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Solar - Geophysical Data

Part I (Prompt Reports)

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DATA FOR

JULY 1983

JUNE 1983

Michael A. Chinnery, Director
NATIONAL GEOPHYSICAL DATA CENTER
BOULDER, COLORADO

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

NUMBER 468

(Issued in Two Parts)

Helen E. Coffey, Editor

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Solar-Terrestrial Physics Division

C O N T E N T S

PART I (PROMPT REPORTS)

DETAILED INDEX FOR 1982-1983.	Page 2
DATA FOR JULY 1983	3-38
DATA FOR JUNE 1983	39-120
LATE DATA	
SOLAR RADIO SPECTRAL OBSERVATIONS - Dec 82 Harvard	122-128
GEOMAGNETIC INDICES	
Sudden Commencements/Solar Flare Effects - May 83	129
COSMIC RAY MEASUREMENTS BY NEUTRON MONITOR	
Daily Counting Rates - May 83 Alert/Deep River.	130
Chart of Variations - May 83 Alert/Deep River.	131

PART II (COMPREHENSIVE REPORTS)

DETAILED INDEX FOR 1982-1983	Page 2
DATA FOR FEBRUARY 1983	3-29

DETAILED INDEX OF OBSERVATIONS PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

CODE	KIND OF OBSERVATION	DEC 82	JAN 83	FEB	MAR	APR	MAY	JUN	JUL
A. SOLAR AND INTERPLANETARY PHENOMENA									
A.1	Sunspot Drawings	462A 44	463A 40	464A 38	465A 42	466A 54	467A 48	468A 44	
A.2aa	Internat. Provisional Sunspot Numbers	461A 11	462A 11	463A 9	464A 9	465A 9	466A 11	467A 11	468A 9
A.2c	American Sunspot Numbers	461A 11	462A 11	463A 9	464A 9	465A 9	466A 11	467A 11	468A 9
A.3a	Mt. Wilson Magnetograms	462A 44	463A 40	464A 38	465A 42	466A 54	467A 48	468A 44	
A.3b	Mt. Wilson Sunspot Magnetic Class	462A 75	463A 71	464A 66	465A 73	466A 84	467A 79	468A 74	
A.3c	Kitt Peak Magnetograms	462A 44	463A 40	464A 38	465A 42	466A 54	467A 48	468A 44	
A.3d	Mean Solar Magnetic Field (Stanford)	461A 52	462A 34	463A 30	464A 32	465A 34	466A 48	467A 40	468A 38
A.3e	Stanford Magnetograms	462A 44	463A 40	464A 38	465A 42	466A 54	467A 48	468A 44	
A.4	H-alpha Filtergrams	462A 44	463A 40	464A 38	465A 42	466A 54	467A 48	468A 44	
A.5	Calcium Plage Drawings								
A.5a	Calcium Plage and Sunspot Regions								
A.5b	Daily Calcium Plage Indices								
A.6	H-alpha Synoptic Charts	462A 36	463A 45	464A 34	465A 38	466A 50	467A 44	468A 40	
A.6b	Active Region Synoptic Chart (Paris)								
A.6c	Stanford Solar Mag Field Synoptic Maps	462A 38	463A 37	464A 35	465A 39	466A 51	467A 45	468A 41	
A.6d	Kitt Peak Solar Mag Field Synoptic Maps	462A 40	463A 38	464A 36	465A 40	466A 52	467A 46	468A 42	
A.6e	Mass Ejections from the Sun	466B 82	467B 22	468B 29					
A.7g	Kitt Peak Helium Synoptic Maps	462A 42	463A 39	464A 37	465A 41	466A 53	467A 47	468A 43	
A.7h	Coronal Line Emission (Sacramento Peak)	462A 44	463A 40	464A 38	465A 42	466A 54	467A 48	468A 44	
A.8aa	2800 MHz - Solar Flux (Ottawa)	461A 11	462A 11	463A 9	464A 9	465A 9	466A 11	467A 11	468A 9
A.8ac	2800 MHz - Adj. Solar Flux (Ottawa)	461A 11	462A 11	463A 9	464A 9	465A 9	466A 11	467A 11	468A 9
A.8g	Adjusted Daily Solar Fluxes (Sagamore)	461A 11	462A 11	463A 9	464A 9	465A 9	466A 11	467A 11	468A 11
A.10a	Interferometric Chart -169 MHz- Nancy	461A 32	462A 24	463A 20	464A 20	465A 22	466A 31	467A 26	468A 25
A.10c	East-West Scans - 21 cm - Fleurs	461A 35	462A 27	463A 23	464A 23	465A 25	466A 34	467A 29	468A 28
A.10d	East-West Scans - 43 cm - Fleurs	461A 36	462A 28	463A 24	464A 24	465A 26	466A 35	467A 30	468A 29
A.10e	East-West Scans - 10 cm - Ottawa	461A 34	462A 26	463A 22	464A 22	465A 24	466A 33	467A 28	468A 27
A.10f	East-West Scans - 3 cm - Toyokawa	461A 33	462A 25	463A 21	464A 21	465A 23	466A 32	467A 27	468A 26
A.11g	Solar X-ray SMS/GOES (graphs)	466B 76	467B 16	468B 24					
A.12e	Solar Particles (IMP H & J) 1980-81	467B 88							
A.13d	Solar Wind from IP Scintillations	---	---	---	---	---	---	---	---
A.13e	Solar Plasma (IMP H & J)	467B 93							
A.17	Interplanetary Mag Field (Pioneer 12)								
A.17c	Inferred Interplanetary Magnetic Field	461A 50	462A 32	463A 28	464A 30	465A 32	466A 46	467A 38	468A 36
B. IONOSPHERIC RADIO PROPAGATION PHENOMENA									
B.52	Field Strength Graphs - North Atlantic	462A128	463A106	464A 92	465A106	466A120	467A124	468A118	
B.53	Quality Indices on Paths to Germany	462A130	463A106	464A 91	465A108	466A119	467A123	468A120	
C. SOLAR FLARE-ASSOCIATED EVENTS									
C.1a	H-alpha Flares	461A 16	462A 16	463A 14	464A 14	465A 14	466A 16	467A 14	468A 14
C.1ba	H-alpha Flare Groups	1980							
C.1d	Flare Patrol Observations	461A 31	462A 23	463A 19	464A 19	465A 21	466A 30	467A 25	468A 24
C.1d	Flare Patrol Observations	1980							
C.1e	Flare Indices (by day)	1980							
C.3	Radio Bursts Fixed Freq.*	466B 4	467B 4	468B 4					
	Radio Bursts Fixed Freq. Selected	461A 37	462A 29	463A 25	464A 25	465A 27	466A 36	467A 31	468A 30
	Radio Bursts Spectral (Fort Davis)	468A122	---	---	---	---	---	---	---
C.4d	Radio Bursts Spectral (Culgoora)	462A 98	463A 92	464A 78	465A 89	466A103	467A102	468A 96	
C.4e	Radio Bursts Spectral (Weissenau)	462A 98	463A 92	464A 78	465A 89	466A103	467A102	468A 96	
C.4f	Radio Bursts Spectral (Sagamore Hill)	462A 98	463A 92	464A 78	465A 89	466A103	467A102	468A 96	
C.4h	Radio Bursts Spectral (Dwingeloo)								
C.4i	Radio Bursts Spectral (Bleien)	462A 98	463A 92	464A 78	465A 89		467A102	468A 96	
C.4k	Radio Bursts Spectral (Learmonth)	462A 98	463A 92	464A 78	465A 89	466A103	467A102	468A 96	
C.4l	Radio Bursts Spectral (Palehua)	462A 98	463A 92	464A 78	465A 89	466A103	467A102	468A 96	
C.5e	Solar X-ray SMS/GOES (graphs)	466B 76	467B 16	468B 24					
C.6	Sudden Ionospheric Disturbances	462A 92	463A 89	464A 75	465A 86	466A 99	467A 97	468A 91	
D. GEOMAGNETIC & MAGNETOSPHERIC PHENOMENA									
D.1a	Geomagnetic Indices	462A121	463A102	464A 87	465A101	466A114	467A118	468A111	
D.1ba	27-day Chart of Kp Indices	462A123	463A104	464A 89	465A103	466A116	467A120	468A113	
D.1c	27-day Chart of Cg	462A124							
D.1d	Principal Magnetic Storms	462A125	463A105	464A 90	465A104	466A117	467A122	468A116	
D.1f	Sudden Commencement/Solar Flare Effects	462A127	464A 98	465A112	465A105	466A118	468A129	468A117	
D.1g	Equatorial Indices Dst	463A111	464A 97	465A111	466A125	467A131	467A121	468A115	
D.1h	Geomagnetic Substorm Log (Boulder)	461A 49	462A 31	463A 31	464A 29	465A 35	466A 45	467A 41	468A 35
F. COSMIC RAYS									
F.1a	Cosmic Ray Neutron Counts (Deep River)	462A116	463A101	464A 83	466A128	466A113	468A130	468A110	
F.1b	Cosmic Ray Neutron Counts (Climax)	462A116	466A128	466A128	466A128	466A113	467A117	468A110	
F.1e	Cosmic Ray Neutron Counts (Alert)	462A116	463A101	464A 83	466A128	466A113	468A130	468A110	
F.1h	Cosmic Ray Neutron Counts (Thule)	462A116	463A101	464A 83	465A 97	466A113	467A117	468A110	
F.1i	Cosmic Ray Neutron Counts (Kiel)	462A116	463A101	464A 83	465A 97	466A113	467A117	468A110	
F.1j	Cosmic Ray Neutron Counts (Tokyo)	465A113	463A101	464A 83	465A 97	466A113	467A117	468A110	
F.1l	Cosmic Ray Neutron Counts (Huancayo)		466A128	466A128	466A128	467A128		468A110	
H. MISCELLANEOUS									
H.60	IUWDS Alert Periods	461A 4	462A 5	463A 4	464A 4	465A 4	466A 4	467A 4	468A 4

The entry "462A 44" under Dec 1982, for example, means that the sunspot drawings for Dec 1982 appear in SOLAR-GEOPHYSICAL DATA No. 462, Part I, and that they begin on page 44. "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

*Solar radio noise bursts observed at Athens, Learmonth, Manila, Palehua and Sagamore Hill during Aug 1979 through Oct 1980 appear in SOLAR-GEOPHYSICAL DATA, No. 461, Part II, pages 103-235.

