

OCTOBER 1979    Number 422 -- Part I

# Solar-Geophysical Data prompt reports



Data for September 1979 -- August 1979

Explanation of Data Reports Issued as Number 414 (Supplement) February 1979



**noaa**

NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION

ENVIRONMENTAL DATA AND  
INFORMATION SERVICE

BOULDER, COLORADO

# SOLAR-GEOPHYSICAL DATA

No. 422

*Issued in two parts*

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SGD 422 Part I (Prompt)

## SEPTEMBER 1979 DATA

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**ALERT PERIODS**  
INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE  
SEPTEMBER 1979

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS).

14 SEPTEMBER 1979 BOULDER 14/1340Z TENFLARE 3000 FLUX UNITS 14/0653Z DURATION 100 MINUTES.  
 15 SEPTEMBER 1979 BOULDER 15/1727Z PROTON EVENT BEGAN AT 15/1420Z 10 PARTICLES/CM<sup>2</sup>/S/SR AT GREATER THAN 10 MEV.  
 16 SEPTEMBER 1979 BOULDER 16/1358Z SOFLARE X4/2B N03E80 16/0937Z DURATION 100 MINUTES.  
 BOULDER 16/1358Z SOFLARE X2/SURGE 16/0101Z N08E90.  
 19 SEPTEMBER 1979 BOULDER 19/2130Z SOFLARE M2/2B N05E32 19/2057Z DURATION 30 MINUTES.  
 BOULDER 19/2130Z SOFLARE X5/3B N06E33 19/2306Z 14 MINUTE DURATION.  
 20 SEPTEMBER 1979 BOULDER 20/0024Z TENFLARE 1800 FLUX UNITS 19/2307Z DURATION 33 MINUTES.  
 22 SEPTEMBER 1979 BOULDER 22/0050Z SOFLARE M9/1B N06E06 21/2356Z DURATION 24 MINUTES.  
 TENFLARE 210 FLUX UNITS 21/2351Z DURATION 7 MINUTES.  
 BOULDER 22/0310Z SOFLARE X1/1B N06E04 22/0238Z DURATION 8 MINUTES.

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions			Outstanding events	Forecasts			Alert Situations								
						Location	No of	Flares		Date	Location	Desc*									
														Lat-Long	Total	M	X	Lat-Long			
244	01	31	213	177	013	N05W78	4	0	0	31	N05W78	A	SOLALERT 01/XX MAGQUIET								
						S32W74	0	0	0		S32W74	Q									
						N26W74	0	0	0		N26W74	Q									
						N18W67	1	0	0		N18W67	Q									
						N17W41	1	0	0		N17W41	Q									
						S23W34	0	0	0		S23W34	Q									
						S28W13	0	0	0		S28W13	Q									
						N24E07	0	0	0		N24E07	Q									
						N12E12	0	0	0		N12E12	Q									
						N19E16	0	0	0		N19E16	E									
						N21E52	6	0	0		N21E52	E									
						N13E53	3	0	0		N13E53	E									
						245	02	01	216		173	004		N04W85	1	0	0	01	N04W85	Q	SOLALERT 02/03 MAGQUIET
N20W79	0	0	0	N20W79	Q																
N18E03	0	0	0	N18E03	Q																
N23W07	0	0	0	N23W07	Q																
N17W56	0	0	0	N17W56	Q																
N21E38	2	0	0	N21E38	E																
N12E38	4	0	0	N12E38	E																
N13W01	0	0	0	N13W01	Q																
S19E66	0	0	0	S19E66	A																
N14E53	0	0	0	N14E53	Q																
N16W15	0	0	0	N16W15	Q																
S15E01	0	0	0	S15E01	Q																
246	03	02	169	177	008					S22W62			0	0	0	02	S22W62		Q	SOLALERT 03/xx MAGQUIET	
						S26W40	0	0	0	S26W40	Q										
						N18W11	0	0	0	N18W11	Q										
						N17W71	0	0	0	N17W71	Q										
						N20E24	1	0	0	N20E24	E										
						N12E21	2	0	0	N12E21	E										
						N12W14	0	0	0	N12W14	Q										
						S19E53	2	0	0	S19E53	E										
						N14E39	1	0	0	N14E39	Q										
						N22W31	0	0	0	N22W31	Q										
						247	04	03	184	178	007	S21W75	0	0	0		03	S21W75	Q		SOLNIL MAGQUIET
												N18W22	0	0	0			N18W22	Q		
												N17W82	0	0	0			N17W82	Q		
N21E10	0	0	0	N21E10	E																
N12E07	1	0	0	N12E07	Q																
N12W25	0	0	0	N12W25	Q																
S19E40	1	1	0	S19E40	Q																
N14E27	2	1	0	N14E27	E																
S20W17	0	0	0	S20W17	Q																
248	05	04	201	177	009							N18W37	1	0	0	04		N18W37	Q	SOLQUIET MAGQUIET	
												N21W02	0	0	0			N21W02	Q		
												N12W07	0	0	0			N12W07	Q		
												N13W42	3	0	0			N13W42	Q		
						S18E26	0	0	0	S18E26	Q										
						N15E13	7	0	0	N15E13	E										
						S20W33	3	0	0	S20W33	E										
						N15E74	0	0	0	N15E74	Q										
						S11E56	0	0	0	S11E56	Q										
						N12W21	0	0	0	N12W21	Q										
						249	06	05	208	174	015	N18W55	1	0	0		05	N18W55	Q		SOLQUIET MAGQUIET
												N21W20	0	0	0			N21W20	Q		
												N12W20	1	0	0			N12W20	Q		
N13W54	1	0	0	N13W54	Q																
S19E14	0	0	0	S19E14	Q																
N14W00	0	0	0	N14W00	Q																
S21W45	1	0	0	S21W45	Q																
N14E60	1	0	0	N14E60	Q																
N13W12	0	0	0	N13W12	Q																
250	07	06	223	180	015							N18W67	5	0	0	06		N18W67	Q	SOLQUIET MAGALERT 07/09	
												N21W29	0	0	0			N21W29	Q		
												N12W31	0	0	0			N12W31	Q		
												N13W71	0	0	0			N13W71	Q		
						S18E00	0	0	0	S18E00	Q										
						N14W13	0	0	0	N14W13	Q										
						S21W60	0	0	0	S21W60	Q										
						N14E47	0	0	0	N14E47	Q										
						N14W24	0	0	0	N14W24	Q										
						S21W12	0	0	0	S21W12	Q										

ALERT PERIODS  
INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE

SEPTEMBER 1979

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions				Outstanding events	Forecasts			Alert Situations									
						Location		No of Flares	M		X	Date	Location		Desc*								
						Lat	Long									Total							
251	08	07	231	184	008	N17W81	1	0	0		07	N17W81	E	SOLALERT 08/10 MAGALERT 08/09									
						N21W41	1	0	0			N21W41	E										
						N13W85	0	0	0			N13W85	Q										
						S18W12	5	0	0			S18W12	E										
						N14W27	7	0	0			N14W27	E										
						S21W75	0	0	0			S21W75	E										
						N14E33	2	0	0			N14E33	Q										
						S30E02	0	0	0			S30E02	Q										
						N27E57	0	0	0			N27E57	Q										
						N12E72	0	0	0			N12E72	Q										
						N16E42	5	0	0			N16E42	E										
						252	09	08	181			181	008		N21W55	3	0	0		08	N21W55	E	SOLALERT 09/11 MAGQUIET
															S18W30	1	0	0			S18W30	Q	
N14W40	1	0	0	N14W40	E																		
N14E19	0	0	0	N14E19	E																		
S31W08	0	0	0	S31W08	Q																		
N26E44	0	0	0	N26E44	Q																		
N14E63	0	0	0	N14E63	Q																		
N16E28	2	0	0	N16E28	Q																		
253	10	09	150	185	004					N21W68	0			0	0		09	N21W68			Q	SOLALERT 10/12 MAGQUIET	
										S19W44	0			0	0			S19W44			Q		
						N13W53	1	0	0	N13W53	Q												
						N14E05	0	0	0	N14E05	Q												
						N26E27	0	0	0	N26E27	Q												
						N12E51	2	0	0	N12E51	E												
						N15E15	5	1	0	N15E15	A												
						N28E75	0	0	0	N28E75	Q												
						254	11	10	253	182	010	N20W84	0	0	0				10	N20W84	Q		SOLALERT 11/12 MAGALERT 12
												S19W57	1	1	0					S19W57	E		
N13W67	5	0	0	N13W67	Q																		
N13W09	1	0	0	N13W09	Q																		
S27W30	0	0	0	S27W30	Q																		
N25E13	0	0	0	N25E13	Q																		
N14E37	4	0	0	N14E37	E																		
N11E01	1	0	0	N11E01	Q																		
N27E64	0	0	0	N27E64	Q																		
N10E39	0	0	0	N10E39	Q																		
N17E40	0	0	0	N17E40	Q																		
S27W29	1	0	0	S27W29	Q																		
S26E75	0	0	0	S26E75	Q																		
255	12	11	190	184	019	S19W74	1	0	0		11	S29W74	Q	SOLALERT 12 MAGNIL									
						N13W81	1	0	0			N13W81	Q										
						N12W21	3	0	0			N12W21	Q										
						S25W48	0	0	0			S25W48	Q										
						N13E23	3	0	0			N13E23	Q										
						N16W14	5	2	0			N16W14	E										
						N27E52	0	0	0			N27E52	Q										
						N09E26	7	0	0			N09E26	E										
						N18E29	0	0	0			N18E29	Q										
						S27W42	0	0	0			S27W42	Q										
						S25E61	0	0	0			S25E61	Q										
						256	13	12	223			179	005		S19W87	2	0	0		12	S19W87	Q	SOLALERT MINOR 13 MAGQUIET
															N13W36	4	0	0			N13W36	Q	
S25W60	6	0	0	S25W60	Q																		
N13E09	0	0	0	N13E09	E																		
N16W28	4	0	0	N16W28	Q																		
N27E39	0	0	0	N27E39	Q																		
N08E12	3	0	0	N08E12	E																		
N18E14	0	0	0	N18E14	E																		
S28W57	0	0	0	S28W57	Q																		
S25E50	0	0	0	S25E50	Q																		
N21E63	0	0	0	N21E63	Q																		
N13W13	0	0	0	N13W13	Q																		
257	14	13	247	184	006					S25W73	1			0	0		13	S25W73			Q	SOLALERT 14/xx MAGQUIET	
						N11W49	0	0	0	N11W49	Q												
						N16W40	3	0	0	N16W40	E												
						N13W27	1	0	0	N13W27	Q												
						S25W07	0	0	0	S25W07	Q												
						N13W03	0	0	0	N13W03	Q												
						N08W02	11	2	0	N08W02	A												
						N17E02	0	0	0	N17E02	Q												
						S13E18	0	0	0	S13E18	Q												
						N27E26	2	0	0	N27E26	Q												
						S26E35	4	0	0	S26E35	E												
						N21E49	0	0	0	N21E49	Q												
						N33E65	1	0	0	N33E65	Q												
						S12E73	1	0	0	S12E73	Q												

ALERT PERIODS  
INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE

SEPTEMBER 1979

SUMMARY OF THE GEALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions				Outstanding events	Forecasts			Alert Situations
						Location		No. of Flares			Date	Location	Desc*	
						Lat-Long	Total	M	X					
258	15	14	240	199	007	N11W63	0	0	0	PRESTO SOFLARE MAJOR FLARE X2 BELGAN 0652Z MAX 0802Z 157 MINUTE DURATION. TENFLARE 3300 FLUX UNITS AT 2700 MHZ TYPE II and IV DEKAMETRIC RADIO. LOOPS AFTER SPRAY OF MANY HOURS DURATION.	14	N11W63	Q	MAJOR FLARE ALERT 15/xx MAGALERT MINOR 15/17
						N16W56	1	1	0			N16W56	E	
						N14W42	0	0	0			N14W42	Q	
						S05W42	2	0	0			S05W42	E	
						N12W17	1	0	0			N12W17	Q	
						N08W16	10	1	0			N08W16	P	
						N17W11	0	0	0			N17W11	Q	
						S12E02	0	0	0			S12E02	Q	
						N26E13	1	0	0			N26E13	Q	
						S26E21	0	0	0			S26E21	Q	
						S11E25	0	0	0			S11E25	Q	
						N20E36	0	0	0			N20E36	Q	
						N32E52	0	0	0			N32E52	Q	
						S12E60	0	0	0			S12E60	Q	
S12E60	0	0	0	N05E90	P									
259	16	15	245	192	011	N12W30	0	0	0	PRESTO SOFLARE X2/NO OPTICAL 16/0114Z 08 MINUTE DURATION, 200 FLUX UNITS AT 2695 MHZ. PRESTO TOYOKAWA TENFLARE 270 UNITS 16/0100Z DURATION 20 MINUTES	15	N12W30	Q	SOLALERT 16/18 MAGALERT MINOR 16/18
						N16W69	1	0	0			N16W69	Q	
						N27E00	0	0	0			N27E00	Q	
						N08W29	1	0	0			N08W29	A	
						N16W24	0	0	0			N16W24	Q	
						S25E08	0	0	0			S25E08	Q	
						N23E23	1	0	0			N23E23	Q	
						N14W58	0	0	0			N14W58	Q	
						S12E47	1	0	0			S12E47	Q	
						N34E39	0	0	0			N34E39	Q	
						S06W55	0	0	0			S06W55	Q	
						S12E15	0	0	0			S12E15	Q	
						N04E85	0	0	0			N04E85	A	
						S11E25	0	0	0			S11E25	Q	
S33W50	0	0	0	S33W50	Q									
N17E56	0	0	0	N17E56	Q									
260	17	16	233	196	008	N11W44	0	0	0	PRESTO SOFLARE 2B 16/0937Z N03E80 DURATION 100 MINUTES SUSPECTED PROTON FLARE X4 EVENT AT 16/0443Z DURATION 14 MINUTES. 32 PROTON/CM²/S/SR GREATER THAN 10 MEV X2 EVENT AT 16/0101Z.	16	N11W44	Q	PROTON FLARE ALERT 17/19 N06E73 MAGALERT MINOR 17/xx
						N13W81	0	0	0			N13W81	Q	
						N25W12	0	0	0			N25W12	Q	
						N08W44	2	1	0			N08W44	E	
						N17W41	0	0	0			N17W41	Q	
						S26W03	0	0	0			S26W03	Q	
						N19E09	0	0	0			N19E09	Q	
						N11W73	0	0	0			N11W73	Q	
						S10W23	0	0	0			S10W23	Q	
						S12E34	0	0	0			S12E34	Q	
						N32E25	0	0	0			N32E25	Q	
						S08W72	0	0	0			S08W72	Q	
						N06E73	6	1	2			N06E73	A	
						S12E10	0	0	0			S12E10	Q	
S23E70	0	0	0	S23E70	Q									
261	18	17	204	203	010	N08W58	0	0	0		17	N08W58	E	MAGALERT MINOR 18 PROTON FLARE ALERT 18/20 N05E61
						S27W16	0	0	0			S27W16	Q	
						N20W04	0	0	0			N20W04	Q	
						S10W37	0	0	0			S10W37	Q	
						S12E21	0	0	0			S12E21	Q	
						S12W01	0	0	0			S12W01	Q	
						N05E61	6	0	0			N05E61	A	
						S11E02	0	0	0			S11E02	Q	
N15E30	0	0	0	N15E30	Q									
S22E53	0	0	0	S22E53	Q									
262	19	18	278	214	42	N25W40	0	0	0		18	N25W40	Q	SOLALERT 19/22 MAGALERT MINOR 19
						N08W72	2	1	0			N08W72	E	
						S27W29	0	0	0			S27W29	Q	
						N21W17	0	0	0			N22W17	Q	
						S11W49	0	0	0			S11W49	Q	
						S11E08	0	0	0			S11E08	Q	
						N33E01	0	0	0			N33E01	Q	
						S13W26	0	0	0			S13W26	Q	
						N06E46	6	1	0			N06E46	A	
						S12W15	0	0	0			S12W15	Q	
						N14E17	0	0	0			N14E17	Q	
						S22E41	0	0	0			S22E41	Q	
						S12E63	0	0	0			S12E63	Q	
						S19E71	1	0	0			S19E71	Q	
N27E74	0	0	0	N27E74	Q									
263	20	19	282	217	005	N08W84	4	1	0	PRESTO SOFLARE BOULDER X5/3B N06E33 AT 19/2306Z AND TENFLARE 1800 FLUX UNITS AT 19/2307Z WITH 33 MINUTE DURATION.	19	N08W84	E	SOLALERT 20/23 MAGALERT 21
						S24W42	2	0	0			S24W42	Q	
						N18W29	0	0	0			N18W29	Q	
						S12W62	0	0	0			S12W62	Q	
						S11W06	0	0	0			S11W06	Q	
						N06E31	13	1	1			N06E31	A	
						S12W31	0	0	0			S12W31	Q	
						S21E28	1	0	0			S21E28	Q	
						S13E52	0	0	0			S13E52	Q	
						S19E60	2	0	0			S19E60	E	
						N28E59	2	0	0			N28E59	E	
						S21E15	0	0	0			S21E15	Q	
						S09E30	0	0	0			S09E30	Q	
						N12E59	0	0	0			N12E59	Q	
N21E01	0	0	0	N21E01	Q									

ALERT PERIODS  
INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE

SEPTEMBER 1979

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions				Outstanding events	Forecasts			Alert Situations										
						Location		No. of Flares			Date	Location	Desc*											
						Lat-Long	Total	M	X						Lat-Long									
264	21	20	207	216	014	S27W56	0	0	0			20	S27W56	Q	SOLALERT 21/23 MAGALERT 21/22									
						S10W75	0	0	0				S10W75	Q										
						N05E18	8	2	0				N05E18	P										
						S21E14	0	0	0				S21E14	Q										
						S13E37	0	0	0				S13E37	Q										
						S20E45	1	0	0				S20E45	Q										
						N27E47	2	0	0				N27E47	E										
						S22W01	0	0	0				S22W01	Q										
						S09E15	0	0	0				S09E15	Q										
						N11E44	0	0	0				N11E44	Q										
						N18E82	0	0	0				N18E82	Q										
						265	22	21	194				217	018		S27W70	0	0	0	BOULDER SOFLARE M9 N06E06 21/2356Z DURATION 24 MINUTES TENFLARE 210 FLUX UNITS 21/2351Z DURATION 7 MINUTES TOYOKAWA TENFLARE 490 F.U. 21/2351Z DURATION 20 MINUTES.	21	S27W70	Q	SOLALERT 22/24 MAGALERT 22
																N05E05	6	1	0			N05E05	P	
																S21E02	0	0	0			S21E02	Q	
S13E24	0	0	0	S13E24	Q																			
S20E33	1	0	0	S20E33	Q																			
N27E32	1	0	0	N27E32	E																			
S09W05	1	0	0	S09W05	Q																			
N17E71	2	0	0	N17E71	Q																			
266	23	22	291	215	012					S27W86	0	0			0	BOULDER SOFLARE X1/1B N06E04 22/0238Z DURATION 8 MINUTES TOYOKAWA TENFLARE 22/0233Z 130 F.U. DURATION 10 MINUTES.	22	S27W86	Q			MAJOR FLARE ALERT 23/24 MAGALERT 23		
										N05W08	6	0			1			N05W08	P					
						S21W11	0	0	0	S21W11	Q													
						S13E11	0	0	0	S13E11	Q													
						S19E18	0	0	0	S19E18	Q													
						N28E19	0	0	0	N28E19	Q													
						S10W16	0	0	0	S10W16	Q													
						N12E16	0	0	0	N12E16	Q													
						N18E55	0	0	0	N18E55	Q													
						S17W55	0	0	0	S17W55	Q													
						N07W16	0	0	0	N07W16	Q													
						S13E32	2	0	0	S13E32	E													
						N18E35	0	0	0	N18E35	Q													
						N16E70	0	0	0	N16E70	E													
						267	24	23	395	225	005	N12W51	1	0	0			TOYOKAWA TENFLARE 23/0300Z 130 F.U. 23/0202Z DURATION 04 MINUTES.	23	N12W51	E		MAJOR FLARE ALERT 24/xx MAGNIL	
												S10W30	0	0	0					S10W30	Q			
N07W28	0	0	0	N07W28	Q																			
S21W24	0	0	0	S21W24	Q																			
N05W21	8	2	0	N05W21	P																			
N22W19	1	0	0	N22W19	E																			
S11W02	1	0	0	S11W02	Q																			
N12E02	0	0	0	N12E02	Q																			
S19E06	0	0	0	S19E06	Q																			
N28E07	0	0	0	N28E07	Q																			
S13E20	3	0	0	S13E20	E																			
N18E23	0	0	0	N18E23	Q																			
S12E34	0	0	0	S12E34	Q																			
N10E35	0	0	0	N10E35	Q																			
N19E44	0	0	0	N19E44	Q																			
S24E60	0	0	0	S24E60	Q																			
N15E60	0	0	0	N15E60	Q																			
N22E71	0	0	0	N22E71	Q																			
N18E71	1	0	0	N18E71	E																			
268	25	24	408	208	008	N05W34	8	1	0			24	N05W34	E	SOLALERT 25/27 MAGALERT MINOR 26 (FILAMENT DISAPPEARANCE)									
						N12W64	3	0	0				N12W64	Q										
						S22W36	0	0	0				S22W36	Q										
						S19W08	0	0	0				S19W08	Q										
						N27W06	0	0	0				N27W06	Q										
						S10W42	0	0	0				S10W42	Q										
						N12W12	1	0	0				N12W12	Q										
						N17E30	0	0	0				N17E30	Q										
						N08W40	0	0	0				N08W40	E										
						S13E05	0	0	0				S13E05	Q										
						N17E07	0	0	0				N17E07	Q										
						N15E46	0	0	0				N15E46	Q										
						N22W33	1	0	0				N22W33	Q										
						N09E21	0	0	0				N09E21	Q										
						S13E20	0	0	0				S13E20	Q										
						S26E46	1	0	0				S26E46	Q										
						N21E57	0	0	0				N21E57	Q										
N17E60	1	0	0	N17E60	Q																			
S31E03	0	0	0	S31E03	Q																			
S21E65	1	0	0	S21E65	Q																			
N21E57	0	0	0	N21E57	Q																			

**ALERT PERIODS**  
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**SUMMARY OF THE GEALERT WWA MESSAGES**

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions			Outstanding events	Forecasts			Alert Situations										
						Location		No. of Flares		Date	Location			Desc#									
						Lat-Long	Total				M	X			Lat-Long								
269	26	25	393	234	013	N06W46	3	0	0		25	N06W46	E	SOLALERT 26/27 MAGALERT 26									
						N13W77	1	0	0			N13W77	Q										
						S20W50	0	0	0			S20W50	Q										
						S19W22	0	0	0			S19W22	Q										
						N27W17	0	0	0			N27W17	Q										
						N12W25	0	0	0			N12W25	Q										
						N17E18	4	0	0			N17E18	E										
						S13W11	0	0	0			S13W11	Q										
						N17W03	0	0	0			N17W03	Q										
						N15E33	0	0	0			N15E33	Q										
						N22W46	2	0	0			N22W46	Q										
						N10E08	0	0	0			N10E08	Q										
						S12E06	0	0	0			S12E06	Q										
						S27E34	0	0	0			S27E34	Q										
						N20E49	3	0	0			N20E49	E										
						N16E48	3	1	0			N16E48	E										
						S21E53	0	0	0			S21E53	Q										
N22E22	0	0	0	N22E22	Q																		
270	27	26	355	231	015	N06W59	3	0	0		26	N06W59	E	SOLALERT 27/28 MAGNIL									
						S19W31	0	0	0			S19W31	Q										
						N16W28	1	0	0			N16W28	Q										
						N11W39	0	0	0			N11W39	Q										
						N17E05	0	0	0			N17E05	E										
						S12W24	0	0	0			S12W24	Q										
						N16W16	0	0	0			N16W16	Q										
						N15E20	0	0	0			N15E20	Q										
						N22W59	1	0	0			N22W59	Q										
						N11W04	0	0	0			N11W04	Q										
						S12W08	0	0	0			S12W08	Q										
						S26E20	0	0	0			S26E20	Q										
						N21W33	0	0	0			N21W33	Q										
						N17E35	1	0	0			N17E35	E										
						S22E40	4	0	0			S22E40	Q										
						N22E08	0	0	0			N22E08	Q										
						N21E67	1	0	0			N21E67	Q										
271	28	27	274	229	015	N07W72	1	0	0		27	N07W72	E	SOLALERT 28/29 MAGQUIET									
						S19W48	0	0	0			S19W48	Q										
						N28W43	0	0	0			N28W43	Q										
						N17W08	2	0	0			N17W08	E										
						S13W40	0	0	0			S13W40	Q										
						N16W31	0	0	0			N16W31	Q										
						N14E06	0	0	0			N14E06	Q										
						N22W73	0	0	0			N22W73	Q										
						S13W21	2	0	0			S13W21	Q										
						N26E07	1	0	0			N26E07	Q										
						N16E21	3	0	0			N16E21	E										
						S21E26	1	0	0			S21E26	Q										
						N22W05	6	0	0			N22W05	Q										
						N23E53	0	0	0			N23E53	Q										
						N24E12	0	0	0			N24E12	Q										
						272	29	28	284			233	013		N06W85	2	0	0		28	N06W85	Q	SOLNIL MAGQUIET
															S20W62	0	0	0			S20W62	Q	
N27W56	1	0	0	N27W56	Q																		
N17W21	3	0	0	N17W21	E																		
S14W54	0	0	0	S14W54	Q																		
N15W44	0	0	0	N15W44	Q																		
N14W06	1	0	0	N14W06	E																		
N21W87	0	0	0	N21W87	Q																		
S13W35	0	0	0	S13W35	Q																		
S26W06	1	0	0	S26W06	Q																		
N17E08	4	0	0	N17E08	E																		
S21E13	2	0	0	S21E13	Q																		
N22W19	0	0	0	N22W19	E																		
S27E68	0	0	0	S27E68	Q																		
273	30	29	253	224	011					S20W76	0			0	0		29	S20W76			Q	SOLQUIET MAGQUIET	
										N18W35	3			0	0			N18W35			E		
										S15W65	0			0	0			S15W65			Q		
						N14W58	0	0	0	N14W58	Q												
						N14W21	0	0	0	N14W21	Q												
						S13W49	0	0	0	S13W49	Q												
						S14W19	0	0	0	S14W19	Q												
						N17W07	0	0	0	N17W07	E												
						S21W01	0	0	0	S21W01	E												
						N22W33	0	0	0	N22W33	Q												
						S28E55	0	0	0	S28E55	Q												
						N11E74	0	0	0	N11E74	Q												



ALERT PERIODS  
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SEPTEMBER 1979

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions				Outstanding events	Forecasts			Alert Situations
						Location	No of	Flares			Date	Location	Desc*	
						Lat-Long	Total	M	X					
274	01	30	303	231	017	S19W88	1	0	0		30	S19W88	Q	SOLALERT 01/02 MAGQUIET
						N20W46	8	0	0			N20W46	A	
						S13W80	0	0	0			S13W80	Q	
						N14W72	0	0	0			N14W72	Q	
						N14W33	1	0	0			N14W33	Q	
						S13W62	1	0	0			S13W62	Q	
						S25W31	3	0	0			S25W31	Q	
						N17W20	2	0	0			N17W20	E	
						S22W14	1	0	0			S22W14	Q	
						N23E16	0	0	0			N23E16	Q	
						S26E42	0	0	0			S26E42	Q	
						N12E64	2	0	0			N12E64	Q	
						S34E11	0	0	0			S34E11	Q	
						N15E45	2	0	0			N15E45	Q	

\* Q=Quiet E=Eruptive A=Active P=Proton C=Caution D=Doubtful O.G.=Other Groups MF=Major Flare

RELATIVE SUNSPOT NUMBERS  
ZURICH, R<sub>Z</sub>

DAY	1978 FINAL			1979 PROVISIONAL								
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	109	110	158	116	116	131	108	121	158	115	165
2	112	122	110	158	127	138	134	106	162	166	96	141
3	135	125	117	131	148	141	135	103	161	205	121	148
4	100	129	115	157	123	142	138	112	175	219	110	157
5	73	121	104	146	134	135	109	113	207	232	93	139
6	74	108	122	173	146	144	91	122	226	269	104	139
7	95	112	138	163	144	146	77	148	222	223	110	170
8	103	118	148	172	142	143	69	155	220	219	132	142
9	121	108	152	165	139	146	61	162	231	191	115	190
10	149	120	144	163	137	140	87	145	205	163	92	177
11	158	118	170	157	137	156	109	143	136	155	84	167
12	158	99	188	159	138	170	107	158	199	145	87	156
13	156	90	165	159	152	169	113	163	172	142	91	175
14	170	78	150	162	163	159	116	203	140	127	119	166
15	166	59	140	178	161	155	117	207	127	121	135	177
16	163	77	143	164	159	130	119	187	103	114	122	170
17	143	92	146	164	160	142	107	184	122	109	138	195
18	135	93	132	146	162	142	98	143	125	105	157	177
19	154	85	95	138	166	138	79	109	110	135	176	195
20	151	76	84	177	169	120	68	107	111	158	187	191
21	144	68	68	181	171	134	68	114	124	151	218	184
22	125	77	63	178	155	140	79	121	108	152	216	178
23	116	55	59	188	127	139	79	117	96	154	206	219
24	104	61	65	209	99	118	80	119	90	143	203	236
25	96	85	81	209	88	114	85	124	120	144	201	252
26	102	101	93	173	108	114	118	123	132	142	182	251
27	115	118	110	162	97	117	125	111	112	146	189	256
28	117	118	122	157	95	114	132	110	128	132	174	239
29	137	111	135	153		110	132	113	124	148	158	235
30	128	103	159	149		127	120	96	154	150	150	233
31	111		177	130		147		129		144	168	
MEAN	125.1	97.9	122.7	165.8	138.0	137.0	102.8	134.6	150.5	159.6	143.5	188.7

1978 yearly mean=92.5

DAILY SOLAR FLUX AT 2800 MHz  
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S<sub>11</sub>

DAY	1978			1979								
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	139.0	152.0	166.6	194.1*	135.8	168.5	202.6*	180.4	183.5	186.3	169.1	175.8
2	137.8	159.0	167.6	200.1	185.6	170.7	203.4	179.2	206.3*	200.9*	143.9*	180.1
3	131.7	169.9	164.2	203.5*	187.4*	173.3	194.2	164.3	216.1*	213.4	145.1	183.8
4	132.0*	177.4	165.3	192.7*	197.7	181.4	183.5	176.0	228.9*	218.1	141.7	175.3*
5	138.7*	181.2	169.5	194.9	137.4	180.1*	179.3	169.6	230.2	204.5	141.6	177.1
6	137.4	172.2*	164.5	190.9	206.5	182.4	176.3	171.1*	233.1	211.3	149.5	180.4*
7	141.6	174.6	178.5*	186.2	233.4	183.1*	166.7	178.0	238.1	207.2	151.1	185.3
8	150.1	168.0*	189.9	200.1	207.2*	178.9	169.0*	182.4*	242.7	206.7	152.7	183.6
9	155.8	164.9*	189.6	192.6	198.7	181.4	169.6	181.3	247.4*	197.9*	157.3	187.4
10	162.3	166.3	204.7	186.2	198.4*	180.6	173.0	174.7	239.9	185.9	152.1*	184.6
11	171.6*	163.7	210.5	179.5	202.2*	181.7*	170.0*	178.6	229.6	178.6	154.4	181.5*
12	177.2	150.4	217.3	174.5	175.4	188.7	174.5	184.2	208.3	170.1	144.5	181.7
13	178.5	145.3	210.6*	193.9	195.4	186.3	175.8	186.6	193.7	161.4	155.8	186.1
14	180.1	136.3	197.0	200.0*	204.2*	189.4	170.9	182.0	185.7	154.7*	158.2*	192.6*
15	182.0	133.8	192.7	192.1*	205.3*	181.3	168.1	181.9	176.0	151.1	167.6	193.8
16	176.7*	128.8	180.5	189.9*	209.2	183.5*	171.7	176.4	167.5	143.6	164.8	196.3*
17	171.5	128.1	177.7	175.7	213.1	177.7	168.0	187.7	158.1	142.7	165.8	202.7*
18	169.4	127.4	161.5	177.6	237.7	188.6*	158.7	171.3*	152.6	141.2	180.0	215.7
19	170.4	128.9	152.9	187.8	237.8	177.6	159.4	161.5	146.2	143.6	186.4	218.1*
20	171.0	134.9	138.1	197.2	230.1*	184.1	156.1	155.6	151.5	145.6	204.2*	213.9*
21	166.9*	126.0	132.1*	210.3	225.1	182.2	161.5	155.7	148.9	143.7*	207.5*	218.4
22	161.4	127.1	132.7	226.9	223.3	181.1	159.7*	156.5*	141.1	155.7	223.2	216.5
23	161.4	121.9	133.4	225.1	136.0	188.5	162.3	156.0	139.0	163.1*	218.6	224.2*
24	156.9	123.5	135.2*	208.5	132.8	188.3	161.9	159.2*	141.2	162.6	225.2	231.7
25	156.1	124.7*	138.0	206.1	167.5	188.2	172.5	153.3*	147.8	164.5	229.3*	235.5
26	154.4	132.7	144.2	192.9	166.0	200.2	182.0	149.1	153.7	165.6	223.3	229.9*
27	150.7	144.4*	148.7*	205.4	162.7	187.9	195.1*	149.4	158.5	159.1*	212.8	228.7*
28	148.4*	154.1	164.1	209.6	163.6	188.6	192.1*	148.2	159.1	158.1	214.2	233.8
29	149.8	162.2	166.2	209.3		191.4	185.7	150.2	166.9	156.7	197.6	225.0
30	146.5	167.8	181.7	194.1*		186.6	185.2*	158.4	176.7*	163.3	187.8	231.9
31	144.0		195.1	193.7		201.4*		174.9		152.4	179.9	
MEAN	157.1	148.2	170.0	196.5	199.1	184.0	175.0	168.9	186.0	171.4	177.0	202.3

\* adjusted for burst  
A = interpolated data point

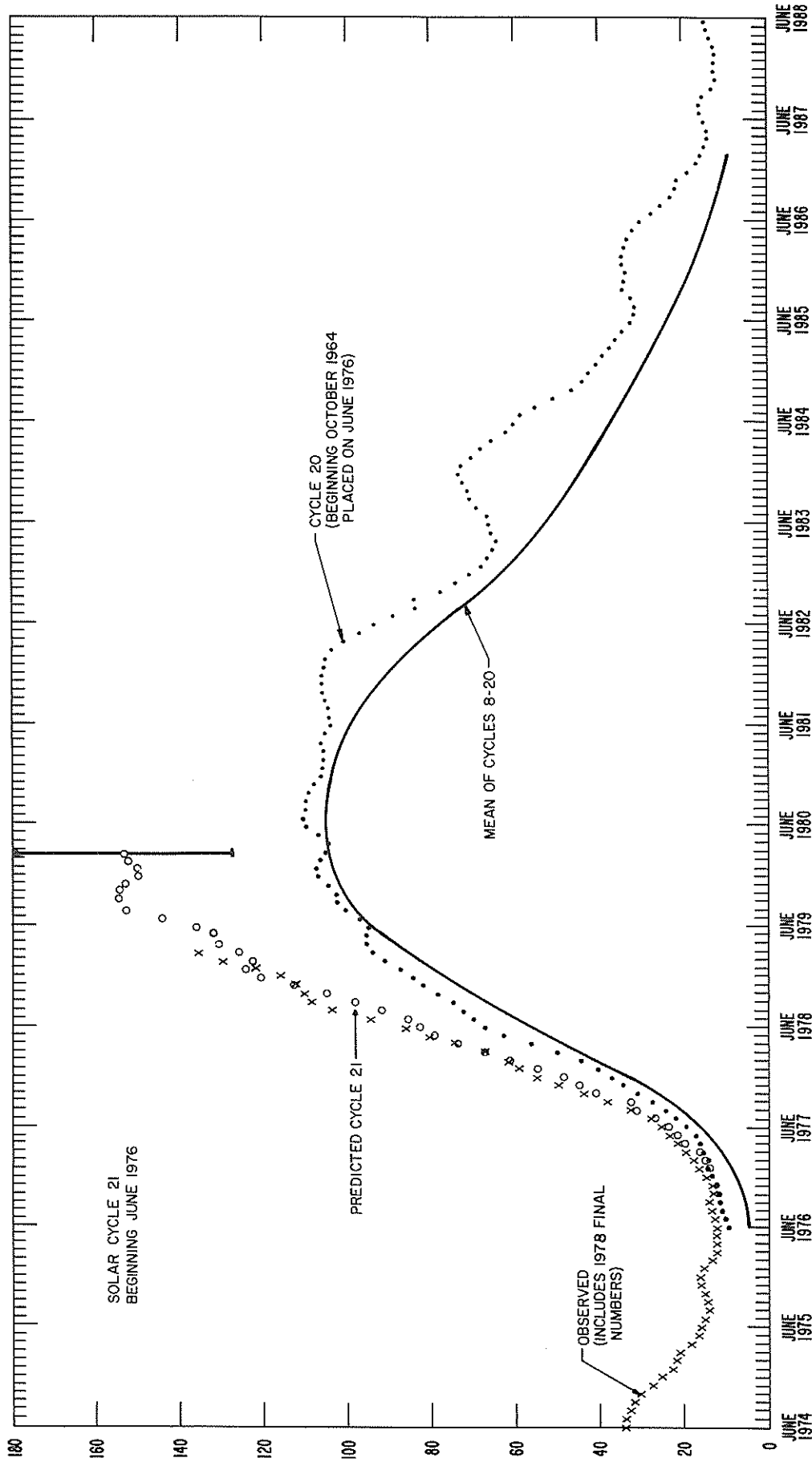
DAILY SOLAR INDICES

SEPTEMBER 1979

SEP 1979	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	SUNSPOT NUMBERS		OBSERVED FLUX OTTAWA 2800	SOLAR FLUX ADJUSTED TO 1 A.U.										
			R <sub>Z</sub>	R <sub>A'</sub>		AFGL 15400	AFGL 8800	AFGL 4995	OTTAWA 2800	AFGL 2695	AFGL 1415	AFGL 606	AFGL 410	AFGL 245		
1	244	5	165	134	172.7	585	389	191	175.8	173	128	83				22
2	245	6	141	119	176.9	580	372	202	160.1	178	126	80				23
3	246	7	148	161	177.8	583	376	205	180.8	183	123	81				56
4	247	8	157	160	172.4*	573	393	199	175.3*	179	133	87				34
5	248	9	139	139	174.3	568	367	195	177.1	178	124	85				38
6	249	10	139	137	177.6*	531	342	197	180.4*	179	129	80	55			34
7	250	11	170	163	183.5	582	382	198	186.3	181	122	82	51			29
8	251	12	192	159	180.9	566	366	195	183.6	182	122	79	51			24
9	252	13	190	153	184.8	597	380	209	187.4	188	122	88				20
10	253	14	177	165	182.1	571	360	205	184.6	186	124	80				22
11	254	15	167	163	179.2*	596	401	216	181.5*	184	123	99				20
12	255	16	156	152	179.4	566	376	195	181.7	179	121	83				21
13	256	17	175	164	183.7	584	388	197	186.1	184	129	85	50			20
14	257	18	186	172	190.1*	565	383	216	192.6*	191	136	91	47			35
15	258	19	177	168	191.7	588	410	218	193.8	198	136	97	46			36
16	259	20	170	165	194.2*	595	423	226	196.3*	198	137	102				28
17	260	21	155	137	200.7*	577	423	223	202.7*	202	140	85				21
18	261	22	177	160	213.8	598	424	233	215.7	215	136	77				20
19	262	23	195	174	216.2*	536	449	238	218.1*	229	146	81	44			20
20	263	24	191	166	212.2*	589	433	235	213.9*	227	145	89	40			18
21	264	25	184	184	216.7	579	409	230	218.4	221	154	115				20
22	265	26	178	208	215.0	568	375	219	216.5	233	142	87				19
23	266	27	219	275	222.6*	573	416	230	224.2*	239	151	110				25
24	267	1	236	276	229.3	598	411	239	230.7	236	151	110	47			23
25	268	2	252	277	234.3	596	404	229	235.5	231	160	104	42			23
26	269	3	261	261	228.8*	596	394		229.9*	228	156	93	41			
27	270	4	256	230	227.8*	608	414	221	228.7*	221	142	88	43			
28	271	5	239	244	232.9	587	425	236	233.8	223	153	90	46			
29	272	6	235	217	224.3	574	407	240	225.0	212	144	88	51			
30	273	7	233	238	231.2	572	379	259	231.9	208	152	91	54			
MEAN			188.7	184.0	200.2	581	396	217	202.3	201	137	90	47			27

\*Adjusted for burst.

Note: Data gaps in AFGL Sagamore Hill are due to equipment problems.



OBSERVED AND PREDICTED SUNSPOT NUMBERS

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS  
CYCLE 21

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1976	15.2	13.2	12.2	12.6	12.5	12.2	12.9	14.0	14.3	13.4	13.5	14.8
1977	16.7	18.1	20.0	22.2	24.2	26.3	29.0	33.4	39.1	45.6	51.9	56.9
1978	61.3	64.5	69.6	76.9	83.2	89.3	97.4	104.0	108.4	111.0	113.3	116.7
1979	122.8	130.4	136.1	139.4	142.4	147.1	151.7	154.9	157.0	158.2	158.6	157.9
				( 5)	( 9)	(12)	(14)	(16)	(17)	(19)	(22)	(24)
1980	156.3	154.6	153.5	153.5	152.7	149.2	145.4	142.2	140.2	139.2	137.8	136.5
	(26)	(27)	(26)	(28)	(30)	(33)	(37)	(39)	(39)	(41)	(42)	(45)
1981	136.5	136.1	133.5	130.4	127.6	124.8	123.6	123.4	122.7	121.3	118.8	115.5
	(48)	(47)	(45)	(44)	(45)	(45)	(44)	(42)	(42)	(42)	(40)	(38)
1982	112.2	108.8	106.4	104.6	102.3	99.9	96.0	91.2	86.8	82.0	78.5	75.0
	(36)	(35)	(35)	(33)	(31)	(29)	(27)	(25)	(24)	(21)	(20)	(20)
1983	70.9	67.9	65.9	63.9	61.6	59.1	57.0	55.2	53.5	52.4	51.6	50.7
	(20)	(20)	(21)	(21)	(22)	(22)	(24)	(25)	(27)	(29)	(30)	(30)
1984	49.4	47.4	44.3	40.9	38.3	37.3	36.3	34.8	33.2	31.9	30.6	29.0
	(31)	(30)	(29)	(29)	(30)	(31)	(32)	(31)	(31)	(29)	(28)	(27)
1985	27.8	27.1	26.4	25.9	25.2	24.2	23.3	22.5	21.8	21.0	20.1	19.5
	(27)	(27)	(26)	(26)	(26)	(25)	(23)	(23)	(22)	(23)	(24)	(24)
1986	19.0	18.2	17.4	16.4	15.0	13.8	12.8	12.2	12.0	11.7	11.6	11.6
	(24)	(24)	(24)	(23)	(22)	(21)	(20)	(19)	(17)	(16)	(15)	(13)
1987	11.9	12.5	13.3	14.4	15.5	16.6	17.7					
	(12)	(11)	(11)	(12)	(13)	(13)	(14)					

The table gives observed Zürich smoothed sunspot numbers for Cycle 21 up to the one calculated from the latest observed data, marked by a vertical bar. They are based on final Zürich numbers through 1978 and provisional Zürich numbers thereafter. Some of these data after the June 1976 value will change slightly when final data for 1979 are received. The numbers after the vertical bar are predictions by the McNish-Lincoln method (see *Explanation of Data Reports*, February 1978). Shown in parentheses are the corresponding absolute values of the 90% confidence interval, an indication of the uncertainty above and below the predicted number.

The McNish-Lincoln method is very sensitive to the identification of a minimum epoch. In SGD 390-401 issues, the Cycle 21 predictions were based on March 1976 as the minimum epoch. Latest studies, including one published by Waldmeier, show that June 1976 is the more appropriate epoch of minimum. Thus, we have adopted a June 1976 minimum.

\*Prediction of Sunspot Maximum -- The McNish-Lincoln prediction method is recommended for predictions up to only one year ahead. From that point, the predictions regress rapidly towards the mean value. Combining this McNish-Lincoln prediction of sunspot maximum with the Ohl method (as done by Sargent, see *Explanation of Data Reports*, February 1979) indicates that the most probable value for sunspot maximum is  $158 \pm 23$ .



# H $\alpha$ SOLAR FLARES

SEPTEMBER 1979

OBSERVATORY	OBSERVED UT				LOCATION				DURATION MIN.	IM POR- TANCE	OBS.		MEASUREMENTS			REMARKS	
	DAY	START	MAX. PHASE	END	APPROX.		CENTRAL DISTANCE	MCMATH FLARE REGION			CMP. DAY	COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk		CORR. AREA Sq. Deg.
					LAT.	MER. DIST.											
PALE	01	0340	0341	0342	N12	E52	.821		5.1	2	SF	3	C		33		DE
PALE	01	0401	0404	0408	N12	E52	.821		5.1	7	SF	3	C		28		DE
ISTA	01	0620E		0633	S20	E90	.999	16267	8.0	130	1N		V				AB
ISTA	01	0635		0643	N11	E51	.808		5.1	8	SN		V				D
ISTA	01	0644		0653	N22	E46	.823		4.9	9	SN		V				D
BIGB	01	1437	1439	1449	N16	W77	.984		23.8	12	SN	2	C	1439	70		
HOLL	01	1456	1458	1515	S23	W44	.708		26.3	19	SF	3	C		39		
HOLL	01	1457	1515	1551	N20	E42	.760		4.8	54	SF	3	C		75		F
BIGB	01	1457	1505	1540	N19	E44	.773		4.9	43	SN	2	C	1505	80	1.1	
BIGB	01	1458	1502	1520	N23	E42	.777		4.8	22	SN	2	C	1502	80	1.1	
BIGB	01	1524	1526	1537	S14	W65	.899		24.8	13	SN	2	C	1526	30		
BIGB	01	1601	1604	1607D	N16	W77	.984		23.9	60	SN	2	P	1604	70		
HOLL	01	1654	1729	1742	N 5	W85	.997		23.3	48	SN	3	C		34		
HOLL	01	1714	1727	1804	N20	E40	.741		4.7	50	SN	3	C		33		
BIGB	01	1823	1824	1829	S14	W67	.914		24.7	6	SN	3	P	1824	40		
BIGB	01	1851	1857	1903	S34	W90	.998		23.0	12	SN	3	C	1857	40		
BIGB	01	1947	1948	1953	N11	E46	.758		5.3	6	SN	3	C	1948	40	.6	
HOLL	01	1949	1949	1957	N12	E40	.697		4.8	8	SB	3	C		21		DE
BIGB	01	2322	2326	2339	S34	W90	.998		23.2	17	SN	3	C	2326	90		
BIGB	01	2328	2336	2352	S23	E75	.958		7.6	24	SN	3	C	2336	120		A
MANI	02	0030E	0039	0047D	S19	E67	.913	16267	7.0	170	1N	3	C		100		F
PALE	02	0303	0308	0329	S19	E65	.899		7.0	26	SF	2	C		71		DE
ISTA	02	0700E	0703	0723	N18	W20	.530	16252	28.8	230	2B		V				GUWV
BUCA	02	0710E		0726	N17	W17	.492		1.0	160	SF		C	0710	193	2.1	
ISTA	02	0737	0744	0752	S21	E64	.892		7.1	15	SN		V				D
HOLL	02	1345	1345	1405	N13	E30	.588		4.8	20	SF	3	C		41		
BIGB	02	1735	1737	1745	N15	W63	.915		26.0	10	SN	2	C	1737	30	.7	
BIGB	02	1837	1842	1932	N15	W63	.915		26.1	55	SN	2	C	1842	60	1.4	
BIGB	02	2004	2006	2008D	S25	E65	.901		7.7	40	SN	2	P	2006	20		
BIGB	02	2029	2041	2101	S20	E65	.899		7.7	32	SB	3	C	2041	50		
BIGB	02	2255	2257	2303D	S32	W90	.998		24.2	80	SN	3	P	2257	40		
HOLL	02	2329	0039	0043D	S20	E66	.906	16267	7.9	740	1B	3	C		122		DE
MANI	03	0435E	0435	0450	S19	E55	.815	16267	7.3	150	1B	3	C		200		
ISTA	03	0734		0758	S21	W67	.913		26.3	24	SN		V				D
ISTA	03	0825		0837	S21	W67	.913		26.3	12	SN		V				E
HOLL	03	1421	1421	1455	N12	E16	.422		4.8	34	SF	3	C		24		
BIGB	03	1759	1800	1806	N14	E34	.641		6.3	7	SN	3	C	1800	10	.1	
BIGB	03	1856	1901	1919	N15	E32	.626		6.2	23	SB	3	C	1901	70	.9	
HOLL	03	1857	1859	1921	N14	E29	.585		6.0	24	SB	3	C		138		DE
RAMY	03	1857	1859	1915	N14	E29	.585		6.0	18	SB	2	C		100		UDE
PALE	03	1905E	1905U	1917	N14	E32	.618		6.2	12D	SB	2	C		109		UDE
BIGB	03	1918	1920	1935	N24	W28	.663		1.7	17	SF	3	C	1920	20	.2	
HOLL	03	2101	2113	2117	N15	E30	.604		6.1	16	SF	3	C		28		
BIGB	03	2150	2155	2239D	S24	E50	.774		7.7	49D	SN	3	P	2155	80	1.3	
HOLL	04	1343	1343	1404	N15	E21	.507		6.1	21	SN	3	C		114		F
HOLL	04	1415	1618	1641	N14	W36	.663	16252	1.9	146	1N	3	C		187		DE
HOLL	04	1440	1521	1628	S21	W29	.518		2.4	108	SN	3	C		42		
BIGB	04	1521	1526	1602	N15	W35	.659		2.0	41	SF	2	C	1526	50	.6	
BIGB	04	1536	1538	1544	N12	W37	.663		1.9	8	SF	2	C	1538	50	.6	
BIGB	04	1600	1603	1620	S21	W29	.518		2.5	20	SN	2	C	1603	40	.5	
BIGB	04	1614	1619	1654	N17	W33	.651		2.2	40	SN	2	C	1619	120	1.5	
BIGB	04	1621	1626	1643	N14	E19	.476		6.1	22	SF	2	P	1626	20	.2	
BIGB	04	1629	1637	1655	N16	E17	.480		6.0	26	SF	2	C	1637	30	.3	
BIGB	04	1658	1659	1700	N12	W39	.686		1.8	2	SN	2	C	1659	10	.1	
BIGB	04	1704	1711	1808	N14	E16	.447		5.9	64	SB	2	C	1711	90	1.0	
HOLL	04	1704	1706	1740	N16	E21	.518		6.3	36	SB	3	C		114		FDE
BIGB	04	1740	1742	1822	N13	E16	.434		5.9	42	SF	2	C	1742	40	.4	
HOLL	04	1759	1807	1845	S21	W30	.531		2.5	46	SN	3	C		60		
BIGB	04	1801	1804	1821	S21	W31	.544		2.4	20	SN	3	C	1804	20	.2	
HOLL	04	1836	1842	1914	N17	W39	.714		1.9	38	SF	3	C		32		
BIGB	04	1836	1843	1903	S19	W31	.535		2.5	27	SF	3	C	1843	20	.2	
BIGB	04	1905	1910	1925	N12	W39	.686		1.9	20	SN	3	C	1910	70	.9	
HOLL	04	1943	1943	1951	S21	W32	.557		2.4	8	SF	3	C		24		
HOLL	04	2007	2012	2022	N15	E15	.450		6.0	15	SN	3	C		35		
BIGB	04	2009	2010	2036	N14	W16	.447		3.6	27	SB	3	C	2010	20	.2	
HOLL	04	2048	2048	2054	N15	E15	.450		6.0	6	SN	3	C		35		
BIGB	04	2048	2049	2054	N14	W17	.456		3.6	6	SN	3	C	2049	20	.2	
BIGB	04	2056	2057	2104	N14	W16	.447		3.7	8	SN	3	C	2057	50	.5	
HOLL	04	2057	2111	2138	N15	E15	.450		6.0	41	SN	3	C		48		F

# H $\alpha$ SOLAR FLARES

SEPTEMBER 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IM-PORTANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX.		CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP. DAY			COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
					LAT.	MER. DIST.											
BIGB	04	2109	2111	2148	N14	W17	.456		3.6	39	SB	3	C	2111	20	.2	
HOLL	04	2210	2211	2223	N15	E14	.442		6.0	13	SN	3	C		27		
BIGB	04	2239	2242	2310	N15	W39	.702		2.0	31	SF	3	C	2242	30	.4	
BIGB	04	2242	2243	2251	N20	W35	.693		2.3	9	SF	3	C	2243	30	.4	
HOLL	04	2243	2243	2305	N13	W41	.713		1.9	22	SF	3	C		66		
HOLL	04	2316	2317U	2318D	N15	E14	.442		6.0	20	SB	3	C		96		DE
WEND	05	0705E		0712D	N15	E11	.419		6.1	70	SF		C	0705	56	.6	
WEND	05	0705E		0712D	S20	W37	.616		2.5	70	SN		C	0707	50	.7	
ISTA	05	0713E		0725	S21	W38	.632		2.4	150			V				BEF
MANI	05	0715E	0715U	0720	S20	W33	.565		2.8	50	SN	3	C		80		
ISTA	05	0719		0745	N12	E69	.947	16275	10.5	26	1N		V				KU
ISTA	05	0837		0858	N12	E69	.947	16275	10.5	21	1N		V				KU
ISTA	05	0905		0910	N21	W05	.480		5.0	5	SF		V				D
BIGB	05	1424	1425	1436	N16	E79	.989		11.5	12	SB	2	C	1425	100		A
HOLL	05	1528	1529	1536	N19	W51	.836		1.8	8	SF	3	C		26		
HOLL	05	1654	1654	1701	N13	W51	.815		1.9	7	SF	3	C		18		
BIGB	05	1802	1808	1842	N12	W11	.377		4.9	40	SN	3	C	1808	70	.7	G
HOLL	05	1803	1808	1828	N13	W14	.416		4.7	25	SN	3	C		45		F
BIGB	05	1958	2012	2038	N37	W69	.978		28.7	40	SF	3	P	2012	40		G
BIGB	05	2012	2018	2027	N16	E02	.396		6.0	15	SF	3	P	2018	30	.3	
ISTA	06	0612E		0630D	N11	E56	.854		10.5	180	SN		V				D
ISTA	06	0616		0621	N12	W62	.903		1.6	5	SN		V				E
MONT	06	0726	0727	0731	N14	W05	.372		5.9	5	SF		C	0727	50		
WEND	06	0727		0801	N20	W21	.562		4.7	34	SF		C	0736	56	.7	
MONT	06	0727	0729	0752	N21	W19	.557		4.9	25	SF		C	0729	50		E
WEND	06	0732		0807	N11	E56	.854		10.5	35	SN		C	0738	30	.6	T
WEND	06	0819		0836	S15	E42	.667		9.5	17	SF		C	0820	38	.5	G
MONT	06	0822	0824	0829	N14	W05	.372		6.0	7	SF		C	0824	50		
MONT	06	0906	0907	0911	N20	W64	.931		1.6	5	SF		C	0907	50		D
MONT	06	0951	0955	0958	N21	W20	.565		4.9	7	SF		C	0955	60		E
WEND	06	1210	1212	1224	N22	W60	.911	16252	2.0	14	1N		C	1212	105	2.3	
WEND	06	1332		1339D	N17	W63	.919		1.8	70	SN		C	1337	80	1.9	
HOLL	06	1333	1336	1346	N16	W64	.924		1.8	13	SN	3	C		80		
HOLL	06	1350	1355	1402	N17	W61	.906		2.0	12	SF	3	C		30		
HOLL	06	1411	1412	1418	N17	W61	.906		2.0	7	SF	3	C		19		
BIGB	06	1534	1537	1557	N18	W60	.902	16252	2.1	23	1N	2	C	1537	120	2.5	
HOLL	06	1535	1539	1556	N17	W63	.919		1.9	21	SF	3	C		103		
BIGB	06	1651	1604	1610	N21	W66	.943		1.7	9	SN	2	C	1604	20		
BIGB	06	1636	1637	1700	N16	W64	.924		1.9	24	SN	2	C	1637	20	.5	
HOLL	06	1637	1647	1657	N17	W64	.925		1.9	20	SB	3	C		64		DE
BIGB	06	1645	1646	1658	N16	W68	.947		1.6	13	SN	2	C	1646	50		
WEND	06	1646		1654	N17	W65	.931		1.8	8	SF		C	1648	30		
BIGB	06	1930	1932	1945	N23	W26	.636		4.9	15	SF	2	C	1932	30	.3	
BIGB	06	1950	1951	2011	S17	W05	.189		6.5	21	SN	2	C	1951	20	.2	
BIGB	06	2055E	2055	2100	N10	E48	.775		10.5	50	SN	2	P	2055	40	.6	
BIGB	06	2103	2104	2112	N20	W65	.936		2.0	9	SN	2	C	2104	50		
BIGB	06	2205	2207	2212D	N18	E49	.815		10.6	70	SN	2	P	2207	30	.5	
BIGB	07	0057	0058	0102D	S17	W58	.216		6.4	50	SB	1	P	0058	40	.4	
MANI	07	0100E	0100U	0110D	S18	W 5	.205		6.7	100	SB	3	C		180		ZDE
PALE	07	0105E	0105U	0105D	S18	W 0	.187		7.0		SF	2	C		42		F
BUCA	07	0616		0655	N15	W17	.468		6.0	39	SF		C	0630	107	1.2	
MONT	07	0947	1001	1010	N22	W75	.982	16252	1.8	23	1N		C	1001	220		
MONT	07	1113	1115	1128	S17	W13	.276		6.5	15	SN		C	1115	70		E
HOLL	07	1506	1509	1519	N15	W22	.517		6.0	13	SF	3	C		21		
HOLL	07	1515	1516	1525	N21	W37	.720		4.9	10	SF	3	C		40		
BIGB	07	1605	1616	1627	N15	W22	.517		6.0	22	SN	2	C	1616	50	.6	
HOLL	07	1612	1614	1618	S16	W15	.294		6.6	6	SF	3	C		24		
BIGB	07	1613E	1613E	1627	S17	W15	.302		8.6	140	SN	2	P	1613	30	.3	
WEND	07	1613D		1619D	S17	W16	.316		6.5	60	SN		C	1613	38	.4	
WEND	07	1615		1619D	N15	W23	.528		6.0	40	SN		C	1617	50	.6	
HOLL	07	1616	1616	1626	N15	W22	.517		6.0	10	SN	3	C		66		
BIGB	07	1712	1713	1719	N16	W21	.518		6.1	7	SN	2	C	1713	50	.6	
HOLL	07	1713	1713	1722	N15	W23	.528		6.0	9	SN	3	C		66		
BIGB	07	1717	1722	1727	N11	E80	.989		13.7	10	SN	3	C	1722	20		
HOLL	07	1836	1837	1846	N17	E45	.773		11.2	10	SF	3	C		27		
HOLL	07	1908	1909	1929	N16	E38	.697		10.6	21	SB	3	C		44		DE
BIGB	07	1948	1950	2007	S17	W17	.330		6.6	19	SB	3	C	1950	70	.8	
HOLL	07	1948	1951	2005	S15	W17	.315		6.6	17	SB	3	C		162		DE
PALE	07	1949	1951	2002	S17	W17	.330		6.6	13	SB	3	C		135		FDE

# H $\alpha$ SOLAR FLARES

SEPTEMBER 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IMPOR- TANCE	OBS.		MEASUREMENTS			REMARKS	
	DAY	START	MAX. PHASE	END	APPROX.		CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP. DAY			COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.		
					LAT.	MER. DIST.												
HOLL	07	2035	2038	2055	N18	E42	.749		11.0	20	SF	3	C			31		
BIGB	07	2057	2058	2102	N16	W25	.559		6.0	5	SB	3	C	2058		70	.8	
HOLL	07	2058	2058	2102	N17	W25	.568		6.0	4	SB	3	C			69		
BIGB	07	2108	2110	2129	N16	E46	.779		11.3	21	SF	3	C	2110		20	.3	
HOLL	07	2109	2109	2118	N19	E46	.792		11.3	9	SN	3	C			26		
HOLL	07	2147	2149	2153	N16	E34	.655		10.5	6	SF	3	C			42		
PALE	07	2207	2209	2226	N14	W26	.551		6.0	19	SF	3	C			28		DE
BIGB	07	2208	2209	2223	N15	W26	.560		6.0	15	SN	3	C	2209		40	.5	
HOLL	07	2208	2208	2222	N15	W25	.549		6.0	14	SN	3	C			55		
PALE	08	0319	0322	0330	N14	W29	.585		6.0	11	SF	3	C			23		DE
PALE	08	0338	0351	0407D	N15	E39	.702		11.1	29D	SF	3	C			49		U
MANI	08	0402E	0409	0416	N21	W42	.766		5.0	14D	SF	3	C			100		U
PALE	08	0405	0405	0407D	N22	W44	.789		4.9	20	SN	3	C			37		F
WEND	08	0637E		0645	S15	W25	.434		6.4	80	SN		C	0637		32	.4	B
ISTA	08	0640E		0643	S16	W27	.467		6.3	30	SN		V					BD
ISTA	08	0644		0715	S23	W90	.999	16271	1.5	31	2B		V					A
WEND	08	0645	0657	0710	S22	W80	.978		2.3	25	SN		C	0657		40		A
ATHN	08	0646	0649	0705	S21	W78	.971		2.4	19	SB	3	C			64		DE
ISTA	08	0728		0732	N17	W27	.589		6.3	4	SN		V					E
MONT	08	0843	0845	0852	S17	W25	.443		6.5	9	SF		C	0845		50		D
MONT	08	0857	0908	0929	N16	E38	.697	16225	11.2	32	1B		C	0908		250		
WEND	08	0904E		0920D	N16	E37	.687	16275	11.2	16D	1N		P	0906		162	2.2	F
BIGB	08	1515	1517	1531	N13	E27	.554		10.7	16	SB	3	C	1517		30	.3	
WEND	08	1518E		1527	N13	E27	.554		10.7	9D	SF		C	1518		44	.5	
BIGB	08	1817	1856E	1911	N14	W90	1.000		2.0	54	SB	1	P	1856		50		
BIGB	08	1854	1856	1911	N25	W52	.866		4.9	17	SN	3	C	1856		20	.3	
HOLL	08	1855	1857	1908	N25	W53	.873		4.8	13	SN	3	C			40		
PALE	08	1855	1857	1906	N24	W51	.855		5.0	11	SN	3	C			38		DE
PALE	08	2056	2057	2101	N15	E30	.604		11.1	5	SF	3	C			21		F
PALE	09	0008	0010	0029D	N15	E28	.582		11.1	21D	SF	3	C			33		F
PALE	09	0151	0200	0232	N15	E27	.571		11.1	41	SN	3	C			103		F
MANI	09	0241	0246	0256D	N15	E28	.582		11.2	15D	SN	3	C			50		F
PALE	09	0243E	0248U	0309	N16	E29	.601	16275	11.3	26D	1B	3	C			199		U F
ISTA	09	0748		0825	N14	W44	.750		6.0	37	SF		V					EK
ISTA	09	0818	0825	0835	S20	W32	.552		6.9	17	SN		V					D
WEND	09	0920		0935	N15	E24	.538		11.2	15	SF		C	0922		60	.7	
HOLL	09	1358	1416	1430	N11	W54	.836		5.5	40	SN	3	C			50		F
RAMY	09	1526	1629	1636	N16	E59	.890		14.1	70	SN	3	C			262		
BIGB	09	1623	1624	1634	N10	E55	.843		13.8	11	SN	3	C	1624		60	1.1	
BIGB	09	1722	1726	1732	N13	W49	.796		6.0	10	SN	3	C	1726		40	.6	
PALE	09	1722	1723	1734	N12	W49	.792		6.0	12	SN	3	C			19		DE
BIGB	09	1728	1729	1742	N13	E53	.833		13.7	14	SN	3	C	1729		20	.3	
BIGB	09	1922	1922	1937	N13	E52	.824		13.7	15	SB	3	C	1922		50	.8	
MANI	10	0159E	0159U	0206D	N13	W54	.842		6.0	7D	SF	3	C			15		FDE
RAMY	10	1357	1359	1410	N17	E 9	.436		11.3	13	SB	3	C			142		
RAMY	10	1400	1401	1409	N14	W59	.885		6.2	9	SF	3	C			24		
HOLL	10	1401	1401	1411	N16	W 1	.395		10.5	10	SN	3	C			69		
BIGB	10	1432	1433	1443	N14	E40	.707		13.6	11	SF	3	C	1433		30	.4	
HOLL	10	1457	1510	1539	N14	W62	.907		6.0	42	SN	4	C			71		F
RAMY	10	1505	1510	1530	N14	W60	.893		6.1	25	SF	3	C			36		F
BIGB	10	1505	1512	1536	N15	W62	.909		6.0	31	SB	2	C	1512		50	1.1	
BIGB	10	1545	1549	1624	N17	E45	.773		14.0	39	SN	3	C	1549		50	.7	
RAMY	10	1549	1549	1557	N13	E44	.745		14.0	8	SF	3	C			37		
BIGB	10	1608	1609	1619	N14	E40	.707		13.7	11	SF	3	C	1609		30	.4	
PALE	10	1654	1705	1724	N13	E40	.702		13.7	30	SN	3	C			30		
HOLL	10	1655	1657	1727	N16	E39	.708		13.6	32	SN	3	C			55		
PALE	10	1735	1741	1759	N13	W62	.905		6.1	24	SN	3	C			92		F
HOLL	10	1737	1740	1810	N13	W62	.905		6.1	33	SB	3	C			98		
BIGB	10	1738	1741	1808	N14	W13	.420		9.6	30	SB	3	C	1741		110	1.2	
BIGB	10	1755	1757	1836	N14	E40	.707		13.7	41	SN	3	C	1757		30	.4	
HOLL	10	2015	2018	2023	N14	E37	.675		13.6	8	SF	3	C			23		
HOLL	10	2147	2153	2158	S25	W28	.531		8.8	11	SF	3	C			21		
HOLL	10	2239	2244	2359	N10	E41	.699		14.0	80	SB	2	C			161		U F
MANI	10	2243E	2246	2305	N 9	E40	.683		13.9	22D	SN	3	C			150		U F
HOLL	10	2249	2253	2301	N14	E34	.641		13.5	12	SF	2	C			35		
HOLL	11	0001	0001	0008	N14	W66	.933		6.1	7	SN	2	C			24		
HOLL	11	0029	0032	0041	N14	E34	.641		13.6	12	SN	2	C			50		F
MONT	11	0844	0846	0851	N16	W73	.970		5.9	7	SF		C	0846		50		E

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IM-PORTANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX.		CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP. DAY			COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
					LAT.	MER. DIST.											
MONT	11	0954	1009	1021	N11	E31	.585	16279	13.7	27	1N	C	1009	250			
RAMY	11	1259	1300	1399	N 9	E32	.585		13.9	10	SN	3 C		36			
RAMY	11	1338	1339	1350	N 9	E32	.585		14.0	12	SN	3 C		35			
HOLL	11	1342E	1349	1524	N16	W 8	.415	16275	11.0	1020	2B	3 C		701		Z U	
RAMY	11	1343	1347	1524	N16	W 7	.411	16275	11.0	101	1B	3 C		391		Z U	
RAMY	11	1346	1347	1413	N13	W17	.444		10.3	27	SN	3 C		32		F	
RAMY	11	1403	1414	1429	N 9	E32	.585		14.0	26	SF	3 C		72		F	
BIGB	11	1409E	1409D	1427E	N15	W08	.400	16275	11.0	180	1B	2 P	1409	260	2.7		
BIGB	11	1414	1416	1558	N17	E35	.672		14.2	104	SN	2 C	1416	30	.4		
BIGB	11	1512	1516	1540	N09	E31	.572		14.0	28	SF	3 C	1516	70	.8		
RAMY	11	1517	1519	1526	N14	E26	.551		13.6	9	SN	3 C		23			
BIGB	11	1517	1518	1527	N11	E27	.537		13.7	10	SB	3 C	1518	20	.2		
BIGB	11	1538	1539	1547	N12	E26	.533		13.6	9	SB	3 C	1539	20	.2		
BIGB	11	1555	1557	1608	S22	W67	.914		6.6	13	SB	3 C	1557	80			
HOLL	11	1555	1600	1606	S18	W66	.906		6.7	11	SN	3 C		50			
RAMY	11	1556	1557	1608	S22	W64	.893		6.9	12	SB	3 C		83			
BIGB	11	1635	1636	1640	N12	E30	.581		13.9	5	SN	3 C	1636	60	.7		
RAMY	11	1636	1636	1639	N14	E25	.540		13.6	3	SF	3 C		38			
RAMY	11	1638	1642	1714	N14	W10	.398		10.9	36	SB	3 C		168			
BIGB	11	1638	1640	1723	N16	W10	.427		10.9	45	SB	3 C	1640	150	1.6		
HOLL	11	1642	1643	1717D	N16	W 9	.421		11.0	350	SB	3 C		168		FDE	
PALE	11	1706	1709	1718	N 9	E28	.534		13.8	12	SF	3 C		30		F	
PALE	11	1707	1711	1717	N15	W11	.419		10.9	10	SF	3 C		53		F	
BIGB	11	1707	1717	1758	S15	W30	.506		9.5	51	SN	3 C	1717	70	.8	G	
BIGB	11	1723	1724	1729	N20	E80	.993		17.7	6	SN	3 C	1724	20			
PALE	11	1742	1750	1816	N13	W18	.454		10.4	34	SN	3 C		123		F	
RAMY	11	1743	1750	1816	N13	W19	.464		10.3	33	SN	3 C		57			
BIGB	11	1749	1752	1831	N10	W18	.420		10.4	42	SB	3 P	1752	80	.9		
BIGB	11	1758	1801	1828	N08	W30	.553		9.5	30	SN	2 P	1801	40	.5		
RAMY	11	1759	1801	1819	N 9	E29	.547		13.9	20	SN	3 C		48			
HOLL	11	1800	1801	1819	N 8	E29	.540		13.9	19	SN	3 C		57			
PALE	11	1801	1801	1807	N 9	E28	.534		13.9	6	SF	3 C		37		F	
PALE	11	1840	1841	1859	N 9	E27	.521		13.8	19	SF	3 C		20		F	
RAMY	11	1840	1840	1851	N 9	E29	.547		14.0	11	SN	3 C		25			
RAMY	11	1943	1952	2005	N 9	E28	.534		13.9	22	SN	3 C		59			
HOLL	11	1944	1952	2007	N 9	E29	.547		14.0	23	SN	3 C		55		F	
BIGB	11	2119	2122	2148D	N07	E29	.533		14.1	290	SN	2 P	2122	60	.7		
HOLL	11	2251	2252	2324	N12	W22	.487		10.3	33	SN	3 C		69			
BIGB	11	2251	2252	2337D	N10	W20	.444		10.5	460	SN	2 P	2252	50	.6		
HOLL	11	2255	2257	2315D	N16	W14	.455		10.9	200	SF	3 C		40			
HOLL	11	2326	2331	2331D	N16	W15	.463		10.9	30	SF	2 C		40			
BIGB	11	2337E	2340	2348	N11	E23	.489		13.7	110	SB	2 P	2340	40	.4		
HOLL	11	2346E	0023	0029D	N10	W23	.480		10.3	430	SN	2 C		97			
HOLL	12	0012	0013	0021	N10	E27	.529		14.0	9	SN	2 C		34		F	
BIGB	12	0012	0013	0028	N09	E29	.547		14.2	16	SN	2 C	0013	20	.2		
BIGB	12	0054	0055	0059D	N09	W23	.471		10.3	50	SN	2 P	0055	60	.6		
MANI	12	0101E	0101U	0150	N10	W23	.480		10.3	490	SN	3 C		100		F	
ISTA	12	0737	0739	0743	N10	W28	.541		10.2	6	SF	V				D	
MONT	12	1017	1020	1026	N15	E17	.468		13.7	9	SF	C	1020	60		E	
RAMY	12	1228	1231	1336	S23	W67	.914		7.5	68	SN	3 C		0			
BIGB	12	1538	1540	1553	S31	W60	.872		8.2	15	SN	2 C	1540	30	.6		
RAMY	12	1540	1542	1547	S35	W60	.878		8.2	7	SF	3 C		22			
HOLL	12	1641	1642	1657	S31	W60	.372		8.2	16	SN	3 C		27			
BIGB	12	1641	1643	1659	S31	W60	.872		8.2	19	S3	2 C	1643	20	.4		
RAMY	12	1642	1642	1724	S35	W61	.885		8.1	42	SF	3 C		23			
HOLL	12	1643	1724	1810	N12	W33	.616		10.2	87	SN	3 C		133		U F	
HOLL	12	1652	1705	1721	N16	W24	.548		10.9	29	SF	3 C		34			
HOLL	12	1704	1719	1723	S31	W60	.872		8.2	19	SF	3 C		11			
PALE	12	1713	1726	1750	N11	W28	.549		10.6	37	SF	3 C		84		F	
RAMY	12	1716	1724	1735D	N11	W30	.573		10.5	190	SF	3 C		54			
BIGB	12	1717	1723	1803	N11	W30	.573		10.5	46	SN	2 P	1723	80	1.0		
PALE	12	1838	1839	1859	S35	W62	.891		8.1	21	SF	3 C		11		F	
HOLL	12	1854	1855	1909	S31	W61	.879		8.2	15	SF	3 C		12			
HOLL	12	1905	1907	1914	N16	W25	.558		10.9	9	SF	3 C		25			
HOLL	12	1917	1920	1929	N12	W34	.628		10.3	12	SN	3 C		43			
HOLL	12	1926	1928	1932	N 9	E16	.387		14.0	6	SF	3 C		40			
HOLL	12	2142	2143	2157	N16	W28	.590		10.8	15	SF	3 C		38			
HOLL	12	2221	2237	2252	N16	W27	.579		10.9	31	SN	3 C		45			
HOLL	12	2257	2257	2308	S19	W71	.938		7.6	11	SF	3 C		0			
HOLL	12	2311	2314	2334	N 8	E13	.342		13.9	23	SN	3 C		73			
BIGB	12	2317E	2317	2339	N07	E14	.341		14.0	220	SN	2 P	2317	60	.6		

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IMPOR- TANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX.		CENTRAL DISTANCE	MCNATH PLAGE REGION	CMP. DAY			COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
					LAT.	MER. DIST.											
ISTA	13	0635E		0725	S31	W67	.918	16267	8.2	500	1N	V					B03
ISTA	13	0637		0653	N16	W32	.633		10.9	16	SN	V					E
ISTA	13	0657		0710	N16	E07	.410		13.8	13	SF	V					D
ISTA	13	0726		0740	S25	E42	.693		16.5	14	SF	V					D
ISTA	13	0756	0805	0820	N07	E07	.273	16279	13.9	24	1B	V					F
MONT	13	0802	0805	0820	N08	E06	.281		13.8	18	SN	C	0805	110			E
MONT	13	0843	0854	0856	N09	E08	.310		14.0	15	SF	C	0854	50			E
RAMY	13	1305	1306	1310	N26	E30	.697		15.8	5	SF	3 C		24			
RAMY	13	1307	1313	1343	N 7	E 2	.248		13.7	36	SB	3 C		146			F0E
BERN	13	1309	1314	1347	N08	E02	.264	16279	13.7	38	1B	C		175			
BIG3	13	1454	1455	1512	N08	E06	.281		14.1	18	S3	2 C	1455	30	.3		
BIG3	13	1547	1548	1552	S31	W77	.967		7.9	5	SN	2 C	1548	30			
RAMY	13	1605	1605	1609	N29	E29	.716		15.8	4	SF	3 C		20			
HOLL	13	1853	1855	1913	S31	W73	.950		8.3	20	SF	3 C		0			
HOLL	13	1904E	1904U	1944	N 7	W 1	.246		13.7	400	SN	3 C		49			F
HOLL	13	1919	1927	1933	S32	W78	.970		8.0	14	SF	3 C		0			
HOLL	13	1949	1955	2004	N 8	E 0	.262		13.8	15	SN	3 C		35			F
HOLL	13	2009	2010	2016	N 8	W 2	.264		13.7	7	SN	3 C		57			F
HOLL	13	2027	2029	2050	N 9	E 1	.280		13.9	23	SN	3 C		77			
HOLL	13	2058	2139	2213	N 8	W 3	.267		13.6	75	SN	3 C		105			F
HOLL	13	2214	2217	2257	N 8	E 1	.263		14.0	43	SN	3 C		52			
PALE	14	0117	0121	0150D	N 8	W 3	.267		13.8	330	SN	3 C		133			0E
ATHN	14	0616E	0620U	0640	N 6	W 6	.250		13.8	240	SB	2 C		127			0E
ISTA	14	0620E		0642	N08	W08	.295	16279	13.7	220	1F	V					0U
ATHN	14	0735	0742	0758	N28	W74	.983	16273	8.8	23	1B	3 C		159			0E
MONT	14	0739	0741	0746	S29	W90	.998		7.6	7	SF	C	0741	70			
MONT	14	0743	0754	0759	N08	W03	.267		14.1	16	SF	C	0754	50			
ISTA	14	0745		0756	N08	W06	.281	16279	13.9	11	1F	V					U
ATHN	14	0746	0748	0813	N10	W 1	.296		14.2	27	SB	3 C		64			0E
BUGA	14	0755	0806	0915	N07	W08	.280	16279	13.7	80	2B	C	0806	644	6.7		
MONT	14	0759	0808	0906	N08	W06	.281	16279	13.9	67	1N	C	0808	330			
ISTA	14	0800		0840	N08	W08	.295	16279	13.7	40	1N	V					KU
ATHN	14	0802	0808	0905	N 6	W 7	.258	16279	13.8	63	1B	3 C		111			0E
BERN	14	0808E	0808	0935	N08	W09	.303	16279	13.7	870	2B	C		720			
MONT	14	0810	0815	0828	N07	E90	1.000		21.1	18	SN	C	0815	80			
MONT	14	0832	0836	0846	S15	W31	.521		12.0	14	SF	C	0836	50			
RAMY	14	1307	1307	1311	N 9	W 8	.310		13.9	4	SN	3 C		51			
RAMY	14	1419	1423	1453	N 7	W11	.308		13.8	34	SN	3 C		44			
HOLL	14	1420	1422	1434	N 7	W11	.308		13.6	14	SN	3 C		39			F
BIG3	14	1421	1425	1436	N07	W11	.308		13.8	15	SN	2 C	1425	40	.4		
BIG3	14	1445	1449	1459	S26	W90	.998		7.9	14	SN	2 C	1449	30			
RAMY	14	1452	1456	1500	S28	W86	.993		8.2	8	SF	3 C		0			
RAMY	14	1520	1528	1618	S 6	W35	.570		12.0	58	SN	3 C		47			
BIG3	14	1700	1703	1803	N15	W55	.856	16275	10.6	63	1B	1 C	1703	280	5.3		
RAMY	14	1701	1708	1710D	N16	W52	.933	16275	10.8	90	2N	3 C		390			
PALE	14	1710E	1713U	1729	N15	W53	.839		10.7	190	SF	3 C		58			F0E
RAMY	14	1727	1727	1734	N 5	W11	.282		13.9	7	SN	3 C		27			
BIG3	14	1948E	1948	2055	N07	W15	.352		13.7	670	SB	1 P	1948	100	1.1		
BIG3	14	2130	2134	2209	N07	W15	.352		13.8	39	SB	1 C	2134	70	.7		
BIG3	14	2259	2304	2348	N07	W15	.352		13.8	49	SN	2 P	2304	50	.5		
PALE	15	0357E	0401U	0401D	N15	W61	.902		10.6	40	SF	3 C		24			0E
MONT	15	1019	1029	1038D	S15	E56	.823	16295	19.6	190	1N	C	1029	250			
MONT	15	1024	1028	1038D	N06	E90	1.000	16298	22.2	140	1B	C	1028	330			
BIG3	15	1535	1538	1546	S15	E45	.704		19.0	13	SF	3 C	1538	40	.6		G
BIG3	15	1600	1603	1610	N09	W73	.964		10.2	10	SF	3 C	1603	30			G
BIG3	15	1616	1619	1640	N06	W25	.473		13.8	24	SN	3 C	1619	30	.4		
BIG3	15	1830	1838	1845	N08	E90	1.000		22.5	15	SN	3 C	1838	30			
BIG3	15	1840	1841	1852	S16	E41	.657		18.9	12	SN	3 C	1841	30	.4		G
BIG3	15	1844	1846	1854	S13	E27	.457		17.8	10	SN	3 C	1846	40	.5		G
BIG3	15	2219	2222	2230	N00	E90	1.000		22.7	11	SB	3 C	2222	50			
BIG3	16	0108	0109	0114D	N01	E90	1.000		22.8	60	SN	3 P	0109	110			
BIG3	16	0110	0111	0113	N07	E90	1.000		22.8	3	SB	3 C	0111	50			
ATHN	16	0656	0659	0711	N 9	W36	.634		13.6	15	SB	3 C		95			F
ATHN	16	0759	0804	0823	N 3	E85	.997		22.7	24	SB	3 C		37			0E
ATHN	16	0937	0942	1017	N 3	E80	.985	16298	22.4	40	2B	3 C		350			Z F
RAMY	16	1256	1300	1312	N 6	E72	.956		21.9	16	SN	3 C		0			
BIG3	16	1633	1636	1647	N03	E80	.986		22.7	14	SB	2 C	1636	40			
PALE	16	1740	1747	1810D	N 4	E76	.973		22.4	300	SF	3 C		13			0E
BIG3	16	1744	1746	1803	N03	E80	.986		22.7	19	SB	3 P	1746	30			



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OBSERVATORY	OBSERVED UT				LOCATION				DURATION MIN.	IM POR- TANCE	OBS.		MEASUREMENTS			REMARKS	
	DAY	START	MAX. PHASE	END	APPROX.		CENTRAL DISTANCE	MCMATH PLAGE REGION			CMP. DAY	COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk		CORR. AREA Sq. Deg.
					LAT.	HER. DIST.											
BIGB	16	1901	1902	1919	N03	E80	.986		22.8	18	SB	3	C	1902	36		
PALE	16	1950	1956	2051	N 7	W41	.685		13.8	61	SB	3	C		79		DE
BIGB	16	1951	1959	2043E	N03	W41	.690		13.8	570	SB	2	P	1959	100	1.4	
PALE	16	2316	2355	2359D	N 4	E78	.980	16298	22.6	430	2N	3	C		520		F
MANI	16	2346E	2350U	0010D	N 6	E71	.951		22.3	240	SF	3	C		50		F
BIGB	16	2347	2352	0054	N03	E75	.968		22.6	67	SN	3	C	2352	290		
ISTA	17	J725		0730D	N06	E69	.940		22.5	50	SN		V				E
BERN	17	0931	0935	0941	N05	E71	.950	16298	22.7	10	2F		C				
BERN	17	1034	1036	1041	N05	E68	.933		22.5	7	SN		C				
BIGB	17	1543	1546	1559	N08	E67	.930		22.7	16	SF	3	C	1546	40		
BIGB	17	1603	1606	1620	N08	E66	.924		22.6	17	SN	3	C	1606	40		
RAMY	17	1605	1635	1612	N 9	E65	.919		22.5	7	SN	3	C		0		
BIGB	17	1639	1643	1701	N08	E66	.924		22.6	22	SB	3	C	1643	50		
RAMY	17	1641	1647	1656	N 8	E65	.917		22.6	15	SN	3	C		25		
PALE	17	1703	1737	1730	N 4	E67	.926		22.7	27	SN	3	C		68		F
BIGB	17	1704	1705	1743	N04	E68	.932		22.8	39	SN	3	C	1705	90		
RAMY	17	1705	1705	1714	N 5	E67	.927		22.7	9	SB	3	C		40		
RAMY	17	1719	1720	1726	N 5	E66	.920		22.7	7	SN	3	C		26		
BIGB	17	1731	1734	1740	N15	E36	.669		20.4	9	SN	3	C	1734	100	1.3	G
BIGB	17	1816	1811	1825	N08	E63	.903		22.5	15	SN	3	C	1811	50	1.1	
PALE	17	1816	1818	1830	N 6	E62	.893	16298	22.4	14	1F	3	C		185		F
BIGB	17	1817	1819	1839	N02	E67	.924		22.8	22	SN	3	C	1819	70		
RAMY	17	1817	1818	1825	N 8	E62	.896		22.4	8	SN	3	C		24		
PALE	17	1905	1905	1907	N 6	E62	.893		22.4	2	SF	3	C		24		F
BIGB	17	1911	1930	2024	N26	E90	1.001		24.5	73	SN	3	C	1930	40		
BIGB	17	2242	2243	2245	N03	E63	.896		22.7	3	SB	2	C	2243	70	1.6	
PALE	17	2316	2355U	0041D	N 4	E78	.980	16298	23.8	950	2N	3	C		520		F
BIGB	18	0022	0025	0135	N07	E61	.887	16298	22.6	13	1B	3	C	0025	100	2.1	
MONT	18	0748	0804	0804D	N08	W62	.896		13.7	160	SN		C	0804	110		E
ATHN	18	0757E	0758U	0844	N 7	W62	.894		13.7	470	SB	2	C		95		DE
ISTA	18	0923E		0932	S20	E90	.999		25.1	120	SF		V				AB
BERN	18	1229	1231	1240	N03	E55	.827	16298	22.6	11	1F		C		150		
RAMY	18	1408	1424	1458	S18	E76	.964		24.3	50	SF	3	C		0		
BIGB	18	1423	1427	1440	S19	E80	.979		24.6	17	SN	2	C	1427	30		A
BERN	18	1432	1438	1508	N02	E56	.835	16298	22.8	36	1N		C		300		
BIGB	18	1433	1440	1515	N05	E52	.902		22.5	42	SB	2	C	1440	240	2.6	
RAMY	18	1435	1437	1503	N 8	E50	.789		22.4	23	SB	3	C		160		FDE
WEND	18	1438E		1514	N02	E54	.816	16298	22.7	360	1N		C	1446	160	2.8	T
HOLL	18	1440E	1440U	1642	N 5	E52	.802	16298	22.5	1220	2B	2	C		435		F
RAMY	18	1441	1441	1529	N 7	W66	.923		13.7	48	SB	3	C		0		
HOLL	18	1443	1449	1542	N 8	W65	.917		13.7	59	SB	2	C		67		F
BIGB	18	1444	1446	1516	S19	E80	.979		24.6	32	SN	3	C	1446	40		A
BIGB	18	1444	1446	1510	N08	W66	.924		13.7	26	SB	3	C	1446	50		
WEND	18	1446E		1520	N09	W65	.919		13.7	340	SN		C	1446	60		B
BIGB	18	1700	1706	1711	N26	E79	.993		24.6	11	SN	3	C	1706	20		
BIGB	18	1734	1739	1817	S18	E03	.196		19.0	43	SN	3	C	1739	140	1.4	G
HOLL	18	1756	1756	1835	N 5	E54	.821		22.8	9	SN	3	C		24		
BIGB	18	1922E	1924	1935	N05	E46	.737		22.3	130	SB	2	P	1924	40	.6	
BIGB	18	1926	1934	2004	N02	E52	.795		22.7	38	SN	2	C	1934	70	1.2	
HOLL	18	2159	2201	2207	N 6	E47	.751		22.4	8	SN	3	C		34		
BIGB	18	2318E	2319	2331	N03	E51	.787		22.8	130	SB	2	P	2319	30	.5	
BIGB	19	0052	0054	0056E	N26	E76	.987		24.7	40	SN	1	P	0054	30		
WEND	19	0647	0710	0725	N06	E41	.681		22.4	38	SF		C	0710	80	1.1	EZ
ISTA	19	0700E		0725	N07	E42	.697		22.4	250	SN		V				E
WEND	19	0707		0817	N02	E42	.681		22.4	70	SF		C	0710	38	1.2	
MONT	19	0708E	0710	0846	N04	E43	.699	16298	22.5	980	1N		C	0710	250		
ISTA	19	0708		0730D	N02	E44	.705		22.6	220	SF		V				E
ATHN	19	0709	0712	0809	N 5	E44	.714	16298	22.6	60	1B	3	C		190		F
ATHN	19	0711	0714	0731	N 5	W73	.960		13.8	20	SB	3	C		64		DE
MONT	19	0713	0716	0720	N06	W76	.974		13.6	7	SF		C	0716	50		
RAMY	19	1219	1219	1221D	N 6	E39	.657		22.4	20	SB	3	C		36		
HOLL	19	1353E	1358	1423	N 8	W75	.971	16279	14.0	300	1B	3	C		0		FDE
HOLL	19	1407	1420	1524	N 4	E39	.649		22.5	77	SB	3	C		93		DE
BIGB	19	1407E	1408	1422	N08	W75	.971	16279	14.0	150	1B	2	P	1408	390		A
BIGB	19	1449	1451	1502	S14	E02	.125		19.8	13	SN	2	C	1451	60	.6	G
HOLL	19	1542	1603	1632	N 5	E36	.614		22.4	50	SB	3	C		30		DE
BIGB	19	1602	1603	1622	N07	E36	.623		22.4	20	SB	2	C	1603	10	.1	
HOLL	19	1709	2050	2158	N 5	E36	.614	16298	22.4	289	1B	3	C		336		U F
PALE	19	1740	1744	1806	N 6	E36	.619		22.4	26	SB	3	C		74		FDE

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IM- POR- TANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX.		CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP. DAY			COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
					LAT.	MER. DIST.											
BIGB	19	1742	1746	1816	N04	E39	.649		22.7	34	SB	3	C	1746	100	1.3	
PALE	19	1828	1844	1903	N 6	E36	.619		22.5	35	SF	3	C		66		U F
BIGB	19	1831	1835	1908D	N05	E35	.601		22.4	37D	SN	3	P	1835	160	2.0	
PALE	19	1916	1954	2022	N 5	E37	.627		22.6	66	SN	3	C		114		FDE
BIGB	19	1918	1924	2015	N05	E35	.601		22.4	57	SN	2	P	1924	120	1.5	
HOLL	19	2009	2012	2040	S25	W41	.683		16.8	31	SN	3	C		60		
PALE	19	2025	2027	2030	N 4	E37	.623		22.6	5	SF	3	C		28		FDE
PALE	19	2031	2046	2047	N 5	E34	.588	16298	22.4	16	1N	3	C		249		FDE
BIGB	19	2039	2052	2129D	N05	E37	.627	16298	22.6	50D	1B	2	P	2052	210	2.7	
PALE	19	2206	2218U	2240	N 9	E36	.634		22.6	34	SF	3	C		68		
HOLL	19	2247	2256	2307	S20	E60	.861		24.4	20	SN	3	C		31		
HOLL	19	2256	2303	0025D	N 6	E33	.580	16298	22.4	89D	3B	3	C		1203		UDE
PALE	19	2304E	2307	0010D	N 6	E32	.566	16298	22.4	66D	3B	3	C		1301		F
BIGB	19	2317E	2319	0023	N04	E34	.583	16298	22.5	66D	2B	2	P	2319	580	7.2	
HOLL	19	2319	2338	2346	N28	E60	.925		24.5	27	SN	3	C		19		
HOLL	19	2341	2359	0024	S20	E60	.861		24.5	43	SB	3	C		55		
BIGB	19	2357	2358	2359D	S19	E64	.892		24.8	2D	SB	2	P	2358	20	.5	
ATHN	20	0559E	0800U	0810	N 4	E25	.458		22.1	131D	SB	3	C		159		DE
BUCA	20	0720	0721	S23	W48	.752			16.7	1	SN		C	0720	43	.8	O
BUCA	20	0759	0803	0811	N06	E25	.472	16298	22.2	12	1N		C	0803	322	3.6	
ATHN	20	0759E	0800U	0810	N 4	E25	.458		22.2	11D	SB	3	C		159		DE
MONT	20	0759	0803	0824	N05	E25	.465	16298	22.2	25	1N		C	0803	250		
MONT	20	0839	0855	0944	N05	E25	.465		22.2	65	SN		C	0855	110		EFZ
RAMY	20	1200E	1257	1358	S14	E53	.793		24.5	118D	SN	3	C		130		
RAMY	20	1200E	1249	1357	N28	E61	.930		25.1	117D	SF	3	C		44		
RAMY	20	1317	1342	1419	N 6	E25	.472		22.4	62	SB	3	C		173		F
HOLL	20	1340E	1342U	1412	N 5	E24	.451		22.4	32D	SB	3	C		104		DE
RAMY	20	1428	1458	1511	N 6	E24	.458		22.4	43	SN	3	C		35		
HOLL	20	1459	1502	1514	N 6	E24	.458		22.4	15	SB	3	C		24		DE
HOLL	20	1517	1536	1604	N 6	E24	.458		22.4	47	SN	3	C		39		F
RAMY	20	1520	1535	1555	N 6	E24	.458		22.4	35	SN	3	C		38		
BIGB	20	1534	1540	1611	N05	E25	.465		22.5	37	SF	2	C	1540	50	.6	
HOLL	20	1633	1633	1644	N28	E53	.883		24.7	11	SF	3	C		16		
HOLL	20	1634	1639	1702	N 6	E23	.445		22.4	28	SB	3	C		36		DE
BIGB	20	1636	1641	1738	N05	E25	.465		22.6	62	SN	2	C	1641	50	.6	
BIGB	20	1751	1801	1824	N13	W90	1.000		14.0	33	SN	2	C	1801	30		
BIGB	20	1819	1834	1837	N05	E25	.465		22.6	18	SN	2	C	1834	50	.6	
PALE	20	1821	1859	1900D	N 5	E22	.423	16298	22.4	39D	1N	3	C		246		
PALE	20	1821	1906	1907D	N 5	E22	.423	16298	22.4	46D	1B	3	C		346		FDE
HOLL	20	1827	1904	1948	N 7	E21	.426	16298	22.3	81	1B	3	C		198		UDE
BIGB	20	1856	1859	2007	N05	E23	.437	16298	22.5	71	1B	2	C	1859	210	2.4	
RAMY	20	1937E	1941U	1959D	N 6	E21	.418		22.4	22D	SN	3	C		65		
HOLL	20	2051	2107	2123	N 6	E21	.418		22.4	32	SN	3	C		42		
BIGB	20	2214	2240	2252	N27	W64	.943		16.1	38	SF	2	C	2240	60	1.4	G
BIGB	20	2255	2305	0006	N04	E21	.402		22.5	71	SN	2	C	2305	60	.7	
HOLL	20	2257	2318	2357	N 6	E19	.391		22.4	60	SB	3	C		77		DE
HOLL	20	2341	2359	0001D	S20	E60	.861		25.5	20D	SB	3	C		55		
RAMY	21	1457	1509	1533	N 2	E15	.300		22.7	36	SB	3	C		80		F
RAMY	21	1520	1532	1556	S 9	E 3	.062		21.9	36	SF	3	C		49		
HOLL	21	1535	1535	1602	S 9	E 2	.049		21.8	27	SF	3	C		44		
RAMY	21	1544	1546	1608	N 3	E11	.257		22.5	24	SB	3	C		115		
BIGB	21	1544	1550	1559	N03	E11	.257		22.5	15	SN	2	C	1550	50	.5	
BIGB	21	1618	1652	1830	S24	E41	.679		24.8	132	SF	2	C	1652	80	1.1	
BIGB	21	1633	1647	1716	N15	E80	.991		27.7	43	SN	2	C	1647	50		
HOLL	21	1633	1637	1641	N16	E76	.980		27.4	8	SF	3	C		0		
BIGB	21	1714	1718	1732	N06	E08	.263		22.3	18	SF	2	C	1718	20	.2	
BIGB	21	1719	1735	1811	S09	E02	.049		21.9	52	SF	2	C	1735	20	.2	
BIGB	21	1724	1736	1758	N14	E80	.990		27.7	34	SN	2	C	1736	10		
RAMY	21	1736	1736	1746	S18	E36	.598		24.4	10	SF	3	C		21		
BIGB	21	1809	1811	1818	N09	E17	.396		23.0	9	SN	2	C	1811	20	.2	
HOLL	21	1835	1836	1849	N16	E77	.983		27.5	14	SF	3	C		0		
RAMY	21	1845	1846	1851	N 6	E 9	.273		22.5	6	SN	3	C		28		
BIGB	21	1911	1912	1916	N17	E78	.987		27.6	5	SN	2	C	1912	30		
BIGB	21	2006	2007	2015	N09	E09	.315		22.5	9	SN	2	C	2007	30	.3	
PALE	21	2007	2021	2029	N 5	E 7	.240		22.4	22	SF	2	C		34		F
BIGB	21	2010	2011	2020	N04	E08	.235		22.4	10	SN	2	C	2011	30	.3	
BIGB	21	2015	2017	2033	N08	E08	.292		22.4	18	SF	2	C	2017	30	.3	
BIGB	21	2050	2052	2124	N15	E80	.991		27.9	34	SN	2	C	2052	40		
RAMY	21	2110	2111	2124	N 6	E 8	.263		22.5	14	SB	3	C		137		FDE
BIGB	21	2110	2112	2130	N07	E07	.270		22.4	20	SN	2	C	2112	80	.8	