C O N T E N T S

Prompt Reports DATA FOR JULY 1983 Number 468 Part I

	Page
IUWDS ALERT PERIODS (Advance and Worldwide)	4- 7
SOLAR ACTIVITY INDICES	
Daily Sunspot Numbers and 2800 MHz Solar Flux (12 Months).	8
Daily Solar Indices (Sunspot Numbers and Solar Flux)	9
Observed and Predicted Solar Activity Indices.	10
Smoothed Observed and Predicted Sunspot Numbers.	11
Graph of Observed and Predicted Sunspot Numbers.	12
Graph and Table of Sunspot Numbers (1944 - 1983)	13
SOLAR FLARES	
H-alpha Solar Flares	14-23
Intervals of No Flare Patrol Observation	24
SOLAR RADIO EMISSION	
Solar Interferometric Chart - 169 MHz - Nancay	25
East-West Solar Scans at 3 cm - Toyokawa.	26
East-West Solar Scans at 10 cm - Ottawa.	27
East-West Solar Scans at 21 cm - Fleurs.	28
East-West Solar Scans at 43 cm - Fleurs.	29
Selected Fixed Frequency Events.	30-33
Selected Graph of Solar Noise Burst.	34
INTERPLANETARY SCINTILLATION MEASUREMENTS OF SOLAR WIND	
(Observations to resume late in 1983)	
BOULDER GEOMAGNETIC SUBSTORM LOG.	35
INFERRED INTERPLANETARY MAGNETIC FIELD POLARITY	36
MEAN SOLAR MAGNETIC FIELD	
Stanford Mean Solar Magnetic Field (Chart)	37
Stanford Mean Solar Magnetic Field (Table)	38
PIONEER XII SPACECRAFT OBSERVATIONS OF SOLAR WIND	
(Measurements unavailable because of Data Center buget reductions)	

Jul 83

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
JULY 1983

SUMMARY OF THE GEOALERT MESSAGES

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
182	01	30	113	123	006	N16W97	0	0	0		01	N16W97	Q	SOLQUIET
						N11W68	5	0	0			N11W68	Q	MAGQUIET
						N26W09	0	0	0			N26W09	Q	
						S12W01	0	0	0			S12W01	Q	
						S08E13	2	0	0			S08E13	E	
						S18E31	0	0	0			S18E31	Q	
183	02	01	112	117	007	N11W81	3	0	0	PRESTO TENFLARE 140 FLUX UNITS	02	N11W81	Q	SOLQUIET
						S12W16	0	0	0	01/0809Z DURATION 1 MINUTE		S12W16	Q	MAGQUIET
						S04W08	0	0	0			S04W08	Q	
						S08E01	4	1	0			S08E01	E	
						S18E18	0	0	0			S18E18	Q	
						S21E75	2	0	0			S21E75	Q	
						S08E76	0	0	0			S08E76	Q	
184	03	02	089	121	007	S09W72	0	0	0		03	S09W72	Q	SOLQUIET
						S08W13	2	0	0			S08W13	E	MAGQUIET
						S19E03	0	0	0			S19E03	Q	
						S20E64	19	0	0			S20E64	E	
						S08E69	2	0	0			S08E69	Q	
185	04	03	090	127	008	S09W26	3	0	0		04	S09W26	E	SOLQUIET
						S18W10	0	0	0			S18W10	Q	MAGQUIET
						S20E50	6	0	0			S20E50	E	
						S10E60	3	0	0			S10E60	Q	
						S12E70	2	0	0			S12E70	Q	
186	05	04	107	133	007	S12W53	0	0	0		05	S12W53	Q	SOLQUIET
						S08W39	2	0	0			S08W39	Q	MAGQUIET
						S19W23	0	0	0			S19W23	Q	
						S20E38	7	0	0			S20E38	E	
						S11E48	2	0	0			S11E48	Q	
						S11E55	5	0	0			S11E55	Q	
187	06	05	101	128	009	S09W59	3	0	0		06	S09W59	Q	SOLQUIET
						S19W39	0	0	0			S19W39	Q	MAGQUIET
						S20E22	6	0	0			S20E22	E	
						S10E27	0	0	0			S10E27	Q	
						S12E40	2	0	0			S12E40	Q	
188	07	06	132	128	013	S08W65	0	0	0		07	S08W65	Q	SOLQUIET
						S19W51	0	0	0			S19W51	Q	MAGQUIET
						S21E09	4	0	0			S21E09	E	
						S11E15	0	0	0			S11E15	Q	
						S12E25	0	0	0			S12E25	Q	
						S15E72	2	0	0			S15E72	E	
189	08	07	113	128	012	S19W66	0	0	0		08	S19W66	Q	SOLQUIET
						S14W07	0	0	0			S14W07	Q	MAGQUIET
						S19W04	0	0	0			S19W04	E	
						S11E03	0	0	0			S11E03	Q	
						S11E14	1	0	0			S11E14	Q	
						S16E59	0	0	0			S16E59	Q	
190	09	08	109	124	012	S18W78	0	0	0		09	S18W78	Q	SOLQUIET
						S20W16	1	0	0			S20W16	E	MAGQUIET
						S10W11	0	0	0			S10W11	Q	
						S11W01	1	0	0			S11W01	Q	
						S16E47	3	0	0			S16E47	E	
191	10	09	105	119	014	S19W31	1	0	0		10	S19W31	E	SOLQUIET
						S10W26	0	0	0			S10W26	Q	MAGQUIET
						S11W15	0	0	0			S11W15	Q	
						N06E12	0	0	0			N06E12	Q	
						S16E32	0	0	0			S16E32	E	
192	11	10	089	119	008	S20W43	3	1	0		11	S20W43	E	SOLQUIET

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
JULY 1983

SUMMARY OF THE GEOALERT MESSAGES

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						S08W39	1	0	0			S08W39	Q	MAGQUIET
						S11W28	3	0	0			S11W28	E	
						S16E21	6	0	0			S16E21	E	
						S13E76	0	0	0			S13E76	Q	
193	12	11	132	122	005	S20W56	6	0	0		12	S20W56	E	SOLQUIET
						S11W51	0	0	0			S11W51	Q	MAGQUIET
						S11W41	4	0	0			S11W41	E	
						N08W02	0	0	0			N08W02	Q	
						S16E09	2	0	0			S16E09	Q	
						N14E13	0	0	0			N14E13	Q	
						S11E35	0	0	0			S11E35	Q	
						S13E67	0	0	0			S13E67	Q	
194	13	12	134	121	010	S21W69	3	0	0		13	S21W69	E	SOLQUIET
						S11W53	3	0	0			S11W53	Q	MAGQUIET
						N07W16	0	0	0			N07W16	Q	
						S17W06	0	0	0			S17W06	Q	
						N15E03	0	0	0			N15E03	Q	
						S11E22	0	0	0			S11E22	Q	
						S14E31	0	0	0			S14E31	Q	
						S14E55	0	0	0			S14E55	Q	
195	14	13	095	120	020	S21W81	4	0	0		14	S21W81	E	SOLQUIET
						S11W66	1	0	0			S11W66	Q	MAGQUIET
						S16W19	0	0	0			S16W19	Q	
						N15W10	0	0	0			N15W10	Q	
						S14E43	2	0	0			S14E43	Q	
						N14E72	0	0	0			N14E72	Q	
196	15	14	129	120	012	S19W91	1	0	0		15	S19W91	Q	SOLQUIET
						S11W80	4	0	0			S11W80	Q	MAGQUIET
						S16W32	3	0	0			S16W32	Q	
						N15W24	0	0	0			N15W24	Q	
						N17E22	1	0	0			N17E22	Q	
						S14E27	2	0	0			S14E27	Q	
						N13E59	0	0	0			N13E59	Q	
						N15E75	1	0	0			N15E75	Q	
197	16	15	141	121	007	S10W94	0	0	0		16	S10W94	Q	SOLQUIET
						S16W45	1	0	0			S16W45	Q	MAGQUIET
						N15W40	0	0	0			N15W40	Q	
						N18E09	1	0	0			N18E09	Q	
						N03E10	0	0	0			N03E10	Q	
						S15E15	1	0	0			S15E15	E	
						S10E29	1	0	0			S10E29	Q	
						N12E46	0	0	0			N12E46	Q	
						N14E63	1	0	0			N14E63	Q	
198	17	16	122	117	020	S17W58	1	0	0		17	S17W58	Q	SOLQUIET
						N13W55	0	0	0			N13W55	Q	MAGQUIET
						N18W04	1	0	0			N18W04	Q	
						N04W03	0	0	0			N04W03	Q	
						S14E01	2	0	0			S14E01	Q	
						S09E16	1	0	0			S09E16	Q	
						N12E33	1	0	0			N12E33	Q	
						N15E51	2	0	0			N15E51	Q	
199	18	17	159	116	021	S17W72	1	0	0		18	S17W72	Q	SOLQUIET
						N13W71	0	0	0			N13W71	Q	MAGQUIET
						S07W22	0	0	0			S07W22	Q	
						N18W18	0	0	0			N18W18	Q	
						N03W14	0	0	0			N03W14	Q	
						S13W14	3	0	0			S13W14	Q	
						S10E02	0	0	0			S10E02	Q	
						S04E06	0	0	0			S04E06	Q	
						N12E19	2	0	0			N12E19	Q	
						N16E37	0	0	0			N16E37	Q	

6
Jul 83

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
JULY 1983

SUMMARY OF THE GEOALERT MESSAGES

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
200	19	18	156	114	016	S17W86	1	0	0		19	S17W86	Q	SOLQUIET
						N13W85	0	0	0			N13W85	Q	MAGQUIET
						S07W35	0	0	0			S07W35	Q	
						N19W30	0	0	0			N19W30	Q	
						S13W26	2	0	0			S13W26	Q	
						S11W08	0	0	0			S11W08	Q	
						S03W06	1	0	0			S03W06	Q	
						N13E06	4	0	0			N13E06	Q	
						N16E24	3	0	0			N16E24	Q	
						S09E50	0	0	0			S09E50	Q	
						N10E51	0	0	0			N10E51	Q	
201	20	19	140	116	012	S07W47	1	0	0		20	S07W47	Q	SOLQUIET
						N20W40	0	0	0			N20W40	Q	MAGQUIET
						S12W39	2	0	0			S12W39	Q	
						S09W24	6	0	0			S09W24	Q	
						S04W15	0	0	0			S04W15	Q	
						N12W08	0	0	0			N12W08	Q	
						N16E11	2	0	0			N16E11	Q	
						S10E35	0	0	0			S10E35	Q	
						N10E36	1	0	0			N10E36	Q	
202	21	20	155	121	010	N16W65	0	0	0		21	N16W65	Q	SOLQUIET
						N19W56	0	0	0			N19W56	Q	MAGQUIET
						S14W50	0	0	0			S14W50	Q	
						S09W38	3	0	0			S09W38	Q	
						S04W28	0	0	0			S04W28	Q	
						N13W21	0	0	0			N13W21	Q	
						N17W03	1	0	0			N17W03	Q	
						N08E12	0	0	0			N08E12	Q	
						S06E13	0	0	0			S06E13	Q	
						N08E23	0	0	0			N08E23	Q	
203	22	21	167	127	012	S10W51	4	0	0		22	S10W51	Q	SOLQUIET
						S04W42	0	0	0			S04W42	Q	MAGQUIET
						N13W36	2	0	0			N13W36	Q	
						N17W16	1	0	0			N17W16	Q	
						N08W01	4	0	0			N08W01	Q	
						S06W00	0	0	0			S06W00	Q	
						N20E04	0	0	0			N20E04	Q	
						N10E09	1	0	0			N10E09	Q	
						S09E12	0	0	0			S09E12	Q	
						S06E65	0	0	0			S06E65	Q	
204	23	22	176	135	009	S06W66	7	0	0		23	S06W66	E	SOLQUIET
						S09W66	1	0	0			S09W66	Q	MAGQUIET
						S04W57	0	0	0			S04W57	Q	
						N14W49	1	0	0			N14W49	Q	
						N08W15	2	0	0			N08W15	Q	
						S05W14	0	0	0			S05W14	Q	
						N21W10	0	0	0			N21W10	Q	
						N11W05	1	0	0			N11W05	Q	
						S07E50	0	0	0			S07E50	Q	
205	24	23	155	130	024	S05W78	2	0	0		24	S05W78	E	SOLQUIET
						S07W77	0	0	0			S07W77	Q	MAGQUIET
						S04W72	0	0	0			S04W72	Q	
						N14W61	0	0	0			N14W61	Q	
						S05W53	0	0	0			S05W53	Q	
						S05W31	1	0	0			S05W31	Q	
						S08W29	1	0	0			S08W29	Q	
						N11W17	0	0	0			N11W17	Q	
S07E38	0	0	0		S07E38	Q								
206	25	24	150	135	038	S03W90	0	0	0	PRESTO TENFLARE 130 FLUX	25	S03W90	Q	SOLQUIET
						N14W75	2	0	0	UNITS 24/2208Z DURATION 16		N14W75	Q	MAGQUIET
						S07W67	0	0	0	MINUTES.		S07W67	Q	
						S05W45	5	0	0			S05W45	E	
						N08W42	2	0	0			N08W42	Q	

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
SUMMARY OF THE GEOALERT MESSAGES JULY 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						S08W34	0	0	0			S08W34	Q	
						N10W30	2	0	0			N10W30	Q	
						S08E22	0	0	0			S08E22	Q	
						S22E72	0	0	0			S22E72	Q	
207	26	25	132	134	014	N14W89	1	0	0	PRESTO TENFLARE 100 FLUX UNITS	26	N14W89	Q	SOLQUIET
						S06W59	3	0	0	25/0356Z DURATION 9 MINUTES		S06W59	Q	MAGQUIET
						N08W58	5	0	0			N08W58	E	
						S09W47	0	0	0			S09W47	Q	
						N10W44	0	0	0			N10W44	Q	
						S13W24	0	0	0			S13W24	Q	
						S08E08	0	0	0			S08E08	Q	
						S21E58	0	0	0			S21E58	Q	
208	27	26	073	127	011	S06W74	0	0	0		27	S06W74	E	SOLQUIET
						N07W71	1	0	0			N07W71	Q	MAGALERT
						N10W57	1	0	0			N10W57	Q	MINOR 28/29
						S21E45	0	0	0			S21E45	Q	
209	28	27	077	119	012	S05W88	2	0	0		28	S05W88	E	SOLQUIET
						N08W84	1	0	0			N08W84	Q	MAGALERT
						N10W71	0	0	0			N10W71	Q	MINOR 28/29
						S08W13	0	0	0			S08W13	Q	
						S21E32	0	0	0			S21E32	Q	
						S07E82	10	1	0			S07E82	E	
210	29	28	107	123	012	N09W94	0	0	0		29	N09W94	Q	SOLQUIET
						N09W84	1	0	0			N09W84	Q	MAGALERT
						S13W21	0	0	0			S13W21	Q	MINOR 29
						S07W04	0	0	0			S07W04	Q	
						S21E19	0	0	0			S21E19	Q	
						S15E24	0	0	0			S15E24	Q	
						S10E70	8	0	0			S10E70	A	
						S21E74	0	0	0			S21E74	Q	
211	30	29	131	140	015	N17W59	0	0	0		30	N17W59	Q	SOLALERT
						S13W37	0	0	0			S13W37	Q	30/XX
						N13W22	0	0	0			N13W22	Q	MAGNIL
						S20E06	0	0	0			S20E06	Q	
						S11E13	0	0	0			S11E13	Q	
						S10E56	1	0	0			S10E56	A	
						S21E64	3	0	0			S21E64	Q	
						S06E66	0	0	0			S06E66	Q	
212	31	30	138	140	019	S13W50	0	0	0		31	S13W50	Q	SOLALERT
						N14W35	9	1	0			N14W35	E	31/XX
						S21W07	0	0	0			S21W07	Q	MAGQUIET
						S12W00	0	0	0			S12W00	Q	
						S10E43	8	0	0			S10E43	E	
						S22E49	0	0	0			S22E49	Q	
						S05E54	0	0	0			S05E54	Q	
213	01	31	179	153	011	S14W64	0	0	0		01	S14W64	Q	SOLALERT 01
						N10W49	3	0	0			N10W49	E	MAGQUIET
						S22W22	0	0	0			S22W22	Q	
						S17W13	0	0	0			S17W13	Q	
						S10E30	8	0	0			S10E30	E	
						S20E37	2	0	0			S20E37	Q	
						S06E42	2	0	0			S06E42	Q	
						S10E48	0	0	0			S10E48	Q	

NO=MESSAGE SERIAL NUMBER DI=DATE OF ISSUE DO=DATE OF OBSERVATION WOLF=WOLF NUMBER 10CM=10CM SOLAR FLUX
A=A INDEX LOC=LOCATION IN LATITUDE AND LONGITUDE TOT=TOTAL FLARES M=NUMBER OF M FLARES X=NUMBER OF X
FLARES DA=DATE OF FORECAST DE=DESCRIPTION Q=QUIET E=ERUPTIVE A=ACTIVE P=PROTON

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS)

01 JULY 1983 BOULDER 01/1440Z TENFLARE 140 FLUX UNITS 01/0809Z DURATION 1 MINUTE
25 JULY 1983 TOYOKAWA 24/2327Z TENFLARE 130 FLUX UNITS 24/2208Z DURATION 16 MINUTES
25 JULY 1983 TOYOKAWA 25/0542Z TENFLARE 100 FLUX UNITS 25/0356Z DURATION 9 MINUTES