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IM POR- TANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX.		CENTRAL DISTANCE	MCMTATH PLAGE REGION	CMP. DAY			COND.	TYPE	TIME UT	MEAS. AREA MIL OF DISK	CORR. AREA Sq. Deg.	
					LAT.	MER. DIST.											
PALE	21	2113E	2113U	2130	N 5	E 7	.240		22.4	170	SN	2	C		84		F
BIGB	21	2120	2124	2143	N25	E36	.737		24.6	23	SN	2	C	2124	50	.6	
RAMY	21	2121	2127	2141	N27	E34	.735		24.4	20	SF	3	C		34		
BIGB	21	2340	2356	0031	N06	E05	.241		22.4	51	SB	2	C	2356	120	1.2	
MANI	21	2344E	2357	00100	N06	E05	.241	16298	22.4	260	1N				450	4.6	
PALE	21	2356E	2356U	00270	N 6	E 6	.248	16298	22.4	310	1B	3	C		473		F H
BIGB	22	0106	0108	0125E	N06	E04	.235		22.3	190	SN	1	P	0108	60	.6	
MANI	22	0110E	0112	01310	N 6	E 4	.235	16298	22.3	210	1N	2	C		250		FDE
BIGB	22	0123E	0126	0155	N07	H05	.256		21.7	320	SN	1	P	0127	30	.3	
PALE	22	0151	0238U	0245D	N 6	E 4	.235	16298	22.4	540	1B	3	C		321		FDE
MANI	22	0238E	0240U	02440	N 6	E 4	.235	16298	22.4	60	1N	2	C		300		FDE
MANI	22	0822E	0822U	08270	N 6	E 1	.225		22.4	50	SN	3	C		150		
HOLL	22	1500	1502	1517	N 6	H 3	.231		22.4	17	SN	3	C		54		
BIGB	22	1503	1506	1517	N07	H06	.262		22.2	14	SN	1	C	1506	30	.3	
BIGB	22	1609	1622	1637	N03	H02	.177		22.5	28	SF	1	C		100	1.0	
BIGB	22	1725	1729	1800	N03	H02	.177		22.6	35	SN	2	C		200	2.0	K
BIGB	22	1728	1731	1738	N07	H04	.251		22.4	10	SF	2	C	1731	30	.3	
BIGB	22	1729	1744	1813	N07	H06	.262		22.3	44	SN	2	C	1744	50	.5	
BIGB	22	1740	1743	1755	N06	H04	.235		22.4	15	SN	2	C		31	.3	
HOLL	22	1742	1743	1753	N 6	H 4	.235		22.4	11	SB	3	C		49		F
HOLL	22	1803	1803	1809	S12	E35	.572		25.4	6	SF	3	C		24		
BIGB	22	1922	1923	1930	N39	E08	.726		23.4	8	SN	2	C		54	.6	
HOLL	22	1923	1925	1931	S14	E38	.615		25.7	8	SN	3	C		30		
BIGB	22	1923	1924	1933	S16	E38	.619		25.7	10	SN	2	C	1924	20	.3	
BIGB	22	2005	2011	2021	N06	H04	.235		22.5	16	SF	2	C		27	.3	
PALE	22	2005	2011	2020	N 5	H 5	.225		22.5	15	SF	3	C		20		DE
BIGB	22	2130	2138	2155	S13	H45	.783		19.5	25	SN	2	C		75	1.0	U
BIGB	22	2140	2143	2211	S15	H45	.705		19.5	31	SF	2	C	2143	50	.7	
BIGB	22	2158E	2202	2222	N08	H05	.272		22.5	240	SN	2	C		30	.3	D
BIGB	22	2159	2204	2227	N02	H02	.160		22.8	28	SN	2	C	2204	30	.3	
PALE	22	2356	2356	00000	N 6	E 6	.247	16298	23.4	40	1B	3	C		473		FDE
BIGB	23	0002	0006	0019D	S03	H10	.186		22.3	170	SN	2	C		25	.3	D
PALE	23	0134	0134	01470	N 5	H 7	.239		22.5	130	SN	3	C		53		F
MANI	23	0202E	0206U	0212D	N 5	H 7	.239		22.6	100	SF	2	C		120		F
ATHN	23	0610	0623	0643	N 8	H11	.318		22.4	25	SB	3	C		143		U F
ATHN	23	0830	0832	0849	N 7	H13	.326		22.4	19	SB	3	C		95		DE
ATHN	23	1023	1025	1035	N 7	H14	.338		22.4	12	SB	3	C		64		DE
HOLL	23	1402	1412	1433	S16	E27	.468		25.6	31	SF	3	C		29		
BIGB	23	1623	1633	1647	S12	E05	.123		24.1	24	SB	1	C	1633	160	1.7	
HOLL	23	1630	1639	1648	S12	E 4	.112	16305	24.0	18	1B	3	C		294		ZDE
BIGB	23	1639	1646	1728	N08	H18	.396		22.3	49	SN	2	C	1646	40	.4	
HOLL	23	1641	1647	1658	N 6	H17	.364		22.4	17	SN	3	C		52		
BIGB	23	1648	1649	1702	N21	H17	.538		22.4	14	SN	2	C	1649	40	.4	
HOLL	23	1748	1748	1804	N21	H17	.538		22.5	16	SF	3	C		34		
PALE	23	1755	1755	1758	N18	E74	.975		29.3	3	SF	3	C		14		F
HOLL	23	1946	2001	2032	S14	E23	.401		25.5	46	SF	3	C		28		F
BIGB	23	2041	2048	2135	N08	H18	.396		22.5	54	SF	2	C	2048	40	.4	
HOLL	23	2051	2054	2059	S13	E22	.382		25.5	8	SF	3	C		22		
HOLL	23	2231	2246	2311	N 8	H22	.447		22.3	40	SB	3	C		123		U F
HOLL	23	2239	2244	2256	N13	H48	.785		20.3	17	SF	3	C		17		
PALE	23	2241	2251	2306	N 6	H21	.417		22.4	25	SN	3	C		109		U F
BIGB	23	2241	2246	2307	N08	H21	.434		22.4	26	SN	3	C	2248	50	.6	
PALE	24	0131E	0131U	0210	N 5	H20	.395		22.6	390	SF	3	C		62		DE
HOLL	24	1406	1413	1451	N13	H57	.866		20.3	45	SN	2	C		109		F
RAMY	24	1410	1413	1436	N12	H57	.864		20.3	26	SN	3	C		90		
HOLL	24	1454	1515	1527	N13	H58	.874		20.3	33	SF	3	C		33		
HOLL	24	1545	1548	1556	S24	E50	.775		28.4	11	SF	3	C		24		
RAMY	24	1617	1619	1625	N 6	H30	.539		22.4	8	SF	3	C		23		
PALE	24	1743	1750U	18140	N 5	H30	.533		22.5	310	SN	3	C		107		F
HOLL	24	1744	1750	1812	N 6	H32	.566		22.3	28	SB	3	C		65		U F
RAMY	24	1745	1750	1813	N 7	H33	.584		22.3	28	SB	3	C		110		F
PALE	24	1750	1800U	1803	N13	H59	.882		20.3	13	SF	3	C		31		F
RAMY	24	1853	1854	19010	N 6	H31	.552		22.5	80	SF	3	C		26		
HOLL	24	2036	2038	2042	N22	H31	.668		22.5	6	SF	3	C		42		
HOLL	24	2038	2052	2058	S20	E67	.914		29.9	20	SF	3	C		15		
HOLL	24	2149	2150	2202	N17	E62	.912		29.6	13	SF	3	C		19		
HOLL	24	2310	2351	0011	N 7	H36	.623		22.3	61	SF	3	C		48		
HOLL	25	0013	0024	0033D	N 1	H32	.543		22.6	200	SN	2	C		52		

# H $\alpha$ SOLAR FLARES

SEPTEMBER 1979

OBSERVATORY	OBSERVED UT				LOCATION				DURATION MIN.	IM POR-TANCE	OBS.		MEASUREMENTS			REMARKS		
	DAY	START	MAX. PHASE	END	APPROX.		CENTRAL DISTANCE	MCMATH PLAGE REGION			CMP. DAY	COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk		CORR. AREA Sq. Deg.	
					LAT.	MER. DIST.												
MANI	25	0328E	0329	0345D	N20	E34	.681		27.7	17D	SN	3	C		80			
ATHN	25	0822	0825	0844	N21	W39	.736		22.4	22	SB	2	C		127			DE
ATHN	25	1016	1020	1038	N18	E29	.615		27.6	22	SB	2	C		143			F
RAMY	25	1143E	1143U	1147D	N21	W40	.745		22.5	40	SF	2	C		117			
RAMY	25	1143E	1143U	1147D	N18	E56	.871		29.7	40	SN	2	C		142			F
RAMY	25	1338	1342	1350	N 6	W42	.693		22.4	12	SF	3	C		56			
HOLL	25	1406	1414	1417	N22	W42	.769		22.4	11	SF	3	C		18			
HOLL	25	1509	1522	1537	N24	E47	.822		29.2	28	SF	3	C		32			
HOLL	25	1512	1513	1519	N21	E26	.613		27.6	7	SF	3	C		23			
BIGB	25	1811	1812	1835	N15	W50	.811		22.0	24	SN	2	C	1812	90	1.4		
HOLL	25	1925	1928	1956	N20	E49	.821		29.5	31	SN	3	C		94			
HOLL	25	1925	1931	1946	N19	E21	.547		27.4	21	SN	3	C		70			
BIGB	25	1926	1927	1935D	N18	E50	.822		29.6	9D	SN	2	P	1927	40	.6		
BIGB	25	1929	1931	1935D	N20	E25	.594		27.7	6D	SF	2	P	1931	40	.5		
BIGB	25	1955	1956	2007	N22	E86	1.000		1.3	12	SB	2	C	1956	70			A
HOLL	25	2004	2009	2016	N23	E87	1.000		1.4	12	SF	3	C		0			
BIGB	25	2036	2043	2109	N35	W53	.811		21.9	33	SB	2	C	2043	140	2.4		
HOLL	25	2036	2042	2107	N 5	W52	.801	16298	22.0	31	1B	3	C		228			U F
HOLL	25	2036	2038	2040D	N 6	W45	.728		22.5	40	SB	3	C		148			U F
HOLL	25	2037	2043	2100	N14	W74	.972		20.3	23	SN	3	C		53			
BIGB	25	2122	2124	2129	N22	E88	1.000		1.5	7	SN	2	C	2124	20			
HOLL	25	2129	2134	2152	N21	E47	.808		29.4	23	SB	3	C		75			
BIGB	25	2130	2137	2147	N19	E48	.808		29.5	17	SN	2	C	2137	40	.6		
BIGB	26	0003	0006	0024	N14	E51	.816		29.8	21	SF	2	C	0006	50	.8		
BIGB	26	0004	0005	0028	S22	E56	.829		30.2	24	SF	2	C	0005	20	.4		
PALE	26	0015E	0015U	0035D	N17	E52	.835		29.9	20D	SF	2	C		20			F
PALE	26	0212	0213	J222	N 4	W52	.799		22.2	10	SF	2	C		20			DE
ISTA	26	0716E	0725	0736	N16	E17	.475		27.6	20D	SN		V					D
ISTA	26	0716E		0751	S21	E50	.770		30.1	35D	SN		V					K
ISTA	26	0728		0743	N16	E45	.767		29.7	15	SF		V					DK
ISTA	26	0802	0806	0821	N16	E17	.475		27.6	19	SN		V					D
ISTA	26	0843		0849	S11	W14	.249		25.3	6	SN		V					E
ISTA	26	0846	0850	0908	N12	E09	.356	16315	27.0	22	1B		V					F
RAMY	26	1245	1259	1402	S25	E45	.727		29.9	77	SN	3	C		130			
HOLL	26	1322E	1324U	1349	S19	E47	.734		30.1	27D	SN	2	C		60			
HOLL	26	1547	1548	1554	N 6	W56	.842		22.5	7	SN	3	C		24			
BIGB	26	1547	1548	1552	N36	W58	.860		22.3	5	SN	2	C	1548	40	.8		
BIGB	26	1635	1638	1646	N19	W58	.889		22.3	11	SN	2	C	1638	20	.4		
RAMY	26	1636	1636	1645	N19	W56	.874		22.5	9	SF	3	C		16			
BIGB	26	1855	1858	1917	N23	E73	.975		1.3	22	SN	2	C	1858	30			
HOLL	26	1856	1859	1916	N24	E71	.969		1.1	20	SF	3	C		29			
PALE	26	1857	1858	1905	N23	E72	.972		1.2	8	SF	3	C		17			
BIGB	26	1902	1903	1907	N16	E06	.466		27.2	5	SN	2	C	1903	30	.3		
BIGB	26	1936	1942	1954	N06	W58	.860		22.5	18	SN	2	C	1942	40	.5		
BIGB	26	2014	2016	2036	N29	W26	.691		24.9	22	SN	2	C	2016	30	.3		
HOLL	26	2014	2014	2025	N28	W26	.681		24.9	11	SF	3	C		23			F
BIGB	26	2020	2021	2029	N17	W15	.471		25.7	9	SN	2	C	2021	30	.3		
HOLL	26	2057	2105	2256	N 1	W57	.843	16298	22.6	119	1N	3	C		268			U U
BIGB	26	2058	2117	2201D	N05	W62	.591	16298	22.2	63D	1B	2	P	2117	120	2.6		
PALE	26	2103E	2120	2206	N 3	W58	.855	16298	22.5	63D	1N	3	C		199			U F
PALE	26	2125	2127	2136	S21	E41	.670		30.0	11	SF	3	C		34			DE
HOLL	26	2323	2325	2334	S21	E42	.682		30.1	11	SF	3	C		38			
HOLL	26	2343	2345	2358	S24	E21	.446		28.6	15	SF	3	C		43			
PALE	27	0218	0221	0252	N 6	W64	.907		22.3	34	SN	3	C		53			F
MANI	27	0224E	0224U	0235	N 6	W66	.921		22.2	110	SF	3	C		25			
PALE	27	0303	0313	0317D	N21	E20	.560		28.6	140	SF	3	C		33			F
MONT	27	0715	0722	0742	S28	E90	.998	16334	3.1	27	1N		C	0722	180			
RAMY	27	1215	1217	1227	S12	W12	.224		26.6	12	SN	3	C		29			
RAMY	27	1235	1238	1254	S20	E31	.542		29.8	19	SF	3	C		35			
RAMY	27	1448	1502	1524	S13	W14	.261		26.6	36	SF	3	C		52			
HOLL	27	1501	1504	1510	S13	W14	.261		26.6	9	SF	3	C		21			
BIGB	27	1531	1539	1602	N36	W75	.970		22.0	31	SF	2	C	1539	50			
RAMY	27	1705	1718	1735	N20	W 3	.453		27.5	30	SN	3	C		47			F
BIGB	27	1707	1709	1715	N21	W01	.467		27.6	8	SF	2	C	1709	50	.5		
BIGB	27	1726	1727	1731	N15	W07	.389		27.2	5	SF	2	C	1727	30	.3		
HOLL	27	1730	1736	1741	N17	W 5	.412		27.4	11	SF	3	C		28			F
HOLL	27	1901	1909	2001	N23	W 4	.501		27.5	60	SN	3	C		138			
RAMY	27	1908	1909	2001	N20	W 3	.453		27.6	53	SB	3	C		91			FJE
BIGB	27	1908	1909	1941	N21	W02	.467		27.6	33	SN	2	C	1909	60	.6		
PALE	27	1912	1915	1945	N22	W 2	.483		27.7	33	SF	3	C		166			F

# H $\alpha$ SOLAR FLARES

SEPTEMBER 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IM- POR- TANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX.		CENTRAL DISTANCE	MCNATH PLAGE REGION	CMPR. DAY			COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
					LAT.	MER. DIST.											
BIGB	27	1928	1929	1939	N14	W01	.355		27.7	11	SF	2	C	1929	30	.3	
HOLL	27	2008	2023	2038	N17	E24	.553		29.6	30	SF	3	C		36		
PALE	27	2017	2017	2023	N22	W 3	.484		27.6	6	SF	3	C		43		F
HOLL	27	2115	2130	2143	N17	E23	.543		29.6	28	SF	3	C		25		
PALE	27	2128	2144	2220D	N20	W 4	.455		27.6	520	SN	3	C		107		F
BIGB	27	2142	2145	2200	N21	W03	.469		27.7	18	SN	2	C	2145	50	.5	
HOLL	27	2143E	2144	2257	N23	W 6	.505		27.5	740	SB	3	C		134		DE
PALE	27	2302	2306	2335	N21	W 5	.473		27.6	33	SF	2	C		59		F
HOLL	27	2308	2312	2320	N23	E22	.598		29.6	12	SF	3	C		24		
PALE	27	2344	2404	0020D	S21	E27	.496		30.0	360	SF	2	C		30		F
HOLL	27	2351E	2356	0022D	S21	E28	.509		30.1	310	SN	2	C		96		U
HOLL	28	0008	0014	0022D	N26	W44	.807		24.7	140	SF	2	C		77		F
ISTA	28	0750		0809	N17	E03	.406		28.6	11	SF		V				D
RAMY	28	1303	1346	1359	N17	W16	.478		27.3	56	SN	3	C		61		
HOLL	28	1341	1350	1354	N17	W16	.478		27.4	13	SF	3	C		28		
HOLL	28	1350	1351	1411	N15	W 1	.371		28.5	21	SF	3	C		25		
HOLL	28	1357	1404	1434	N18	W16	.490		27.4	37	SF	3	C		38		
HOLL	28	1421	1424	1437	N 4	W79	.984		22.7	16	SF	3	C		0		
HOLL	28	1520	1533	1552	S21	E20	.407		30.1	32	SF	3	C		36		
RAMY	28	1846	1847	1912	N17	E13	.454		29.8	26	SN	3	C		136		
HOLL	28	1846	1848	1912	N20	E13	.495		29.8	26	SB	3	C		167		
PALE	28	1847E	1847U	1917	S18	W16	.329		27.6	300	SN	3	C		134		F
HOLL	28	2006	2010	2021	N24	W18	.579		27.5	15	SN	3	C		34		
HOLL	28	2157E	2157U	2222	N20	E 8	.468		29.5	250	SN	3	C		197		
HOLL	28	2200	2203	2220	N19	W22	.554		27.3	20	SN	3	C		28		F
HOLL	28	2240	2245	2252	N 2	W86	.998		22.5	12	SF	3	C		0		
HOLL	28	2252	2256	2303D	N18	E 8	.438	16325	29.6	110	18	3	C		217		OE
ISTA	29	0640E		0700	N17	W24	.552	16315	27.5	200	1N		V				BD
ISTA	29	0646	0649	0703	N19	E07	.448	16315	29.8	17	18		V				E
ISTA	29	0728		0845	N08	W90	1.000		22.6	77	SF		V				AD
HOLL	29	1646	1648	1712	N17	W30	.615		27.4	26	SF	3	C		60		
HOLL	29	1831	1837	1910	N17	W31	.626		27.4	39	SN	3	C		69		
PALE	29	1832	1837	1839D	N14	W31	.603		27.4	70	SF	2	C		35		F
HOLL	29	1839	1858	1913	N14	E68	.943		3.9	34	SF	3	C		0		
MANI	30	0045E	0045U	0050D	N17	W33	.647		27.6	50	SN	3	C		50		F
ATHN	30	0614	0616	0647	N18	W38	.706		27.4	33	SB	3	C		48		DE
ISTA	30	0627E		0725	N15	E54	.846	16337	3.3	580	2N		V				BKU
ISTA	30	0627E		0705	N20	W37	.708	16329	27.5	380	3B		V				BF
ISTA	30	0732	0738	0745	N13	W22	.491		28.7	13	SF		V				E
ISTA	30	0735		0845D	N21	W41	.753		27.2	700	SF		V				DK
ISTA	30	0826	0830	0844	S23	W01	.202		30.3	18	SN		V				D
RAMY	30	1135E	1140U	1157D	S27	W86	.993		24.0	220	SN	3	C		0		
RAMY	30	1135E	1139	1154	N16	W40	.715		27.5	190	SN	3	C		30		F
RAMY	30	1139	1143	1159	N15	W26	.554		28.5	20	SN	3	C		38		
RAMY	30	1149	1206	1311	N13	W12	.391		29.6	82	SN	3	C		107		
RAMY	30	1251	1253	1302	S25	W 4	.321		30.2	11	SF	3	C		35		
RAMY	30	1433	1447	1500	N14	E73	.967		5.1	27	SF	3	C		0		
HOLL	30	1510	1511	1543	N24	W44	.796		27.3	33	SN	2	C		44		
HOLL	30	1511	1525	1537	N19	W42	.751		27.5	26	SN	2	C		47		
HOLL	30	1611	1614	1620	N20	W18	.530		29.3	9	SN	3	C		60		F
RAMY	30	1612	1613	1621	N17	W17	.485		29.4	9	SN	3	C		40		
HOLL	30	1620	1622	1630	S20	W 6	.251		30.2	10	SF	3	C		34		
HOLL	30	1804	1811	1818	N17	E50	.817		3.5	14	SF	3	C		21		
HOLL	30	1810	1811	1820	S24	E39	.659		2.7	10	SN	3	C		30		
HOLL	30	1837	1840	1855	N22	W47	.811		27.3	18	SN	3	C		82		F
BIGB	30	1839	1840	1900	N21	W48	.815		27.2	21	SN	2	C	1840	30	.5	
PALE	30	1856E	1904	1907	N18	W46	.784		27.3	110	SF	3	C		46		FDE
HOLL	30	1916	1918	1924	N17	E49	.808		3.5	8	SF	3	C		29		
PALE	30	2008E	2009U	2011	S13	W59	.851		26.4	30	SF	3	C		27		F
HOLL	30	2212	2220	2302	S21	W31	.548		26.6	50	SF	2	C		27		
PALE	30	2224E	2226	2232	N16	E71	.960		5.3	80	SF	3	C		27		OE
PALE	30	2227	2233	2236	S27	W29	.563		20.8	9	SF	3	C		26		OE
HOLL	30	2336	2339	2341D	N24	W41	.770		27.9	50	SB	2	C		36		F

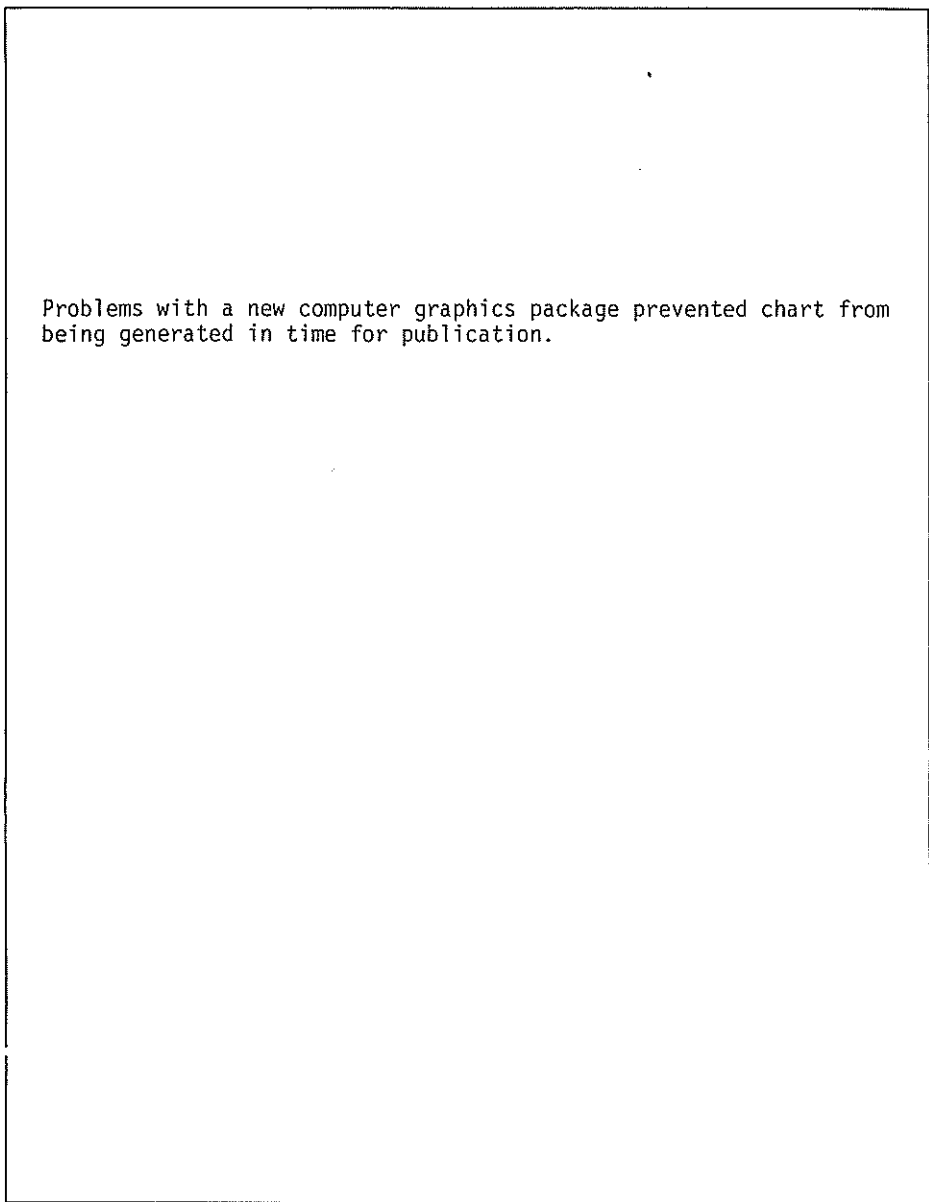
"Remarks":

- A = Eruptive prominence whose base is less than 90° 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 a 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 calcium II lines H and K.
- P = Flare shows helium D $\alpha$  in emission.
- Q = Flare shows the Balmer continuum in emission.
- R = Marked asymmetry in H $\alpha$  line suggests ejection of high velocity material.
- S = Brightness follows disappearance of filament (same position).
- T = Region active all day.
- U = Two bright branches, parallel (||) or converging (Y).
- V = Occurrence of an explosive phase: important and abrupt expansion in about a minute with or without important intensity increase.
- W = Great increase in area after time of maximum intensity.
- X = Unusually wide H $\alpha$  line.
- Y = System of loop-type prominences.
- Z = Major sunspot umbra covered by flare.



INTERVALS OF NO FLARE PATROL OBSERVATION  
FOR PRECEDING SOLAR FLARE TABLE  
SEPTEMBER 1979



Observatories included in total patrol:

Athenes	Bucharest	Kodaikanal	Palehua	Wendelstein
Berne	Holloman	Manila	Ramey	
Big Bear	Istanboul	Monte Mario	Upice	

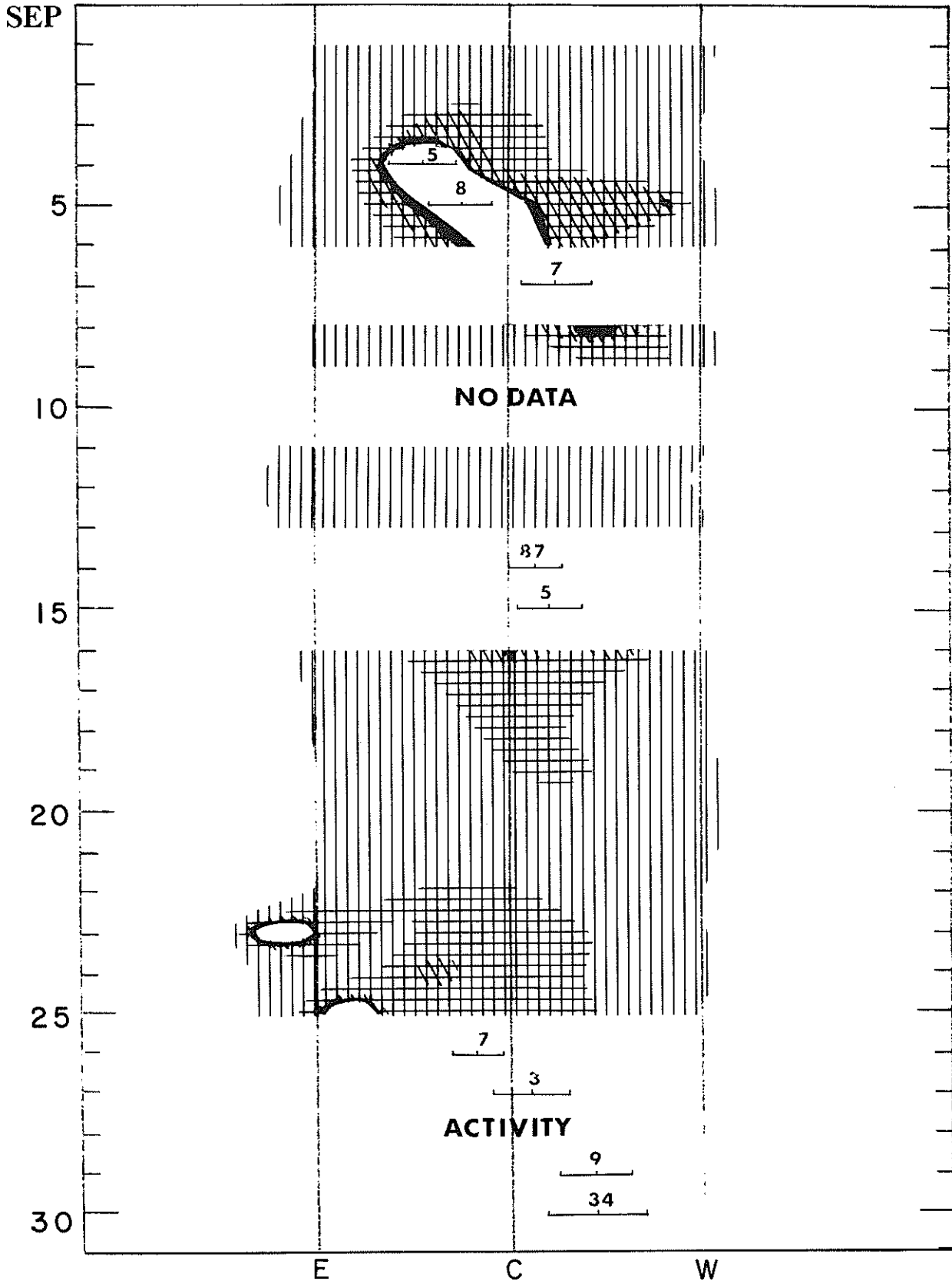
Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

# SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATION

SEPTEMBER 1979

Nangay

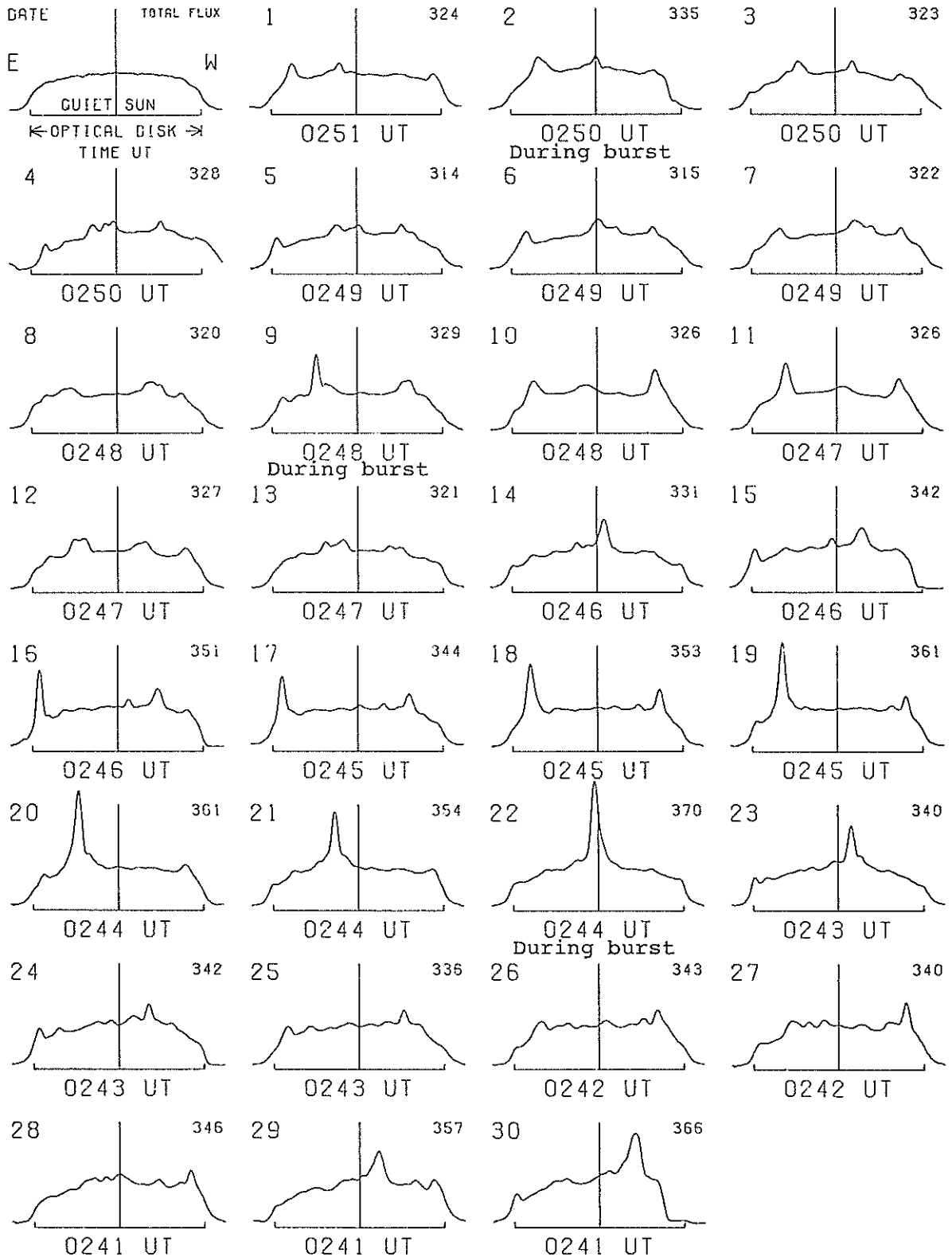
169 MHz



# EAST-WEST SOLAR SCANS SEPTEMBER 1979

TOYOKAWA, JAPAN

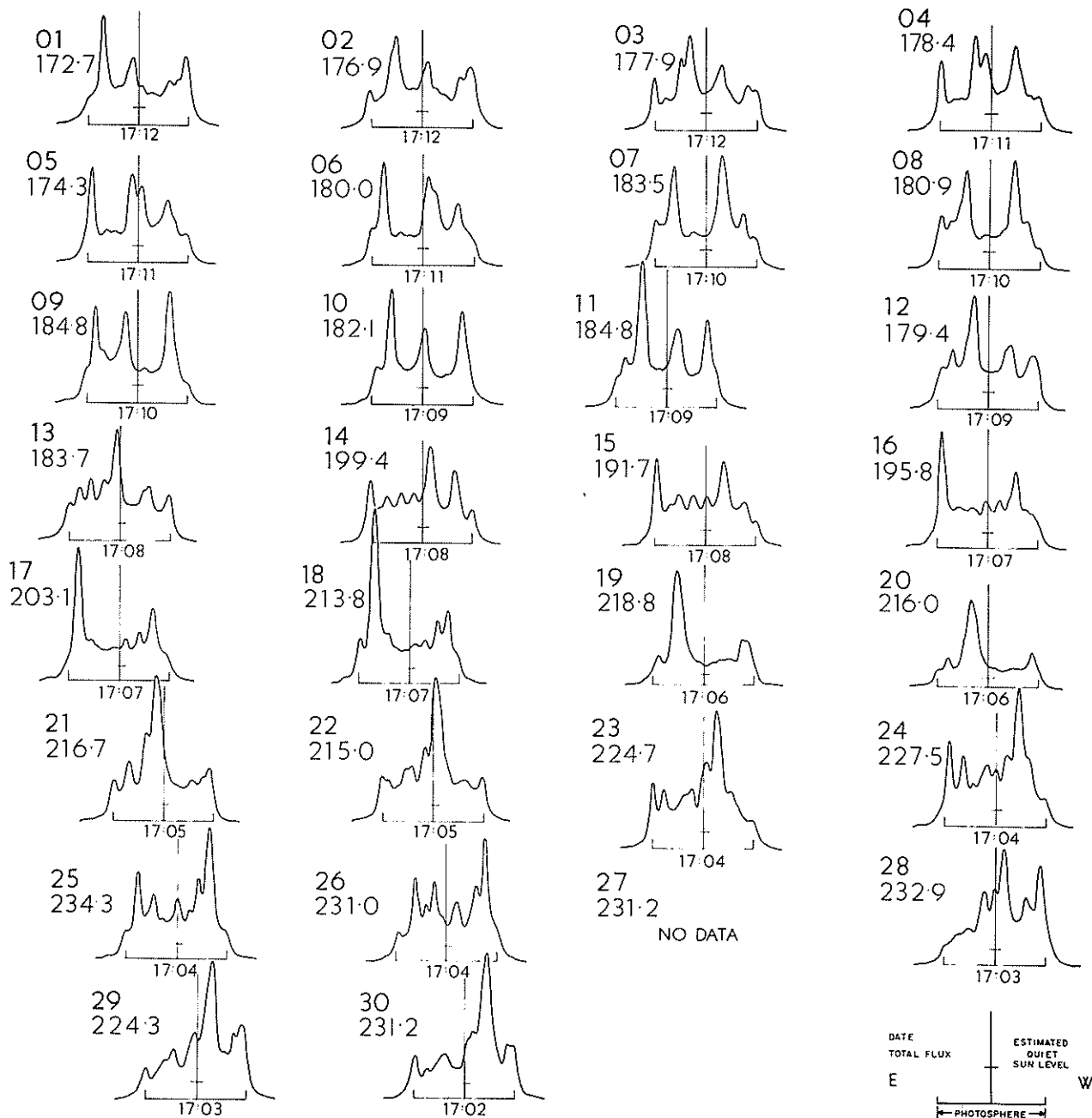
3 CM  
FAN BEAM WITH 1.1 MINUTES OF ARC



EAST-WEST SOLAR SCANS  
SEPTEMBER 1979

ALGONQUIN RADIO OBSERVATORY  
CANADA

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

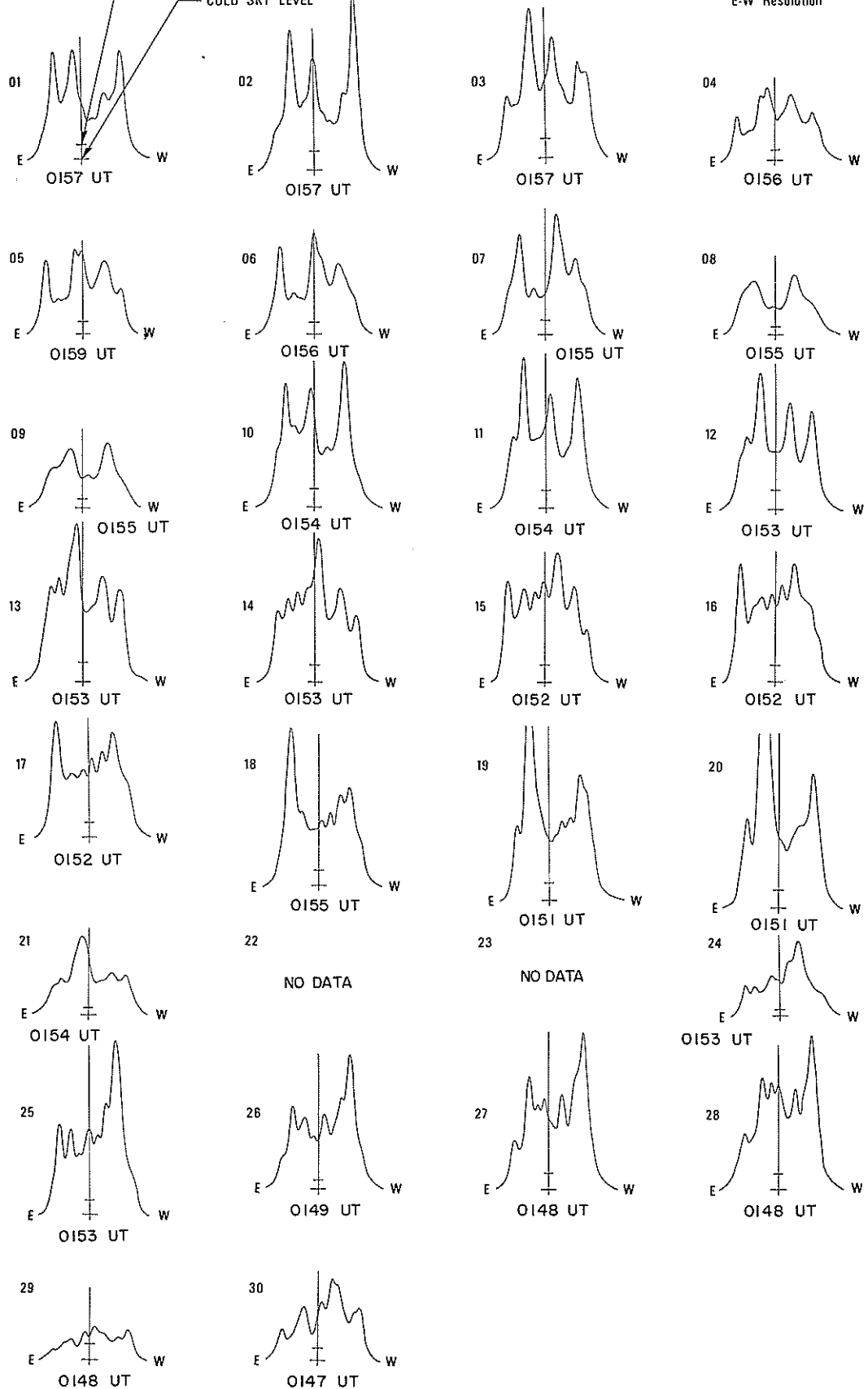


EAST-WEST SOLAR SCANS  
SEPTEMBER 1979

Fleurs, Australia

ESTIMATED QUIET SUN LEVEL  
COLD SKY LEVEL

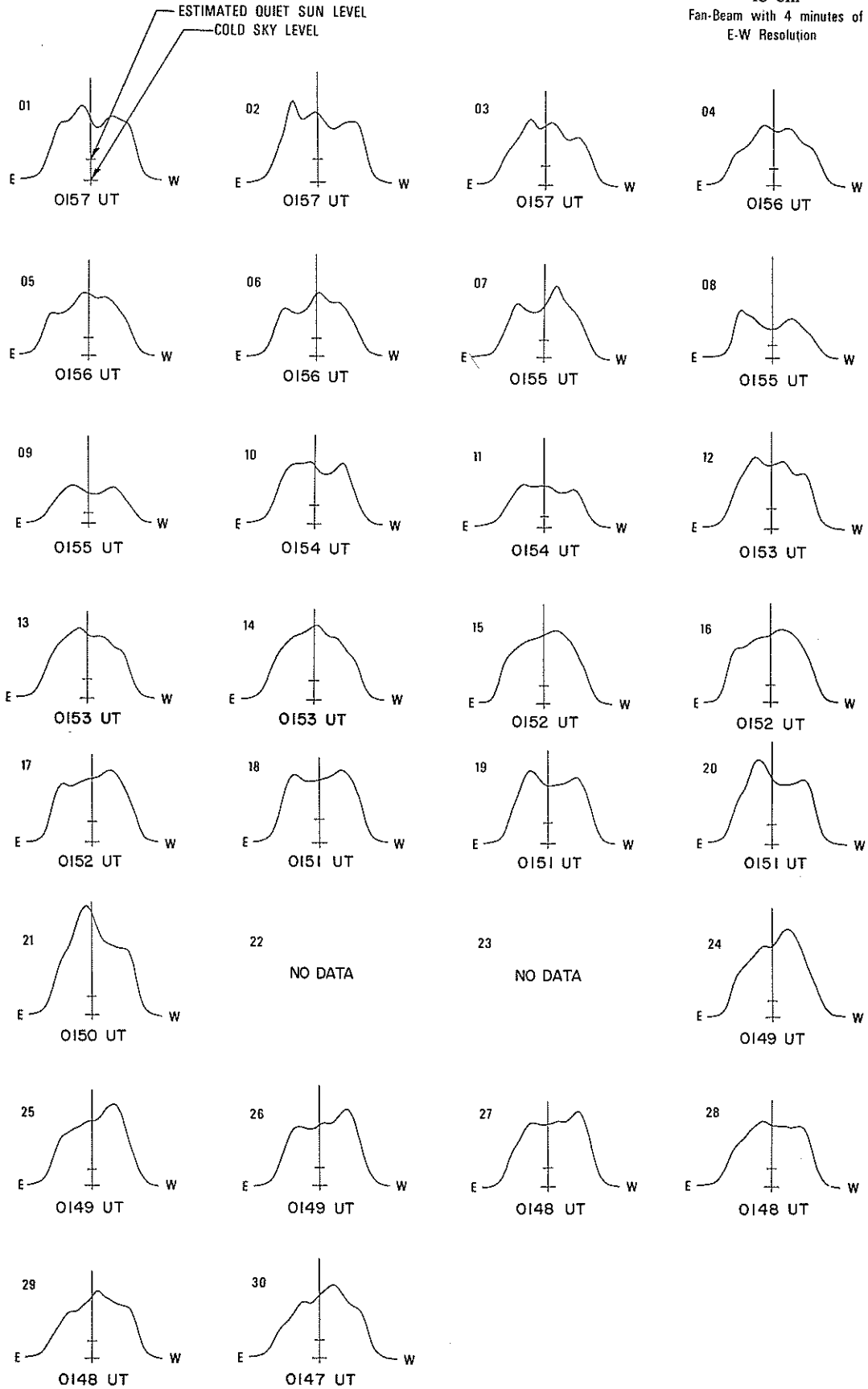
21 cm  
Fan-Beam with 2 minutes of arc  
E-W Resolution



### EAST-WEST SOLAR SCANS SEPTEMBER 1979

Flours, Australia

43 cm  
Fan-Beam with 4 minutes of arc  
E-W Resolution



## SOLAR RADIO EMISSION SELECTED FIXED FREQUENCY EVENTS

SEPTEMBER 1979

DAY OF MONTH	FREQUENCY STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22} \text{ W m}^{-2} \text{ Hz}^{-1}$		INT	REMARKS
			UT	UT	MINUTES	PEAK	MEAN		
1	2800 OTTA	260 FAL	1800	1840	40	4.4	2.2		
	2800 OTTA	1 S	1851	1854	9	9.4	3.2		
	2695 PENT	240 R	2315	2335	20	6.4	3.2		
2	2695 PALE	4 SF	0021.1	0034.1	25.90	13.9			
	8800 PALE	4 SF	0021.1	0034.1	25.90	7.3			
	2695 PENT	4 S/F	0021	0034.3	32	143	49		
	2695 PENT	29 PBI	0053	0053	40 0	10.2			
	2800 OTTA	27 RF	1250		185	2.6	2.4		
	2800 OTTA	24 R	1250	1305	15	2.6	1.3		
	2800 OTTA	24P R	1305		150	2.6			
	2800 OTTA	1 S	1529	1530	2.5	1.6	.8		
	2800 OTTA	26 FAL	1535	1555	20	-2.6	-1.3		
	2800 OTTA	240 R	2000	2020	20	3.4	2		
3	2695 LEAR	4 SF	0437.8	0443.8	11.20	1.3			
	8800 LEAR	4 SF	0438.6	0444.5	11	.4			
	8800 SGHR	4 SF	1856.8	1858.5	2.80	7.9			
	2695 PALE	4 SF	1856.8	1858.1	45.70	2.4			
	8800 PALE	4 SF	1856.8	1858.1	45.70	9.4			
	2800 OTTA	4 S/F	1856	1858.1	4	23	7.6		
	2695 SGHR	4 SF	1857.3	1858.8	46.20	2.2			
	2800 OTTA	30 PBI	1900	1900	27	3.4	1.2		
	2800 OTTA	1 S	1901	1901.8	1.5	2	1		
	2800 OTTA	8 S	1908	1908.2	.2	4.4			
2800 OTTA	20 GRF	1955	2020	105	2.6	1.3			
4	2800 OTTA	2 S/F	1309.9	1310	1.5	4			
	2800 OTTA	27 RF	1336		120	2.4	2.3		
	2800 OTTA	24 R	1336	1338	2	2.4	1.2		
	2800 OTTA	24P R	1338		112	2.4			
	2800 OTTA	1 S	1341	1342	2	2.6	1.3		
	2800 OTTA	26 FAL	1530	1536	6	-2.4	-1.2		
	2800 OTTA	21 GRF	1600	1616	270	6	3		
	2800 OTTA	22 GRF	1704	1710	70	3.8			
5	2695 LEAR	4 SF	0706.1	0706.8	2.70	4.6			
	2695 ATHN	4 SF	0706.3	0706.8	3 0	3.9			
	8800 ATHN	8 S	0706.8	0707.3	1.7	.4			
	2800 OTTA	1A S	1257.5	1259	2.5	2.4	1.2		
	2800 OTTA	8 S	1258.8	1258.8	.1	2.6			
	2800 OTTA	4 S/F	1432.6	1433.2	1	34	17		
	2800 OTTA	20 GRF	1800	1840	80	3.4	1.8		
6	2800 OTTA	1 S	1335.9	1336.5	2	2	1		
	2800 OTTA	21 GRF	1435	1537	255	7.6	3.8		
	2800 OTTA	20 GRF	1635	1650	25	2.6	1.9		
	2800 OTTA	1 S	1929	1930	7	2.4	1.2		
	7	8800 PALE	4 SF	0056.1	0057.3	44.90	11		
2695 PALE		4 SF	0056.1	0057.3	44.90	5			
2695 PENT		4 S/F	0056	0057.4	4	40	23.6		
8800 NANI		4 S/F	0057	0058.7	4.5	122.9	41		
2695 NANI		1 S	0058	0058.8	2.5	34.8	11.6		
2800 OTTA		1 S	1317	1319	3	2	1		
8800 SGHR		8 S	1352.8	1352.8	1	6.8			
2800 OTTA		20 GRF	1607	1615	15	1.6	.8		
2800 OTTA		1 S	1712	1713	1.1	3.4	1.6		
2800 OTTA		20 GRF	1725	1730	12	2.4	1.2		
2800 OTTA		20 GRF	1835	1840	15	1.6	.8		
2800 OTTA		4 S/F	1948.4	1948.7	4.6	40	20		
8800 SGHR		4 SF	1948.6	1950.6	4	1.8			
2695 SGHR		4 SF	1948.8	1949.8	4.30	4			
2800 OTTA		29 PBI	1953	1953	7	3.4	1.7		
2800 OTTA		3 S	2057.7	2058	1	37	18		
2800 OTTA	29 PBI	2058.7	2058.7	3	4.4	2.2			
2695 PENT	240 R	2300	2420	80	10.2	5.1			
8	2695 LEAR	4 SF	0205.1	0205.6	2.20	1.3			
	2695 LEAR	4 SF	0404.5	0406	404.50	2.2			
	8800 ATHN	4 SF	0647	0648.1	6.8	40			
	2695 ATHN	4 SF	0647	0648.1	6.1	3.8			
	8800 LEAR	4 SF	0647	0648	8 0	38			
	2695 LEAR	4 SF	0647	0648.1	5.50	3.5			
	8800 NANI	3 S	0647.3	0648.4	7.7	128.6	42.8		
	2800 OTTA	20 GRF	1440	1445	20	2.2	1.1		
	2800 OTTA	260 FAL	1537	1635	58	-2.8	-1.4		
	9	2800 OTTA	3 S	1211.8	1212.5	2.2	34	9	
2695 ATHN		4 SF	1211.8	1212.6	2.2	4.5			
8800 ATHN		8 S	1212	1212.6	1.1	2.9			
2800 OTTA		1 S	1228	1228.7	1.2	3	1.5		
2800 OTTA		2 S/F	1358	1359.7	3.5	3.6	1.2		
2800 OTTA		1 S	1534.5	1537	8	6.6	3.3		

## SOLAR RADIO EMISSION SELECTED FIXED FREQUENCY EVENTS

SEPTEMBER 1979

DAY OF MONTH	FREQUENCY STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22} \text{ W m}^{-2} \text{ Hz}^{-1}$		INT	REMARKS
			UT	UT	MINUTES	PEAK	MEAN		
	2800 OTTA	1 S	1656	1657	2	1	.5		
	2800 OTTA	1 S	1720	1729.5	2	3.6	1.2		
	2800 OTTA	3 S	1922	1923	2	11.6	3.8		
	2800 OTTA	22 GRF	1945	1948.5	45	5.4			
	2800 OTTA	22 GRF	2035	2053	55	4.4	2.2		
10	8800 LEAR	4 SF	0515.3	0516.1	11.7	4.9			
	2695 LEAR	4 SF	0515.3	0516.6	11.70	3.9			
	2695 ATHN	4 SF	0515.3	0516.5	3.2	4.5			
	2695 HANI	3 S	0515.6	0516.8	2.4	43.4	14.5		
	8800 ATHN	8 S	0515.8	0516.1	1.7	2.7			
	2800 OTTA	8 S	1215.5	1215.5	.2	5.4			
	2800 OTTA	23 GRF	1320	1336	65	2.6			
	2800 OTTA	1 S	1357.9	1358	1	5.4	2.7		
	2800 OTTA	20 GRF	1505	1508	15	2.6	1.3		
	2800 OTTA	1 S	1738.7	1740	2.5	2.2	1.4		
	2800 OTTA	1 S	1812	1812.5	1	2.2	1.1		
	2695 PENT	21 GRF	2235	2255	135	11.2	5.6		
	2695 PENT	3 S	2243	2244	3	14	6		
	2695 PENT	1 S	2400.5	2401	1	3	1.5		
11	2695 HANI	1 S	0518	0518.5	1.6	2.7	.9		
	2695 LEAR	4 SF	0522.6	0524.1	8 D	6.1			
	2800 OTTA	21 GRF	1342		160	14.8			
	8800 SGMR	4 SF	1343	1349.8	11 D	2.1			
	2695 SGMR	4 SF	1343	1346.5	12 D	9.4			
	2695 ATHN	4 SF	1343.3	1347	92.3D	8.9			
	8800 ATHN	4 SF	1343.6	1359.3	100.5	3.7			
	2800 OTTA	3 S	1343	1346.8	12	75	26.6		
	2800 OTTA	21 GRF	1634	1749	190	9.2	4.8		
	2800 OTTA	45 C	1635.5	1636	7	11	3.7		
	2800 OTTA	240 R	2010	2025	15	4.8	2.4		
	2695 PENT	1 S	2250.8	2251.2	1.5	6	3		
	2695 PENT	21 GRF	2250	2253	90	5.4			
	2695 PENT	21 GRF	2332	2336	30	3	1.5		
	2695 PENT	3 S	2333.9	2334	1.1	10.6	5.3		
	2695 PENT	1 S	2337	2338	1.8	3.6	2.4		
12	2695 PENT	20 GRF	2305	2317	25	3.2			
13	2695 SGMR	4 SF	1310.3	1312.1	5.7D	1.1			
	8800 SGMR	4 SF	1310.8	1312	5.2	2.6			
	2800 OTTA	2 S/F	1310.9	1315.9	5	7.2	5		
	2800 OTTA	24 R	1310	1316	6	4.4			
	2800 OTTA	27A RF	1310		170	4.4	3.8		
	2800 OTTA	24P R	1316		124	4.4			
	2800 OTTA	1 S	1454	1455.5	3	8.6	4.3		
	2800 OTTA	29 PBI	1457	1457	20	3.6	1.8		
	2800 OTTA	26 FAL	1520	1600	40	-4.4	-2.4		
	2800 OTTA	21 GRF	1855	1955	85	3	1.5		
	2695 PENT	3 S	2009	2009	2	11.8	3		
	2800 OTTA	240AR	2040	2056	16	4.8			
	2800 OTTA	4 S/F	2049.5	2050.7	6	14.4	7		
	2800 OTTA	20 GRF	2125	2143	45	4.8	2.4		
14	8800 PALE	4 SF	0324.8	0325.1	10.2	7.2			
	8800 LEAR	4 SF	0324.8	0325.1	4.3D	9.4			
	2695 LEAR	4 SF	0324.8	0327	7.3D	2			
	2695 ATHN	47 GB	0652.3	0746.1	184.3D	390			
	8800 LEAR	47 GB	0652.5	0737.5	161.5D	310			
	8800 ATHN	47 GB	0653 E	0743.1	183.8	300			
	2695 LEAR	47 GB	0653.8	0745.6	160.2D	300			
	2695 HANI	47 GB	0655	0745.5	96.3	4089.3	1363.1		
	8800 HANI	47 GB	0656	0738	97.7	3060	1020		
	8800 LEAR	4 SF	0814	0821.5	23	32			
	2695 LEAR	4 SF	0814	0821.3	20.3D	38			
	8800 HANI	4 SF	0925.1	0927.5	8.2	13.9			
	8800 ATHN	4 SF	0926.1	0938.3	9.7	1.7			
	2695 ATHN	4 SF	0926.1	0930.1	88.2D	3.2			
	2800 OTTA	22 GRF	1318	1333	35	2.2	1		
	2800 OTTA		1418.8E	1418.9	.5D	8.8			
	2800 OTTA	24 R	1429	1431	2	3.8	1.9		
	2800 OTTA	27A RF	1429		126	3.8	3.4		
	2800 OTTA	2 S/F	1431.5	1434	4.5	9.2	4.4		
	2800 OTTA	24P R	1431		99	3.8			
	2800 OTTA	40 F	1530	1533.3	3.5	8.7			
	2800 OTTA	26 FAL	1610	1635	25	-3.8	-1.9		
	2800 OTTA	21 GRF	1655	1720	135	9.4	4.6		
	2695 SGMR	4 SF	1659	1700.5	45.3D	6.5			
	2695 PALE	4 SF	1659.8	1701.8	45.8D	6.8			
	8800 SGMR	4 SF	1659.8	1701.1	43.7	1.1			
	2800 OTTA	4 S/F	1700	1701.8	6	44.8	11		
	2800 OTTA	21 GRF	1930	2000	85	6.6	3.3		
	8800 SGMR	4 SF	1931	1934.8	8.6	3.2			
	2695 SGMR	4 SF	1931.3	1935	8 D	2.2			



## SOLAR RADIO EMISSION SELECTED FIXED FREQUENCY EVENTS

SEPTEMBER 1979

DAY OF MONTH	FREQUENCY STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22} \text{ W m}^{-2} \text{ Hz}^{-1}$		INT	REMARKS
			UT	UT	MINUTES	PEAK	MEAN		
	2800 OTTA	3 S	1934.5	1936.3	6	11.4	5.7		
	2800 OTTA	2 S/F	2036	2039.6	5	8.4			
	2800 OTTA	32 ABS	2100	2130	75	-4.4	-2.2		
	2695 PENT	240 R	2240	2305	25	6	3		
	2695 PENT	22 GRF	2316	2319	18	3.4	1.5		
15	2695 PENT	1 S	0045	0045.7	1	3.2	1.6		
	2695 PENT	1 S	0112.5	0113.5	1.5	6.8			
	8800 SGHR	8 S	1818.8	1819.5	1.8	26			
	2800 OTTA	1 S	2145.4	2145.5	1	2	1		
16	2695 PALE	4 SF	0107.8	0109.3	4.20	20			
	8800 PALE	47 GB	0107.8	0109.5	4.20	150			
	2695 PENT	4 S/F	0107	0108.9	5	192	44.4		
	8800 MANI	47 GB	0108	0109.5	7	1355.5	451.8		
	2695 MANI	3 S	0108	0109.3	7	93.9	31.3		
	8800 ATHN	4 SF	0759.8	0801.6	70.8	18			
	2695 LEAR	4 SF	0801	0802.6	9.50	1.6			
	8800 LEAR	4 SF	0801.1	0801.5	9.40	11			
	2695 ATHN	4 SF	0802.1	0802.8	9.0	.6			
	8800 ATHN	47 GB	0933.6	0937	95.9	160			
	2695 LEAR	47 GB	0934.6	0938.1	20.40	13.9			
	8800 LEAR	47 GB	0935.1	0937	19.90	58			
	2695 MANI	4 S/F	0935.3	0936.8	5.3	123.7	41.2		
	2695 ATHN	47 GB	0935.6	0938	104.70	13.9			
	2800 OTTA	20 GRF	1545	1600	50	6.6	3		
	2800 OTTA	20 GRF	1652	1658	11	1.6			
	8800 SGHR	4 SF	1949.6	1950	6.40	4.7			
	8800 PALE	4 SF	1950.6	1951.6	5.40	11			
	2800 OTTA	21 GRF	1950	2045	120	5.8	3.6		
	2695 PALE	4 SF	1951	1952.5	5.0	7.1			
	2695 SGHR	4 SF	1951.1	1952.8	6.70	7.8			
	2800 OTTA	3 S	1951	1952.8	6	64	29.9		
	2800 OTTA	29 PBI	1957	1957	25	8	4		
	2695 PENT	20 GRF	2220	2250	50	3	1.5		
	2695 PENT	20 GRF	2330	2417	70	6.8	2.3		
	8800 PALE	8 S	2351	2351.3	1.3	11.9			
17	2800 OTTA	20 GRF	1345	1400	40	2.4			
	2800 OTTA	22 GRF	1515	1618	115	5.2	3		
	2800 OTTA	27 RF	1720		155	4	3.4		
	2800 OTTA	24 R	1720	1735	15	4	2		
	2800 OTTA	24P R	1735		110	4			
	2800 OTTA	26 FAL	1925	1955	30	-4	-2		
	2800 OTTA	1 S	2049.7	2050	1	2.8	1.4		
	2800 OTTA	8 S	2202.5	2202.8	.5	2	1		
18	2695 PENT	1 S	0023	0024	2.5	5	2.5		
	2695 PENT	4 S/F	0125.5	0126	1.5	12.8	6.4		
	8800 ATHN	4 SF	0748.1	0801.3	83.9	1.3			
	2695 ATHN	4 SF	0755.1	0823.3	172.0	1.9			
	8800 ATHN	4 SF	1251.1	1253.5	6.5	3.4			
	2800 OTTA	21 GRF	1420	1445	110.0	13.8			
	8800 SGHR	4 SF	1432.5	1438.3	100.0	10			
	2695 SGHR	4 SF	1435.6	1438.3	100.0	3.6			
	2800 OTTA	3 S	1436	1438	6	24.6	9		
	2800 OTTA	21 GRF	1730	1750	50	4	2		
	2800 OTTA	1 S	1755	1755.6	1	8.4	2.1		
	2800 OTTA	20 GRF	1920	1953	90	6.2	3.1		
	2800 OTTA	20 GRF	2120	2135	40	3.6	2		
	2695 PENT	20 GRF	2220	2235	45	3.8	2		
19	8800 ATHN	4 SF	0644.8	0646.1	18.5	40			
	2695 ATHN	4 SF	0645.1	0646.1	56.0	11.9			
	8800 MANI	3 S	0646.5	0647.5	7.7	252.9	84.3		
	2695 MANI	3 S	0647.2	0647.7	1.8	49.4	16.5		
	2695 ATHN	4 SF	0707.6	0708.5	14.50	.9			
	8800 ATHN	4 SF	0707.6	0708.8	7	3			
	2800 OTTA	21 GRF	1205	1230	95	7.8	3.7		
	2800 OTTA	45 C	1211	1214.8	7	5.2	2.5		
	8800 SGHR	4 SF	1217.6	1219	3.7	2			
	2695 SGHR	4 SF	1355.1	1359	49.70	5.7			
	8800 SGHR	4 SF	1355.3	1357.6	52.20	25			
	8800 ATHN	47 GB	1355.3	1357.6	79.5	28			
	2695 ATHN	47 GB	1355.8	1420.3	81.30	5.6			
	2800 OTTA		1356	1420.5	29	54.6			
	8800 SGHR	4 SF	1416	1420.3	13.30	7.4			
	2695 SGHR	4 SF	1417.1	1420.3	10.20	5.9			
	2800 OTTA	29 PBI	1425	1425	90	14	7		
	2695 SGHR	4 SF	1600	1602.3	10.50	1.1			
	8800 SGHR	4 SF	1600.8	1602.3	9.70	1.3			
	2800 OTTA	240 R	1600	1601.2	1.2	3	1		
	2800 OTTA	22 GRF	1618	1651	65	3			
	2800 OTTA	240 R	1741	1742.2	1.2	4.4	2.2		
	2800 OTTA	20 GRF	1826	1830.5	34	20	6.7		

## SOLAR RADIO EMISSION SELECTED FIXED FREQUENCY EVENTS

SEPTEMBER 1979

DAY OF MONTH	FREQUENCY STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22} \text{ W m}^{-2} \text{ Hz}^{-1}$		INT	REMARKS
			UT	UT	MINUTES	PEAK	MEAN		
	2800 OTTA	21 GRF	1910	1930	60	5.2			
	2800 OTTA	4 S/F	1916	1918	11	12.2	6.1		
	2800 OTTA	22 GRF	1935.5	1936.3	16	7.8	3.7		
	2800 OTTA	21 GRF	2015	2045	73	11.6	5.8		
	2800 OTTA	1 S	2019.5	2020.5	2	4.4	2.2		
	2800 OTTA	8 S	2033	2033.2	.6	3	1.5		
	2800 OTTA	1 S	2034	2036.3	8	7.4	2.6		
	2695 PENT	8 S	2257.3	2257.3	.1	11.2			
	8800 MANI	47 GB	2301	2306.2	20.8	2047.5	682.5		
	2695 PALE	47 GB	2302	2306.8	33 0	180			
	8800 PALE	47 GB	2302	2306.3	33 0	270			
	2695 PENT	47 GB	2302	2306.5	38	1520	277		
	2695 MANI	47 GB	2303	2306.4	8.5	993.8	331.3		
	2695 PENT	29 PBI	2340	2340	70	28	12.5		
20	2695 LEAR	4 SF	0738.1	0741.1	6.20	8.1			
	8800 LEAR	4 SF	0739.8	0742	5.2	1.7			
	8800 LEAR	4 SF	0757.6	0759.6	48.50	24			
	8800 ATHN	4 SF	0757.6	0759.5	47	20			
	2695 ATHN	4 SF	0758.5	0759.3	52.30	4.3			
	2695 LEAR	4 SF	0759	0759.5	43.10	5.3			
	8800 MANI	4 S/F	0759.4	0759.7	1.6	88.4	29.5		
	2695 MANI	3 S	0759.5	0759.7	.7	69.1	23.1		
	2695 SGHR	4 SF	1149.8	1152.6	8.50	4.7			
	8800 SGHR	4 SF	1151.3	1152.6	5	.9			
	2695 ATHN	4 SF	1151.6	1152.6	2.40	3.3			
	2800 OTTA	4 S/F	1152	1152.5	2	38	16		
	8800 SGHR	4 SF	1207.8	1208.6	6.20	4.6			
	2695 ATHN	4 SF	1251.6	1252.6	2.40	3.3			
	2800 OTTA	20 GRF	1335	1339	70	9.2	3		
	8800 ATHN	4 SF	1337	1338.6	10.6	1.3			
	2695 ATHN	4 SF	1337.1	1338.6	12.40	.3			
	2800 OTTA	24 R	1458	1503	5	3.8	1.8		
	2800 OTTA	27F RF	1458		165	3.8	3.4		
	2800 OTTA	24P R	1503		130	3.8			
	2800 OTTA	26 FAL	1713	1743	30	-3.8	-1.9		
	2800 OTTA	23 GRF	1800	1844	115	11.2	5		
	2800 OTTA	1 S	1813.8	1815	3	3	1.6		
	2800 OTTA	22 GRF	1857	1859.5	25	11.8	5.9		
	2800 OTTA	1 S	2153.5	2154.3	2	9.2	4.6		
	2695 PENT	20 GRF	2255	2315	50	3.8	1.9		
21	8800 LEAR	47 GB	0349.6	0358.6	51.40	2.4			
	2695 LEAR	4 SF	0356.5	0358.6	44.60	2.9			
	8800 SGHR	4 SF	1210	1211.5	4	6.4			
	8800 ATHN	4 SF	1211.6	1212.5	9	5.3			
	2800 OTTA	1A S	1336	1339	10	5.4	2.7		
	2800 OTTA	1 S	1337	1337	1	5			
	2800 OTTA	3 S	1338.2	1338.5	1.2	23	8		
	2800 OTTA	1 S	1348	1453	8	2.2	1.4		
	2800 OTTA	20 GRF	1445	1448.5	15	10	4.8		
	2800 OTTA	20 GRF	1506.5	1509	15	4.2	2.1		
	2800 OTTA	1 S	1524	1524.3	1	5	1.3		
	2695 ATHN	4 SF	1544.8	1545.3	10.20	1.6			
	8800 ATHN	4 SF	1544.8	1545.3	10.3	.9			
	2800 OTTA	22 GRF	1544	1545	16	7.6	2.6		
	8800 ATHN	4 SF	1556.3	1558.3	53.5	4.8			
	2695 ATHN	4 SF	1556.8	1558	53 0	3.6			
	2800 OTTA	21 GRF	1730	1828	85	3	1.8		
	2800 OTTA	8 S	1826.3	1826.4	.5	2.6	1.3		
	2800 OTTA	21 GRF	1945	2016	75	3.6	1.8		
	2695 PENT	1 S	2010	2011	3	6.6	3.3		
	2800 OTTA	21 GRF	2107	2123	85	3	1.6		
	8800 PALE	4 SF	2109.6	2109.8	3.50	10			
	2800 OTTA	8 S	2110	2110.1	.5	6.4			
	8800 MANI	47 GB	2350	2352	5.6	1473.8	491.3		
	2695 MANI	4 S/F	2350.3	2352	4.1	90.8	30.3		
	2695 PENT	45 C	2350	2353.2	8	200	47		
	2695 PALE	4 SF	2351.3	2353	6.7	21			
	8800 PALE	47 GB	2351.3	2353	6.70	190			
	2695 PENT	29 PBI	2358	2358	20	13	6.5		
22	8800 LEAR	4 SF	0213.8	0215.8	6.20	5.2			
	8800 MANI	4 S/F	0232	0234.3	5.2	341	113.7		
	2695 LEAR	4 SF	0232.1	0235.5	10.90	3.9			
	8800 PALE	4 SF	0233	0235.1	5 0	29			
	2695 PALE	4 SF	0233	0235.3	5	3.9			
	8800 LEAR	4 SF	0233.1	0235.3	10.90	31			
	8800 LEAR	8 S	0320	0320.1	1 0	1.3			
	8800 MANI	3 S	0729.2	0729.7	1	53.7	17.9		
	8800 LEAR	4 SF	0730.3	0730.8	2.3	7			
	2695 LEAR	8 S	0730.3	0730.8	1.80	1.3			
	8800 ATHN	4 SF	0730.3	0730.6	5.5	4.7			
	2695 ATHN	4 SF	0730.5	0730.6	2.80	1.1			
	8800 LEAR	8 S	0815.1	0815.6	1 0	2.5			

## SOLAR RADIO EMISSION SELECTED FIXED FREQUENCY EVENTS

SEPTEMBER 1979

DAY OF MONTH	FREQUENCY STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22} \text{ Wm}^{-2} \text{ Hz}^{-1}$		INT	REMARKS	
			UT	UT	MINUTES	PEAK	MEAN			
	2695 LEAR	4 SF	0820.8	0821.8	7.50	2.2				
	8800 ATHN	4 SF	0821.3	0821.8	7	3.9				
	2695 ATHN	4 SF	0821.3	0821.6	6.30	1.3				
	8800 LEAR	4 SF	0821.3	0821.8	5.50	6				
	2800 OTTA	8 S	1154.5	1154.7	.8	6.2	3.1			
	2800 OTTA	240 R	1233	1255	22	7	4.6			
	2800 OTTA	1 S	1315	1316.5	3	2	1.5			
	2800 OTTA	1 S	1907	1907.7	1	3	1.5			
	2800 OTTA	2 S/F	1922	1923.5	2	3.6	1.8			
	8800 PALE	47 GB	2351.3	2353	6.70	190				
	2695 PALE	4 SF	2351.3	2353	6.7	21				
	23	8800 LEAR	4 SF	0202.6	0203.3	2.4	8.2			
		2695 LEAR	4 SF	0202.6	0203.3	2.90	11.9			
		2695 MANI	3 S	0203	0204.7	2	65.7	21.9		
		8800 MANI	3 S	0203	0203.2	1.8	56	18.7		
8800 LEAR		4 SF	0619.8	0620.1	5.20	23				
8800 ATHN		4 SF	0620.1	0620.6	6.7	16				
2695 ATHN		4 SF	1048.6	1050.3	7.90	4.4				
8800 ATHN		4 SF	1158.1	1159.3	46.2	2.8				
2800 OTTA		240 R	1525	1600	35	4.2	2.1			
2800 OTTA		21 GRF	1630	1642	35	5	2.5			
2800 OTTA		40 F	1631.5	1633.4	3	10.4				
2800 OTTA		20 GRF	1740	1755	60	3.4	2			
2800 OTTA		8 S	1853	1853	.1	12.4				
2695 PENT		20 GRF	2215	2250	75	4.8	2.4			
24		2695 PALE	4 SF	0149.8	0150.1	4.20	3.9			
	8800 MANI	4 S/F	0506	0507.8	4	141.4	47.1			
	8800 ATHN	4 SF	0506.3	0508.1	19.2	15				
	2695 ATHN	4 SF	0506.3	0509.1	12 D	2.1				
	2800 OTTA	20 GRF	1425	1440	40	2.4	1.2			
	2800 OTTA	21 GRF	1730	1855	300	9.6	4.8			
	8800 SGMR	4 SF	1748	1751.3	8	3.3				
	2695 SGMR	4 SF	1748	1750.1	7 D	1.3				
	2800 OTTA	21 GRF	1749	1752	15	8.2	4			
	2800 OTTA	8 S	1750.1	1750.1	.1	8.2				
25	2695 SGMR	4 SF	1124.1	1129	16 D	11				
	8800 SGMR	4 SF	1127.3	1129.3	12.2	1.1				
	2800 OTTA	20 GRF	1240	1400	220	7.6	4			
	2800 OTTA	21 GRF	1700	1735	85	2.8	1.4			
	2800 OTTA	2 S/F	1811.8	1811.9	1	3.2	1.6			
	2800 OTTA	21 GRF	1910	1930	60	6	3			
	2800 OTTA	45 C	1925.5	1926	3	9.4	4.5			
	2800 OTTA	21 GRF	2030	2045	40	4.8	2.4			
	2800 OTTA	1 S	2036	2037	6	3.2	1.6			
	2800 OTTA	4 S/F	2132	2135	7	11.8	4			
	2695 PENT	21 GRF	2240	2250	40	5.6	2.8			
	2695 PENT	3 S	2244.3	2245.5	4	11.8	5.9			
	26	2800 OTTA	20 GRF	1300	1308	60	2.4	1.2		
2800 OTTA		1 S	1551	1552.5	3	4	2			
2800 OTTA		20 GRF	1610	1705	110	4	2.4			
2800 OTTA		20 GRF	1805	1835	105	3.6	1.8			
2800 OTTA		24 R	2005	2015	10	4	2			
2800 OTTA		27A RF	2005		135	4	3.7			
2800 OTTA		24P R	2015		115	4				
2800 OTTA		4 S/F	2055	2100.8	12	40.4	23.1			
2800 OTTA		29 PBI	2107	2107	40	13.8	8.4			
2800 OTTA		26 FAL	2210	2220	10	-4	-2			
27	2800 OTTA	20 GRF	1450	1530	100	4.8	2.4			
	2800 OTTA	20 GRF	1645	1705	55	3.8	2			
	8800 SGMR	4 SF	1844.3	1845.1	4	13				
	2695 PENT	8 S	2243.9	2244	.8	6.6				
	28	2695 ATHN	8 S	0757.3	0758	1	1.3			
2695 LEAR		8 S	0757.8	0758	0.5	1.6				
2800 OTTA		240 R	1340	1355	15	3.8	1.9			
8400 BERN		1	1447.2	1448.1	2.2	24				
2800 OTTA		22 GRF	1515	1530	25	4.4	2.2			
2800 OTTA		2 S/F	1845	1847	3	3.4				
2800 OTTA		20 GRF	2000	2010	75	6.6	2.2			
2800 OTTA		20 GRF	2130	2150	60	5.8	2.9			
29	8400 BERN	1	0913.5	0914	1	20				
	8800 ATHN	4 SF	1107.1	1110.1	13	3.5				
	2800 OTTA	21 GRF	1210	1340	170	9.6	6.5			
	2800 OTTA	1 S	1320.8	1321.4	2	7	3.5			
	2695 ATHN	8 S	1321.1	1321.8	1.70	.6				
	8800 ATHN	8 S	1321.3	1321.6	1.2	1				
	2800 OTTA	240 R	1630	1648	18	3.8	1.9			
	2800 OTTA	20 GRF	1830	1835	30	2.8	1.4			
	2695 PENT	22 GRF	2110	2240	160	6.8	3.4			

## SOLAR RADIO EMISSION SELECTED FIXED FREQUENCY EVENTS

SEPTEMBER 1979

DAY OF MONTH	FREQUENCY STATION	TYPE	STARTING TIME		DURATION	FLUX DENSITY $10^{-22} \text{ W m}^{-2} \text{ Hz}^{-1}$		INT	REMARKS
			UT	UT		MINUTES	PEAK		
30	8800 ATHN	4 SF	0612.6	0616.8	88		13		
	8800 LEAR	8 S	0613.3	0616.3	1.3D		11.9		
	8400 BERN	3	0615	0616.3	2		76		
	8800 ATHN	4 SF	0801.6	0805.1	22.2		3.6		
	8400 BERN	20	0803.5	0806.1	9.5		19		
	2695 ATHN	4 SF	0804.1	0805.1	18.5D		2		
	8800 ATHN	4 SF	1105.8	1109	21		8.6		
	8400 BERN	45	1107.5	1108.5	22.5		86		
	2695 ATHN	4 SF	1108	1109.3	8.3D		.6		
	2800 OTTA	20 GRF	1419	1420	30 D		4.8		
	2800 OTTA	260 FAL	1640	1800	80		14.4	7.2	
	2800 OTTA	22 GRF	1900	1911	42		3.8		
	2800 OTTA	260 FAL	2020	2030	10		4	2	

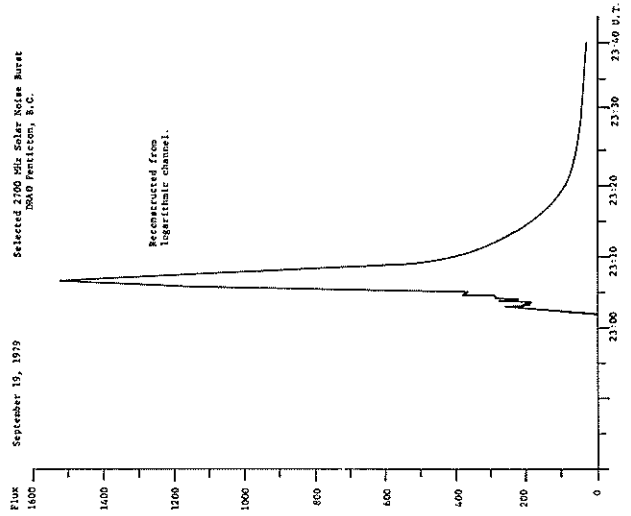
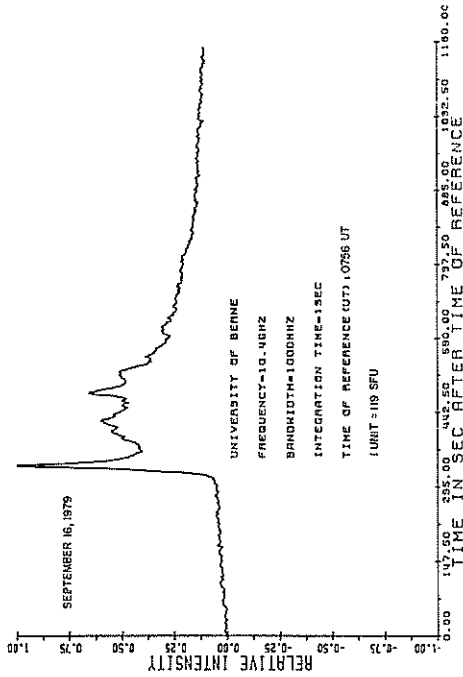
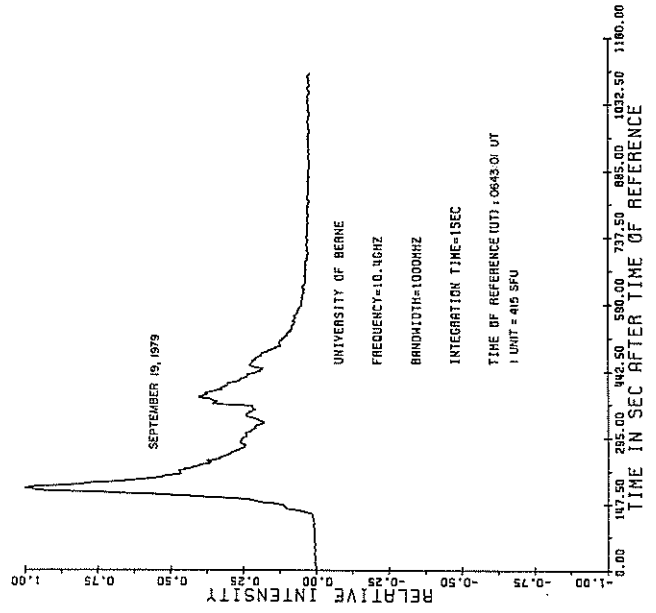
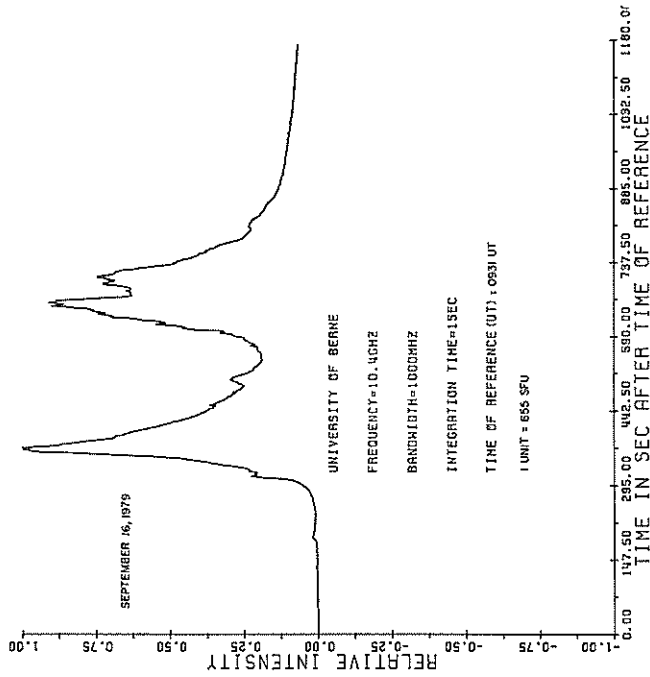
Observatories:

BERN = Berne    BOUL = Boulder    MANI = Manila    OTTA = Ottawa ARO    PENT = Penticton    SGMR = Sagamore Hill

Explanation of Type Code:

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

SELECTED SOLAR NOISE BURSTS  
SEPTEMBER 1979



**PIONEER XII**  
**SEPTEMBER 1979**

DATE Sep '79	TIME (UT)	ESV (°)	$U_{H^+}$ (KM/SEC)	$N_{H^+}$ (H <sup>+</sup> /CC)	$T_{H^+}$ ( $\times 10^6$ °K)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12	1610		751.	0.24	0.146
13	1653		940.	.417	---
14	*				
15	1710	166	843.	5.3	.287
16	1647		571.	3.1	.037
17	1516		412.	1.1	---
18	1542		365.	29.2	.060
19	1802		453.	17.1	.21
20	1637		434.	19.5	.117
21	1806		400.	8.3	---
22	0504		406.	13.	.147
23	1452		463.	31.1	.03
24	1454		339.	24.9	.41
25	0658		353.	17.4	.087
26	1624		364.	13.6	.085
27	0624		381.	40.6	.096
28	1814		438.	14.	.149
29	0651	157.	412.	20.3	.059
30	0558		484.	14.6	.237

\*Solar wind velocities were in excess of 1200KM/SEC.  
Experienced some difficulty in the data reduction  
during this period.

38  
Sep 79

## CORONAL HOLES

Helium D3 Chromosphere at Solar Limb

SEPTEMBER 1979

Big Bear Solar Observatory

Only three D3 limb observations were made during the month of September. These data are presented in numerical form rather than graphically.

Position angles of coronal hole boundaries (in degrees)

<u>Date</u>	<u>North</u>	<u>South</u>
6 September	18 -2	
20 September		-175 170
25 September		None

SOLAR WIND  
Interplanetary Scintillations  
SEPTEMBER 1979

DAY	3C48 VEL ERR	3C144 VEL ERR	3C147 VEL ERR	3C161 VEL ERR	3C237 VEL ERR	3C273 VEL ERR	3C298 VEL ERR	3C459 VEL ERR
1	337 19	378 20		467 32			357 23	
2		380 23					323 5	
3							352 11	
4				335 16			315 19	
5	378 4	492 57		363 5			418 18	
6		440 8		467 28			398 20	
7		243 22		541 9		250 6	428 11	
8		377 73		271 5			283 5	
9		318 7		482 36			288 8	
10		367 17		337 33			422 33	
11	394 39	368 17						
12				341 17				
13	362 9	258 7		405 5				
14	445 31	288 13						
15	277 20	372 19						
16	209 *	308 9		532 26			382 19	
17	350 24	426 21		512 31			385 9	
18	474 19	315 48			303 45		385 6	
19	390 27	406 14	444 56	382 15			349 16	
20			278 51	389 42			262 47	
21				436 12	349 7		383 6	
22	415 81	286 7	387 106	362 31	320 19			
24							463 10	
25		278 23		395 33			432 41	
26				351 23	280 27		386 7	
27		390 12					392 33	
28				324 38	291 12		408 54	
29							336 14	
30				341 67			391 15	

SEPTEMBER	5					15					25				
	UT	LAT	DIST	DLON	UT	LAT	DIST	DLON	UT	LAT	DIST	DLON			
3C48	11.	12.	1.20	11	10.	12.	1.23	9.	10.	11.	1.25	7.			
3C144	15.	6.	0.99	17	14.	6.	1.04	17.	14.	5.	1.09	16.			
3C147	14.	14.	0.98	16.	13.	14.	1.03	16.	13.	13.	1.07	15.			
3C161	16.	-3.	0.93	18.	16.	-1.	0.98	15.	15.	-2.	1.02	14.			
3C237	20.	-14.	0.22	75.	19.	-7.	0.38	67.	18.	-4.	0.53	57.			
3C273	22.	13.	0.40	-68.	21.	22.	0.24	-78.	20.	57.	0.10	-90.			
3C298	24.	21.	0.76	-39.	23.	27.	0.66	-47.	22.	36.	0.54	-54.			
3C459	8.	9.	1.30	2.	8.	9.	1.30	-0.	7.	8.	1.29	-3.			

\*indicated data for which no error estimate is available since only two antennas were operating.



INFERRED IP MAGNETIC FIELD

BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		
1982	JUL 19								TA											TA				AT	AT *		TA			
1983	AUG 15				TA			AT		AT AT			AT	TA							IA *						TA			
1984	SEP 11			TA		AT			TA	T *							A *									IA * TA				
1985	OCT 8	* TA			T *		AT											TA	TA		AT									
1986	NOV 4						- AT											*	AT			AT	AT	AT						
1987	DEC 1	AT										- TA			- AT	- AT	- AT	TA					*			- AT				
1988	DEC 28								- AT *			TA	TA	TA T *					TA								- TA			
1989	JAN 24					*		TA			TA	TA	TA														AT			
1990	FEB 20	TA		- TA			TA			- TA	- TA	TA	TA	TA	TA A *	TA A *	TA A *	TA A *	TA A *	TA A *					A *				TA A *	
1991	MAR 19		AT			AT								*					TA		AT					A *			TA A *	
1992	APR 15		A * TA	T * AT				TA TA			T *					TA					- AT	- TA				A *			TA A *	
1993	MAY 12											AT				*		TA			AT AT									TA A *
1994	JUN 8	TA	TA	A *							- AT								T *	- TA		TA T *	TA T *			AT T *			TA A *	
1995	JUL 5	TA	TA	AT		TA		AT A *	TA		TA		TA	TA	AT									TA T *					TA A *	
1996	AUG 1			AT	IA *				TA				T *				*				AT						AT *			TA A *
1997	AUG 28										AT											T *		- AT	TA			TA AT		TA A *
1998	SEP 24																													TA A *

= definitely towards the sun     = definitely away from the sun  
 = towards the sun    A = away from the sun    \* = effect doubtful or not discernible    - = missing data

The table shows daily inferences of the polarity of the interplanetary magnetic field. The first half of the day is based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service now operated at Thule by the Danish Meteorological Institute is used for the second half of the day.

# STANFORD MEAN SOLAR MAGNETIC FIELD

BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
1983	AUG 10	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1984	SEP 6	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1985	OCT 3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1986	OCT 30	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1987	NOV 26	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1988	DEC 23	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1989	1979 JAN 19	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1990	FEB 15	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1991	MAR 14	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1992	APR 10	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1993	MAY 7	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1994	JUN 3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1995	JUN 30	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1996	JUL 27	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1997	AUG 23	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1998	SEP 19	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

POLARITY OF THE MEAN SOLAR MAGNETIC FIELD:  = FIELD > 2μT,  = -2μT ≤ FIELD ≤ 2μT,  = FIELD < -2μT  
 No box visible indicates no data available for that day.

Note: Data are taken daily at 2000 UT. Dates given are not Bartels Rotation dates. These earlier dates correspond to the occurrence of phenomena on the sun which affect the Earth during the given Bartels Rotation.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

1979

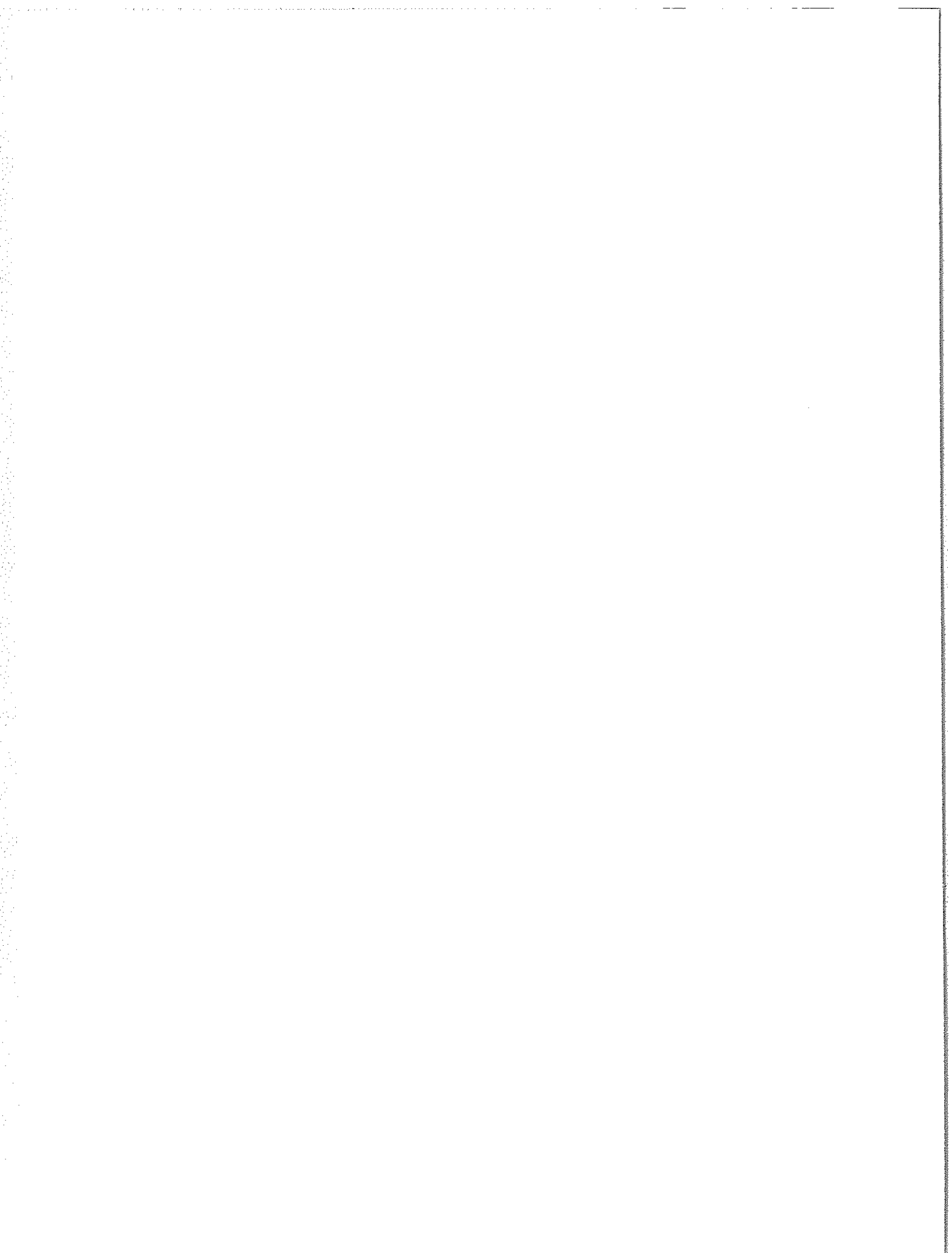
1978

DAY	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.
01	26	-11	-18	-72	11	.	-36	-4	26	41	97	24
02	32	-20	-21	-39	.	-1	.	16	13	82	86	21
03	15	-14	-36	-7	15	30	.	57	6	137	70	6
04	18	-8	-28	17	-6	27	-24	44	10	115	35	4
05	2	-3	-19	19	-25	-13	-6	11	45	104	-33	2
06	-24	-7	-12	9	-26	1	46	9	68	78	-61	-6
07	-12	-20	3	5	.	50	64	14	101	15	-81	-8
08	-7	-29	-6	-15	.	88	56	67	134	-27	-80	-8
09	.	-37	-17	-26	.	59	.	102	126	-50	-70	-6
10	-35	-29	-3	-37	27	39	.	124	75	-76	-68	-16
11	-34	-32	5	-19	.	40	21	138	31	-82	-75	-43
12	-42	-14	9	-16	27	30	63	100	-13	-52	-23	-59
13	-36	2	.	13	45	78	100	51	-66	-52	-23	-46
14	-27	7	16	31	45	78	106	-12	-104	-37	-20	-33
15	-26	8	20	43	21	62	.	-51	.	-28	-24	-38
16	-36	9	.	65	36	27	24	.	.	-42	-30	-61
17	-48	5	34	.	48	6	45	-121	.	-43	-26	-57
18	-44	-1	42	59	59	.	.	-117	-27	-35	-32	-41
19	-50	.	.	30	37	-52	-56	-72	-29	-32	-16	4
20	-33	4	55	18	18	.	-81	-40	-36	-37	-10	.
21	-21	3	35	32	9	-86	-81	-27	-34	-24	.	41
22	-14	19	40	27	-15	.	.	-32	-43	0	-16	55
23	5	20	28	-3	.	-80	-51	-40	-56	-7	6	58
24	31	25	27	-20	-54	-52	-41	.	-51	-7	33	68
25	43	23	18	-26	-64	.	-28	.	-30	10	58	74
26	42	24	2	-32	-70	19	.	-99	-16	17	69	77
27	40	29	-17	-63	-64	10	-29	-92	-17	29	83	47
28	29	30	-48	-51	-27	0	-36	-57	-4	47	92	40
29	15	17	-61	-36	12	.	-12	.	19	64	90	32
30	2	-3	-65	-22	.	.	-26	3	10	93	82	1
31		-16		-21	.		-28		9		53	-1

BOULDER GEOMAGNETIC SUBSTORM LOG

SEPTEMBER 1979

DATE	ONSET TIME	DIRECTION	COMMENTS	DATE	ONSET TIME	DIRECTION	COMMENTS
01			Field unsettled after 1700 UT. No distinctive SS activity.	19			Quiet day.
02	0900		Field slightly unsettled. Weak SS.	20	1205		Weak SS.
03	0645	= center	Field intermittently unsettled throughout the day.		1305		Onset of sustained moderate to strong SS activity with field recovery at 1730 UT.
04	0525	East	Onset of multiple injections SS activity with final recovery near 0915 UT. Field remained unsettled balance of the day with no distinctive SS activity.	21			Unsettled field conditions throughout the day.
	0715	West				0040	East
05	0220	East	Boulder in partial ring current sector.		0505	East	
	1225				0850	West	
	1615			22	1315		Moderate SS along auroral oval stations but very strong response at Ft. Yukon.
06	0410	East		23			Field intermittently unsettled.
	0935	West		24	0420	East	Weak SS.
07	0420	East	Weak SS.		1055		Onset of sustained moderate to strong SS activity with field recovery at 1600 UT.
	0915	West	Weak SS.	25	0615	East	
08	0830	= center	Moderate SS.		1450		Slow onset to moderate to strong SS with field recovery at 1820 UT.
09	0605	East	Weak SS.	26			Field unsettled to active throughout the day.
10	0520	East	Weak SS.				
	1045	West	Weak SS.		0645	East	1st of double onset.
	1730		Moderate SS, slow onset.		0720	East	2nd of double onset.
	2040		Cape Parry northward (polar cap only).		1035	West	
11	0650	= center			1300	West	
	1010	West	Moderate SS.		1400	West	
	1500			27	0310	East	
	1620				1230	West	
	1930		Sachs Harbour - Johnson Pt. only.	28			Field unsettled to active throughout the day.
	2240		Sachs Harbour - Johnson Pt. only.		0430	East	1st of double onset, weak SS.
12			Field unsettled after 1700 UT with no distinctive SS activity.		0500	East	2nd of double onset, moderate SS.
13			Quiet day.	14	2040	West	
					2210	West	
14	2040		Cape Parry northward (polar cap only).				
			Cape Parry northward (polar cap only).	15			
15			Quiet day.	16			
16			Minor perturbations, no distinctive SS activity.				
17	0635	East		29	0325	East	Field unsettled throughout the day.
	2115		Field became active, no distinctive SS activity.		0355	East	Weak SS.
18			The field remained active until an SSC at 0545 UT. Magstorm conditions existed through 1730 UT.		0750	West	Weak SS.
					0820	West	Weak SS.
	0735		Strong SS.		1240	West	Moderate SS.
	0955		Strong SS.	30			Field intermittently active, no distinctive network SS activity.
	1150		Strong SS.				



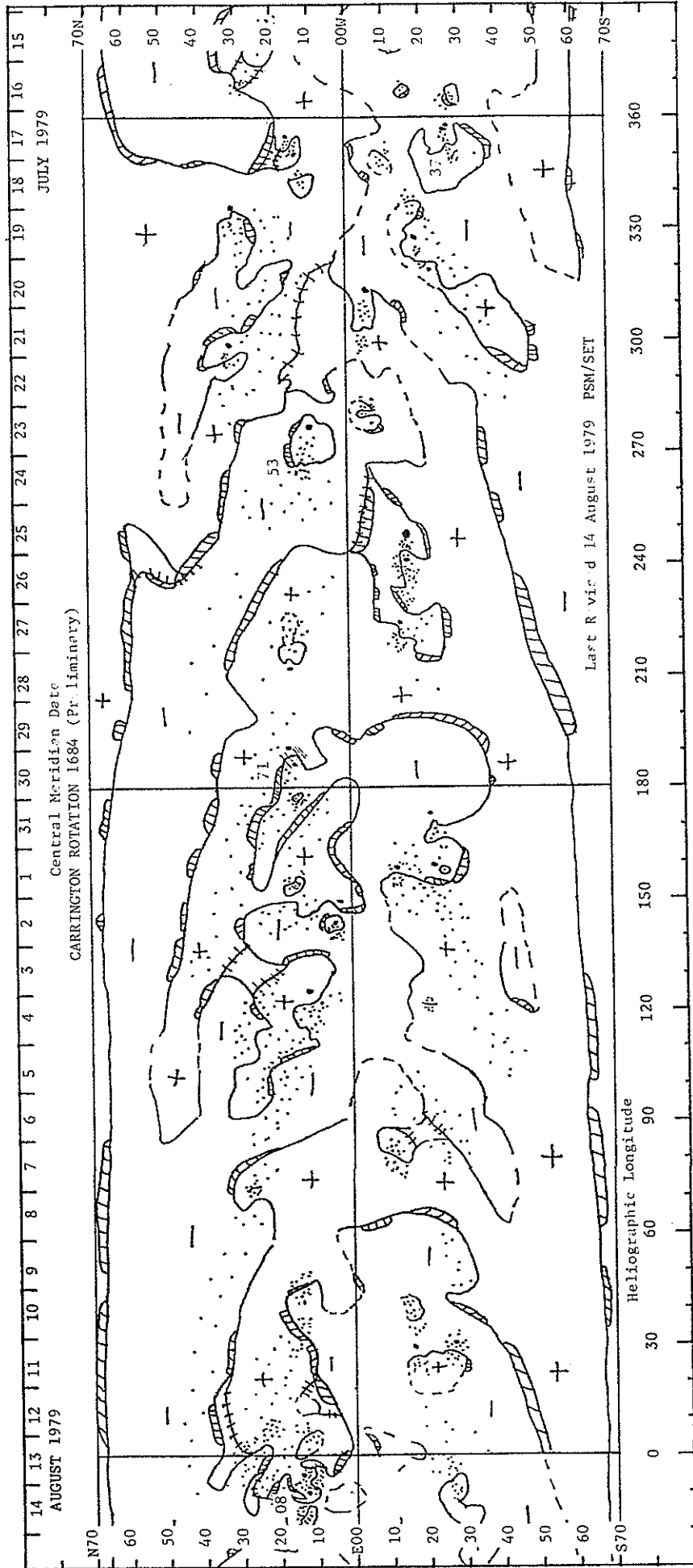
SGD 422 Part I (Prompt)

## AUGUST 1979 DATA

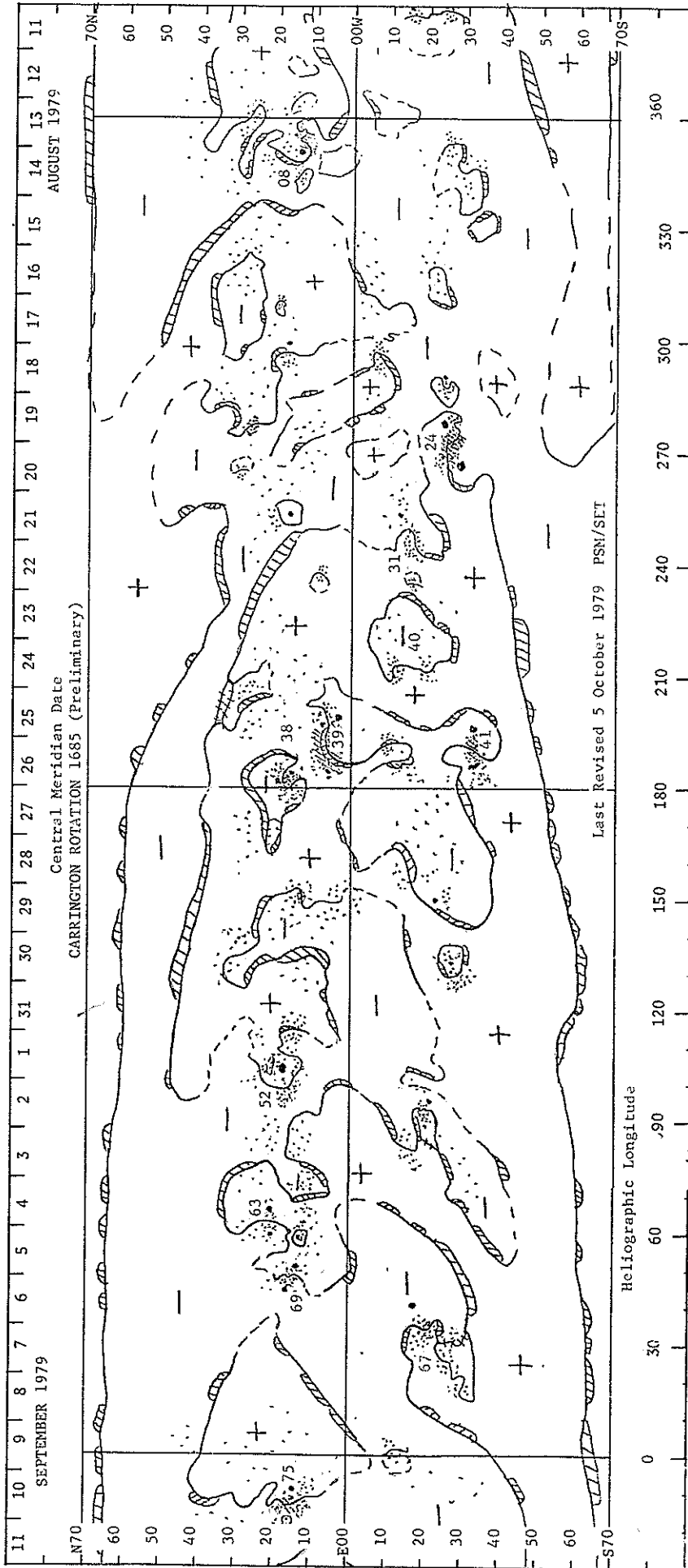
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# H $\alpha$ SYNOPSIS CHART CARRINGTON ROTATION 1684 (PRELIMINARY)



# H $\alpha$ SYNOPTIC CHART CARRINGTON ROTATION 1685 (PRELIMINARY)

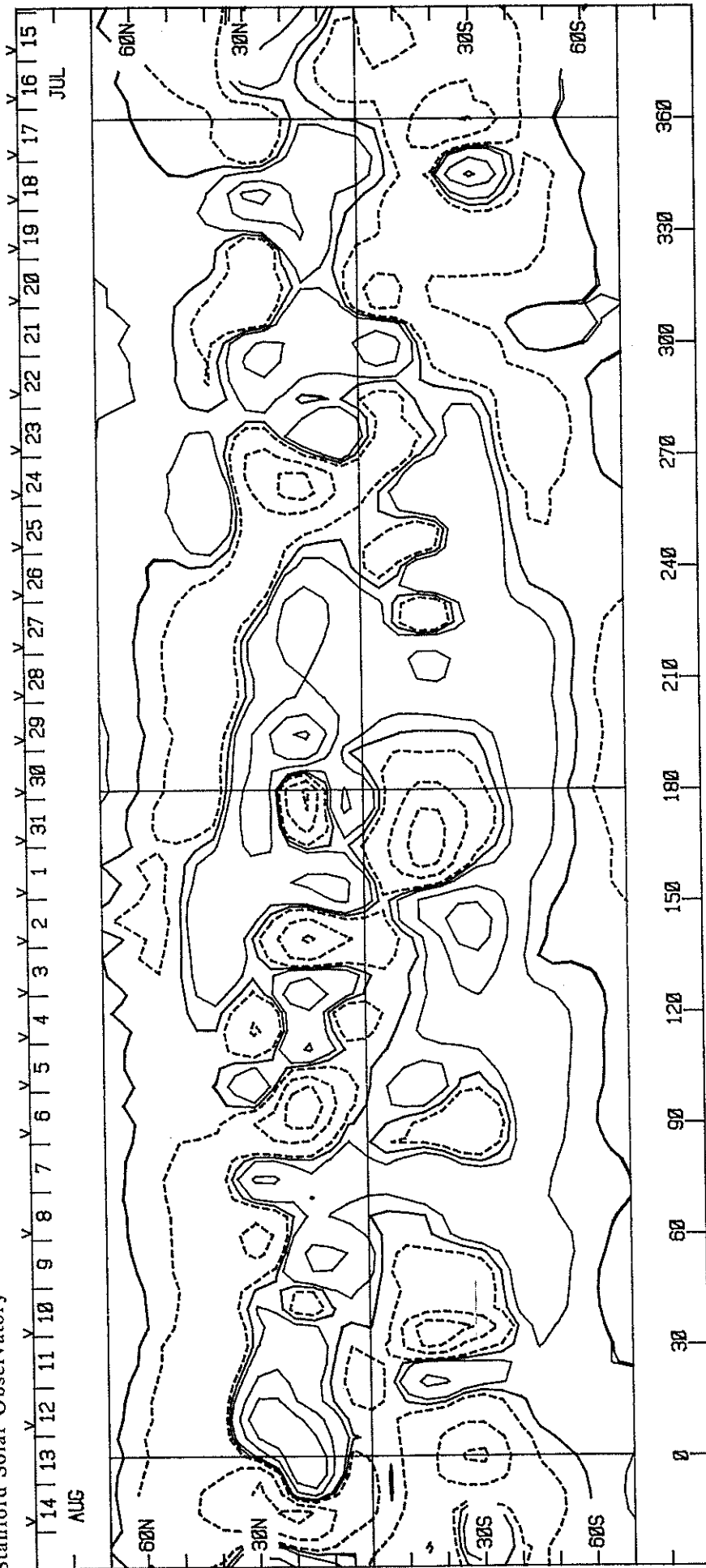




SOLAR MAGNETIC FIELD SYNOPTIC CHART  
CARRINGTON ROTATION 1684

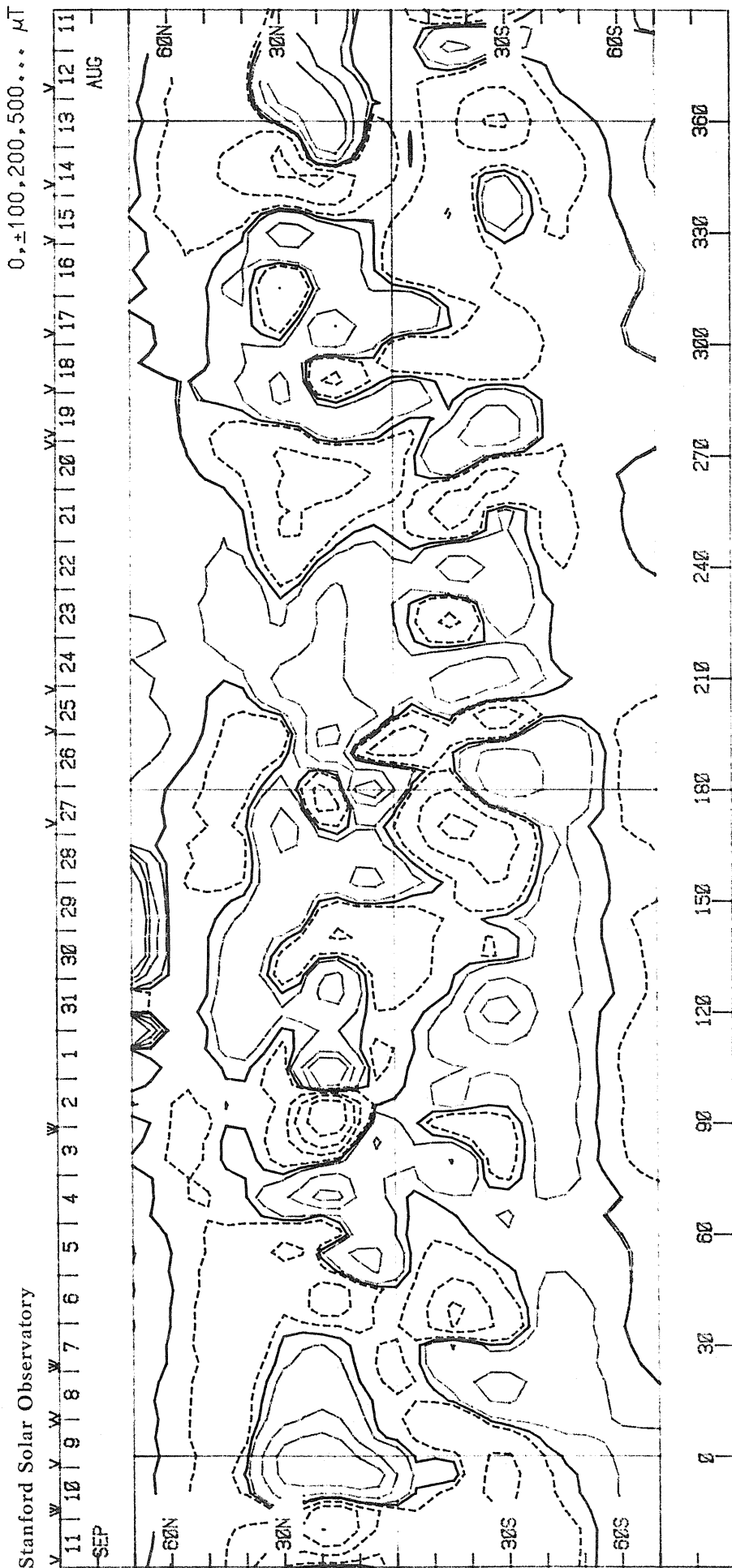
0, ±100, 200, 500... μT

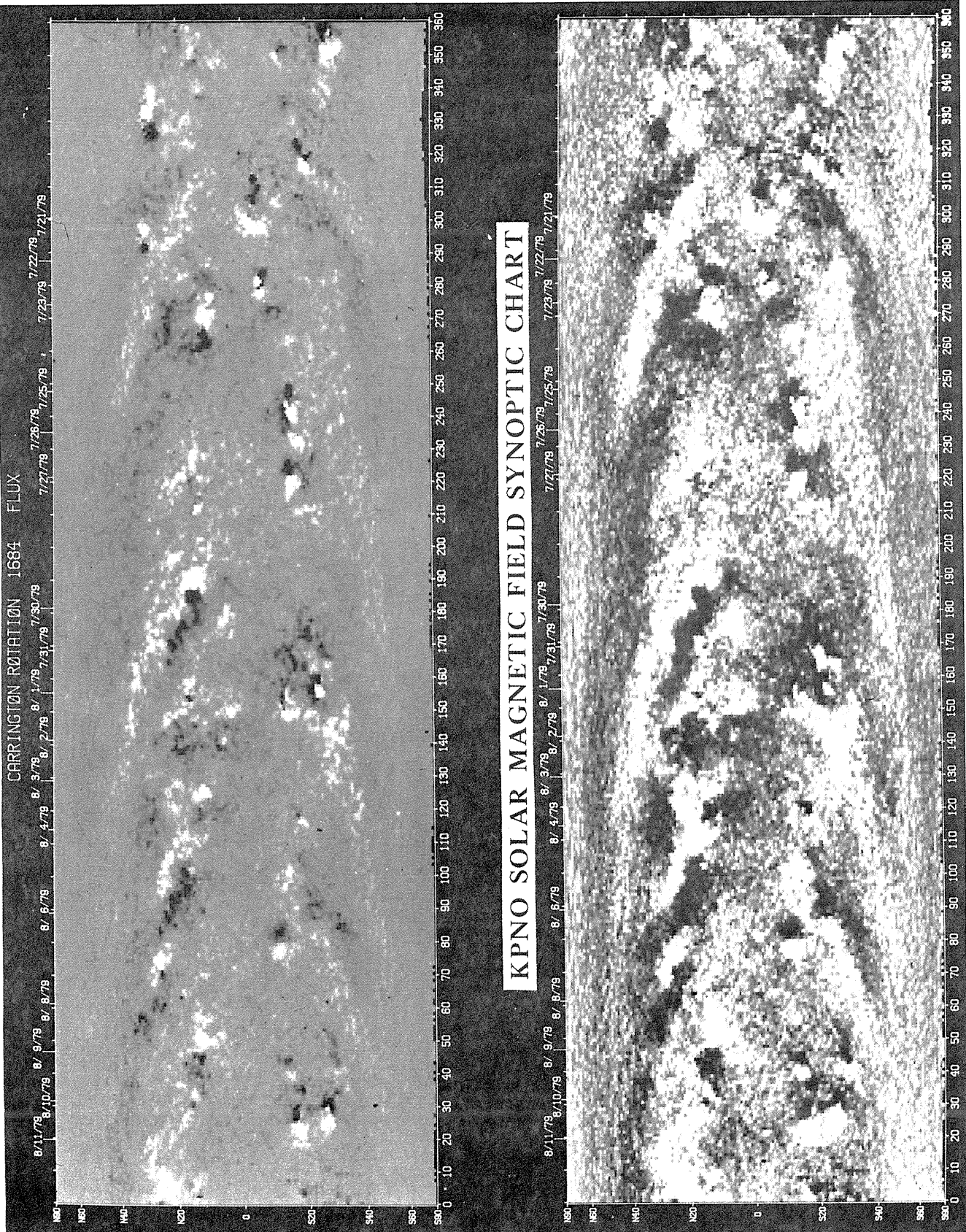
Stanford Solar Observatory



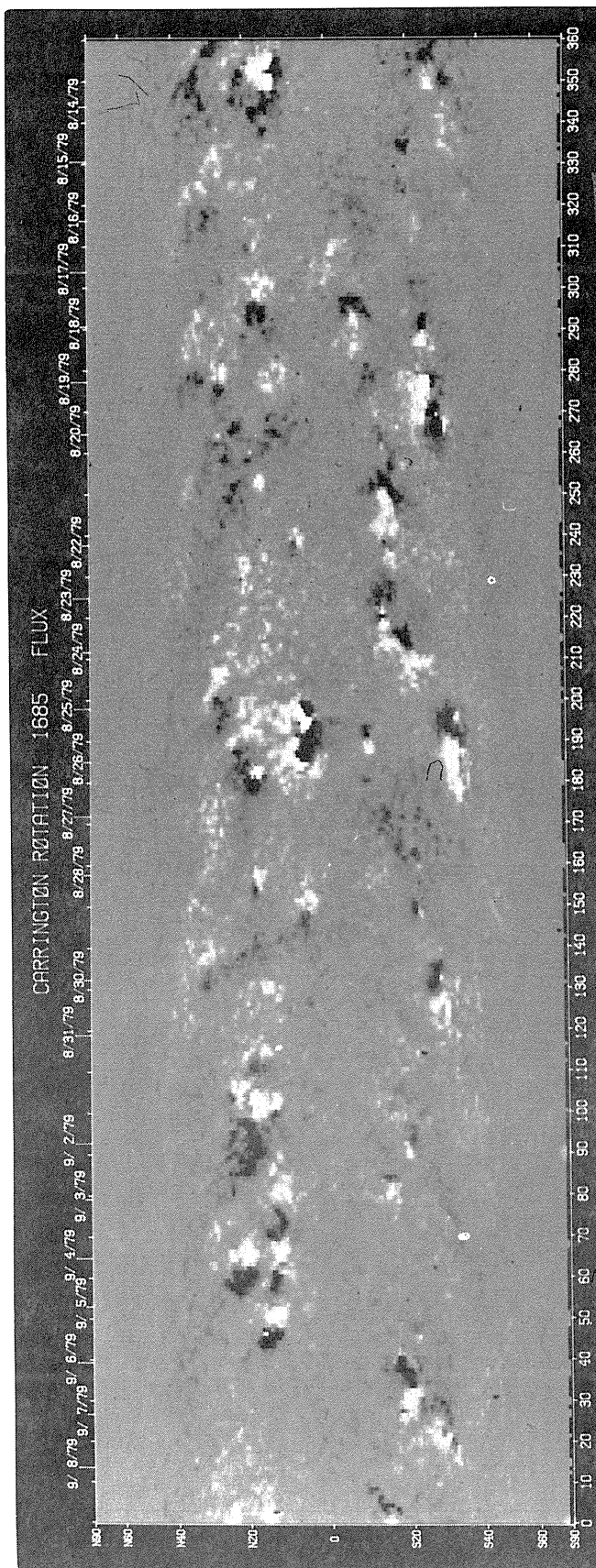
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## CARRINGTON ROTATION 1685

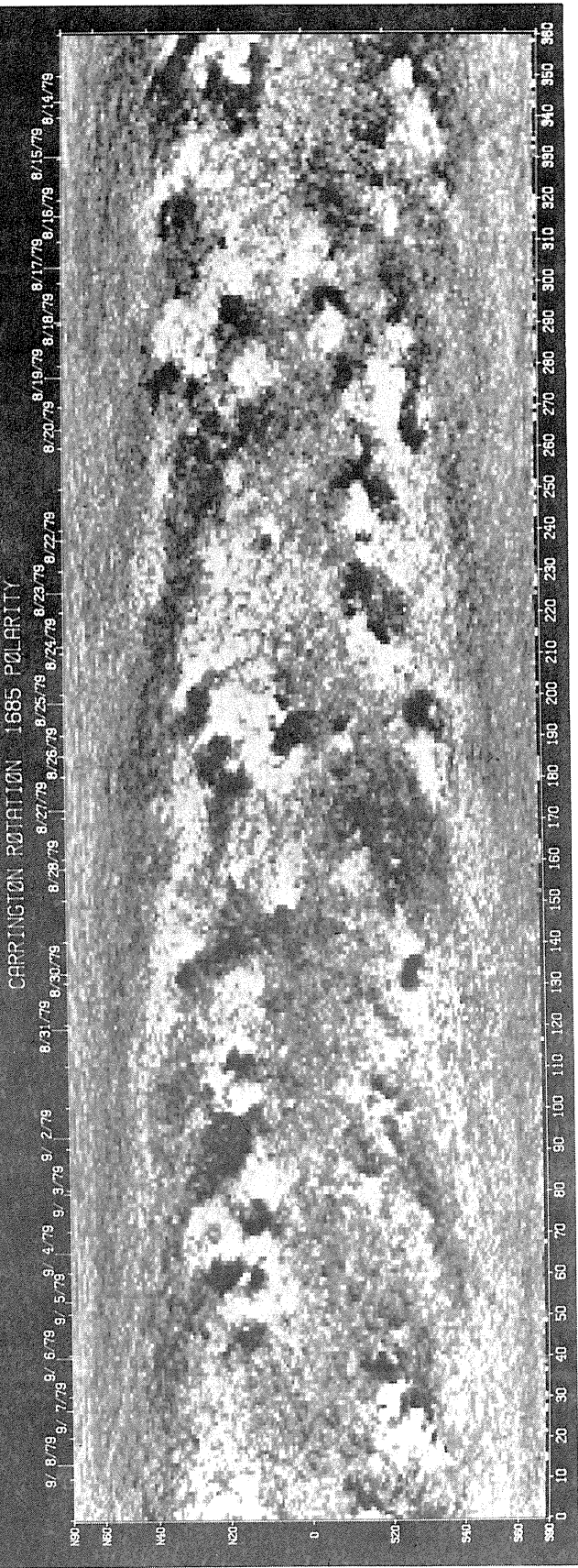




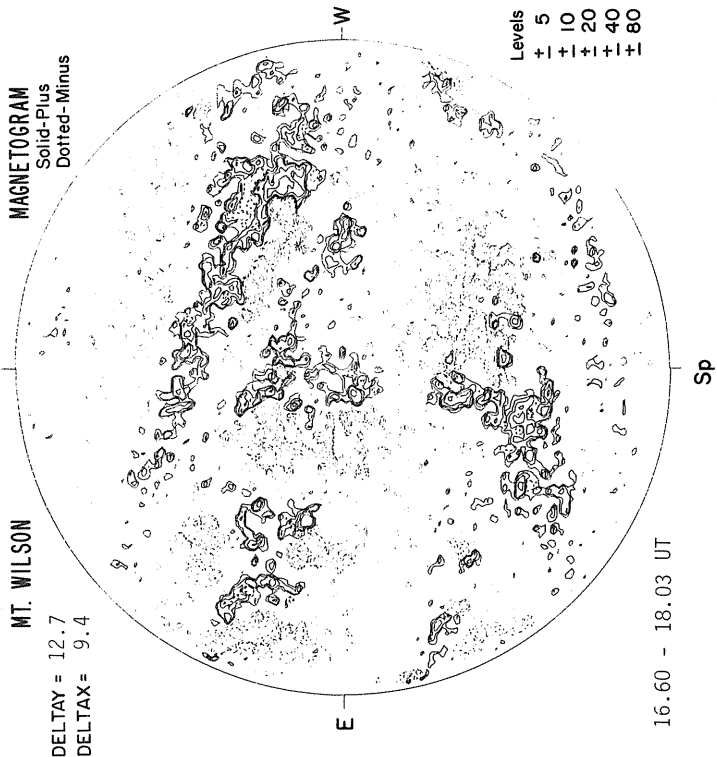
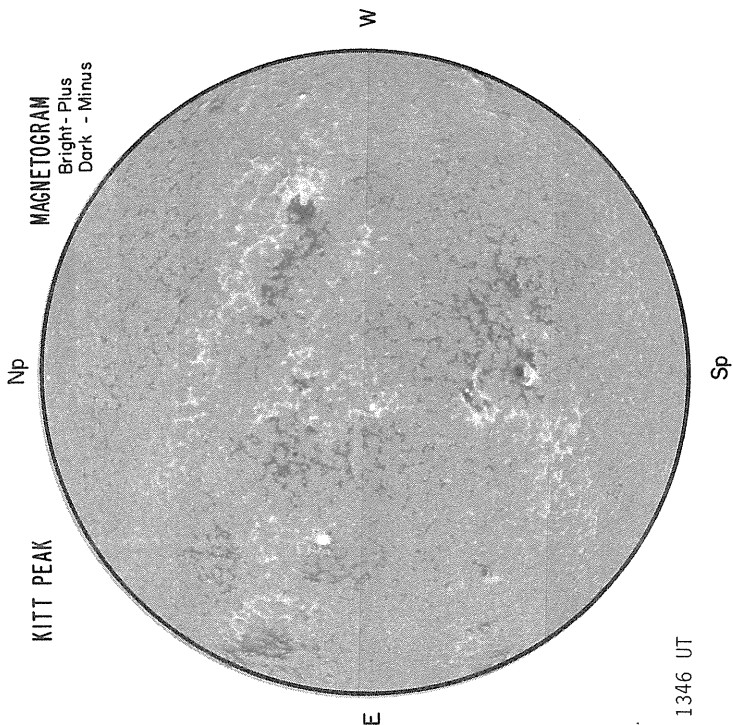
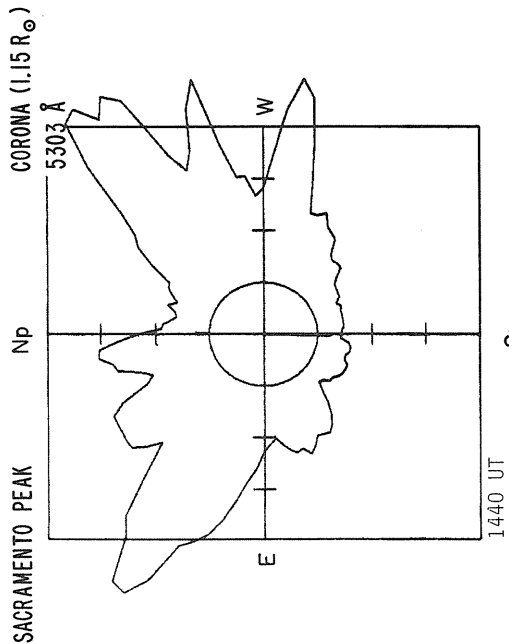


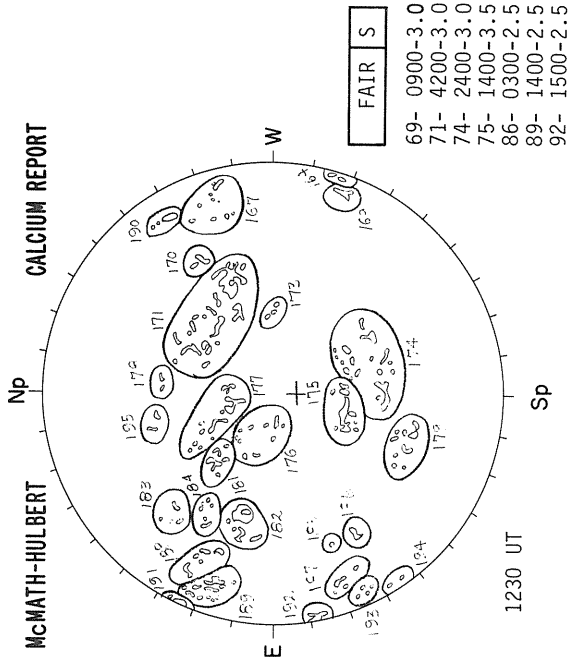
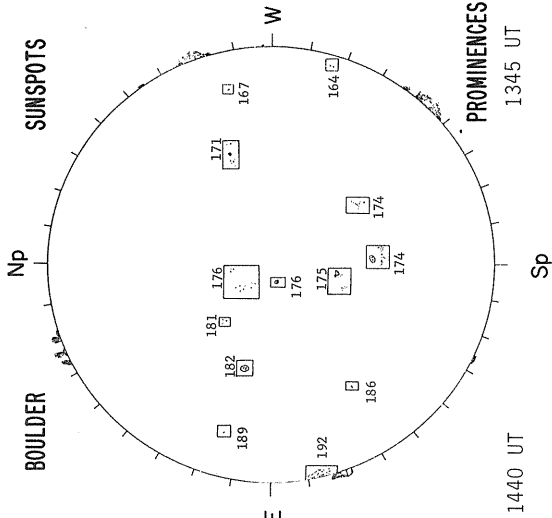
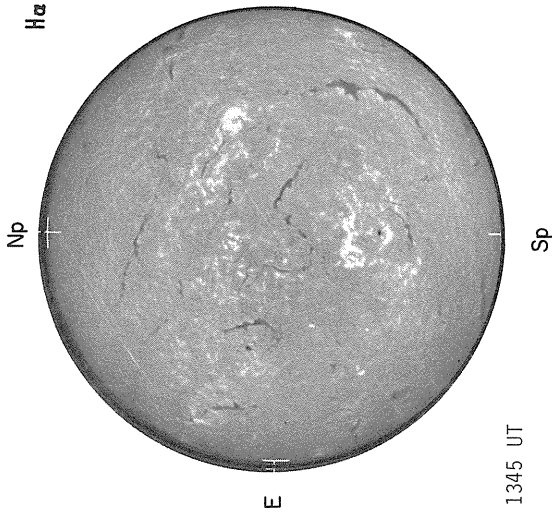


KPNO SOLAR MAGNETIC FIELD SYNOPSIS CHART



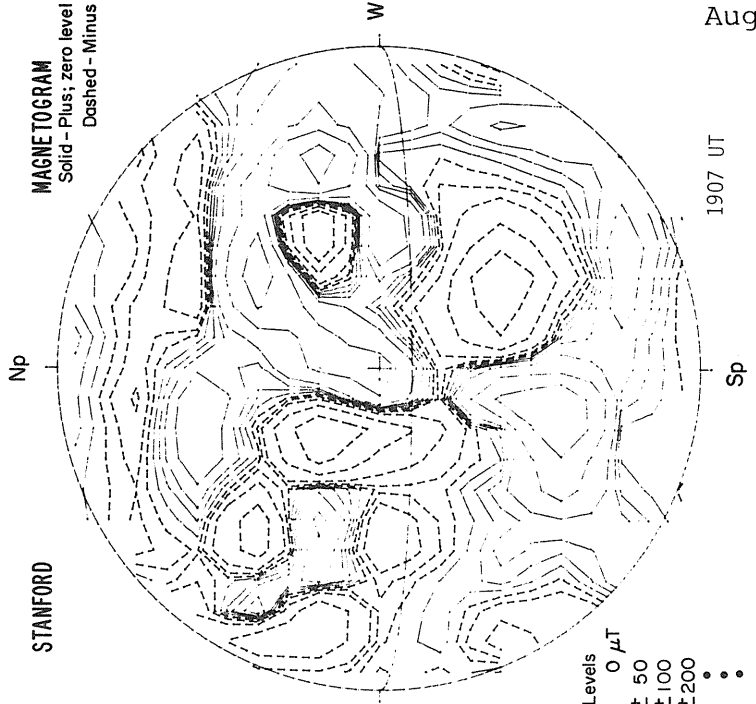
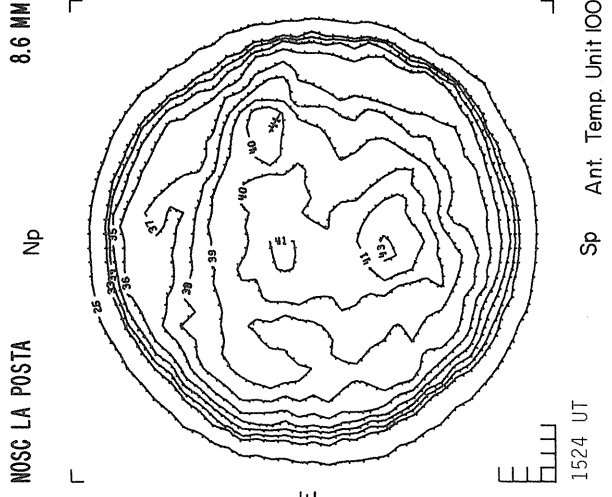
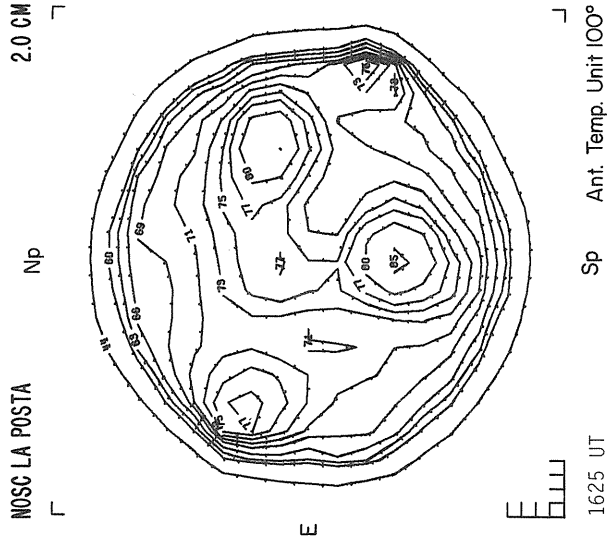
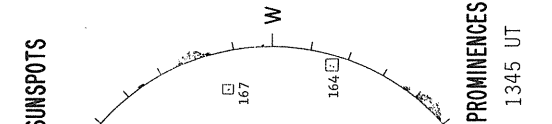
AUGUST 1, 1979 (P = 10.59,  $B_0 = 5.76$ ,  $L_0 = 163.82$ )





FAIR	S
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69- 0900-3.0  
71- 4200-3.0  
74- 2400-3.0  
75- 1400-3.5  
86- 0300-2.5  
89- 1400-2.5  
92- 1500-2.5



Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
•  
•  
•

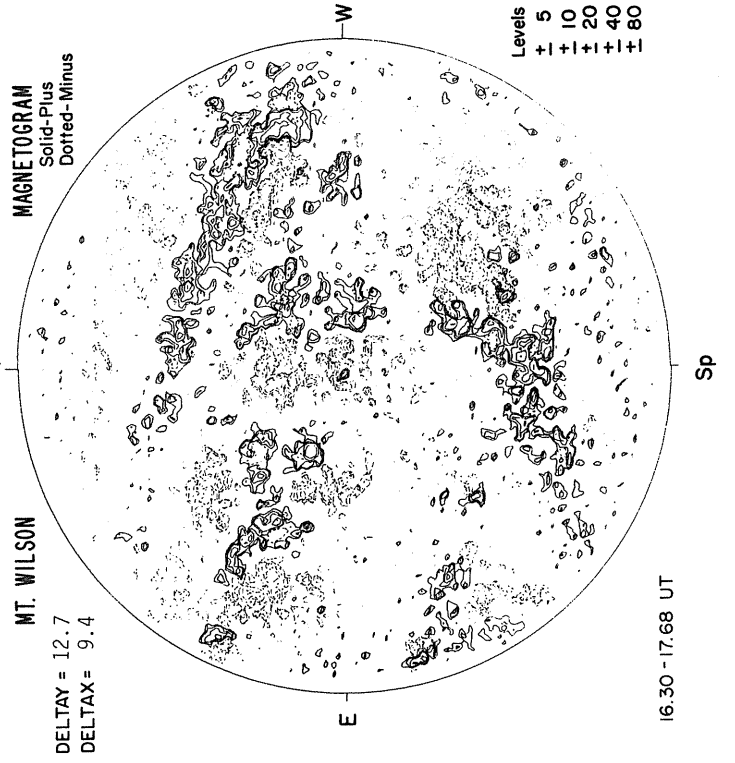
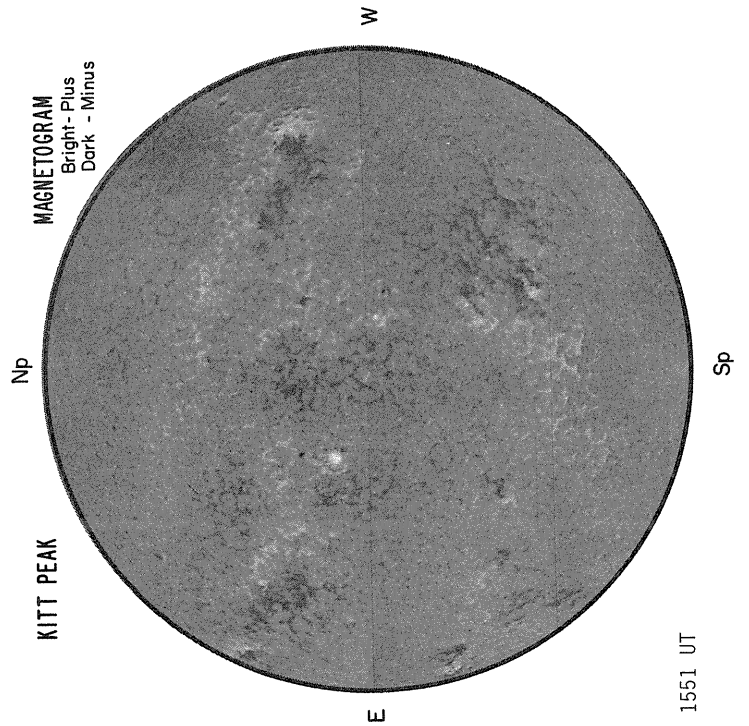
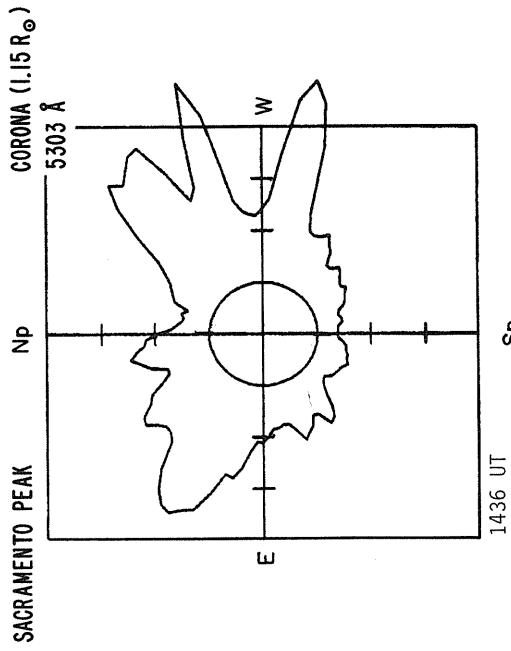
Sp Ant. Temp. Unit 100°K

Sp Ant. Temp. Unit 100°K

1524 UT

1625 UT

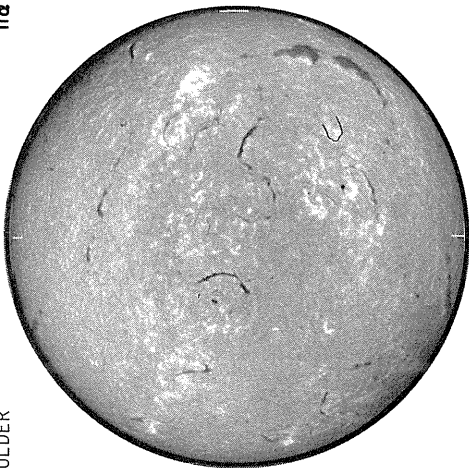
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O2

BOULDER

Np



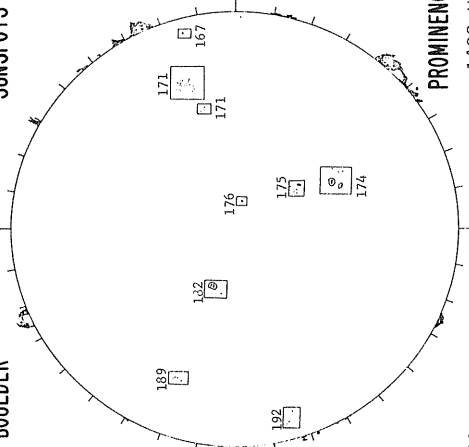
E

1402 UT

H $\alpha$

BOULDER

Np



W

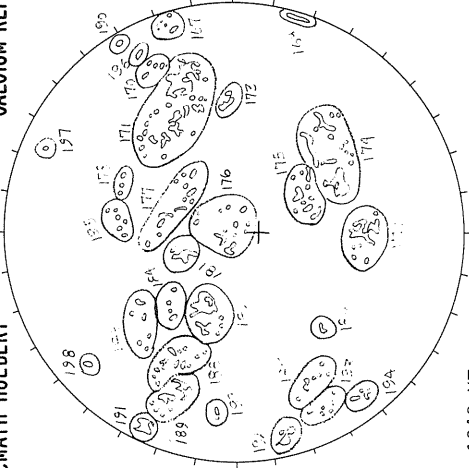
E

1430 UT

SUNSPOTS

McMATH-HULBERT

Np



W

E

1340 UT

CALCIUM REPORT

V	GOOD	S
69-	1000-2.5	
71-	4500-3.5	
74-	2600-3.0	
75-	1100-2.5	
86-	0200-3.0	
91-	1200-3.0	
92	1100-3.0	

PROMINENCES

1402 UT

NOSC LA POSTA

Np

2.0 CM



E

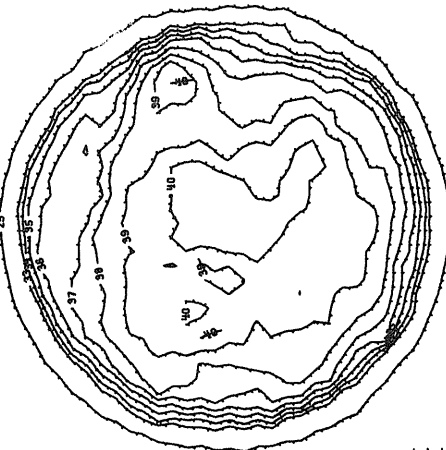
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1623 UT

NOSC LA POSTA

Np

8.6 MM



E

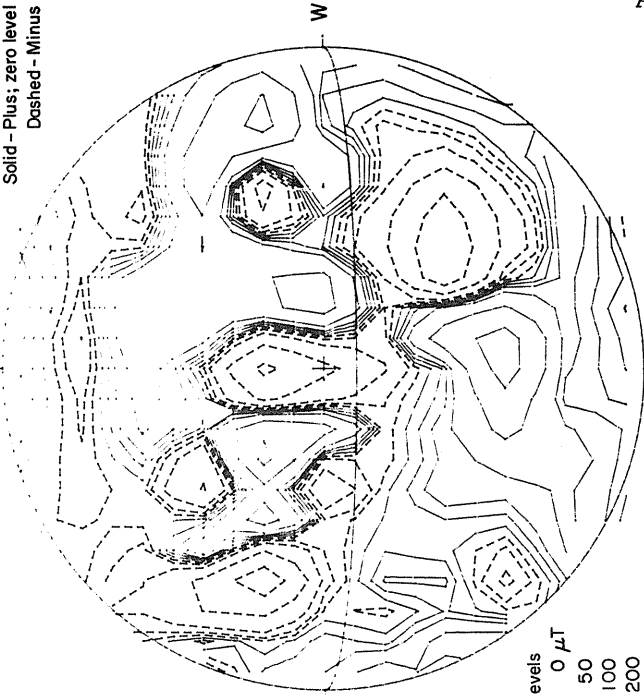
Sp Ant. Temp. Unit 100° K

1518 UT

STANFORD

Np

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

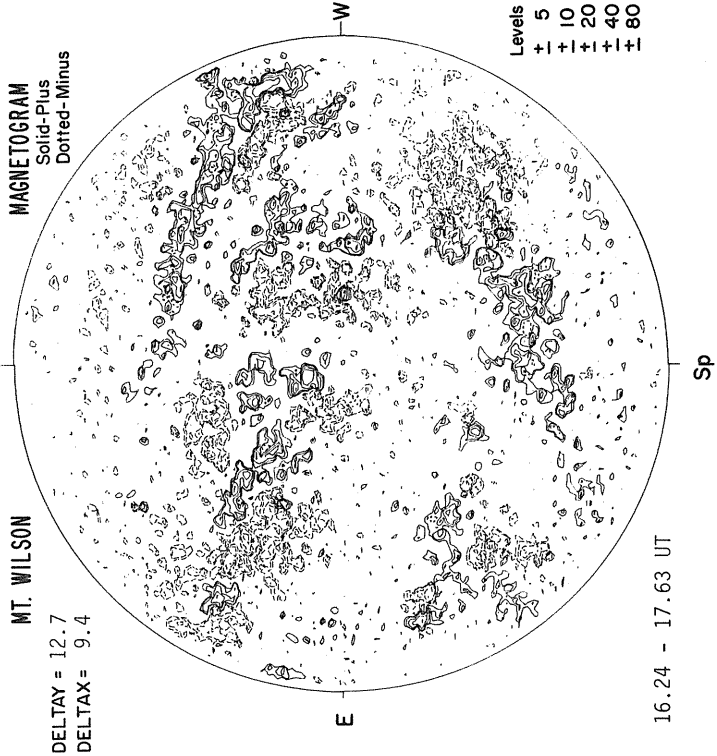
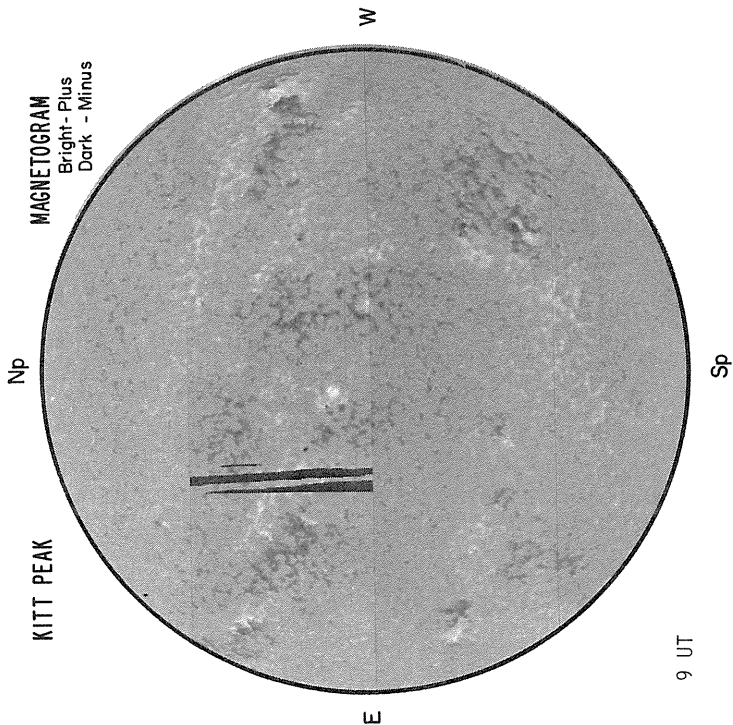
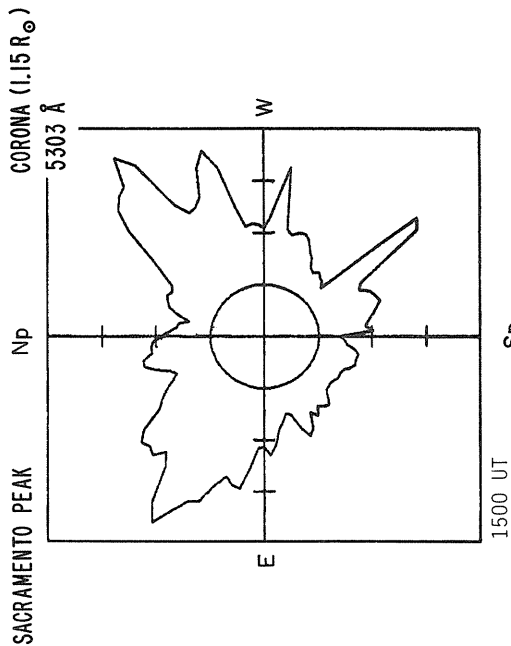


Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
•••

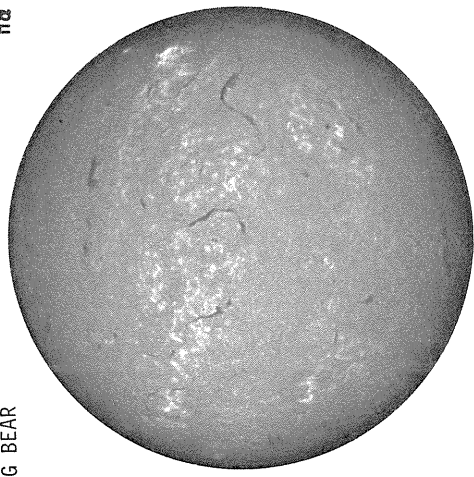
1921 UT



AUGUST 3, 1979 (P = 11.39, B<sub>0</sub> = 5.91, L<sub>0</sub> = 137.37)

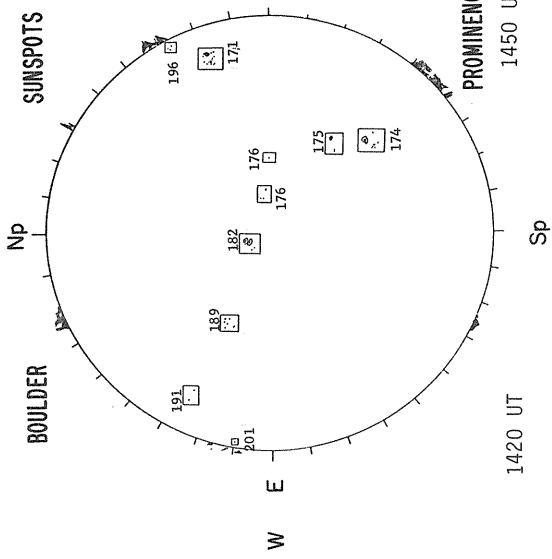


O3  
BIG BEAR



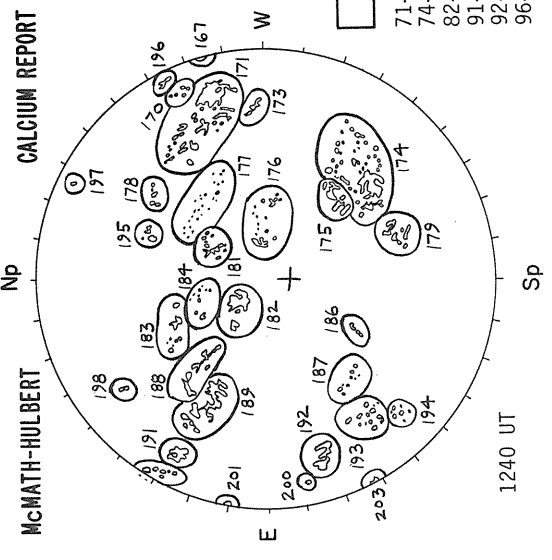
2038 UT

H $\alpha$



1420 UT

SUNSPOTS



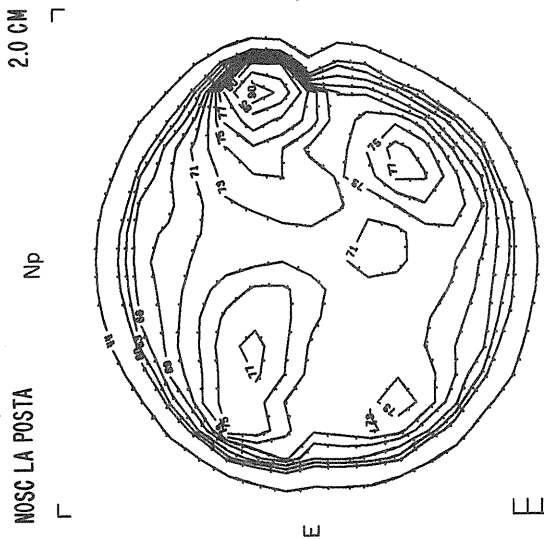
1240 UT

CALCIUM REPORT

GOOD	M
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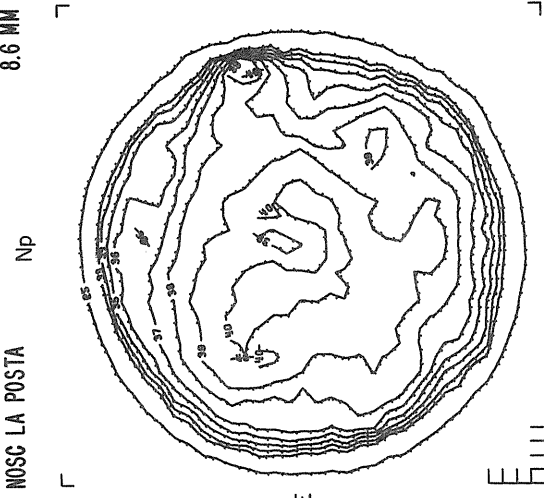
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91- 1300-2.5  
92- 1300-2.5  
96- 0600-3.5

MOSC LA POSTA



1649 UT

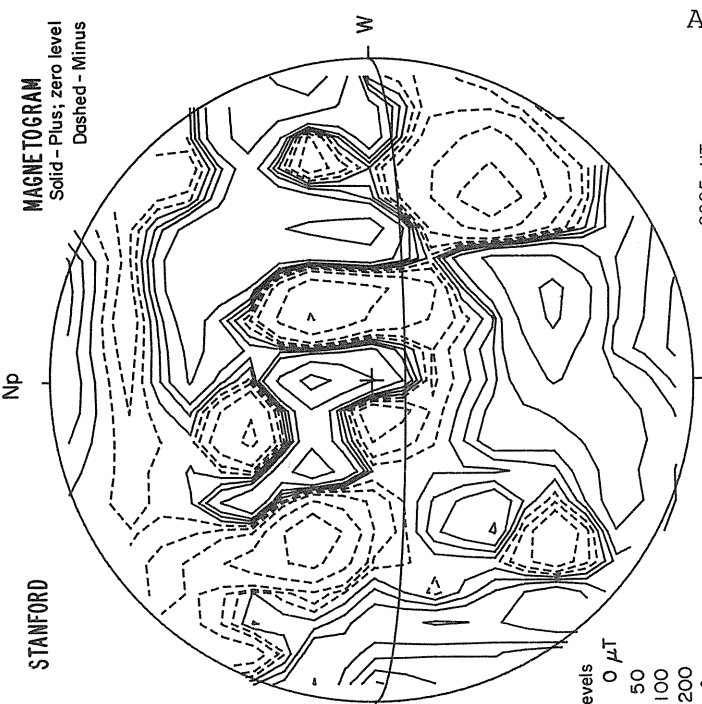
2.0 CM



1555 UT

8.6 MM

STANFORD

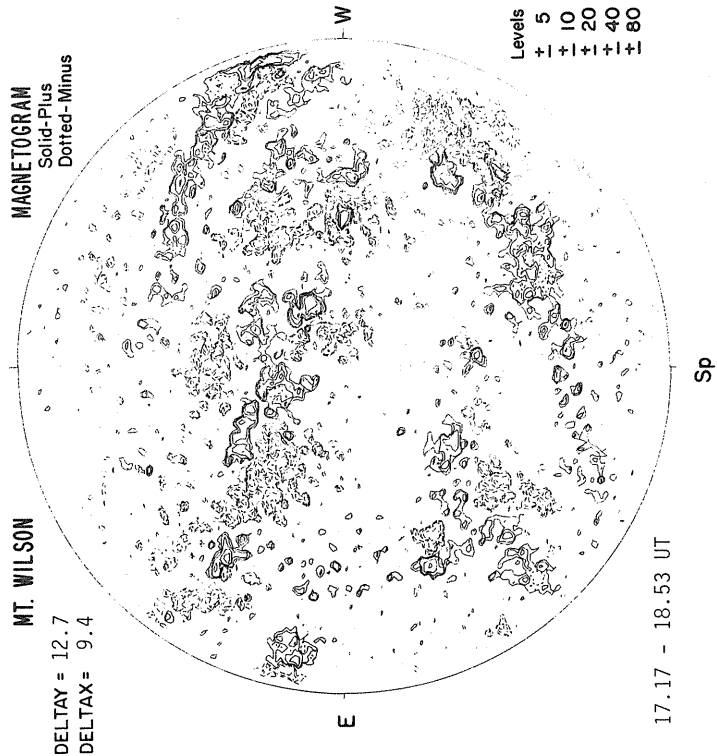
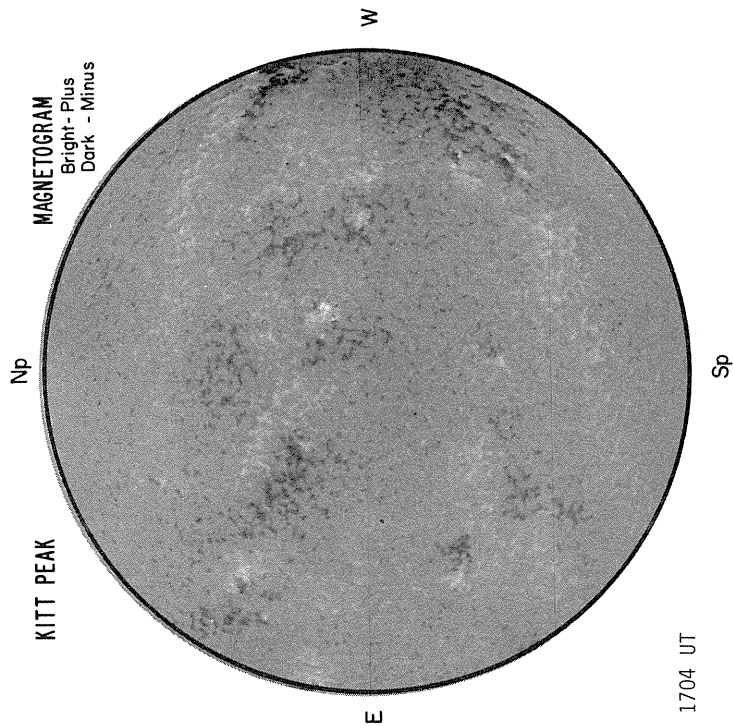
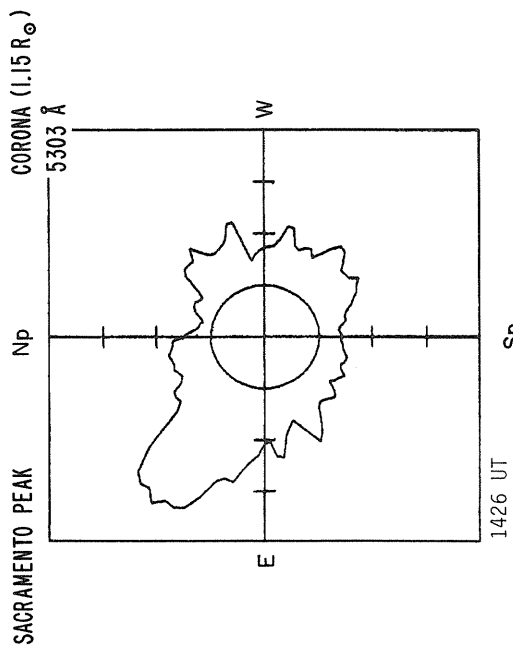


2025 UT

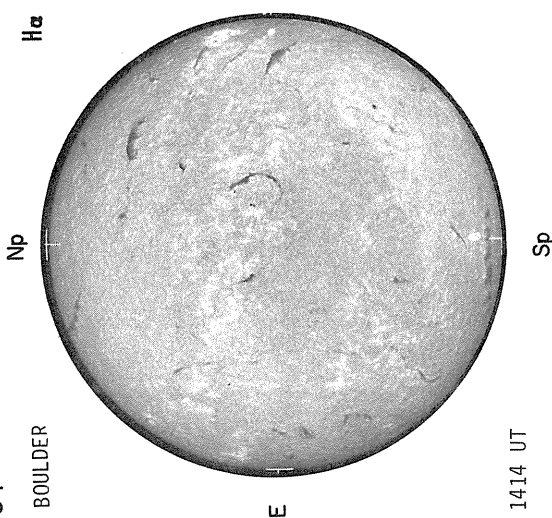
MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
•••

AUGUST 4, 1979 (P = 11.78, B<sub>0</sub> = 5.97, L<sub>0</sub> = 124.14)

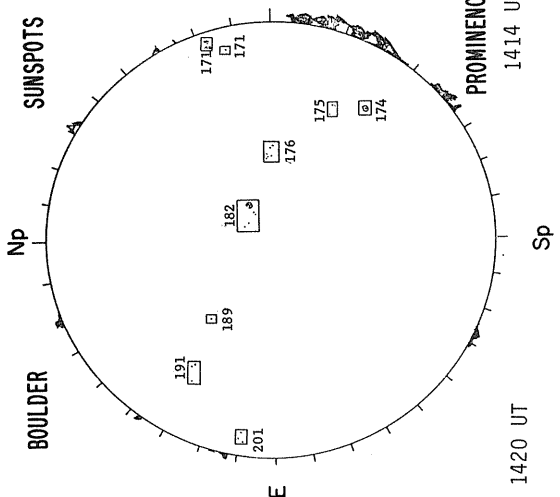


O4  
BOULDER



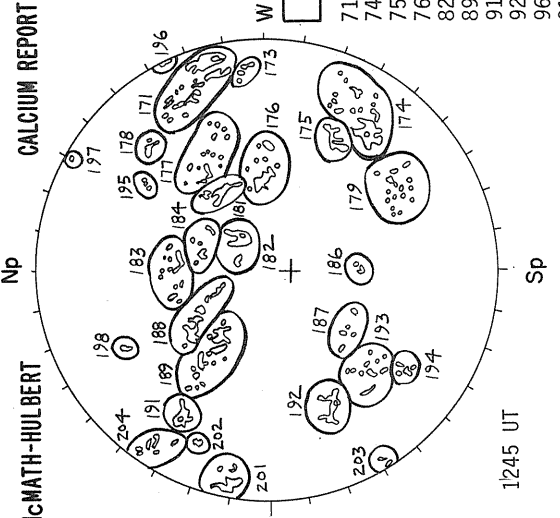
H $\alpha$

BOULDER



SUNSPOTS

McMATH-HULBERT



CALCIUM REPORT

GOOD	S
71- 4500-3.5	
74- 2800-2.5	
75- 1100 2.5	
76- 1000-2.5	
82- 1200-2.5	
89- 1600-2.5	
91- 1200-2.5	
92- 1200-3.0	
96- 0600-2.5	
01- 1600-2.5	

PROMINENCES

1414 UT

1420 UT

1245 UT

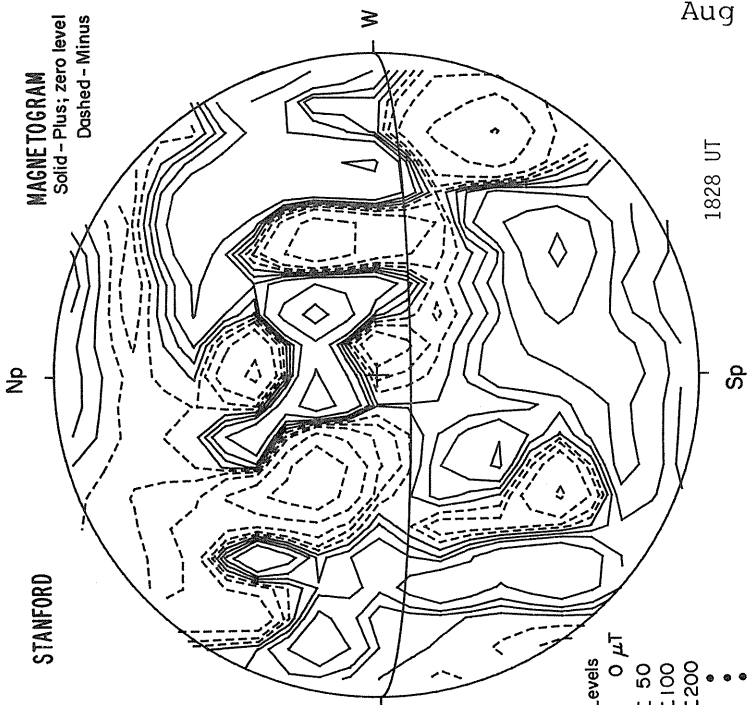
MOSC LA POSTA

2.0 CM

NOSC LA POSTA

8.6 MM

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus



STANFORD

1828 UT

NO DATA

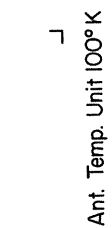
SCHEDULE

NO DATA

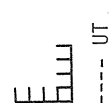
SCHEDULE



Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200



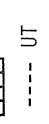
Ant. Temp. Unit 100°K



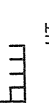
Ant. Temp. Unit 100°K

NO DATA

SCHEDULE



Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200



Ant. Temp. Unit 100°K

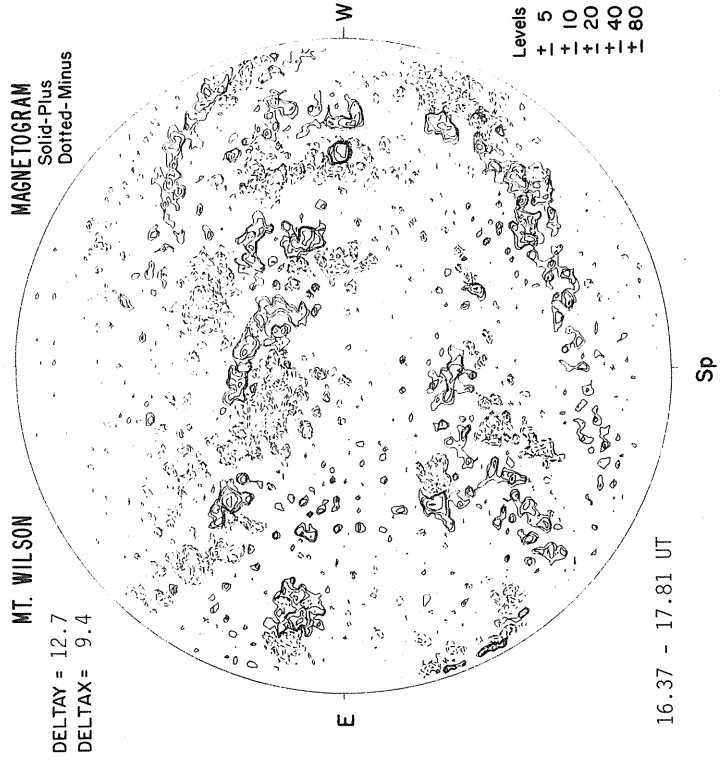
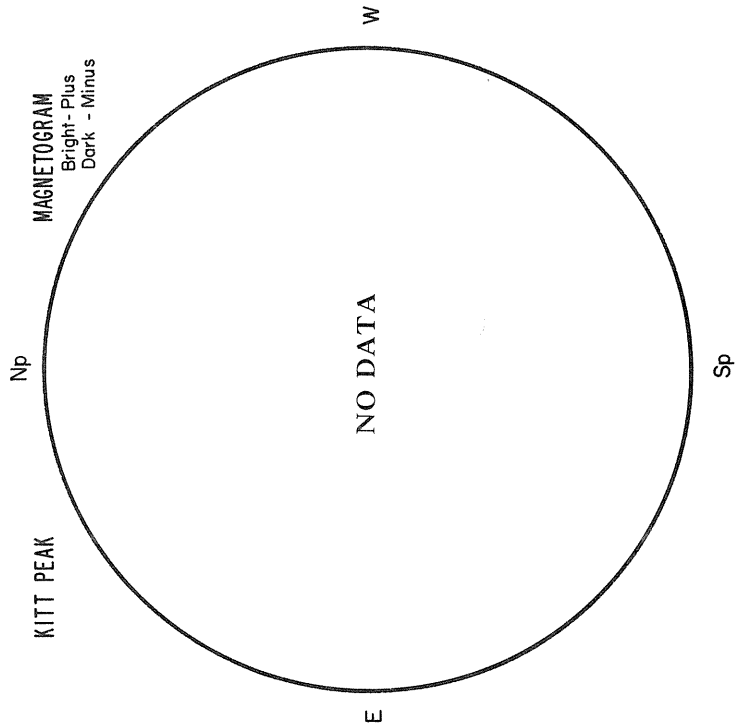
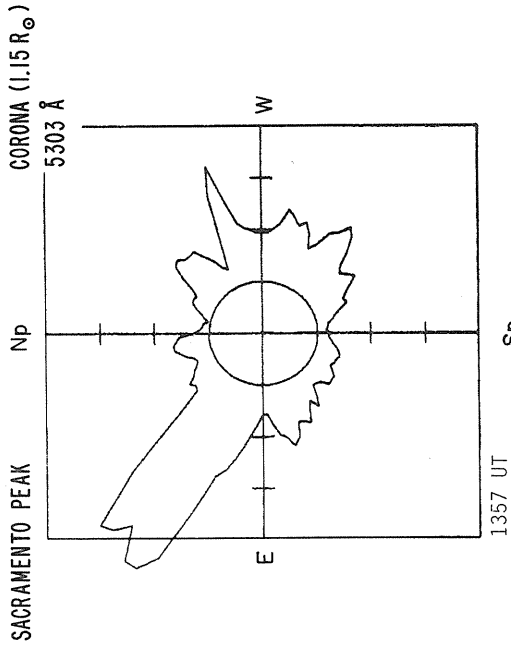
1414 UT

1420 UT

1245 UT

1828 UT

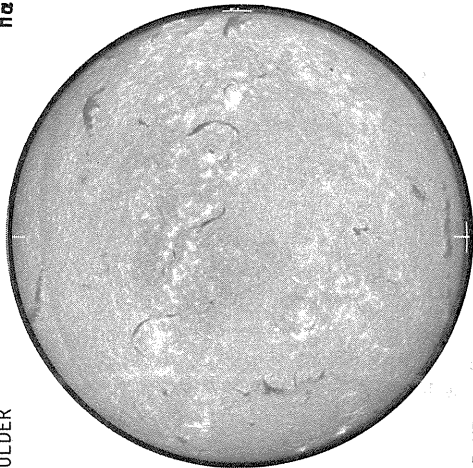
AUGUST 5, 1979 (P = 12.16, B<sub>0</sub> = 6.04, L<sub>0</sub> = 110.92)



O5

BOULDER

Np



E

1335 UT

H $\alpha$

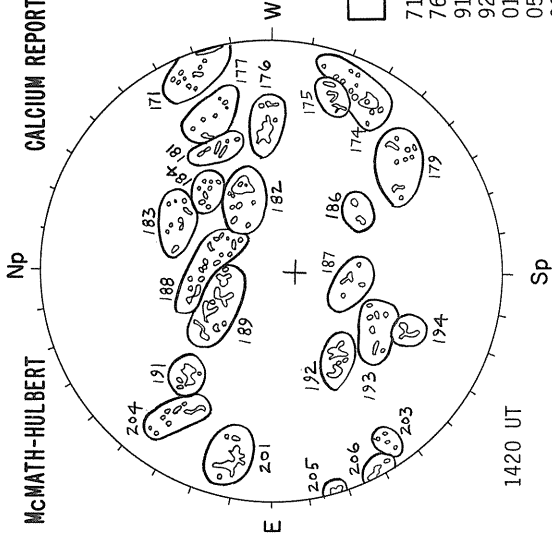
BOULDER

Np

SUNSPOTS

McMATH-HULBERT

CALCIUM REPORT

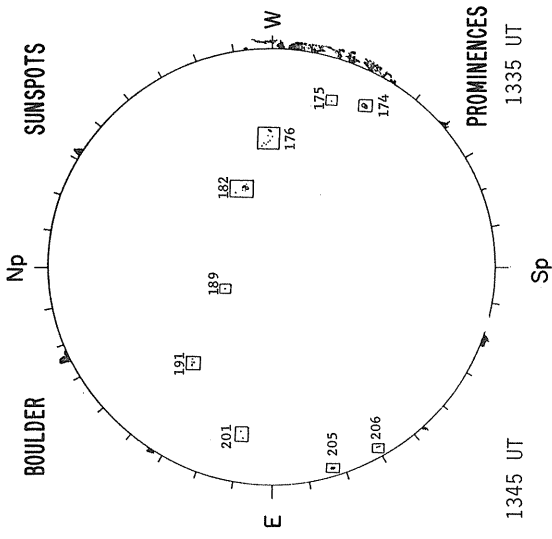


FAIR S

- 71- 2000-2.5
- 76- 1200-3.0
- 91- 1000-2.5
- 92- 1100-2.5
- 01- 1800-3.0
- 05- 0800-3.0
- 06- 1000-3.0

PROMINENCES

1335 UT



1345 UT

NOSC LA POSTA

Np

2.0 CM

NOSC LA POSTA

Np

8.6 MM

NO DATA

SCHEDULE

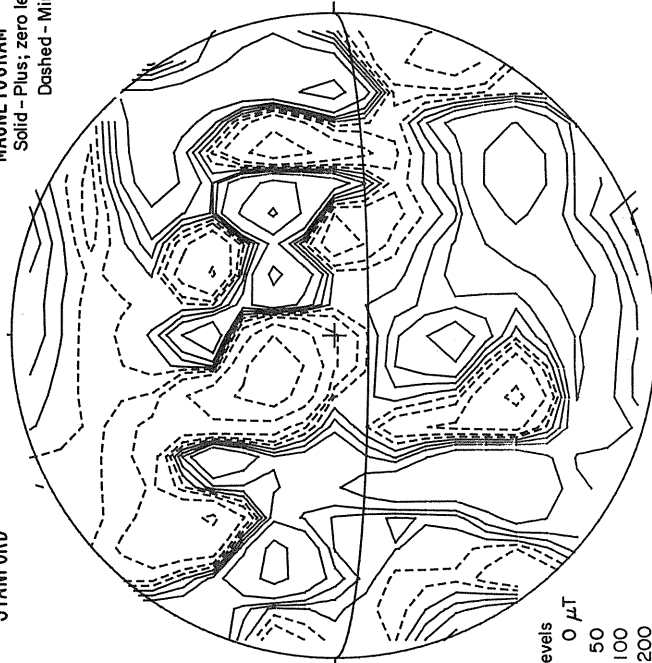
NO DATA

SCHEDULE

STANFORD

Np

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus



Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200

1730 UT

Sp

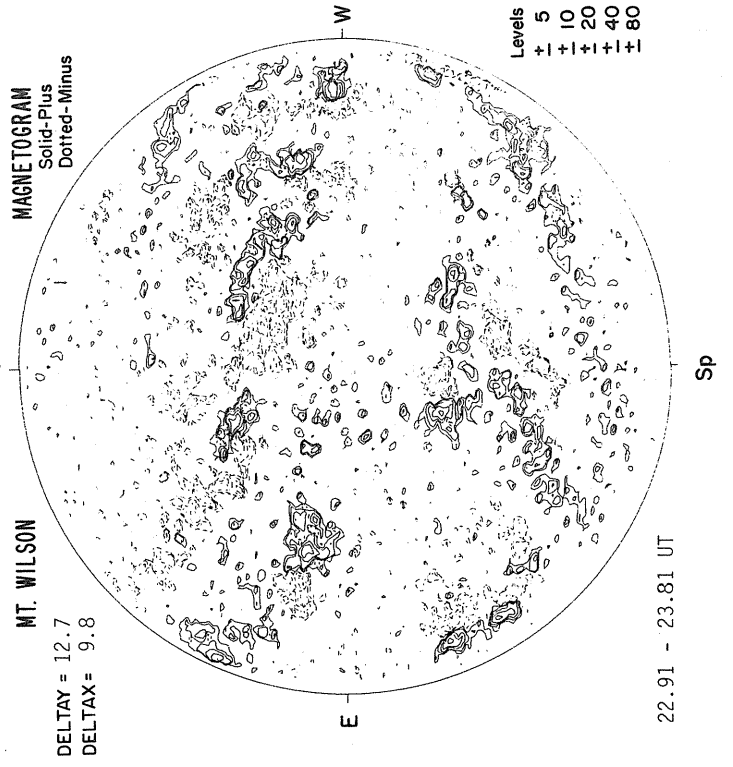
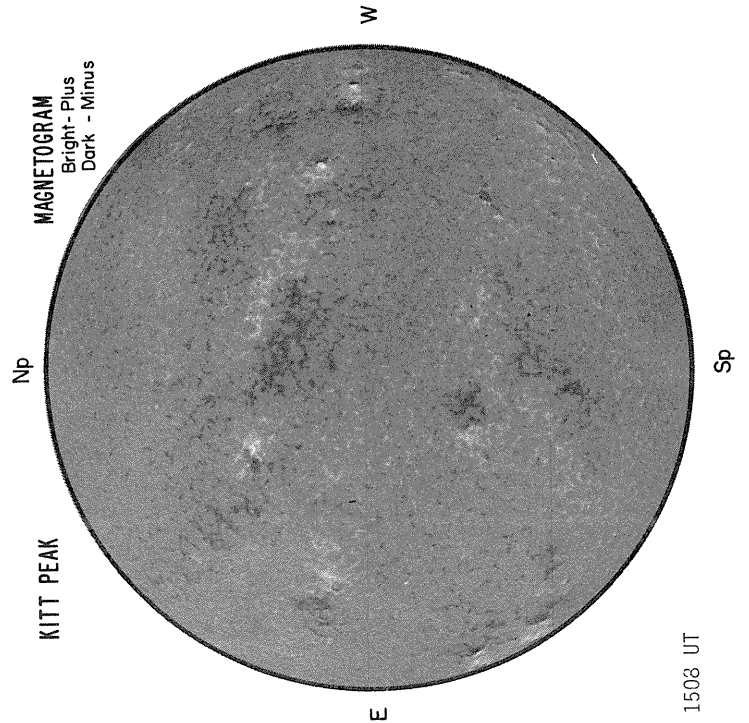
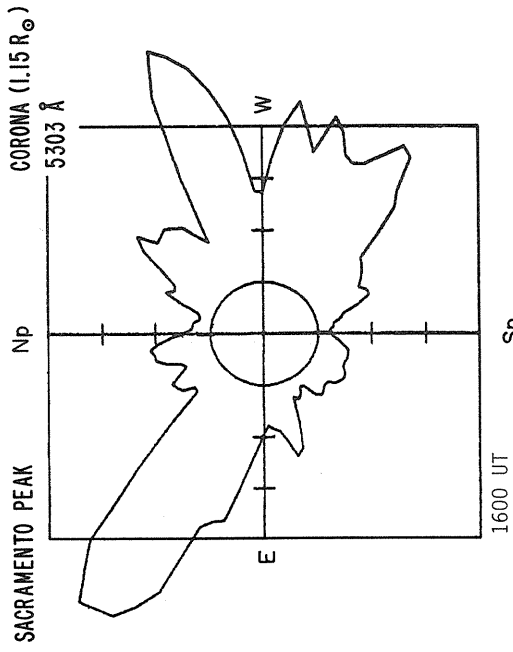
Sp Ant. Temp. Unit 100° K

UT

Sp Ant. Temp. Unit 100° K

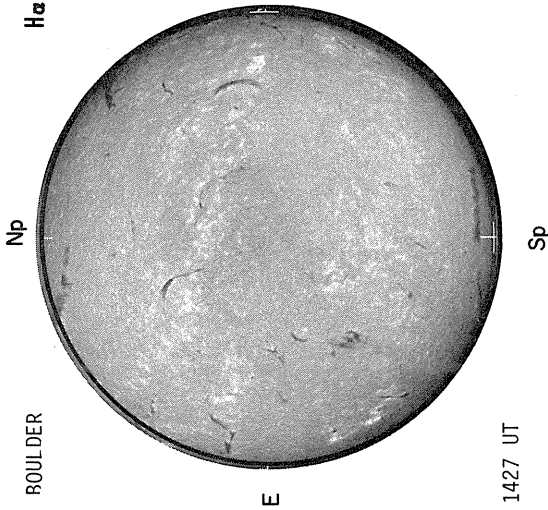
UT

AUGUST 6, 1979 (P = 12.55, B<sub>0</sub> = 6.11, L<sub>0</sub> = 97.69)

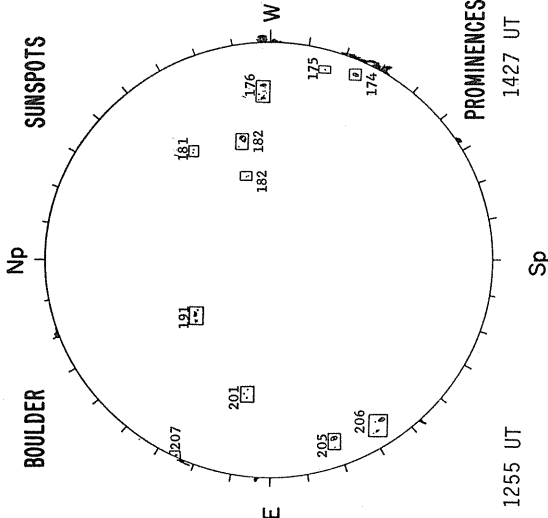


O6

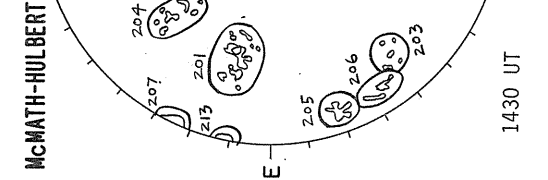
BOULDER



BOULDER

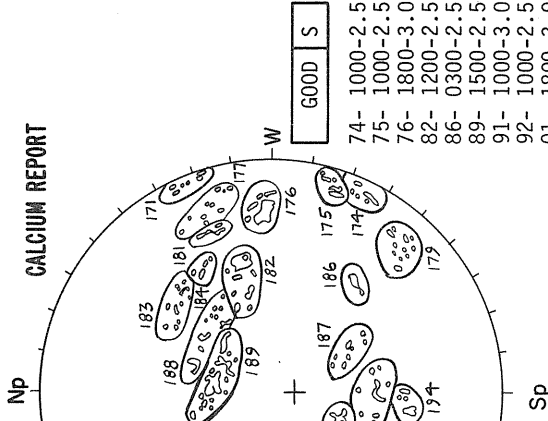


SUNSPOTS



McMATH-HULBERT

CALCIUM REPORT

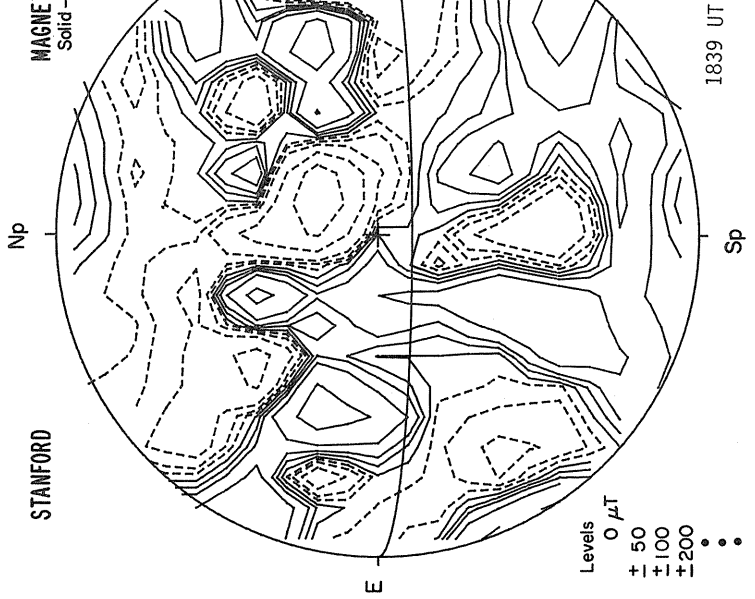


GOOD	S
74-	1000-2.5
75-	1000-2.5
76-	1800-3.0
82-	1200-2.5
86-	0300-2.5
89-	1500-2.5
91-	1000-3.0
92-	1000-2.5
01-	1800-3.0
05-	2000-3.0
06-	1600-3.5
07-	1000-3.0

MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus

STANFORD

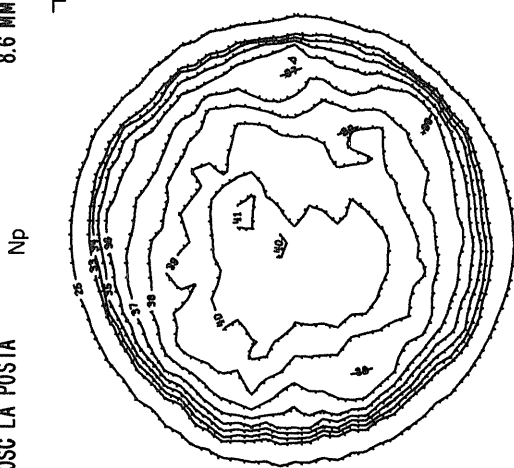
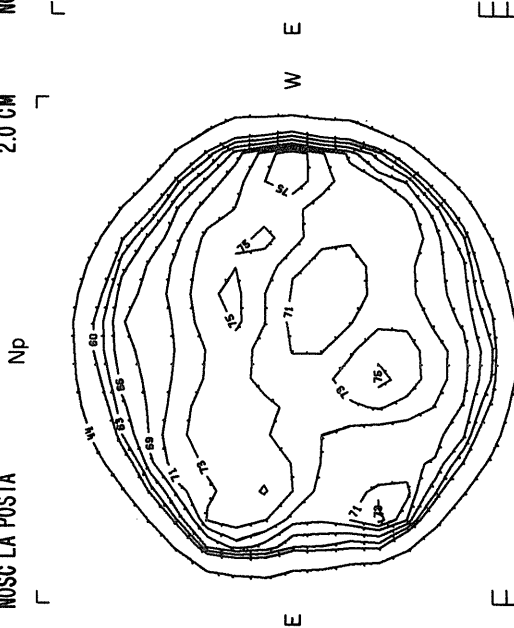


NOSC LA POSTA

2.0 CM

NOSC LA POSTA

8.6 MM



1634 UT

Ant. Temp. Unit 100° K

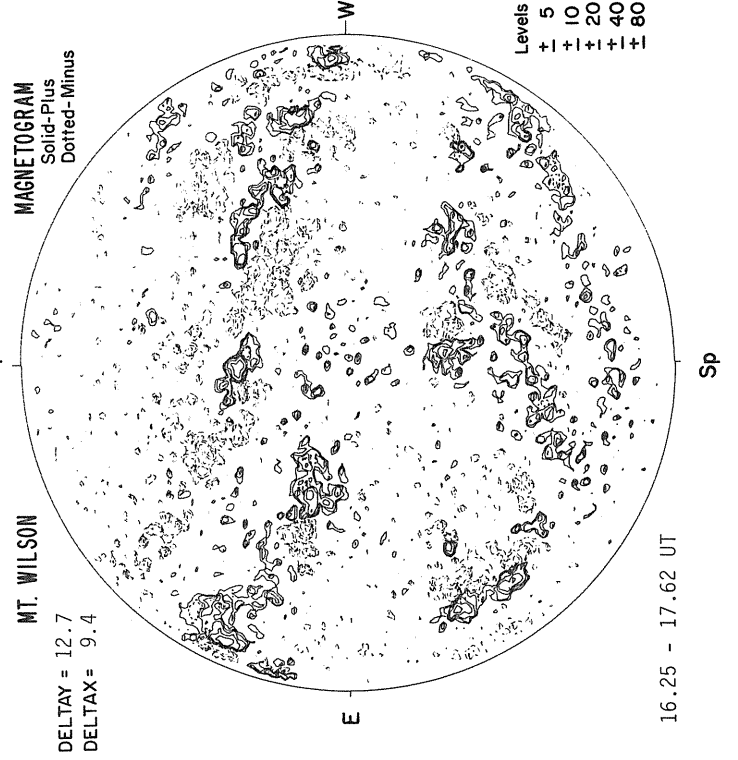
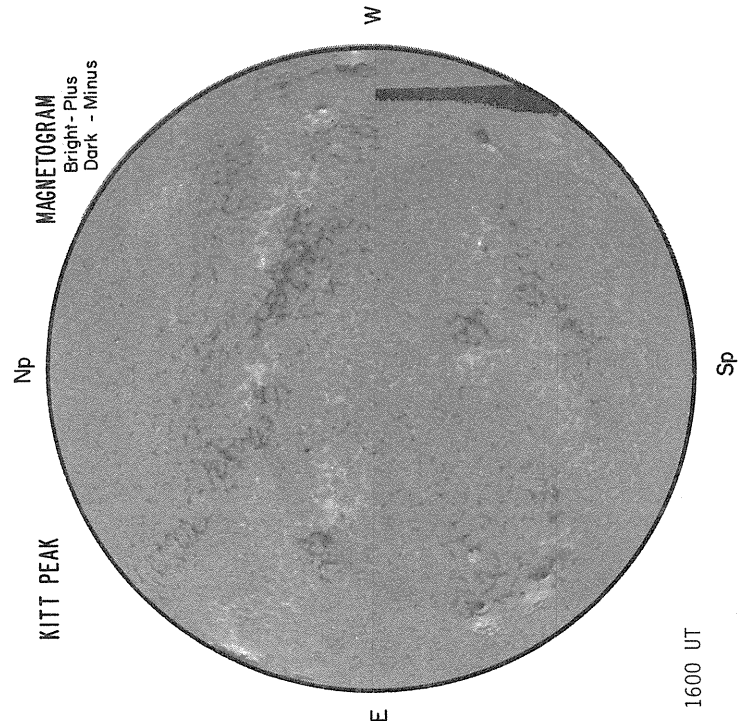
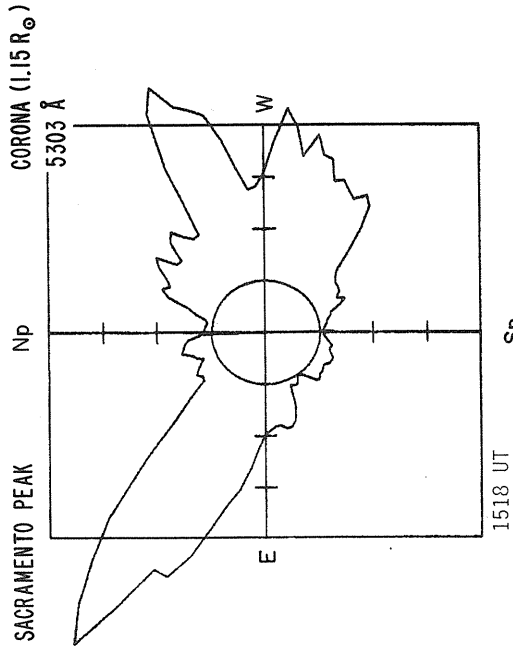
1529 UT

Ant. Temp. Unit 100° K

Levels  
0  $\mu$ T  
 $\pm$  50  
 $\pm$  100  
 $\pm$  200

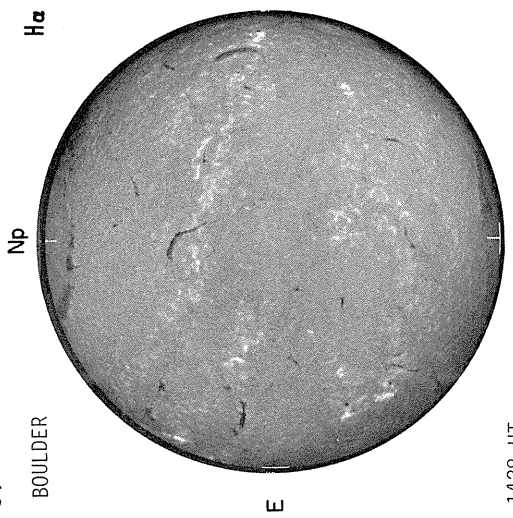


AUGUST 7, 1979 (P = 12.93, B<sub>0</sub> = 6.17, L<sub>0</sub> = 84.47)



07

BOULDER

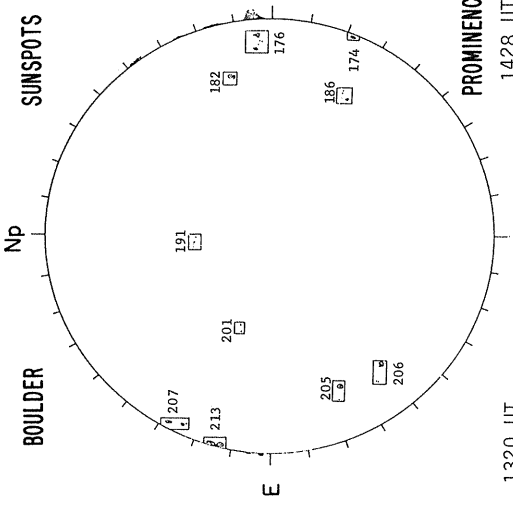


Np

Sp

1428 UT

BOULDER

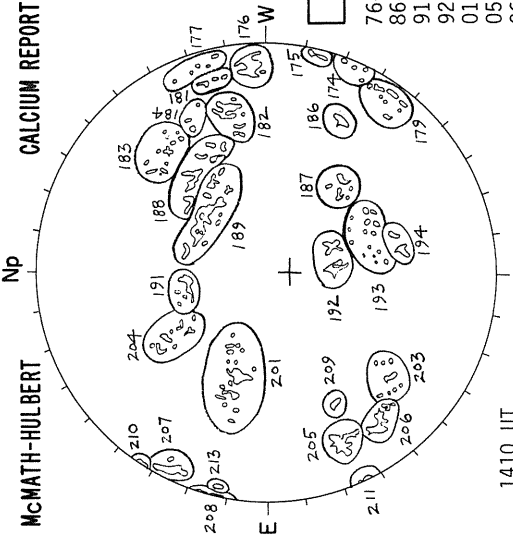


Np

Sp

1320 UT

McMATH-HULBERT



Np

Sp

1410 UT

CALCIUM REPORT

GOOD	S
------	---

76- 2100-3.0  
86- 0500-3.0  
91- 1000-2.5  
92- 1000-2.5  
01- 1600-3.0  
05- 2000-3.0  
06- 1500-3.0  
07- 2200-3.5  
08- 1500-3.0

NOSC LA POSTA

2.0 CM

NOSC LA POSTA

8.6 MM

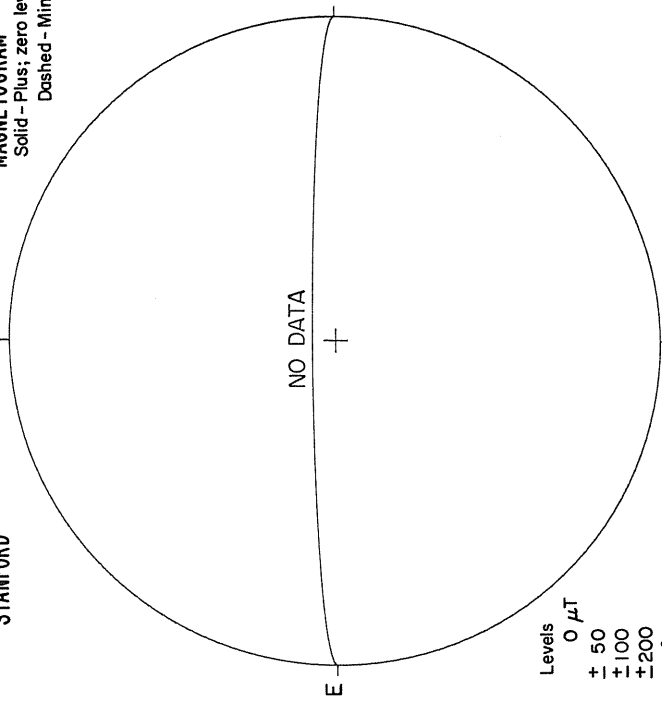
STANFORD

Np

Sp

MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus



Np

Sp

1410 UT

1428 UT

1320 UT

1539 UT

1633 UT

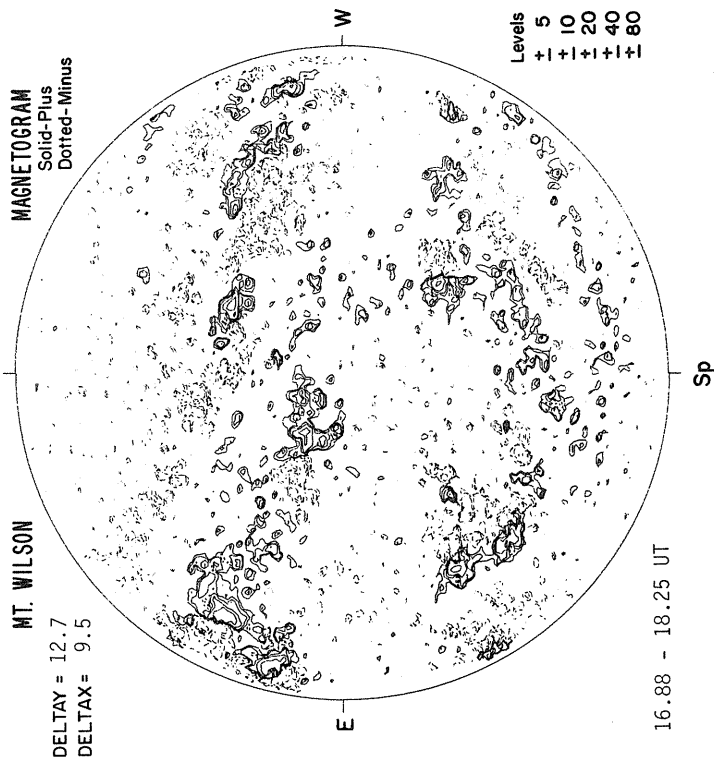
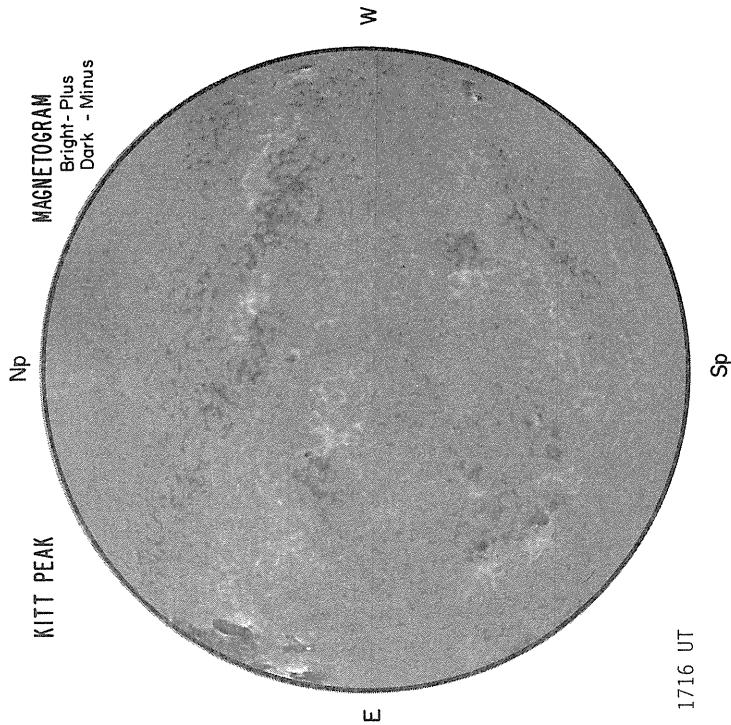
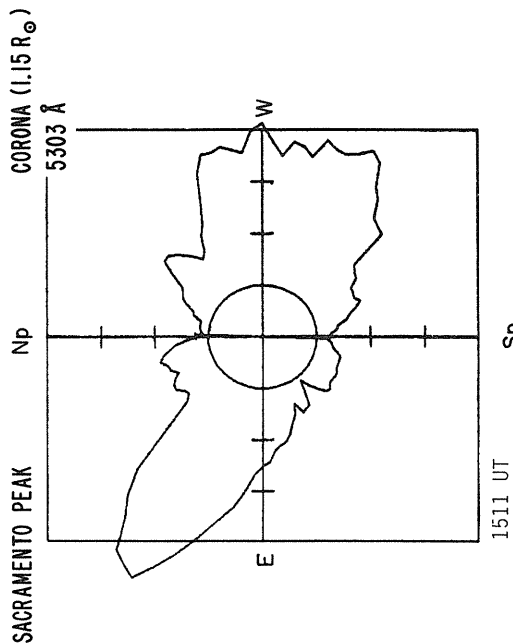
Levels  
0  $\mu$ T  
 $\pm$  50  
 $\pm$  100  
 $\pm$  200