INTERNATIONAL * (R₁) RELATIVE SUNSPOT NUMBERS

Day	1982 Final					1983 Final				1983 Prov		
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
01	55	115	132	80	88	60	103	109	56	114	61	62
02	68	124	164	88	125	65	85	93	70	104	72	59
03	68	146	143	75	132	55	88	86	62	94	73	61
04	81	176	120	100	137	63	94	93	53	85	68	87
05	97	160	109	100	137	82	82	113	36	95	77	80
06	128	141	55	76	174	103	71	88	49	88	85	79
07	144	117	54	98	175	109	72	77	61	92	104	74
08	150	115	55	86	184	126	63	68	55	93	92	82
09	161	94	54	102	152	100	39	74	59	110	100	69
10	155	81	88	109	166	83	26	55	64	121	86	59
11	157	86	87	112	171	90	21	49	69	101	73	68
12	138	78	92	83	194	77	18	32	61	114	66	86
13	113	81	98	98	172	89	11	12	64	132	67	85
14	100	104	88	116	160	92	10	24	64	125	88	88
15	100	129	71	116	166	77	24	44	53	130	92	92
16	86	133	65	100	140	89	17	63	63	99	84	93
17	93	127	54	108	118	102	22	74	63	93	79	96
18	105	107	33	117	102	86	32	88	75	99	78	98
19	97	117	56	122	79	93	33	82	103	88	103	96
20	77	104	70	118	63	81	32	82	90	105	117	101
21	79	102	95	131	87	74	39	87	87	110	117	109
22	90	95	100	141	88	73	33	70	83	104	136	114
23	71	97	128	120	96	59	40	66	97	96	143	95
24	79	109	145	96	100	58	50	60	104	111	122	105
25	101	118	142	75	122	75	67	48	118	106	122	85
26	98	138	135	73	116	77	70	70	106	115	110	58
27	115	133	131	71	126	75	88	72	131	90	92	49
28	132	132	103	74	120	89	98	48	136	68	83	40
29	134	144	101	82	98	99	44	122	88	88	68	77
30	144	160	96	76	79	101	54	137	75	59	59	89
31	120		73		69	110		37		60		110
Mean	108	119	95	98	127	84	51	66	80	100	91	82

*International sunspot numbers have replaced the Zurich values since January 1981.
The yearly mean sunspot number equaled 115.9 in 1982.

DAILY SOLAR FLUX AT 2800 MHz (10.7 CM) ADJUSTED TO 1 AU

ALGONQUIN RADIO OBSERVATORY, OTTAWA

Day	Aug 82	Sep	Oct	Nov	Dec	Jan 83	Feb	Mar	Apr	May	Jun	Jul
01	123.4	184.3*	205.2	159.6	167.8	131.4	162.6	145.4	100.7	142.0	131.3	124.1*
02	138.2*	168.7*	209.4*	154.5	166.5	131.4	156.5*	138.7	101.2	145.4	139.0*	125.4
03	153.5*	171.0*	197.0A	147.4	181.6	136.2	145.5	141.0	101.4*	139.4	139.3	131.5
04	167.3	188.1*	182.3*	143.4	194.5	138.2	156.8	143.7	100.8	132.9	149.2	137.2
05	180.9	179.4	163.9	136.4	195.9*	154.6	154.3*	146.6	98.7	130.8	167.9*	132.1
06	201.2	172.1	151.9	142.1	210.4	161.6*	152.3	139.3	99.5	125.8*	191.4	132.4
07	219.6	176.8	140.2	142.3	244.3	163.3	142.2	132.3	102.2	117.4	179.5	132.7
08	217.5*	178.5	136.9	144.8	241.7*	155.9*	133.3	128.1	104.1*	127.0	173.7	127.9
09	212.5	179.2	137.4	147.5A	258.6	150.0	121.9	122.0	106.1	132.2*	159.5*	123.1
10	209.5	165.6	134.8	152.9	273.5*	144.2	113.4	115.1	103.3	143.5*	150.5*	123.1
11	205.0*	158.3	137.3	154.1	259.3*	139.3	106.9	103.0	104.4	159.3*	139.2	125.7
12	195.2*	152.5*	136.4	164.9	251.1	135.7	99.8	99.5*	107.7	160.4*	134.5	124.7
13	182.9*	151.3	143.9	161.2	239.0	135.1	95.5	95.8	109.1	154.4	128.3	123.5
14	176.8	147.4	140.4	159.5	235.6	137.2	91.7	95.9	111.7	153.5*	126.4*	124.4
15	173.0	149.0*	134.1	157.0*	221.9	141.0	88.5	100.6*	103.6	145.7	128.7	124.6
16	161.4	147.3	129.8	163.3	213.2*	140.2	89.7	107.8	105.1	134.0*	128.8*	121.3
17	165.1	147.0*	130.1	158.0	200.5*	138.0	91.9	114.5	113.5	131.7*	130.7	120.0
18	166.4*	143.2	132.8	170.2*	186.5	134.8	97.2	117.7	120.7	137.6	130.5	116.4*
19	159.2	142.6*	136.7	182.3	176.8*	127.4	94.6	118.3	125.0	146.8	133.8	119.5
20	144.7	146.9	146.2*	189.2	159.2	120.5	97.3	120.7	127.4	151.8*	136.9	125.1
21	138.6	145.4	161.4	200.9	149.4	116.1	101.6	118.8*	133.3	149.8	144.0	128.1*
22	138.8	146.2	168.2	231.1*	150.1*	113.5	106.2	117.2	139.7	152.0	148.9	138.9
23	141.2	152.6*	177.3*	196.1	157.0*	115.4	112.0	116.2	140.4	143.7	149.8	132.9*
24	142.9	165.4*	190.9	172.9	166.8	114.1	114.3	117.1	142.7	140.5	141.7*	136.3*
25	158.5	170.3	196.8*	164.8	170.6	122.7	120.3	114.2*	145.6	138.8	141.4	136.7*
26	166.4	187.3	193.5	168.8*	168.7	132.6	126.2	114.7*	146.8	132.3	144.1A	128.9*
27	180.4	191.4	187.7*	158.6	166.2	133.6	138.3	109.6	149.6	130.5	137.1	123.1
28	181.4	196.9	181.4	160.3*	157.0	140.6	137.6	104.9	156.4*	133.1	129.4*	127.1
29	183.4	204.6	170.9*	161.4	147.3	148.9	148.9	98.9	148.4	139.0	128.9	138.5*
30	174.5	202.4	166.7	164.8	142.5	154.8		100.7	147.2	135.4*	126.8	144.3
31	175.0*		165.1		134.4	161.9		98.7		138.0*		153.1*
Mean	172.1	167.1	160.9	163.7	193.2	137.7	119.6	117.3	119.9	140.2	143.0	129.1

A = interpolated value.

*Adjusted for burst in progress at time of measurement.

The yearly mean 2800 MHz flux adjusted to 1 astronomical unit equaled 175.1 in 1982.

DAILY SOLAR INDICES

9
Jul 83

JULY 1983

Day	Julian Day	Bartels Cycle Day	Sunspot Numbers		Obs Flux Ottawa (2800)	----- Solar Flux Adjusted to 1 Astronomical Unit -----								
			R _I	R _A		SGMR (15400)	SGMR (8800)	SGMR (4995)	Ottawa (2800)	SGMR (2695)	SGMR (1415)	SGMR (606)	SGMR (410)	SGMR (245)
01	182	27	62	61	120.0*	562	264	146	124.1*	109	106	81	34	15
02	183	1	59	60	121.3	556	265	151	125.4	117	110	81	34	16
03	184	2	61	71	127.2	567	271	154	131.5	120	115	80	32	16
04	185	3	87	86	132.7	553	274	160	137.2	133	115	78	32	15
05	186	4	80	81	127.8	557	268	152	132.1	125	114	81	33	19
06	187	5	79	84	128.0	562	263	151	132.4	119	115	81	31	14
07	188	6	74	77	128.3	568	271	154	132.7	108	113	77	33	15
08	189	7	82	77	123.7	---	---	---	127.9	---	---	---	---	---
09	190	8	69	75	119.1	561	259	146	123.1	98	106	71	33	16
10	191	9	59	59	119.1	559	260	147	123.1	101	104	74	33	17
11	192	10	68	78	121.6	576	272	158	125.7	104	106	78	35	17
12	193	11	86	91	120.7	564	273	153	124.7	102	105	86	44	39
13	194	12	85	88	119.6	560	263	150	123.5	89	104	76	33	16
14	195	13	88	88	120.4	567	263	150	124.4	---	104	79	34	18
15	196	14	92	88	120.6	548	255	140	124.6	97	108	81	34	21
16	197	15	93	91	117.4	550	258	142	121.3	118	109	83	37	19
17	198	16	96	91	116.2	568	256	140	120.0	113	110	85	36	44
18	199	17	98	109	112.7*	559	264	141	116.4*	114	110	82	35	28
19	201	18	96	84	115.7	563	264	143	119.5	125	111	83	31	15
20	202	19	101	110	121.1	521	264	148	125.1	116	114	83	32	15
21	203	20	109	119	124.1*	561	268	151	128.1*	122	116	77	31	15
22	204	21	114	112	134.6	551	277	162	138.9	129	115	89	40	17
23	205	22	95	93	128.8*	566	266	158	132.9*	127	115	83	36	17
24	206	23	105	103	132.1*	550	286	167	136.3*	158	116	85	46	84
25	207	24	85	75	132.5*	572	284	164	136.7*	133	116	81	36	22
26	208	25	58	56	124.9*	562	264	156	128.9*	119	108	85	36	27
27	209	26	49	47	119.4	573	249	153	123.1	113	104	79	34	18
28	210	27	40	36	123.3	574	277	162	127.1	118	102	80	34	18
29	211	1	77	88	134.3*	567	293	183	138.5*	131	110	80	34	16
30	212	2	89	87	140.0	553	277	170	144.3	136	113	76	32	17
31	213	3	110	128	148.6*	576	286	181	153.1*	151	126	79	38	49
Mean			82	84	125.0	561	268	154	129.1	119	111	80	34	23

*Adjusted for burst in progress at time of measurement.