Ant. Temp. Unit 100°K

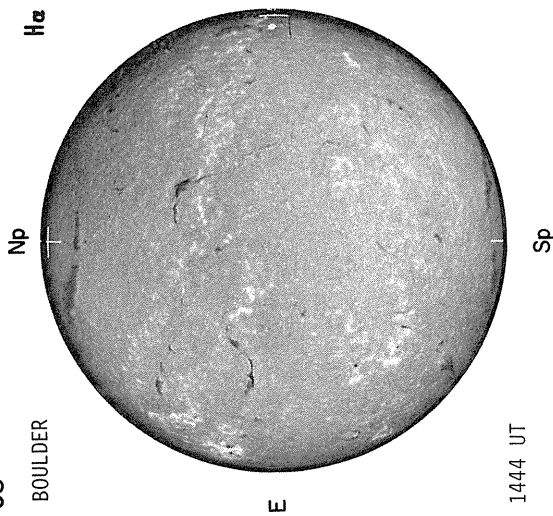
Ant. Temp. Unit 100°K

Ant. Temp. Unit 100°K

AUGUST 8, 1979 (P = 13.30, B<sub>0</sub> = 6.24, L<sub>0</sub> = 71.25)



O8  
BOULDER



1444 UT

H $\alpha$

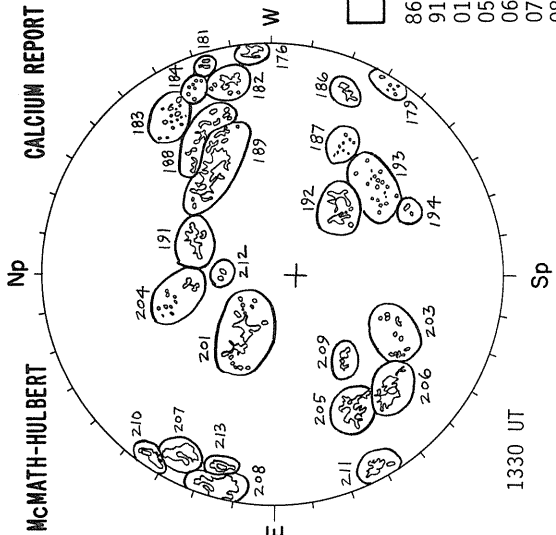
BOULDER

Np

SUNSPOTS

McMATH-HULBERT

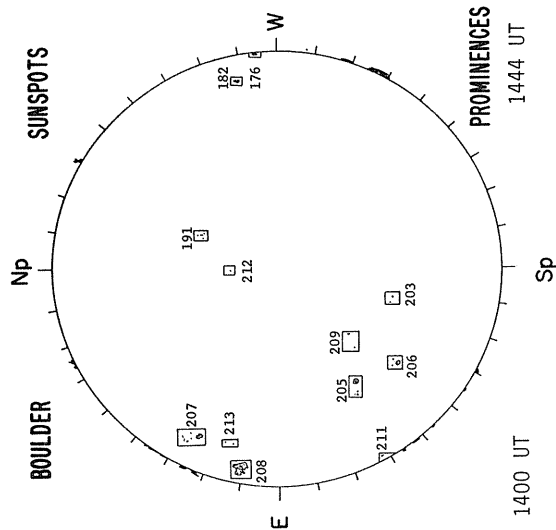
CALCIUM REPORT



1330 UT

PROMINENCES

1444 UT



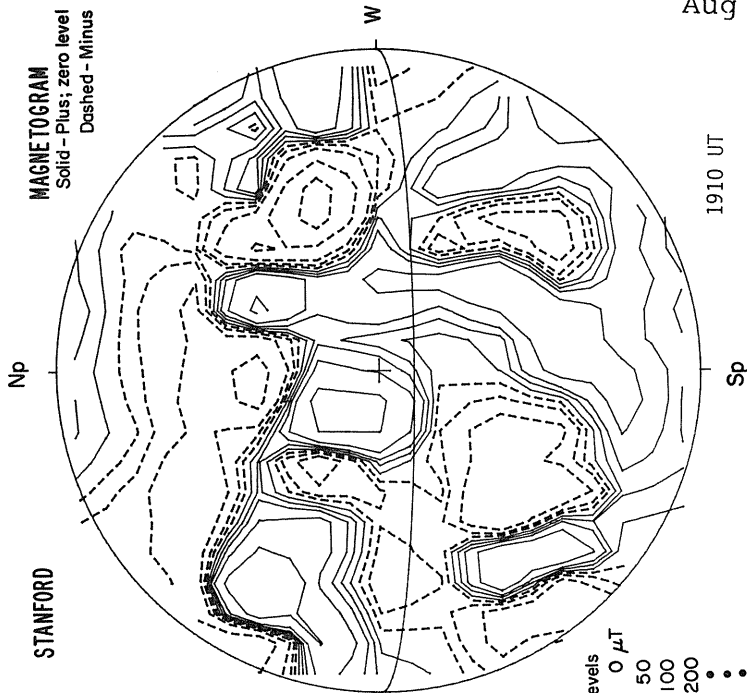
1400 UT

MOSC LA POSTA

2.0 CM

MOSC LA POSTA

8.6 MM



Np

STANFORD

1330 UT

MAGNETOGRAM

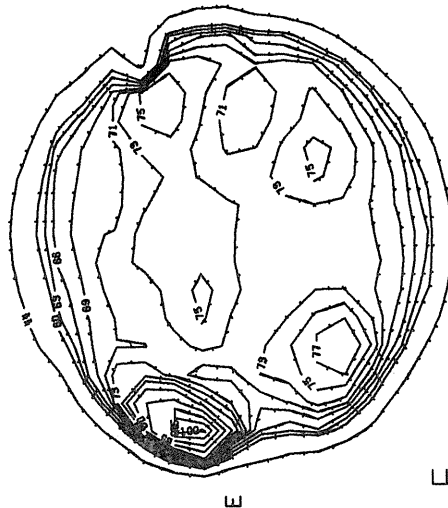
Solid - Plus; zero level  
Dashed - Minus

Np

2.0 CM

MOSC LA POSTA

8.6 MM



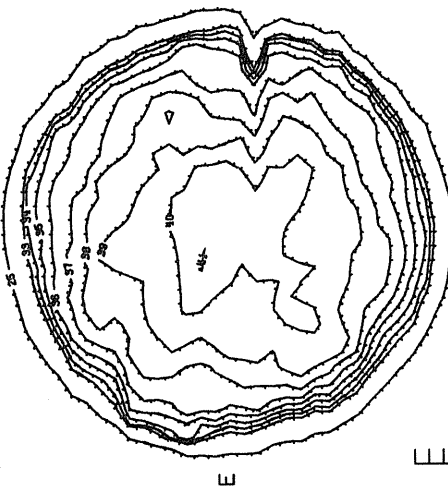
1648 UT

Np

2.0 CM

MOSC LA POSTA

8.6 MM



1556 UT

Np

8.6 MM

Levels  
0  $\mu$ T  
+ 50  
 $\pm$  100  
 $\pm$  200

1910 UT

Np

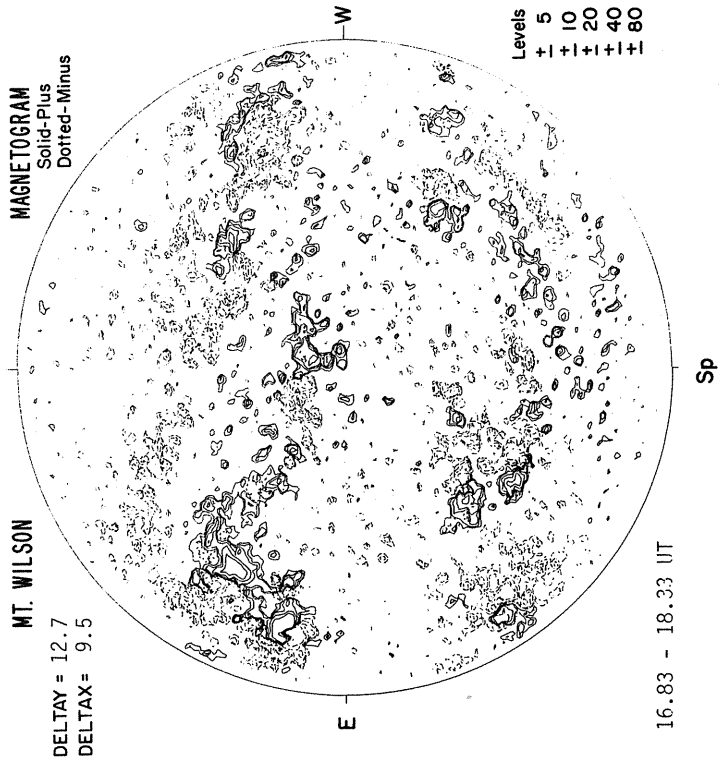
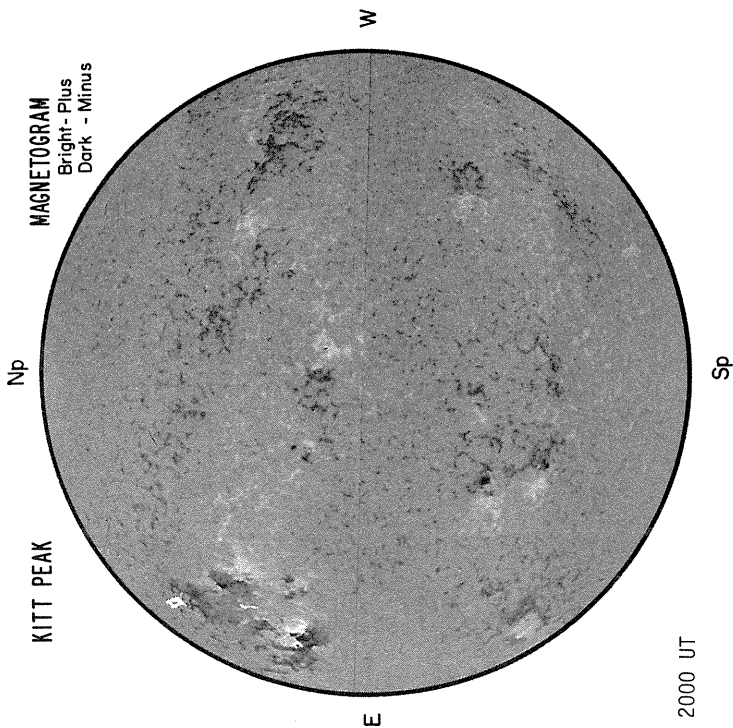
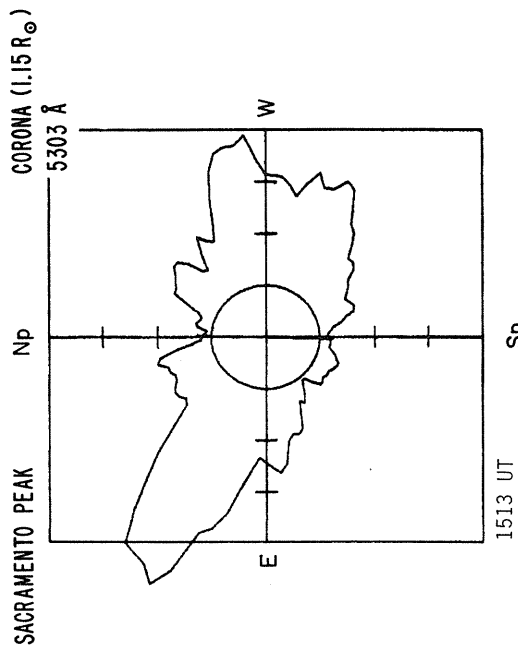
STANFORD

1330 UT

MAGNETOGRAM

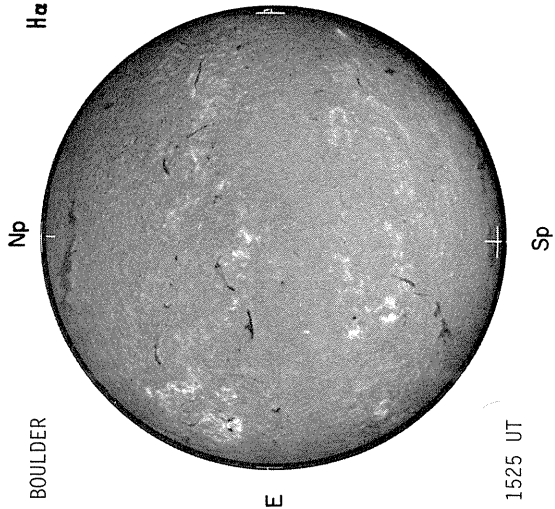
Solid - Plus; zero level  
Dashed - Minus

AUGUST 9, 1979 (P = 13.67, B<sub>0</sub> = 6.30, L<sub>0</sub> = 58.02)

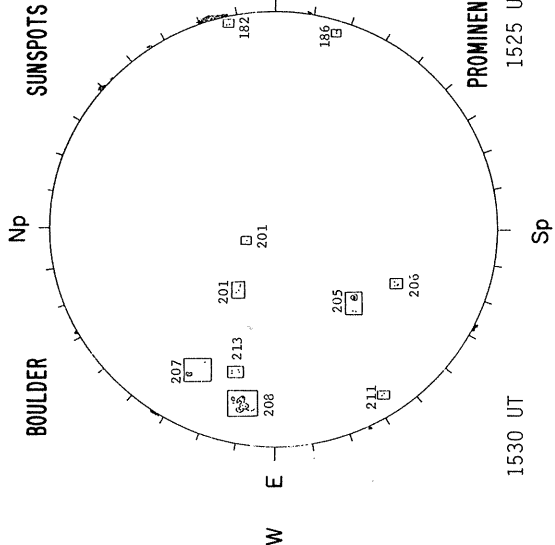


O9

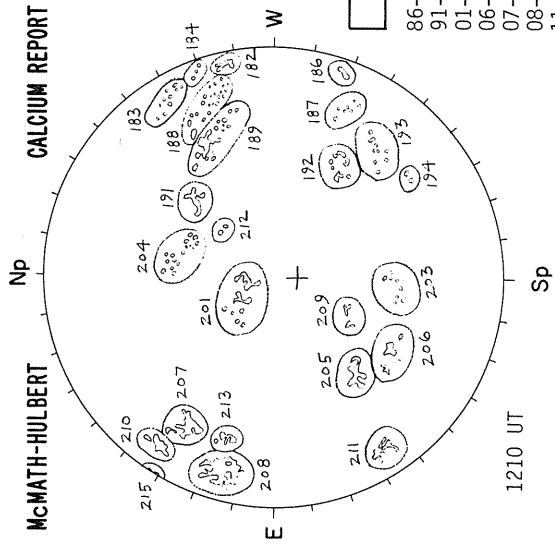
BOULDER



BOULDER



McMATH-HULBERT



CALCIUM REPORT

V	POOR	M
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86- 0500-3.0  
91- 0700-2.5  
01- 1600-2.5  
06- 1400-2.5  
07- 1700-2.5  
08- 3800-3.5  
11- 1400-2.5

PROMINENCES

1525 UT

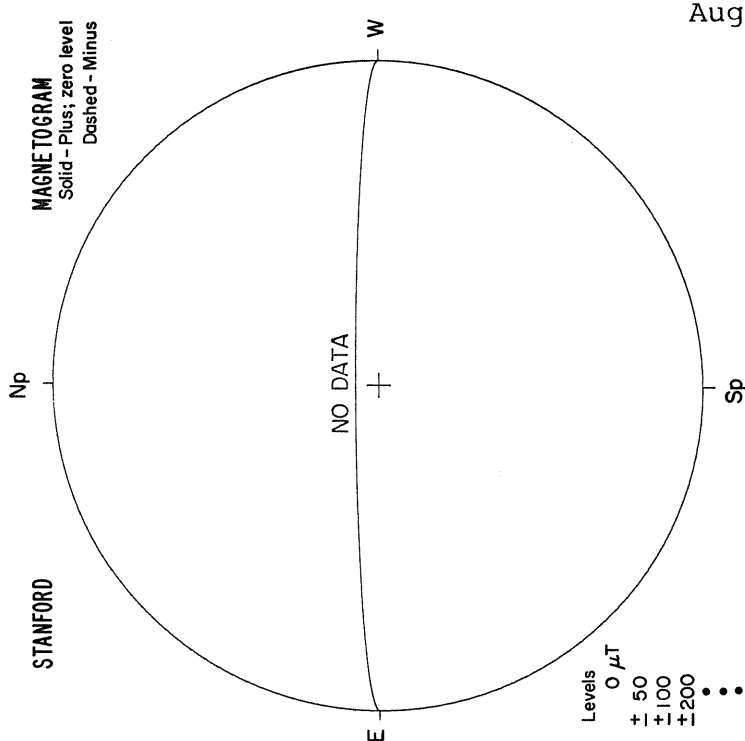
1530 UT

MOSC LA POSTA

2.0 CM

MOSC LA POSTA

8.6 MM



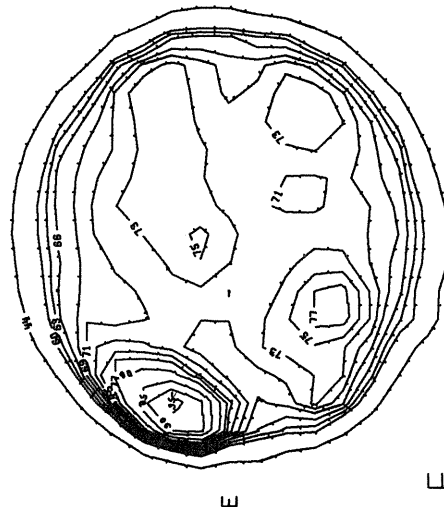
E

Np

Sp

Ant. Temp. Unit 100°K

1613 UT

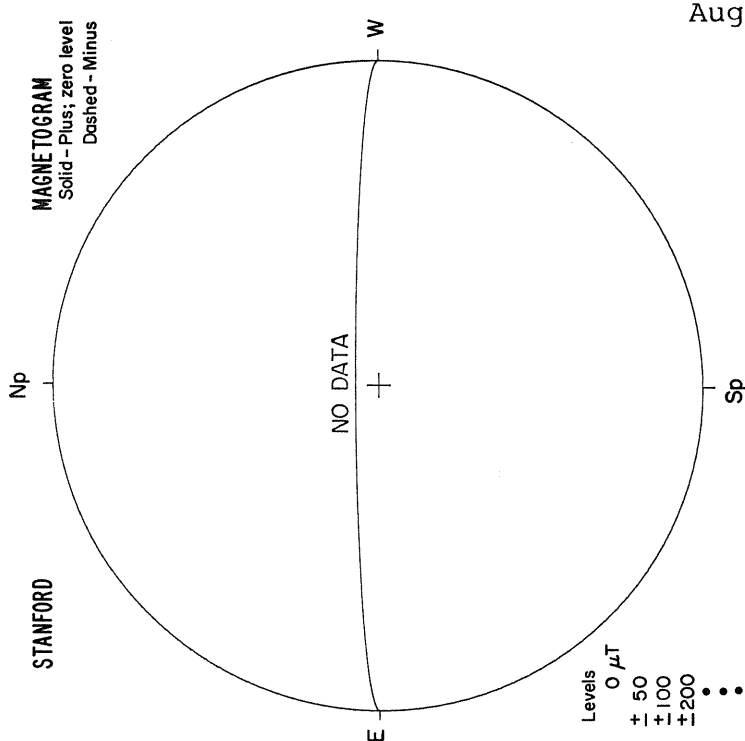


8.6 MM

MOSC LA POSTA

Np

8.6 MM



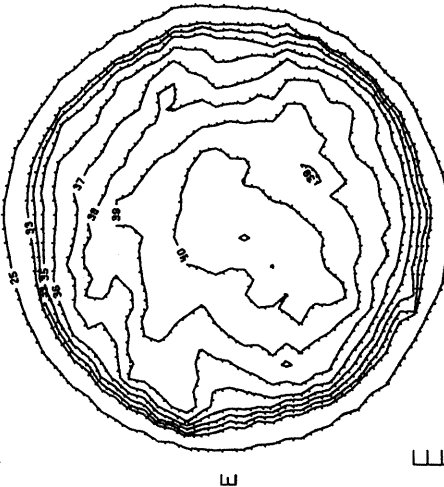
E

Np

Sp

Ant. Temp. Unit 100°K

1524 UT



Levels  
0  $\mu$ T  
+ 50  
- 100  
+ 200

1524 UT

Np

MOSC LA POSTA

8.6 MM

Ant. Temp. Unit 100°K

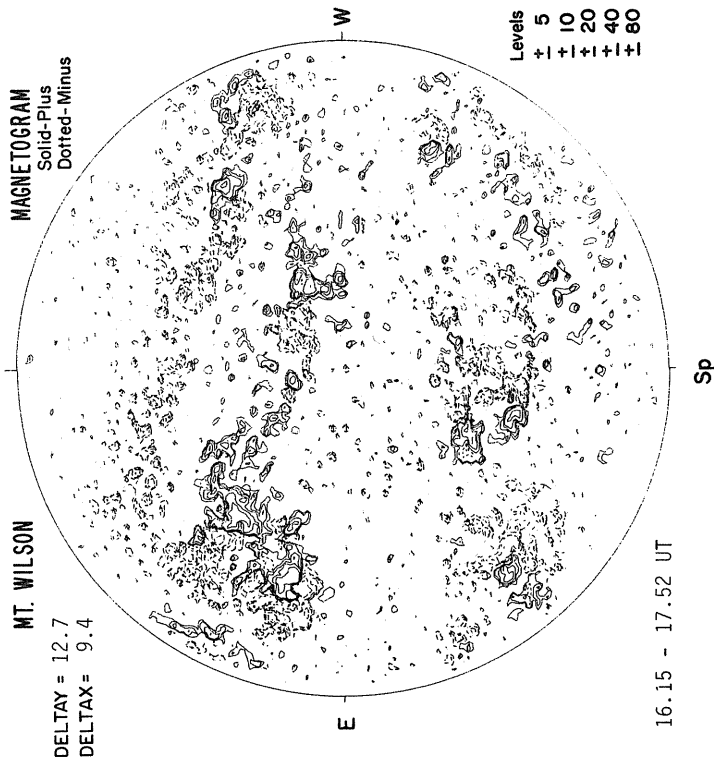
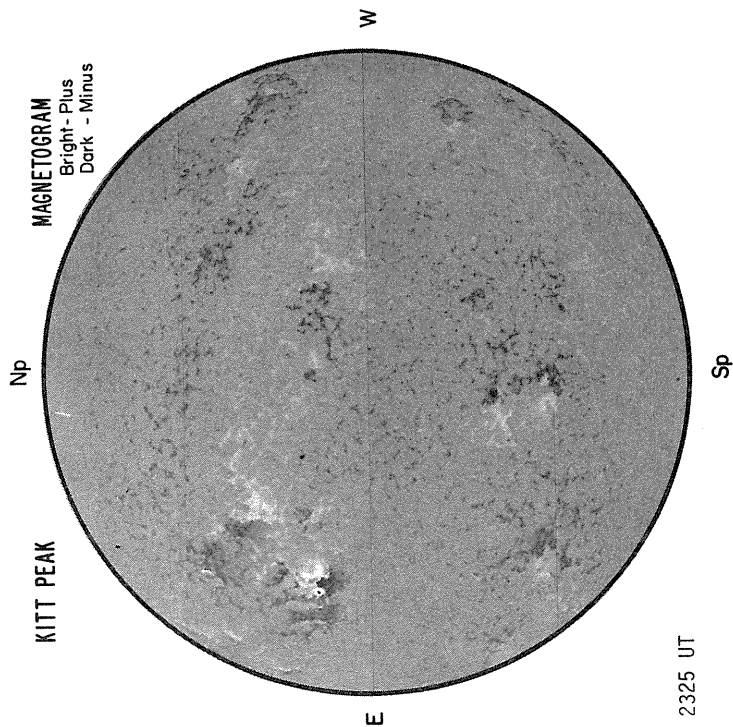
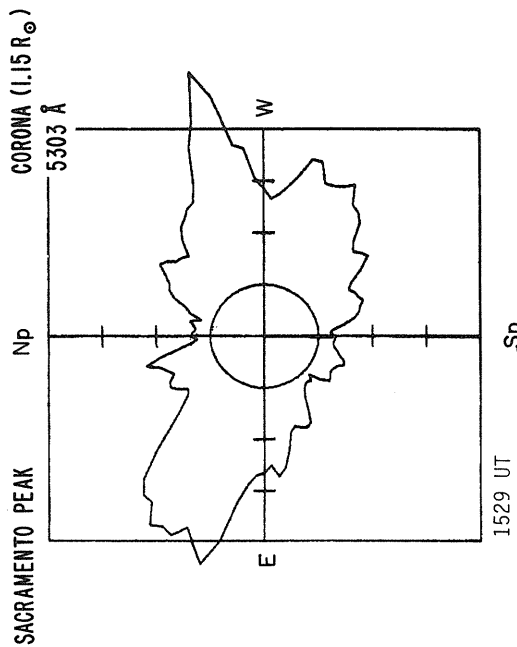
1524 UT

Np

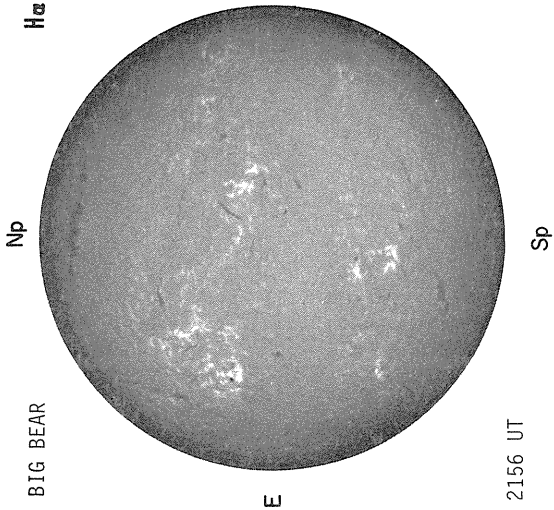
8.6 MM

Levels  
0  $\mu$ T  
+ 50  
- 100  
+ 200

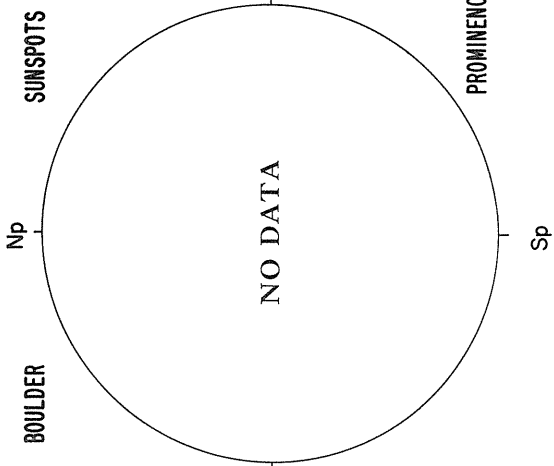
AUGUST 10, 1979 (P = 14.04, B<sub>o</sub> = 6.36, L<sub>o</sub> = 44.80)



IO  
BIG BEAR

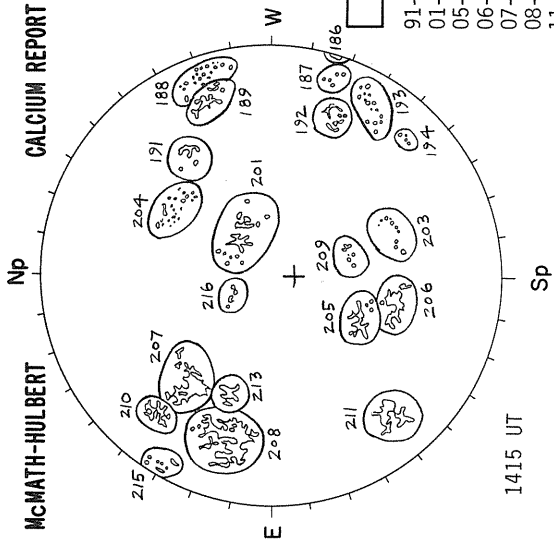


BOULDER



SUNSPOTS

McMATH-HULBERT



CALCIUM REPORT

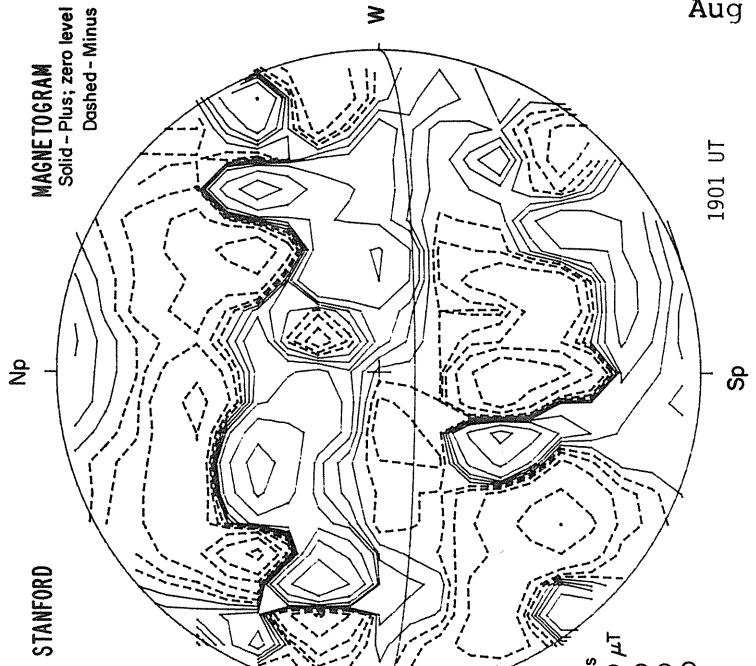
NOSC LA POSTA

2.0 CM

NOSC LA POSTA

8.6 MM

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus



1639 UT

1549 UT

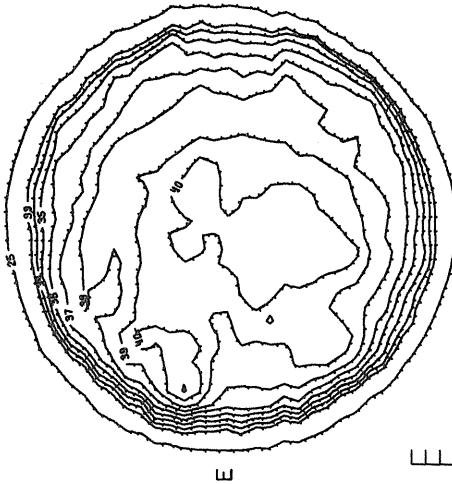
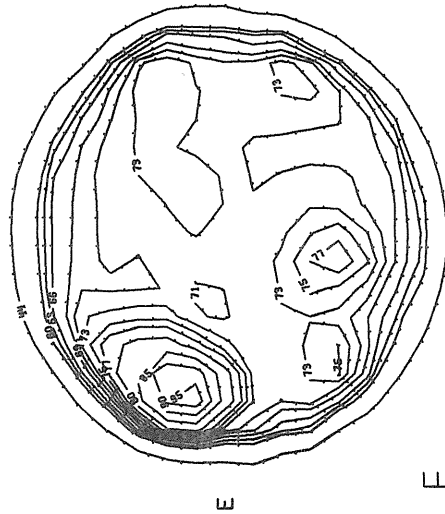
Np

8.6 MM

STANFORD

Np

1901 UT



Levels  
0  $\mu$ T  
+ 50  
 $\pm$  100  
+ 200

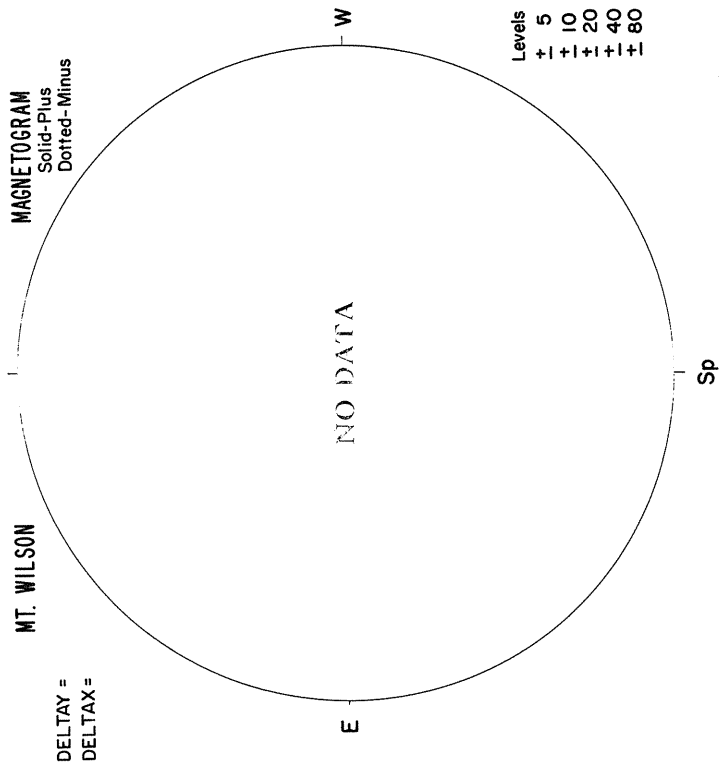
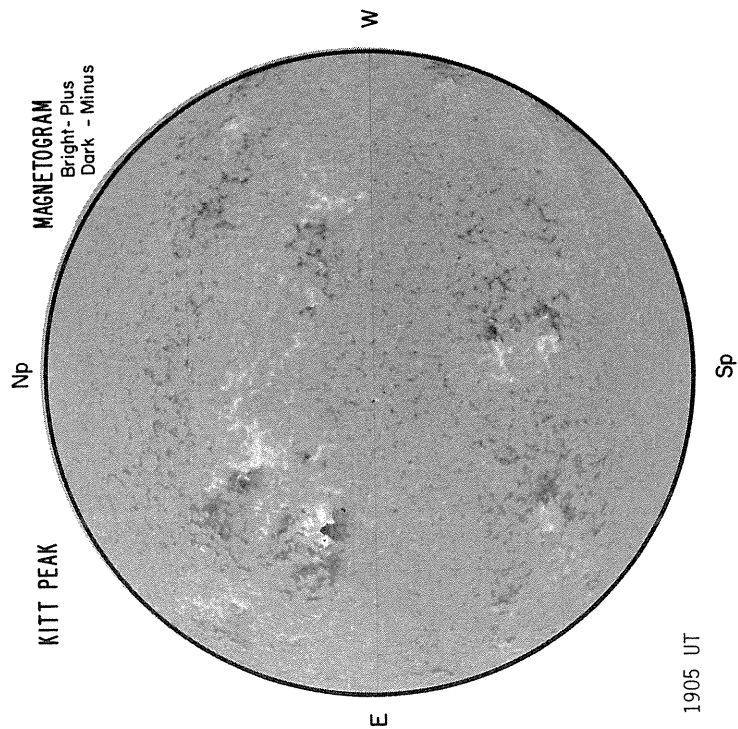
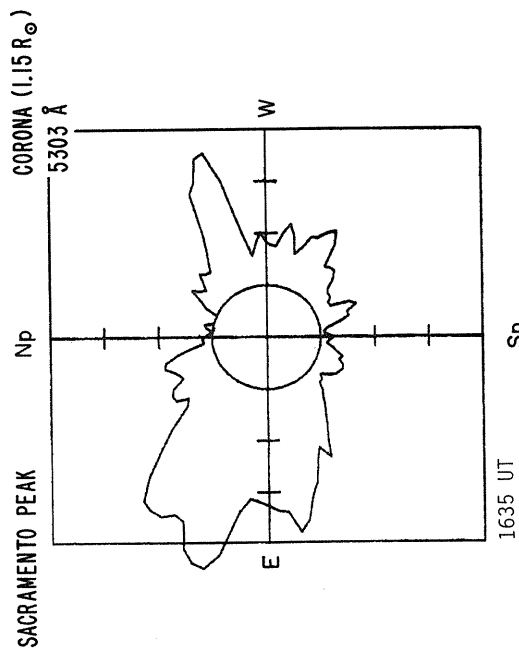
Ant. Temp. Unit 100°K

Ant. Temp. Unit 100°K

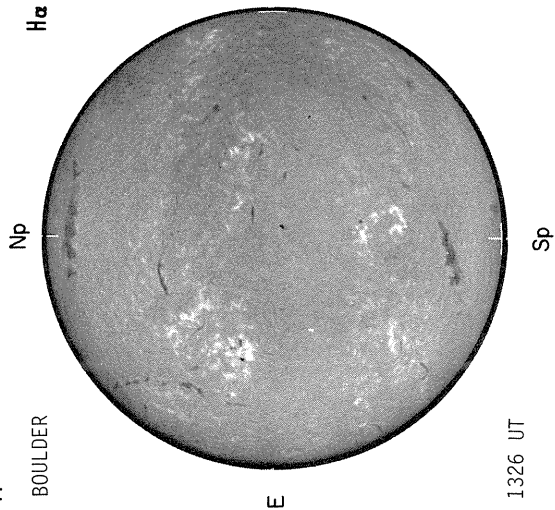
Ant. Temp. Unit 100°K



AUGUST 11, 1979 (P = 14.4I, B<sub>0</sub> = 6.4I, L<sub>0</sub> = 31.58)

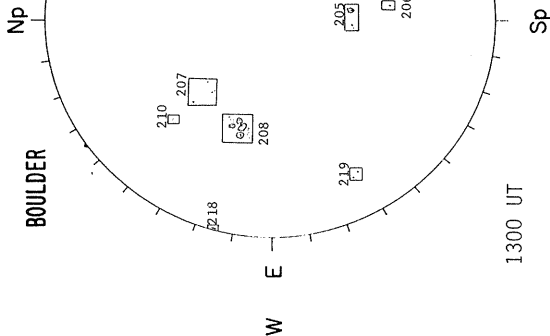


II  
BOULDER



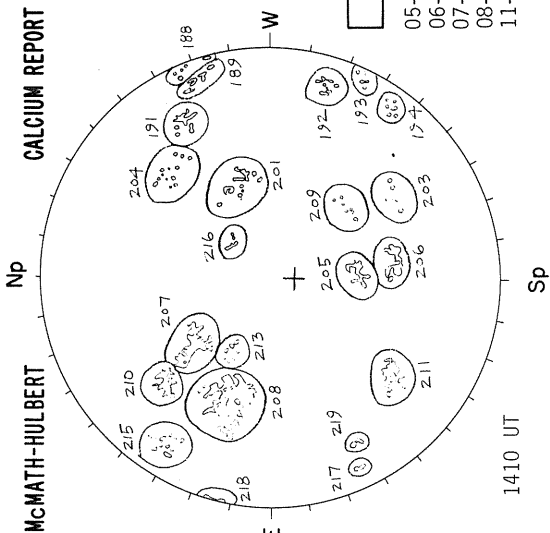
H $\alpha$

BOULDER



SUNSPOTS

McMATH-HULBERT



CALCIUM REPORT

FAIR M  
05- 1100-2.5  
06- 1400-2.5  
07- 2500-2.5  
08- 4200-3.0  
11- 1400-2.5

PROMINENCES

1326 UT

1300 UT

1300 UT

1326 UT

NOSC LA POSTA

2.0 CM

NOSC LA POSTA

8.6 MM

STANFORD

MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus

NO DATA

SCHEDULE

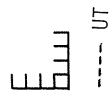
W E

NO DATA

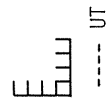
W E

NO DATA

W



Sp Ant. Temp. Unit 100° K



Sp Ant. Temp. Unit 100° K

Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200

E

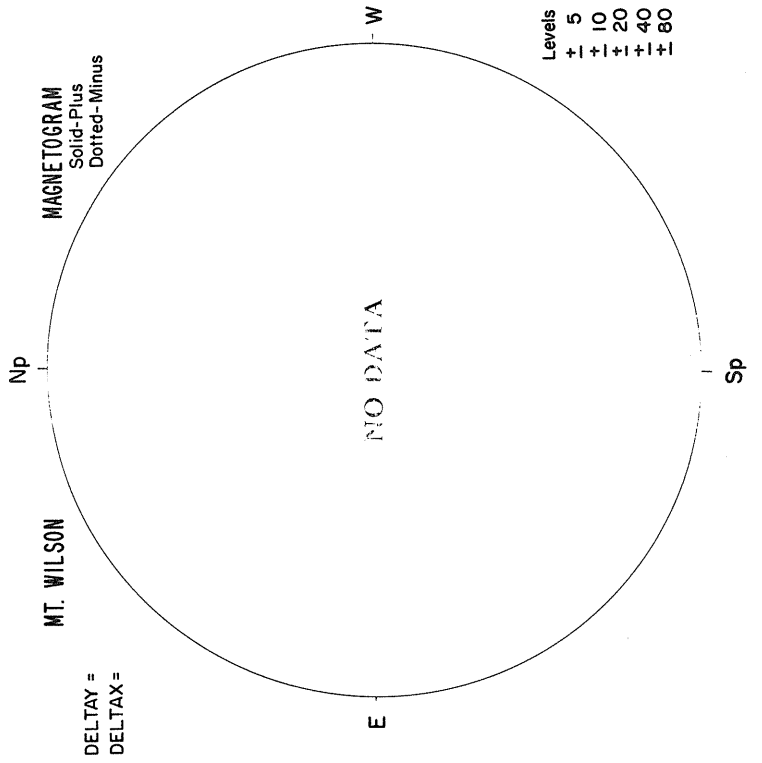
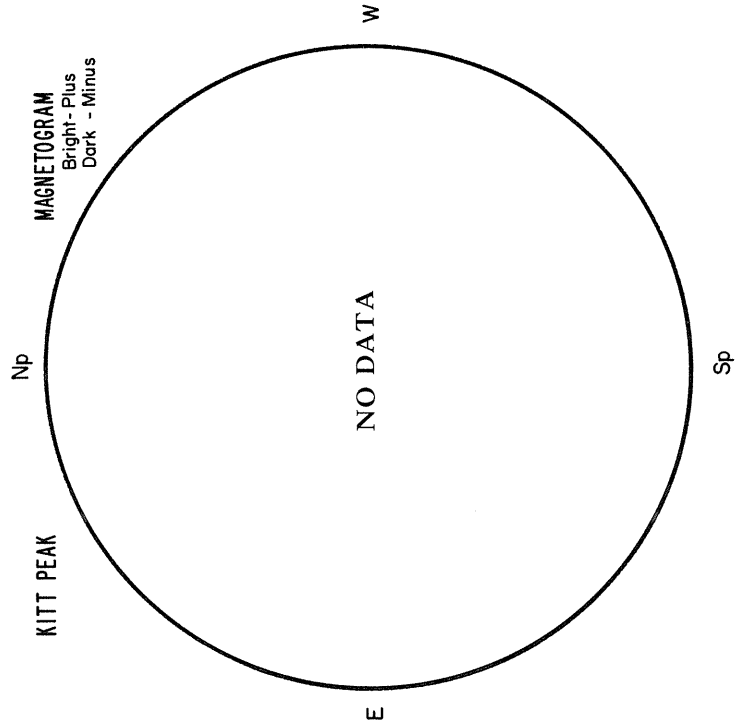
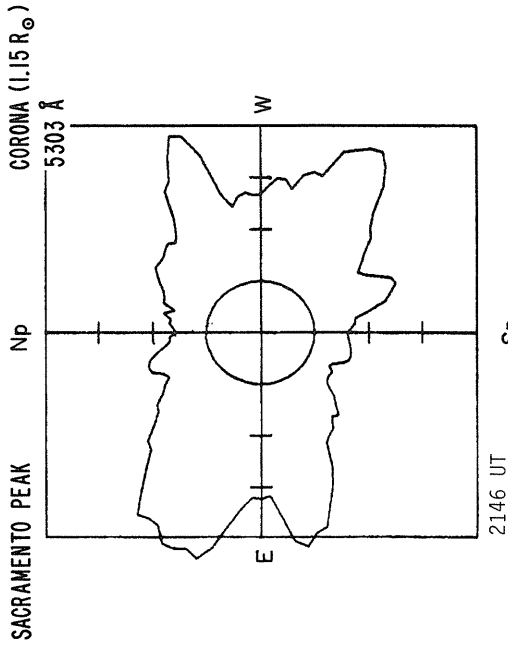
----- UT

----- UT

Sp Ant. Temp. Unit 100° K

Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200

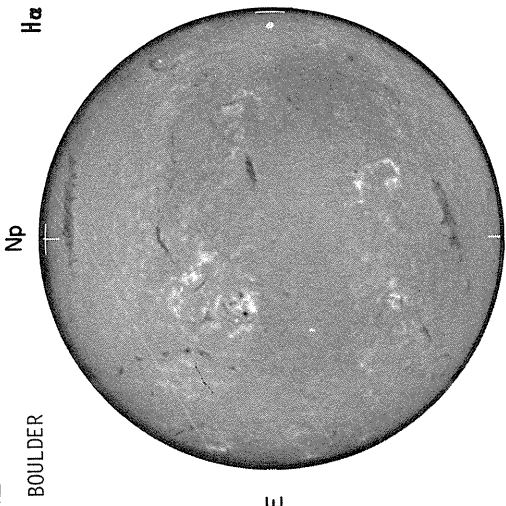
AUGUST 12, 1979 (P = 14.76, B<sub>0</sub> = 6.47, L<sub>0</sub> = 18.36)



Levels

+	5
+	10
+	20
+	40
-	60

I2  
BOULDER

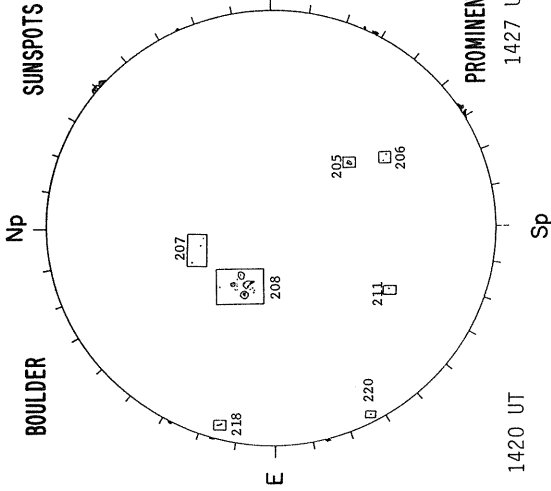


Np Sp

1427 UT

H $\alpha$

BOULDER

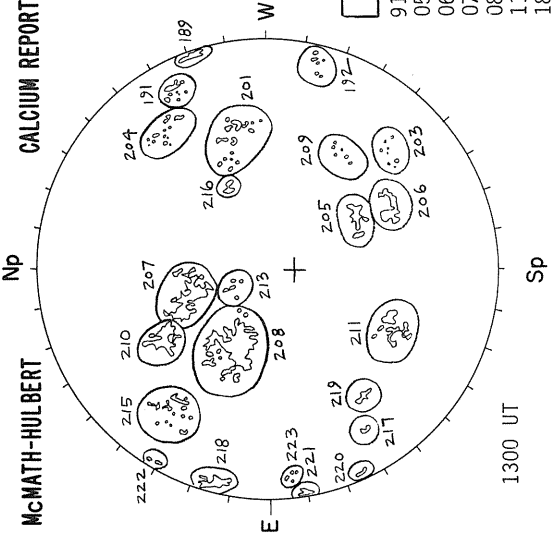


Np Sp

1420 UT

SUNSPOTS

McMATH-HULBERT



Np Sp

1300 UT

CALCIUM REPORT

	FAIR	M
91-	0700-2.5	
05-	1000-3.0	
06-	1300-3.0	
07-	2500-3.0	
08-	4000-3.5	
11-	1500-2.5	
18-	1800-2.5	
21-	0500-2.5	

NOSC LA POSTA

2.0 CM

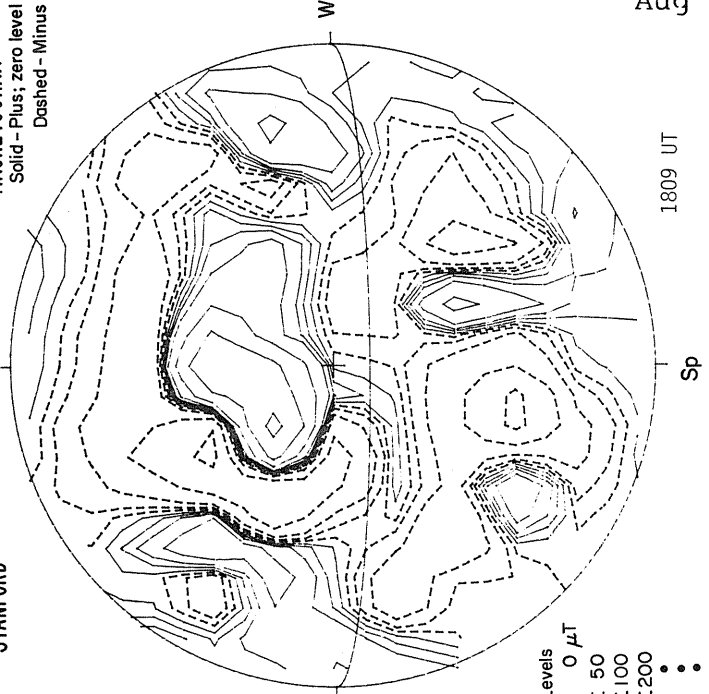
NOSC LA POSTA

8.6 MM

STANFORD

NOSC LA POSTA

MAGNETOGRAM



Np

Sp

1809 UT

W

E

Np

Sp

1809 UT

W

E

NO DATA

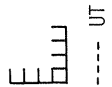
SCHEDULE

NO DATA

SCHEDULE

Sp Ant. Temp. Unit 100°K

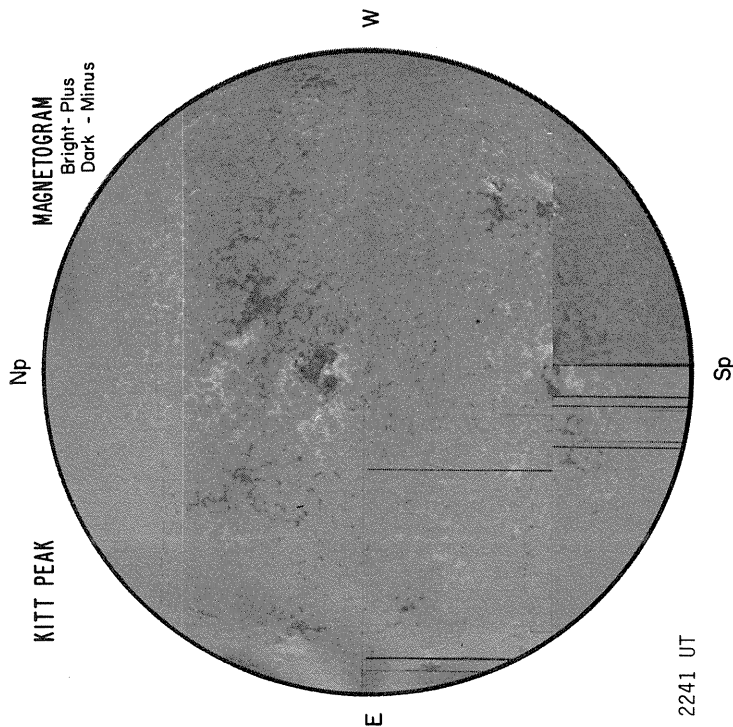
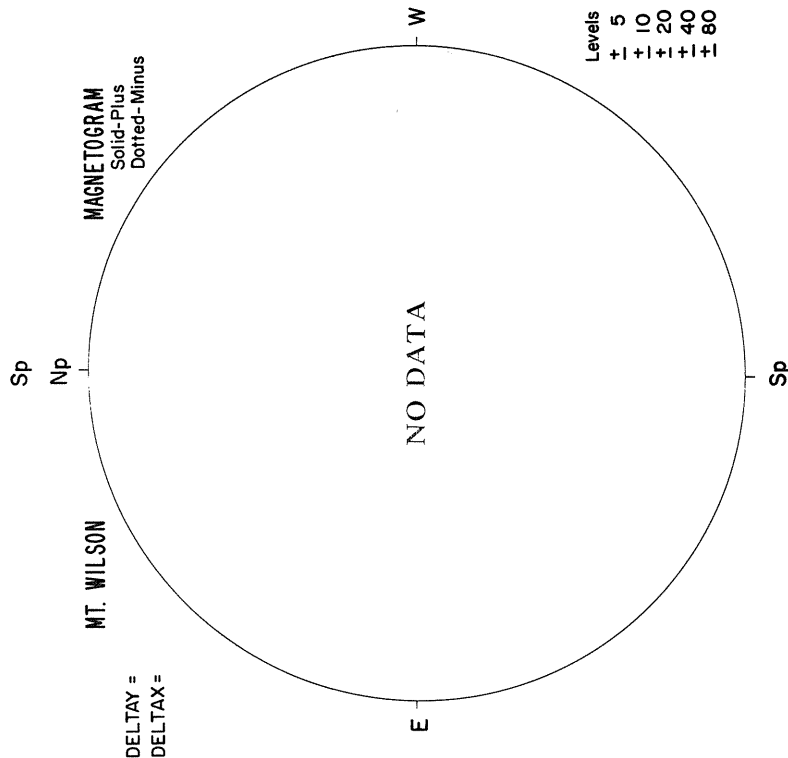
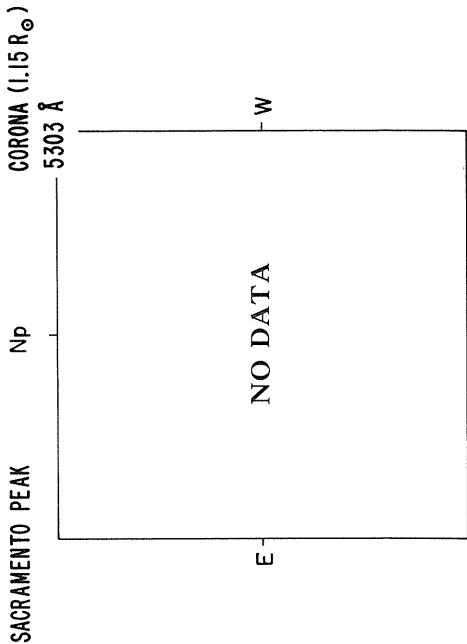
Sp Ant. Temp. Unit 100°K

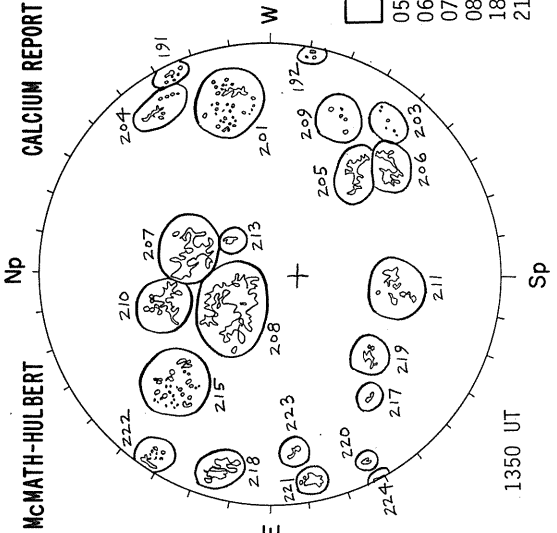
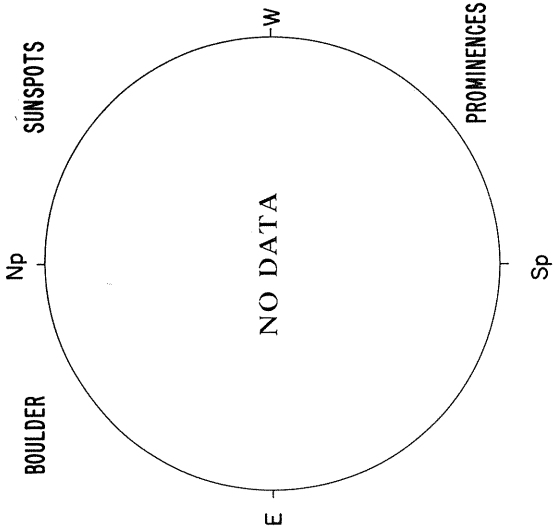
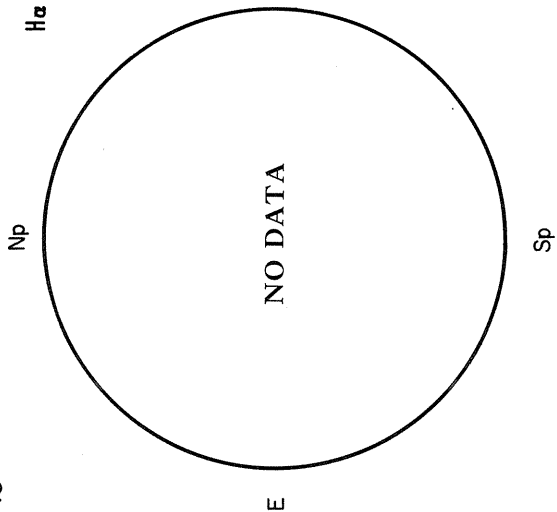


Levels  
0 μT  
± 50  
± 100  
± 200

W  
E  
Np  
Sp

AUGUST 13, 1979 (P = 15.12, B<sub>0</sub> = 6.52, L<sub>0</sub> = 5.14)





GOOD	M
05-	1000-2.5
06-	1200-2.5
07-	2400-2.5
08-	4000-3.0
18-	1700-2.5
21-	1300-3.0

NOSC LA POSTA

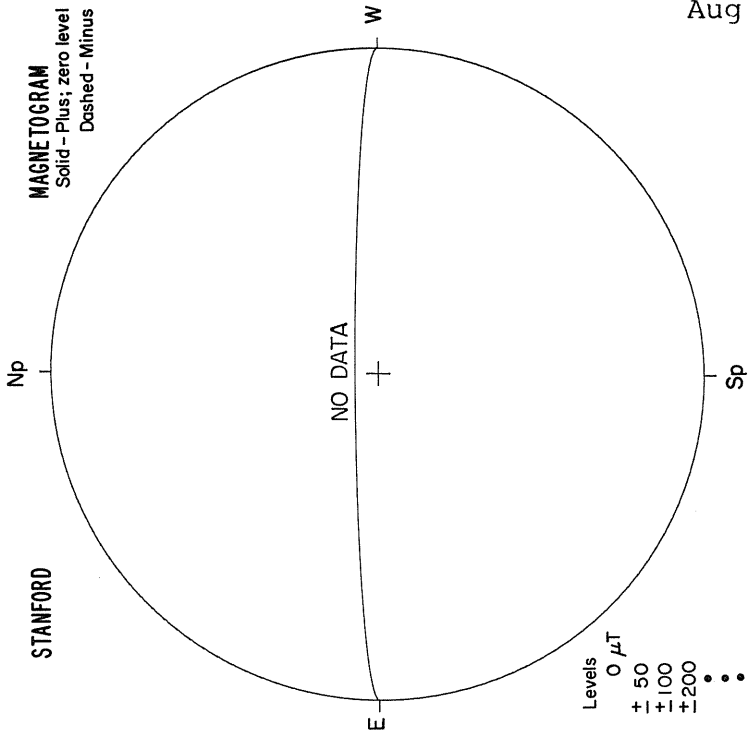
2.0 CM

NOSC LA POSTA

8.6 MM

STANFORD

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus



NO DATA

NO DATA

8.6 MM

1350 UT

NOSC LA POSTA

STANFORD

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

WEATHER

WEATHER

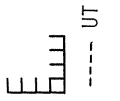
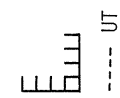
8.6 MM

1350 UT

NOSC LA POSTA

STANFORD

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus



NO DATA

8.6 MM

1350 UT

NOSC LA POSTA

STANFORD

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

Levels  
 0 μT  
 + 50  
 ± 100  
 ± 200  
 •  
 •  
 •

Ant. Temp. Unit 100°K

Ant. Temp. Unit 100°K

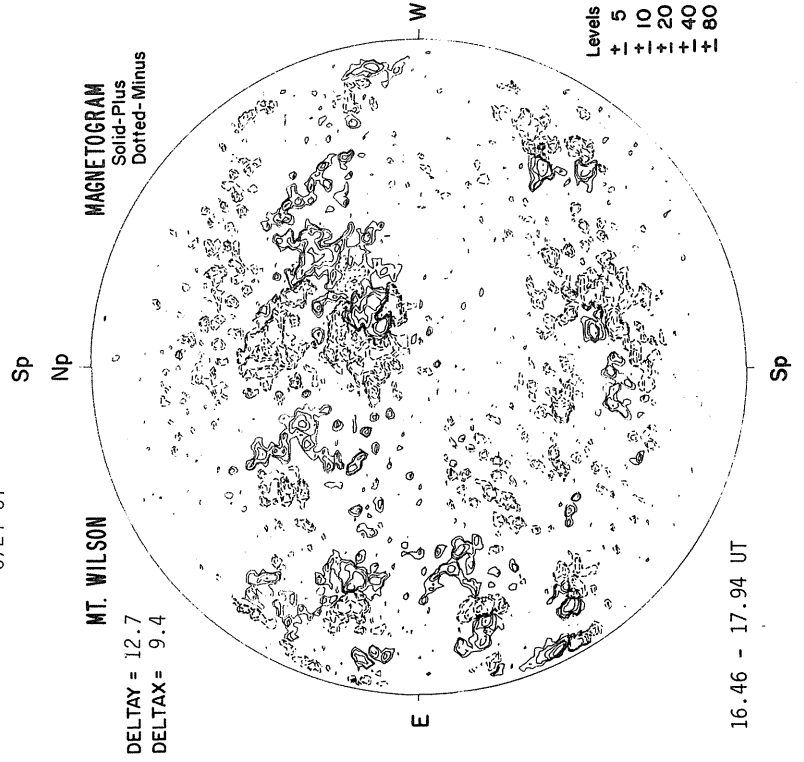
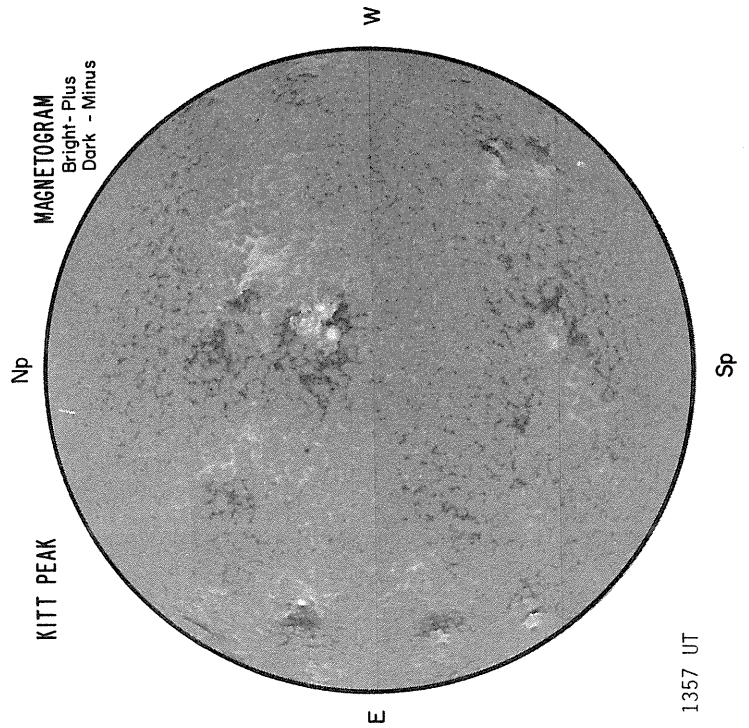
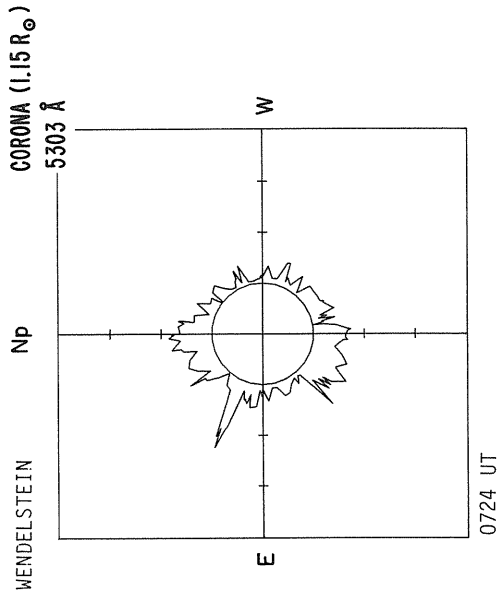
1350 UT

NOSC LA POSTA

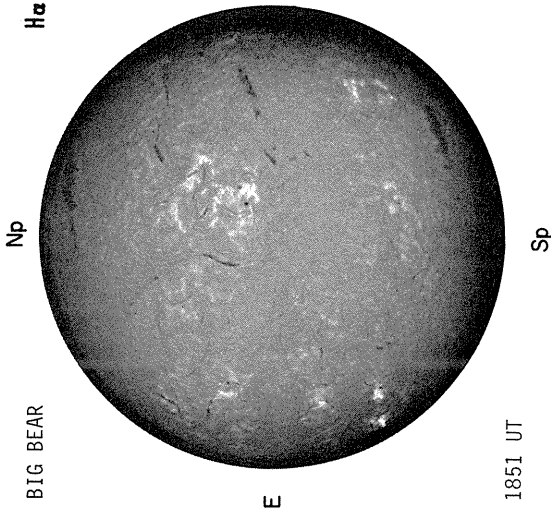
STANFORD

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

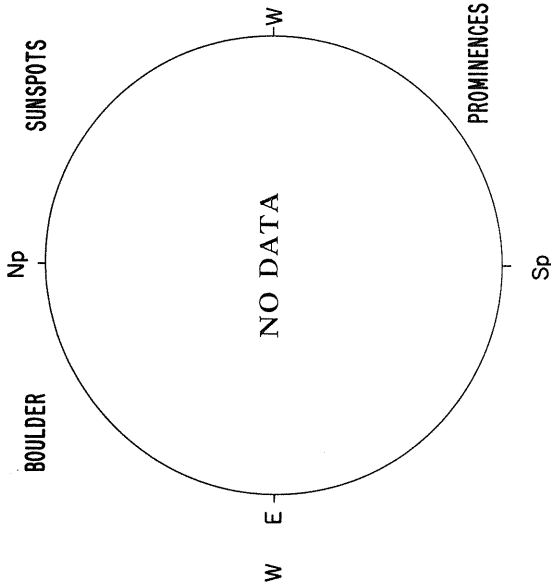
AUGUST 14, 1979 (P = 15.47, B<sub>0</sub> = 6.58, L<sub>0</sub> = 351.92)



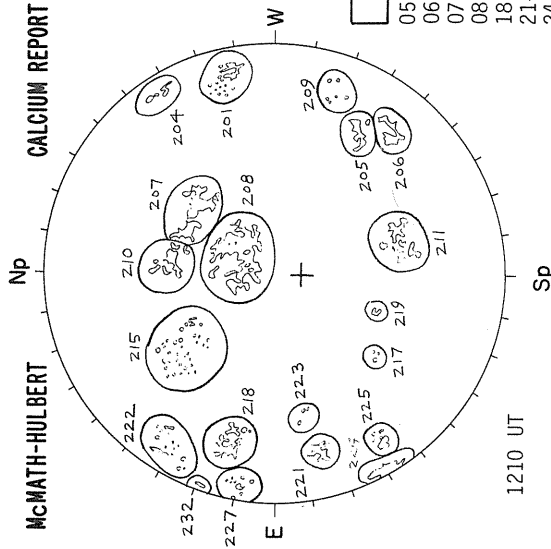
I4  
BIG BEAR



BOULDER



McMATH-HULBERT



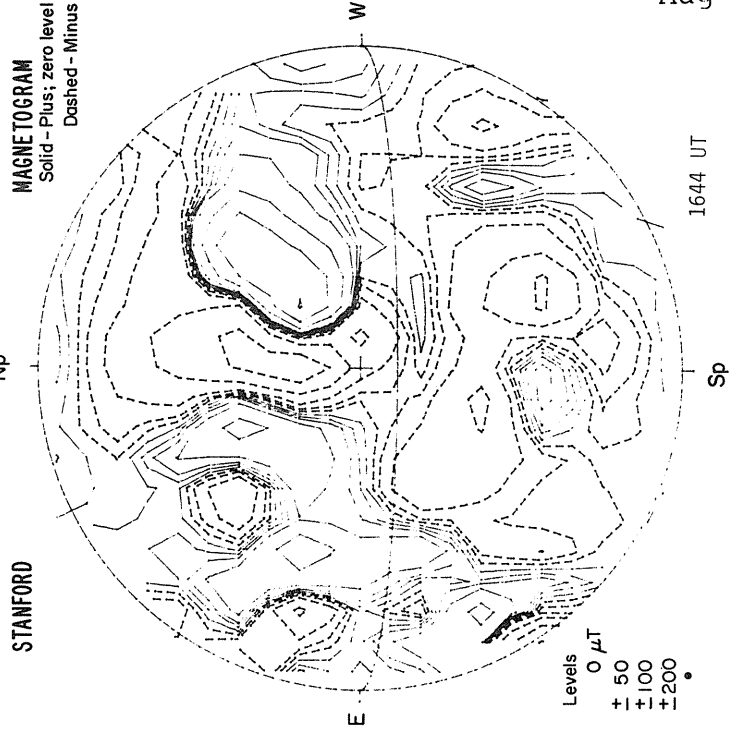
CALCIUM REPORT



NOSC LA POSTA

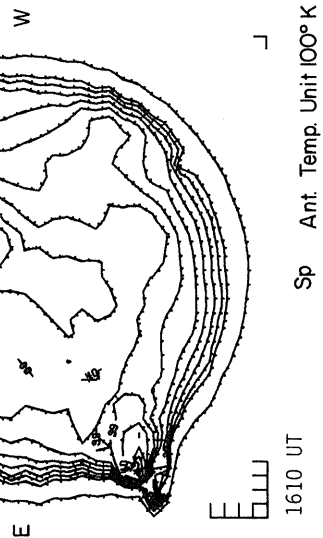


STANFORD



NO DATA

EQUIPMENT



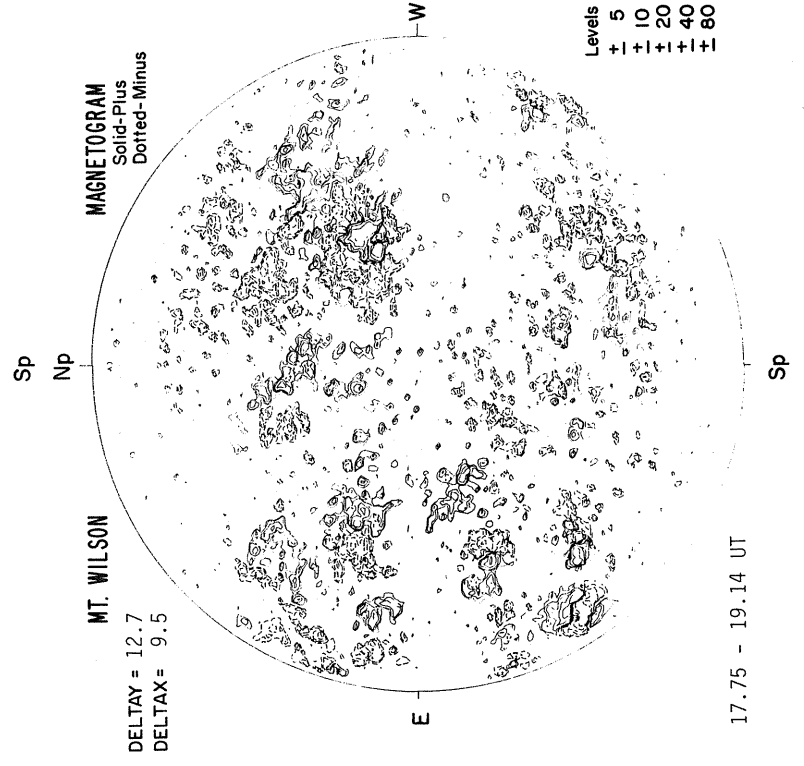
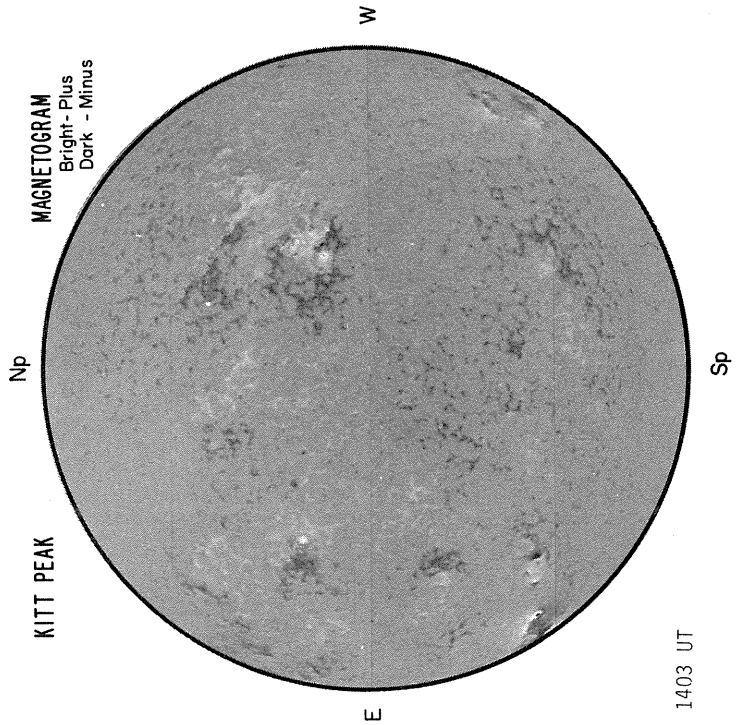
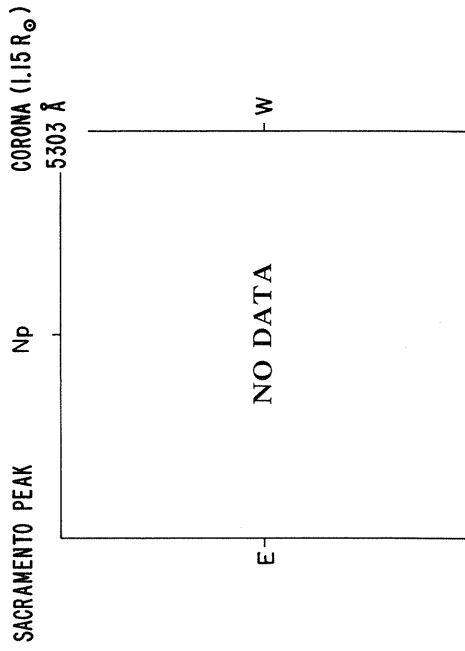
Ant. Temp. Unit 100° K

Ant. Temp. Unit 100° K

----- UT

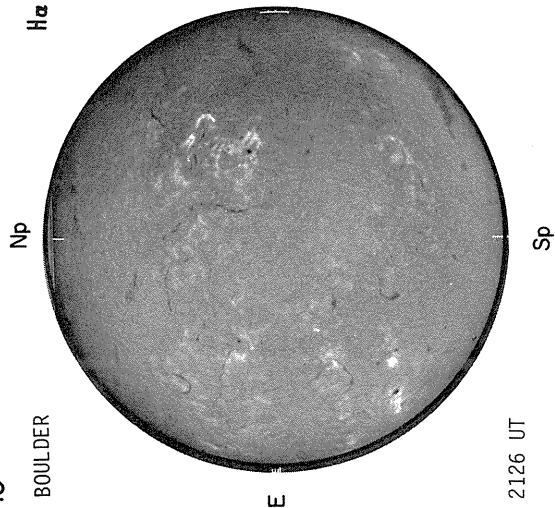


AUGUST 15, 1979 (P = 15.81,  $B_0 = 6.63$ ,  $L_0 = 338.70$ )



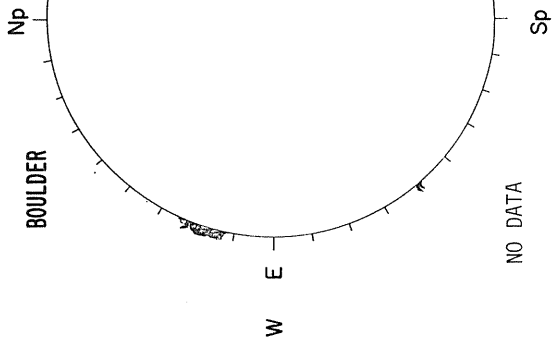
Levels  
+ 5  
+ 10  
+ 20  
+ 40  
+ 80

I5  
BOULDER



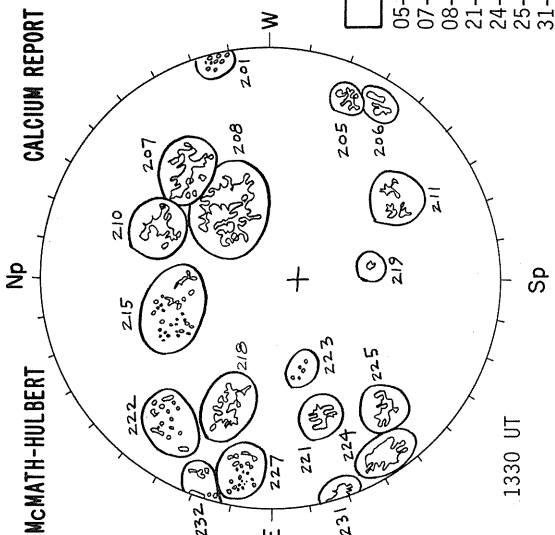
H $\alpha$

BOULDER



SUNSPOTS

McMATH-HULBERT



CALCIUM REPORT

GOOD	M
05- 0900-2.5	
07- 2700-2.5	
08- 4000-3.0	
21- 1100-2.5	
24- 5000-4.0	
25- 1400-3.0	
31- 2400-3.0	
32- 1200-2.5	

PROMINENCES

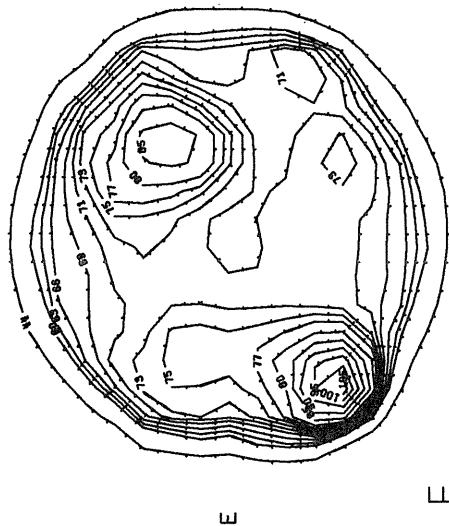
1330 UT

2126 UT

NO DATA

NOSC LA POSTA

2.0 CM

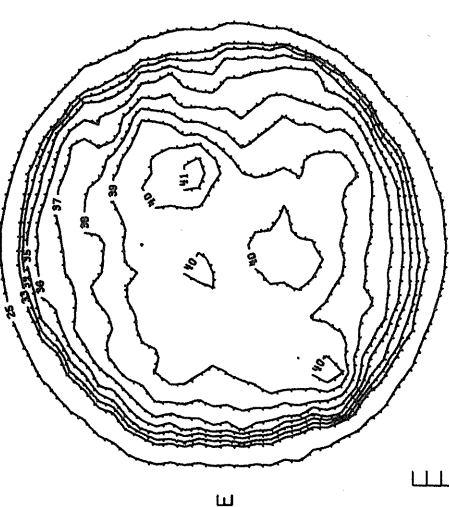


Ant. Temp. Unit 100° K

1556 UT

NOSC LA POSTA

8.6 MM

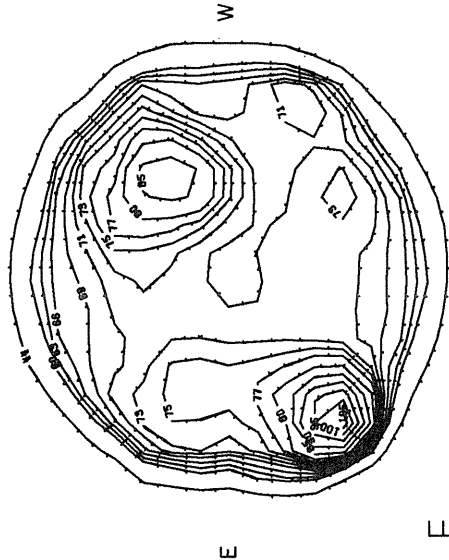


Ant. Temp. Unit 100° K

1556 UT

NOSC LA POSTA

2.0 CM

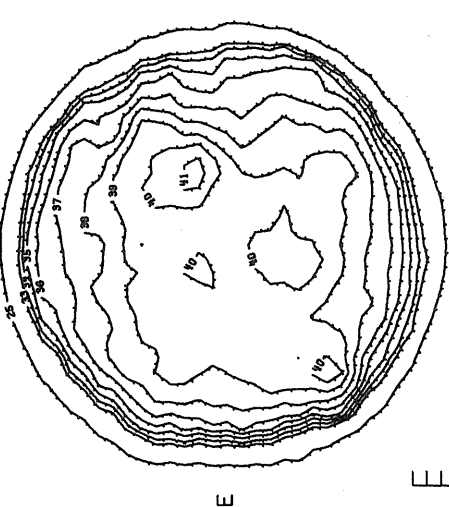


Ant. Temp. Unit 100° K

1556 UT

NOSC LA POSTA

8.6 MM



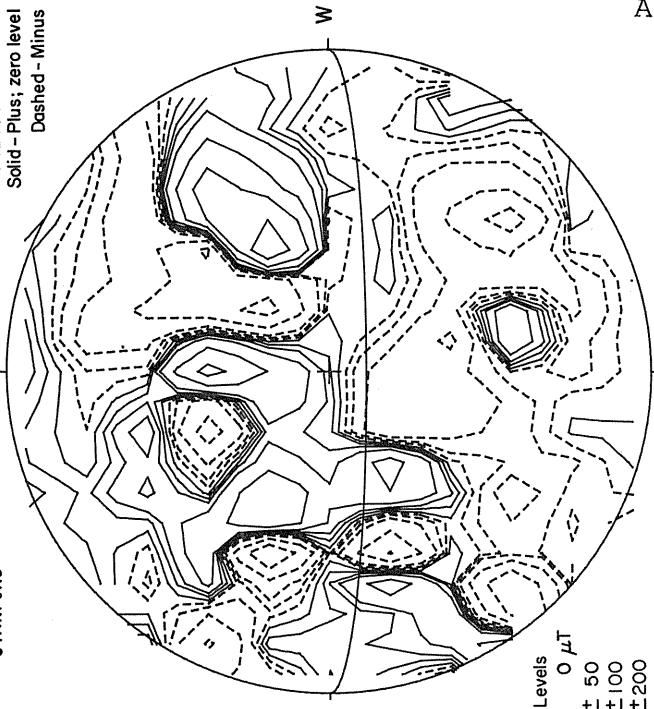
Ant. Temp. Unit 100° K

1556 UT

STANFORD

MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus



Levels

0  $\mu$ T

+ 50

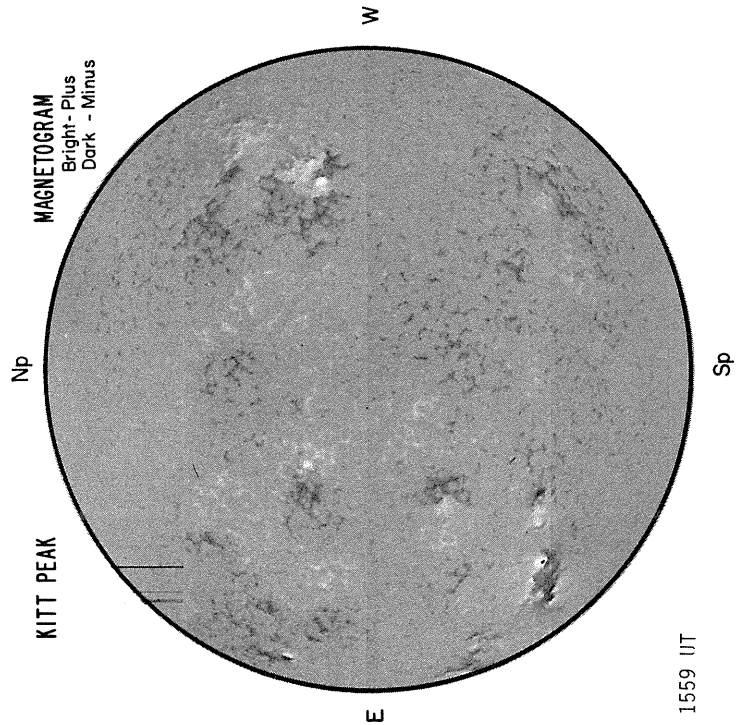
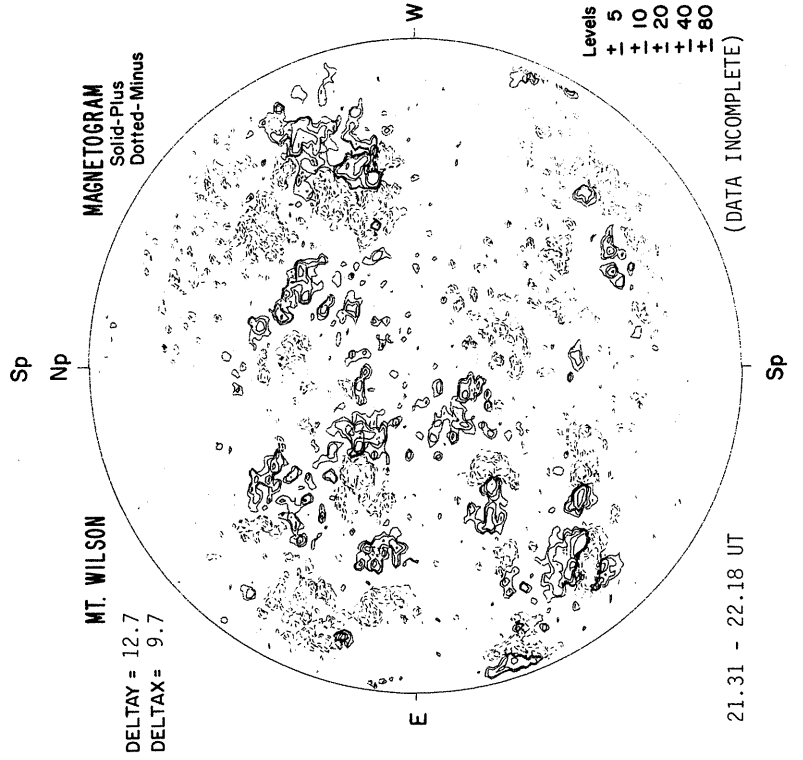
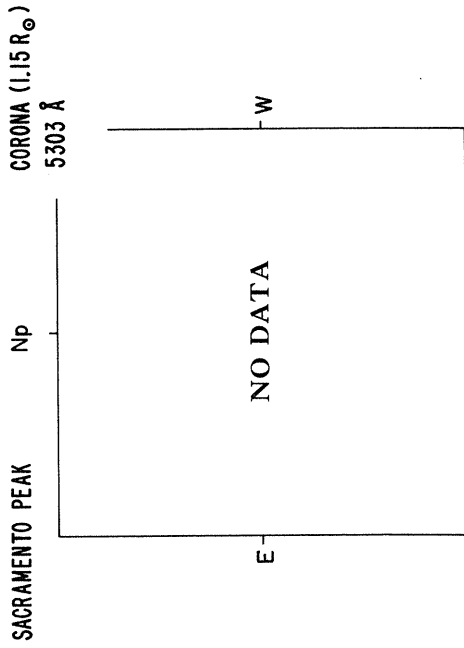
+ 100

+ 200

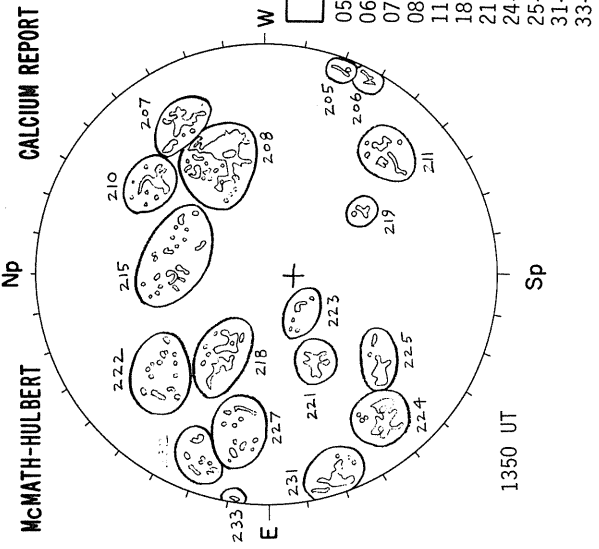
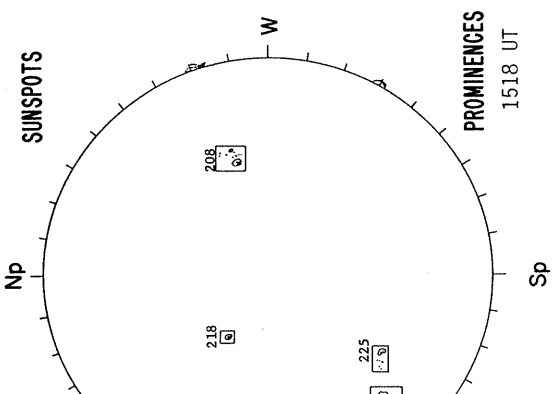
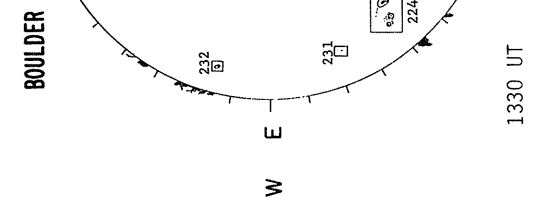
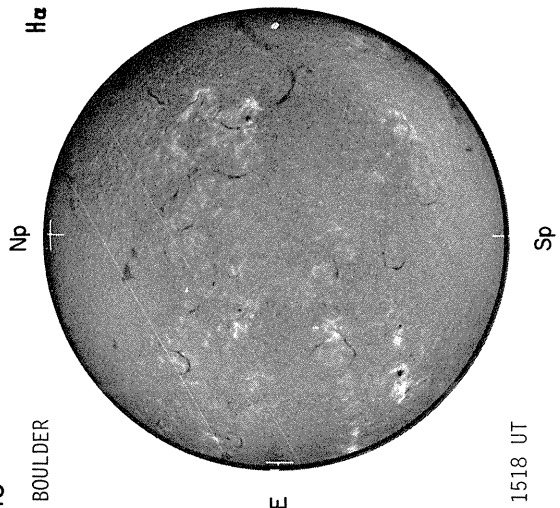
•••

1858 UT

AUGUST 16, 1979 (P = 16.16, B<sub>0</sub> = 6.67, L<sub>0</sub> = 325.48)

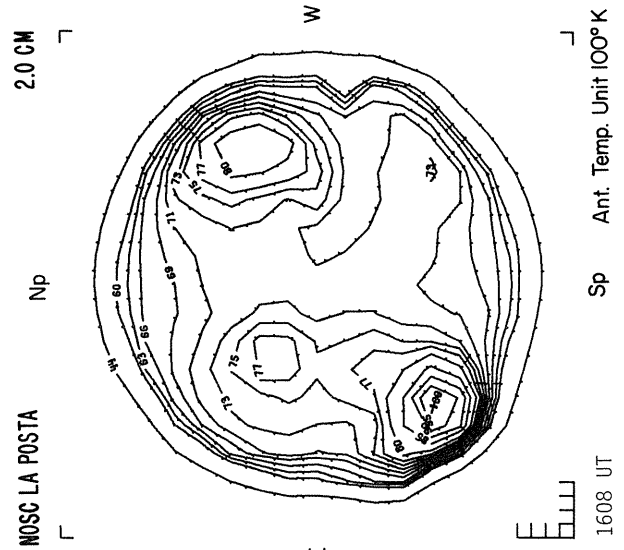


I6  
BOULDER

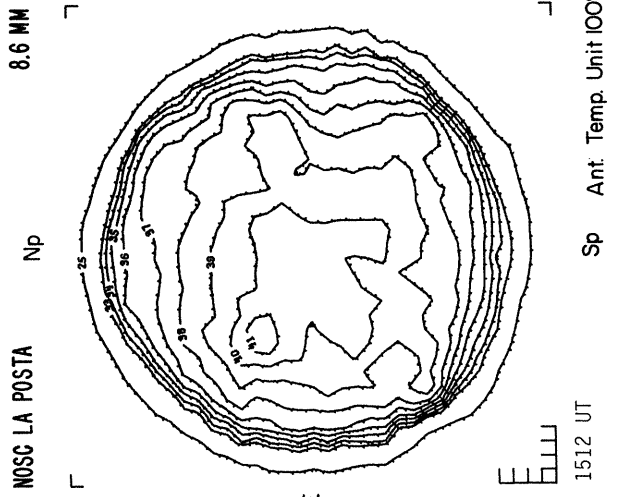


PROMINENCES

MOSC LA POSTA

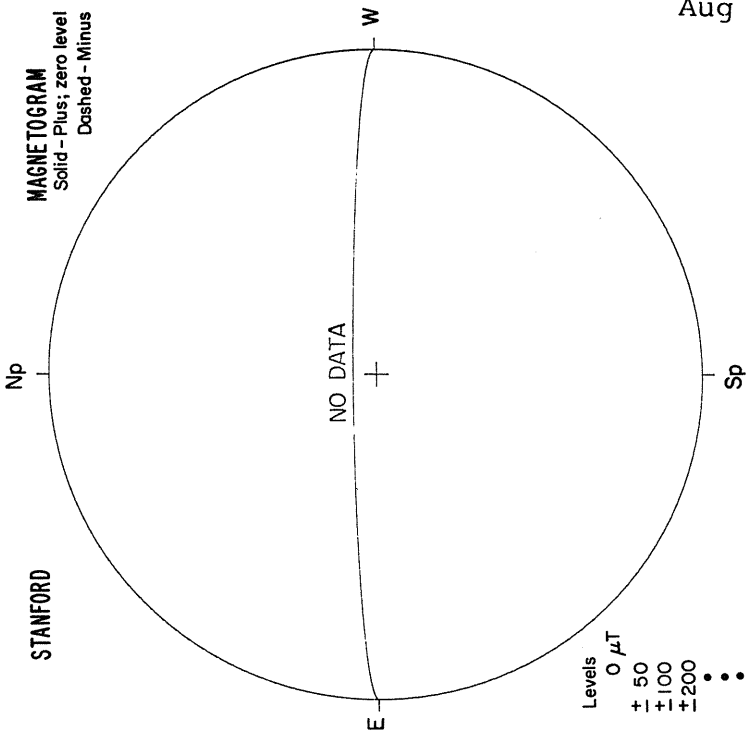


MOSC LA POSTA



8.6 MM

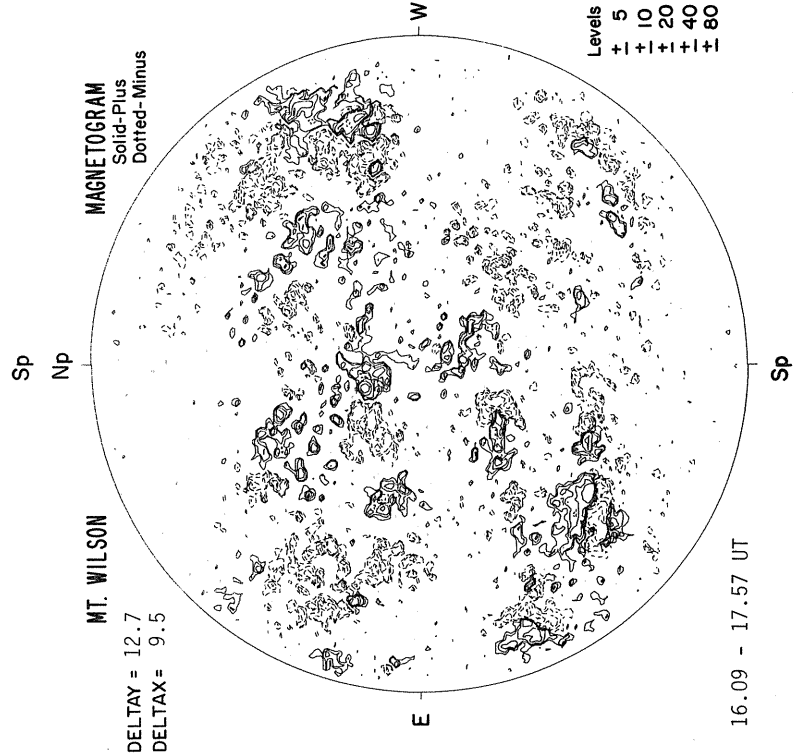
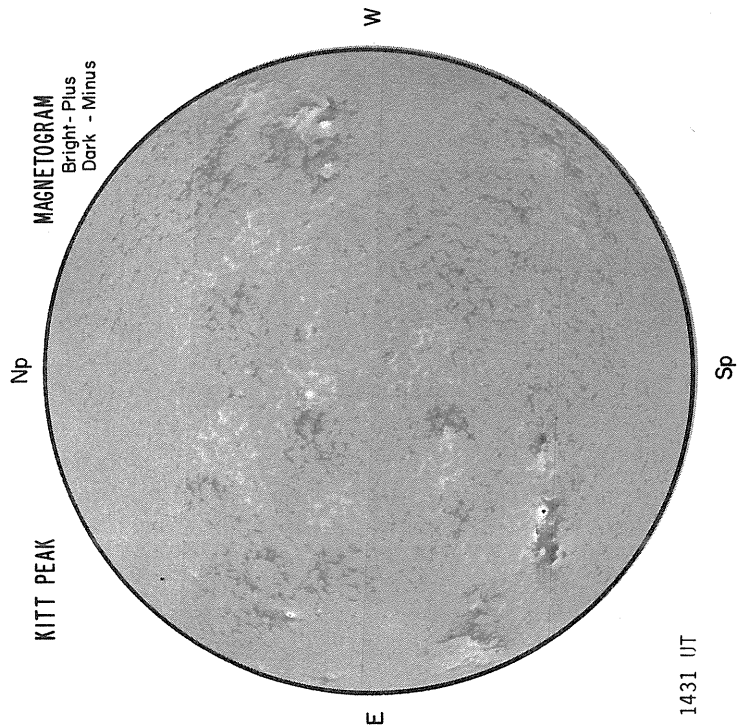
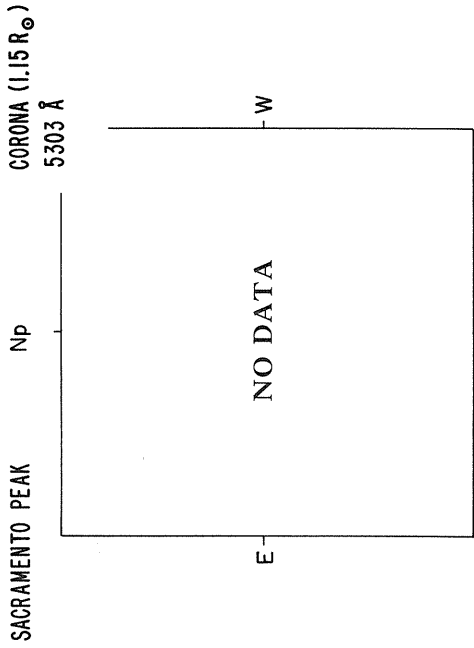
STANFORD



Ant. Temp. Unit 100°K

Ant. Temp. Unit 100°K

AUGUST 17, 1979 (P = 16.49, B<sub>0</sub> = 6.72, L<sub>0</sub> = 312.26)

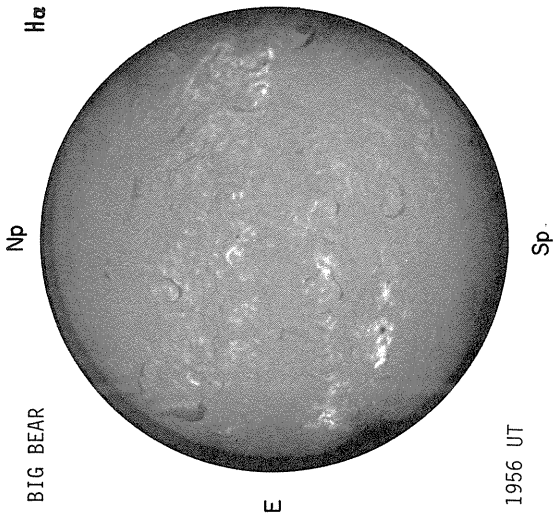


1431 UT

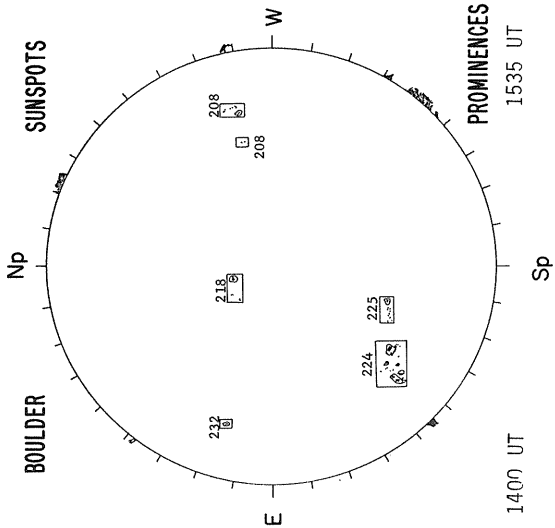
16.09 - 17.57 UT

17

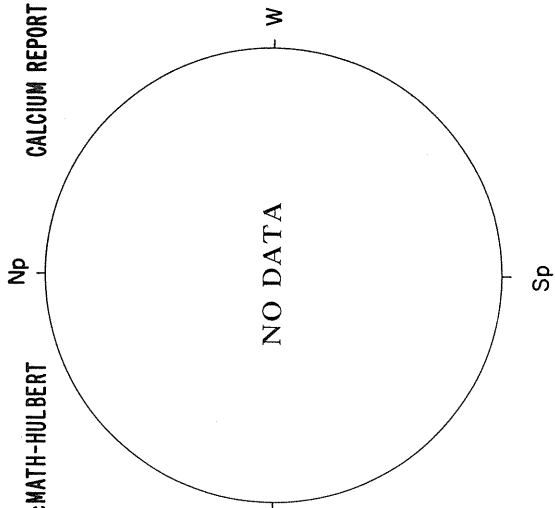
BIG BEAR



BOULDER

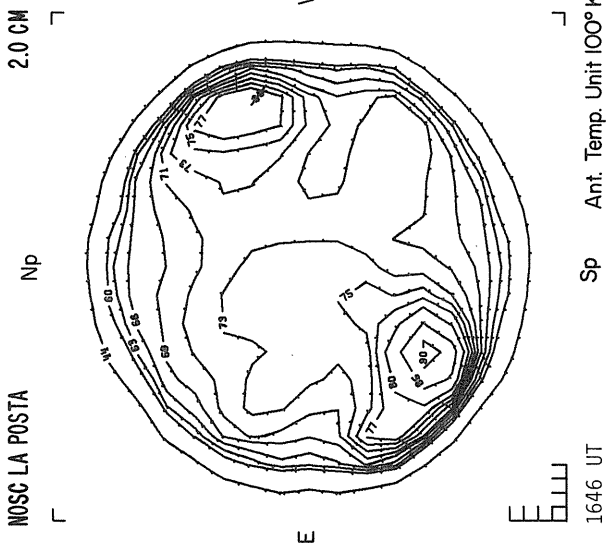


McMATH-HULBERT

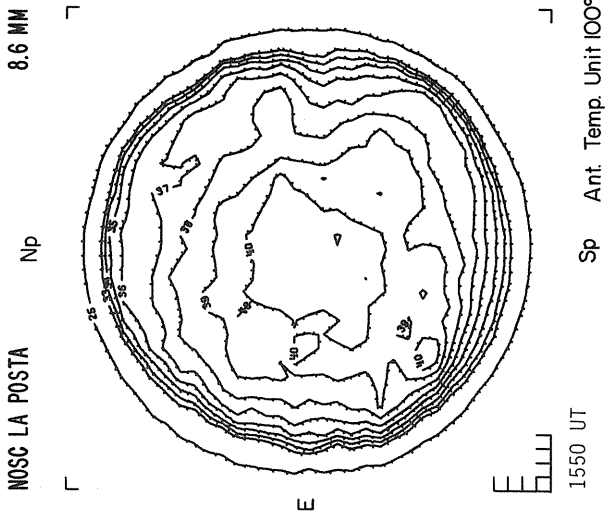


CALCIUM REPORT

MOSC LA POSTA

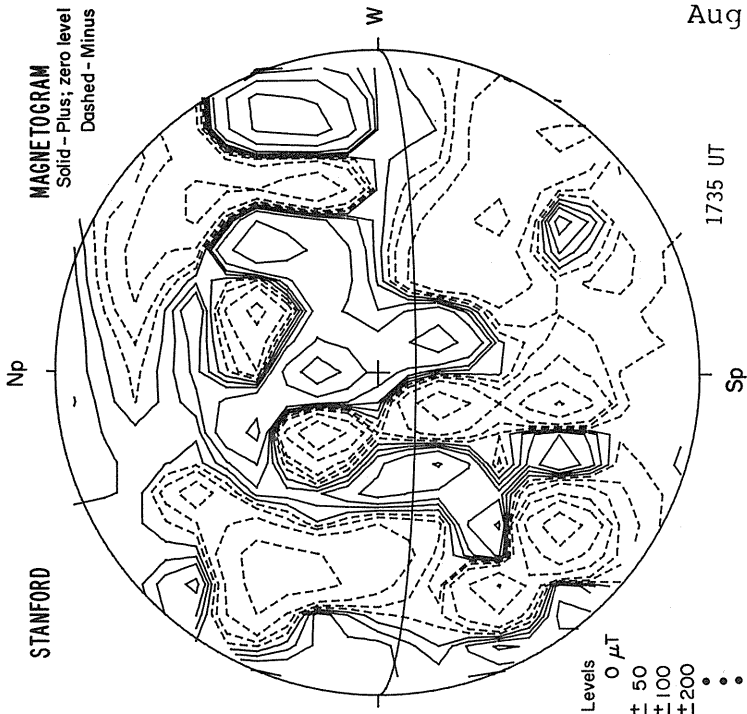


MOSC LA POSTA



8.6 MM

STANFORD



MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

Ant. Temp. Unit 100° K

Sp Ant. Temp. Unit 100° K

1550 UT

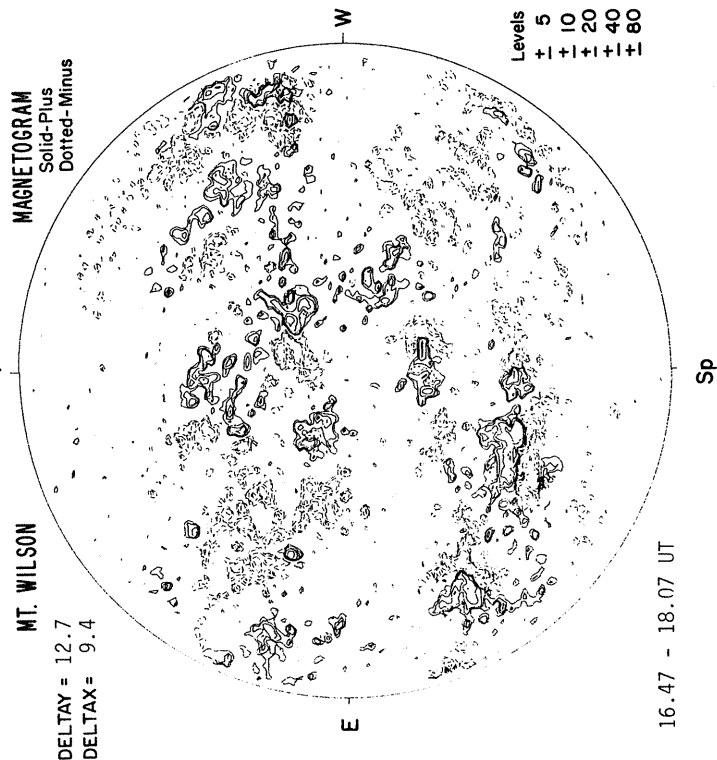
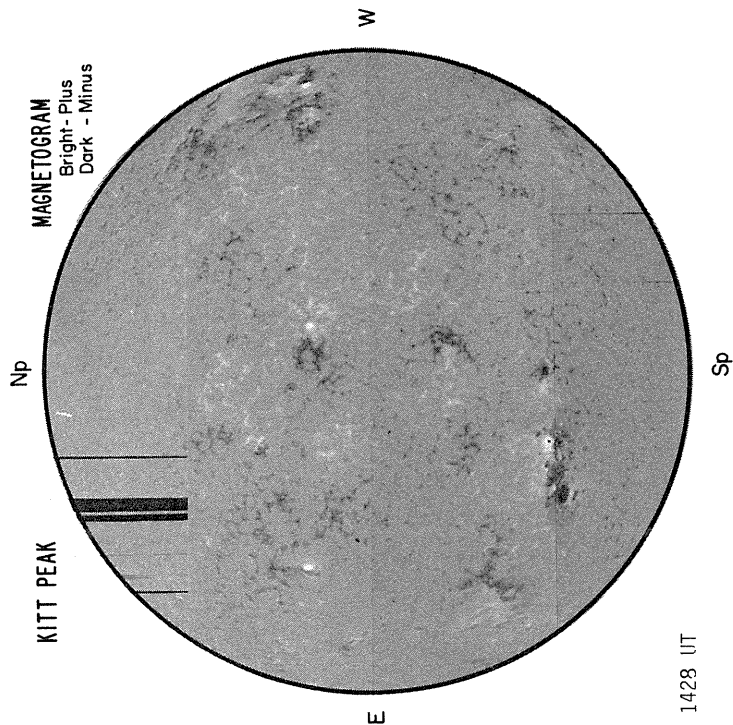
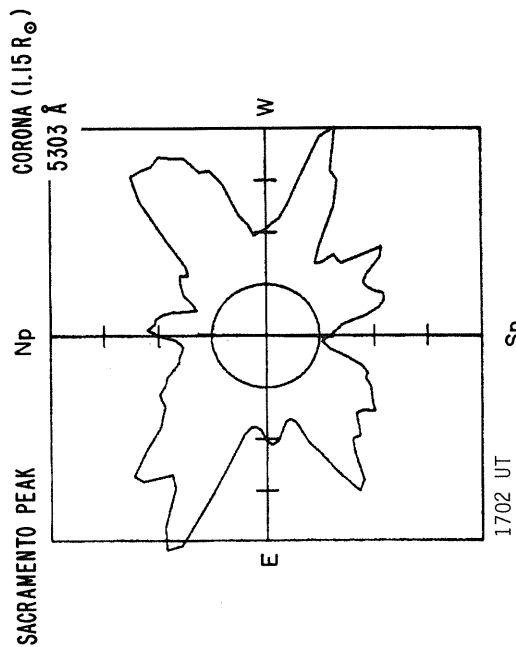
Sp Ant. Temp. Unit 100° K

Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200

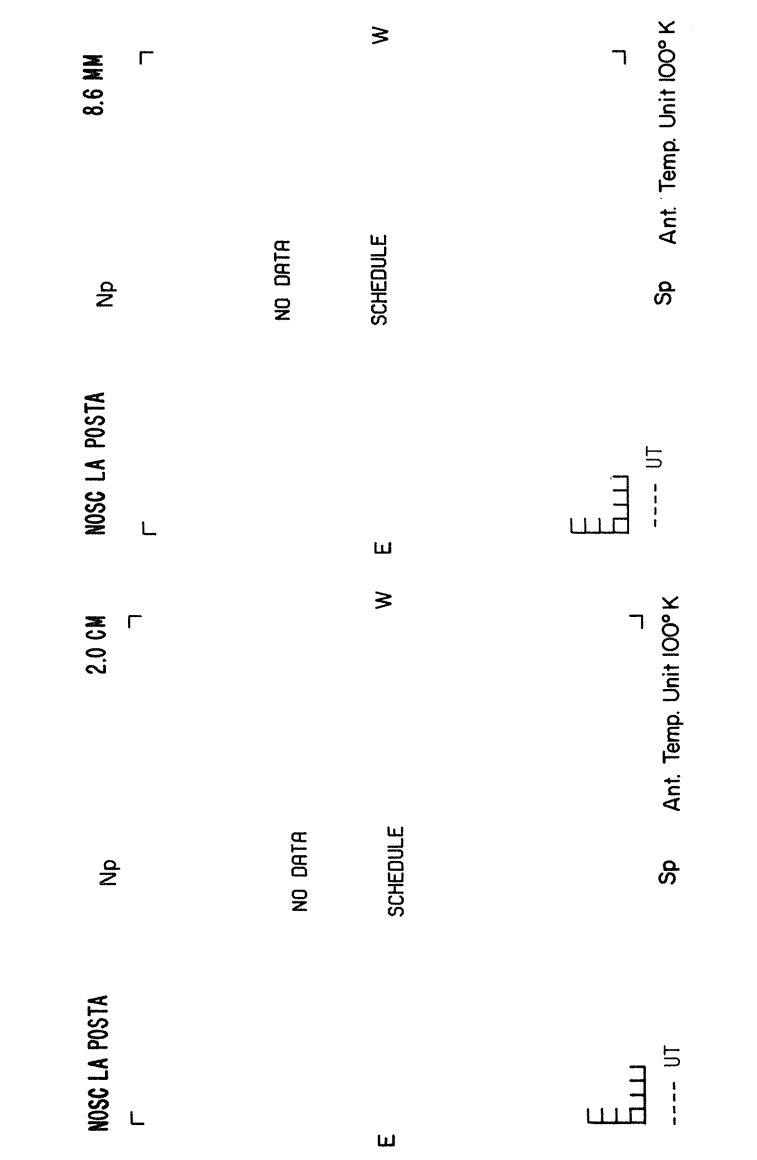
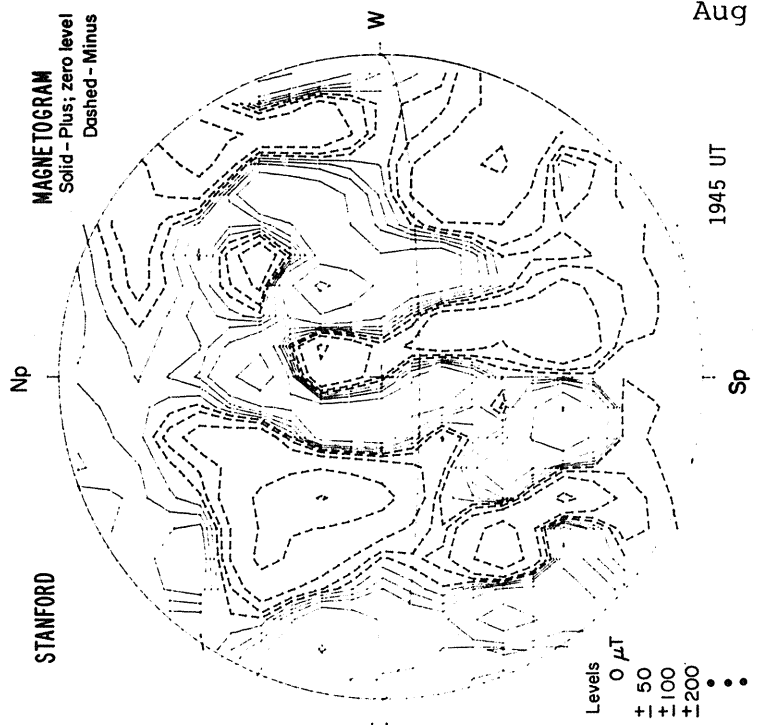
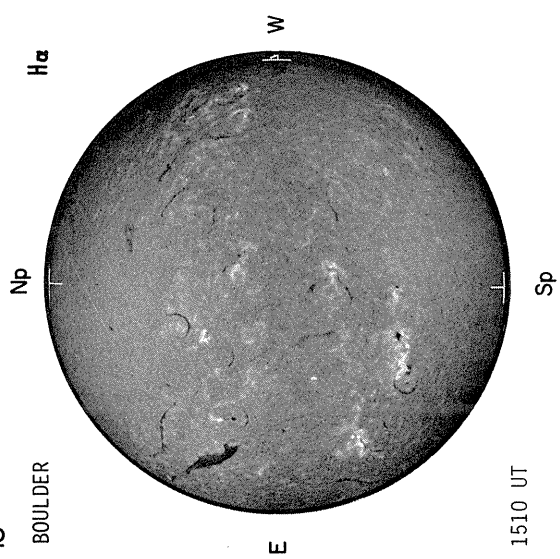
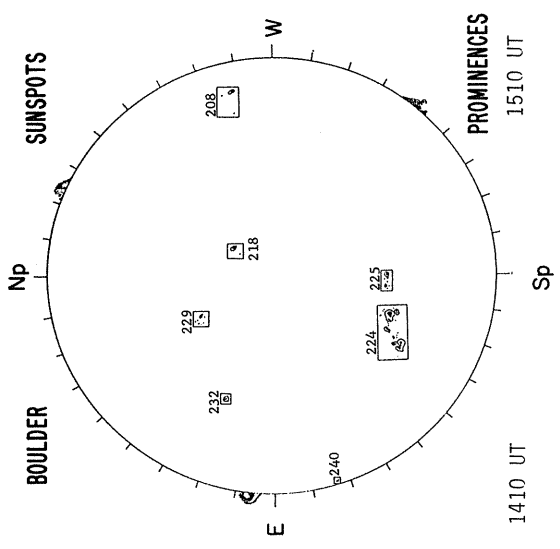
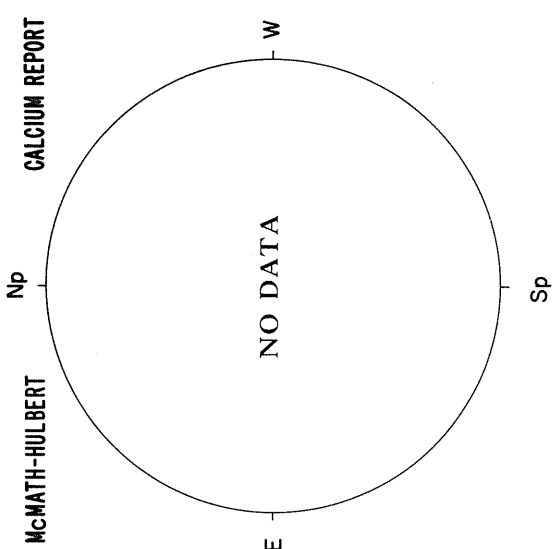
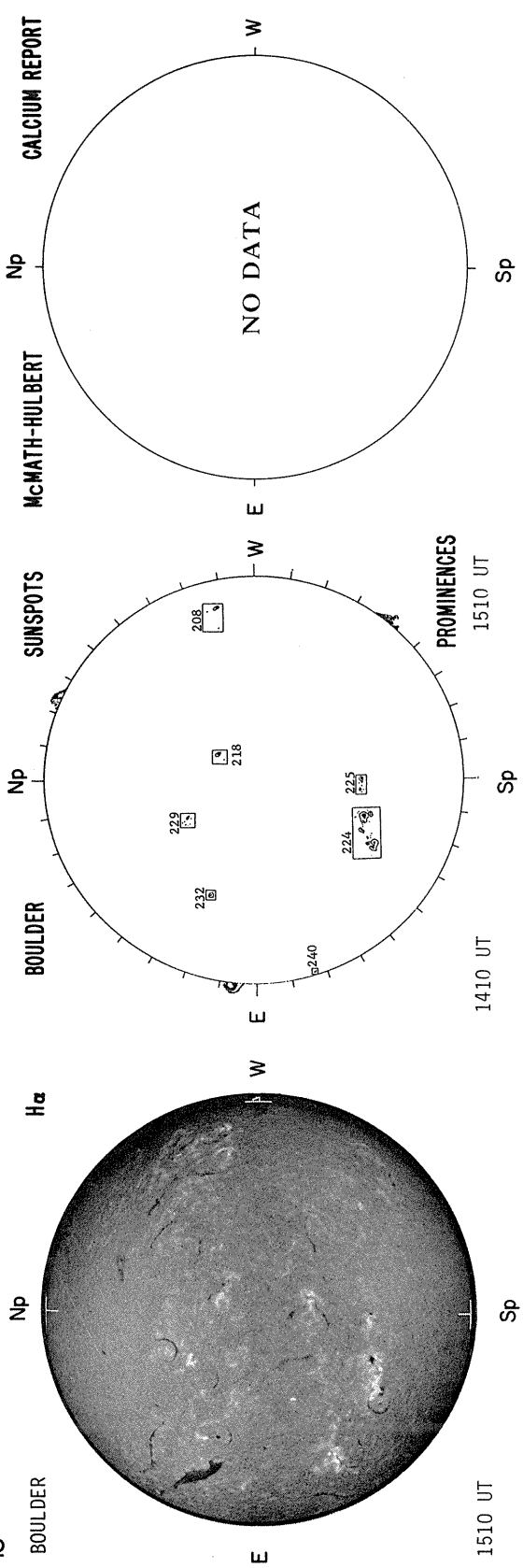
PROMINENCES

1535 UT

AUGUST 18, 1979 (P = 16.82, B<sub>0</sub> = 6.77, L<sub>0</sub> = 299.05)



18



NOSC LA POSTA  
Np  
E  
2.0 CM  
NOSC LA POSTA  
Np  
E  
8.6 MM

NO DATA  
SCHEDULE  
NO DATA  
SCHEDULE

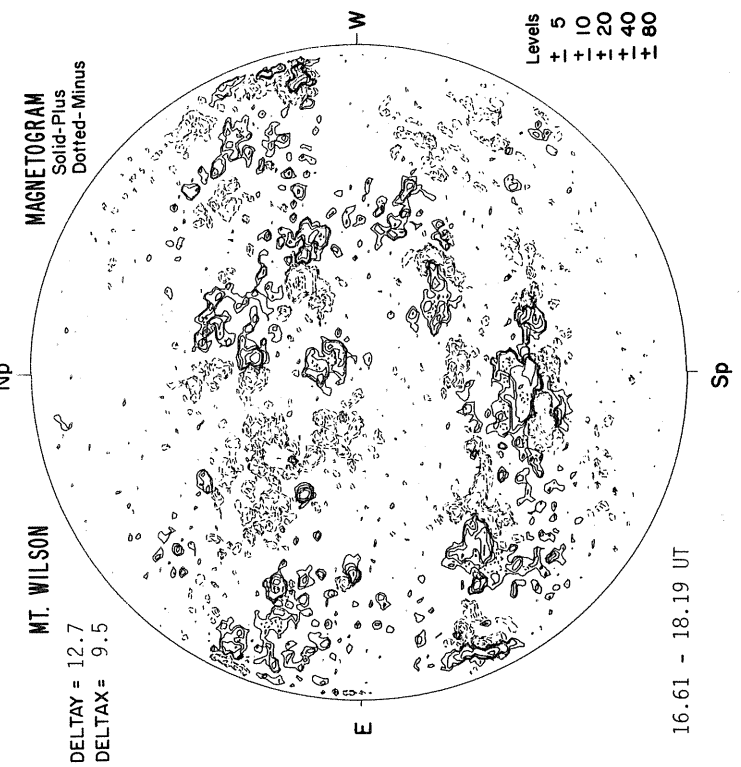
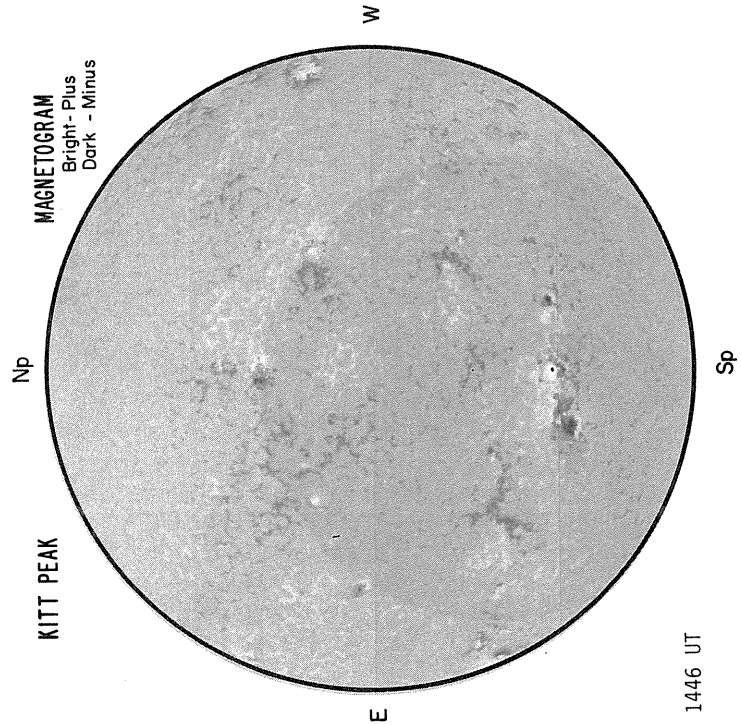
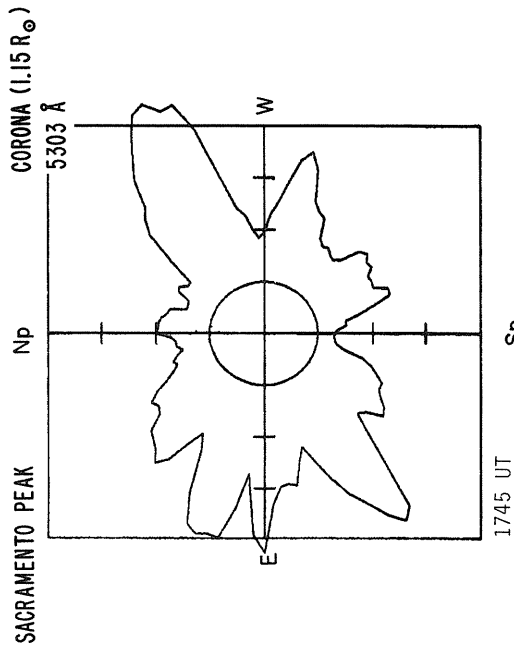
E  
----- UT  
Ant. Temp. Unit 100° K

E  
----- UT  
Ant. Temp. Unit 100° K

Sp  
Ant. Temp. Unit 100° K

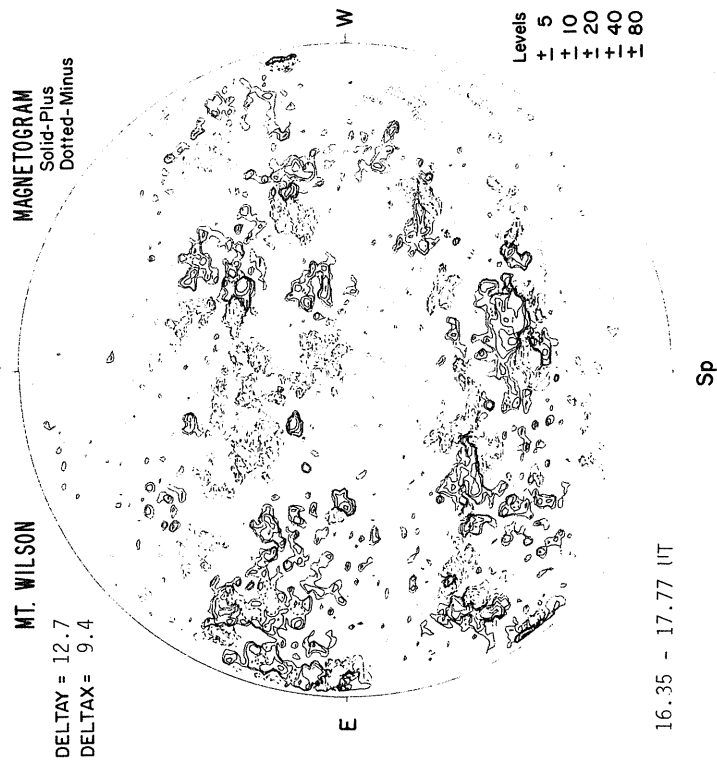
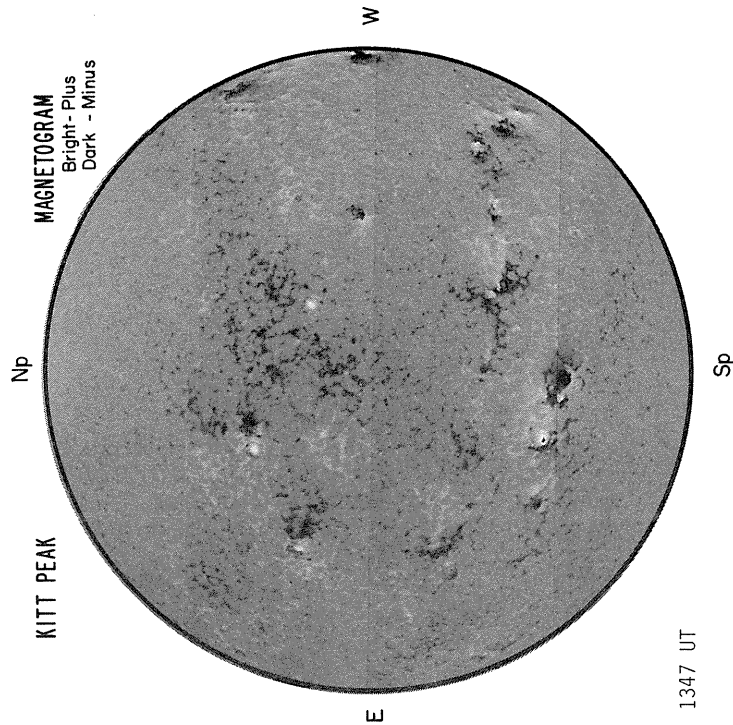
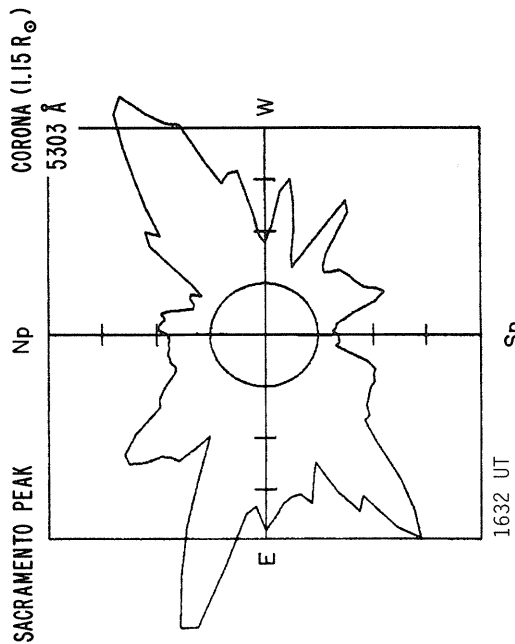


AUGUST 19, 1979 (P = 17.15, B<sub>0</sub> = 6.81, L<sub>0</sub> = 285.83)

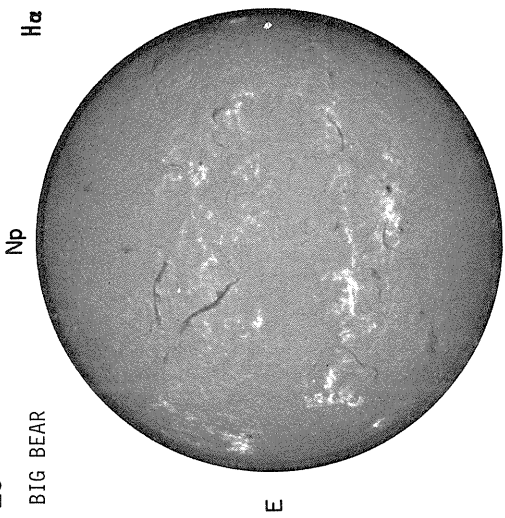




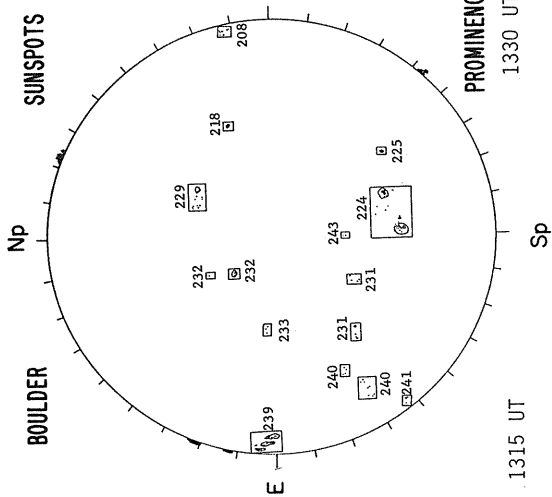
AUGUST 20, 1979 (P = 17.47, B<sub>0</sub> = 6.85, L<sub>0</sub> = 272.61)



20  
BIG BEAR

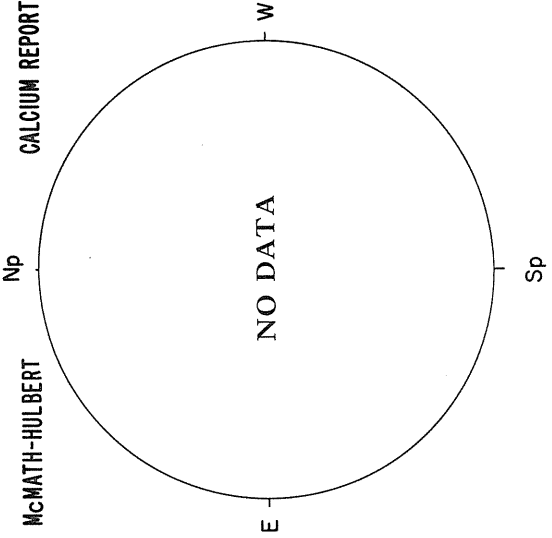


BOULDER



PROMINENCES

McMATH-HULBERT



CALCIUM REPORT

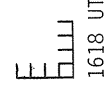
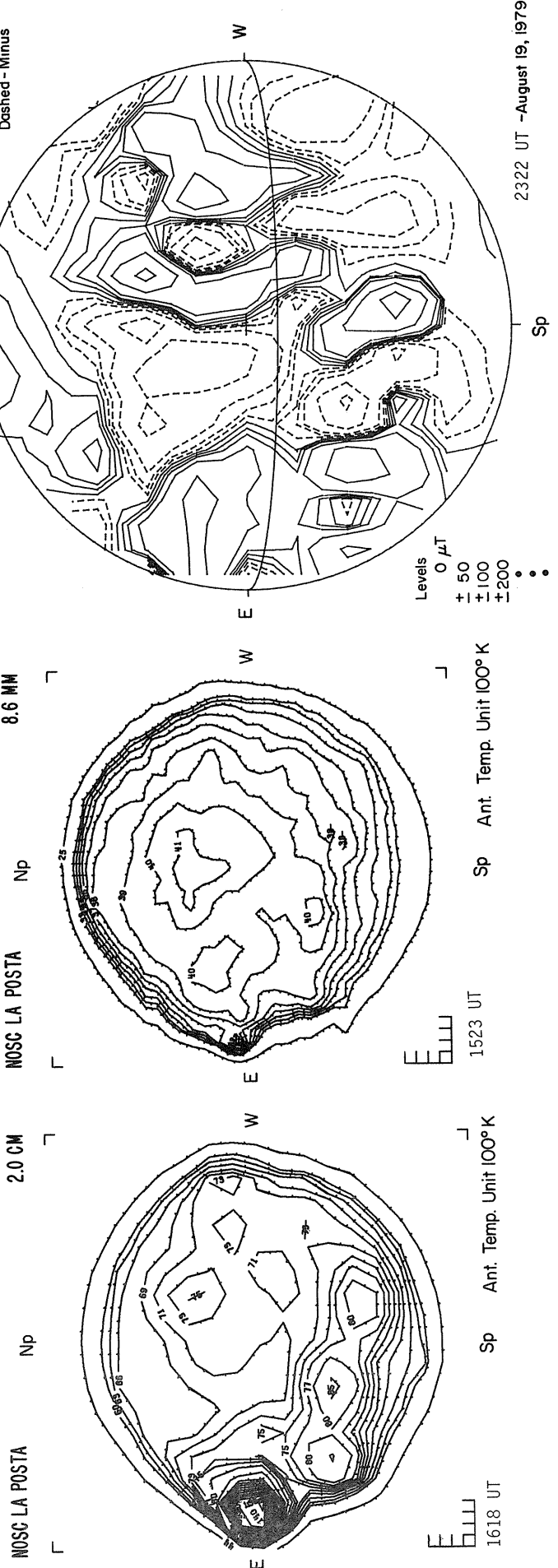


NOSC LA POSTA

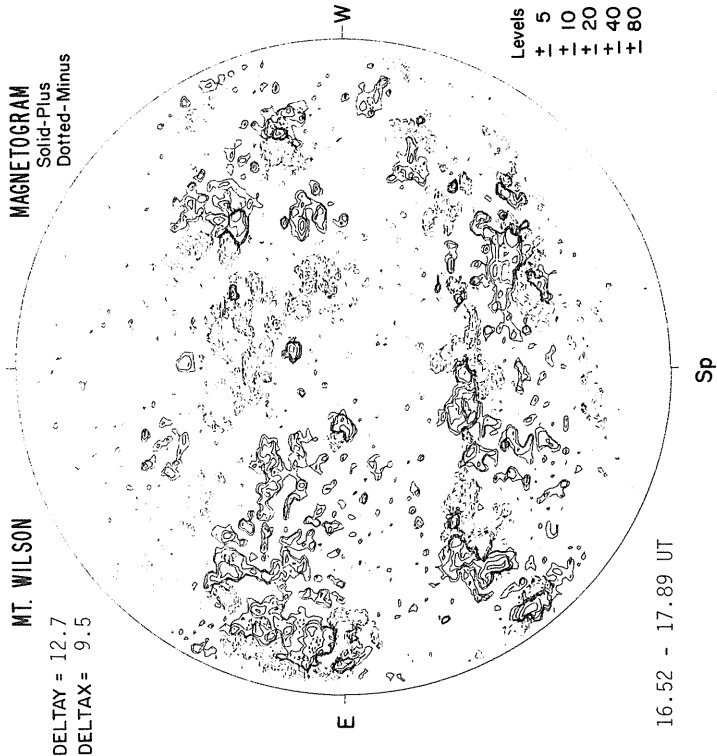
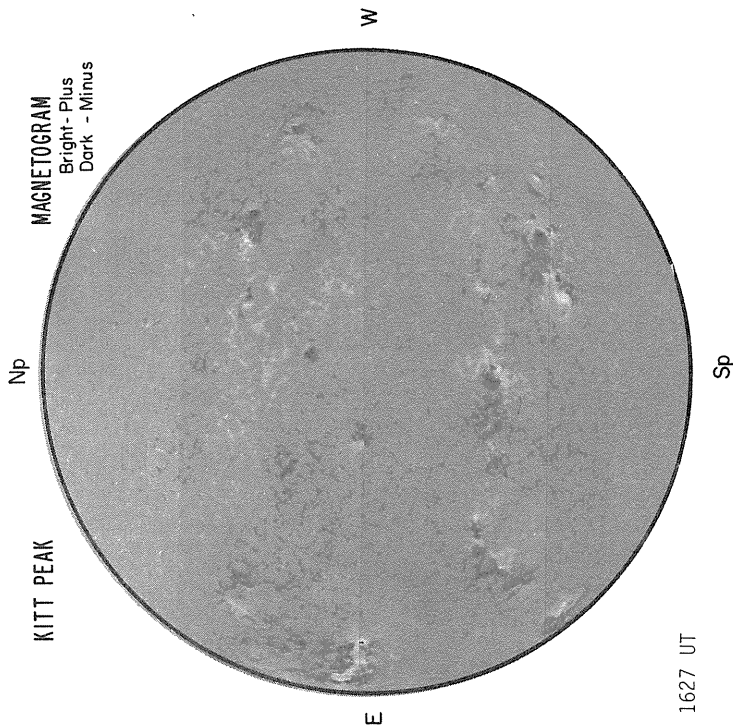
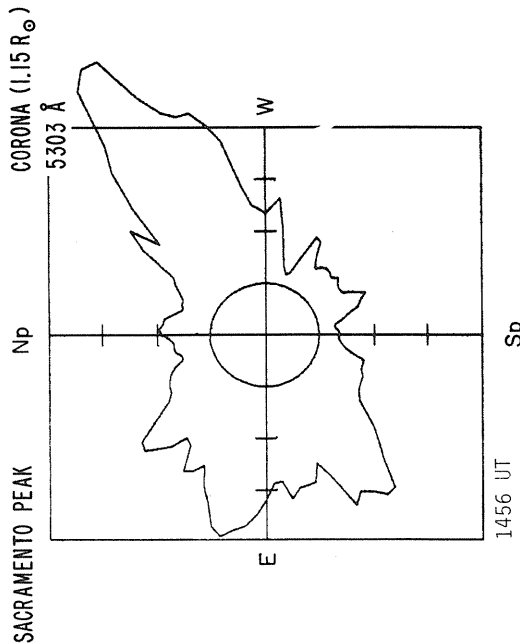
2.0 CM

NOSC LA POSTA

8.6 MM

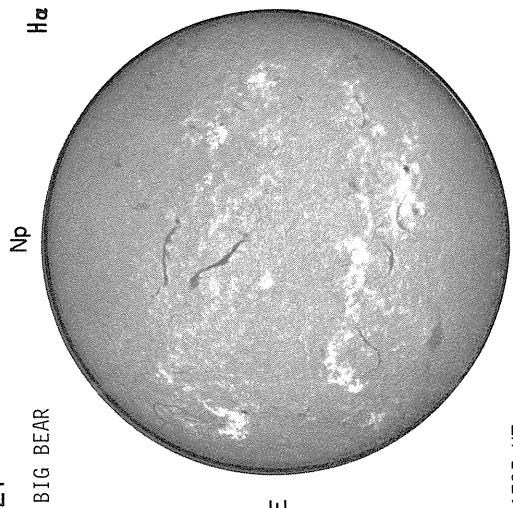


AUGUST 21, 1979 (P = 17.79, B<sub>0</sub> = 6.89, L<sub>0</sub> = 259.40)



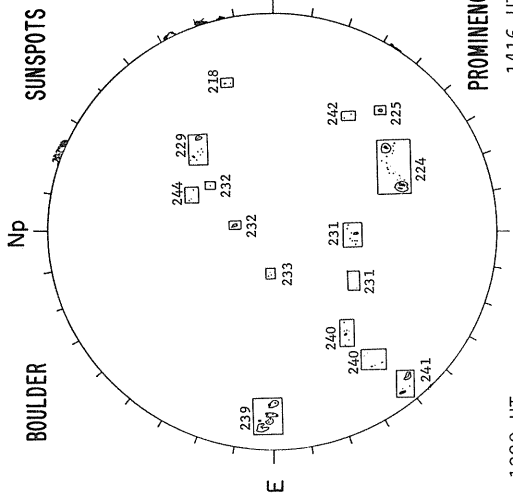
21

BIG BEAR



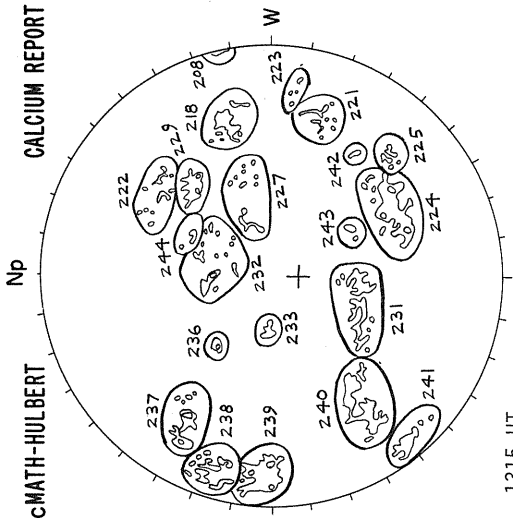
H $\alpha$

BOULDER



SUNSPOTS

McMATH-HULBERT



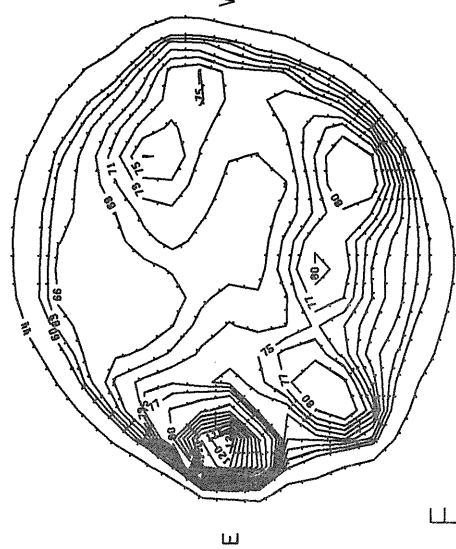
CALCIUM REPORT

GOOD	S
08-	0600-2.5
18-	1600-3.0
21-	1000-2.5
24-	4800-3.5
29-	1400-3.0
31-	3000-3.0
33-	0500-3.0
37-	2000-2.5
38-	3000-2.0
39-	6000-3.5
40-	5200-3.5
41-	2400-3.5
42-	0400-2.5
44-	0300-2.5

MOSC LA POSTA

2.0 CM

1517 UT



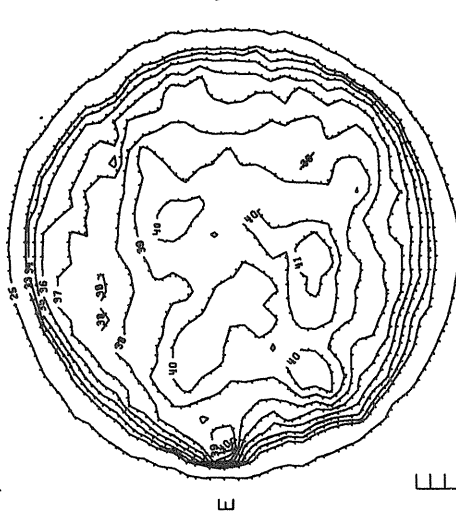
Ant. Temp. Unit 100°K



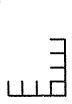
MOSC LA POSTA

8.6 MM

1416 UT



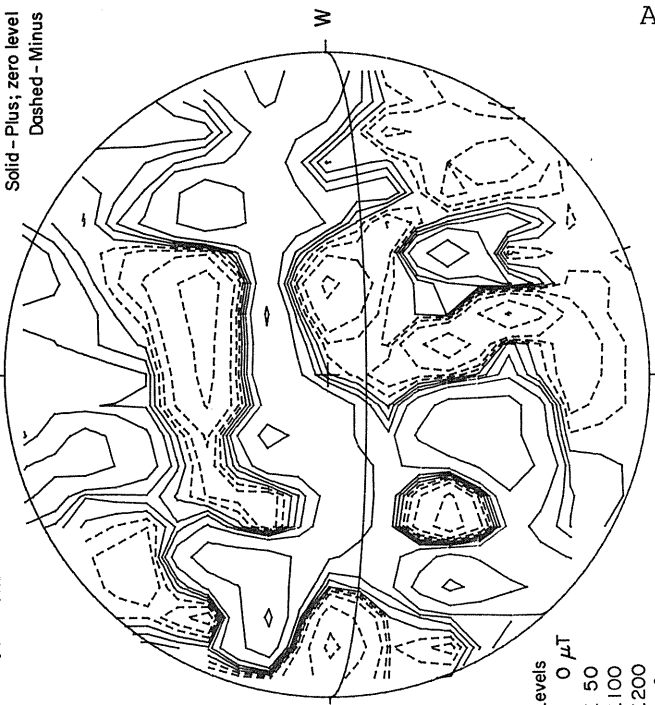
Ant. Temp. Unit 100°K



STANFORD

Np

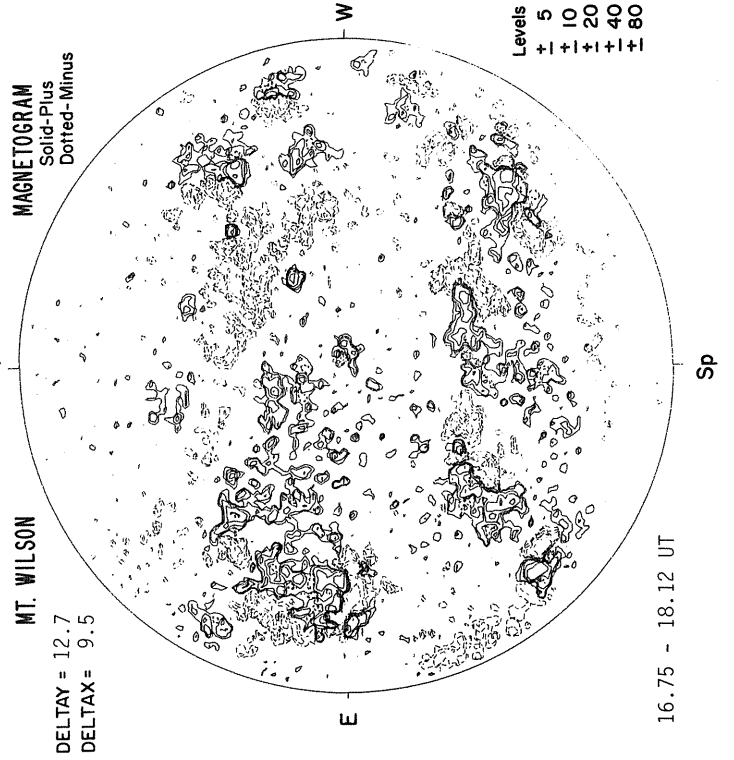
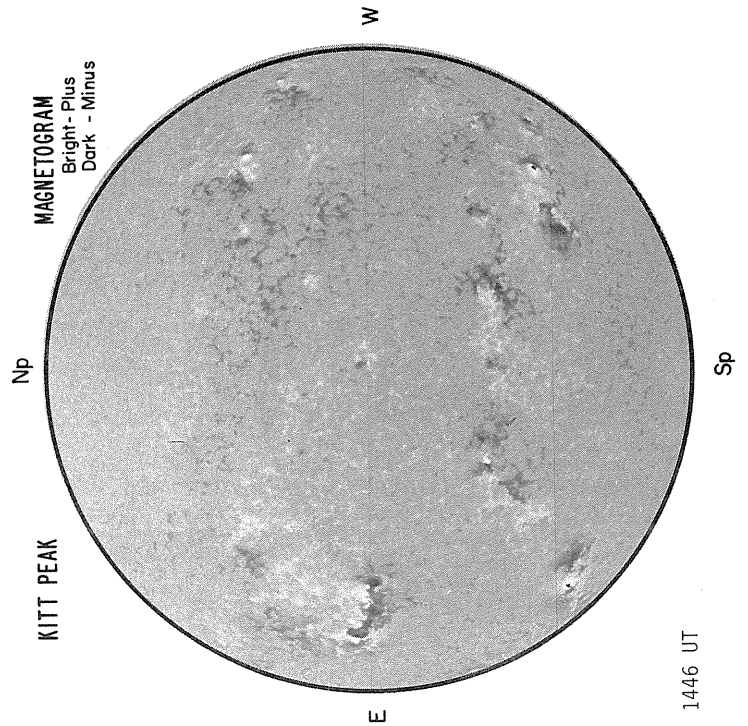
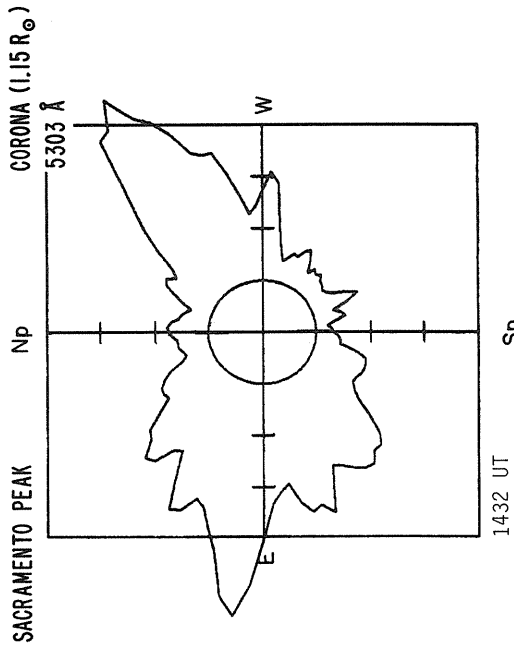
1710 UT



Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200

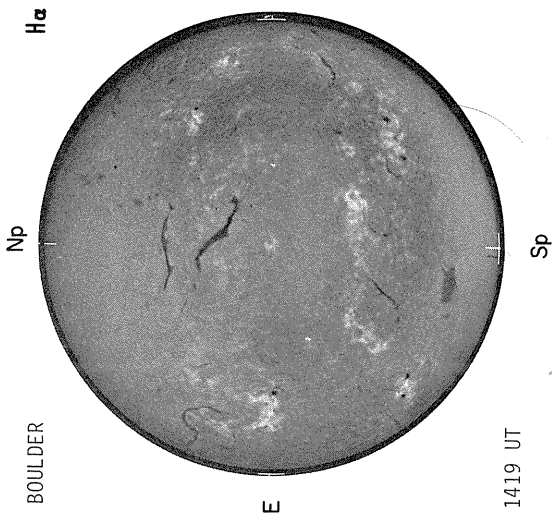
MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

AUGUST 22, 1979 (P = 18.10, B<sub>o</sub> = 6.93, L<sub>o</sub> = 246.18)

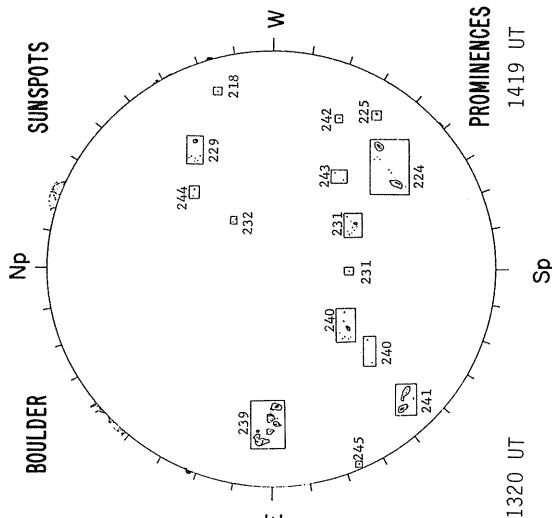


22

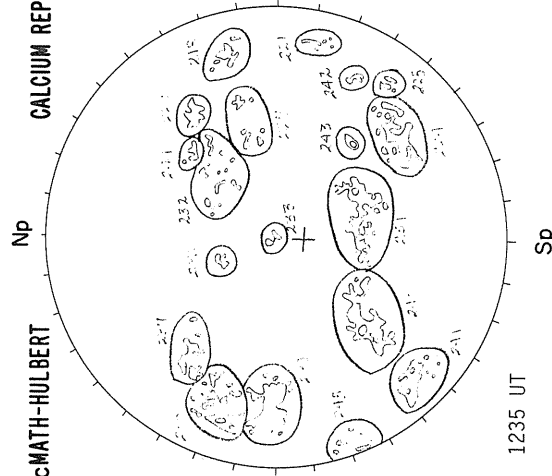
BOULDER



BOULDER



McMATH-HULBERT



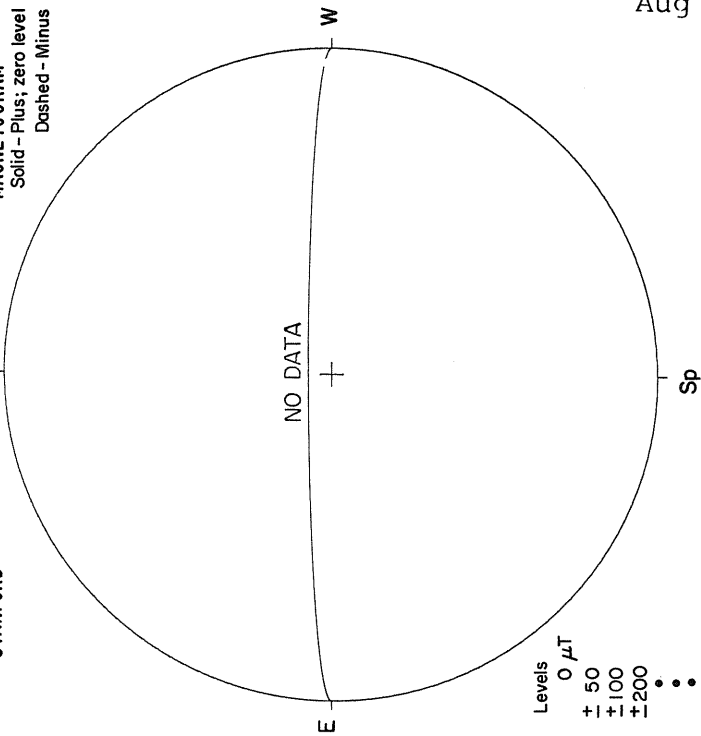
CALCIUM REPORT

GOOD	S
18-	1600-2.5
24-	4500-3.0
29-	1400-3.0
31-	3200-3.0
33-	0300-2.5
37-	1800-2.5
38-	3000-2.5
39-	5600-3.5
40-	5000-3.0
41-	2800-3.5
42-	0500-2.5
44-	0300-3.0

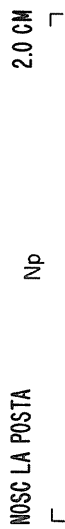
MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus

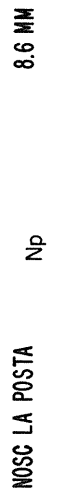
STANFORD



MOSC LA POSTA



MOSC LA POSTA



Ant. Temp. Unit 100° K

Ant. Temp. Unit 100° K

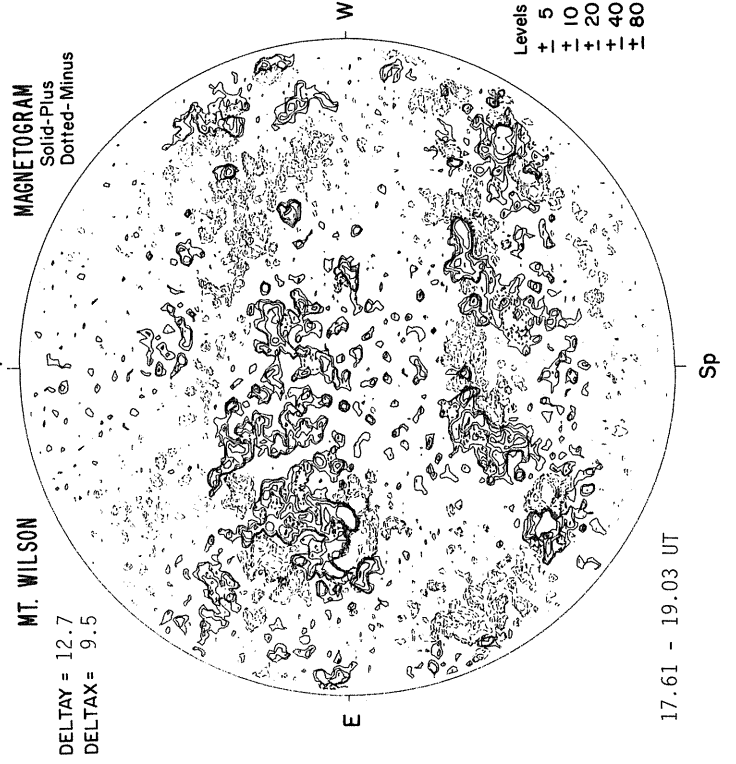
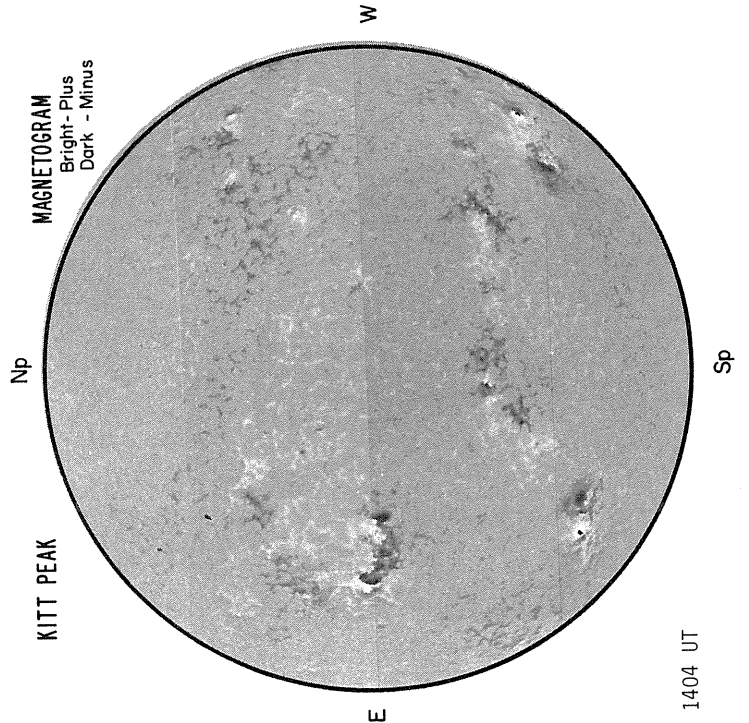
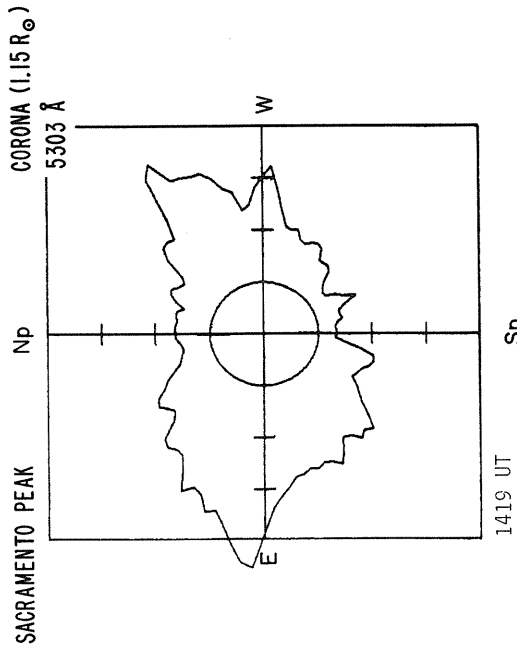
Ant. Temp. Unit 100° K

Levels  
0  $\mu$ T  
 $\pm$  50  
 $\pm$  100  
 $\pm$  200

Levels  
0  $\mu$ T  
 $\pm$  50  
 $\pm$  100  
 $\pm$  200



AUGUST 23, 1979 (P = 18.4l, B<sub>o</sub> = 6.96, L<sub>o</sub> = 232.97)



Levels

+ 5

+ 10

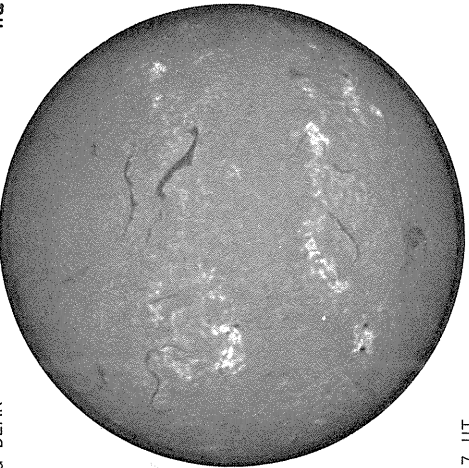
+ 20

+ 40

+ 80

BIG BEAR

Np



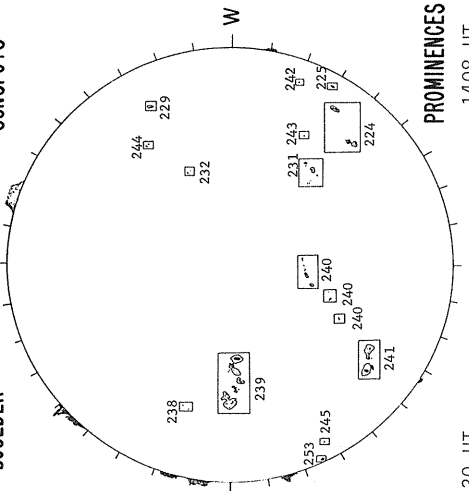
E

1837 UT

H $\alpha$

BOULDER

Np



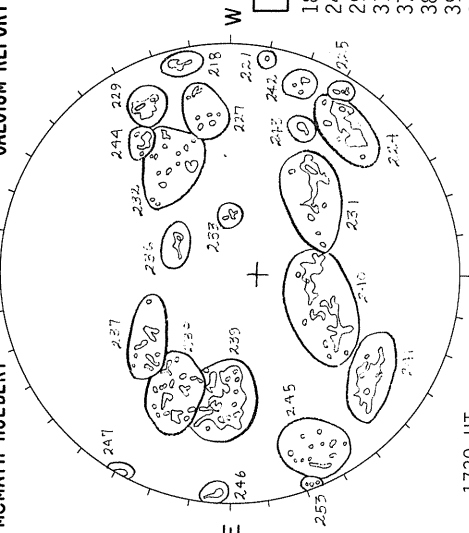
W

1430 UT

Sp

SUNSPOTS

Np



W

1730 UT

Sp

McMATH-HULBERT

CALCIUM REPORT

POOR   S
18- 1400-2.5
24- 4500-3.0
29- 1500-3.0
31- 2800-3.0
37- 1400-2.5
38- 2800-2.5
39- 5800-3.0
40- 4200-3.0
41- 3400-3.5
42- 0400-2.5
44- 0600-2.5
46- 0900-2.5

MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus

Np

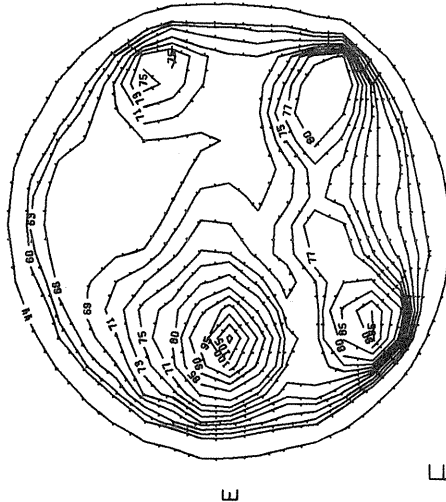
STANFORD

8.6 MM

NOSC LA POSTA

2.0 CM

NOSC LA POSTA

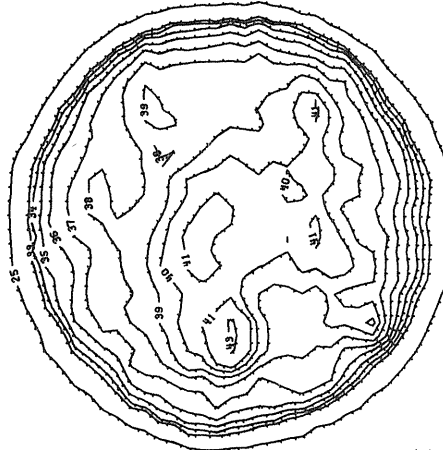


E

2224 UT

Sp

Ant. Temp. Unit 100°K



W

2128 UT

Sp

Ant. Temp. Unit 100°K



W

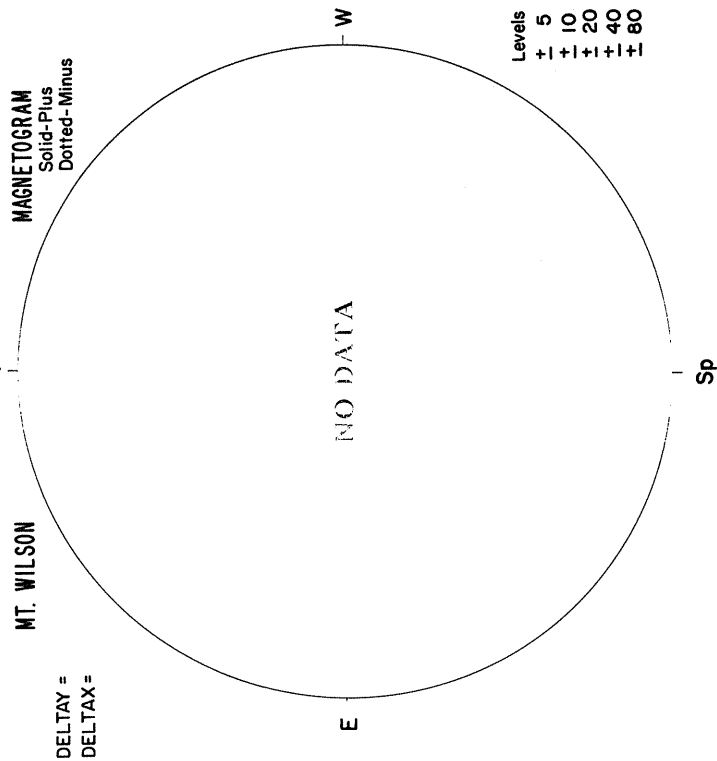
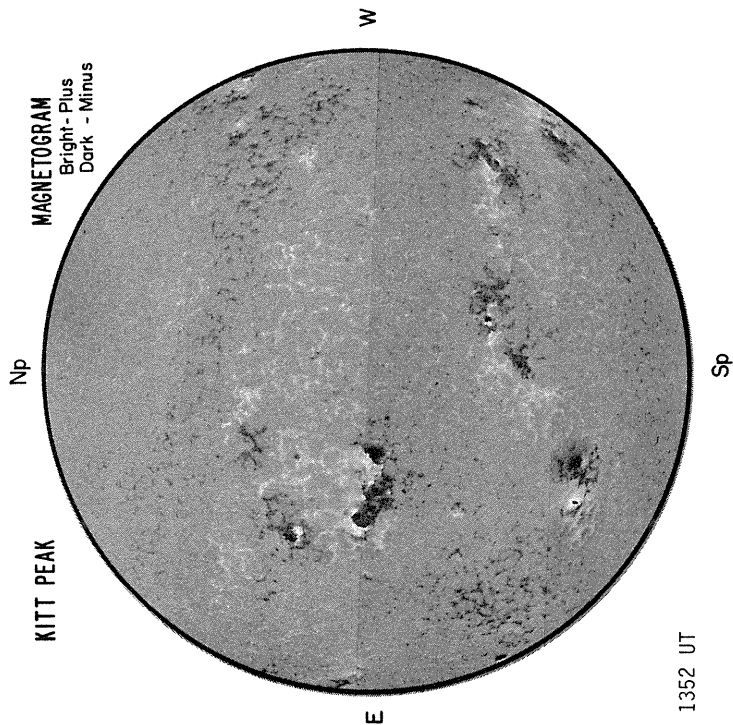
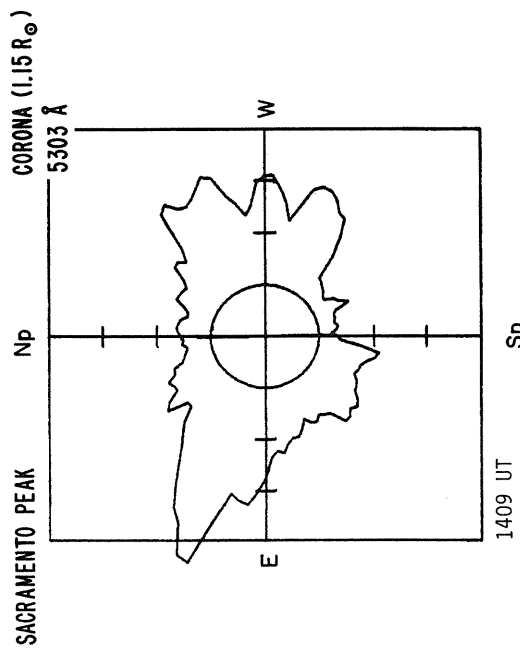
E

Levels  
0  $\mu$ T  
± 50  
± 100  
± 200  
•••

NO DATA

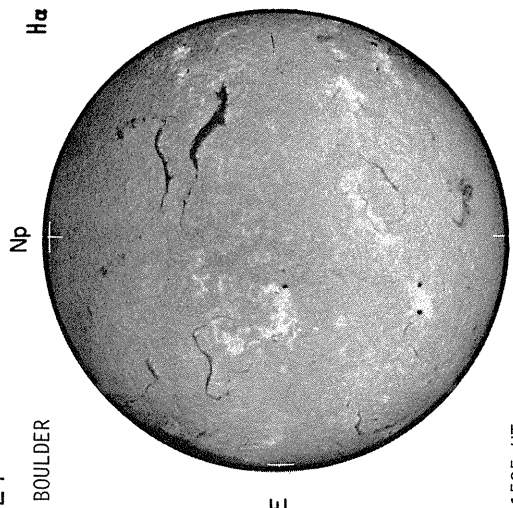
Np

AUGUST 24, 1979 (P = 18.71, B<sub>0</sub> = 6.99, L<sub>0</sub> = 219.76)



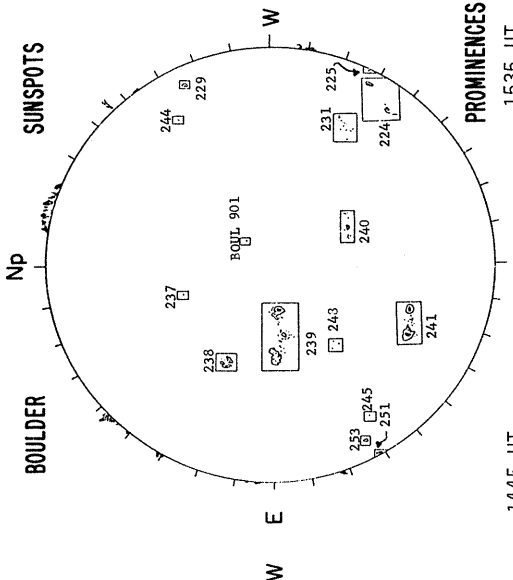
24

Boulder



1535 UT

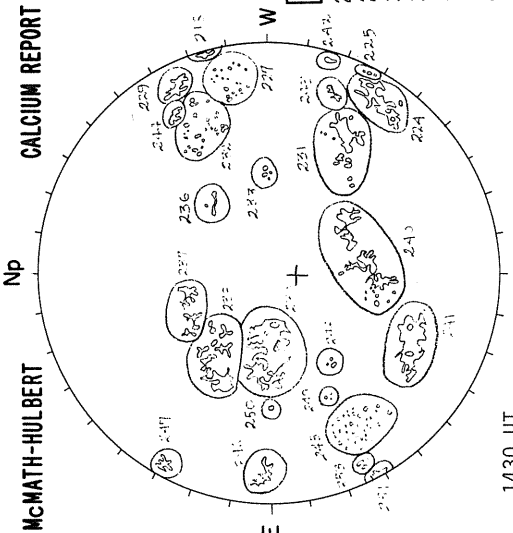
Boulder



1445 UT

Sunspots

McMath-Hulbert

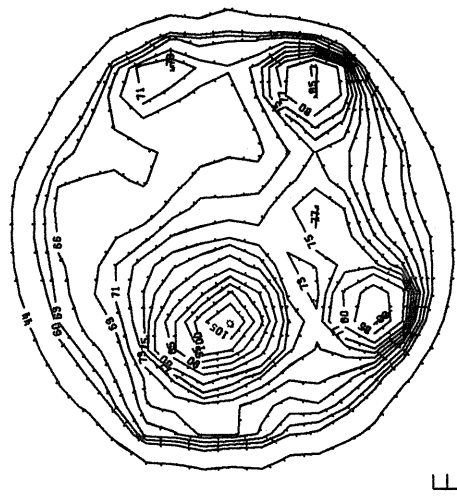


1430 UT

POOR	M
24-	4000-2.5
29-	1200-3.0
31-	2600-3.5
37-	1200-2.5
38-	2700-3.0
39-	5200-3.0
40-	3700-3.0
41-	4000-3.0
44-	0600-3.0
46-	0900-3.0
48-	0100-2.5
51-	0900-2.5

Calcium Report

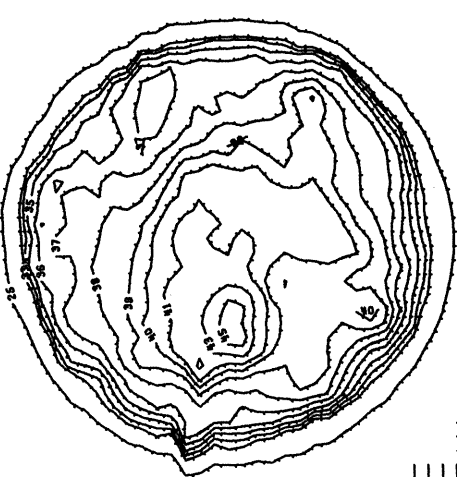
NOSC LA POSTA



1658 UT

2.0 CM

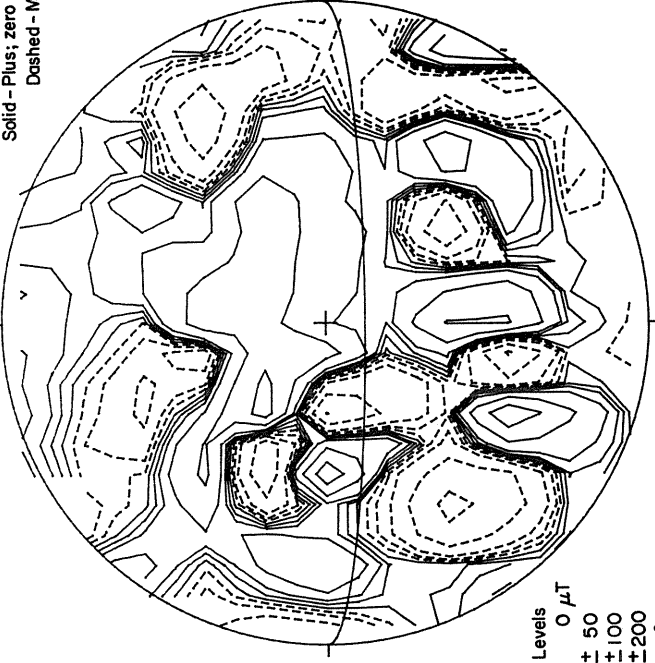
NOSC LA POSTA



1601 UT

8.6 MM

STANFORD



2325 UT

MAGNETOGRAM

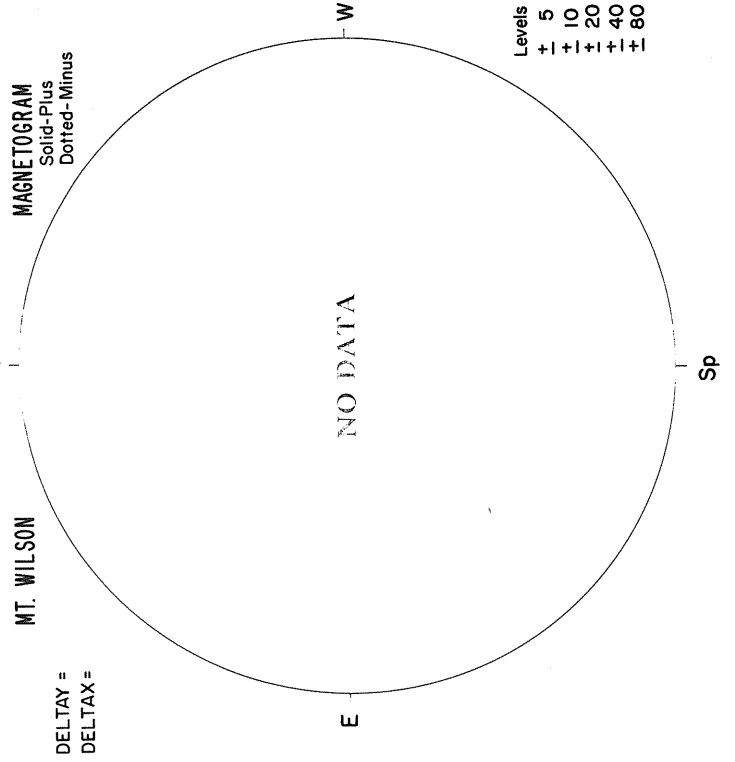
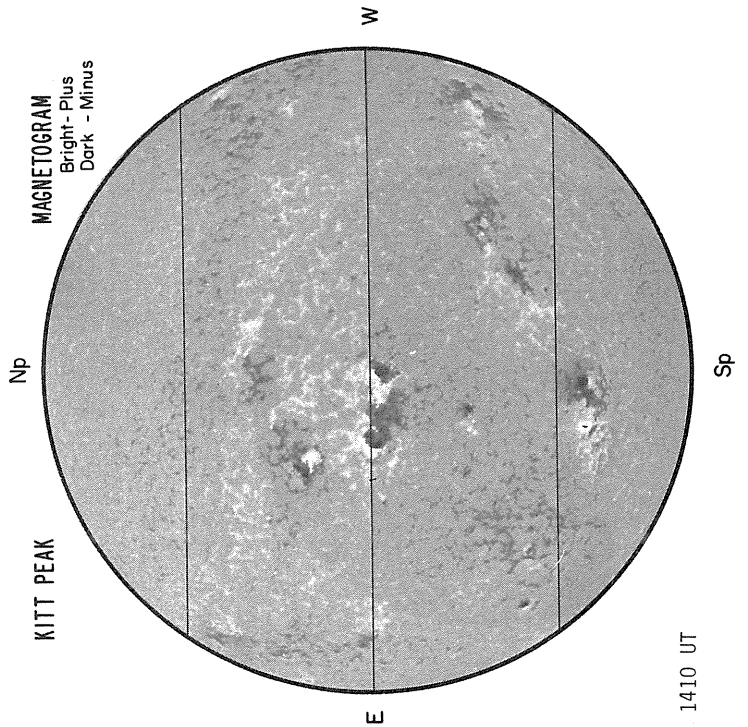
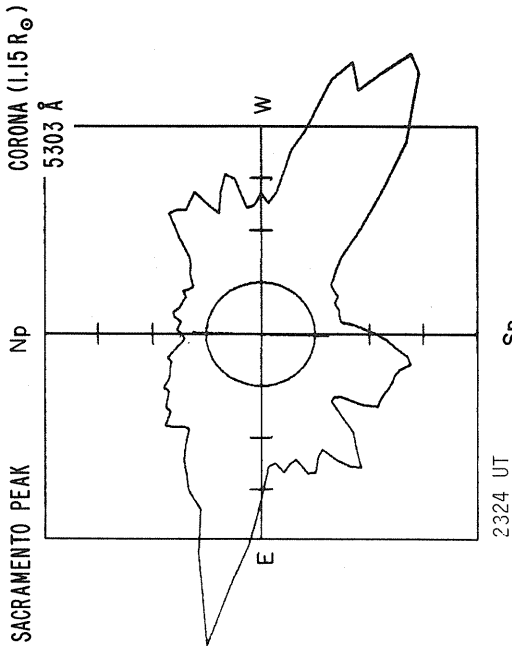
Solid - Plus; zero level  
Dashed - Minus

Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
...

Ant. Temp. Unit 100°K

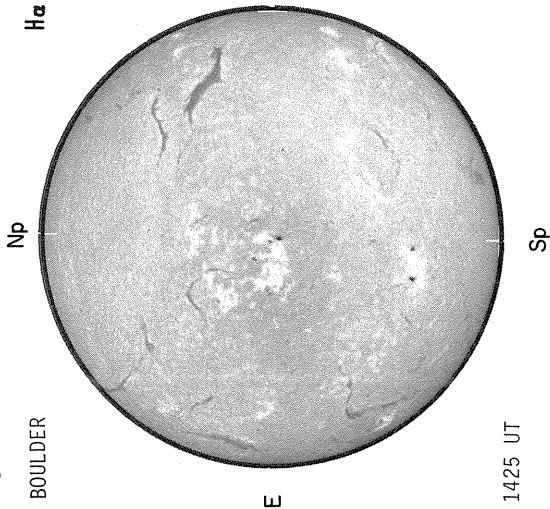
Ant. Temp. Unit 100°K

AUGUST 27, 1979 (P = 19.59, B<sub>0</sub> = 7.08, L<sub>0</sub> = 180.12)



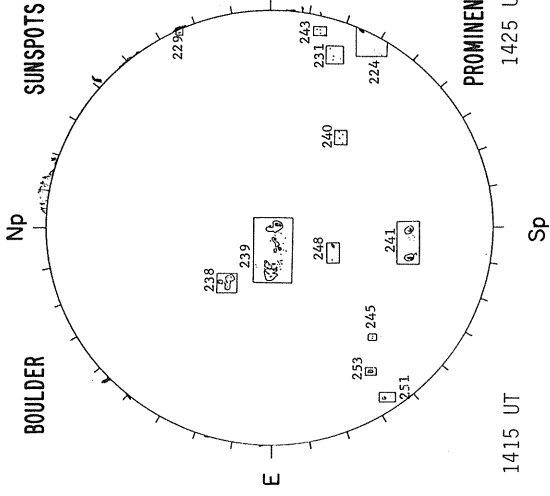
25

BOULDER



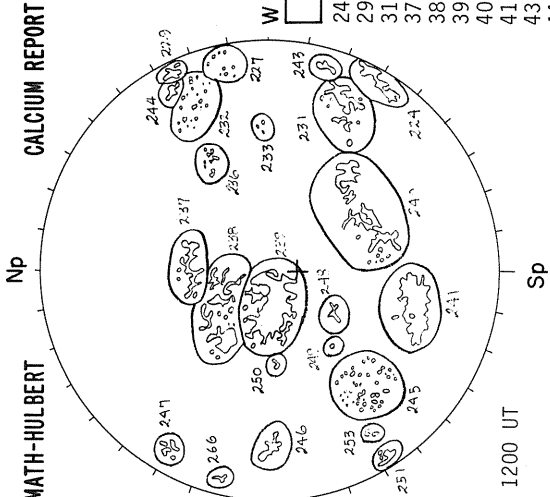
H $\alpha$

BOULDER



SUNSPOTS

McMATH-HULBERT

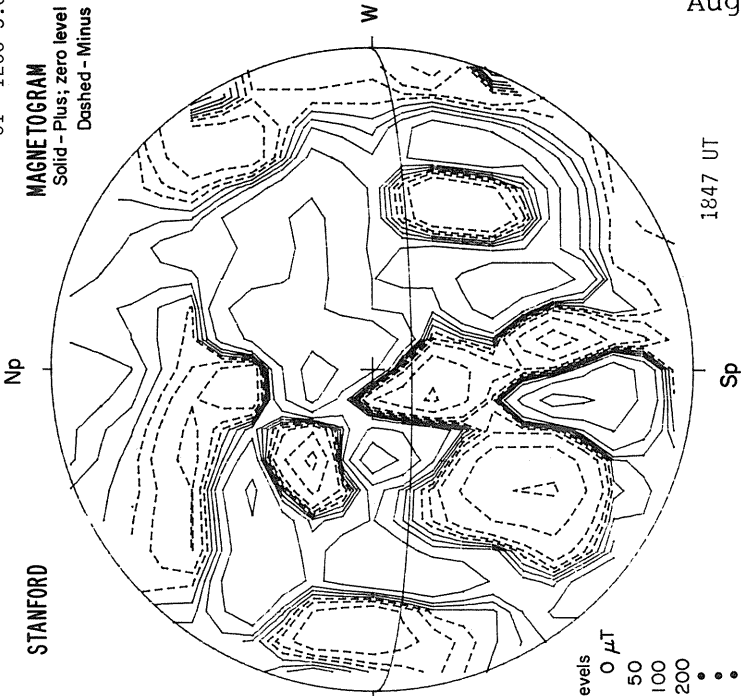


CALCIUM REPORT

FAIR	M
24- 4000-2.0	
29- 1200-2.5	
31- 2800-3.0	
37- 1300-2.5	
38- 2900-3.0	
39- 5300-3.5	
40- 3500-2.5	
41- 4500-3.0	
43- 0800-3.0	
44- 0500-3.0	
46- 0900-2.5	
51- 1200-3.0	

MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus



STANFORD

8.6 MM

2.0 CM

NOSC LA POSTA

Np

Np

8.6 MM

NO DATA

NO DATA

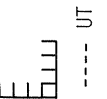
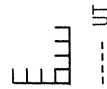
E

SCHEDULE

W E

SCHEDULE

W E



Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
•••

Sp Ant. Temp. Unit 100° K

Sp Ant. Temp. Unit 100° K

--- UT

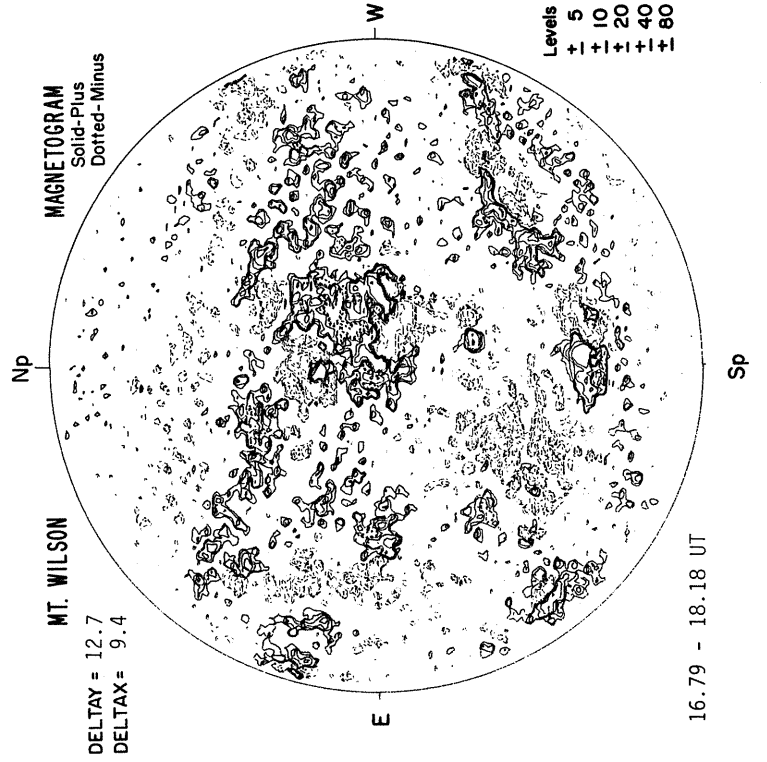
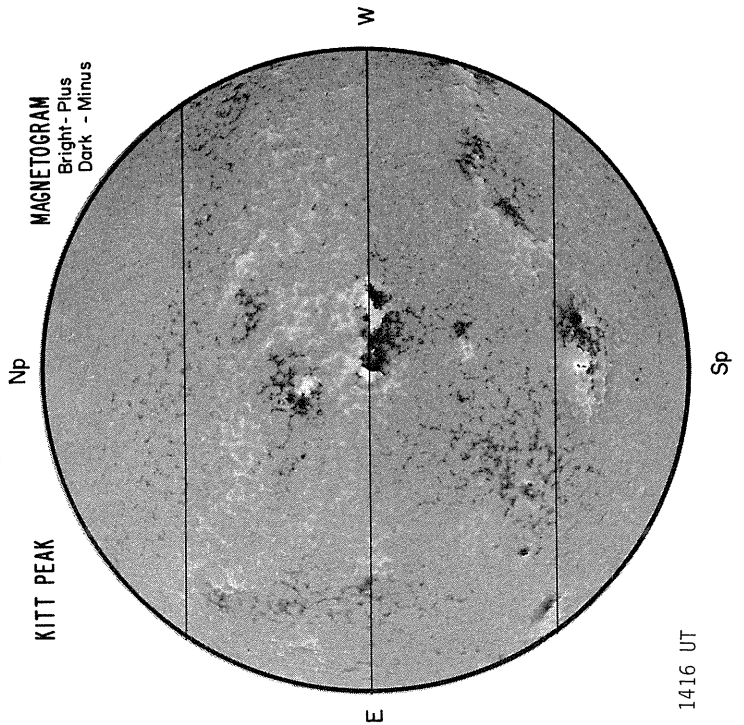
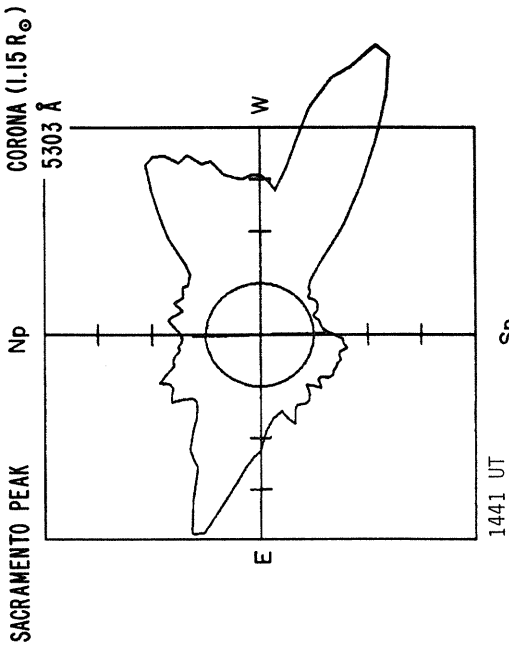
--- UT

1847 UT

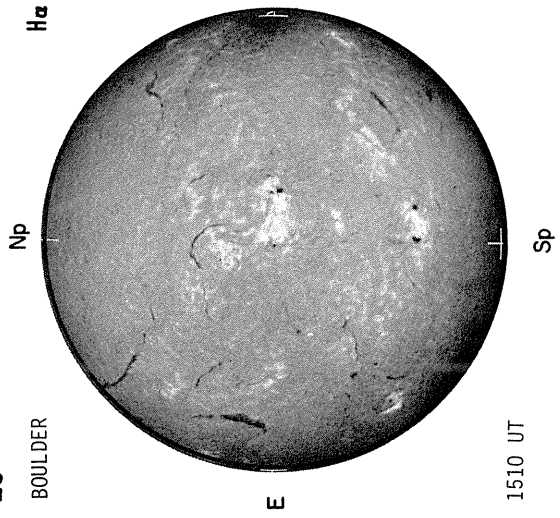
Sp

Sp

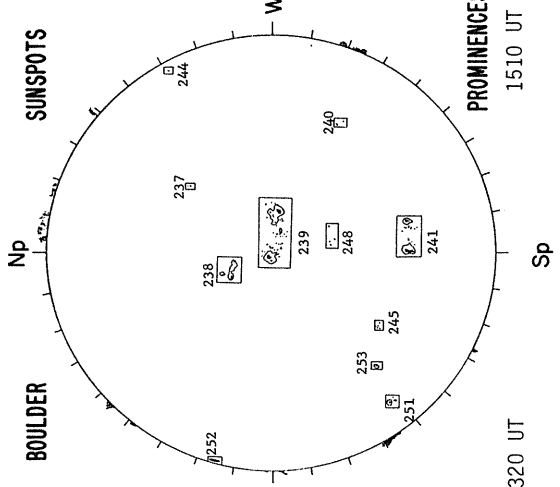
AUGUST 26, 1979 (P = 19.30,  $B_0 = 7.05$ ,  $L_0 = 193.33$ )



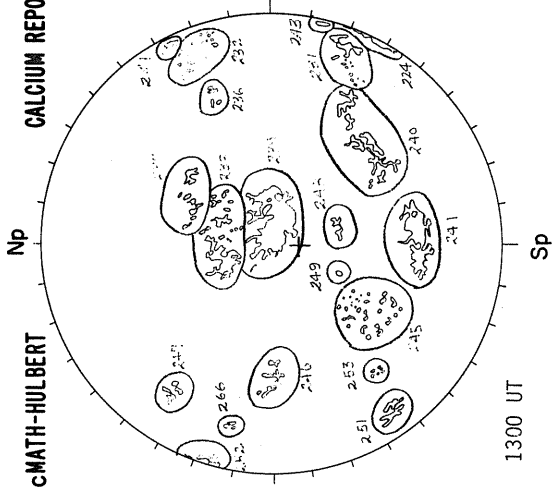
BOULDER



BOULDER



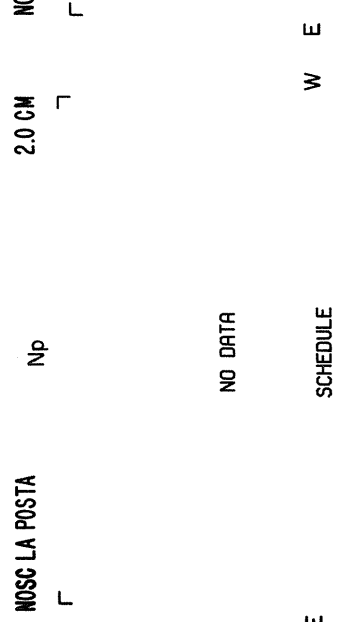
McMATH-HULBERT



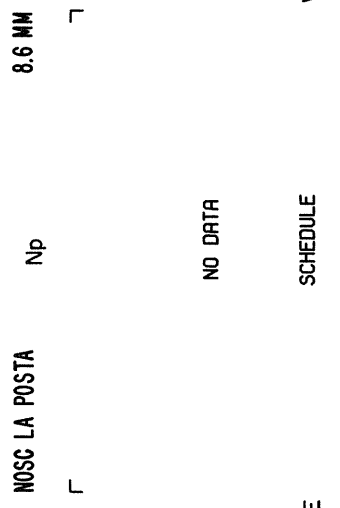
CALCIUM REPORT

	FAIR	M
31-	2600-2.5	
38-	3000-2.5	
39-	5500-3.5	
40-	3500-2.5	
41-	4400-3.0	
44-	0800-2.5	
51-	1500-3.0	
52-	2400-2.5	

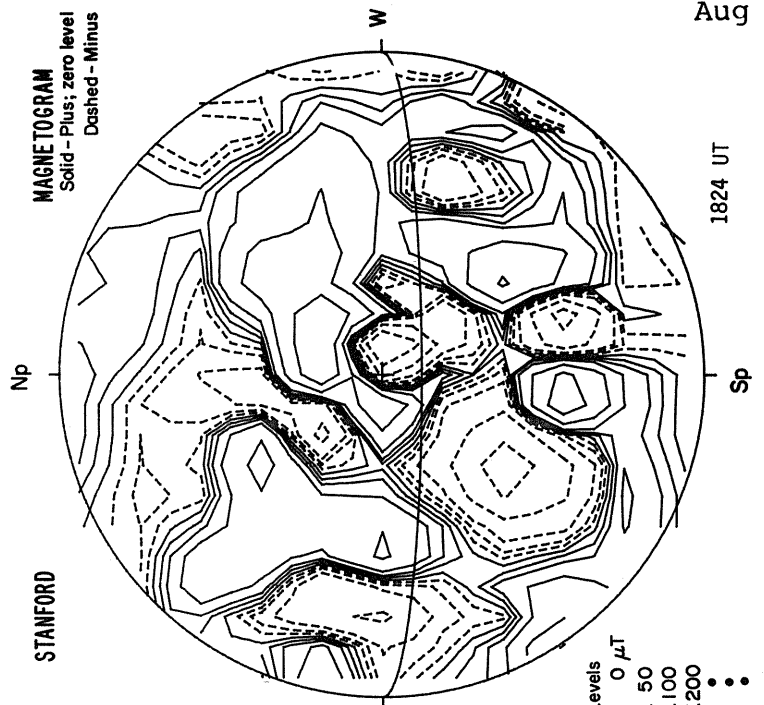
NOSC LA POSTA



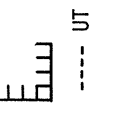
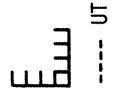
NOSC LA POSTA