The observed and the adjusted Ottawa fluxes tabulated above are the "Series C" daily values reported by the Algonquin Radio Observatory, Ottawa, Ontario, Canada. The letter "A" following an entry designates an interpolated flux. Numbers in parentheses in the column headings denote frequencies in MHz.

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

The International and American sunspot numbers shown above are preliminary values.

OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES

JULY 1983

Date	RELATIVE SUNSPOT NUMBERS						2800 MHz RADIO FLUX Adjusted to 1 AU (S _a)	
	Zurich or Internat (R _I)		American (R _A)		Derived (R _S)		Monthly	
	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed
Jun 79	149.5	153	136.4	144	138.9	144	186.0	191
Jul	159.4	155	140.5	145	123.1	145	171.4	192
Aug	142.2	155	125.1	144	129.2	145	177.0	192
Sep	188.4	156	184.0	143	156.5	144	202.3	191
Oct	186.2	158	178.2	144	171.7	145	216.4	192
Nov	183.3	162	176.5	149	182.9	149	226.8	196
Dec	176.3	164	157.6	152	151.0	152	197.2	199
Jan 80	159.6	164	145.3	153	153.6	154	199.6	200
Feb	155.0	163	133.9	154	148.7	155	195.1	200
Mar	126.2	161	107.9	153	117.8	153	166.5	200
Apr	164.1	159	138.5	151	164.0	152	209.3	198
May	179.7	156	172.3	149	185.4	151	229.1	197
Jun	157.3	155	153.6	149	153.2	151	199.3	198
Jul	136.3	153	136.0	144	144.1	151	190.8	197
Aug	135.4	150	133.0	144	121.9	150	170.3	196
Sep	155.0	150	150.0	146	138.8	152	185.9	198
Oct	164.7	150	160.8	149	157.1	154	202.9	200
Nov	147.9	148	149.9	149	168.5	153	213.4	199
Dec	174.4	143	167.5	145	174.3	150	218.8	196
Jan 81	114.0	140	115.4	144	120.5	149	169.0	195
Feb	141.3	142	143.7	146	153.5	152	199.5	198
Mar	135.5	143	149.2	149	157.5	156	203.2	202
Apr	156.4	143	169.2	149	180.7	158	224.7	204
May	127.5	143	141.3	149	152.8	159	198.9	204
Jun	90.9	142	99.0	147	112.9	158	161.9	203
Jul	143.8	140	154.3	146	152.1	157	198.2	203
Aug	158.7	141	170.4	147	182.1	158	226.0	203
Sep	167.3	143	174.5	148	177.7	158	221.9	204
Oct	162.4	142	157.0	146	178.6	156	222.8	202
Nov	137.5	139	138.8	142	157.6	151	203.3	197
Dec	150.1	138	145.0	140	155.5	149	201.4	195
Jan 82	111.1	137	110.4	139	124.2	148	173.4	195
Feb	163.6	133	161.0	134	163.6	144	208.9	191
Mar	153.8	129	155.5	130	163.0	139	208.3	186
Apr	122.0	124	121.9	124	113.9	134	162.9	182
May	82.2	120	82.6	120	97.7	129	147.9	177
Jun	110.4	117	113.5	118	129.6	127	177.4	175
Jul	106.1	115	113.3	117	116.0	125	164.8	174
Aug	107.6	109	110.5	111	123.9	120	172.1	168
Sep	118.8	101	117.8	103	118.5	112	167.1	161
Oct	94.7	96*	90.1	97	111.8	106	160.9	155
Nov	98.1	95*	93.2	95	114.8	103	163.7	153
Dec	127.0	94*	145.0	95	146.7	101	193.2	151
Jan 83	84.3	93*	82.8	90	86.7	98	137.7	148
Feb	51.0	90(3)*	3.4	87	67.2	95	119.6	---
Mar	66.5	88(6)*	60.5	85	64.7	93	117.3	---
Apr	79.7†	86(10)*	74.5	83	67.5	90	119.9	---
May	100.2†	82(13)*	97.7	79	86.1	87	137.1	---
Jun	90.6†	79(16)*	93.1	76	92.4	83	143.0	---
Jul	82.1†	77(18)*	---	74	77.4	81	129.1	---
Aug	---	76(20)*	---	73	---	80	---	---
Sep	---	75(22)*	---	72	---	80	---	---
Oct	---	76(23)*	---	73	---	81	---	---
Nov	---	77(23)*	---	73	---	82	---	---
Dec	---	76(24)*	---	72	---	81	---	---
Jan 84	---	74(25)*	---	71	---	79	---	---

*An asterisk marks either a value of the observed 12-month running mean or of a predicted 12-month average that is based in part on preliminary observations.

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

†International numbers replaced the Zurich values in January 1981.

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS FOR CYCLE 21

11
Jul 83

JULY 1983

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1976	15	13	12	13	13	12	13	14	14	13	14	15
1977	17	18	20	22	24	26	29	33	39	46	52	57
1978	61	65	70	77	83	89	97	104	108	111	113	118
1979	124	131	137	141	147	153	155	155	156	158	162	165*
1980	164	163	161	159	156	155	153	150	150	150	148	143
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	137	133	129	124	119	117	115	109	101	96	95	95
1983	93	90 (3)	88 (6)	86 (10)	82 (13)	79 (16)	77 (18)	76 (20)	75 (22)	76 (23)	77 (23)	76 (24)
1984	74 (25)	71 (25)	67 (25)	63 (26)	61 (27)	62 (28)	61 (29)	59 (29)	56 (29)	53 (28)	51 (27)	48 (27)
1985	47 (27)	47 (25)	46 (25)	46 (24)	44 (24)	42 (24)	40 (22)	39 (21)	38 (21)	37 (22)	37 (23)	36 (23)
1986	35 (24)	34 (24)	32 (24)	30 (23)	27 (23)	24 (22)	22 (22)	20 (21)	19 (19)	19 (18)	18 (17)	17 (15)

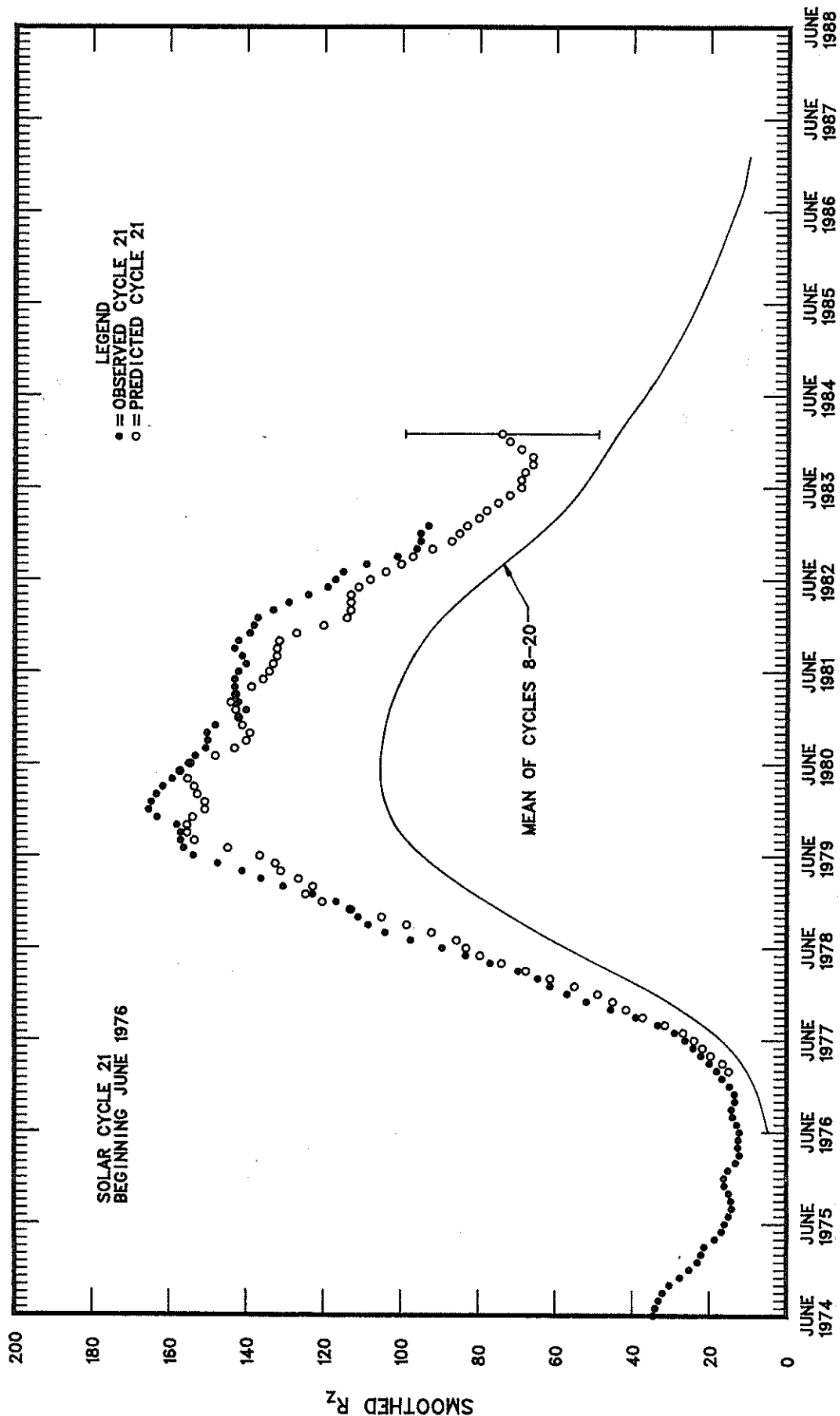
For the current solar cycle, this table gives observed smoothed sunspot numbers up to the one calculated from the most recently measured monthly mean. These smoothed observed values are based on final monthly mean Zurich numbers through 1980, on final international numbers through March 1983, and on provisional international numbers thereafter. Some table entries after the June 1976 value will change slightly, when we incorporate final data for 1983.

The entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the February 1983 edition of the "Solar-Geophysical Data" supplement.) By adding to and subtracting from each prediction the number in parentheses, one generates the 90% confidence interval. Consider, for example, the January 1984 prediction tabulated above. There exists a 90% chance that in January 1984 the actual smoothed sunspot number will fall somewhere between 49 and 99.

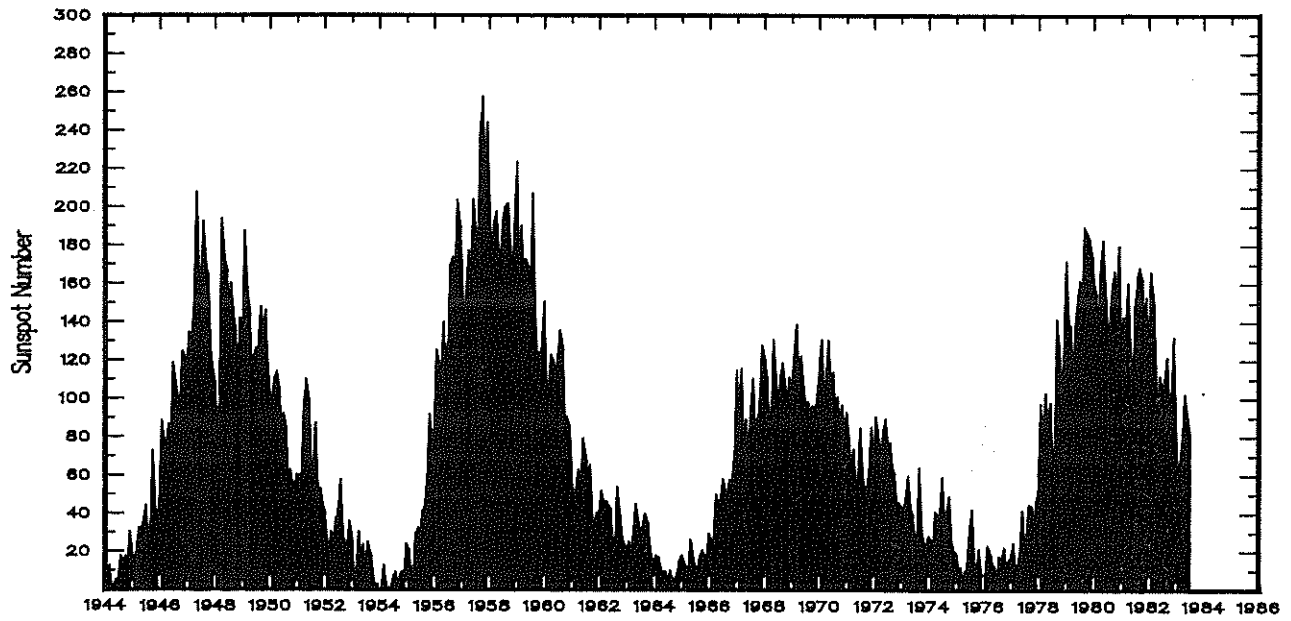
THE MCNISH-LINCOLN PREDICTION METHOD GENERATES USEFUL ESTIMATES OF SMOOTHED SUNSPOT NUMBERS FOR NO MORE THAN 12 MONTHS AHEAD. Beyond a year the predictions regress rapidly toward the mean of all 13 cycles of data used in the computation. Furthermore, the method is very sensitive to the date defined as the beginning of the current sunspot cycle, that is, to the date of the most recent sunspot minimum. In "Solar-Geophysical Data," issues 390-401, we based the current cycle predictions on March 1976 as the end of cycle 20 and the onset of the new cycle 21. Later studies, including one published by M. Waldmeier, showed that June 1976 was more appropriately the minimum epoch. We therefore generated this table using the June 1976 date.

*MAXIMUM OF SUNSPOT CYCLE 21. The maximum smoothed sunspot number occurred in December 1979.

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SMOOTHED SUNSPOT NUMBERS



MONTHLY MEAN SUNSPOT NUMBERS January 1944 - July 1983



MONTHLY MEAN SUNSPOT NUMBERS

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1944	3.7	0.5	11.0	0.3	2.5	5.0	5.0	16.7	14.3	16.9	10.8	28.4
1945	18.5	12.7	21.5	32.0	30.6	36.2	42.6	25.9	34.9	68.8	46.0	27.4
1946	47.6	86.2	76.6	75.7	84.9	73.5	116.2	107.2	94.4	102.3	123.8	121.7
1947	115.7	133.4	129.8	149.8	201.3	163.9	157.9	188.8	169.4	163.6	128.0	116.5
1948	108.5	86.1	94.8	189.7	174.0	167.8	142.2	157.9	143.3	136.3	95.8	138.0
1949	119.1	182.3	157.5	147.0	106.2	121.7	125.8	123.8	145.3	131.6	143.5	117.6
1950	101.6	94.8	109.7	113.4	106.2	83.6	91.0	85.2	51.3	61.4	54.8	54.1
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.9	63.6	37.7	32.6	40.0
1962	38.7	50.3	45.6	46.4	43.7	42.0	21.8	21.8	51.3	39.5	26.9	23.2
1963	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9
1964	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.1
1965	17.5	14.2	11.7	6.8	24.1	15.9	11.9	8.9	16.8	20.1	15.8	17.0
1966	28.2	24.4	25.3	48.7	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4
1967	110.9	93.6	111.8	69.5	86.5	67.3	91.5	107.2	76.8	88.2	94.3	126.4
1968	121.8	111.9	92.2	81.2	127.2	110.3	96.1	109.3	117.2	107.7	86.0	109.8
1969	104.4	120.5	135.8	106.8	120.0	106.0	96.8	98.0	91.3	95.7	93.5	97.9
1970	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5
1971	91.3	79.0	60.7	71.8	57.5	49.8	81.0	61.4	50.2	51.7	63.2	82.2
1972	61.5	88.4	80.1	63.2	80.5	88.0	76.5	76.8	64.0	61.3	41.6	45.3
1973	43.4	42.9	46.0	57.7	42.4	39.5	23.1	25.6	59.3	30.7	23.9	23.3
1974	27.6	26.0	21.3	40.3	39.5	36.0	55.8	33.6	40.2	47.1	25.0	20.5
1975	18.9	11.5	11.5	5.1	9.0	11.4	28.2	39.7	13.9	9.1	19.4	7.8
1976	8.1	4.3	21.9	18.8	12.4	12.2	1.9	16.4	13.5	20.6	5.2	15.3
1977	16.4	23.1	8.7	12.9	18.6	38.5	21.4	30.1	44.0	43.8	29.1	43.2
1978	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7
1979	166.6	137.5	138.0	101.5	134.4	149.5	159.4	142.2	188.4	186.2	183.3	176.3
1980	159.6	155.0	126.2	164.1	179.9	157.3	136.3	135.4	155.0	164.7	147.9	174.4
1981	114.0	141.3	135.5	156.4	127.5	90.9	143.8	158.7	167.3	162.4	137.5	150.1
1982	111.2	163.6	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.7	98.1	127.0
1983	84.3	51.0	66.5	79.7*	100.2*	90.6*	82.1*					

*Provisional

H - ALPHA SOLAR FLARES

JULY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement			Remarks
												Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
GOES	01	0737	0740	0742					5	B 7.1					
YUNN	01	0808E	0810	0813	S19	E84		07	7.8	5D SN		P		31	A
GOES	01	0910	0913	0915						C 1.9					
CATA	01	1045	1045	1055	S13	W06		07	1.0	10 S	1	C	1045	56	.6
GOES	01	1124	1129	1131						7 C 1.1					
RAMY	01	1153	1209	1239	N11	W75	4222	06	25.8	46 SF	3	C		45	
RAMY	01	1218	1221	1235	S10	E11	4227	07	2.3	17 SF	3	C		28	
RAMY	01	1332	1335	1339D	S11	E11	4227	07	2.4	7D 1B M 1.7	3	C		340	
HOLL	01	1332	1336	1440	S10	E10	4227	07	2.3	68 1B	3	C		482	ZE
GOES	01	1653	1658	1703						10 B 8.8					
HOLL	01	1811	1830	1833	N12	W77	4222	06	26.0	22 SF	3	C		17	
HOLL	01	1902	1903	1907	N12	W78	4222	06	25.9	5 SF	3	C		12	
PALE	01	2141	2147	2153	S18	E78		07	7.8	12 SF	3	C		19	
PALE	01	2216	2216	2221	S18	E78	4235	07	7.9	5 SF	3	C		12	
HOLL	01	2229	2230	2237	S06	E04	4227	07	2.2	8 SN	3	C		49	F
PALE	01	2230	2235U	2238	S07	E03	4227	07	2.2	8 SF	3	C		22	F
PALE	01	2342	2343	2349	S11	E05	4227	07	2.4	7 SF	3	C		27	
HOLL	02	0007	0009	0028	S20	E75	4235	07	7.7	21 SF	3	C		18	
LEAR	02	0009E	0009U	0017	S19	E84	4235	07	8.4	8D SF	3	C		10	
GOES	02	0031	0034	0037						6 B 9.1					
LEAR	02	0135	0136	0148	S19	E85	4235	07	8.6	13 SF	2	C		13	F
LEAR	02	0443	0443	0450	S21	E75	4235	07	8.0	7 SF C 1.0	3	C		16	
LEAR	02	0614	0617	0642	S11	E02	4227	07	2.4	28 SF	3	C		108	
LEAR	02	0742	0743	0759	S08	W02	4227	07	2.2	17 SF C 1.7	3	C		37	F
LEAR	02	0850	0854	0907	S20	E71	4235	07	7.8	17 SF	3	C			
GOES	02	0910	0930	0940						30 C 1.1					
CATA	02	0915	0920	0935	S11	W01		07	2.3	20 S	2	C	0920	84	.9
RAMY	02	1204	1412	1536	S21	E64	4235	07	7.4	212 1F C 1.0	3	C		75	
HOLL	02	1329	1335	1341	S10	E76	4234	07	8.3	12 SF C 1.7	2	C		16	
HOLL	02	1505	1510	1524	S20	E70	4235	07	8.0	19 SN	3	C		56	
RAMY	02	1540	1550	1607	S20	E68	4235	07	7.9	27 1F	3	C		62	
HOLL	02	1541	1550	1605	S21	E68	4235	07	7.9	24 SN	3	C		62	
HOLL	02	1627	1637	1659	S20	E68	4235	07	7.9	32 SF	3	C		45	
HOLL	02	1731E	1735	1805	S21	E69	4235	07	8.0	34D SN	3	C		69	F
HOLL	02	1813	1814	1831	S20	E69	4235	07	8.0	18 SN	3	C		22	
HOLL	02	1840	1906	1942D	S21	E69	4235	07	8.1	62D SF C 1.9	3	C		23	K
HOLL	02	1840	1923	1942D	S21	E69	4235	07	8.1	62D SN	3	C		68	K
PALE	02	1847	1905	1912	S20	E65	4235	07	7.8	25 SN	3	C		25	F
GOES	02	1917	1930	1936			4235			19 C 6.6					
PALE	02	1918	1931	1954	S20	E65	4235	07	7.8	36 SN	3	C		106	F
HOLL	02	2020E	2020U	2049D	S18	E66	4235	07	7.9	29D SF	3	C		38	
GOES	02	2103	2106	2109			4235			6 C 1.8					
PALE	02	2106E	2106U	2142D	S19	E64	4235	07	7.8	36D SN C 2.5	3	C		32	
PALE	02	2156	2156	2202	S20	E67	4235	07	8.0	6 SF	3	C		40	
HOLL	02	2203	2204	2219	S21	E66	4235	07	8.0	16 SF	3	C		25	
HOLL	02	2221	2232	2236	S21	E63	4235	07	7.8	15 SF	3	C		12	
PALE	02	2240	2245	2248	S20	E65	4235	07	7.9	8 SF	3	C		22	F
HOLL	02	2257	2302	2323	S21	E62	4235	07	7.7	26 SF	3	C		25	
HOLL	02	2329	2330	2336	S11	E72	4234	07	8.4	7 SF	3	C		29	
HOLL	02	2336	2338	2343	S22	E61	4235	07	7.7	7 SF C 1.9	3	C		30	
HOLL	02	2346	2348	2356	S22	E61	4235	07	7.7	10 SF	3	C		26	
PALE	02	2348	2349	2358	S20	E63	4235	07	7.8	10 SF	3	C		13	
PALE	03	0010	0010	0014	S20	E62	4235	07	7.8	4 SF C 1.8	3	C		31	
GOES	03	0020	0028	0032			4222			12 C 6.6					
LEAR	03	0053	0101	0106	S22	E62	4235	07	7.8	13 SF	3	C		35	
PURP	03	0102	0103	0104D	S23	E63		07	7.9	2D SB		C	0103	60	E
PURP	03	0130	0132	0205D	S23	E63		07	7.9	35D SB		C	0132	73	E
PALE	03	0131	0133	0146	S20	E62	4235	07	7.8	15 SF C 1.9	3	C		61	
PALE	03	0312E	0315U	0331	S10	W10	4227	07	2.4	19D SF	3	C		21	F
PURP	03	0317	0318	0340D	S12	W10		07	2.4	23D SF		C	0318	42	.5
PEKG	03	0342	0343	0350	S12	W86		06	26.7	8 SF C 1.1		C	0343	42	D
LEAR	03	0401	0403	0410	S22	E60	4235	07	7.8	9 SF	3	C		30	
LEAR	03	0439	0441	0458	S22	E60	4235	07	7.8	19 SF C 1.8	3	C		39	
GOES	03	0709	0730	0734						25 B 8.9					
CATA	03	0710	0710	0720	S19	E59		07	7.8	10 S	2	C	0710	28	.6
LEAR	03	0748	0751	0819	S08	W13	4227	07	2.3	31 SF	3	C		72	F
CATA	03	0750	0750	0810	S09	W13		07	2.4	20 S	2	C	0750	112	1.2
CATA	03	0750	0750	0810D	S08	W18		07	2.0	20D S	2	C	0750	56	.6
GOES	03	0833	0837	0842						9 C 1.0					

H - ALPHA SOLAR FLARES

15
Jul 83

JULY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks
																Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
GOES	03	0913	0917	0921						8		C 4.8						
[CATA	03	0915	0920	0930	S11	E79		07	9.3	15	1		2	C	0920	56		
GOES	03	1248	1251	1253						5		B 8.9						
[RAMY	03	1428	1428	1445	S21	E54	4235	07	7.7	17	SN		3	C		27		
[HOLL	03	1428	1428	1441	S21	E56	4235	07	7.9	13	SF		3	C		19		F
GOES	03	1443	1447	1502						19		C 1.8						
[PALE	03	1709	1711	1724	S11	E72		07	9.1	15	SF	C 1.0	3	C		22		
[HOLL	03	1709	1709	1724	S13	E73		07	9.2	15	SF		3	C		19		
HOLL	03	1804	1805	1818	S10	W25	4227	07	1.9	14	SF		3	C		31		F
HOLL	03	2107	2108	2116	S10	E59	4234	07	8.3	9	SF		3	C		35		F
HOLL	03	2113	2116	2136	S13	E73	4236	07	9.4	23	SN	C 1.2	3	C		67		
HOLL	03	2208	2213	2240	S11	E57	4234	07	8.2	32	SN	C 3.0	3	C		68		F
GOES	03	2322	2333	2336			4222			14		C 1.1						
GOES	04	0018	0027	0031						13		C 1.2						
GOES	04	0303	0307	0342						39		C 2.2						
[YUNN	04	0609	0613	0625	S19	E47		07	7.8	16	2N	C 1.4		P		338	5.5	
[LEAR	04	0609	0611	0635	S20	E49	4235	07	8.0	26	SN		3	C		67		F
[LEAR	04	0654	0656	0709	S19	E46	4235	07	7.8	15	SF		3	C		48		
[CATA	04	0655	0655	0655D	S19	E46		07	7.8	15D	S		2	P	0655	112	1.8	
[YUNN	04	0705E	0705U	0712	S18	E43		07	7.6	7D	SN	C 6.9		P	0705	108	1.6	
YUNN	04	0937	0940	0945	S19	E46		07	7.9	8	SN			P		31	.5	
GOES	04	1035	1045	1055						20		C 1.2						
[RAMY	04	1137E	1138	1146D	S20	E46	4235	07	8.0	9D	SN	C 2.0	3	C		61		K
[RAMY	04	1137E	1146	1146D	S20	E46	4235	07	8.0	9D	SB		3	C		119		F K
HOLL	04	1448	1451	1534	S20	E43	4235	07	7.9	46	1B	C 1.9	3	C		195		FE
HOLL	04	1500	1503	1519	S12	E62	4236	07	9.3	19	SN	C 2.9	3	C		66		
HOLL	04	1553	1600	1626	S20	E43	4235	07	8.0	33	SN		3	C		42		F
HOLL	04	1622	1624	1635	S12	E61	4236	07	9.3	13	SF		3	C		27		
HOLL	04	1735	1741	1744	S19	E41	4235	07	7.9	9	SF		3	C		47		
HOLL	04	1833	1838	1930	S12	E62	4236	07	9.4	57	SB	C 4.8	3	C		80		FE
RAMY	04	1845E	1845U	1851	S18	E40	4235	07	7.8	6D	SF		3	C		24		
RAMY	04	1856	1859	1915	S10	E46	4234	07	8.2	19	SN		3	C		54		
HOLL	04	1916	1918	1924	S10	W33	4227	07	2.3	8	SF		3	C		21		
HOLL	04	2222	2236	2308	S12	E58	4236	07	9.3	46	SB		3	C		121		E
HOLL	04	2224	2258	2321	S11	E81		07	11.0	57	SN	C 1.7	3	C		15		
HOLL	04	2242	2242	2246	S12	E44	4234	07	8.3	4	SF		3	C		20		
HOLL	04	2257	2300	2333	S09	W35	4227	07	2.3	36	SF		3	C		49		F
HOLL	04	2328	2340	2352	S12	E57	4236	07	9.3	24	SF	C 1.1	3	C		30		F
HOLL	04	2352	2353	0002	S20	E38	4235	07	7.9	10	SF		3	C		30		F
HOLL	05	0007	0009	0024	S22	E37	4235	07	7.9	17	SF	C 1.0	3	C		20		F
HOLL	05	0032	0032	0042	S22	E37	4235	07	7.9	10	SN		3	C		26		F
LEAR	05	0246	0247	0255	S08	W35	4227	07	2.5	9	SF		3	C		35		F
[LEAR	05	0344	0354	0430	S08	W35	4227	07	2.5	46	SF	C 1.6	3	C		88		K
[LEAR	05	0344	0413	0430	S08	W35	4227	07	2.5	46	SF		3	C		69		F K
[YUNN	05	0347	0351	0411	S07	W37		07	2.4	24	SN			P		46	.6	
[PEKG	05	0353E	0353	0402	S07	W36		07	2.5	9D	SF			P	0353	59	.8	E
[PALE	05	0353	0356	0402	S08	W36	4227	07	2.5	9	SF	C 4.0	3	C		51		F
[LEAR	05	0422	0422	0440	S13	E55	4236	07	9.3	18	SN		3	C		33		
[YUNN	05	0424	0432	0440	S13	E56		07	9.4	16	SN			P		31	.6	
LEAR	05	0444	0447	0451	S18	E37	4235	07	8.0	7	SF		3	C		18		
LEAR	05	0510	0511	0519	S07	W39	4227	07	2.3	9	SF		3	C		34		
LEAR	05	0603	0604	0609	S19	E34	4235	07	7.8	6	SF	C 2.9	3	C		48		
LEAR	05	0654	0654	0727	S22	E34	4235	07	7.9	33	SN		3	C		60		K
[LEAR	05	0654	0659	0727	S22	E34	4235	07	7.9	33	1B		3	C		411		UFK
[YUNN	05	0655	0707	0719	S20	E35		07	8.0	24	1N	C 1.8		P		189	2.6	
[MANI	05	0655	0700	0725	S21	E34		07	7.9	30	1B	9.5	1	V		370	5.1	F
HOLL	05	1912	1918	1935	S10	E40	4236	07	8.8	23	SF		3	C		22		
GOES	05	2040	2043	2047						7		C 1.1						
HOLL	05	2057	2057	2105	S20	E25	4235	07	7.8	8	SF		3	C		26		
GOES	05	2335	2344	2349						14		C 1.1						
GOES	06	0043	0045	0053						10		B 9.8						
[YUNN	06	0102	0103	0112	S20	E21		07	7.7	10	SN			P		31	.4	
[LEAR	06	0102E	0104	0117	S20	E23	4235	07	7.8	15D	SN		3	C		45		F
[PEKG	06	0103E	0103	0108	S21	E23		07	7.8	5D	SF			P	0103	34	.4	E
[HOLL	06	0105E	0105U	0109D	S20	E22	4235	07	7.7	4D	SN		3	C		86		F
LEAR	06	0248	0252	0312	S20	E22	4235	07	7.8	24	SF		3	C		60		F
[LEAR	06	0512	0515	0526	S19	E20	4235	07	7.7	14	SF		3	C		47		F
[MANI	06	0513E	0514	0522	S19	E21		07	7.8	9D	SF		1	V		40	.5	F