STANFORD



MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus



Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
+ 300

Sp Ant. Temp. Unit 100° K

Sp Ant. Temp. Unit 100° K

NO DATA

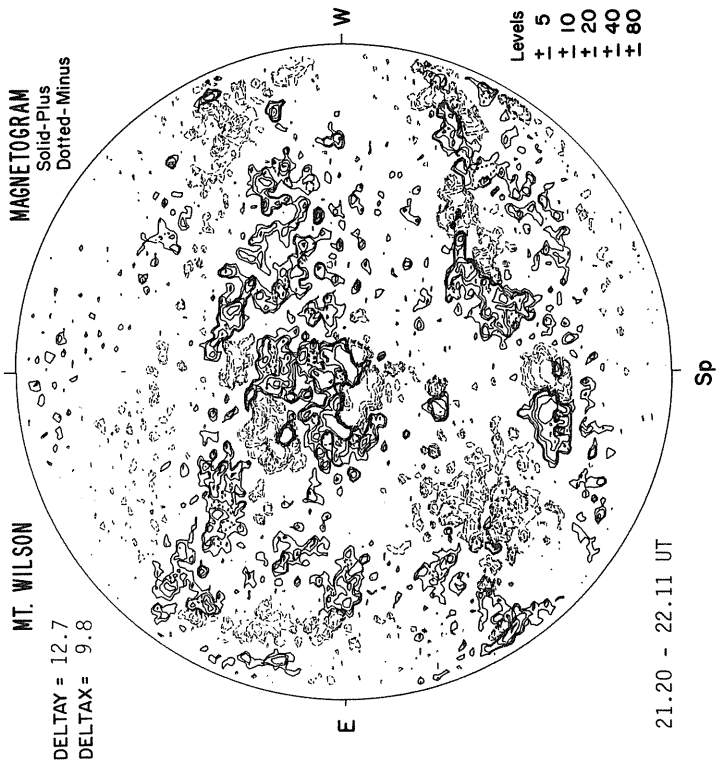
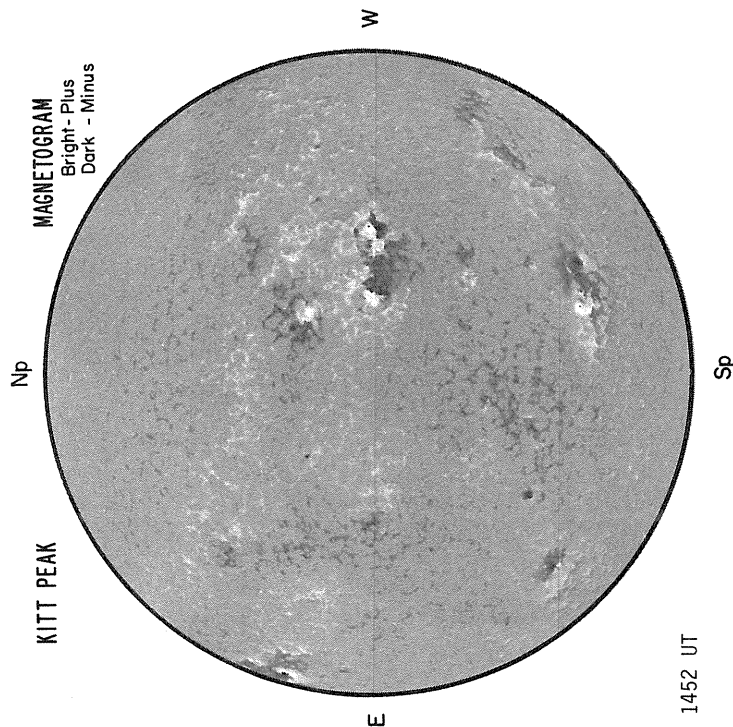
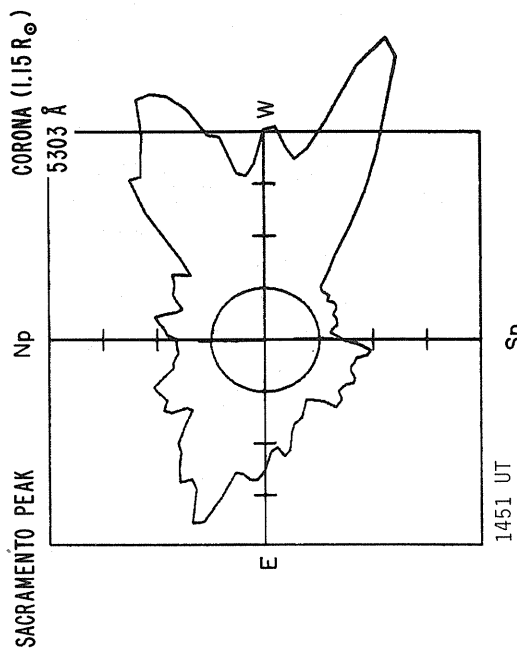
NO DATA

SCHEDULE

SCHEDULE



AUGUST 25, 1979 (P = 19.01,  $B_o = 7.03$ ,  $L_o = 206.54$ )

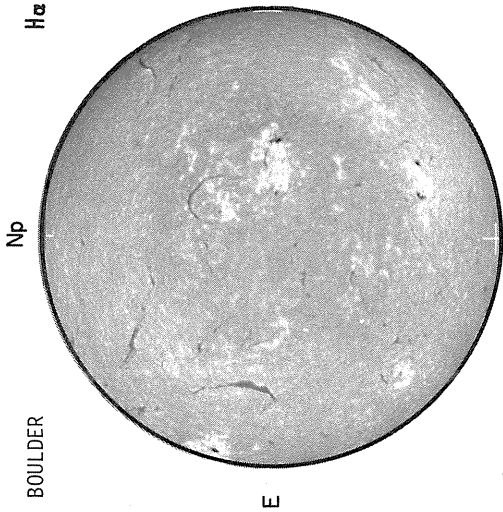


Levels  
5  
+ -  
10  
+ -  
20  
+ -  
40  
+ -  
80  
+ -

MAGNETOGRAM  
Bright - Plus  
Dark - Minus

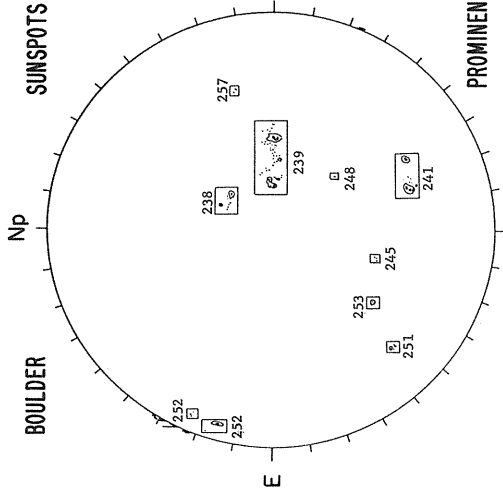
MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

BOULDER



1421 UT

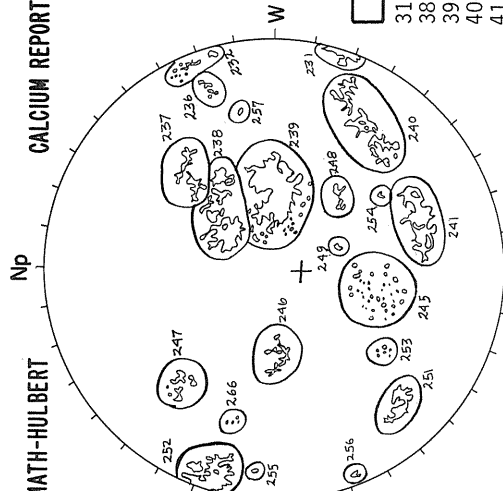
BOULDER



1310 UT

SUNSPOTS

McMATH-HULBERT



1340 UT

CALCIUM REPORT

FAIR	M
31- 1800-2.5	
38- 3200-3.0	
39- 5500-3.5	
40- 3500-2.5	
41- 4200-3.0	
51- 1900-3.0	
r.2- 5000-3.0	

PROMINENCES

1421 UT

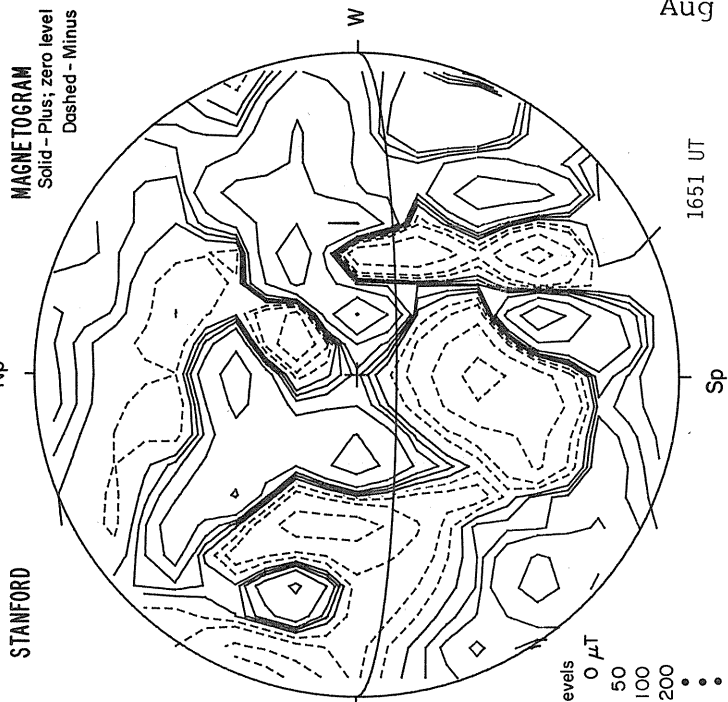
NOSC LA POSTA

2.0 CM

NOSC LA POSTA

8.6 MM

STANFORD



MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus

Levels  
 0  $\mu$ T  
 + 50  
 + 100  
 + 200  
 •••

1631 UT

1534 UT

1421 UT

1651 UT

Ant. Temp. Unit 100°K

Ant. Temp. Unit 100°K

Ant. Temp. Unit 100°K

Ant. Temp. Unit 100°K

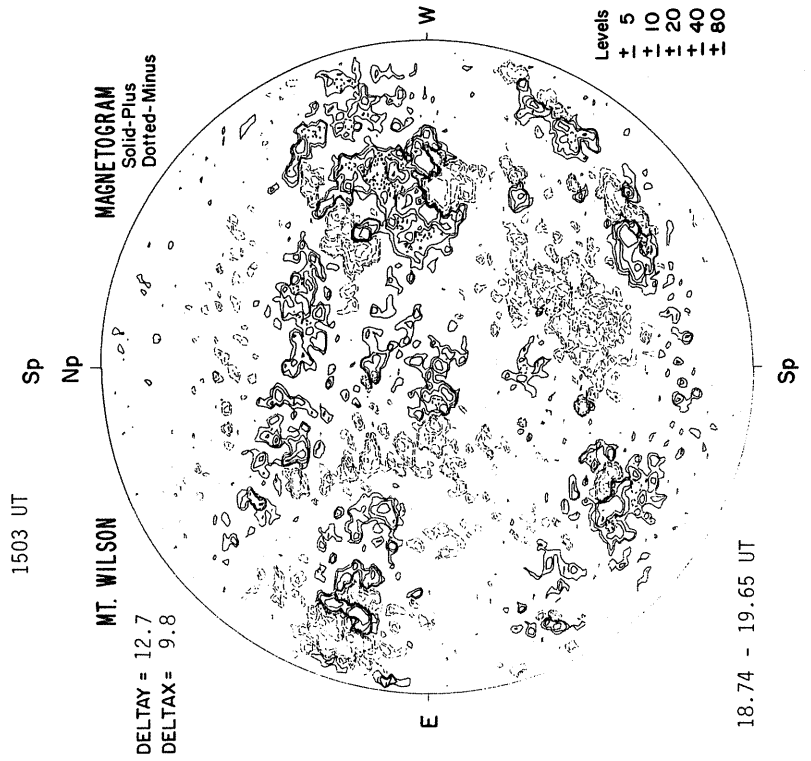
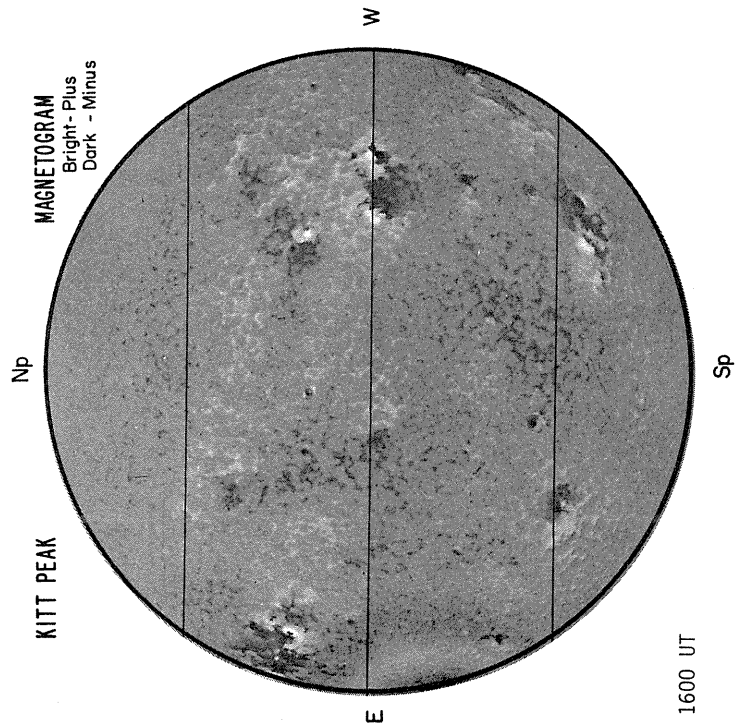
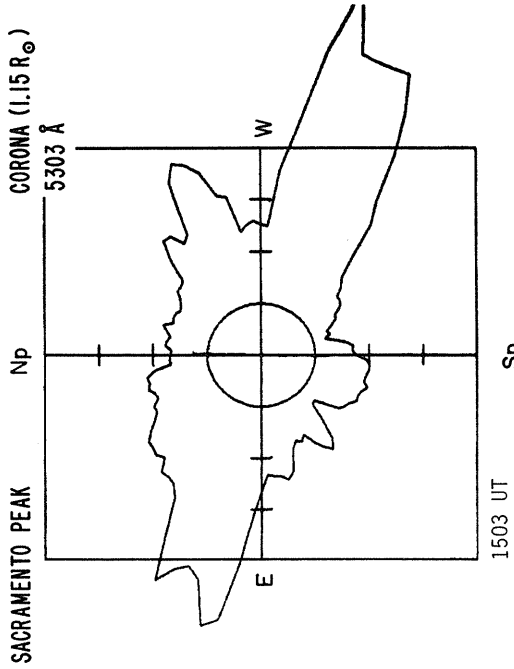
Ant. Temp. Unit 100°K

Ant. Temp. Unit 100°K

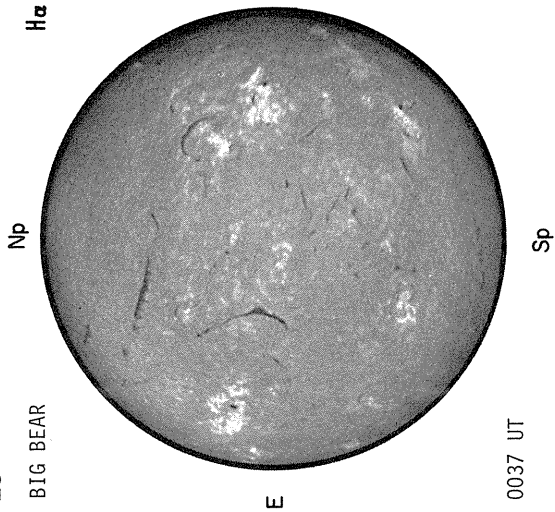
Ant. Temp. Unit 100°K

Ant. Temp. Unit 100°K

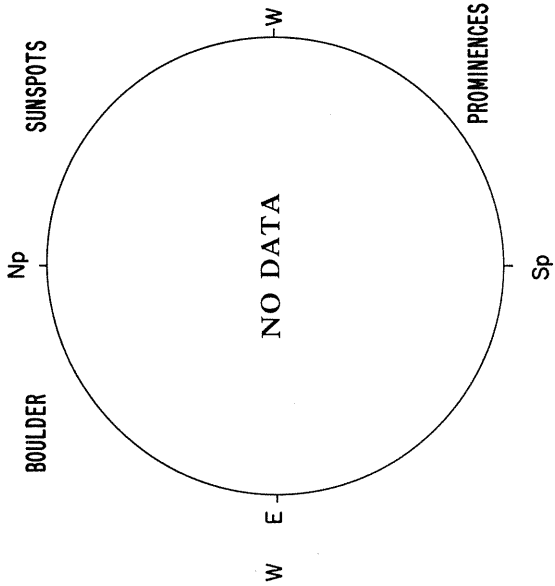
AUGUST 28, 1979 (P=19.87, B<sub>0</sub>=7.11, L<sub>0</sub>=166.91)



BIG BEAR

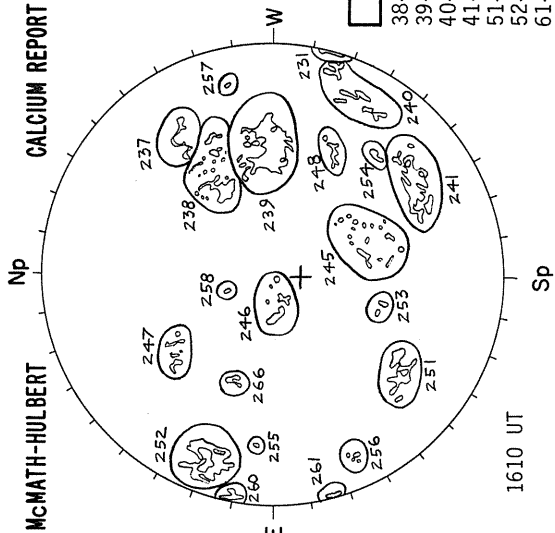


BOULDER



SUNSPOTS

McMATH-HULBERT



CALCIUM REPORT

NOSC LA POSTA

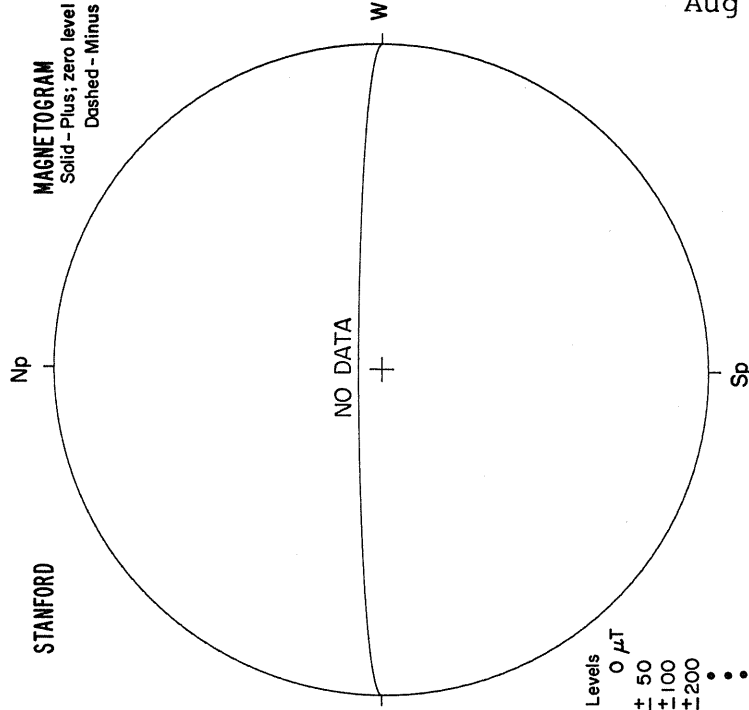
2.0 CM

NOSC LA POSTA

8.6 MM

STANFORD

MAGNETOGRAM  
Solid - Plus; zero level  
Dashed - Minus



Ant. Temp. Unit 100° K

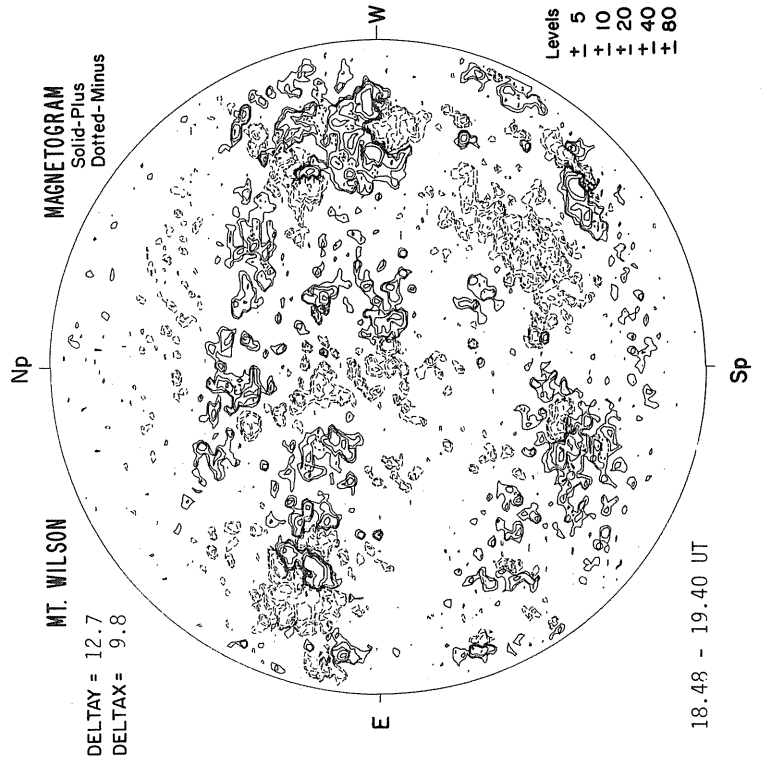
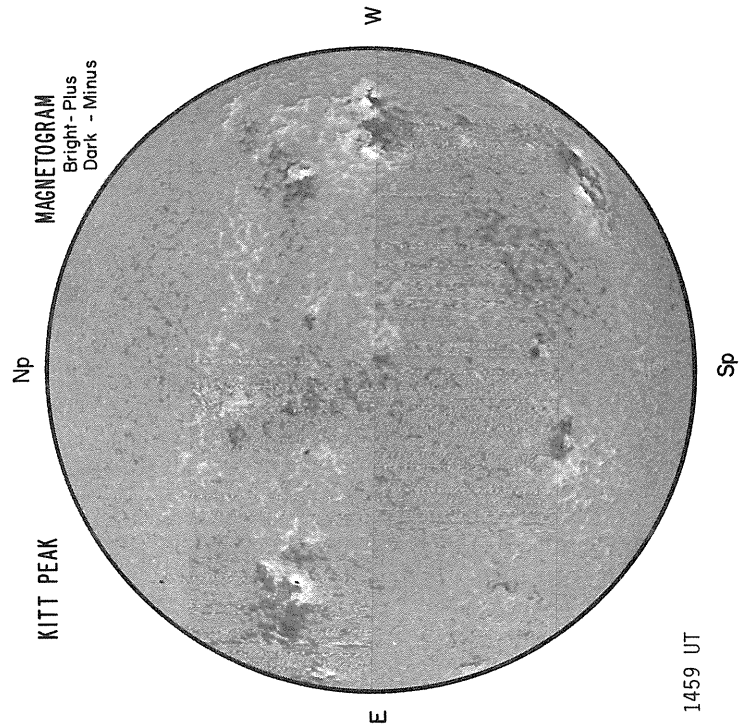
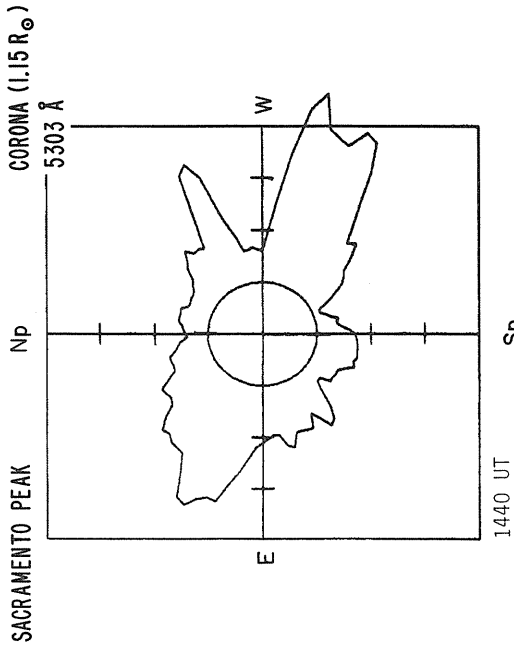
Ant. Temp. Unit 100° K

Ant. Temp. Unit 100° K

Levels

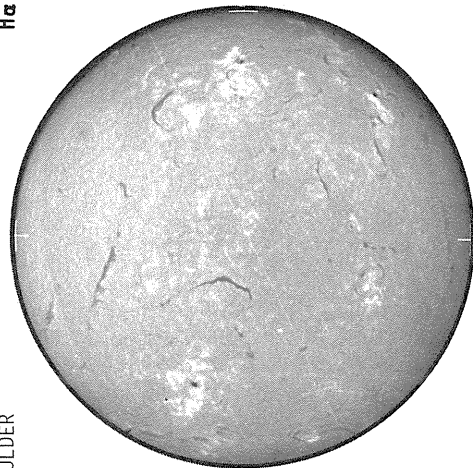
- 0  $\mu$ T
- + 50
- + 100
- + 200
-

AUGUST 29, 1979 (P = 20.15, B<sub>0</sub> = 7.13, L<sub>0</sub> = 153.70)



BOULDER

Np



E

1427 UT

Sp

H $\alpha$

BOULDER

Np

SUNSPOTS

W

McMATH-HULBERT

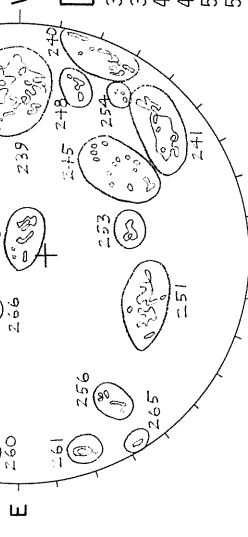
CALCIUM REPORT

Np

E

W

GOOD	M
38- 2700-3.0	
39- 5500-3.5	
41- 4200-3.0	
46- 0700-2.5	
51- 1800-3.0	
52- 5300-3.5	
58- 0300-2.5	
60- 1400-2.5	
61- 0800-3.0	
63- 1100-3.0	



1820 UT

Sp

PROMINENCES

1427 UT

Sp

NOSC LA POSTA

Np

2.0 CM

1552 UT

E



E

1646 UT

Sp

Ant. Temp. Unit 100°K

1552 UT

Sp

Ant. Temp. Unit 100°K

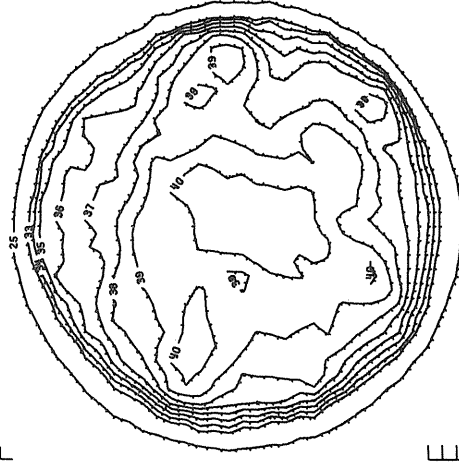
NOSC LA POSTA

Np

8.6 MM

1427 UT

E



W

Levels

0  $\mu$ T

$\pm$  50

$\pm$  100

$\pm$  200

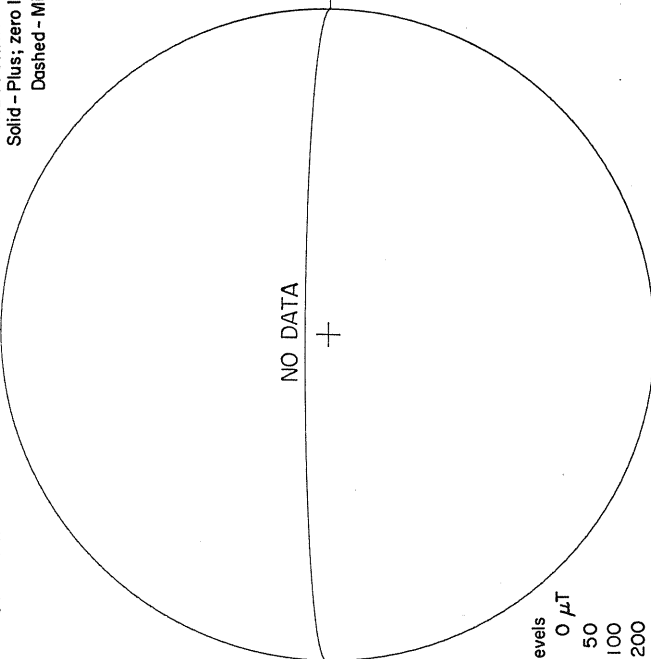
$\pm$  300

STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus

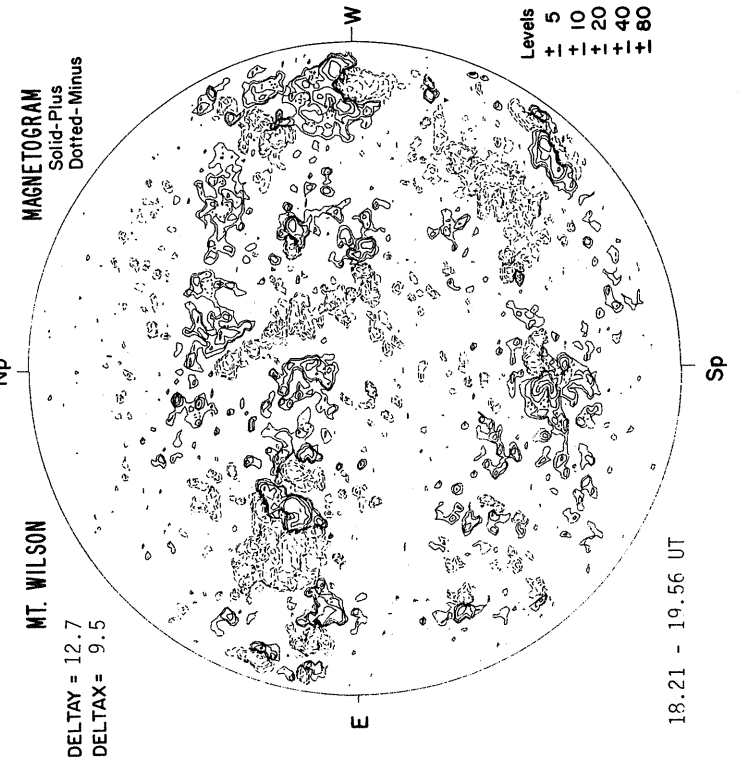
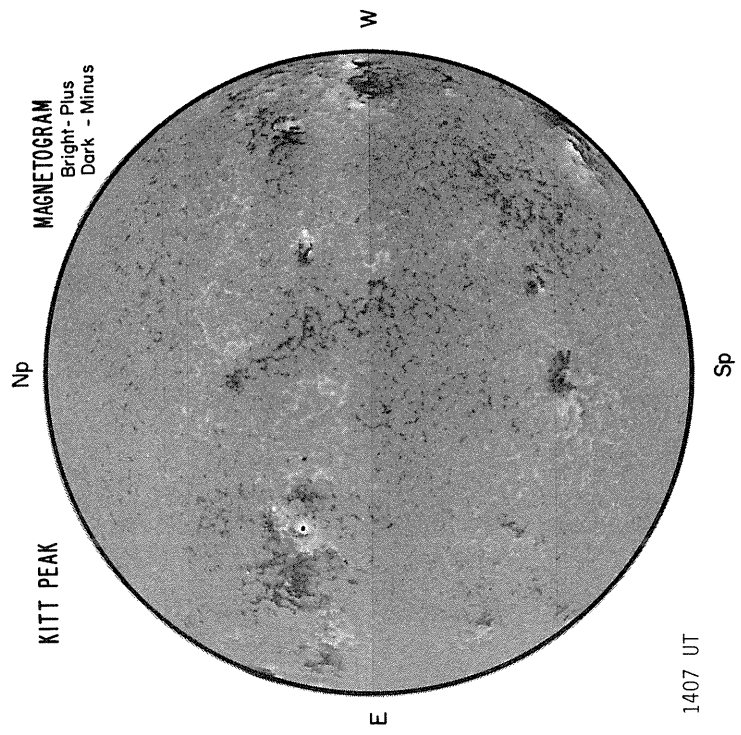
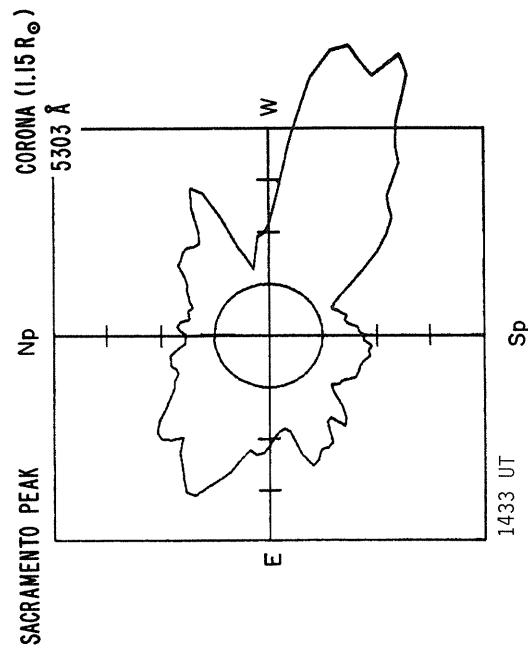


NO DATA

E

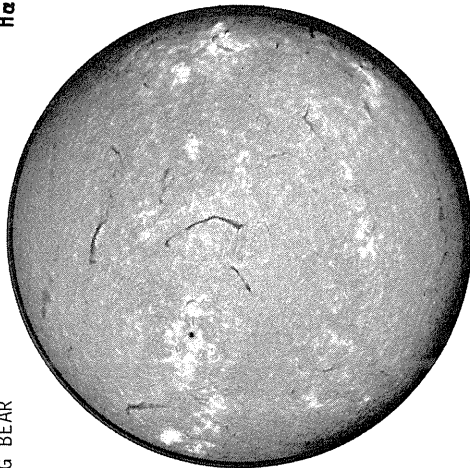
Sp

AUGUST 30, 1979 (P = 20.42, B<sub>0</sub> = 7.15, L<sub>0</sub> = 140.48)



BIG BEAR

Np



E

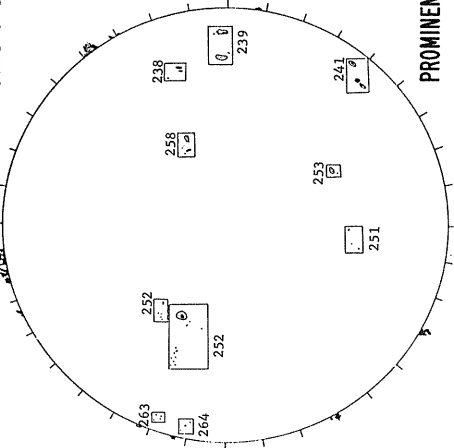
1903 UT

Sp

H $\alpha$

BOULDER

Np



W

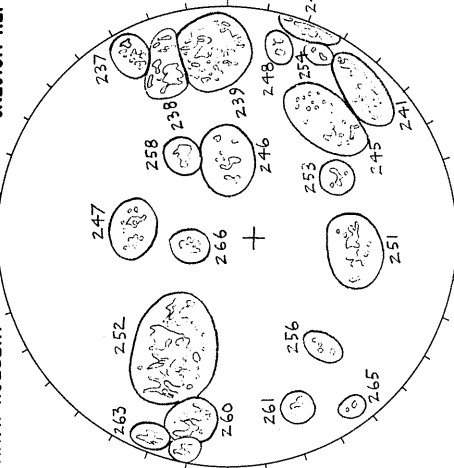
1450 UT

Sp

SUNSPOTS

McMATH-HULBERT

Np



W

1345 UT

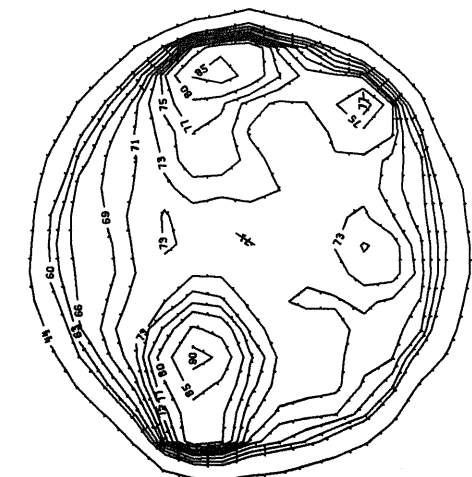
Sp

CALCIUM REPORT

GOOD	S
38-	2400-3.0
39-	5800-3.0
41-	3800-2.5
48-	0300-2.5
51-	1600-2.5
52-	5000-3.5
58-	0800-3.0
60-	1500-2.5
61-	0600-2.5
63-	1500-3.0
65-	0200-2.5

NOSC LA POSTA

Np



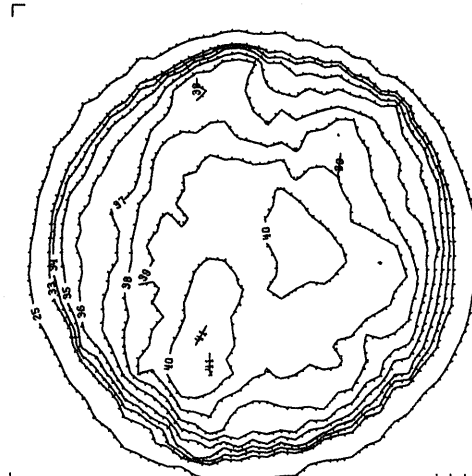
E

1624 UT

Sp

NOSC LA POSTA

Np



E

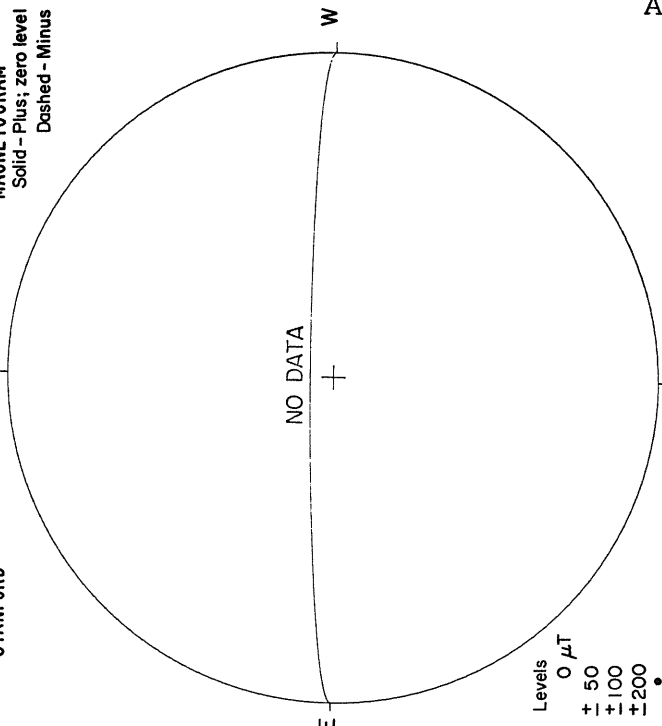
1527 UT

Sp

8.6 MM

STANFORD

Np

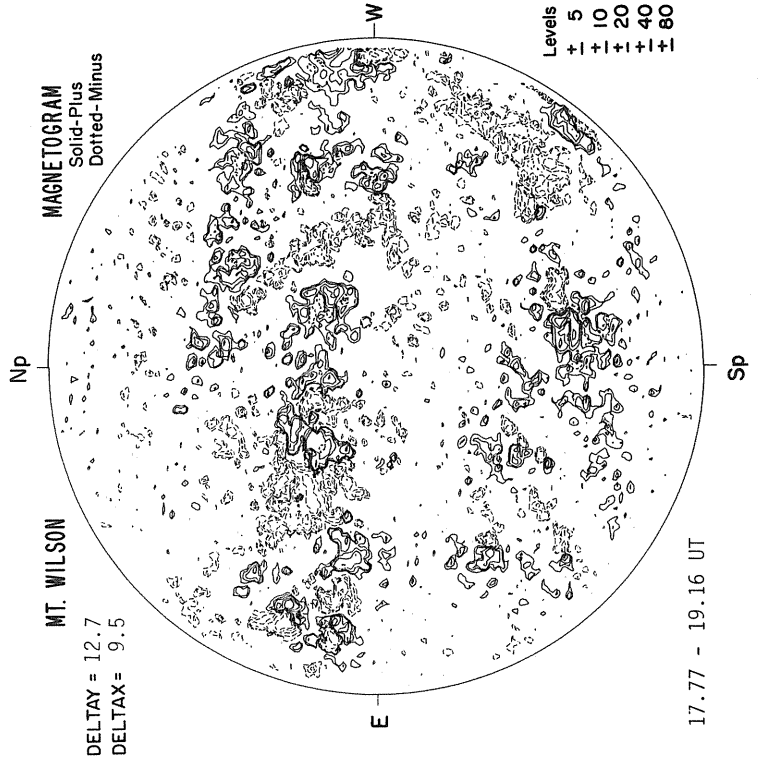
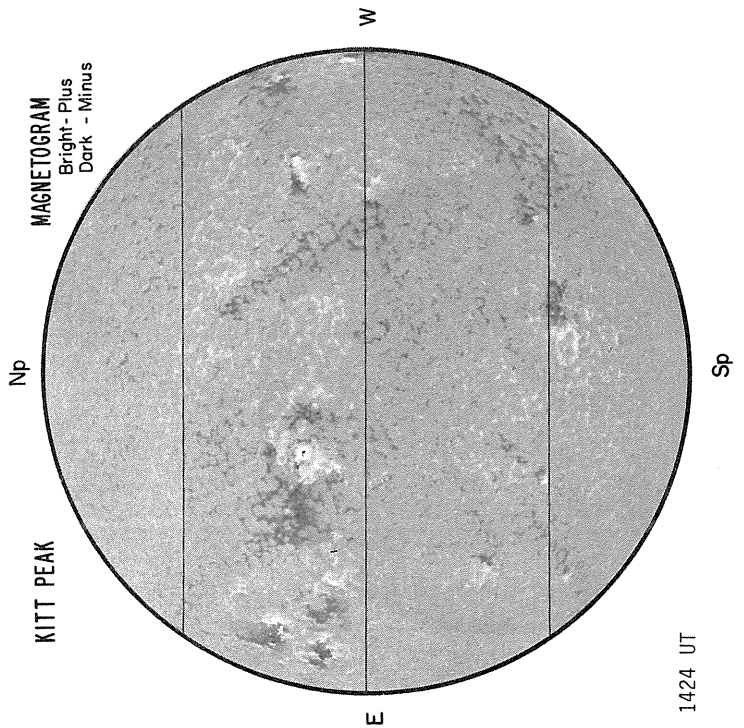
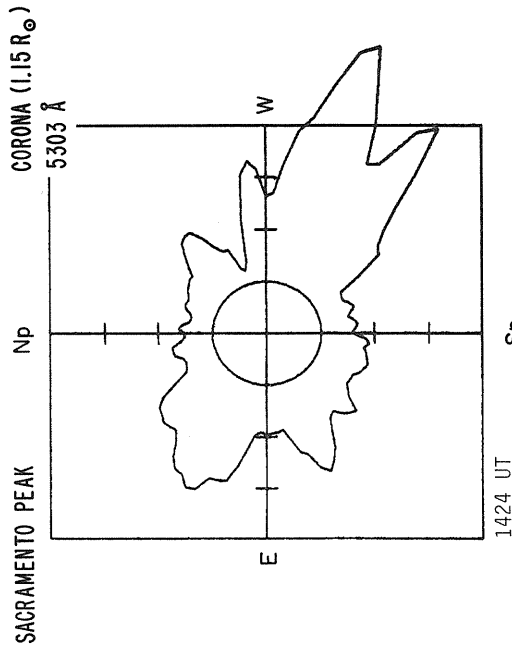


W

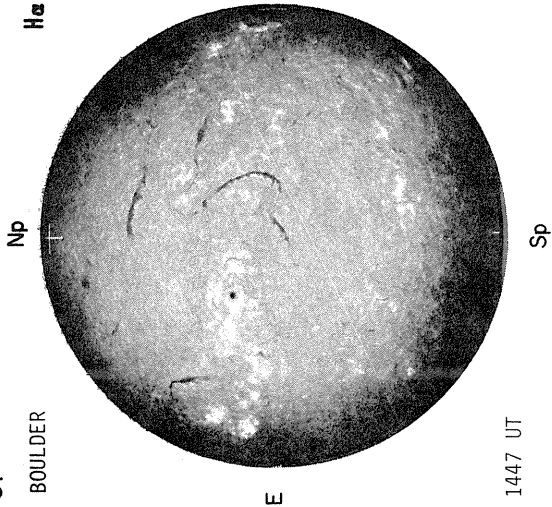
Levels  
 0  $\mu$ T  
 $\pm$  50  
 $\pm$  100  
 $\pm$  200



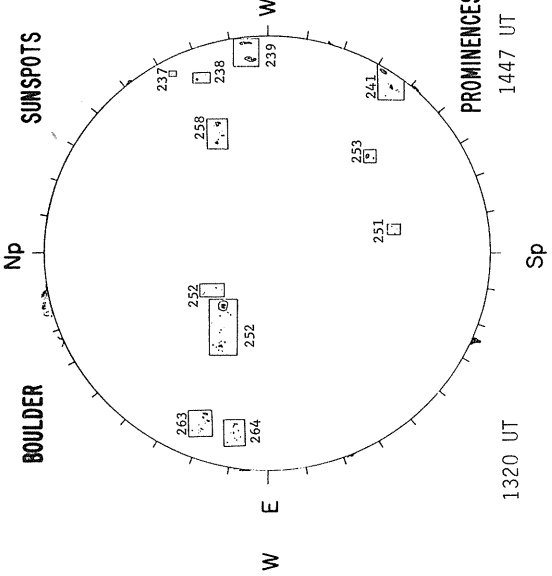
AUGUST 31, 1979 (P = 20.69, B<sub>0</sub> = 7.17, L<sub>0</sub> = 127.27)



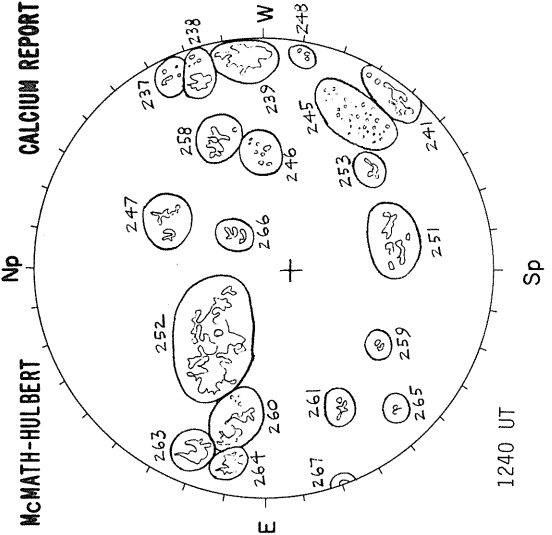
31  
BOULDER



BOULDER



McMATH-HULBERT

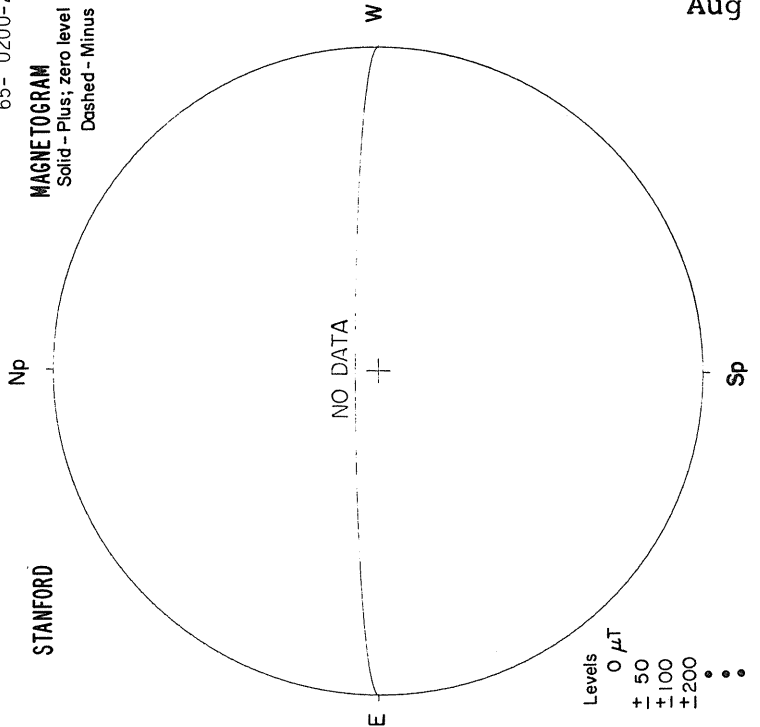


GOOD	M
38- 2400-3.0	
39- 5800-3.0	
41- 3500-2.5	
51- 1600-2.5	
52- 5500-3.0	
53- 0400-2.5	
58- 0800-3.0	
60- 1800-2.5	
61- 0400-2.5	
63- 2000-3.0	
64- 1300-3.5	
65- 0200-2.5	

MAGNETOGRAM

Solid - Plus; zero level  
Dashed - Minus

STANFORD

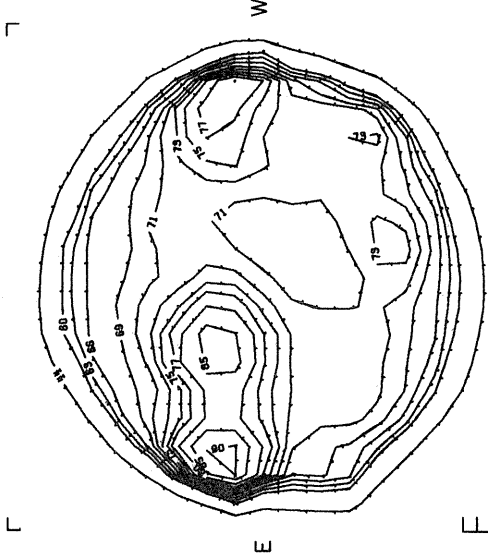


NOSC LA POSTA

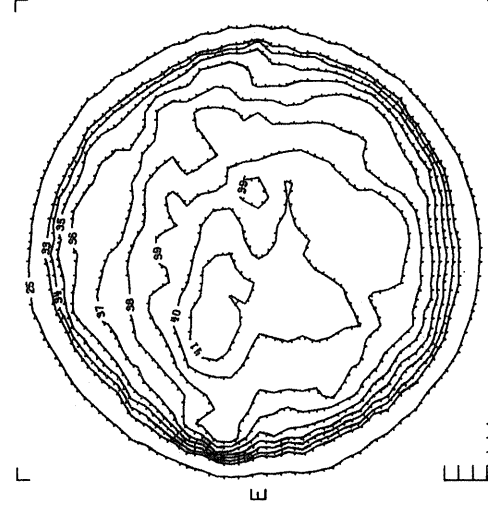
2.0 CM

NOSC LA POSTA

8.6 MM



1638 UT



1543 UT

Levels  
0  $\mu$ T  
+ 50  
+ 100  
+ 200  
...

Sp Ant. Temp. Unit 100°K

Sp Ant. Temp. Unit 100°K

REGIONS OF SOLAR ACTIVITY  
AUGUST 1979

MCMATH REGION 16178

CMP DATE 1.3

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	7	26	16178	N34 E79	158	300	1.5								
79	7	27	16178	N34 E64	160	700	1.5								
79	7	28	16178	N34 E50	160	500	1.0								
79	7	29	16178	N35 E37	160	400	1.0								
79	7	30	16178	N35 E23	162	400	1.0								
79	7	31	16178	N35 E09	162	400	1.5								
79	8	1	16178	N35 W03	160	200	1.5								
79	8	2	16178	N35 W15	157	200	1.5								
79	8	3	16178	N35 W27	157	200	1.0								
79	8	4	16178	N35 W41	158	300	1.0								

MCMATH REGION 16175

CMP DATE 1.8

RETURN OF REGION 16118

ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	7	26	16175	S13 E89	148	500	2.0								
79	7	27	16175	S13 E68	156	1000	2.5								
79	7	28	16175	S15 E56	154	1200	3.0	20775	S14 E54	156	(B)	2	B	30	3 BXO
79	7	29	16175	S14 E43	154	1500	3.0	20775	S14 E45	152	(B)	2			
79	7		16175					20779	S15 E42	155	(AP)	2			
79	7	30	16175	S14 E31	154	1500	3.0	20775	S13 E33	151	(B)	4	B	50	12 CRO
79	7	31	16175	S14 E17	154	1500	2.5	20775	S12 E18	153	(BP)	2	B	70	16 DRO
79	8	1	16175	S13 E04	153	1400	3.5	20775	S12 E04	152	(D)	4			
79	8	2	16175	S13 W09	151	1100	2.5	20775	S12 W11	153	(BP)	3			
79	8	3	16175	S13 W22	152	1100	2.0	20775	S13 W26	155	(BP)	4			
79	8	4	16175	S13 W36	153	1100	2.5	20775	S13 W38	154	(AP)	2			
79	8	5	16175	S13 W51	154	900	2.0	20775	S13 W52	155	(AP)	3			
79	8	6	16175	S13 W65	155	1000	2.5								
79	8	7	16175	S13 W78	154	800	1.5								

MCMATH REGION 16177

CMP DATE 2.0

RETURN OF REGION 16114

ROTATION 5

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	7	26	16177	N22 E89	148	300	1.0								
79	7	27	16177	N20 E74	150	800	1.0								
79	7	28	16177	N20 E63	147	700	1.5								
79	7	29	16177	N21 E49	148	1000	1.5								
79	7	30	16177	N20 E34	151	1400	2.0								
79	7	31	16177	N20 E20	151	1200	2.0								
79	8	1	16177	N19 E06	151	1200	2.0								
79	8	2	16177	N19 W08	150	1100	2.0								
79	8	3	16177	N20 W21	151	800	1.0								
79	8	4	16177	N20 W33	150	600	1.5								
79	8	5	16177	N20 W46	149	500	1.0								
79	8	6	16177	N20 W58	148	600	1.5								
79	8	7	16177	N20 W72	148	400	2.0								

MCMATH REGION 16195

CMP DATE 2.1

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	7	31	16195	N36 E22	149	300	1.0								
79	8	1	16195	N36 E08	149	300	1.5								
79	8	2	16195	N36 W04	146	300	1.0								
79	8	3	16195	N36 W15	145	300	1.0								
79	8	4	16195	N36 W28	145	200	1.0								

MCMATH REGION 16176

CMP DATE 2.4

RETURN OF REGION 16115 AND NEW

ROTATIONS 6 AND 1

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	7	26	16176	N05 E89	148	300	1.0								
79	7	27	16176	N06 E76	148	700	1.0	20774	N05 E71	152	(AP)	3	B	40	1 HAX
79	7	28	16176	N07 E64	146	700	1.5	20774	N05 E58	152	(AP)	4	B	40	1 HSX
79	7	29	16176	N07 E50	147	800	1.5	20774	N05 E45	152	(AP)	4	B	50	1 HSX
79	7	30	16176	N07 E37	148	700	1.5	20774	N04 E33	151	(AP)	4	B	60	2 HSX
79	7	31	16176	N07 E24	147	500	1.5	20774	N04 E19	152	(AP)	3	B	60	3 HSX
79	8	1	16176	N07 E11	146	500	1.5	20774	N04 E06	150	(AP)	3	B	30	2 HSX
79	8	2	16176	N08 W02	144	600	1.5	20774	N04 W07	149	(AP)	3			

CONTD

REGIONS OF SOLAR ACTIVITY

AUGUST 1979

MCHATH REGION 16176 (CONT) CMP DATE 2.4 RETURN OF REGION 16115 AND NEW ROTATIONS 6 AND 1

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	8	3	16176	N07 W15	145	500	2.0	20774	N04 W21	150	(AP)	3			
79	8	4	16176	N07 W27	144	1000	2.5								
79	8	5	16176	N07 W40	143	1200	3.0								
79	8	6	16176	N06 W54	144	1800	3.0								
79	8	7	16176	N07 W67	143	2100	3.0								
79	8	8	16176	N05 W80	143	1900	2.0								

MCHATH REGION 16179 CMP DATE 2.4 RETURN OF PART OF REGION 16112 ROTATION 4

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	7	27	16179	S28 E75	149	800	1.0								
79	7	28	16179	S30 E63	147	900	1.0								
79	7	29	16179	S30 E51	146	1000	1.5								
79	7	30	16179	S29 E40	145	1200	1.5		S26 E42			B	0	1	AXX
79	7	31	16179	S29 E24	147	1300	1.5								
79	8	1	16179	S29 E12	145	1100	1.5								
79	8	2	16179	S29 W01	143	1300	1.5								
79	8	3	16179	S29 W13	143	900	2.0								
79	8	4	16179	S29 W25	142	800	2.0								
79	8	5	16179	S29 W38	141	800	1.5								
79	8	6	16179	S30 W49	139	800	1.5								
79	8	7	16179	S30 W62	138	900	1.5								
79	8	8	16179	S30 W74	137	400	1.0								

MCHATH REGION 16181 CMP DATE 2.9 RETURN OF PART OF REGION 16119 ROTATION 6

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	7	27	16181	N18 E82	142	400	1.0								
79	7	28	16181	N17 E72	138	500	1.0								
79	7	29	16181	N19 E60	137	700	1.5								
79	7	30	16181	N19 E47	138	600	1.5								
79	7	31	16181	N18 E28	143	600	1.5								
79	8	1	16181	N18 E15	142	700	1.5								
79	8	2	16181	N18 E04	138	600	1.5								
79	8	3	16181	N19 W10	140	500	2.0								
79	8	4	16181	N17 W22	139	800	1.5								
79	8	5	16181	N19 W35	138	700	2.0								
79	8	6	16181	N19 W47	137	600	2.0								
79	8	7	16181	N18 W62	138	600	2.0								
79	8	8	16181	N18 W75	138	400	1.0								

MCHATH REGION 16184 CMP DATE 4.0 RETURN OF REGION 16121 ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	7	29	16184	N22 E74	123	300	1.5								
79	7	30	16184	N22 E62	123	500	1.5								
79	7	31	16184	N22 E45	126	300	1.5								
79	8	1	16184	N22 E34	123	300	1.5								
79	8	2	16184	N21 E20	122	300	1.5								
79	8	3	16184	N22 E06	124	300	1.0								
79	8	4	16184	N22 W07	124	400	1.0								
79	8	5	16184	N22 W21	124	300	1.0								
79	8	6	16184	N22 W34	124	400	1.0								
79	8	7	16184	N23 W47	123	400	1.0								
79	8	8	16184	N23 W60	123	300	1.0								
79	8	9	16184	N23 W73	124	200	1.0								

MCHATH REGION 16182 CMP DATE 4.1 RETURN OF REGION 16122 ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS	
79	7	28	16182	N10 E88	122	500	1.0	20776	N12 E85	125	(AP)	2	B	100	1	HSX
79	7	29	16182	N12 E76	121	700	2.0	20776	N12 E70	127	(AP)	3	B	130	1	HSX
79	7	30	16182	N12 E62	123	800	2.0	20776	N12 E57	127	(AP)	5				
79	7	31	16182	N12 E45	126	800	1.5	20776	N12 E44	127	(AP)	4	B	140	2	HSX
79	8	1	16182	N12 E34	123	1200	1.5	20776	N12 E30	126	(AP)	4	B	170	2	HSX
79	8	2	16182	N12 E20	122	1200	2.0	20776	N12 E17	125	(AP)	4				
79	8	3	16182	N13 E07	123	1200	2.5	20776	N12 E04	125	(BP)	4				

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MCMATH REGION 16182 (CONT)				CMP DATE 4.1				RETURN OF REGION 16122				ROTATION 2			
				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	8	4	16182	N13 W07	124	1200	2.5	20776	N12 W10	126	(SP)	4			
79	8	5	16182	N13 W21	124	1200	2.3	20776	N12 W23	126	(AP)	4	B	50	5 CSO
79	8	6	16182	N13 W32	122	1200	2.5	20776	N12 W38	127	AP	4			
79	8	7	16182	N13 W45	121	1200	2.0	20776	N13 W50	126	(AP)	4			
79	8	8	16182	N13 W59	122	800	2.0	20776	N12 W64	126	(AP)	3			
79	8	9	16182	N14 W72	123	800	2.0	20776	N12 W76	126	(AP)	2			

MCMATH REGION 16183				CMP DATE 4.4				RETURN OF REGION 16120				ROTATION 2			
				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	7	28	16183	N26 E87	123	500	1.0								
79	7	29	16183	N27 E76	121	300	1.0								
79	7	30	16183	N27 E68	117	300	1.0								
79	7	31	16183	N28 E50	121	200	1.5								
79	8	1	16183	N29 E37	120	200	1.5								
79	8	2	16183	N29 E25	117	300	1.0								
79	8	3	16183	N29 E12	118	400	1.0								
79	8	4	16183	N29 W01	118	500	1.0								
79	8	5	16183	N29 W15	118	500	1.5								
79	8	6	16183	N29 W28	118	500	1.0								
79	8	7	16183	N30 W39	115	700	1.5								
79	8	8	16183	N29 W52	115	700	1.0								
79	8	9	16183	N30 W65	116	500	1.0								

MCMATH REGION 16186				CMP DATE 4.5											
				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	7	29	16186	S18 E83	114	400	2.0								
79	7	30	16186	S18 E66	119	200	2.0								
79	7	31	16186	S18 E50	121	200	2.0								
79	8	1	16186	S18 E39	118	300	2.5								
79	8	2	16186	S18 E26	116	200	3.0								
79	8	3	16186	S18 E13	117	300	1.5								
79	8	4	16186	S18 E00	117	200	1.5								
79	8	5	16186	S18 W16	119	300	2.0								
79	8	6	16186	S17 W30	120	300	2.5								
79	8	7	16186	S16 W43	119	500	3.0								
79	8	8	16186	S16 W56	119	500	2.5								
79	8	9	16186	S16 W69	120	500	3.0								
79	8	10	16186	S16 W83	120	400	1.0								

MCMATH REGION 16185				CMP DATE 4.5											
				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	7	29	16185	S10 E84	113	400	1.0								
79	7	30	16185	S10 E69	116	300	1.5								
79	7	31	16185	S10 E51	120	100	1.5								
79	8	1	16185	S11 E41	116	100	1.0								

MCMATH REGION 16188				CMP DATE 5.4				RETURN OF PART OF REGION 16123				ROTATION 4			
				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	7	30	16188	N17 E76	109	600	1.0								
79	7	31	16188	N14 E58	113	400	2.0								
79	8	1	16188	N20 E50	107	600	2.0								
79	8	2	16188	N20 E37	105	600	2.0								
79	8	3	16188	N22 E25	105	300	2.0								
79	8	4	16188	N21 E12	105	1000	2.0								
79	8	5	16188	N21 W01	104	1000	1.5								
79	8	6	16188	N21 W15	105	1100	2.0								
79	8	7	16188	N22 W28	104	1300	2.0								
79	8	8	16188	N21 W41	104	1300	2.0								
79	8	9	16188	N21 W54	105	1300	2.0								
79	8	10	16188	N20 W67	104	1200	1.5								
79	8	11	16188	N20 W80	104	1000	1.5								









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MCMATH REGION 16206

CHP DATE 11.3

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	8	5	16206	S27 E76	27	1000	3.0								
79	8	6	16206	S26 E60	30	1600	3.5								
79	8	7	16206	S26 E46	30	1500	3.0								
79	8	8	16206	S25 E34	29	1500	2.5								
79	8	9	16206	S25 E22	29	1400	2.5								
79	8	10	16206	S25 E09	28	1400	2.5								
79	8	11	16206	S26 W04	28	1400	2.5		S26 W06			B	10	1	AXX
79	8	12	16206	S25 W17	27	1300	3.0		S25 W21			B	10	2	BX0
79	8	13	16206	S25 W30	27	1200	2.5								
79	8	14	16206	S25 W43	29	1000	2.5								
79	8	15	16206	S25 W56	28	900	2.0								
79	8	16	16206	S25 W69	28	800	2.5								

MCMATH REGION 16205

CHP DATE 11.4

RETURN OF REGION 16154

ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS	
79	8	5	16205	S16 E83	20	800	3.0	20794	S14 E73	30	(AP)	3				
79	8	6	16205	S16 E65	25	2000	3.0	20794	S15 E59	30	AP	4				
79	8	7	16205	S16 E50	26	2000	3.0	20794	S15 E47	29	(BP)	4				
79	8	8	16205	S16 E37	26	2000	2.5	20794	S17 E34	28	(BP)	4				
79	8	9	16205	S16 E25	26	1400	2.0	20794	S15 E22	28	(AP)	4	B	70	3	CS0
79	8	10	16205	S16 E11	26	1100	2.5	20794	S15 E09	28	(AP)	4	M	80	1	HSX
79	8	11	16205	S16 W02	26	1100	2.5		S15 W04			B	70	4	CS0	
79	8	12	16205	S16 W14	24	1000	3.0	20794	S15 W18	27	AP	4	B	50	1	HSX
79	8	13	16205	S16 W27	24	1000	2.5	20794	S15 W30	26	(AP)	3	M	50	1	HSX
79	8	14	16205	S15 W40	26	1000	2.5	20794	S16 W42	27	(AP)	3	R	50	3	CS0
79	8	15	16205	S15 W54	26	900	2.5	20794	S15 W56	28	(AP)	3	R	20	4	BX0
79	8	16	16205	S16 W67	26	800	2.5									

MCMATH REGION 16213

CHP DATE 12.9

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	8	6	16213	N14 E88	2	500	1.0								
79	8	7	16213	N15 E70	6	400	2.0								
79	8	8	16213	N16 E60	3	600	2.0								
79	8	9	16213	N16 E48	3	500	2.0								
79	8	10	16213	N16 E34	3	700	2.0								
79	8	11	16213	N16 E20	4	400	1.0								
79	8	12	16213	N16 E05	5	200	1.0								
79	8	13	16213	N16 W08	5	200	2.0	20810	N07 W08	4	(AP)	2			

MCMATH REGION 16207

CHP DATE 13.1

RETURN OF REGION 16160

ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS	
79	8	6	16207	N24 E85	5	1000	3.0									
79	8	7	16207	N26 E71	5	2200	3.5	20800	N26 E72	4	(B)	3				
79	8	8	16207	N26 E59	4	2000	3.0	20800	N27 E60	2	(B)	4	B	190	12	DS0
79	8	9	16207	N26 E46	5	1700	2.5	20800	N26 E47	3	(B)	3	B	80	6	DA0
79	8	10	16207	N25 E33	4	2200	3.0	20800	N26 E34	3	(B)	4				
79	8	11	16207	N25 E20	4	2500	2.5		N22 E19			B	10	2	BX0	
79	8	12	16207	N26 E07	3	2500	3.0	20800	N27 E10	0	AP	3	B	10	2	BX0
79	8	13	16207	N27 W06	3	2400	2.5	20800	N26 W04	0	(BF)	3	M	30	1	HSX
79	8	14	16207	N27 W18	4	2500	2.5	20800	N28 W13	358	(BY)	3	R	30	7	CR0
79	8	15	16207	N27 W32	4	2700	2.5	20800	N29 W26	358	(AF)	2	R	10	1	AXX
79	8	16	16207	N27 W46	5	2700	3.0									
79	8	19	16207	N27 W80	359	1800	2.0									

MCMATH REGION 16211

CHP DATE 13.9

RETURN OF REGION 16137

ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	8	7	16211	S25 E85	352	700	2.0								
79	8	8	16211	S25 E70	354	1600	2.5								
79	8	9	16211	S26 E56	356	1400	2.5								
79	8	10	16211	S27 E44	354	1400	2.5								
79	8	11	16211	S27 E30	355	1400	2.5								
79	8	12	16211	S27 E17	354	1500	2.5		S25 E19			B	3	1	AXX

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MCMATH REGION 16215                      CMP DATE 16.2                      RETURN OF REGION 16139                      ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	8	9	16215	N32 E90	322	300	1.3									
79	8	10	16215	N30 E74	324	800	1.5									
79	8	11	16215	N30 E60	325	700	1.5									
79	8	12	16215	N30 E47	324	700	2.0									
79	8	13	16215	N30 E34	324	900	1.5									
79	8	14	16215	N30 E22	324	1100	1.0									
79	8	15	16215	N31 E09	323	1200	2.0									
79	8	16	16215	N31 W05	324	1200	1.5									
79	8	19	16215	N29 W45	324	1100	1.5									

MCMATH REGION 16217                      CMP DATE 16.2

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	8	11	16217	S20 E63	322	300	2.0									
79	8	12	16217	S20 E49	322	100	2.0									
79	8	13	16217	S20 E35	323	100	2.0									
79	8	14	16217	S20 E23	323	100	1.0									

MCMATH REGION 16223                      CMP DATE 17.3

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	8	12	16223	S02 E64	307	300	1.5									
79	8	13	16223	S03 E51	307	200	1.5									
79	8	14	16223	S02 E38	308	200	1.0									
79	8	15	16223	S02 E24	308	100	1.0									
79	8	16	16223	S02 E10	309	200	1.0									
79	8	19	16223	S02 W30	309	300	1.0									
79	8	21	16223	S02 W55	308	200	1.0									

MCMATH REGION 16218                      CMP DATE 18.1

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	8	11	16218	N14 E85	300	700	2.0									
79	8	12	16218	N16 E74	297	1800	2.5	20809	N16 E70	300	AP	3	B	60	1	HSX
79	8	13	16218	N16 E62	296	1700	2.5	20809	N14 E62	295	(AP)	3				
79	8	14	16218	N16 E50	296	1600	2.5	20809	N17 E46	299	(AP)	4	R	60	1	HSX
79	8	15	16218	N17 E36	296	1600	2.0	20809	N17 E32	300	(AP)	5	R	90	3	CSO
79	8		16218					20816	N18 E20	312	(B)	3				
79	8	16	16218	N17 E21	298	1600	3.0	20809	N17 E18	301	(AP)	4	B	90	1	HSX
79	8	17	16218					20809	N16 E05	300	(BP)	4	B	90	3	CSO
79	8		16218					20821	N16 W06	311	(AP)	2				
79	8	18	16218					20809	N17 W07	299	(AP)	4	B	70	4	CSO
79	8	19	16218	N17 W19	298	1800	2.5	20809	N16 W21	300	(BF)	4				
79	8	20	16218					20809	N16 W34	300	(AP)	3				
79	8	21	16218	N17 W44	297	1600	3.0	20809	N17 W46	299	(AP)	3	B	30	2	HRX
79	8	22	16218	N17 W57	297	1600	2.5	20809	N17 W60	299	(AP)	3	B	20	2	AXX
79	8	23	16218	N17 W72	296	1400	2.5									
79	8	24	16218	N17 W85	298	1200	1.0									

MCMATH REGION 16220                      CMP DATE 18.2

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	8	12	16220	S22 E75	296	300	2.0	20808	S22 E67	303	AP	2	B	0	1	AXX
79	8	13	16220	S22 E61	297	200	2.0	20808	S22 E55	302	(AP)	2				

MCMATH REGION 16221                      CMP DATE 18.2                      RETURN OF REGION 16166                      ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	8	12	16221	S07 E80	291	500	2.5									
79	8	13	16221	S07 E66	292	1300	3.0	20812	S07 E65	292	(AP)	1				
79	8	14	16221	S07 E54	292	1100	2.5	20812	S07 E50	295	(B)	2	R	20	4	BX0
79	8	15	16221	S07 E38	294	1100	2.5	20812	S07 E37	295	(AF)	2	R	10	3	BX0

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MCMATH REGION 16221 (CONT) CMP DATE 18.2 RETURN OF REGION 16166 ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	8	16	16221	S06 E24	295	1100	2.5								
79	8	19	16221	S07 W18	297	1000	2.5	20824	S09 W22	301	(AF)	1			
79	8	21	16221	S07 W44	297	1000	2.5								
79	8	22	16221	S07 W59	299	700	2.0								
79	8	23	16221	S07 W71	295	300	1.0								

MCMATH REGION 16225 CMP DATE 18.8

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	8	14	16225	S24 E55	291	700	3.5	20814	S24 E52	293	(B)	4 R	80	10	DAO
79	8	15	16225	S24 E41	291	1400	3.0	20814	S23 E39	293	(D)	R	200	11	DAO
79	8	16	16225	S24 E28	291	1500	3.0	20814	S24 E26	293	(3P)	4 B	160	11	DSO
79	8	17	16225					20814	S24 E14	291	(3P)	3 B	80	10	CSI
79	8	18	16225					20814	S24 E02	290	(BP)	4 B	80	9	DAI
79	8	19	16225	S24 W10	289	800	2.5	20814	S24 W13	292	(AP)	4 B	70	5	CSO
79	8	20	16225					20814	S24 W25	291	(BP)	4 B	30	1	HSX
79	8	21	16225	S24 W35	288	600	2.0	20814	S24 W38	291	(BP)	3 B	30	1	HSX
79	8	22	16225	S24 W48	288	600	2.0	20814	S24 W51	290	(AP)	3 B	40	1	HSX
79	8	23	16225	S24 W62	286	500	1.5	20814	S25 W65	290	(AP)	2			
79	8	24	16225	S24 W75	286	300	1.0	20814	S24 W76	283	(AP)	2			

MCMATH REGION 16242 CMP DATE 19.0

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	8	21	16242	S15 W34	287	400	2.5	20839	S15 W34	287	(B)	3 B	10	2	BXO
79	8	22	16242	S15 W47	287	500	2.5	20839	S14 W45	284	(AF)	2 B	10	2	AXX
79	8	23	16242	S15 W61	285	400	2.5	20839	S15 W63	283	(AP)	2 B	0	1	AXX
79	8	24	16242	S15 W72	285	400	2.0								

MCMATH REGION 16222 CMP DATE 19.3 RETURN OF REGION 16156 ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	8	12	16222	N32 E77	294	300	1.0								
79	8	13	16222	N33 E72	286	600	1.5								
79	8	14	16222	N31 E60	286	800	1.5								
79	8	15	16222	N30 E47	285	1000	1.5								
79	8	16	16222	N32 E32	287	800	1.5								
79	8	19	16222	N33 W04	283	700	1.5								
79	8	21	16222	N33 W29	282	700	1.5								

MCMATH REGION 16229 CMP DATE 19.7

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	8	18	16229					20822	N25 E14	278	(B)	3 B	40	8	CRI
79	8	19	16229	N27 E02	277	600	2.5	20822	N26 E01	278	(BP)	4 B	90	9	DAO
79	8	20	16229					20822	N26 W13	279	(BP)	4 B	80	12	CSO
79	8	21	16229	N27 W26	279	1400	3.0	20822	N26 W26	279	(BP)	4			
79	8	22	16229	N27 W38	278	1400	3.0	20822	N26 W40	279	(BP)	4 B	80	7	CSO
79	8	23	16229	N27 W54	278	1500	3.0	20822	N25 W56	281	(AP)	4			
79	8	24	16229	N27 W67	280	1200	3.0	20822	N25 W68	280	(AP)	3 B	50	1	HSX
79	8	25	16229	N27 W78	279	1200	2.5	20822	N25 W80	280	(AP)	3			

MCMATH REGION 16224 CMP DATE 20.0

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H STA	AREA	CNT	CLASS
79	8	13	16224	S28 E90	268	600	2.0								
79	8	14	16224	S28 E77	269	4000	4.5	20815	S25 E69	276	(X)	3 R	530	27	EKC
79	8	15	16224	S27 E63	269	5000	4.0	20815	S26 E56	276	(B)	5 R	480	35	EKI
79	8	16	16224	S26 E45	274	4800	3.5	20815	S26 E43	276	(BY)	5 B	650	22	EKI
79	8	17	16224					20815	S26 E31	274	(BY)	5 B	680	56	EKI
79	8	18	16224					20815	S26 E18	274	(D)	5 B	740	40	EKI
79	8	19	16224	S26 F06	273	4600	3.0	20815	S26 E06	273	(D)	5 B	710	54	EKI
79	8	20	16224					20815	S26 W07	273	(BY)	5 B	680	19	EKO





REGIONS OF SOLAR ACTIVITY

AUGUST 1979

MCMATH REGION 16237      CMP DATE 25.4      RETURN OF REGION 16196      ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	8	19	16237	N27 E78	201	1000	3.0									
79	8	21	16237	N27 E49	204	2800	2.5									
79	8	22	16237	N27 E36	204	1800	2.5									
79	8	23	16237	N27 E20	204	1400	2.5									
79	8	24	16237	N27 E10	203	1200	2.5		N29 E09				8	0	1	AXX
79	8	25	16237	N27 W01	202	1300	2.5									
79	8	26	16237	N27 W14	201	1300	2.0		N28 W21				3	0	2	AXX
79	8	27	16237	N27 W27	200	1300	2.0									
79	8	28	16237	N27 W41	200	1100	2.0									
79	8	29	16237	N27 W57	201	900	2.0									
79	8	30	16237	N27 W65	199	1000	1.5									
79	8	31	16237	N27 W77	199	700	1.5	20859	N27 W70	190	B	1	B	10	1	AXX
79	9	01	16237	N27 W88		200	1.5									

MCMATH REGION 16254      CMP DATE 26.1

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	8	27	16254	S21 W20	193	100	1.5									
79	8	28	16254	S21 W34	193	300	1.5									
79	8	29	16254	S21 W49	193	200	1.0									
79	8	30	16254	S20 W59	193	200	1.0									

MCMATH REGION 16239      CMP DATE 26.2

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	8	19	16239	N06 E87	192	1700	3.5	20835	N04 E80	199	(X)		3			
79	8	20	16239					20835	N05 E71	195	(D)		4			
79	8	21	16239	N06 E61	192	6000	3.5	20835	N05 E60	193	(D)	5	B	1238	20	FKI
79	8	22	16239	N06 E47	193	5600	3.5	20835	N05 E45	194	(D)	5	B	1340	33	FKI
79	8	23	16239	N06 E32	192	5800	3.0	20835	N05 E33	192	(D)	5	B	1230	40	FKI
79	8	24	16239	N06 E21	192	5200	3.0	20835	N05 E19	193	(D)	5				
79	8	25	16239	N06 E09	192	5300	3.5	20835	N06 E07	193	(D)	5	B	1040	51	FKI
79	8	26	16239	N06 W05	192	5500	3.5	20835	N06 W07	194	(D)	5	B	1040	56	FKI
79	8	27	16239	N06 W18	191	5500	3.5	20835	N06 W19	192	(D)	5	B	820	47	FKI
79	8	28	16239	N06 W34	193	5500	3.0	20835	N06 W33	192	(D)	5	M	720	37	FKI
79	8	29	16239	N06 W50	194	5500	3.5	20835	N06 W47	193	(D)	4	B	550	22	FKI
79	8	30	16239	N06 W60	194	5800	3.0	20835	N06 W60	193	(D)	4	B	360	10	FHO
79	8	31	16239	N06 W72	194	5800	3.0	20835	N06 W71	191	(D)	4				
79	9	01	16239	N06 W85		4500	3.0	20835	N06 W86		(AP)		3			

MCMATH REGION 16238      CMP DATE 26.3      RETURN OF REGION 16171      ROTATION 3

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	8	19	16238	N18 E83	196	800	1.5									
79	8	21	16238	N18 E63	190	3000	2.0									
79	8	22	16238	N18 E51	189	3000	2.5									
79	8	23	16238	N19 E35	189	2800	2.5	20845	N18 E44	181	(B)	2	B	10	2	AXX
79	8	24	16238	N19 E23	190	2700	3.0	20845	N18 E28	184	(D)	4	B	180	22	DAI
79	8	25	16238	N18 E10	191	2900	3.0	20845	N16 E17	183	(B)	4				
79	8	26	16238	N18 W02	189	3000	2.5	20845	N18 E04	183	(B)	4	B	260	12	DKC
79	8	27	16238	N19 W15	188	3200	3.0	20845	N18 W09	182	(D)	4				
79	8	28	16238	N19 W29	188	2800	2.5	20845	N18 W24	183	(B)	4				
79	8	29	16238	N19 W44	188	2700	3.0	20845	N18 W37	183	(B)	3				
79	8	30	16238	N19 W53	187	2400	3.0	20845	N18 W50	183	(BP)	4				
79	8	31	16238	N19 W66	188	2400	3.0	20845	N18 W62	182	(AF)	3	B	60	5	CRO
79	9	01	16238	N19 W78		800	3.0									
79	9	02	16238	N18 W89		500	2.5									

MCMATH REGION 16248      CMP DATE 26.3

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	8	24	16248	S10 E24	189	100	2.5	20847	S10 E22	190	(B)	3				
79	8	25	16248	S10 E11	190	300	2.0	20847	S10 E08	192	(B)	4	B	30	3	CRO
79	8	26	16248	S10 W03	190	300	2.0	20847	S10 W05	193	(B)	3	B	20	4	8X0
79	8	27	16248	S10 W17	190	400	2.0	20847	S10 W16	189	(AF)	2	B	10	1	AXX
79	8	28	16248	S10 W31	190	400	2.0	20847	S09 W26	185	(AP)	1				







REGIONS OF SOLAR ACTIVITY

AUGUST 1979

MCMATH REGION 16266

CHP DATE 30.7

RETURN OF REGION 16182

ROTATION 2

				CALCIUM PLAGE DATA			SUNSPOT DATA										
YR	MO	DA	MC NO.	LAT	CHD	L	AREA	INT	MH NO.	LAT	CHD	L	MAG.	H STA	AREA	CNT	CLASS
79	8	25	16266	N15	E70	131	300	1.0									
79	8	27	16266	N14	E42	131	200	1.0									
79	8	28	16266	N15	E27	132	300	1.0									
79	8	29	16266	N15	E13	131	300	1.5									
79	8	30	16266	N16	E03	131	400	1.0									
79	8	31	16266	N15	W10	132	300	1.0									
79	9	01	16266	N15	W24		400	2.0									
79	9	02	16266	N15	W38		400	1.5									
79	9	03	16266	N14	W49		400	2.0									
79	9	04	16266	N15	W62		300	1.5									
79	9	05	16266	N11	W78		300	1.0									

Note: No calcium spectroheliograms were secured at the McMath-Hulbert Observatory on August 17, 18 and 20, 1979.  
No sunspot observations were made at Mt. Wilson on August 11, 1979.

DAILY CALCIUM PLAGE INDEX

AUGUST 1979

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
79	8	1	36.6	79	8	11	33.6	79	8	21	72.3
79	8	2	37.5	79	8	12	38.0	79	8	22	71.3
79	8	3	35.9	79	8	13	34.0	79	8	23	68.7
79	8	4	35.5	79	8	14	36.0	79	8	24	63.3
79	8	5	25.9	79	8	15	43.3	79	8	25	64.1
79	8	6	32.2	79	8	16	49.0	79	8	26	57.4
79	8	7	33.4	79	8	17	*	79	8	27	59.5
79	8	8	33.8	79	8	18	*	79	8	28	51.4
79	8	9	30.8	79	8	19	45.5	79	8	29	54.3
79	8	10	34.0	79	8	20	*	79	8	30	47.0
								79	8	31	43.7

\* NO OBSERVATIONS

SUDDEN IONOSPHERIC DISTURBANCES

AUGUST 1979

DAY	UNIVERSAL TIME				WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE							KNOWN FLARE	McMATH REGION
	START	END	MAX	IMP		SWF	SCNA	SEA	SPA	LF-SPA	SES	SFO		
01	0858	0915	1935	1-	3	1			1				0900	16174
01	1009	1030	1015	1-	5	1		3	2		1		1008E	16175
01	1116	1210	1123	2	5	4		8	3		3		1120	16174
01	1415	1558	1429	2	5	6		4	2		7		1412	16174
01	1642	1745	1655	1-	5	2		2	2	1	9		1644	16175
01	1756	1830	1808	1-	5				1	1	4		1758	16175
01	1838	1910	1842	1-	5				2	1	5		1835E	16175
02	1228	1244	1235	1-	3			2					*	
02	1520	1545	1527	1-	1	1							1519	16191
02	2104	2132	2111	1-	1				1				2105	16171
04	2019	2052	2025	1-	5				2		3		2019	16174
05	1154	1232	1215	1-	1			1					*	
05	1251	1430	1333	1-	3			2					*	
05	1318	1415	1335	1-	1			1					*	
06	2116	2145D	2130	1-	1				1				*	
06	2145E	2254	2150	1-	1				1				*	
07	0328	0517	0354	1	1				1				*	
07	1950	2140	2014	2	5	2			2	1	9		1955E	16208
08	1737	1910	1755	1	5	2			2	1	11		1737	16208
09	1101	1143	1113	1-	1				1		1		1101	16208
09	1738	1910	1757	1-	5	1			2		8		1739	16208
10	0135	0256	0150	1	1				1				0123	16208
10	0434E	0555	0540	1-	1				1				*	
10	0912	1042	0921	1	5	2		1	1		1		0919E	16208
11	1100	1120	1111	1-	3	2							*	
11	1123	1145	1126	1-	1				1		1		1123	16208
11	1338	1353	1342	1-	1				1		1		1337	16208
11	1655	1720	1702	1-	5				1	1	3		1656	16208
12	0022	0048	0024	1-	1				1				*	
12	1230	1306	1237	1-	1			1					*	
13	0233	0304	0242	1-	1				1				0232	16208
13	1012	1100	1027	2	5	3		4	3		2		NF	
14	1138	1225	1148	1	5	3		4	2		1		NF	
14	1245	1340	1254	1	5	3		1	1		3		1243	16224
14	1554	1601	1550	1-	3				1		4		1542	16205
14	1614	1647	1621	1-	3				1		5		1612	16224
14	1700	1710D	1710	1-	5	1			1		3		1700E	16224
14	1730	1815	1740	1-	3				1		4		1728	16205
14	1905	1939	1906	1-	1				1		1		1902	16221
14	2011	2041	2016	1-	3				1		1		2009	16224
14	2047	2122	2100	1-	3				1		1		2048	16209
14	2148	2213D	2159	1-	3				1		1		2147	16209
14	2310	2330	2317	1-	1				1		1		2311	16231
14	2355	0042D	0003	1	3	1			1		1		2352	16231
15	0042E	0125	0044	1-	1				1				0041	16205
15	1315	1358	1325	1-	1				1		1		1313	16224
15	1341	1432	1416U	1-	1			1					1342E	16208
15	1525	1645	1536	2	5	4		5	2	1	11		1527	16225
16	0036	0120D	0042	1-	1				1				0036	16224
16	0454	0607D	0505	2	3	1			1				*	
16	0607E	0806	0626	2	5			2	1				0607E	16231
18	0627E	0800	0632	1+	1				1				0620	16233
18	0947	1032	1003	1	5	1		1	2				0949	16240
18	1340	1440D	1400	2	5	7		3	2		14		NF	
18	1406	1755	1418	2	5	2		1	2		2		1400	16231
18	0529	0633	0538	1-	1				1				0530	16239
19	1258	1445	1320	1-	5	3		2	2		4		NF	
19	1537	1557	1547	1-	3						3		1536	16224
19	1756	1830	1800	1-	1						1		1758	16208
20	0053	0157	0155	1-	3	1			1				0052	16239
20	0240	0306	0249	1-	1				1				0245E	16239
20	0507	0550D	0516	1-	3	1			2				0508E	16239
20	0720	0904D	0728	1+	5	2		2	2		1		0723E	16239
20	0904E	1124	0920	3	5	5		6	2		1		0906	16239
20	1722	1750	1726	1-	5	1		1			7		1730	16239
20	1944	2010	1948	1-	5	2					6		1937	16239
20	2109	2140	2117	1-	5				1		3		2110	16240
20	2338	0040	2348	1-	5				1		2		2332	16239

SUDDEN IONOSPHERIC DISTURBANCES  
AUGUST 1979

DAY	UNIVERSAL TIME				WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE						KNOWN FLARE	McMATH REGION	
	START	END	MAX	FMP		SWF	SCNA	SEA	SPA	LF-SPA	SES			SFD
21	0607	0713	0624	1-	5	1		1	1				0614E	16218
21	0836	1020	0848	1	5	3		3	2		1		0840	16239
21	1333	1400	1339	1-	3			2	1				1333	16224
21	1642	1754	1708	1-	5			1	1		2		1646E	16238
21	2356	0038	0009	1-	1				1				2351	16223
22	1854	1942	1920	1	3	1					4		1853	16238
22	2150	2224	2207	1-	1				1				2154	16242
22	2350	0030	2358	1-	1				1				2351	16239
23	0433	0535	0441U	1-	1			1					*	
23	0548	0633	0600	1-	1				1				0546E	16239
23	1214	1235	1221	1-	1			1					1213	16239
23	1243	1538	1316	2	5	4		6	3		9		1244	16239
23	2316	0026	2331	1-	5				1		3		2316	16239
24	1200	1250	1208	1	5	3		4	2		1		1159	16239
24	1635	1735	1700	1	5				1		7		1627	16245
24	1815	1940	1828	1-	5	1			1		9		1815	16239
24	2114	2152D	2122	1-	5				1		3		2116	16237
24	2152E	2334	2202	1-	5	1			2		4		2148	16238
25	0022	0058	0033	1-	1				1				0019	16239
25	0300	0416	0318	1-	1				1				*	
25	0754	0850	0801	1-	1				1				0747	16238
25	1343	1443	1414	1-	1				1		1		1348	16239
25	1515	1555	1524	1-	1				1		1		1511E	16231
25	1617	1708	1630	1-	5	1			1		3		1613	16224
25	1944	2054	2002	1-	5	2			3		8		1943	16239
26	0009	0040	0014	1-	1				1				0007	16238
26	0140	0330	0217	1-	3						1		0138	16231
26	0339	0412	0347	1-	1				1				*	
26	0506	0554	0522	1-	1				1				*	
26	0651	0753	0714	1-	1				1				0661	16239
26	0834	0914	0839	1-	3			2					0837	16241
26	1226	1330	1243	1	3				2		1		1222E	16237
26	1456	1540	1510	1-	3				1		2		1447	16252
26	1612	1635	1618	1-	1			1					1615	16239
26	1642	1735	1648	2	5	5		6	3		11		1639	16239
27	0047	0116	0051	1-	1				1				0055E	16252
27	2136	2246	2154	1-	3				1		1		2137	16252
28	0035	0106	0042	1-	1				1				0035	16239
28	0337	0410	0344	1-	1				1				0336E	16252
28	0527	0554	0535	1-	1				1				0530E	16239
28	0618	0656	0630	1-	1				1				0651	16239
28	0751	0856	0807	1-	3			1	1				0750	16252
28	0809	0845	0811	1-	3			2					0805	16239
28	0951	1153	1000	1-	3			2					0950	16252
28	1253	1315	1259	1	5	2		5	1		1		1259	16247
28	1306	1335	1312	1-	3	1							1301	16238
28	1803	1810D	1810	1-	1						1		1804	16239
28	1815	1823D	1823	1-	1						1		1817	16239
28	1838	1907	1845	1-	1						1		1835	16247
28	1915	1929D	1929	1-	1						1		1914	16239
28	2152	2234D	2201	1-	3				1		1		2151	16239
28	2234E	2258	2244	1-	1				1				2236	16239
29	0101	0139	0108	1-	1				1				0100	16252
29	0744	0810	0755	1	5	2		2	2		1		0740	16263
29	1655	1712	1701	1-	3						3		1651	16251
29	2252	2315	2255	1-	1						1		2252	16239
30	0038	0144	0103	1-	1				1				0047E	16238
30	1600	1700	1616	1-	5	1		1			3		1557E	16254
30	2357	0030	0006	1-	1				1				2354	16263
31	1335	1418	1400	1-	1						1		1340	16264

PERIODS OF NO OBSERVATIONS:

DATE	TIME (UT) and STATION	DATE	TIME (UT) and STATION
01	1240-1645 TM	17-20	1715-1340 UM (16 kHz)
05	0700-0900 UM (16 kHz), 1455-1550 UM (16 kHz)	19	0000-1930 TM
07	1000-1400 UM (15 kHz)	21	1000-1400 UM (16 kHz)
09-16	0000-2400 LO	25	1800-1953 UM (16 kHz)
10	0525-0632 TM, 1915-2400 TM	27	0000-2400 TM
11-13	0000-1404 TM	28	1000-1340 UM (16 kHz)
14	0800-1345 UM (16 kHz)	29	1530-1645 UM (13 kHz)
15	1740-1930 TM	30-31	2200-2400 TM

STATIONS REPORTING FOR AUGUST 1979

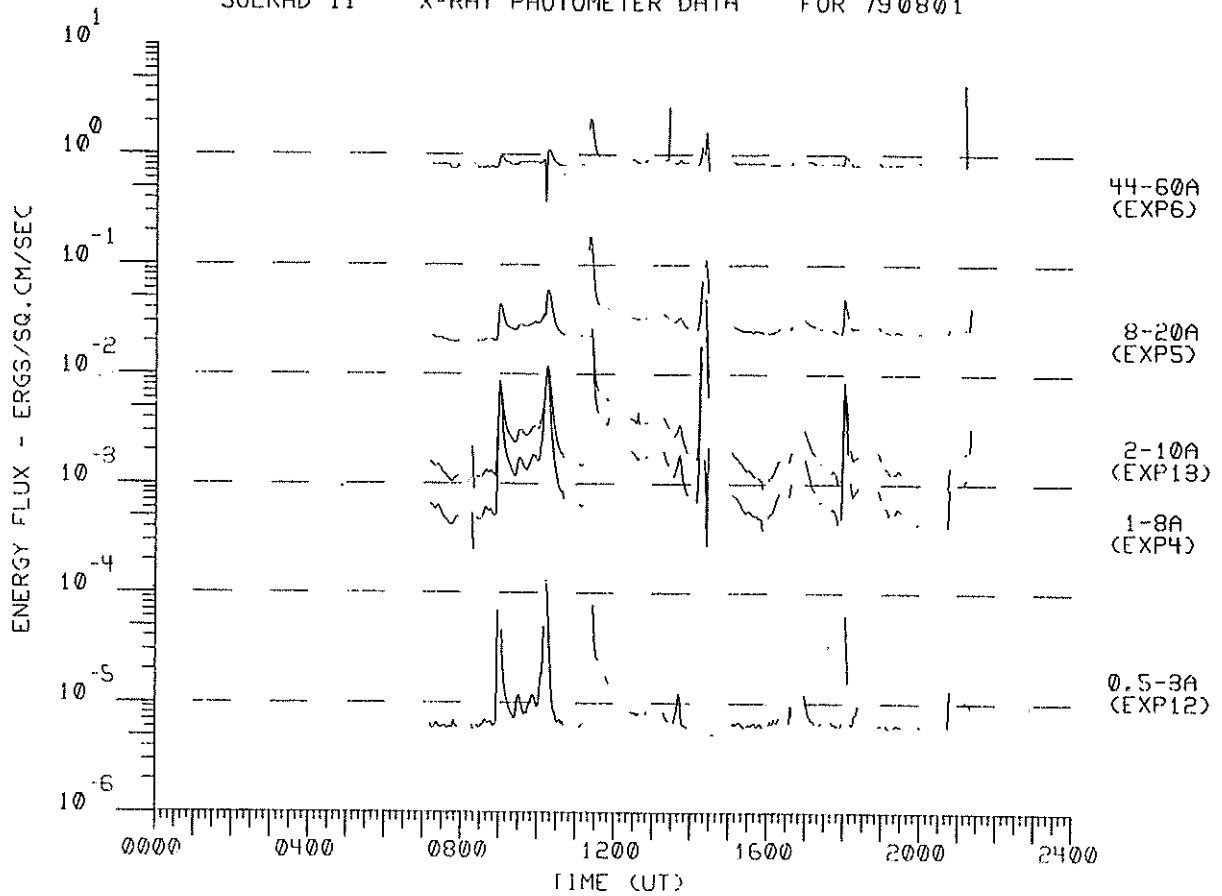
AAVSO (A1, A5, A19, A21, A26, A28, A31, A34, A48) (SES)	NEW JERSEY (NJ) (SES)
ELLENSBURG (EB) (SES)	PANASKA VES (PU) (SWF, SEA, SES)
HERSTMONCEUX (HC) (SEA)	PRESTON (LO) (SEA)
HIRASO (HI) (SWF)	SAO PAULO (UM) (SSS, SPA)
HOBART (TA) (SEA)	SOFIA (SF) (SEA)
HUANGAYO (HU) (SWF)	SOMERTON (SO) (SWF)
INUBO (IN) (SPA)	ST CLOUD (SC) (SES)
JULIUSRUH (JH) (SWF)	TABLE MOUNTAIN (TM) (SPA, LF-SPA)
KUHLUNSBORN (KU) (SES, SPA)	UPICE (UI) (SEA)
LUCHOW (LU) (SWF)	VSETIN (VS) (SEA)
MC MATH (MC) (SWF)	ZILENA (ZL) (SEA)

NOTE: Ellensburg, Washington and Luchow, Germany are new stations reporting for the first time.

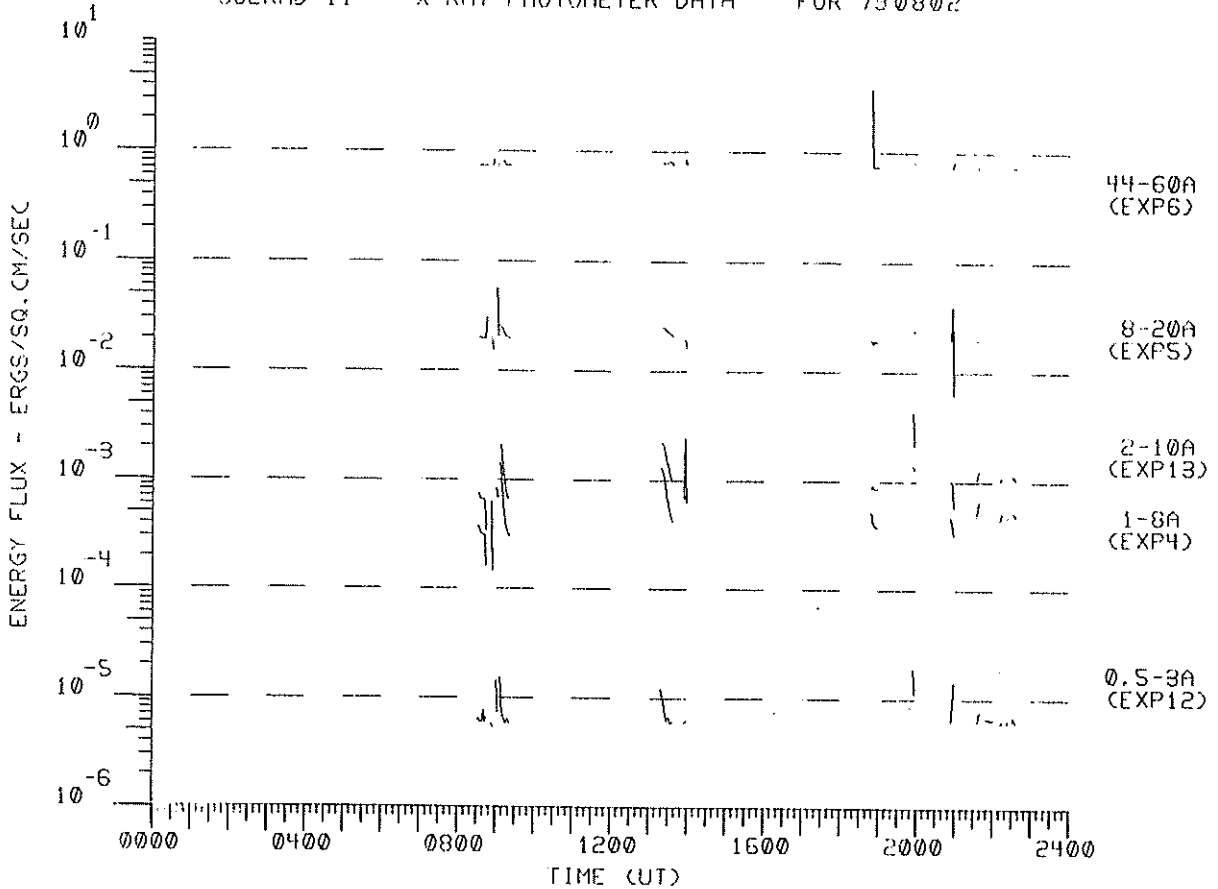
SIDs BY McMATH REGION  
AUGUST 1979

DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
REGION																																
16171		1																														
16174	3		1																													
16175	4																															
16191	1																															
16205														2	1																	
16208								1	1	2	2	3	1	2	1				1													
16209																																
16218																																
16221														1																		
16223																																
16224														4	1	1			1	1					1							
16225														1																		
16231														2	1																	
16233																1										1	1					
16237																																
16238																																
16239																																
16240																																
16241																																
16242																																
16245																																
16247																																
16251																																
16252																																
16254																																
16263																																
16264																																
X-RAY																																
URKGMH													1	1																		
NO FP	1			3	2	1			1	1	2					1									1	1	2					

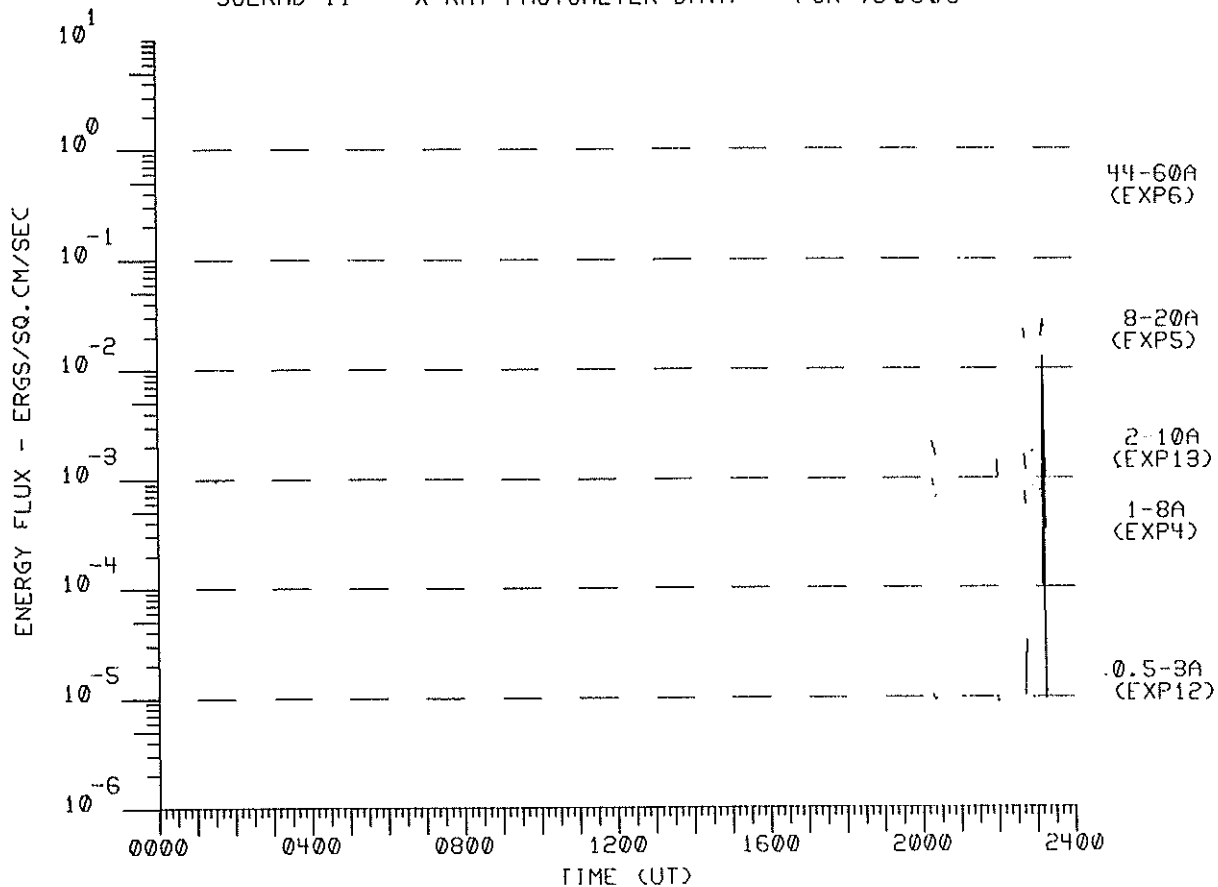
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790801



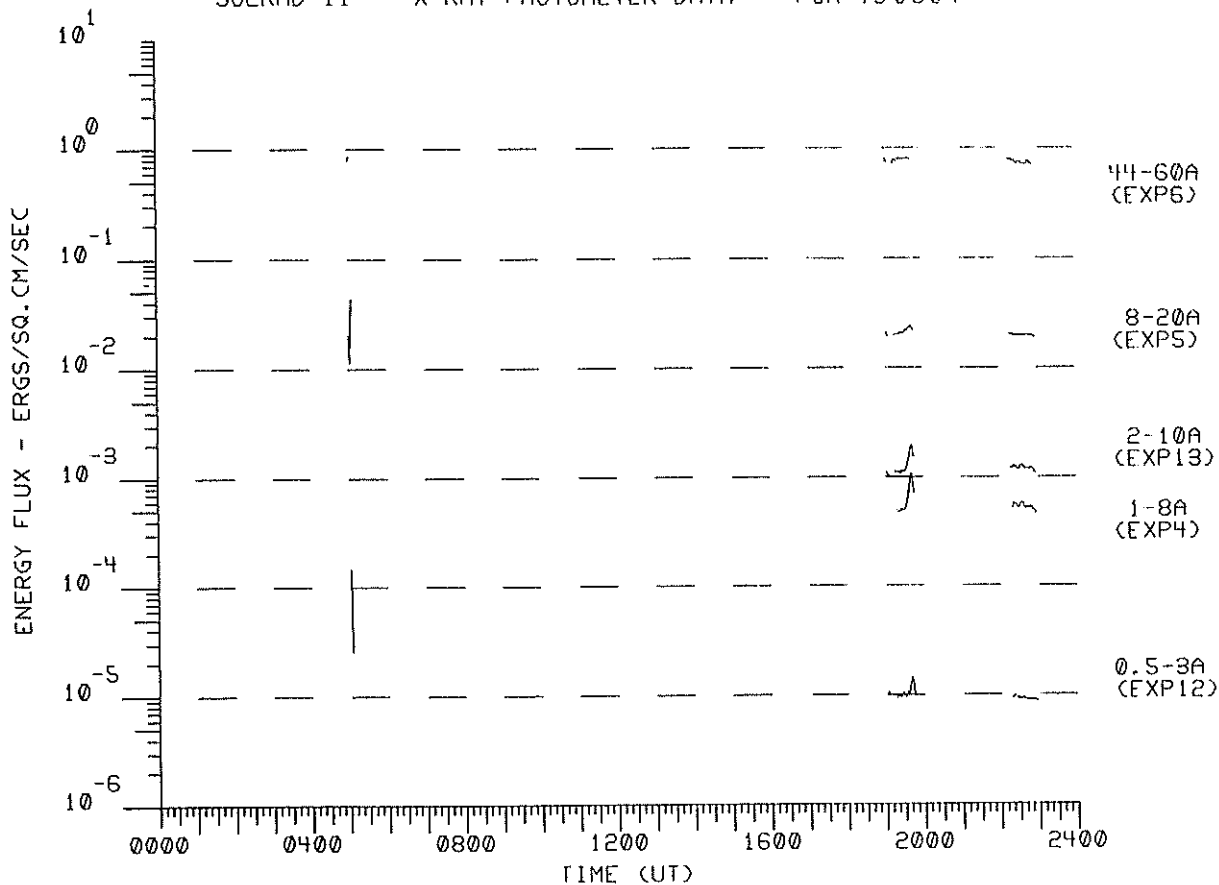
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790802



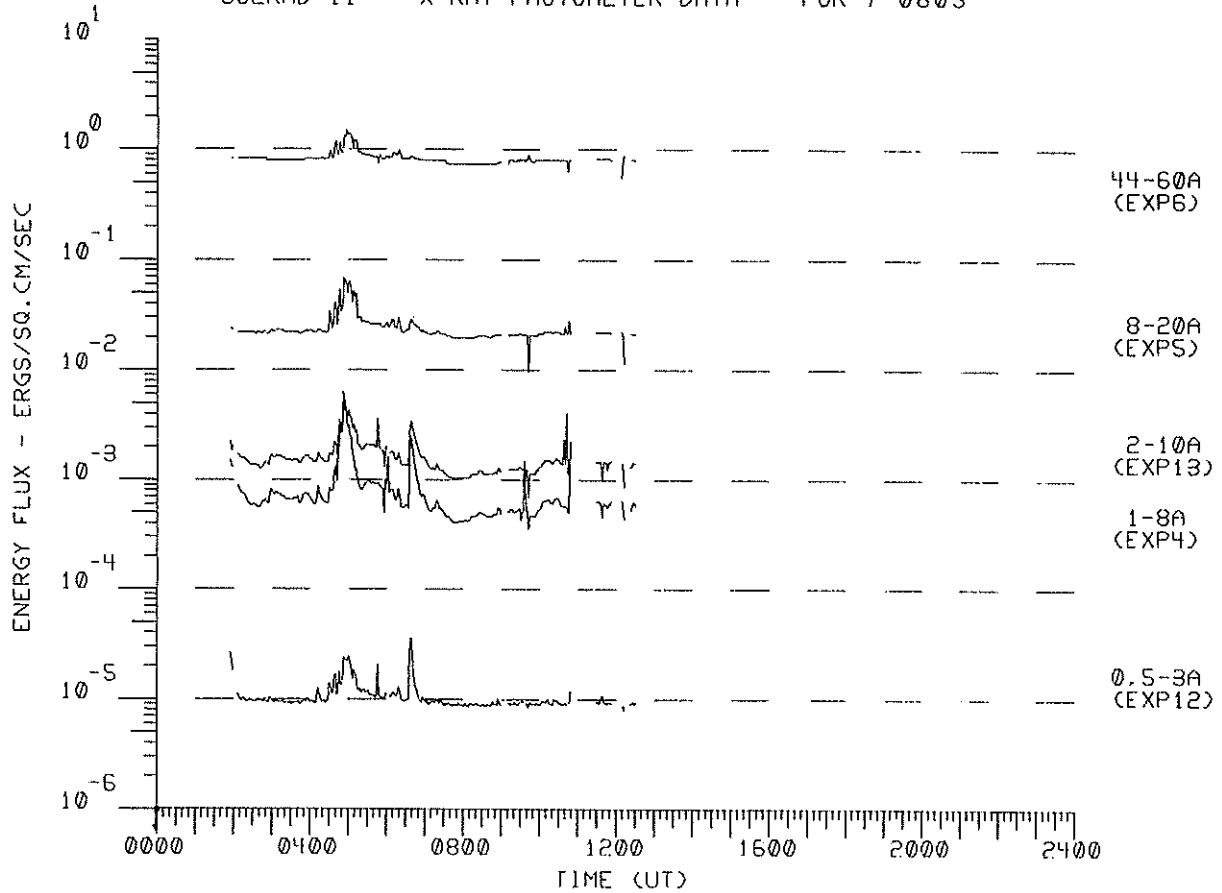
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790803



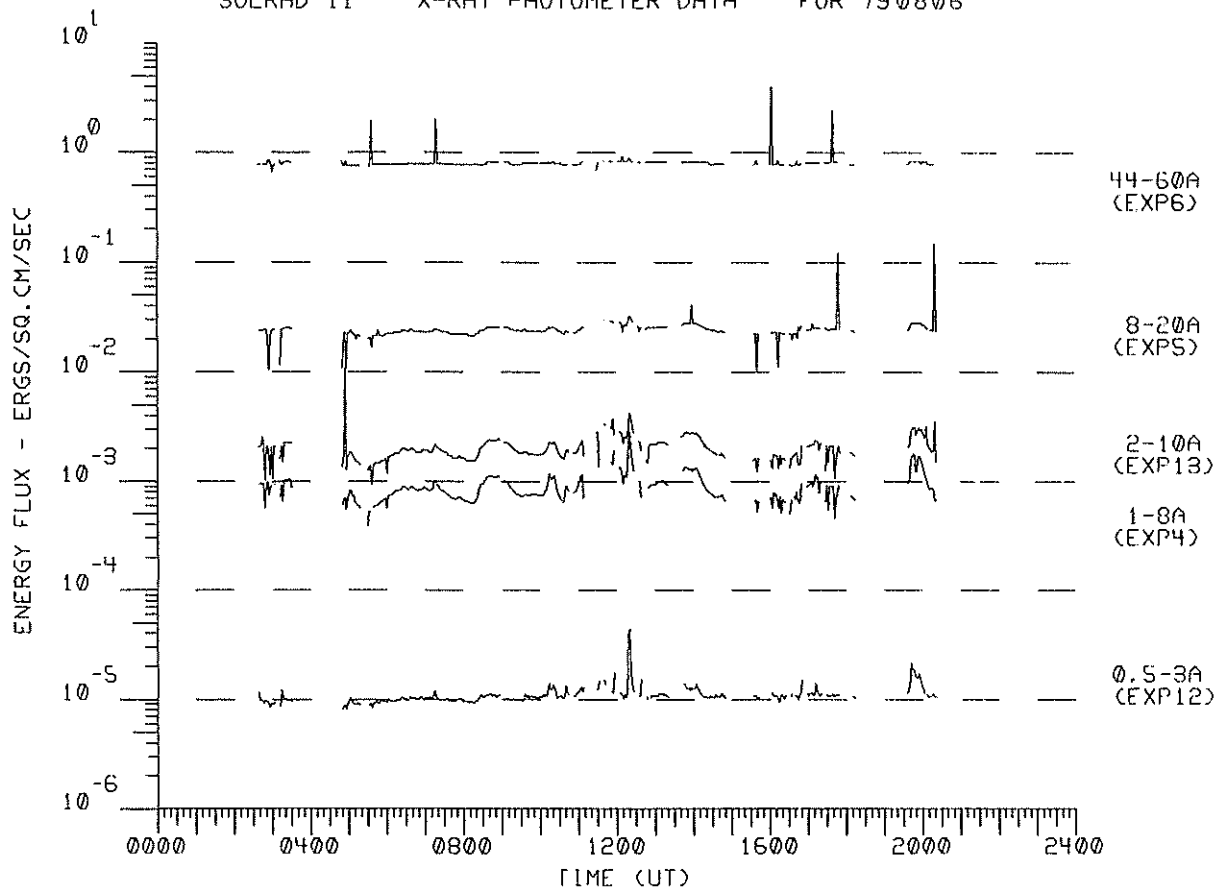
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790804



SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790805

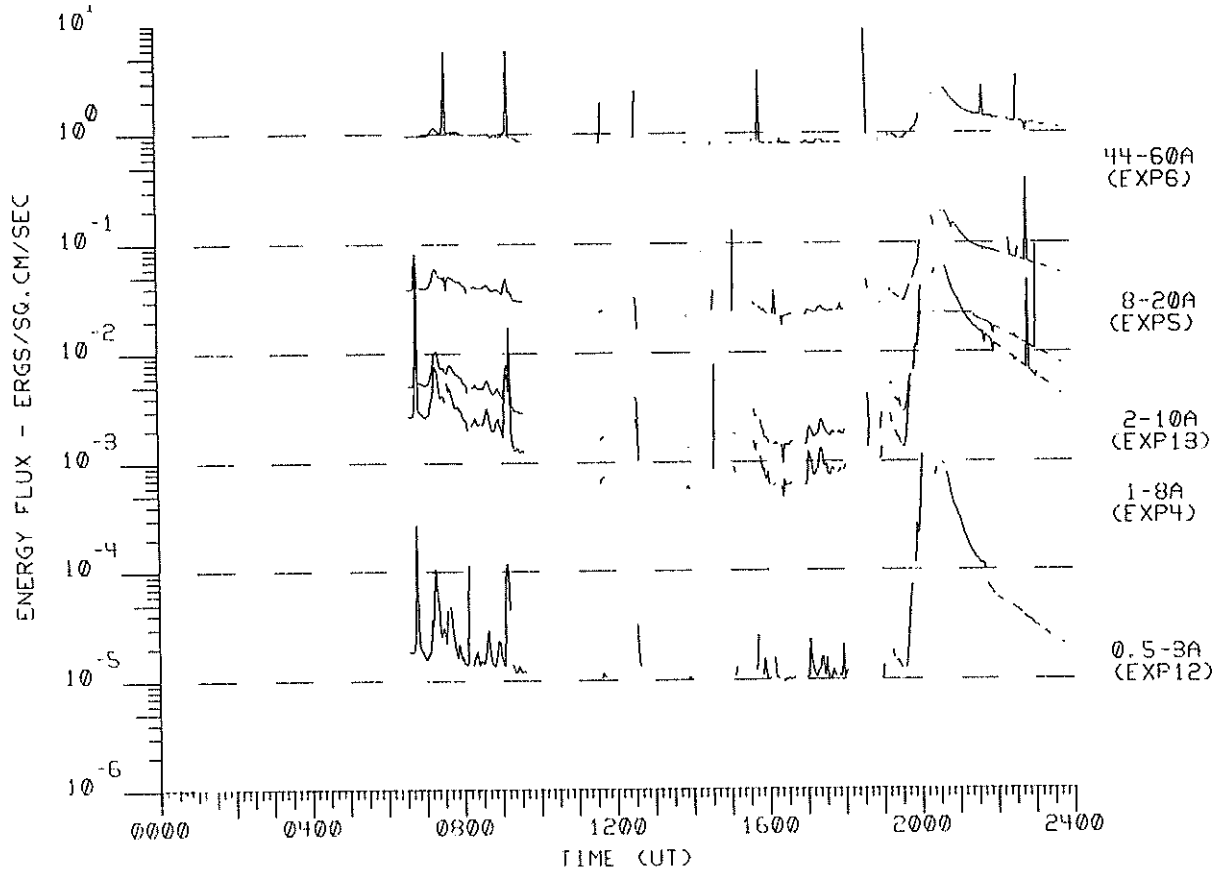


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790806

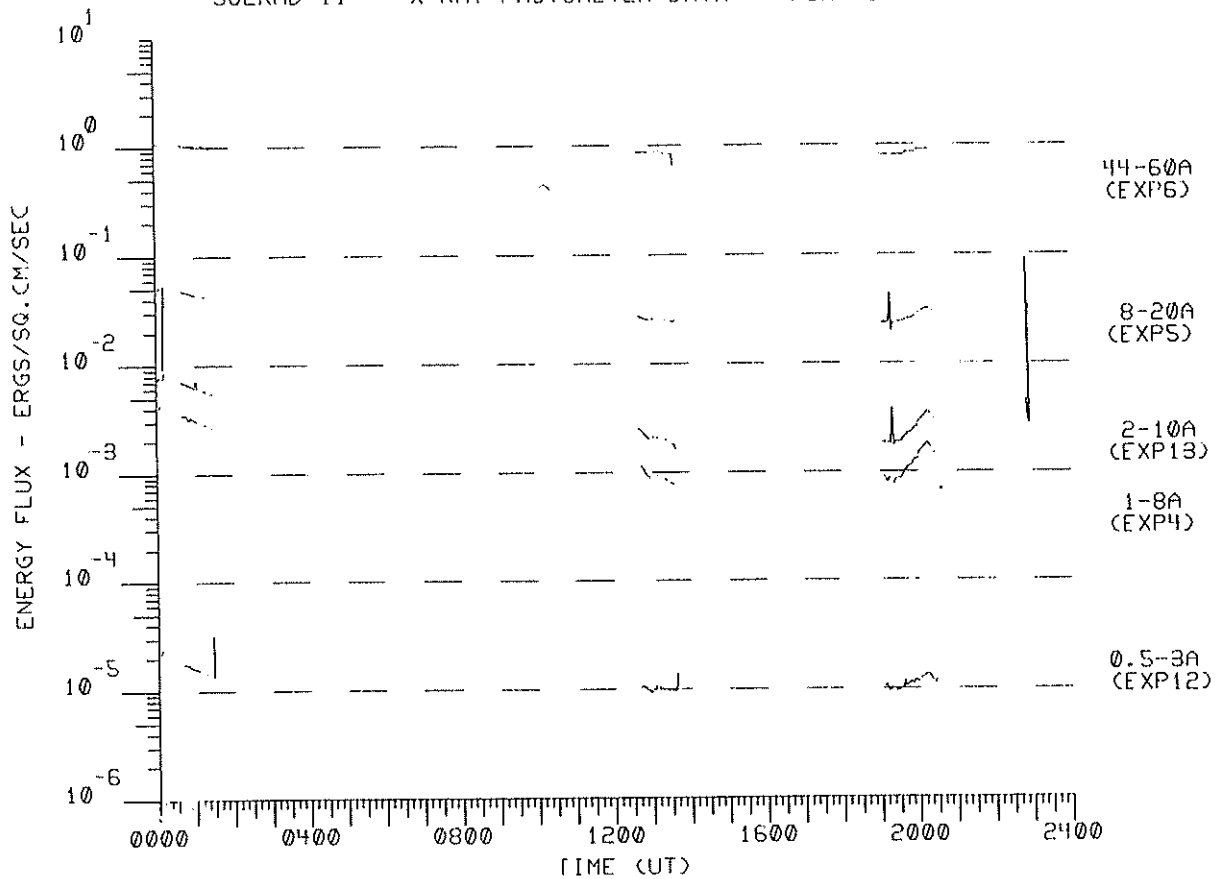




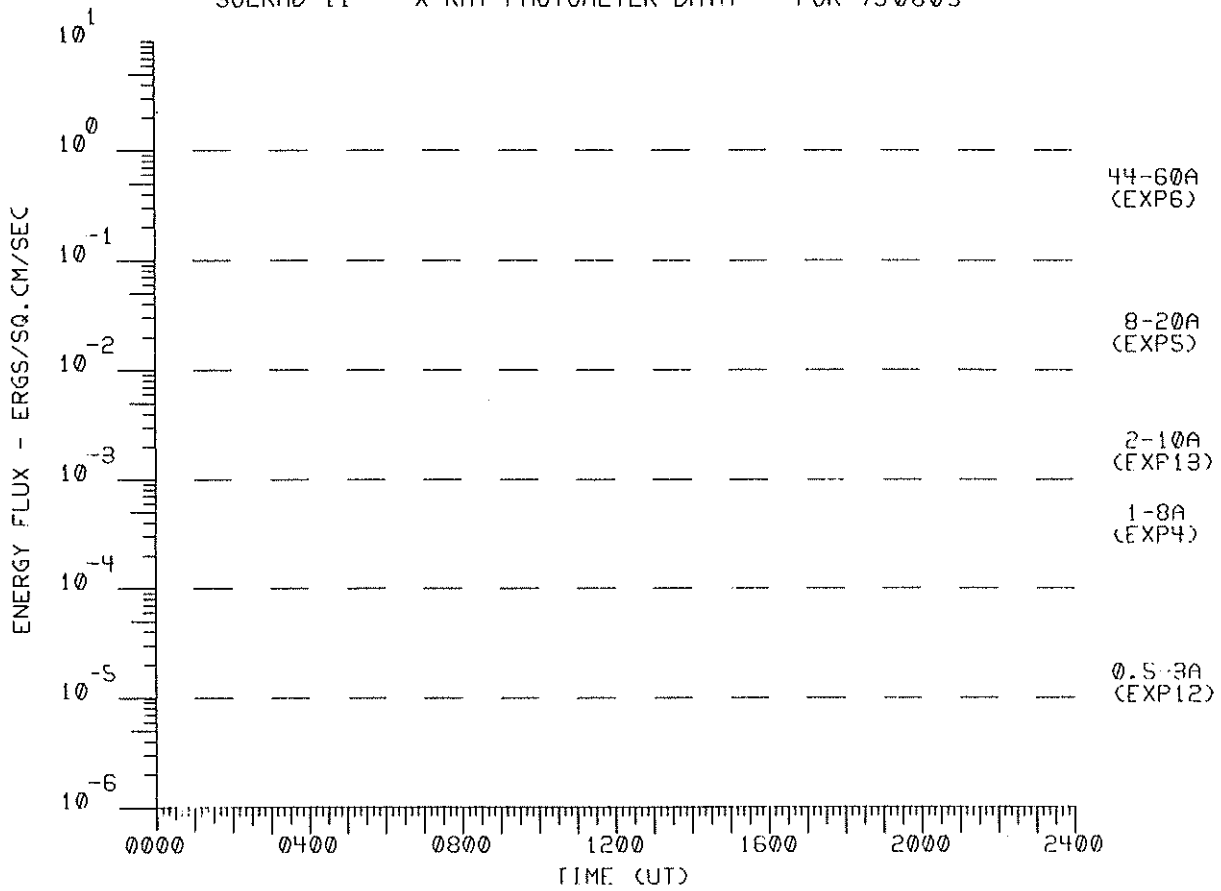
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790807



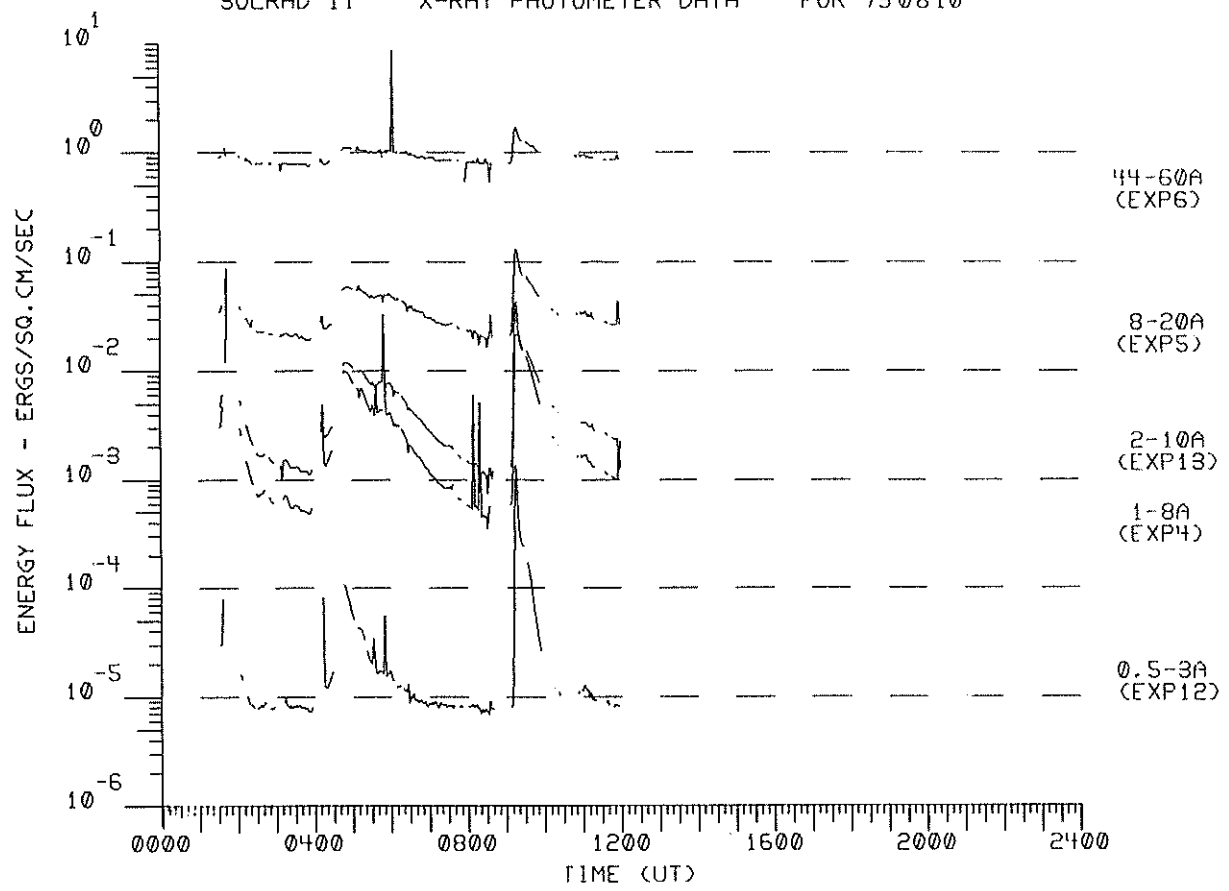
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790808



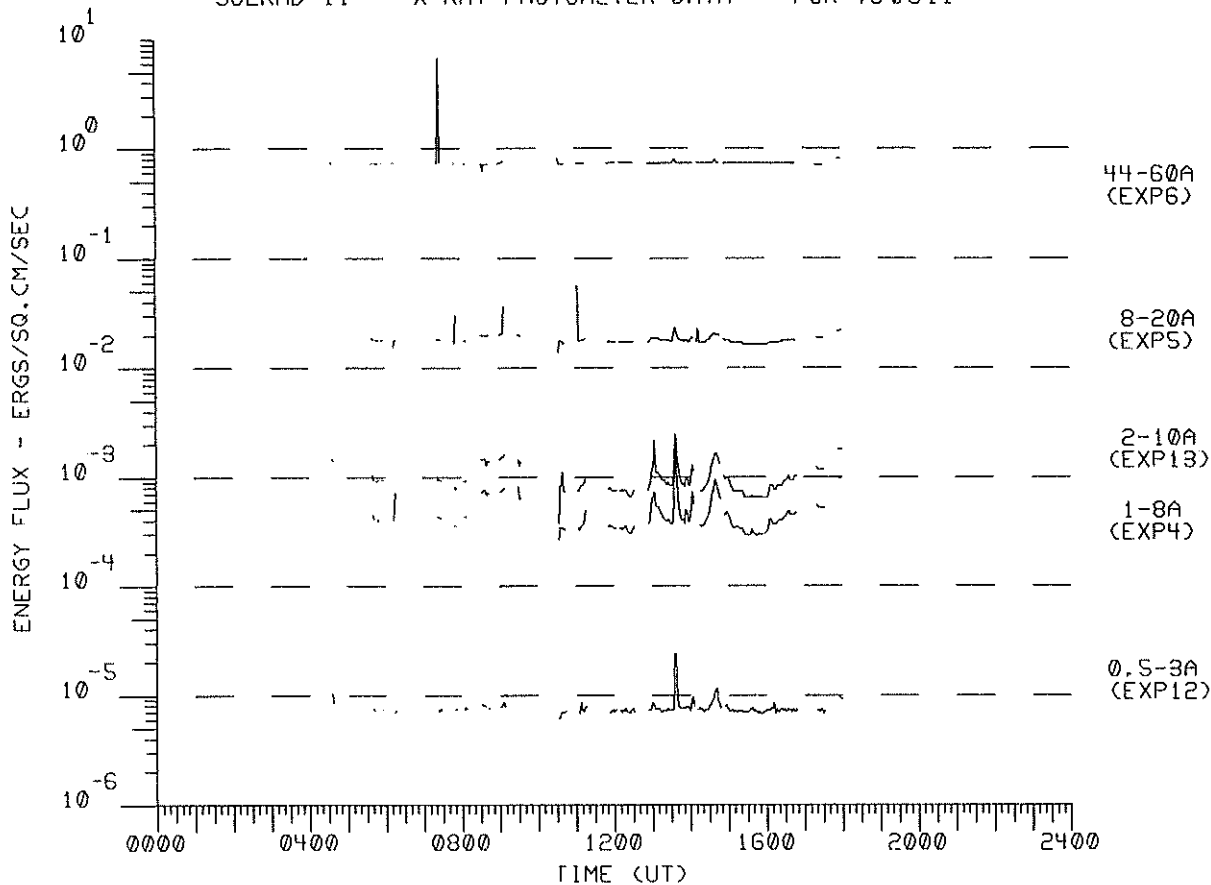
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790809



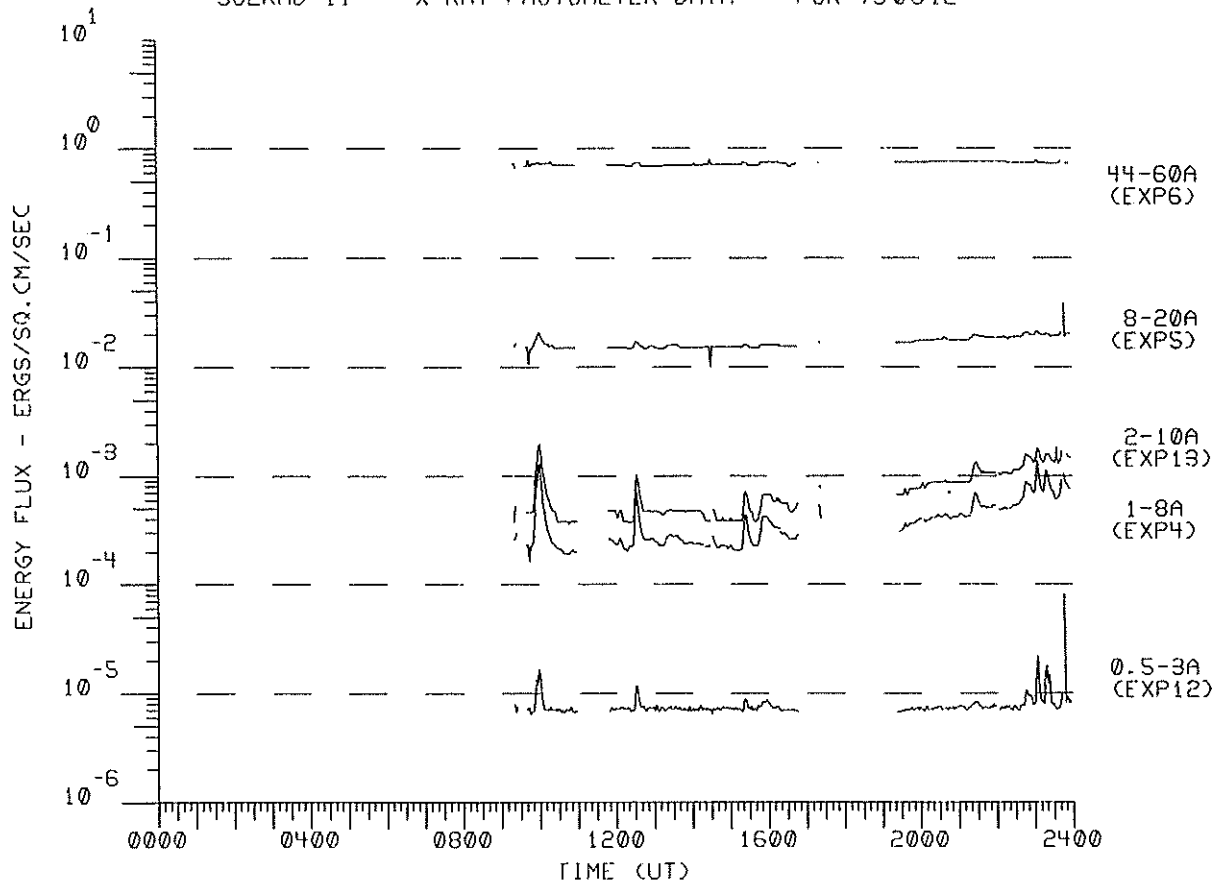
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790810



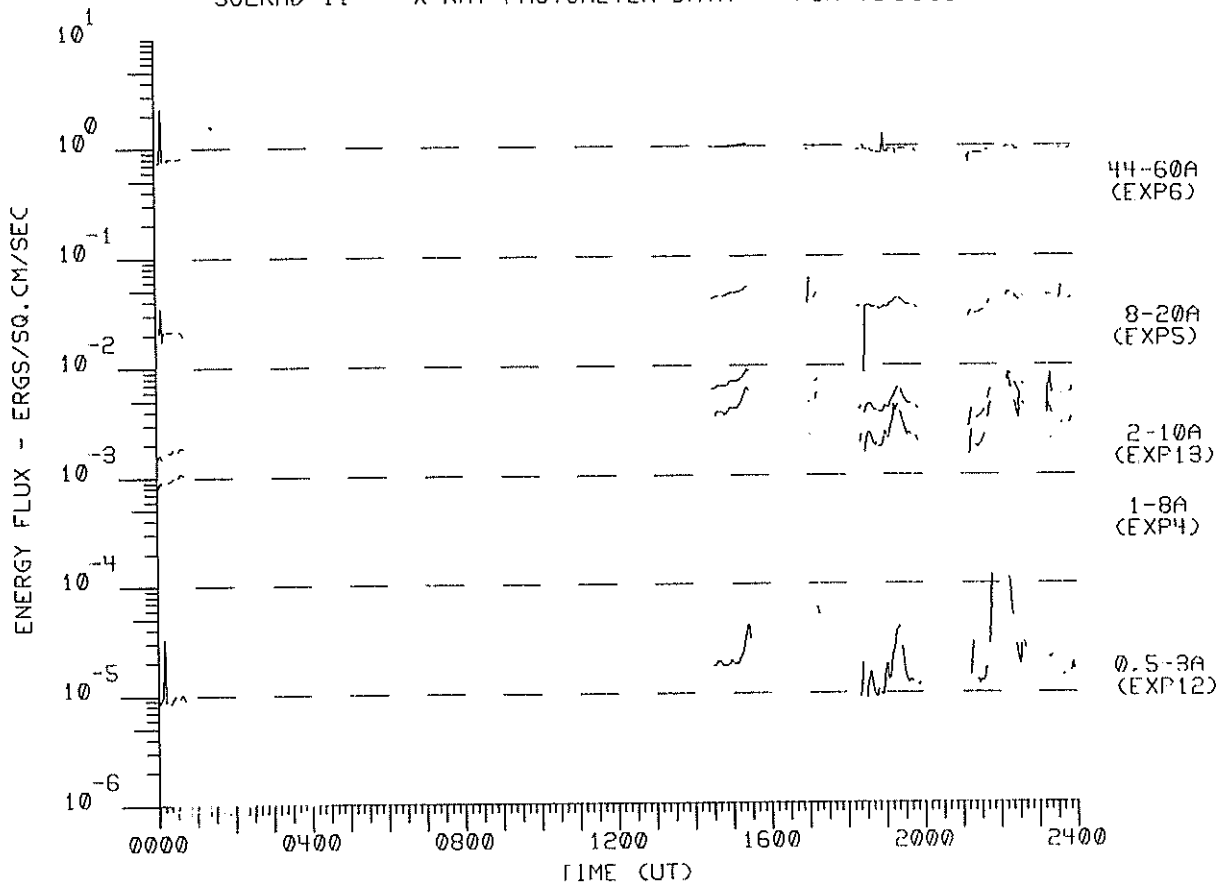
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790811



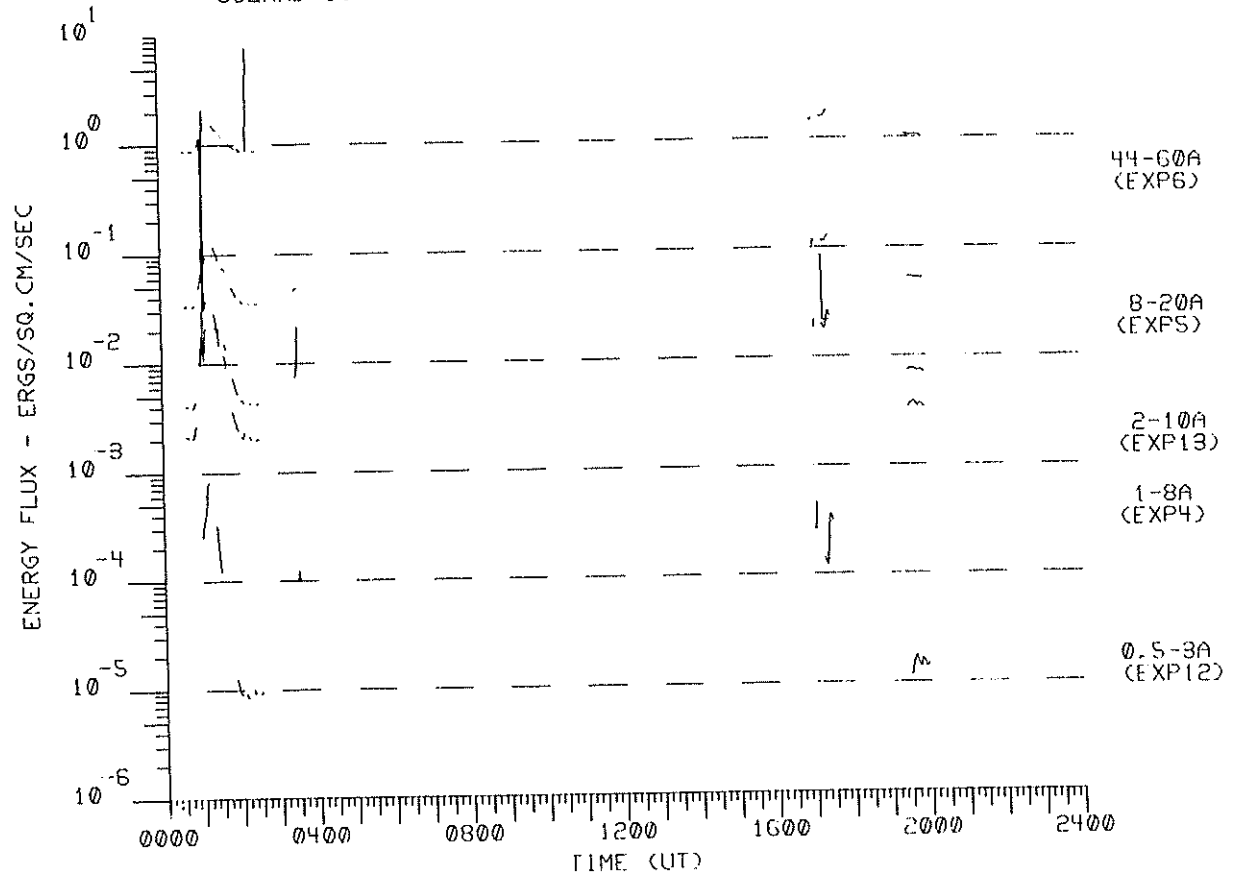
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790812



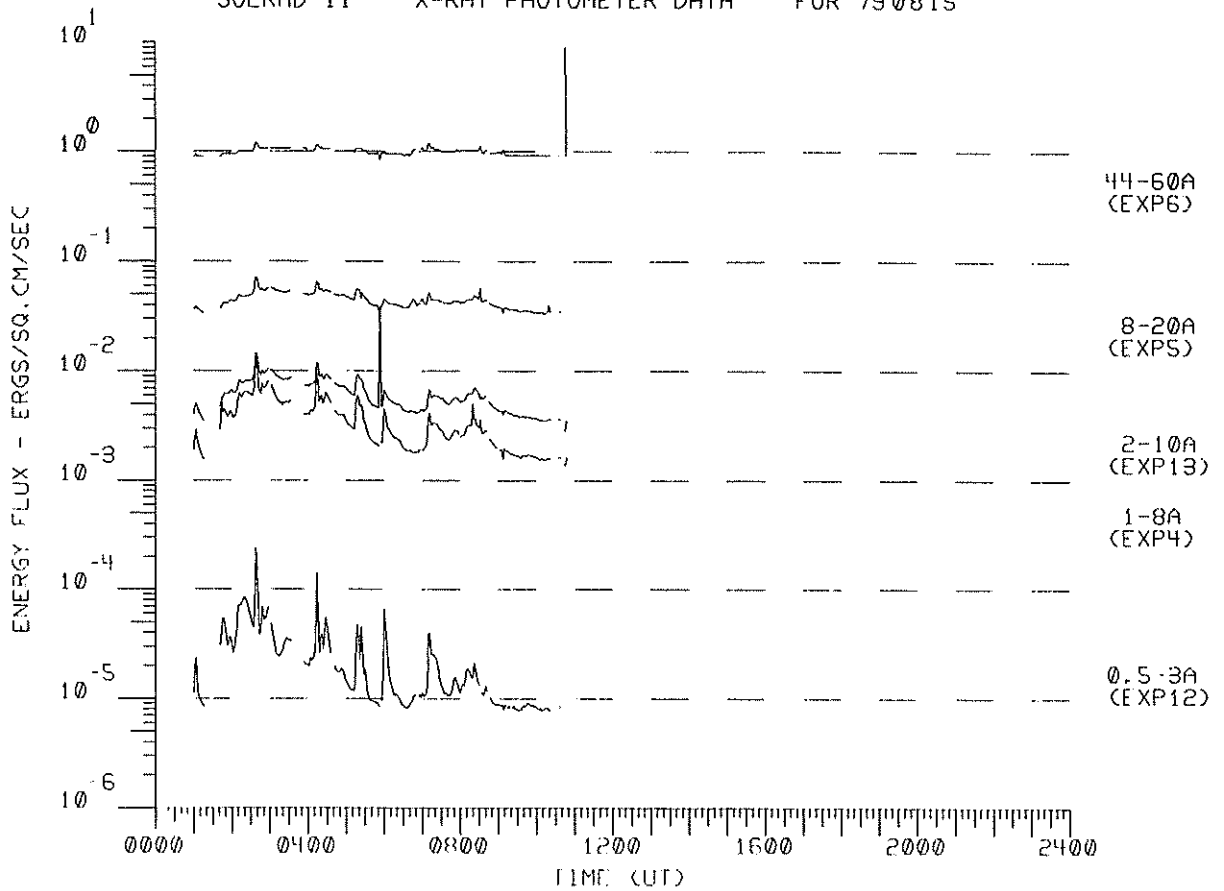
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790813



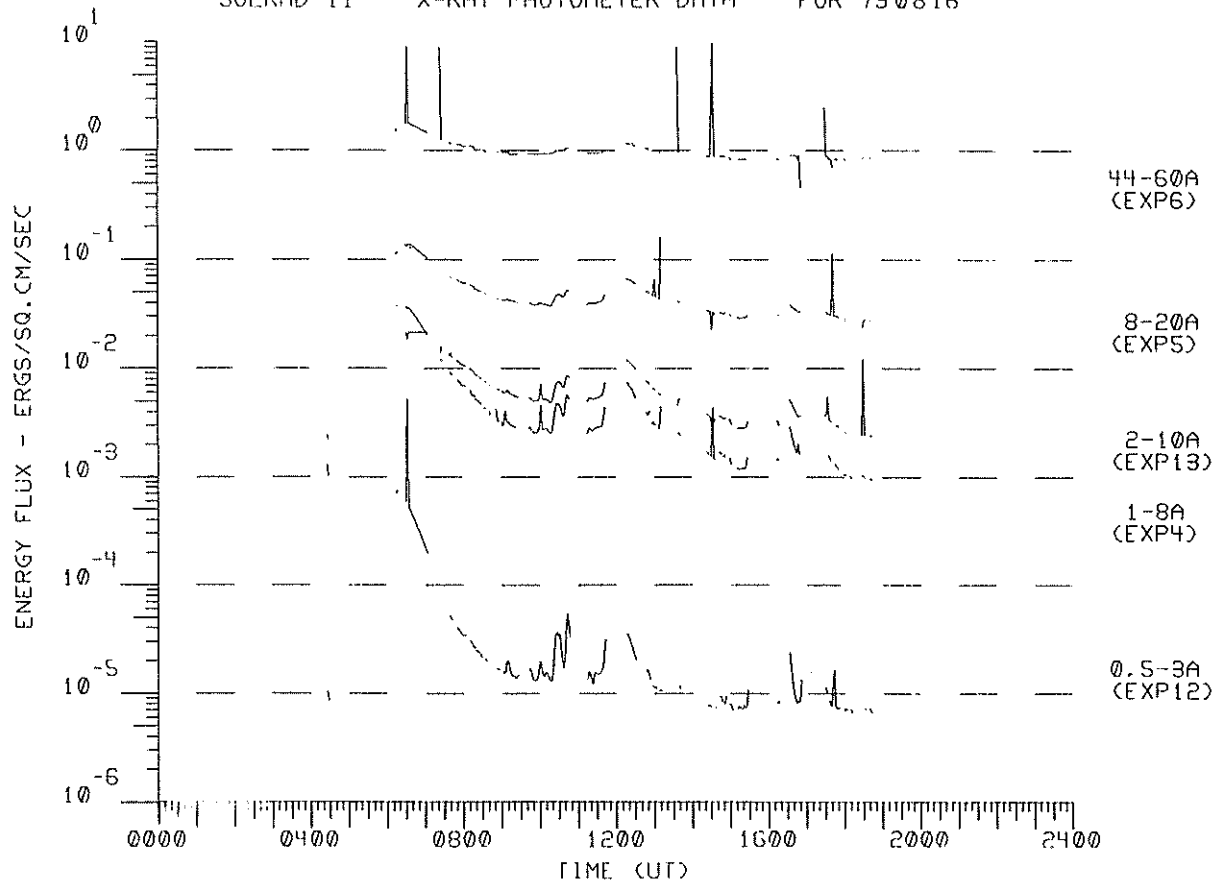
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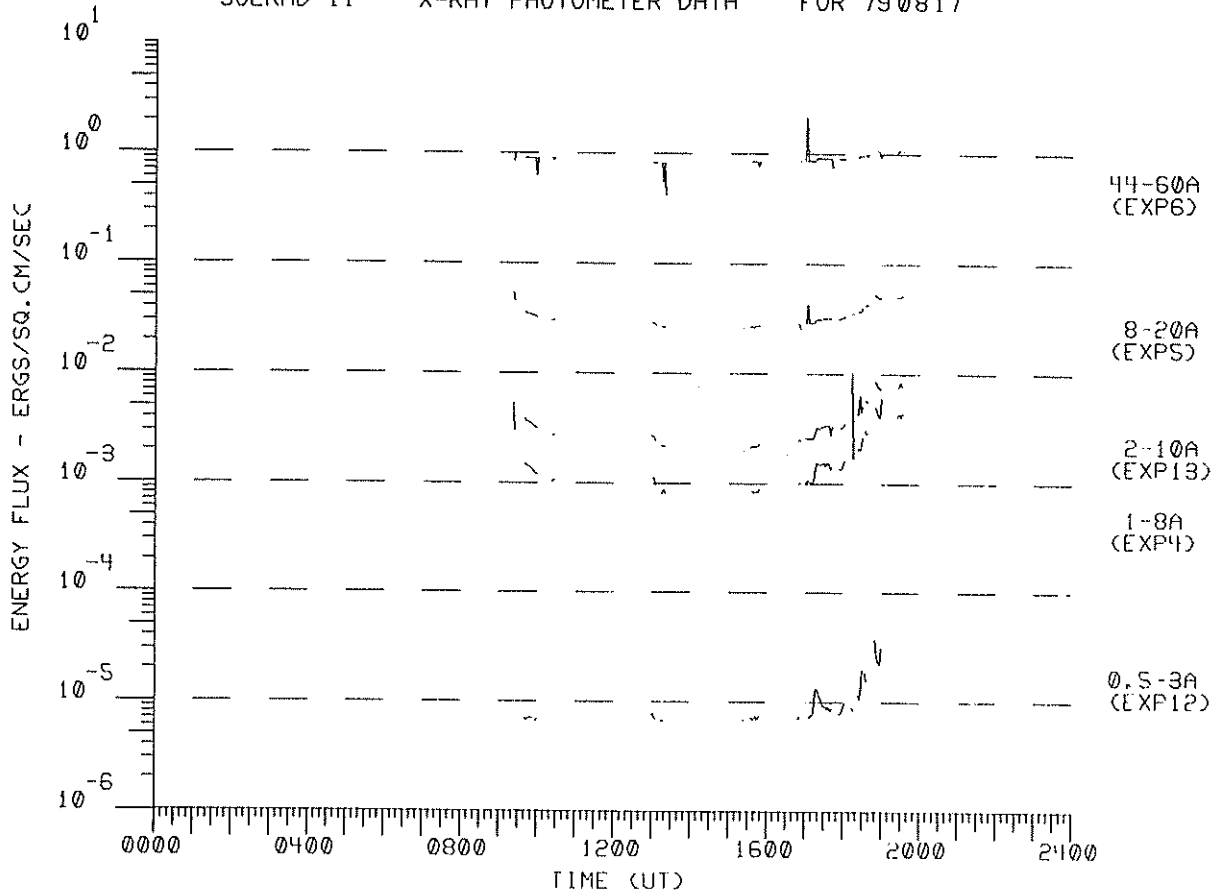
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790815



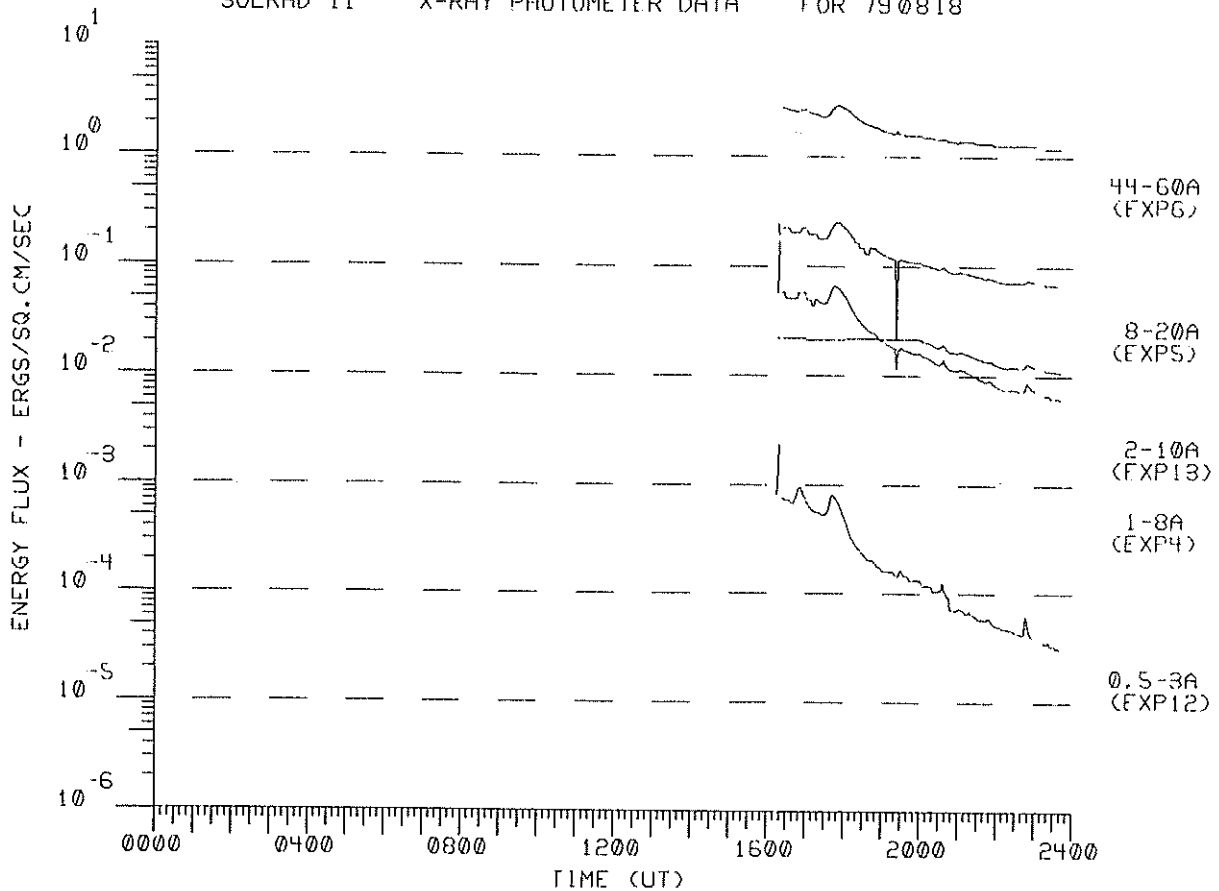
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790816



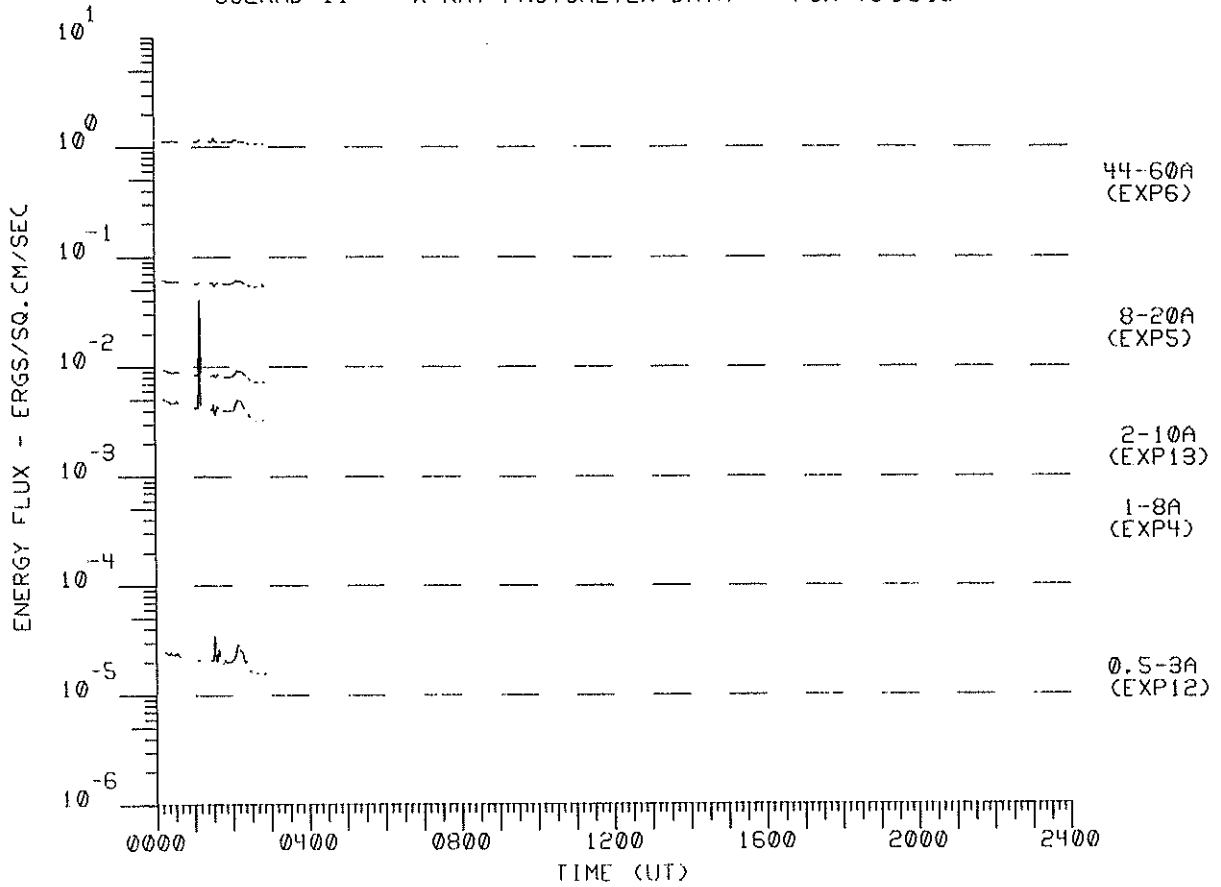
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790817



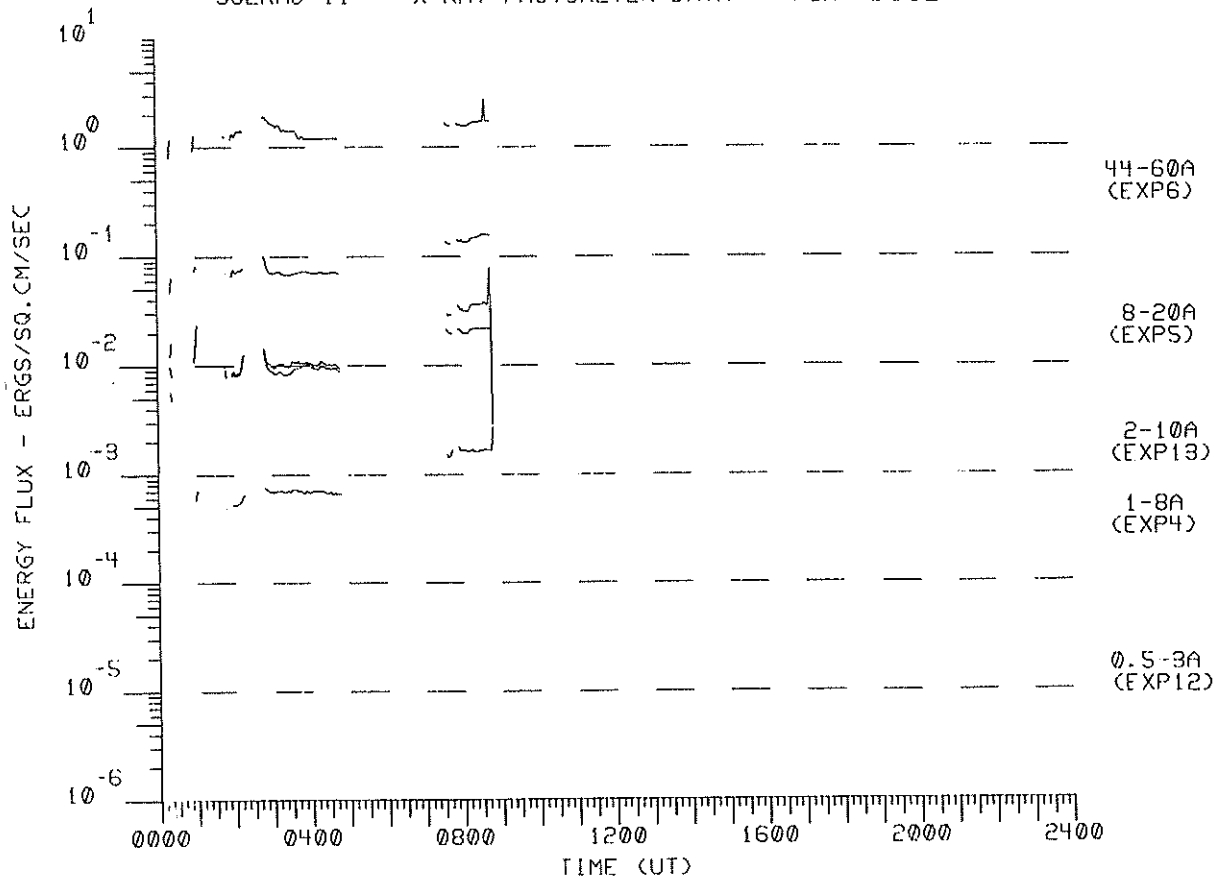
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790818



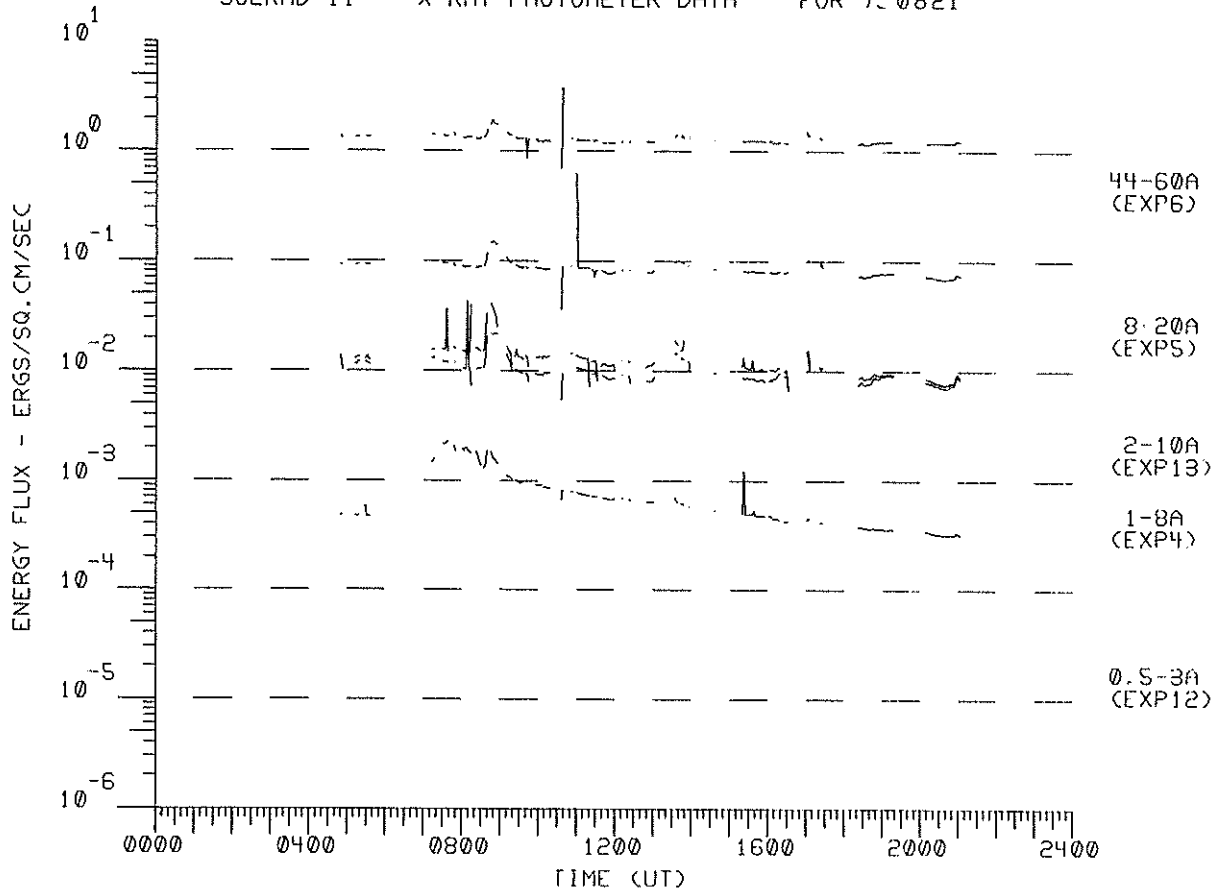
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790819



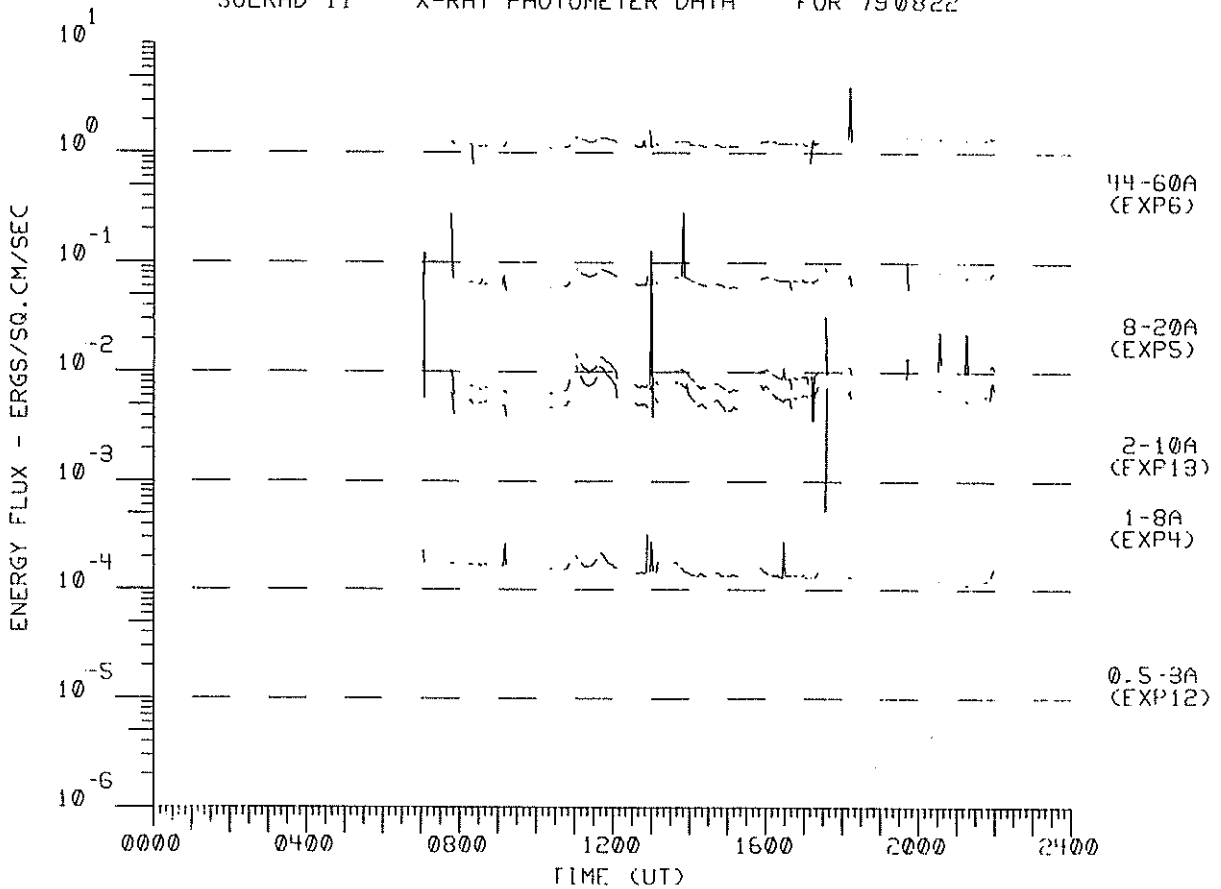
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790820



SOLRAD 11 X-RAY PHOTOMETER DATA FOR 720821

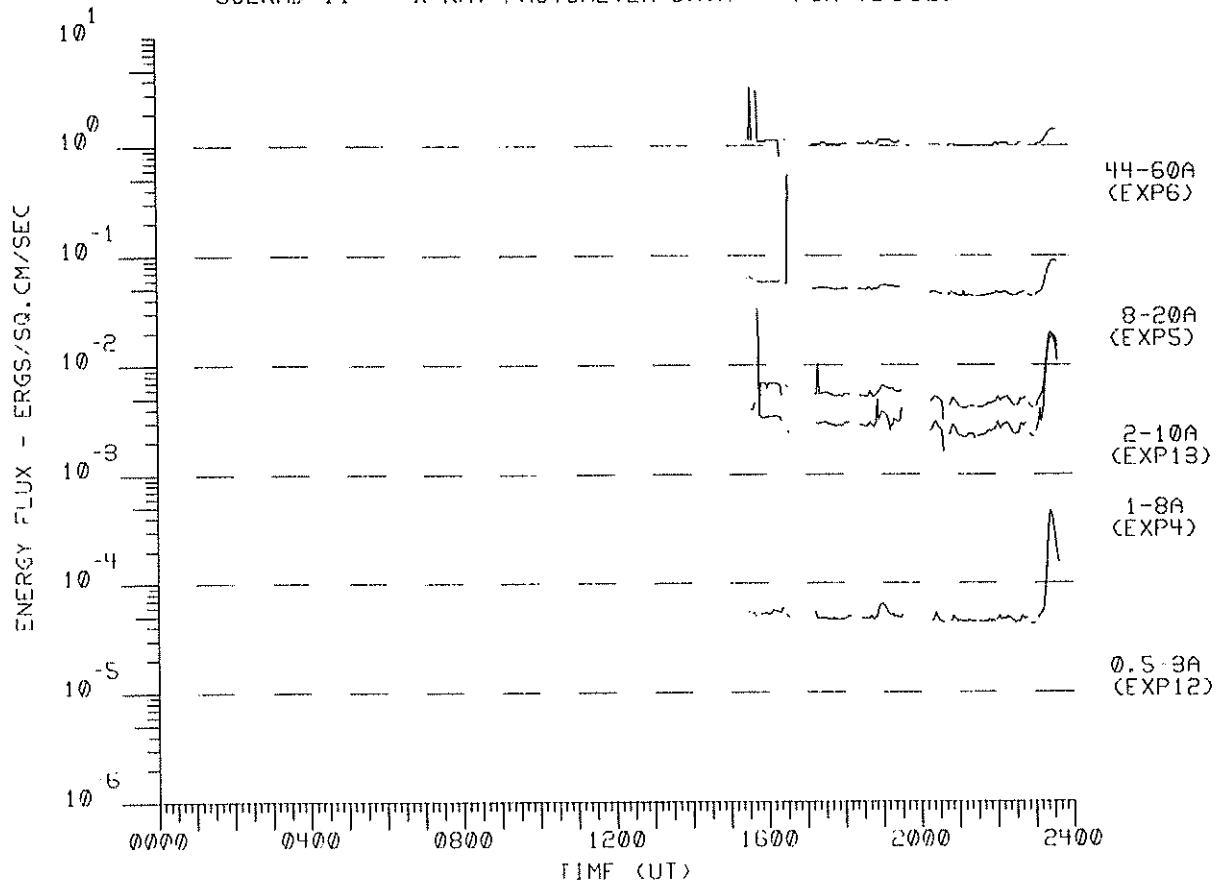


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790822

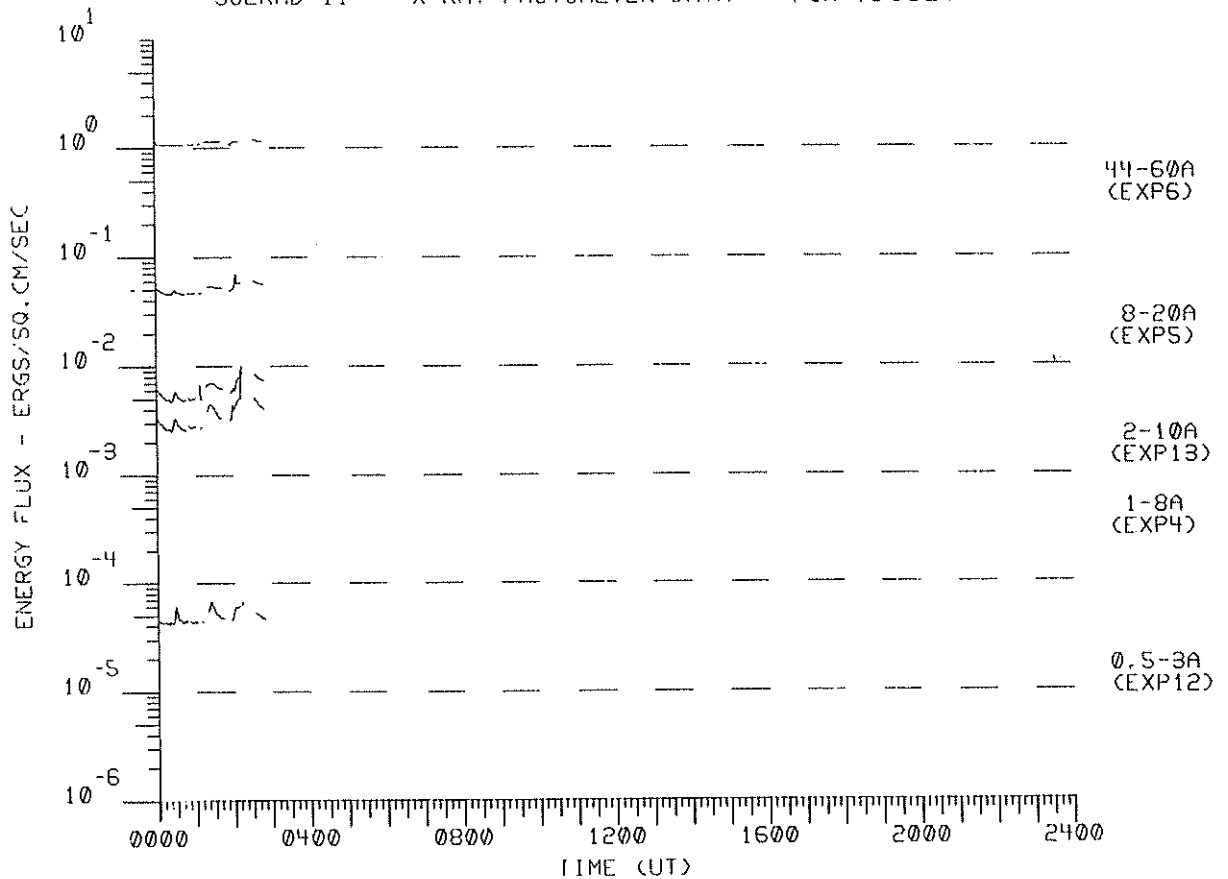




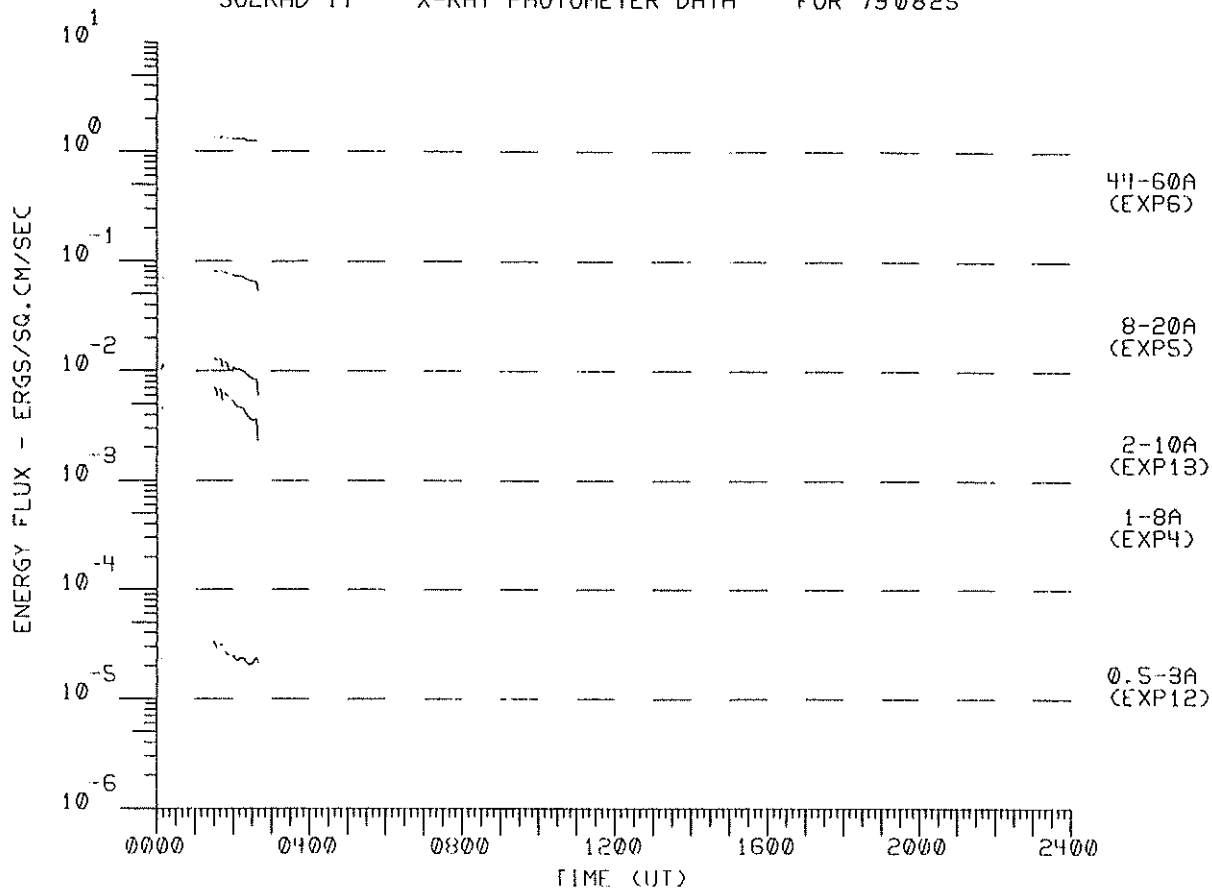
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790823



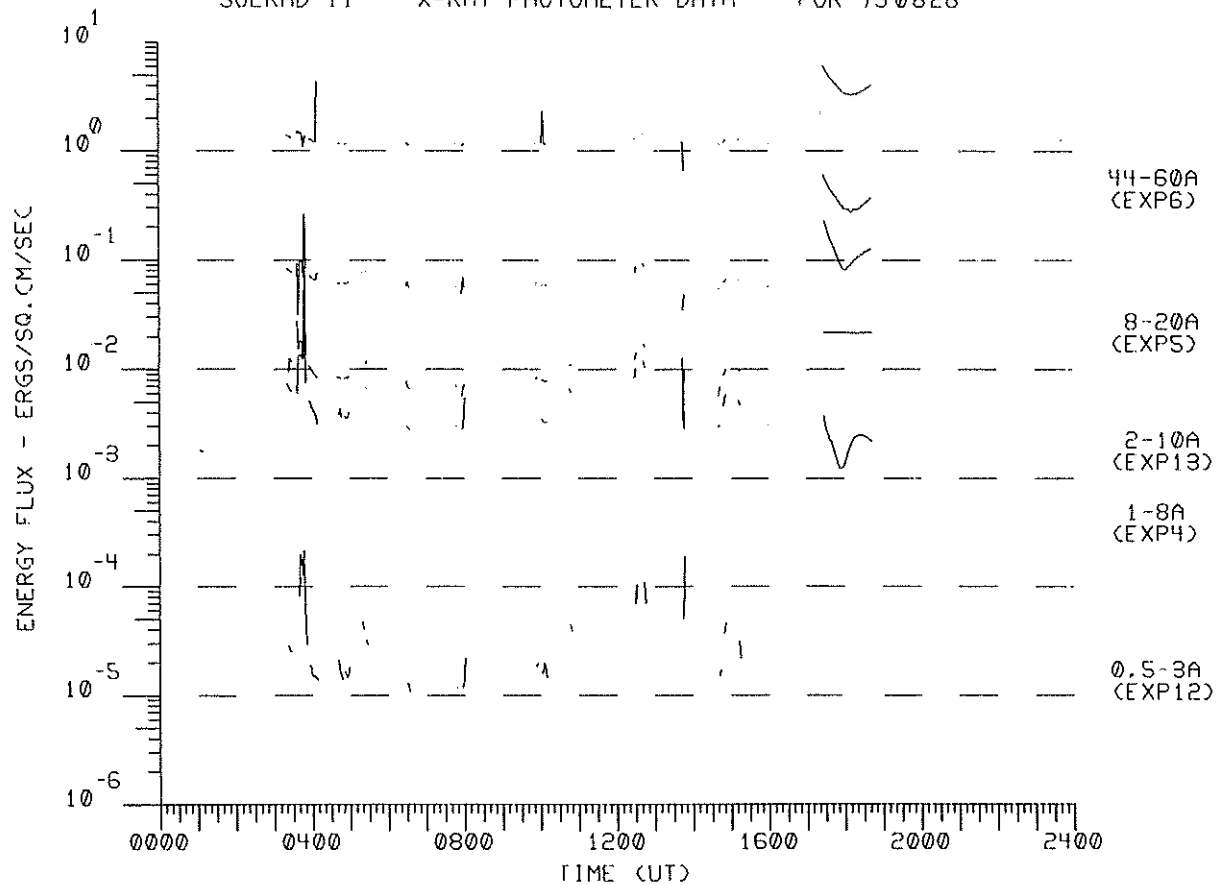
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790824

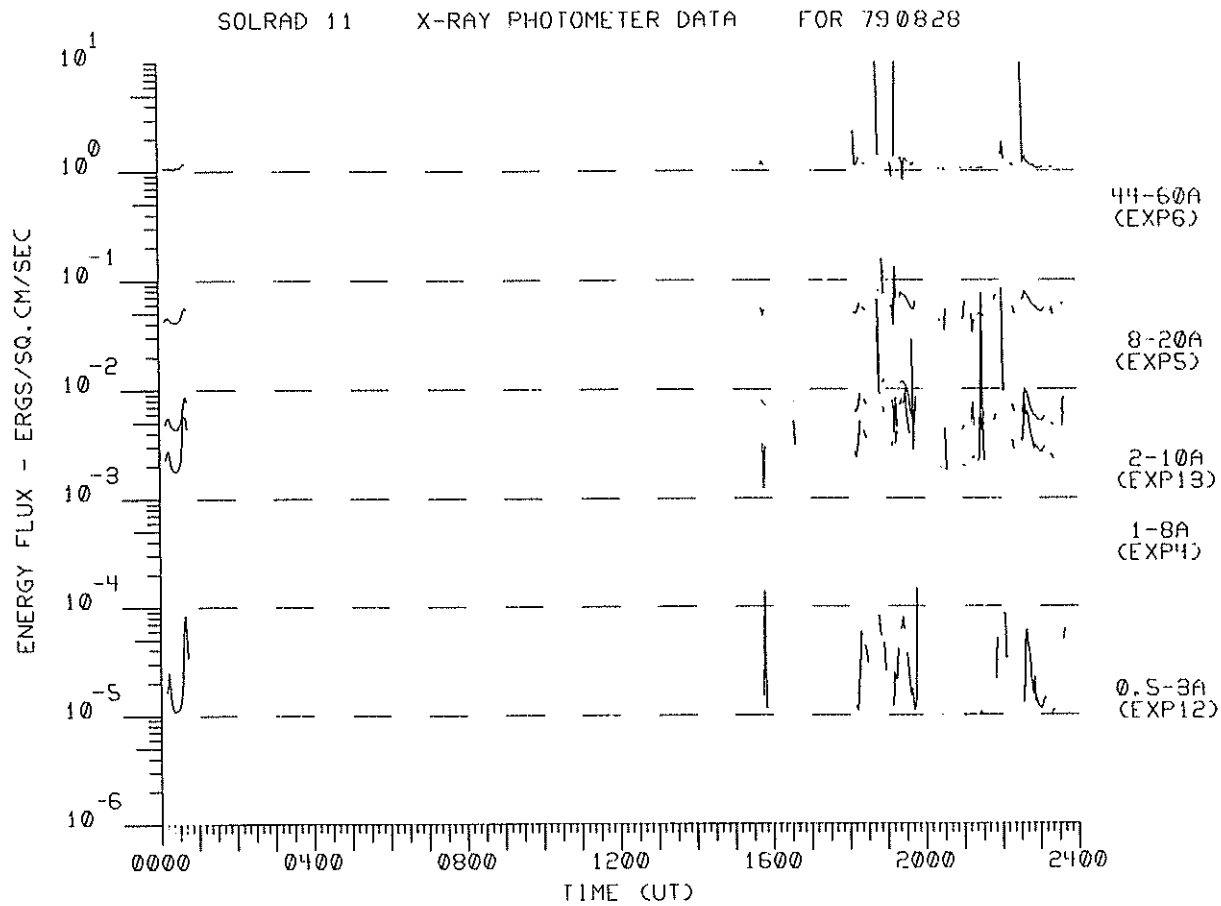
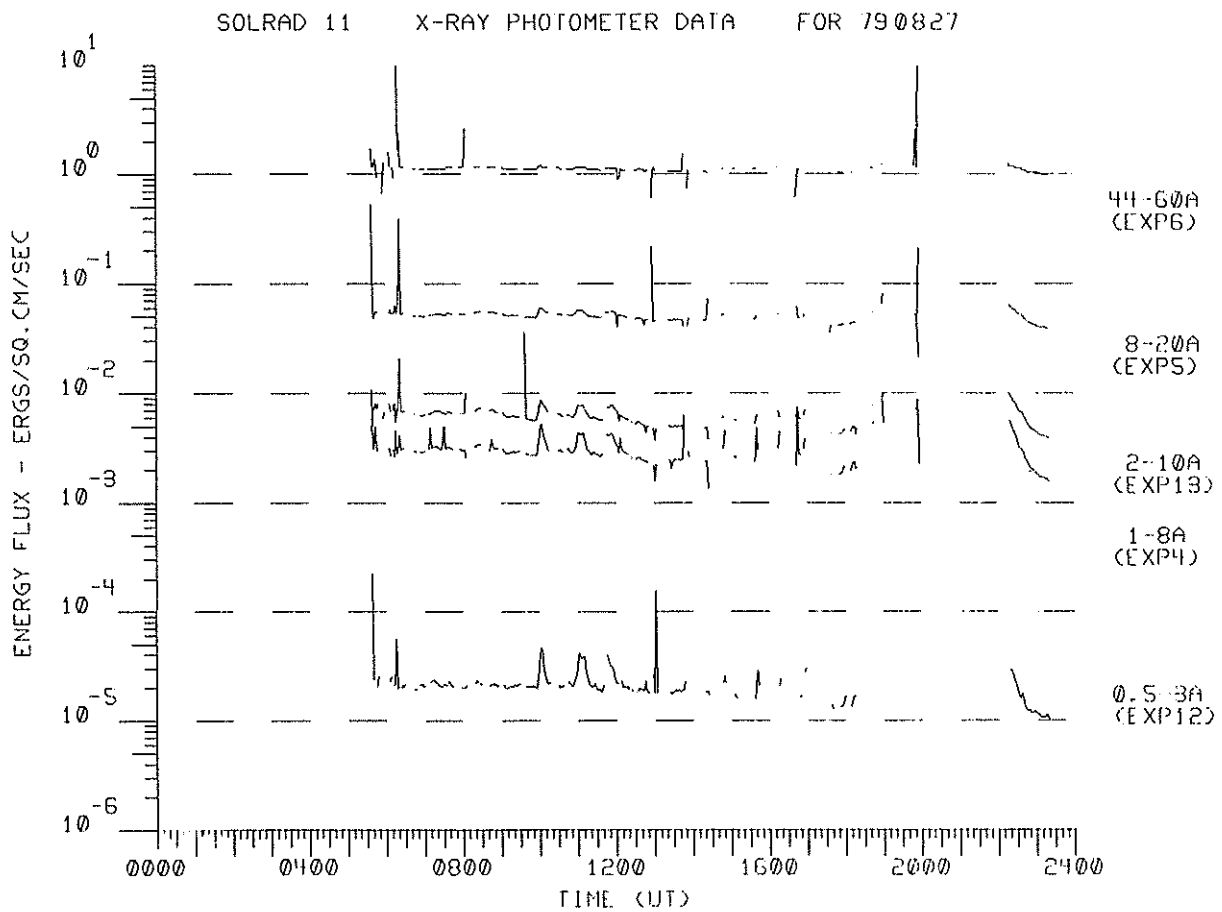


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790825

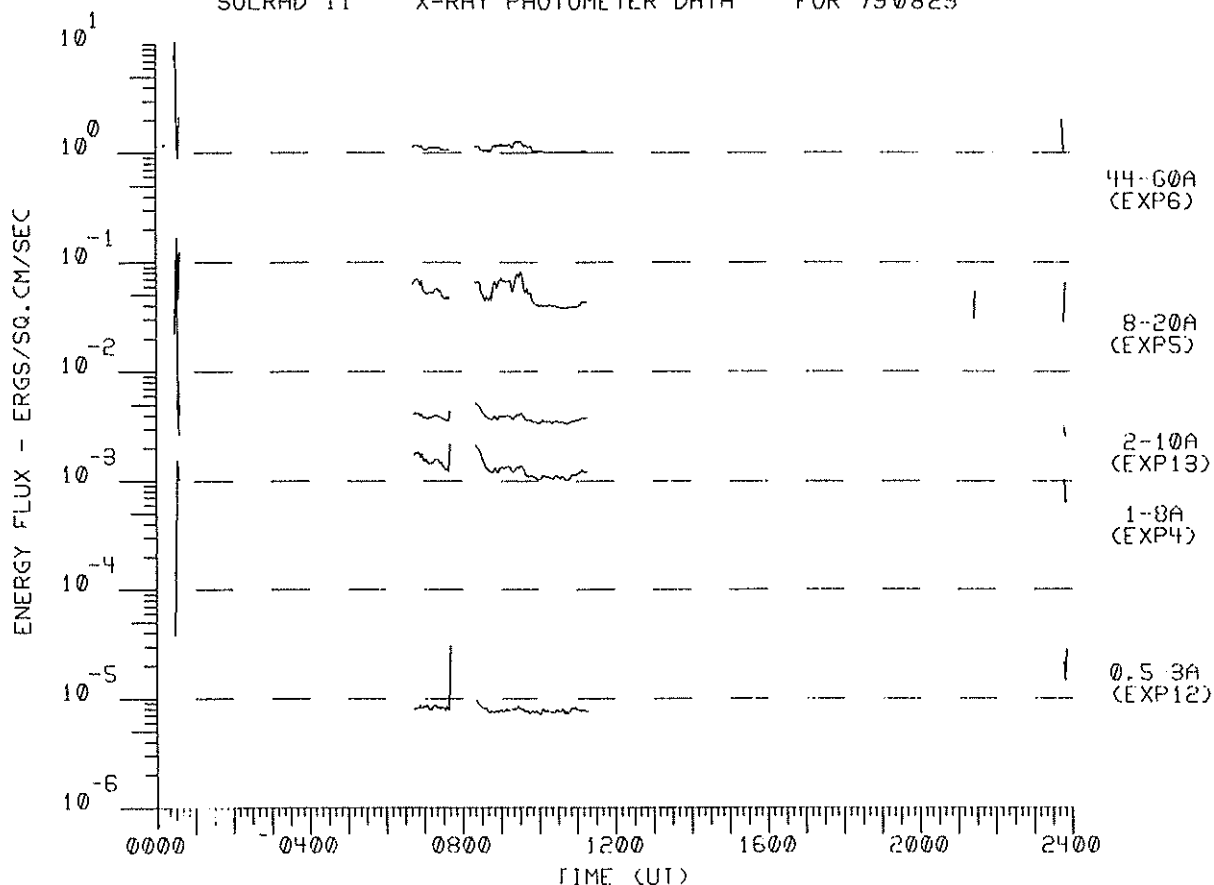


SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790826

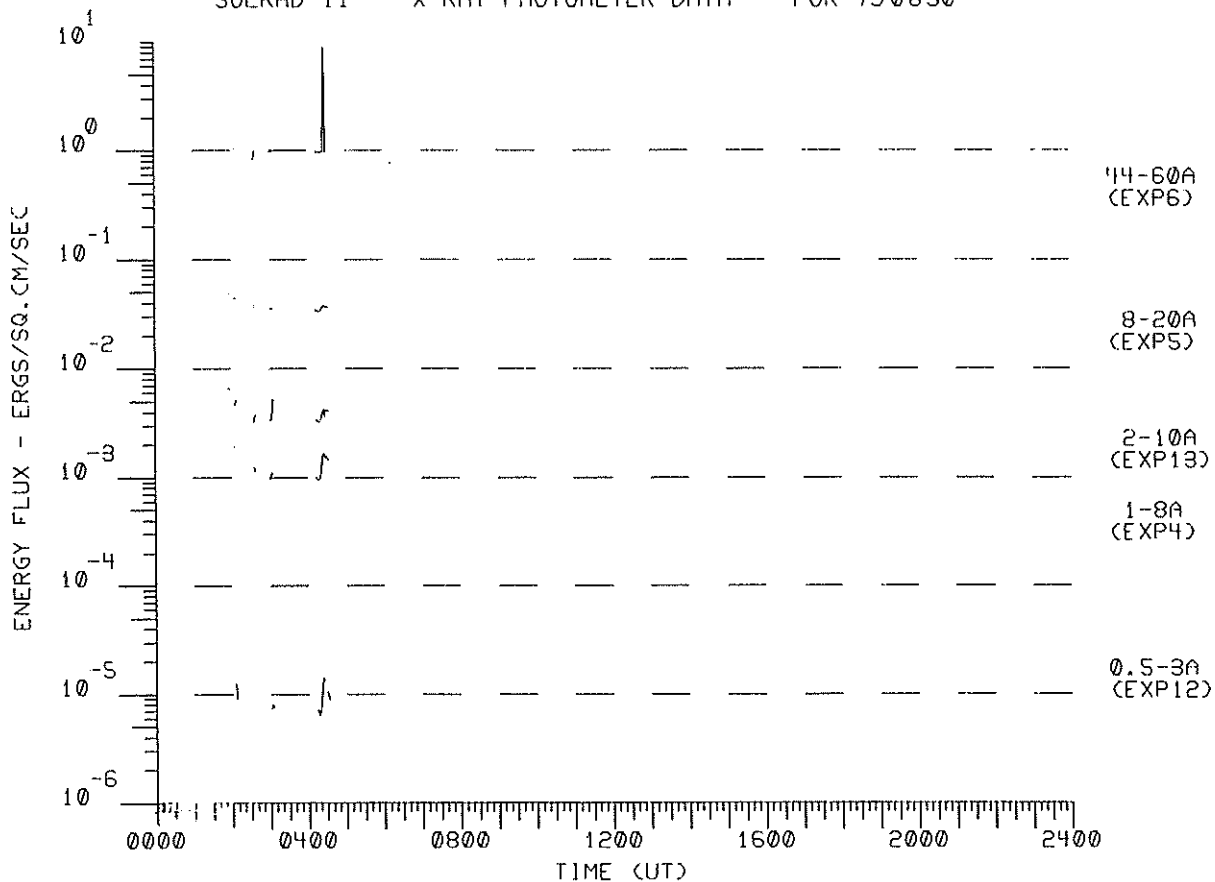




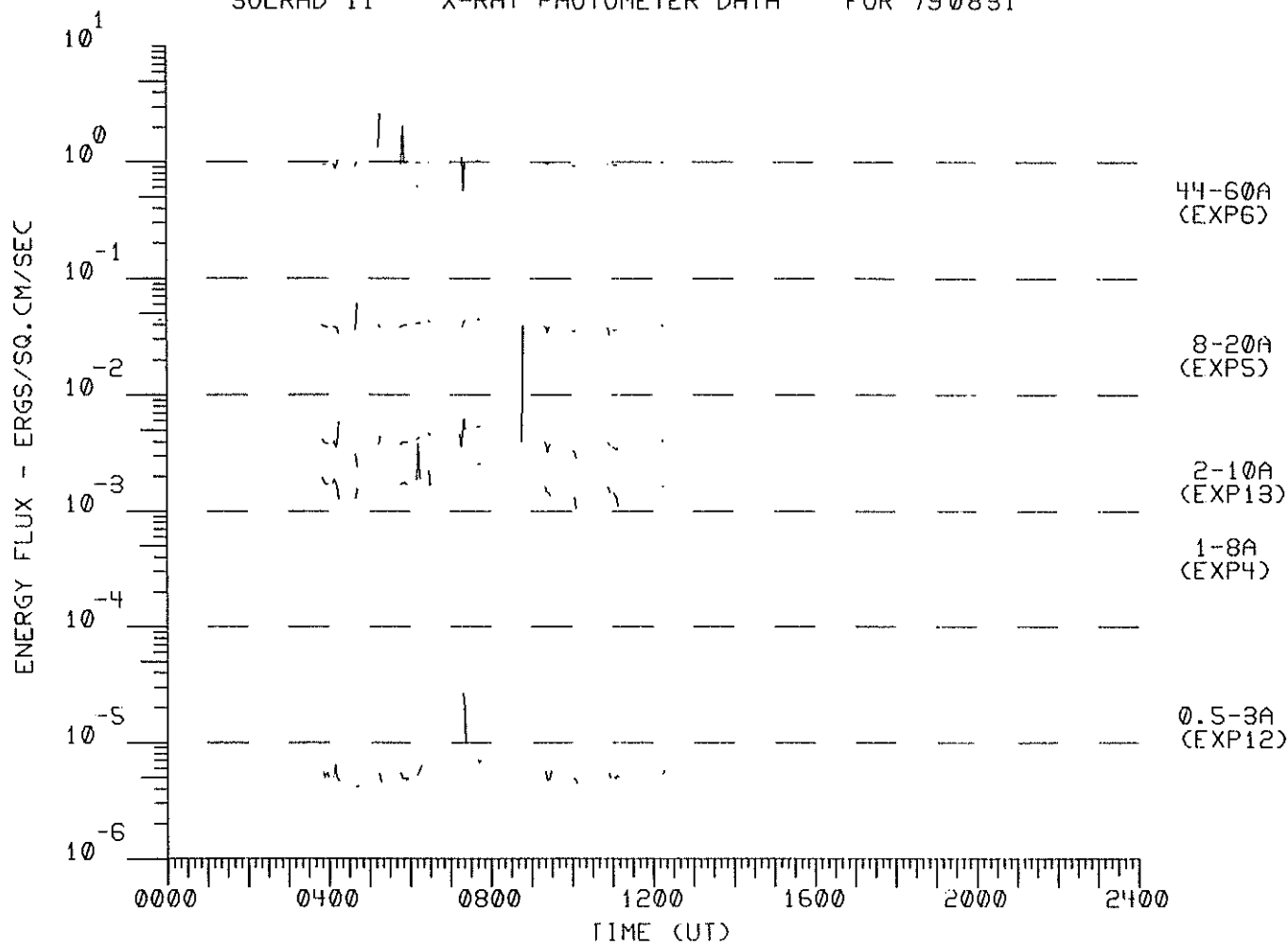
SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790829



SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790830



SOLRAD 11 X-RAY PHOTOMETER DATA FOR 790831





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# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

AUGUST 1979

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE	
				DECI-METRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT			START UT	END UT	INT	START UT	END UT	INT	START UT	END UT		INT
03	0826	1813	CULG				0641	0702						IIIN,W
			WEIS				1133.4	1133.5	1					IIIG
				WEIS				1138.4	1148.2	1				IIIGG
				WEIS				1333.2	1333.3	2				IIIG
				WEIS										IIIG
	1503	1900	WEIS	1501.1	1501.2	1								IIIB
			DWIN	1504.2		1								IIIG
			WEIS	1504.3	1504.5	1								IIIG
				WEIS				1605.3	1606.0	2				IIIG
				WEIS				1801.7	1803.6	1				IIIG
				PALE				1801.8	1803.7	1				CONT
	2038	2400	CULG	2052	2400									IN,W
			CULG				2151	2151.5						IIIG,W
2154	2400	MANI												
04	0000	1000	MANI											
	0000	0738	CULG	0036	0050									IN,W
	0439	0836	WEIS											
			CULG	0640.5		1								IIIB
	0500	1904	DWIN	0653.0	0653.8	2								IIIG
	0904	1818	WEIS				1558.4	1559.9	3					IIIG
	2040	2400	CULG											
2130	2400	MANI												
05	0000	0955	MANI											
	0000	0738	CULG				0232.5	0233	1					UNCLF
	0500	1139	DWIN											
	0440	1506	WEIS				1141.5	1141.8	1					IIIG
			WEIS				1157.2	1158.7	3					IIIG
			WEIS				1358.0	1358.3	1					IIIG
	2038	2400	CULG				2107		1					IIIB,U
2130	2400	MANI												
		CULG				2148	2242							IS,W
06	0000	0014	MANI											
	0000	0738	CULG	0038	0039									I,W
			CULG				0038	0045						IIIN,W
			CULG				0119.5							IIIB,W
	0340	0955	MANI											
	0548	1815	WEIS											
	0715	1904	DWIN											
	2038	2400	CULG											
2152	2353	MANI												
07	0000	0738	LEAR				0230.5	0230.8	2					V
			CULG	0230	0230.5	1	0230.5	0231	1	0230.5	0231	1		IIIB
			LEAR				0233.3	0233.5	1					CONT
			CULG				0233.5		1					IIIB
	0315	0955	MANI											
	0442	1100	WEIS											
	0500	1904	DWIN											
	1107	1813	WEIS				1326.6	1326.8	1					IIIG
			WEIS				1809.6	1809.8	1					IIIB
	2038	2400	CULG	2056	2057	1	2054.5	2210	1					IS,C,DC
			CULG	2056	2057	1	2054.5	2210	1					II POSS
2147	2400	MANI												
		CULG				2233.5	2234							I,W
08	0000	0738	CULG											
	0000	1003	MANI											
	0444	0651	WEIS											
	0500	1635	DWIN											
	0739	1818	WEIS				1258.7	1259.0	2					IIIB
			WEIS				1537.6	1538.0	2					IIIG
2038	2400	CULG												
2153	2400	MANI												
09	0000	0955	MANI											
	0000	0713	CULG				0029							IIIB,W
			LEAR				0253.3	0255.3	1					CONT
			CULG				0253.5	0254	2	0254	0254.5	2		IIIB

# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

AUGUST 1979

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
	START UT	END UT		DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
				START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
09			PALE				0253.9	0254.1	1				III
			CULG	0330	0334	1							IIIN
			CULG				0439	0440					IIIG,W
			CULG				0441.5						IIIB,W
			CULG				0506.5	0508	2				IIIG
	0722	0902	SHIN										
			PALE				1759.3	1800.2	1				V
	0639	1811	WEIS				1759.6	1800.3	2				IIIG
	2130	2400	MANI										
	2040	2400	CULG				2137.5						IIIB,W
		CULG				2229		1				IIIE,U	
		CULG				2340.5	2341	1				IIIG,U	
10	0000	0957	MANI				0537.0	0539.2	1				IIIG
	0446	1258	WEIS				0537	0539					UNCLF,W
	0300	0738	CULG				0542.4	0554.0	2				II
			WEIS				0542.5	0558	1				II
			CULG				0544.0	0550.2	1				II
			LEAR				0550.9	0604.2	1				IV
			LEAR				0556.0	1557.3	1				IIIG
	1315	1809	WEIS				2049	2111					IIIS,W
	2037	2400	CULG										
	2150	2400	MANI										
11	0000	0955	MANI				0259	0737					IN,W
	0000	0737	CULG				0716.6	0717.0	1				CONT
			LEAR				0715	0717	1				IIIG
	0739	1809	WEIS				1851.7	1852.4	1				CONT
	2145	2400	PALE										
			MANI				2152.0	2153.3	2				V
			PALE				2202.0	2202.4	2				V
	2037	2400	CULG				2236.5						IIIE,W
			CULG	2252	2252.5	1	2252	2253	3				IIIG,U
			CULG				2253.5	2254					IIIG,W
			CULG				2255						IIIB,W
			CULG				2302	2302.5	3				IIIE
			CULG				2318.5						IIIB,W
		CULG				2319						IIIB,W	
		CULG	2350.5	2351	3	2351.5	2352	3				IIIG,V	
		PALE				2350.8	2352.0	3				V	
		CULG	2352		2							IIIE	
12	0000	1004	MANI				0045.3	0045.6	1				III
			PALE				0045	0045.5	2				IIIG,U
	0000	0737	CULG	0045	0045.5	2	0052.4	0053.3	2				V
			PALE				0052.5		1				IIIB
			CULG	0052.5		1	0054.2	0056.9	3				V
			PALE				0054	0057	3	0055.5	0056.5	1	IIIGG,V,U
			CULG	0055.5		1	0058.0	0101.9	2				V
			PALE				0058	0100	3	0058	0058.5	3	IIIGG,V,U
			CULG	0100	0101.5	3	0100.5	0102	3	0101	0101.5	2	IIIG,V
			LEAR				0312.5	0321.6	1				CONT
			PALE				0312.5	0312.9	1				V
			CULG				0312	0312.5	1				IIIG
			CULG				0318.5	0319	1				IIIG
			PALE				0318.8	0319.8	1				V
			CULG				0319	0319.5					IIIE,W
			CULG				0321	0321.5					IIIG,W
			LEAR				0439.0	0446.9	2				CONT
			CULG				0439	0439.5	2				IIIG
			CULG	0445.5	0446	2	0445.5	0447	3	0445.5	0446.5	2	IIIG,V
			CULG	0449.5	0451	1	0449.5	0451	1				IIIGG
0448	0942	WEIS				0449.7	0451.2	2				IIIG	
		WEIS				0500.2	0501.3	2				IIIG	
		LEAR				0500.2	0501.3	2				CONT	
		CULG				0500.5	0501					UNCLF,W	
		WEIS				0631.0	0631.5	1				IIIG	



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# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

AUGUST 1979

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE	
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		INT	START UT	END UT	INT	START UT	END UT	INT				
12	0955	1808	CULG				0631	0631.5					IIIG,W	
			WEIS				1048.3	1048.6	3				IIIB	
			WEIS				1110.8	1111.2	1				IIIG	
			PALE				2114.2	2114.8	1				V	
	2129	2400	MANI				2235	2236					IIIG,W	
			CULG				2331	2332					IIIN,W	
			CULG				2355.5	2356					IIIG,W	
	13	0000	0957	MANI				0216	0226					IIIN,W
				CULG				0223.5		1				IIIB
				CULG				0231.5		1				IIIB
LEAR							0313.8	0319.6	1				CONT	
0449		1624	WEIS				1006.0	1529.0	2				IIIN,CONT	
			DWIN											
			WEIS											
1759		1807	WEIS											
			CULG				2048	2157	1				IS	
			MANI				2157	2252					IN,W	
14		0000	0955	MANI				0025.5		1				IIIB
				CULG				0026.5	0027					IIIG,W
				CULG				0051	0255					IN,W
	CULG									0100	0135	1	S.W.F.	
	0649	1805	CULG				0104.5	0105.5	1				IIIG	
			LEAR				0227.3	0228.1	1				CONT	
			CULG	0228.5	0229	1	0228.5	0230	2				IIIG,V	
			CULG				0255	0558					IS,W	
			CULG				0404.5	0405					IIIG,W	
			CULG				0558	0736					IN,W	
			CULG				0653	0657					IIIN,W	
			WEIS				0757.3	0757.5	1				IIIG	
			WEIS				0802.7	0829.4	2				IIIGG	
			LEAR				0803.5	0822.0	1				B	
			0500	1904	WEIS				0852.5	0853.5	2			
	WEIS						0903.6	0904.8	2				IIIG	
	WEIS						1132.8	1132.9	1				U	
	WEIS						1133.2	1138.4	2				IIIB	
	WEIS						1145.8	1147.6	2				IIIG	
	WEIS						1155.0	1634.0	2				IIIN,CONT	
	DWIN	1155			1230	2	1242.7	1416.0	3				IV	
	WEIS												IV	
	DWIN	1243			1318	3	1506.4	1507.3	3				IV	
	WEIS	1542.2			1543.0	2	1542.3	1544.9	3				IIIG	
	2037	2400	DWIN	1611.7	1613.6	2							IIIG	
			WEIS				1700.4	1500.6	2				IIIB	
			WEIS				1727.9	1732.3	3				IIIGG,U	
			PALE				1728.4	1730.2	2				V	
			PALE				1855.5	1855.8	2				III	
CULG						2044	2044.5					IIIG,W		
PALE						2048.1	2051.0	3				V		
CULG			2049	2051.5	2	2049.5	2052	2				IIIGG,V		
CULG						2052	2053	2				IIIGG		
CULG						2052		2				IS		
CULG						2053	2104					IIIB		
2150			2400	CULG				2104.5	2116.5	2				IN,W
	CULG					2123						II		
	MANI					2220						IIIB,W		
	CULG					2312.0	2313.1	3				V		
	PALE	2313.5		2314.5	3	2313.5	2315	3	2314	2315	3	IIIGG		
	CULG					2313						IIIGG,V		
	CULG					2339	2341					IIIB,W		







# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

AUGUST 1979

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE	
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
				START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT		
19	1626	1755	WEIS											
			PALE				1837.9	1841.8	1				CONT	
	2037	2400	CULG	2039	2400		2041	2400					IN,W	
			CULG				2054	2246					IIIN,W	
			CULG				2112		1				UNCLF	
	2135	2400	MANI											
			CULG				2217	2217.5	1				I	
20	0000	1000	MANI											
	0000	0735	CULG				0008	0727					IN,W	
			CULG	0023	0039	1							IS	
			CULG	0050	0110								IN,W	
			CULG	0110	0120								IS,W	
			CULG	0120	0532								IN,W	
			CULG	0125.5			0125.5						IIIB,W	
			CULG	0145	0145.5	1							I	
			CULG				0223		1				IIIB	
			CULG				0227.5						IIIB,W	
			LEAR				0353.4	0354.1	1				V	
			CULG				0353	0353.5	1				IIIG,U	
			CULG				0411.5		1				IIIB	
			LEAR				0411.8	0412.3	1				CONT	
			CULG				0412						IIIB,W	
			LEAR				0420.2	0420.4	1				CONT	
		0459	1753	WEIS				0525.0	1632.0	3				III
		0500	1210	DWIN	0528.0	0528.8	1							IIIG
			CULG	0528	0529	1	0528.5	0529.5	1				IIIG,U	
			CULG				0529		2				IIIB,U	
			CULG	0532	0625	1							IS	
			CULG	0625	0731								IN,W	
			LEAR				0646.4	0646.6	1				CONT	
			CULG				0646.5						IIIB,W	
			DWIN	0911	0940	2							IV	
			WEIS				0915.0	0936.0	3				II	
			WEIS				0916.4	0927.5	2				HARM	
		LEAR				0926.2	0926.3	1				IIIG		
		LEAR				0929.9	0933.7	1				CONT		
		WEIS				1245.7	1246.3	3				II		
	1510	1903	DWIN	1609.0	1610.1	1							IIIG	
		PALE				1937.8	1938.0	1				IIIG		
	2036	2400	CULG	2036	2400		2036	2400					III	
		CULG				2124.5	2125.5	1				IS,W		
	2156	2400	MANI										IIIG	
		CULG	2230.5	2233	1	2230.5	2233	2				IIIG6,V		
		PALE				2247.4	2247.7	2				V		
		CULG				2348.5		1				IIIB		
		CULG				2349		2	2348	2348.5	1	IIIB,V		
		CULG				2349		1				IIIB		
21	0000	0735	CULG	0000	0735		0014	0104					IN,W	
	0000	1000	MANI											
			CULG				0104	0107	1				IS	
			CULG				0107	0735					IN,W	
			PALE				0129.8	0133.5	2				V	
			CULG				0130.5	0135.5	2	0131	0131.5	2	IIIG,V	
			CULG	0133	0134.5	1	0132	0135	1				IIIN	
			CULG				0134	0134.5	2	0134	0134.5	1	IIIG	
			CULG	0202.5	0203.5		0202.5	0203.5					IIIG,W	
			LEAR				0203.0	0203.5	1				V	
			CULG				0236						IIIB,W	
			CULG				0247	0249					IIIG,W	
			CULG				0252	0253					IIIG,W	
			LEAR				0254.5	0953.0	1				8	
			CULG				0432		1				IIIB	
			LEAR				0607.1	0645.4	2				IV	
		0459	1026	WEIS				0607.3	0616.4	3				IIIGG/V
			CULG				0607	0616.5	3				IIIGG,V	
		0500	1900	CULG	0608.5	0620	1							IV
			DWIN	0608	0655	2							IV	
		LEAR				0612.5	0625.3	2				II		

# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

AUGUST 1979

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE		
	START UT	END UT		DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND					
				START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT			
21			WEIS				0615.0	0643.0	3				II	HARM, HB	
			CULG				0615	0633.5	3				II		
			CULG				0633.5	0646.5	2				II	H	
			CULG	0648	0652								IV	W	
		1032	1753	WEIS				0711.4	0711.6	1				IIIB	
				WEIS				1034.8	1035.2	1				IIIB	
				WEIS				1041.0	1041.3	1				IIIG	
				WEIS				1104.4	1105.0	1				IIIG	
				WEIS				1208.7	1208.8	1				IIIG	
				WEIS				1215.9	1216.8	3				IIIG	
				WEIS				1222.1	1222.3	1				IIIB	
				WEIS				1247.6	1247.7	1				IIIB	
				WEIS				1322.6	1322.7	1				IIIB	
				WEIS				1329.6	1331.8	3				IIIG	
				WEIS	1333.7	1333.8	2							IIIG	
				WEIS				1344.8	1347.1	3				IIIG/V	
				WEIS				1356.8	1358.2	2				IIIG	
				WEIS				1404.7	1407.0	2				IIIG	
				WEIS				1416.3	1421.6	3				IIIG,RS	
				WEIS				1424.5	1424.7	1				IIIG	
				WEIS				1524.0	1524.6	2				IIIG	
				WEIS				1549.0	1550.1	3				IIIG	
				WEIS				1620.6	1620.8	1				IIIB	
				WEIS				1647.6	1648.1	2				IIIG	
				WEIS				1648.6	1649.5	2				IIIG	
				WEIS				1702.8	1708.5	2				IIIG	
				WEIS				1724.5	1727.7	1				U	
				PALE				1751.0	1753.2	2				II	
				WEIS				1751.2	1752.5	3				IIIG	
				PALE				1803.1	1803.6	2				V	
				PALE				1805.7	1805.8	1				III	
				PALE				1907.9	1909.5	2				V	
				PALE				1919.1	1919.5	2				V	
				PALE				2000.9	2003.0	2				V	
		2036	2400	CULG	2036	2137								IS,W	
				CULG				2036	2129					IIIN,W	
				CULG				2038	2126					IN,W	
				CULG				2125.5	2126.5	1				IIIG	
				CULG				2126	2244	1				IS	
				PALE				2129.0	2131.8	2				V	
			CULG				2129	2132	1				IIIN		
	2130	2400	MANI												
			CULG				2132	2230					IIIN,W		
			CULG				2134.5		1				IIIB		
			PALE				2136.2	2137.3	3				V		
			CULG				2136	2137	3				IIIG,V		
			CULG	2137	2400	1							IS,C		
			CULG				2206.5		1				IIIB		
			CULG				2221.5		1				IIIB		
			CULG				2230	2400	1				IIIN		
			CULG				2233.5	2234	1				IIIG,U		
			CULG				2244	2400	1				IS,C		
			CULG	2250.5	2251	1							IIIG		
			PALE				2257.0	2258.1	2				V		
			CULG				2257	2258.5	2				IIIG,V		
			CULG				2302		1				IIIB,U		
			CULG				2324.5		2				IIIB		
			PALE				2331.1	0450.0	1				B		
			CULG				2343	2343.5	2				IIIG		
22			PALE				0000.4	0003.9	2				CONT		
			CULG				0000.5	0001.5	2	0000.5	0001.5	1	IIIG		
		0000	0735	CULG	0000	0406	2	0000	0607	2			IS,C		
		0000	1000	MANI											
				CULG				0002.5	0004	2	0002.5	0004	1	IIIG	
				CULG				0009.5	0011	2				IIIG	
				CULG				0012.5	0013	2				IIIG	
				CULG				0015.5						IIIB,W	
				CULG				0106			0106			IIIB,U,W	
				CULG				0145.5						IIIB,W	

## SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

AUGUST 1979

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE		
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND					
	START UT	END UT			START UT	END UT	INT	START UT	END UT	INT					
22			CULG								0145.5	0146	2	IIIB,V	
			CULG								0148.5	0149	1	IIIB	
			LEAR				0200.0	0321.0	2					IV	
			LEAR				0200.0	0953.0	2						B
			CULG				0216.5	0219	2	0217	0219	2			IIIGG
			LEAR				0216.8	0228.3	2						CONT
			LEAR				0216.8	0219.0	2						IV
			CULG				0226	0706	1						N,RS,DP,W
			CULG				0227	0228	2	0227.5			1		IIIB,U
			LEAR				0321.0	0953.0	2						B
			CULG	0353	0354.5	1	0353	0354.5	1						IIIS
			CULG				0355.5	0356	2	0355.5	0356	2			IIIG,V
			CULG				0356.5		1	0356.5		1			IIIB
			CULG				0408		2						IIIB
			CULG	0431	0712										IN,W
		0500 1803	DNIN												IN
		0502 1719	WEIS				0502.0	1246.0	2						IIIN
		1724 1750	WEIS				0503.0	1736.0	2						IIIB
			CULG				0504		2	0504			1		IS
			CULG				0607	0729	1						IIIB,W
			CULG				0617.5								IIIB,V
			CULG				0619.5	0620	2						IIIB,W
			CULG				0620.5								IIIB
			CULG				0621		2						III,B
			BLEN				1224.7	1224.7	2						IIIG
			BLEN				1258.2	1302.8	2						IIIG
			BLEN				1337.8	1339.7	3						I,DC
		1012 1725	BLEN	1345	1725	0 1	1130	1725	0 2						II
			BLEN				1352.3	1356.2	2						IIIB
			BLEN				1507.5	1507.5	2						III
			BLEN	1604.5	1604.5	1	1604.5	1604.8	1						IIIGG
			WEIS				1638.2	1640.5	3						CONT
			PALE				1638.4	1640.5	2						IIIGG
			BLEN	1641.0	1642.3	2	1638.0	1642.3	3						CONT
			PALE				1906.8	1907.5	2						CONT
			PALE				2025.0	2025.8	2						IS,W
		2036 2400	CULG	2036	2219										IN,W
			CULG				2044	2400							IIIG
			CULG				2050.5	2051	1						N,RS,DP,W
		2142 2400	CULG	2107	2214										IN,W
		MANI												IIIG,V	
		CULG	2219	2255		2247.5	2249.5	1						IIIN,W	
		CULG				2338	2352							UNCLF	
		CULG				2343.5	2345.5	2						CONT	
		PALE				2343.8	2346.7	2						CONT	
		PALE				2350.0	2352.1	1						CONT	
		CULG				2350		1						IIIB	
		CULG				2351.5	2358.5							II	
														W	
23	0000 0605	MANI												I	
	0000 0735	CULG				0018.5	0019.5	1						IN,W	
		CULG				0127	0137							IS,W	
		CULG				0137	0155							IS,W	
		CULG				0240	0451							I	
		CULG				0301.5	0302	1						N,RS,DP,W	
		CULG				0305	0600							I	
		CULG				0307	0314	1						CONT	
		LEAR					0411.2	0412.0	1					IIIB,U	
		CULG					0411.5		1					IIIB,W	
		CULG					0413.5							IIIB,W	
		CULG					0414							V	
		LEAR					0423.7	0425.3	2					IIIB,W	
		CULG					0424.5							IIIB	
		CULG					0424		2					IIIG,V	
		CULG					0425	0425.5	3	0425	0425.5	2		IN,W	
		CULG	0451	0731											
		0500 0834	DNIN												I,DC
		0525 0910	BLEN	0525	E 1726	D 1	0525	E 1726	D 1						IIIB
		0502 1748	WEIS				0638.8	0638.9	1						







# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

AUGUST 1979

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
				START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
26			CULG								0502.5		IIIB,W
			CULG				0502	0502.5					IIIG,W
	0720	1748	WEIS				0515.0	1111.0	1				IN
	0503	0649	WEIS				0520.0	1706.0	2				IIIN
	0527	0913	BLEN	0527	E	1727	2	0527	E	1727	0	2	I,DC
			CULG					0558					I
			CULG					0703	0704	2			IIIG
			CULG					071J		2			IIIB
			CULG					072J	0721	1			IIIG
			WEIS					0844.2	0847.6	3			IIIGG
			BLEN	0844.5		0346.7	2						OCIM
			LEAR					0844.8	0847.4	2			CONT
			BLEN					0845.0	0847.1	3			III,V
	1017	1727	BLEN					1031.7	1032.4	2			IIIG
			BLEN					1120.3	1120.7	2			III
			BLEN					1132.8	1142.7	2			IIIGG
			BLEN					1213.3	1213.9	2			IIIG
	1430	1803	DWIN	1244.4		1245.6	2						IV
			BLEN					1301.2	1301.4	2			III
			BLEN	1443.8		1445.8	2						III,GG
			BLEN	1642.3		1642.9	2	1642.5	1642.9				III,G,RS
			WEIS					1644.7	1651.3	2			IIIGG,RS
			BLEN	1645.5		1727	D 3						IV P
			DWIN	1645		1752	1						IV
			WEIS					1656.7	1658.7	2			III
			BLEN					1657.2	1658.0	3			III,V
			DWIN	1752		1803	3						IV
			PALE					1753.0	1830.0	2			IV
			PALE					1835.0	0448.0	1			B
			PALE					1918.8	1919.3	3			V
	2034	2403	CULG	2037		2138							IN,W
			CULG					2108.5	2109	1			IIIG
			PALE					2109.5	2109.5	2			V
			CULG					2108		3			IIIB,V
			CULG					2109.5		1			DP
			CULG	2111.5		2112	1						I
			CULG					2119.5					IIIB,W
			CULG					2120.5					IIIB,W
	2125	2403	MANI										
			CULG					2127.5	2128	2			IIIG,V
			CULG					2127	2127.5	1			IIIG
			CULG					2134.5		1			IIIB
			CULG					2213	2216				I,W
			CULG					2225.5		2			IIIB
			CULG					2231	2348				IIIN,W
			CULG					2242		1			IIIB
			CULG					2255.5		2			IIIB
			CULG					2255	2256	1			IIIG
			CULG					2312	2312.5				I,W
			CULG					2315.5		1			IIIB
			CULG					2322.5		1			IIIB
			CULG					2333.5	2334				I,W
			CULG					2336		2			IIIB
			CULG					2340.5	2341	1			IIIG
			CULG					2341		2			IIIB
			CULG					2359.5		1			IIIB
27	0000	0734	CULG					0033.5	0039				IIIG,W
			CULG					0115		1			IIIB
			CULG					0143	0143.5				UNCLF,W
			CULG					0147.5		1			UNCLF
			CULG					0154.5		1			IIIB
			CULG					0154					IIIB,W
			CULG					0224	0224.5	1			IIIG
			CULG					0225					IIIB,W
			CULG					0234.5	0236				IIIG,W
			LEAR					0257.1	0310.1	3			S
			PALE					0257.2	0310.1	3			CONT
			CULG					0257	0257.5	1			IIIG
			CULG					0258	0258.5	1			IIIB





## SOLAR RADIO EMISSION. SPECTRAL OBSERVATIONS

AUGUST 1979

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE		
				DECI-METRIC BAND			METRIC BAND			DEKAMETRIC BAND					
	START UT	END UT			START UT	END UT	INT	START UT	END UT	INT	START UT	END UT		INT	
31	0502	1755	CULG				0513	0513.5						I,W	
			DMIN	0519.3	0519.5	2								IIIG	
	DMIN	0519.5	0520.6	1									IV		
				CULG	0519.5	0520.5	2	0519	0520.5	2				IIIG,V	
	0532	0910	BLEN	0532	D 0900	2	0532	D 0900	2					I	
			CULG				0555.5							IIIB,H	
	1017	1720	BLEN	0604.1	0605.5	3	0604.2	0605.5	3					IIIG	
			CULG	0604	0604.5	1	0604	0604.5	1					IIIG,U	
			CULG				0622.5	0623.5							I,W
				BLEN	0647.9	0647.9	2							IIIB	
	0715	1748	LEAR				0715.5	0716.0	1					V	
			WEIS				0716.7	0717.9	3					IIIG	
			BLEN	0717.1	0725.5	3	0717.2	0732.2	3					IIIGG,RS,U	
			DMIN	0717.2	0717.6	2									IIIG
			BLEN	0717.5	0718.0	3	0717.5	0718.0	3						V
			CULG	0717	0718	2	0717	0718	2						IIIGG,V
			WEIS				0723.0	1624.0	2						IN
			CULG				0725	0725.5	2						IIIG
			WEIS				0732.2	0732.3	3						IIIB
			CULG				0732		2						IIIB
			BLEN	0804.9	0808.4	2	0804.8	0808.4	2						IIIGG
	0828	0950	HANI												
			BLEN	0907.8	0910.0	3	0909.3	0910	D 3						IIIGG
			WEIS				0909.0	0910.6	2						IIIG
			DMIN	1109.0	1109.2	1									IIIG
			WEIS				1111.1	1112.3	3						IIIGG
			DMIN	1111.3	1111.6	2									IIIG
			BLEN	1111.3	1114.3	3	1111.0	1114.2	3						IIIGG
			BLEN				1111.6	1112.1	3						V
			BLEN	1129.9	1130.1	1									IIIG
			BLEN	1201.7	1205.6	2	1202.6	1205.1	2						IIIGG
WEIS						1202.5	1202.8	2						IIIG	
WEIS						1205.2	1205.3	2						IIIB	
BLEN			1412	1720	D 3	1414.5	1720	D 3						I	
WEIS						1424.5	1424.9	2						IIIG	
BLEN			1454.0	1454.1	2	1454.1	1454.1	2						IIIB	
2033	2400	PALE				2015.1	2015.3	1					V		
		PALE				2017.9	2018.0	2					III		
		CULG				2104	2245						IIIN,H		
		CULG				2108	2108.5	1					IIIG,U		
2135	2400	CULG				2110.5		1					IIIB		
		HANI													
		CULG				2244.5	2245	2					IIIG		
		PALE				2245.0	2250.1	2					V		
		CULG				2245.5	2246.5	2					IIIG		
		CULG	2249		1								IIIB		
									2249	2250	2	IIIG,V			

The symbols used in connection with the spectral type in describing the important bursts are as follows:

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>B = Single burst</li> <li>G = Small group (&lt; 10) of bursts</li> <li>GG = Large group (&gt; 10) of bursts</li> <li>C = Underlying continuum (particularly with Type I)</li> <li>S = Storm in the sense of intermittent but apparently connected activity</li> <li>N = Intermittent activity in this period</li> <li>U = U-shaped burst of Type III</li> </ul> | <ul style="list-style-type: none"> <li>RS = Reverse slope burst</li> <li>DP = Drifting pairs</li> <li>DC = Drifting Chains</li> <li>H = Herringbone</li> <li>W = Weak</li> <li>P = Pulsations</li> <li>CONT = Continuum</li> <li>UNCLF = Unclassified activity</li> <li>DCIM = Fast drift</li> </ul> |
|--|--|

COSMIC RAY INDICES  
(Neutron Monitors)

Aug. 1979	THULE	ALERT	DEEP RIVER	CALGARY	KIEL	CLIMAX	TOKYO	KULA	HUANCAYO
	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/300	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/256	Average (cts/h)/100	Average (cts/h)/100
1	4182.8	6847.6	6436.3		5958.5	3837.9	3561.4		
2	4125.3	6769.2	6329.4		5762.1	3760.9	3531.1(21)		
3	4136.1	6780.5	6372.1		5771.3	3789.4	3540.3		
4	4155.3	6821.9	6382.6		5788.5	3800.9	3548.0		
5	4189.1	6867.9	6406.3		5819.7	3816.3	3557.4		
6	4207.0	6913.8	6498.4		5881.9	3875.8	3568.7(23)		
7	4213.8	6914.3	6493.7		5874.4	3875.0	3575.0		
8	4213.1	6912.4	6476.9		5884.6	3868.2	3579.0		
9	4235.7	6945.3	6503.8		5895.3	3868.1	3581.5		
10	4252.8	6977.3	6531.4		5918.9	3882.4	3594.5		
11	4234.2	6947.2	6506.5		5887.5	3861.0	3577.2		
12	4199.1	6901.0	6468.2		5853.1	3843.6	3576.7		
13	4168.4	6829.4	6398.1		5801.1	3805.4	3566.0		
14	4121.5	6742.6	6343.8		5762.8	3783.8	3554.6		
15	4133.1	6785.3	6380.1		5764.6	3783.7	3548.5		
16	4160.4	6807.7	6424.5		5797.8	3808.9	3555.3		
17	4162.2	6828.6	6423.9		5796.3	3804.0	3543.7		
18	4098.3	6719.7	6309.8		5729.3	3745.5	3521.8		
19	4049.9	6645.6	6242.8		5680.3	3716.6	3505.2		
20	3847.3	6319.9(17)	5934.9		5359.1	3473.6	3415.9		
21	3837.7	6288.3	5895.0		5354.3	3444.1	3396.5		
22	3895.3	6383.8	5974.4		5420.8	3486.3	3419.7		
23	3903.0	6403.0	5997.0		5459.8	3512.0	3433.0		
24	3896.7	6401.8	5965.5		5457.9	3514.8	3432.6		
25	3862.8	6358.8	5943.3		5426.0	3501.9	3440.6		
26	3881.6	6387.5	5984.1		5457.7	3523.5	3454.4		
27	3934.8	6464.3	6067.5		5513.0	3573.5	3483.0		
28	3990.4	6556.7	6138.8		5577.8	3632.5	3504.1		
29	3926.5	6445.6	6059.7		5505.3	3617.0	3514.4		
30	3940.5	6466.2	6032.3		5510.3	3589.4	3501.5		
31	3999.0	6549.8	6122.5		5580.0	3617.5	3511.8		
MEAN	4069.5	6676.9	6259.5		5682.3	3709.7	3519.0		

Data not available at time of publication.

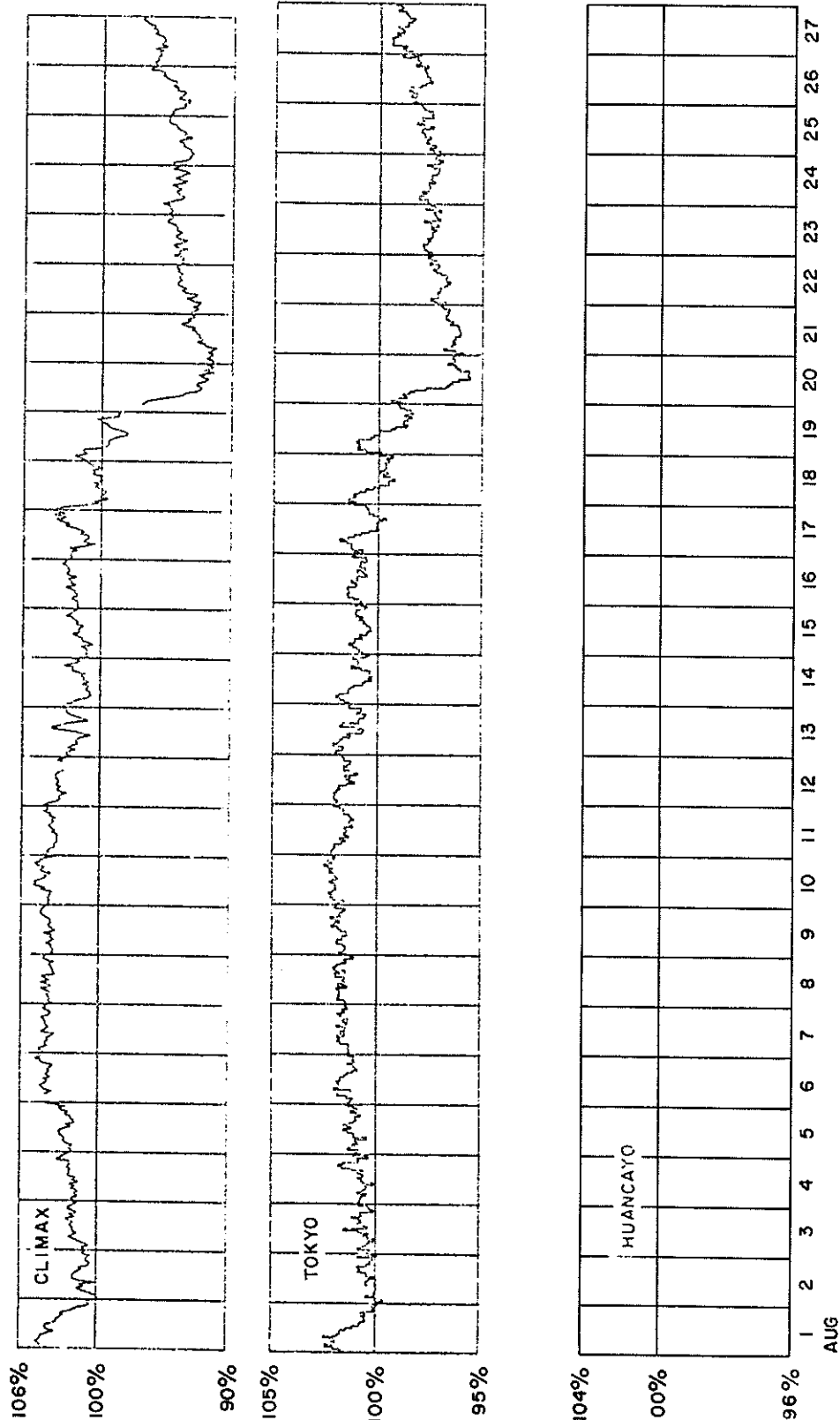
Data not available at time of publication.

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



COSMIC RAY INDICES  
(Neutron Monitors)

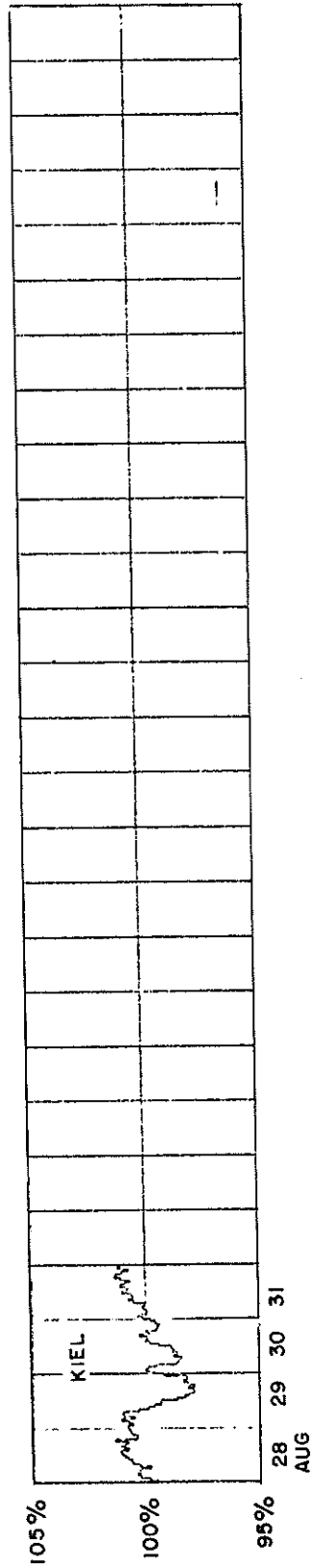
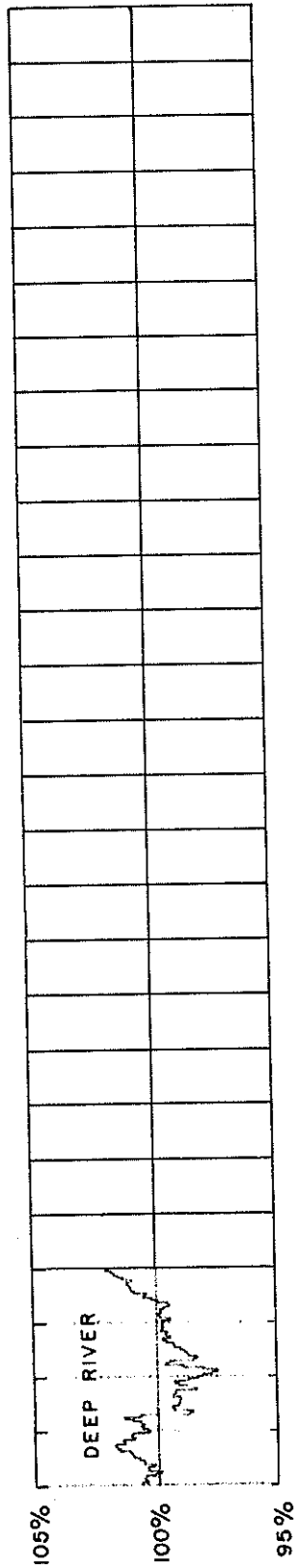
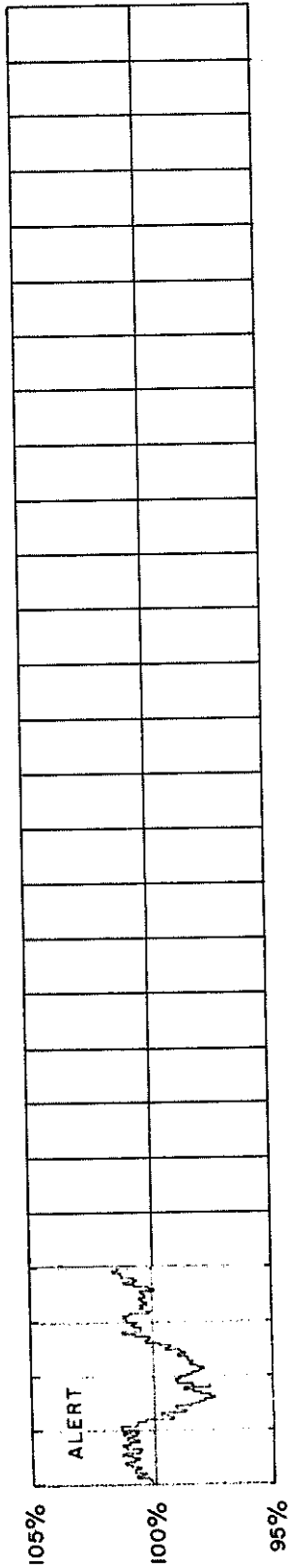
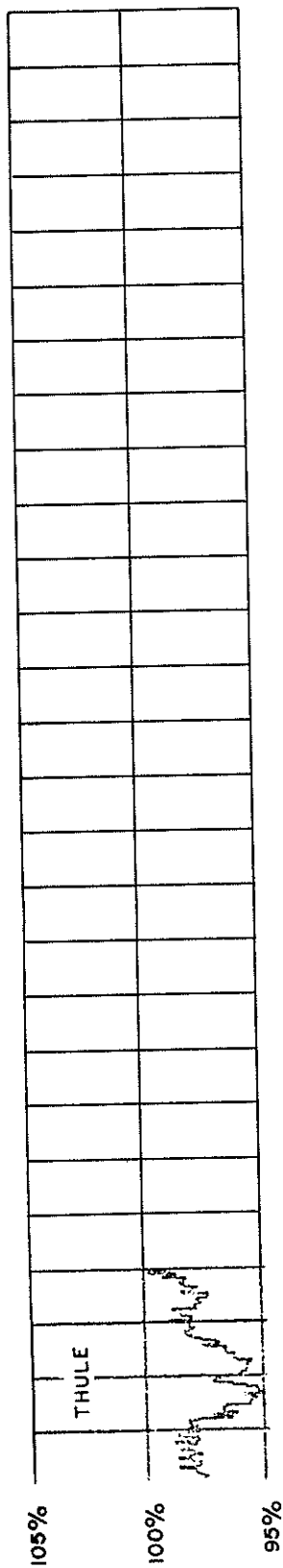
Bartels Rotation 1996 (August 1979)





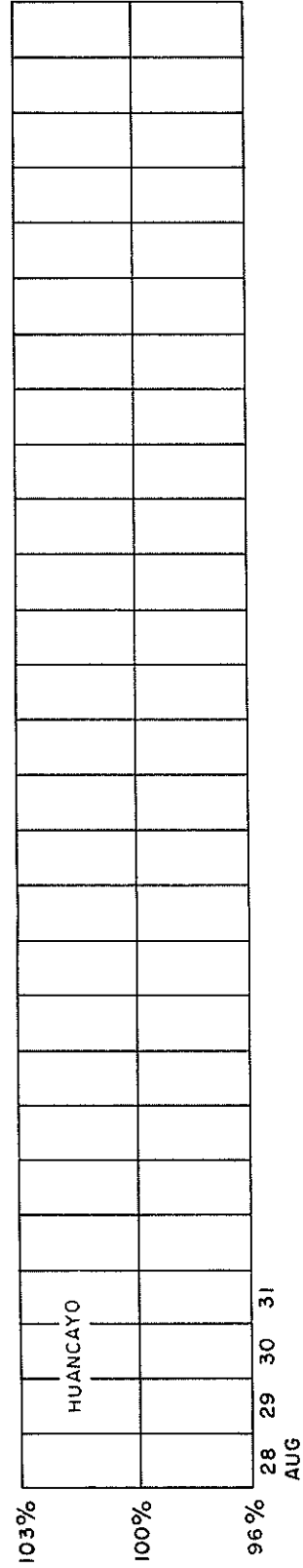
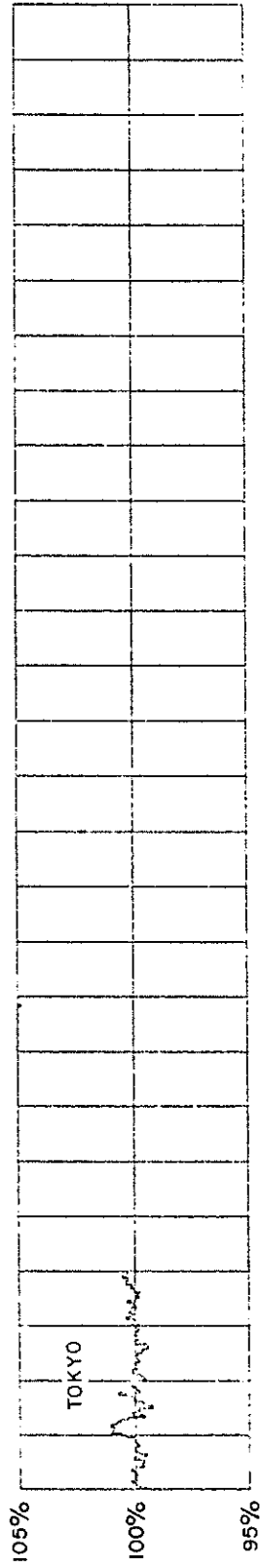
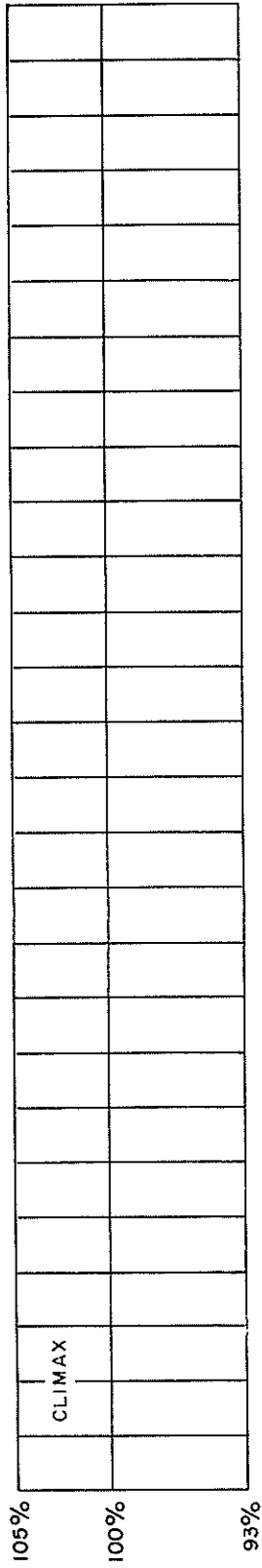
COSMIC RAY INDICES  
(Neutron Monitors)

Bartels Rotation 1997 (August 1979)



COSMIC RAY INDICES  
(Neutron Monitors)

Bartels Rotation 1997 (August 1979)



GEOMAGNETIC ACTIVITY INDICES

AUGUST 1979

Day	Three-Hourly Indices Kp								Sum	Three-Hourly Indices Km								Ap	aa *				Cp		
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		N	S	M				
1	0+	0+	1-	4-	5-	4-	3	4-	26	0	0	0+	3+	4-	3-	3-	3+	15	34	23	14	43	3.9		
2	3	3	3+	3	1+	2+	2	1-	19-	3-	3-	3+	3-	1+	2+	2-	1-	11	20	16	25	11	3.8		
3	2	3	3	3+	2	2-	1	2+	18+	2-	3	3	3	3-	1+	1+	2+	10	19	24	25	18	3.6		
4	2+	3+	3+	3-	3+	3-	4	3-	24+	3-	3	3	2+	3	2	3+	3-	16	31	23	22	33	3.9		
5	08A	1	3-	2	1+	1-	2+	3-	2	1	2+	2	2-	1-	2-	2	2	A	15	8	10	13	3	3.4	
6		3	3+	4	4	3+	2	2	26-	3-	3	4	3+	3+	3-	2-	2-	13	34	25	35	29	1.3		
7		2	2	3	2	2	2+	3+	3-	2-	2	3	2+	3+	2	3-		10	22	25	19	29	1.5		
8	09A	2	2	2	2-	2	2	3-	2	2-	2	2-	2-	2-	2+	3-		7	19	11	12	13	0.4		
9	04	2+	2	2-	2	2	2	1+	0+	14	2	2	1+	2-	2-	1	0+	6	14	9	13	11	3K	0.3	
10	05A	1-	1+	1	2-	2	2	3	3-	14+	0+	1+	1	1+	2+	2+	3-	2+	7	15	12	5	22	3K	0.4
11	08A	2+	2-	1+	2	2+	2-	3+	3+	18	2+	2-	1+	1+	2	1+	3-	3-	10	21	13	12	22	3.5	
12		3	2	2+	4	2-	2-	4-	5+	24-	3	2	2+	3+	1+	2-	2+	5-	18	34	29	24	35	1.0	
13	02	3	1	3+	7-	7+	7-	7	6-	41-	3	1+	4	5+	6	5+	5+	5-	76	87	81	53	108	1.0	
14	07A	3+	2-	1+	1	2-	2	2	2-	15-	3+	1+	1+	1-	1	2-	2	1+	7	15	9	12	12	0.4	
15	01	1-	1+	1	1-	1	1+	1+	2	9+	0+	2-	1+	2+	1-	1+	2-	2-	4	9	6	4	12	3C	3.2
16	03	1+	1+	2+	1+	2-	1-	1-	1+	11-	2-	1+	2+	2-	1+	1-	0+	1	5	10	7	10	5	3C	0.2
17	06A	2	1+	2	1-	1-	3	3+	1	14	2	2	2	1	0+	2+	3-	1	3	13	11	8	15	3K	0.4
18		1+	1-	1	1	2+	2+	2+	5	16	1+	1	1	1	2	2	2+	4+	11	28	13	5	36	0.7	
19	04	6-	5	4+	5	4+	4-	3-	4-	34+	5	4	4+	4+	4	3+	3	4-	35	55	50	67	39	1.4	
20	03	3+	3-	4-	3-	3+	7	6+	4+	33+	3+	3-	4	3	3	6-	5+	4-	42	87	45	33	100	1.5	
21	05	5	4	4-	3+	3+	3-	4-	2+	28	5-	4-	3+	3+	3	3-	3	2+	22	33	25	32	27	1.1	
22		3	3-	3-	2+	3	3	3-	2	21+	3-	3-	3-	2+	3-	2-	2-		12	24	13	14	22	0.7	
23	02	6+	1	2-	1+	2	1	2-	1	10	1-	1	2-	1	1+	3+	1+	1	5	3	4	6	7	3K	0.2
24		1-	1-	1+	2-	2+	5-	4	3-	16	2+	1	1-	2-	2	4+	3+	1-	13	27	14	5	36	0.7	
25		2-	2-	3	4+	4-	4	5-	4+	27+	2-	2+	3	4-	3	3+	4-	4-	22	36	37	24	45	1.1	
26		4-	3	3+	3-	3	2+	4-	1+	23	3	3-	3+	2+	3-	2	3	1	15	25	17	27	19	0.6	
27		2-	3	3+	3	2	3+	3-	1+	20+	2-	3	3	3	2+	3-	2+	1+	12	22	22	25	19	0.7	
28		3	3-	2+	3	2	2	1-	3-	19-	3+	2	2+	3-	2	2+	1	3-	10	19	14	17	16	0.6	
29	01	3	5-	5+	5+	6	4-	7-	6	45-	5+	5	4+	5	5+	5	5	5	77	74	50	50	111	1.8	
30		5-	4	3+	3-	2-	2-	2-	1+	21	4+	4-	3	2+	2-	1	1+	1+	15	23	22	34	11	0.2	
31		1	1+	2	3	4	3-	3-	3	20-	1+	1+	2	3	3+	2	3-	3-	12	19	21	15	25	0.7	
													14	25.2			23.2	25.3		2.75					

Day	Three-Hourly Indices Kn								Three-Hourly Indices Ks							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1	0+	0	0+	4-	4	3	3	3	0	0	0	3	3	2	2	3+
2	3-	3	4-	3	2-	3-	2	1-	3	3-	3+	3-	1+	2	1+	0+
3	2	3	3	3	3-	2-	1+	3-	2-	3	3+	2+	1+	1	2+	
4	3-	3	3	3-	3	2+	3	3-	2+	3	3	2	3	1+	4-	3
5	1	2+	2	2-	1+	2+	3-	2+	1-	3-	2+	1+	0	1+	2	2-
6	3	3+	4+	3+	4-	3	2	2-	2+	3-	4-	3	3-	3-	1+	1+
7	2-	2-	3+	2+	2+	2-	3+	3-	2-	2+	3	2+	3-	2+	3+	1+
8	2	2	2-	2-	2	2	3-	2	1+	2+	2-	2	1+	1+	2+	1
9	3-	2-	1+	2-	2	2-	1+	0+	2-	2-	1	1+	2-	2-	1-	-
10	1-	1+	1	2-	3-	3-	3	2	0+	2-	1	1+	2+	2-	2	2+
11	2+	2-	1+	2-	2	2-	3	3	2+	2	1	1+	2-	1	2+	3-
12	3-	2	3-	4-	2	2	4-	5	1-	1	3+	4				
13	3-	1+	4	5+	6	6	5+	5-	3	1+	4-	5+	6-	5-	6-	4+
14	3	1+	1+	1	2-	2	2	2-	4-	1+	1	1-	0	1	2	1
15	1-	2-	1+	1	1+	2-	2-	2-	0+	1+	1	0	0+	1	1+	1+
16	2-	1+	3-	2-	2	1	1-	1+	2-	1+	2	2-	1-	1-	0	0+
17	2-	2-	2+	1+	1-	3-	3	1+	2+	2-	2-	3+	0	2+	2+	1-
18	1+	1	1	1	3-	2+	2+	4+	1+	1	1-	1-	1+	1+	2+	4+
19	5	4+	4	5-	4	4-	3+	4	5	5-	5-	4+	3+	3	2+	3+
20	3	3-	4	3	3+	6	5+	4	4-	3-	4+	3-	3-	5+	5+	3
21	5-	4-	3+	3+	3	3-	3+	3-	5-	4-	3+	3+	3-	2	3-	2
22	3-	3	3-	2+	3	3-	3-	2-	2+	3-	2+	2	2+	2-	2+	1+
23	1-	1-	2	1+	2	1-	2-	1+	1-	1	1	1-	1-	0	1-	1-
24	1-	1+	1-	2	2+	4-	4-	3-	0	1	1-	2-	2-	3+	3	2+
25	2-	3-	3	4-	3+	4-	4	4	2-	2	3-	4-	3+	3-	3+	3
26	3+	3-	3+	3-	3-	2+	3+	1+	3	3-	3+	2	3-	1+	3-	1
27	2	3+	3	3	3-	3	3-	2-	2-	3-	3-	3	2-	2+	2	1
28	3-	2+	3-	3	2+	3-	1+	3-	2+	2	2	2	2-	2-	1-	2+
29	2+	4+	5-	5	5	6	5+	5	2	4	4+	5	5+	5	6	5+
30	4	3+	3-	2+	2-	2-	2-	1+	5-	4	3+	2	2-	3+	0+	1
31	1+	1	2+	3	3+	2+	3	3-	1+	1+	2-	3-	3+	2-	2	3-

Quiet days (Q) and disturbed days (D), geomagnetic planetary three-hour-range indices (Kp) (integers alone are equivalent to those normally given with a small zero), magnetic character figures (Cp), and average amplitude (Ap) (unit 2 nT) are prepared by Geophysikalisches Institut at the University of Göttingen, F.R. of Germany for the International Service of Geomagnetic Indices. Ten most quiet days [Q1-Q0(10)] and five most disturbed days [D1-D5] are ordered from most quiet or disturbed, respectively. A or K means "not really quiet" (A = "Ap6", K = "Kp6 but one Kp2, 3 or two Kp values > 3-"). An asterisk means "not really disturbed" (Ap<20).  
Geomagnetic three-hourly indices Kn, Ks and Km as in IAGA-Bulletin No. 32 and indices aa ("antipodal") as in IAGA-Bulletin No. 33 are prepared by M. Menvielle of the Institut de Physique du Globe, Paris, France. Really quiet (C) and quiet but slightly disturbed three-hourly intervals (K) are given for 24-hour and 48-hour intervals centered on 1200 UT.

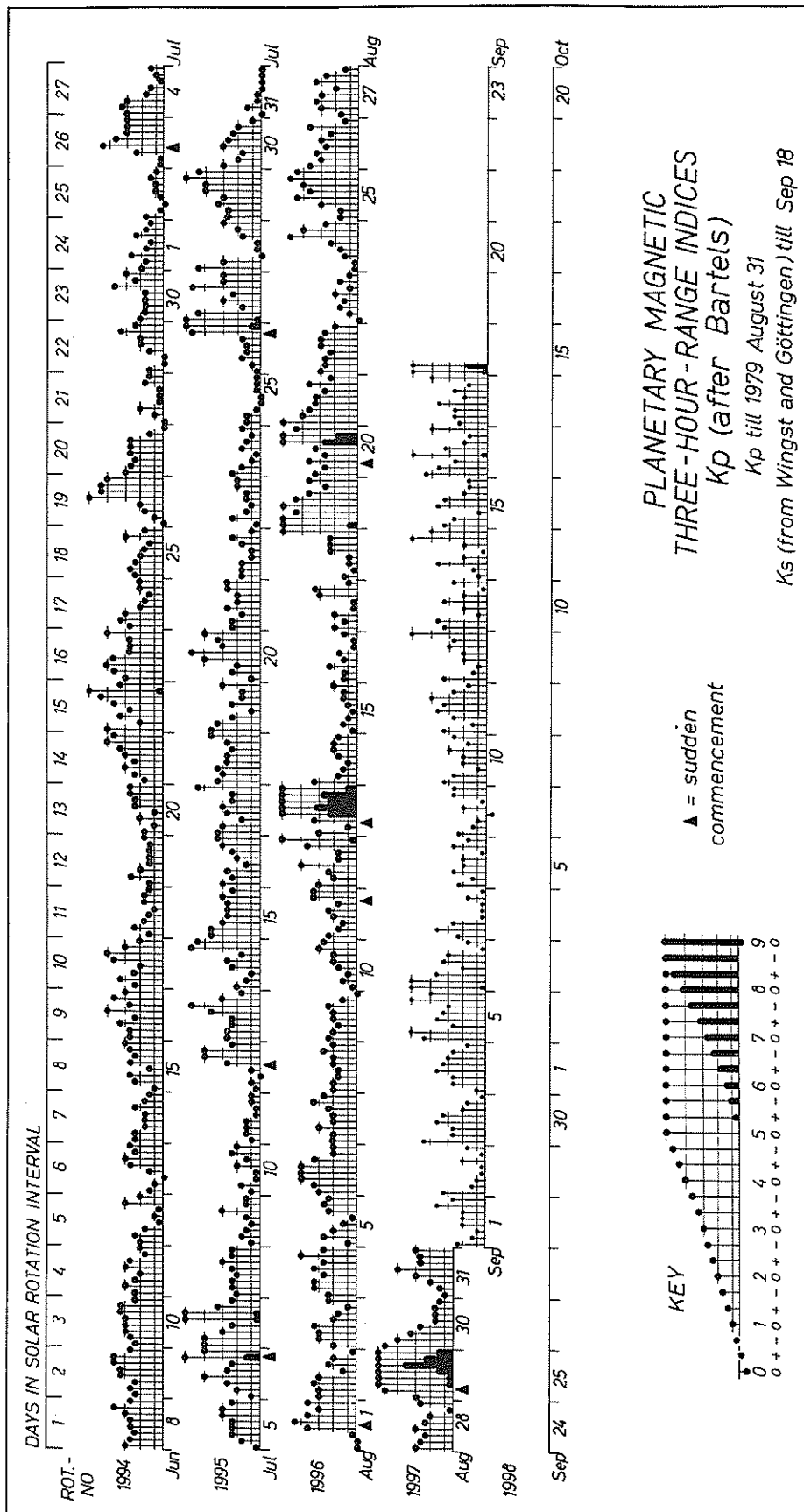
DAILY AVERAGE INDICES Ap

1979

1978

DAY	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
1	21	13	13	11	10	6	12	33	18	5	7	16
2	20	12	10	3	19	10	20	36	14	6	4	11
3	11	8	12	5	19	9	13	54	6	4	14	10
4	8	17	5	12	45	19	27	47	7	6	9	16
5	7	8	6	10	23	9	13	52	7	4	9	8
6	14	4	2	5	18	16	30	12	6	34	22	18
7	6	4	9	2	32	6	7	12	11	26	27	10
8	24	5	14	3	8	9	7	12	8	14	9	7
9	31	11	8	3	15	9	15	9	14	15	6	6
10	12	15	16	1	4	6	54	12	7	14	6	7
11	12	5	10	1	4	12	18	6	19	10	4	10
12	13	14	53	4	16	17	6	15	9	7	11	18
13	6	8	22	7	5	3	7	11	8	8	16	76
14	5	5	11	20	6	2	3	15	11	7	14	7
15	3	5	8	28	15	11	8	18	11	10	15	4
16	6	4	6	14	12	7	11	16	5	16	11	5
17	8	5	6	9	7	5	21	11	3	14	14	6
18	3	32	5	43	11	22	7	6	11	6	15	11
19	2	22	13	24	19	15	11	6	24	6	11	35
20	5	9	22	26	12	6	6	2	13	8	18	42
21	9	13	16	12	11	59	4	21	13	15	9	22
22	12	10	26	19	14	33	45	45	36	24	6	12
23	11	6	12	7	27	31	12	23	11	19	6	5
24	10	5	16	6	23	17	15	14	27	10	5	13
25	36	7	63	21	34	14	21	126	34	9	3	22
26	36	18	33	8	28	22	26	12	25	20	17	15
27	51	23	17	14	23	24	18	27	17	10	23	12
28	50	14	5	14	13	17	39	31	11	4	11	10
29	109	16	4	20	13	68	47	47	32	7	24	77
30	11	25	5	27	16	16	16	26	10	10	9	15
31		20		16	13		15		6		3	12
MEAN	18	12	15	13	16	15	19	25	14	12	12	18

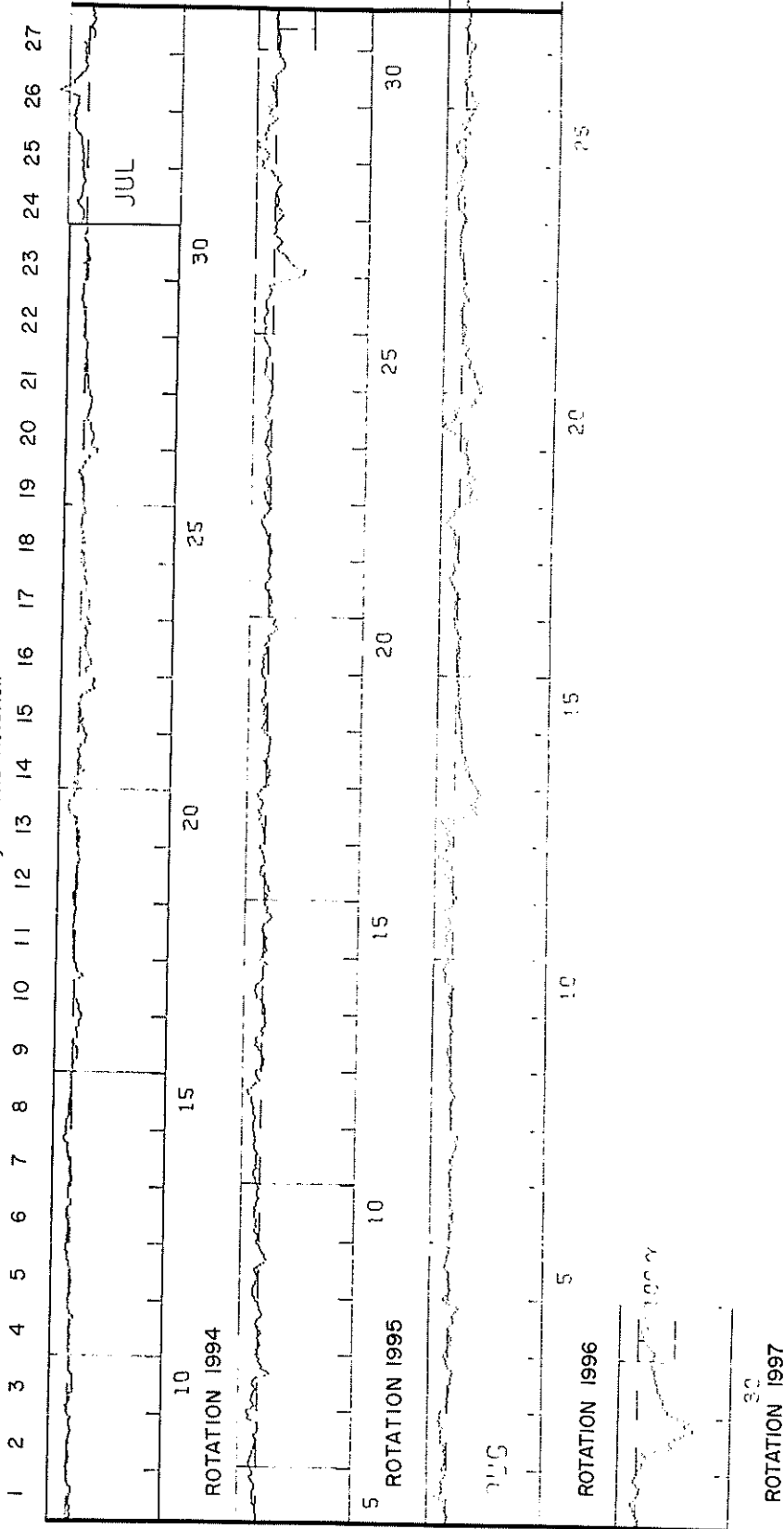
# GEOMAGNETIC ACTIVITY INDICES



# GEOMAGNETIC ACTIVITY INDICES

## Hourly Equatorial Dst

by Bartels Rotation



Note: Both the sensitivity indicator placed on the last day of the month and the zero reference level change from month to month.

HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

AUGUST 1979

NASA/GODDARD SPACE FLIGHT CENTER

DAY	(Time-UT)											(Units-Gammas)												
	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	5	2	-3	-5	-1	5	6	7	9	8	9	18	31	14	11	12	14	12	15	13	7	2	12	11
2	12	7	5	5	4	-1	3	8	6	3	9	15	15	14	15	16	14	12	18	18	22	19	19	19
3	15	8	4	0	-3	0	-2	-2	-6	-5	-3	-8	-9	-8	-12	-13	-13	-11	-1	1	5	5	7	11
4	9	5	2	-2	-9	-3	-10	-10	-5	-1	-3	0	-7	-14	-13	-12	-12	-16	-21	-28	-21	-4	5	12
5	13	7	-3	-6	-6	-1	-3	0	4	2	1	4	9	12	11	8	5	5	4	0	0	-1	5	10
6	8	2	-1	-2	-7	-1	2	0	-11	-8	-7	-7	-10	-10	-2	-1	-1	-6	-1	-2	-1	-3	-1	2
7	2	-1	-3	-4	1	4	-6	-13	-7	-2	-3	-9	-7	-10	-13	-16	-17	-18	-13	-21	-19	-10	-3	-3
8	-1	-2	-3	-4	0	-3	-4	0	2	-1	-4	-5	-8	-13	-9	-6	-1	2	0	-4	3	-1	-1	-1
9	5	12	16	10	3	5	7	9	11	10	9	4	1	1	2	2	-1	-5	1	2	5	4	4	3
10	-1	-2	-1	3	8	11	8	6	8	6	-1	-5	0	11	19	20	20	17	21	25	21	16	12	13
11	15	12	8	12	16	22	20	16	18	18	16	12	8	19	5	7	12	12	23	25	22	11	2	-1
12	-3	-11	-9	0	5	3	2	8	8	9	15	23	19	5	4	5	11	18	29	41	33	20	21	14
13	10	13	15	8	18	21	13	22	31	32	36	16	-30	-63	-59	-52	-60	-47	-60	-53	-64	-73	-65	-64
14	-61	-57	-51	-48	-45	-41	-41	-40	-33	-39	-27	-29	-31	-30	-22	-19	-19	-19	-17	-18	-15	-19	-18	-17
15	-16	-16	-17	-17	-15	-14	-11	-10	-10	-11	-10	-11	-9	-8	-13	-6	-7	-6	-8	-9	-6	-3	-4	-4
16	-7	-5	-4	-3	-3	-2	-3	-8	-2	-6	-8	-7	-6	-4	-3	-9	-10	-3	-1	1	7	8	9	10
17	9	5	3	5	9	8	6	7	-7	0	4	9	11	11	16	18	24	22	15	13	10	11	14	12
18	7	3	3	4	9	12	10	8	10	10	14	12	13	13	22	25	35	30	25	14	11	14	9	1
19	-17	-28	-46	-26	-30	-32	-35	-29	-18	-25	-46	-38	-33	-19	-23	-24	-26	-20	-17	-21	-20	-17	-11	-16
20	-16	-17	-17	-20	-10	-1	16	29	37	48	41	24	18	13	15	10	18	4	-29	-38	-36	-38	-43	-46
21	-52	-47	-55	-43	-40	-39	-35	-35	-34	-29	-20	-20	-23	-23	-16	-11	-10	-15	-19	-11	-1	-3	-2	-5
22	-8	-7	-12	-9	-6	2	0	3	7	6	6	1	-3	-3	-15	-16	-9	-6	-2	0	-3	-9	-8	-5
23	-5	-6	-6	-3	0	-1	-2	3	8	10	10	10	10	9	8	8	10	8	10	7	5	4	3	-2
24	-7	-6	-2	3	9	15	15	17	17	16	17	19	15	10	8	6	20	10	2	11	13	6	6	3
25	-1	-4	-2	8	11	20	21	25	24	16	16	5	-7	-11	-10	4	0	11	-5	-10	-8	-13	-17	-19
26	-18	-26	-32	-22	-18	-14	-12	-13	-2	0	6	7	3	-7	-10	-5	-5	-5	-8	-6	-4	-8	-8	-9
27	-12	-18	-21	-21	-10	-5	-6	-4	-1	2	8	-3	-6	-4	-8	-8	-8	-8	-5	-1	4	2	1	1
28	-4	-7	-8	-7	-8	-2	5	9	7	9	13	13	5	-1	-2	-6	-8	-9	-1	3	9	7	3	0
29	0	-6	-13	-16	-15	-1	-26	-23	-15	-50	-87	-91	-86	-85	-104	-119	-128	-150	-150	-129	-128	-140	-126	-109
30	-93	-79	-78	-73	-65	-67	-66	-65	-59	-59	-53	-51	-51	-50	-46	-46	-43	-44	-42	-43	-37	-37	-33	-34
31	-40	-42	-44	-42	-35	-29	-22	-17	-11	-14	-14	-10	-9	-25	-23	-22	-15	-19	-17	-15	-10	-16	-13	-14



NOTE: The above values are based on data from three observatories: Hermanns, Kakioka, and San Juan. The data from Honolulu are not used because of instrumental difficulties. The Provisional Dst values for July 1979 were also derived from the same three observatories; see the footnote in the July tabulation of provisional Dst values.

# PRINCIPAL MAGNETIC STORMS

AUGUST 1979

OBS. 3 letter IAGA code	GEOG-MAG- NETIC LATI- TUDE	COMMENCEMENT			SC - AMPLITUDES			MAXIMUM 3 HOUR - INDEX K		RANGES			UT END	
		DAY	hr min (UT)	TYPE	D(°)	H(γ)	Z(γ)	DAY (3 HOUR PERIOD)	K	D(°)	H(γ)	Z(γ)	DAY	HOURL
FRQ	43.5N	1	1146	SC	+3	+16	-3	01(5) 12(3,4) 13(4) 14(2,3) 15(2,3,5)	4	16	87	73	16	21
GUL	24.5N	1	1145	SC	- .4	17	- 2		-	7	59	30	12	19
JAI	17.3N	1	1145	SC	- .6	17	- 6		-	6	52	24	12	19
SHL	14.5N	1	1145	SC	- .4	12	3		-	5	55	27	12	19
ABG	09.5N	1	1145	SC	- .5	13	- 6	11(5)	5	6	56	30	12	19
HYB	07.5N	1	1146	SC	- .2	17	- 1	01(4,5,3)	4	6	60	19	12	19
ANN	01.5N	1	1145	SC	- .9	23	3		-	5	61	62	12	19
TPO	11.5S	1	1145	SC	- .1	24	26		-	4	122	54	12	19
PMG	18.5S	1	1146	SC	+ .4	+16	+13	11(5)	5	4	70	35	12	19
EYP	47.4S	1	1147	SC*	+ .4	18.4	6		-	--	--	--	11	18
KGL	56.5S	1	1145	SC	-22	+14	7	11(3)	4				12	08
FRQ	43.5N	11	1813	SC	+1	+15	-3	13(4)	5	28	184	117	14	23
GUL	24.5N	11	1812	SC	- .5	21	3		-	12	181	92	14	23
JAI	17.3N	11	1812	SC	- .5	19	- 4		-	10	172	49	14	23
SHL	14.5N	11	1812	SC	- .3	15	3		-	9	200	50	14	23
ABG	09.5N	11	1812	SC	- .5	17	- 3	13(4,6)	6	9	185	55	14	23
HYB	07.5N	11	1813	SC	- .2	16	- 1	11(7,8) 12(1,2,3,4)	3	8	73	34	12	13
ANN	01.5N	11	1812	SC	--	--	--		-	--	--	--	14	23
HUA	01.5S	11	1812	SC	2	51	6	13(7)	8	10	512	17	14	23
TRO	11.5S	11	1812	SC	.1	15	20		-	6	277	155	14	23
SIT	61.0N	12	19--	**	**	**	**	13(5)	7	120	--	650	14	24
NEW	55.1N	12	1924	**	**	**	**	12(5) 13(5,6)	8	40	275	355	14	24
SJG	29.3N	12	1928	SC	--	4	--	13(5)	6	17	158	22	14	24
YB	07.5N	12	1926	**	**	**	**	13(5,6)	7	9	207	25	14	24
GUA	04.3N	12	1926	**	**	**	**	13(5)	6	10	230	40	14	24
PMG	18.5S	12	17--	**	**	**	**	13(5,6)	5	10	220	90	14	24
COL	64.5N	13	16--	**	**	**	**	13(5)	7	225	1730	710	14	24
SIT	60.0N	13	1629	SC*	5	5	5	13(4,5,6,7,8)	5	39	205	90	14	24
IRK	41.3N	13	1612	SC*	.7	-54	- 3	13(5,6)	6	24	213	60	14	24
HEP	33.7S	13	1600	**	**	**	**	13(4,7)	6	25	160	97	14	24
GNA	43.2S	13	1640	SC*	- 4.8	22	- 24	13(4,5,6)	5	20	120	138	14	24
EYP	47.3S	13	1640	SC*	.7	23	4	13(5)	6	32	175	40	13	23
KGL	56.5S	13	1622	SC*	18	-17	- 5	13(7)	8				14	24
GUL	24.5N	18	21--	**	**	**	**	23(7)	8	273	2130	690	21	13
SIT	60.0N	18	21--	**	**	**	**	13(2)	6	--	740	380	21	12
NEW	55.1N	18	21--	**	**	**	**	19(1,2)	5	40	115	264	21	12
WIT	54.2N	18	19--	**	**	**	**	20(6)	7	40	375	120	21	07
FRQ	43.5N	18	21--	**	**	**	**	13(1)	6	35	135	63	22	23
IRK	41.3N	18	2000	**	**	**	**	13(4)	6	25	157	39	20	04
GUL	24.5N	18	2127	**	**	**	**		-	13	89	42	20	01
JAI	17.3N	18	2127	**	**	**	**		-	10	78	50	20	01
SHL	14.5N	18	2127	**	**	**	**		-	9	87	22	20	01
ABG	09.5N	18	2127	**	**	**	**	13(1,3,4)	5	11	77	53	20	01
HYB	07.5N	18	1500	**	**	**	**	13(1)	6	9	86	24	19	24
GUA	04.3N	18	2126	**	**	**	**	13(1)	5	13	130	20	19	18
ANN	01.5N	18	2127	**	**	**	**		-	10	140	73	20	01
HUA	01.5S	18	1350	**	**	**	**	13(1,5)	5	3	275	33	19	24
TRO	11.5S	18	2127	**	**	**	**		-	7	154	109	20	01
PMG	18.5S	18	2125	**	**	**	**	19(1,2,4)	5	6	150	60	20	00
HEP	33.7S	18	1900	**	**	**	**	19(1,4)	5	27	85	58	20	05
EYP	47.3S	18	2142	**	**	**	**	19(4)	5	17	70	35	19	16
KGL	56.5S	19	1854	SC*	26	18	2	20(6,7) 21(1)	6				22	22
NEW	55.1N	20	1625	SC	5	62	6	20(6,7)	6	60	326	123	22	22
IRK	41.3N	20	1624	SC	2.5	40	10	20(6,7)	6	23	237	45	21	22
SJG	29.3N	20	1623	SC	.5	21	7	20(6)	6	21	140	44	21	07
GUL	24.5N	20	1624	SC	- .5	40	- 4		-	14	167	59	21	20
HON	21.1N	20	1624	SC	2	6	5	23(6)	4	15	34	43	21	10
JAI	17.3N	20	1624	SC	- .8	42	- 8		-	12	135	54	21	20
SHL	14.5N	20	1624	SC	.6	37	5		-	11	148	48	21	20
ABG	09.5N	20	1624	SC	- 1.1	43	-11	20(6,7)	5	12	152	68	21	20
HYB	07.5N	20	1526	SC*	- .6*	43	- 5	20(6,7)	6	10	160	38	21	22
GUA	04.3N	20	1625	SC	--	38	-12	20(5)	5	10	90	50	21	07
ANN	01.5N	20	1624	SC	- 2.3	31	31		-	11	237	87	21	20
HUA	01.5S	20	1624	SC	1	38	7	23(6)	7	9	486	52	21	07
TRO	11.5S	20	1624	SC	.2	33	--		-	7	--	--	21	20
PMG	18.5S	20	1625	SC*	+ 1 *	+36	+32	20(6,7)	5	9	95	55	22	00
HEP	33.7S	20	1625	SC*	- 6	14	9	20(5)	6	28	165	150	22	15
GNA	43.2S	20	1625	SC*	4.3*	42	18 *	20(6)	6	18	110	90	21	10
EYP	47.3S	20	1626	SC	2.5	53.2	11.5	20(7)	6	26	152	70	21	14
KGL	56.5S	20	1625	SC*	-73	-22	11	23(6,7) 21(1)	6				22	22



# PRINCIPAL MAGNETIC STORMS

AUGUST 1979

OBS. 3 letter IAGA code	GEOG- NETIC LATI- TUDE	COMMENCEMENT		SC - AMPLITUDES		MAXIMUM 3 HOUR - INDEX K		RANGES			UT END		
		DAY	hr min (UT)	D(°)	H(γ)	Z(γ)	DAY (3 HOUR PERIOD)	K	D(°)	H(γ)	Z(γ)	DAY	HR
NEW HYB	55.1N 07.5N	24	0830	..	..	..	25(4)	5	31	115	155	26	11
		24	1000	..	..	..	25(4,5)	5	10	154	46	26	10
COL	64.6N	25	07--	..	..	..	25(4,5)	6	159	1050	620	25	23
GUA	04.3N	25	1439	..	..	..	25(6)	5	10	120	30	26	10
NEW	55.1N	28	2325	..	..	..	26(3) 29(5,6)	6	46	312	400	30	12
COL	64.6N	29	03--	..	..	..	29(6)	7	345	1780	1150	30	13
SIT	63.3N	29	03--	..	..	..	29(3)	7	80	--	880	30	12
MIT	54.2N	29	0459	SC*	..	..	29(6)	7	42	320	180	30	03
FRD	49.6N	29	0459	SC	- 4 *	..	29(6)	6	26	210	175	01	00
IRK	41.0N	29	0459	SC*	- 1 +44	- 6	29(6)	6	31	179	99	30	12
SJG	29.3N	29	0558	SC	- 2.8	13	29(5,6,7)	6	11	173	37	30	07
GUL	24.5N	29	0457	SC	--	26	29(6)	6	13	179	71	31	00
JAI	17.3N	29	0457	SC	- 2	10		--	12	195	58	31	00
SHL	14.6N	29	0457	SC	- 3	20		--	11	240	60	31	00
ABG	09.5N	29	0457	SC	- 3	20		--	11	248	59	31	00
HYB	07.6N	29	0459	SC	- 3	23		--	9	281	31	30	12
GUA	04.3N	29	0448	..	- 2	31	29(4,5,6,7)	6	10	200	40	30	11
ANN	01.5N	29	0457	SC	..	..	29(4)	--	9	348	81	31	00
PHG	18.6S	29	0459	SC	- 1.5	62	29(4)	6	9	230	100	31	00
HER	33.7S	29	0459	SC	+ .9	+21	29(8)	6	39	214	141	30	12
GNA	43.2S	29	0458	SC	- 4	13	29(5)	6	29	130	230	30	11
EYR	47.5S	29	0500	SC	1	6	29(4,5,6,7)	5	28	173	106	30	00
KGL	56.5S	29	0459	SC*	-24	-24	23(6,7)	8				30	11

Reports were received from the following observatories:

ALIBAG ANNAMALAINAGAR COLLEGE EYREWELL FREDERICKSBURG GNANGARA GUAM GULMARG HONOLULU HUANCAYO  
HYDERABAD IRKUTSK JAIPUR KERQUELEN NEWPORT PORT MORESBY SAN JUAN SHILLONG SITKA TRIVANDRUM WITTEVEEN

## SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

AUGUST 1979

PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS

The meaning of the station symbols is given in the IAGA-Bulletin no. 32h, page 106-116. Times of ssc are mean values.

Sudden commencements followed by a magnetic storm or a period of storminess (ssc)

- 01 1146: A: ESK VIC FRD MPO;  
B: SOD DOB WNG WIT DOU FUR AQU EBR COI TOL QUE KGL DUM;  
C: HAD HAZ KNY HUA CZT
- 11 1812: A: FUR FRD HUA;  
B: WNG WIT DOU MMB AQU EBR COI KAK;  
C: NGK VAL HAD TOL HAZ KNY (b: A: MPO)
- 13 0611: A: NUR COI MPO;  
B: SOD DOB WNG NGK VAL FUR CZT KGL;  
C: ESK (si: B: DOU EBR)
- 13 0639: A: SOD NUR;  
B: HAZ;  
C: WIT HAD AQU DUM (si: A: FUR; B: EBR - pi: A: MMB)
- 20 0625: A: NUR VIC MMB COI HAZ QUE HUA MPO KGL;  
B: SOD WNG NGK VAL AQU TOL KAK KNY CZT DUM; C: HAD EBR (si:A:FUR)
- 29 0459: A: SOD DOB NUR ESK DOU FUR COI FRD QUE MPO;  
B: WNG WIT VAL MMB AQU TOL KAK HAZ KNY CZT KGL DUM;  
C: NGK HAD EBR

Solar-flare effects (sfe)

Effects confirmed by ionospheric or solar observations are underlined.

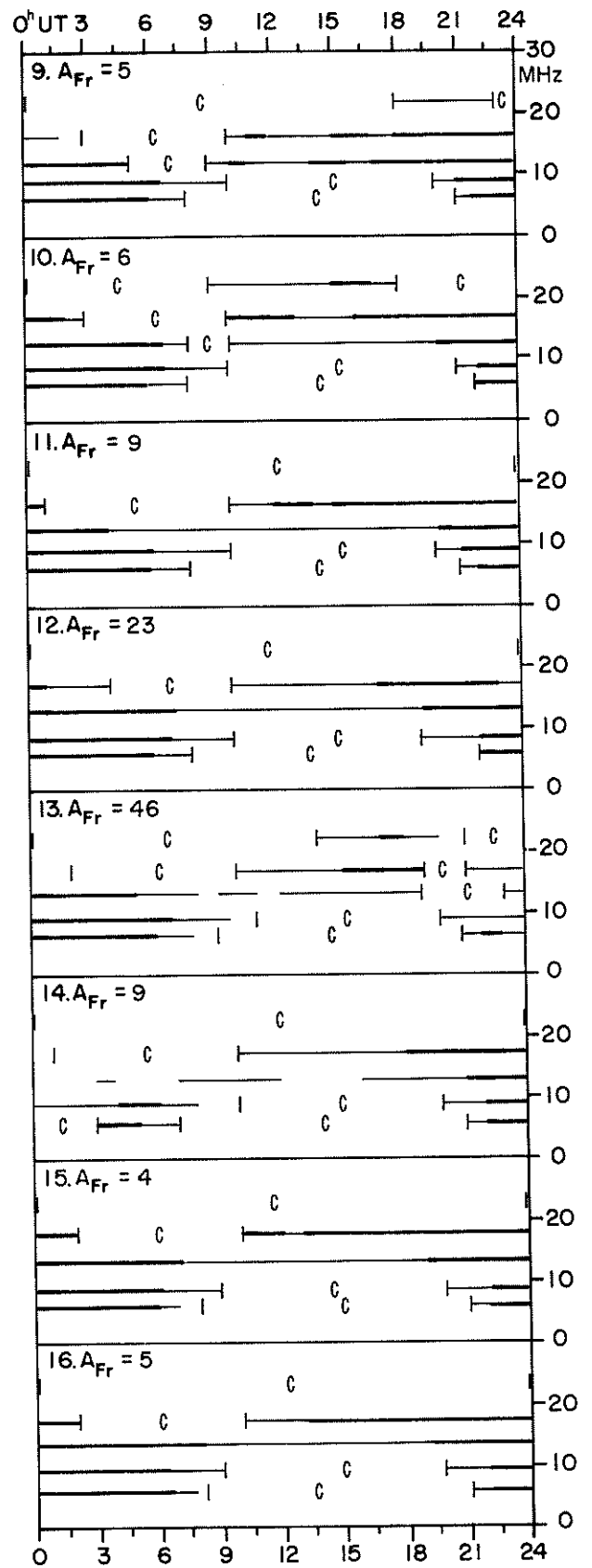
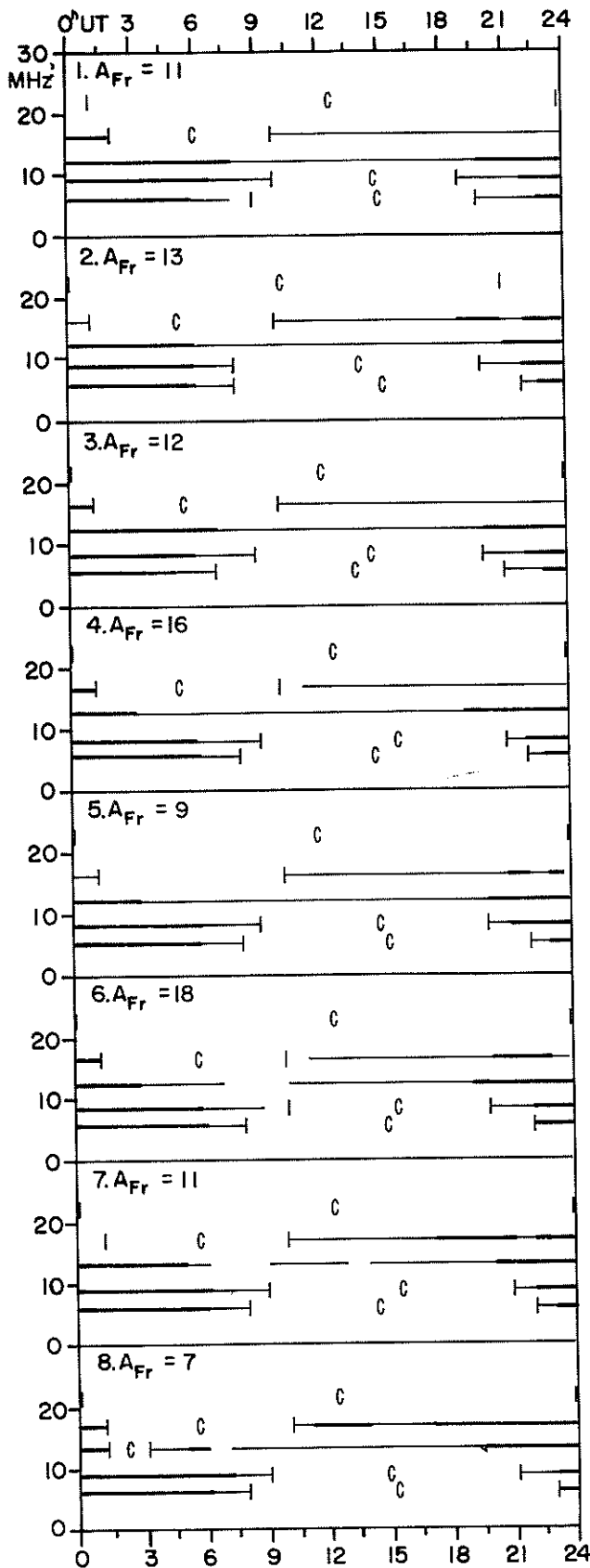
- 16 0456 - 0507 HAZ
- 17 1607 - 1626 SOD QUE (bp: C: MPO)
- 18 1346 - 1455 WNG AQU EBR TOL HUA?
- 21 0150 - 0157 HAZ
- 23 0743 - 0758 WIT
- 26 0913 - 0927 TOL

Very unusual events

None

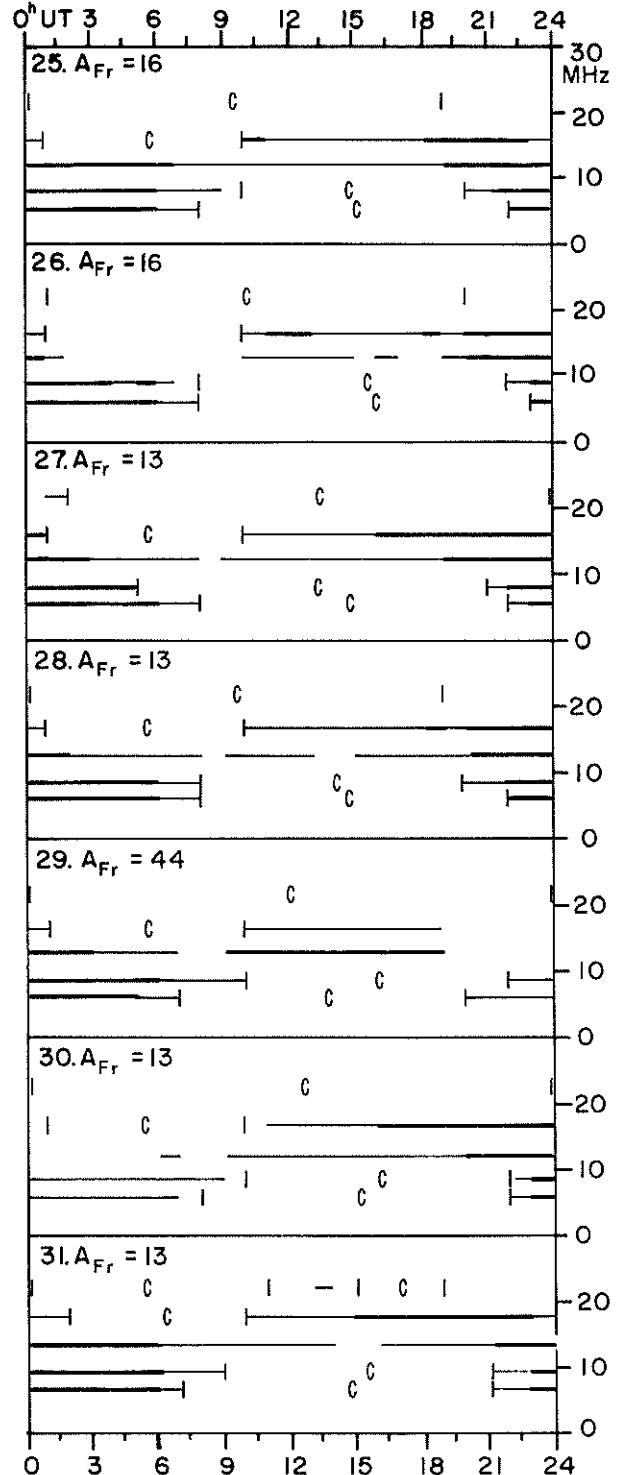
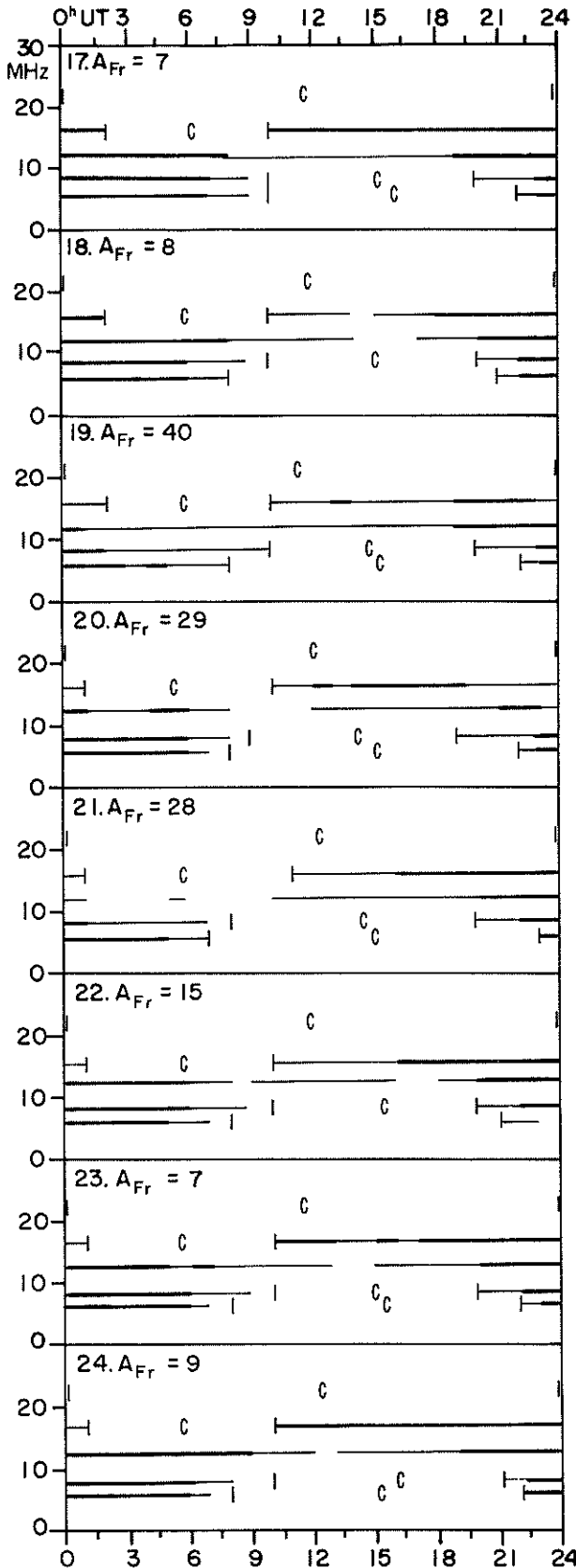
# TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

AUGUST 1979



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

AUGUST 1979

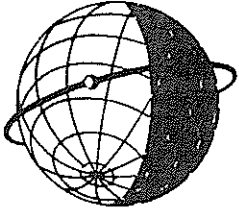


Field strengths from five frequencies, 6.4, 8.5, 12.8, 17.1 and 22.4 MHz, observed on a Lüchow-Halifax circuit are represented above. Heavy solid lines represent field strengths -12 dB above 1  $\mu\text{v}/\text{m}$  (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1  $\mu\text{v}/\text{m}$  and -40 dB above 1  $\mu\text{v}/\text{m}$  are represented by the fine line. Adapted from Observations by Deutsche Bundespost

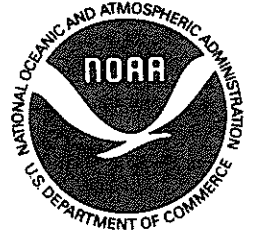
**RADIO PROPAGATION QUALITY INDICES**  
**AUGUST 1979**

Quality Indices calculated for reception at Lüchow

DAY	TOKYO	HALIFAX	TEHRAN	MOSCOW	CANBERRA	BRACKNELL
1	3.0	4.5	10.5	11.5	2.1	11.4
2	2.9	4.1	11.1	11.1	2.9	11.6
3	3.6	4.5	10.6	11.5	3.1	11.7
4	2.3	4.1	10.2	10.8	2.8	11.5
5	2.7	4.3	10.1	10.6	3.0	10.9
6	3.3	4.5	11.0	11.2	2.7	10.8
7	2.3	4.7	9.7	11.9	2.3	12.3
8	3.1	5.0	10.3	10.7	2.7	12.0
9	3.7	5.3	10.4	11.2	3.4	11.9
10	4.1	5.4	10.3	12.2	3.2	12.9
11	3.2	5.5	10.5	12.1	2.9	13.0
12	3.2	4.8	10.7	10.4	2.9	12.2
13	1.3	4.5	9.4	9.9	2.3	12.0
14	2.8	5.0	8.9	10.2	2.3	11.2
15	4.3	5.8	10.3	10.7	3.3	11.5
16	4.0	5.7	11.5	10.9	3.4	11.7
17	4.9	6.4	10.7	12.6	3.6	12.3
18	3.8	4.1	9.9	11.5	2.5	10.9
19	1.8	4.4	10.3	10.4	3.5	10.7
20	1.6	4.1	8.6	10.8	1.5	10.5
21	1.9	5.2	11.3	10.8	2.9	10.8
22	3.9	4.6	10.6	12.2	3.3	11.5
23	5.3	5.6	9.6	12.5	3.6	11.5
24	3.8	6.2	11.0	12.3	3.8	12.1
25	2.4	4.5	10.3	11.6	3.3	11.9
26	3.3	4.6	10.8	10.4	3.2	11.8
27	3.3	4.7	10.9	11.9	4.1	11.7
28	3.8	4.4	10.9	12.0	3.4	12.0
29	2.2	2.9	8.3	11.3	2.0	11.5
30	2.1	4.9	10.2	11.0	2.7	11.2
31	2.8	4.8	10.5	11.6	2.7	11.9
MEAN	3.1	4.8	10.3	11.3	2.9	11.6



**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."