16
Jul 83

H - ALPHA SOLAR FLARES

JULY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp Op+	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
GOES	06	1740	1745	1750						10		B 7.2						
HOLL	06	1854	1901	1948	S17	E73	4237	07	12.3	54	1F		3	C		112		H
GOES	06	2212	2217	2223						11		C 1.0						
HOLL	06	2304	2306	2315	S18	E69	4237	07	12.2	11	SF		3	C		41		
LEAR	07	0103	0106	0120	S20	W22	4203	07	5.4	17	SF		2	C		89		
HOLL	07	0104E	0107U	0117	S18	W20	4203	07	5.5	13D	SF		2	C		82		F
HOLL	07	0104E	0114U	0121	S09	W17	4201	07	5.8	17D	SN		2	C		43		F
LEAR	07	0113	0116	0122	S11	W22	4201	07	5.4	9	SF		2	C		43		F
PALE	07	0128	0132	0142	S11	E28	4236	07	9.2	14	SF		3	C		25		
PALE	07	0233	0257	0327	S08	E57	4204	07	11.4	54	SF		3	C		95		
LEAR	07	0240	0258	0318	S09	E56	4204	07	11.3	38	SF		2	C		49		
LEAR	07	0328	0332	0333D	S16	E71	4237	07	12.5	5D	SF		3	C				F
LEAR	07	0419	0420	0428	S10	W22	4201	07	5.5	9	SF		2	C		65		F
LEAR	07	0549	0553	0629	S09	E54	4204	07	11.3	40	SF		3	C		28		
LEAR	07	0718	0720	0727	S10	W25	4201	07	5.4	9	SF		3	C		42		F
LEAR	07	0737	0739	0748	S11	W25	4201	07	5.4	11	SN		3	C		21		F
LEAR	07	0840	0843	0910D	S12	W26	4201	07	5.4	30D	SF		3	C		20		F
RAMY	07	1201	1201	1210	S10	E68	4205	07	12.6	9	SF		3	C		12		
HOLL	07	1339	1342	1358	S17	W29	4203	07	5.4	19	SF		3	C		21		
HOLL	07	1412	1412	1441	S08	W31	4201	07	5.3	29	SN		3	C		69		F K
HOLL	07	1412	1427	1441	S08	W31	4201	07	5.3	29	SN		3	C		28		K
RAMY	07	1420	1427	1439	S09	W36	4201	07	4.9	19	SN		3	C		43		
HOLL	07	1504	1508	1514	S10	W35	4201	07	5.0	10	SN		3	C		37		F
RAMY	07	1646	1647	1707	S10	W33	4201	07	5.2	21	SN		3	C		32		
HOLL	07	1646	1647	1653	S10	W28	4201	07	5.6	7	SN		3	C		22		
GOES	07	1713	1717	1722						9		B 8.8						
HOLL	07	1719	1720	1725	S07	W36	4201	07	5.0	6	SN		3	C		29		F
HOLL	07	1901	1903	1932	S10	W30	4201	07	5.5	31	SN		3	C		53		F
PALE	07	1905	1907	1940	S11	W32	4201	07	5.4	35	SF		3	C		88		F
HOLL	07	2039	2041	2131	S10	W31	4201	07	5.5	52	SB		3	C		102		K
HOLL	07	2039	2053	2131	S10	W31	4201	07	5.5	52	SB		3	C		118		F K
PALE	07	2047E	2057U	2117D	S11	W32	4201	07	5.5	30D	1N		3	C		318		F
HOLL	07	2155	2158	2206	S09	W33	4201	07	5.4	11	SN		3	C		56		F
LEAR	08	0015	0015	0023	S10	E42	4204	07	11.2	8	SF	B 7.7	2	C		21		F
HOLL	08	0016	0017	0044	S10	E43	4204	07	11.2	28	SN		3	C		26		
LEAR	08	0037	0110	0350	S10	W37	4201	07	5.2	193	SN		3	C		75		K
LEAR	08	0037	0124	0350	S10	W37	4201	07	5.2	193	SN		3	C		109		ZFK
PALE	08	0039E	0125U	0316D	S10	W38	4201	07	5.2	157D	SN		3	C		100		ZF
HOLL	08	0101	0103	0144D	S10	W36	4201	07	5.3	43D	SN		2	C		29		K
HOLL	08	0101	0117	0144D	S10	W36	4201	07	5.3	43D	SN		2	C		41		F K
LEAR	08	0312	0312	0322	S11	E10	4236	07	8.9	10	SF		3	C		34		F
PURP	08	0314E	0314	0326	S13	E10		07	8.9	12D	SF		C	0314		17		.2
LEAR	08	0402	0403	0421	S18	W07	4235	07	7.6	19	SF		3	C		45		F
LEAR	08	0603	0605	0632	S09	W34	4201	07	5.7	29	SB		2	C		115		F
GOES	08	0613	0630	0658						45		C 1.8						
CATA	08	0630	0630	0635D	S12	E09		07	8.9	5D	S		2	P	0630	84	.9	
CATA	08	0630	0630	0635D	S12	W12		07	7.4	5D	S		2	P	0630	112	1.2	
CATA	08	0630	0630	0635D	S15	W05		07	7.9	5D	S		2	P	0630	56	.6	
PEKG	08	0632	0642	0647	S11	E08		07	8.9	15	SF		C	0642	50	.5		E
PEKG	08	0632E	0642	0647	S11	E08		07	8.9	15D	SF		C	0642	50	.5		E
PEKG	08	0635	0642	0651	S12	W12		07	7.4	16	SF		C	0642	126	1.4		E
CATA	08	0645E	0645	0730D	S12	W12		07	7.4	45D	1		2	P	0645	225	2.5	
CATA	08	0645E	0645	0730D	S14	W05		07	7.9	45D	1		2	P	0645	253	2.7	
GOES	08	0705	0730	0740						35		C 1.3						
PURP	08	0725E	0727	0808	S14	W12		07	7.4	43D	SN		C	0727	53	.6		
LEAR	08	0745	0747	0825	S10	E39	4204	07	11.3	40	SN		2	C		103		F
RAMY	08	1102E	1136	1325D	S10	W43	4201	07	5.2	143D	SN		3	C		74		K
RAMY	08	1102E	1323U	1325D	S10	W43	4201	07	5.2	143D	1N		3	C		291		F K
RAMY	08	1221	1222	1229	S10	E37	4204	07	11.3	8	SF		3	C		27		F
HOLL	08	1248	1306	1404	S08	W38	4201	07	5.7	76	1B		2	C		264		F
RAMY	08	1632	1635	1644	S07	W46	4201	07	5.2	12	SN	B 9.1	3	C		59		
HOLL	08	2057	2107	2111	S08	W45	4201	07	5.5	14	SN	B 8.1	3	C		30		
HOLL	08	2118	2118	2211	S10	W50	4201	07	5.1	53	SN		3	C		91		K
HOLL	08	2118	2153	2211	S10	W50	4201	07	5.1	53	SN		3	C		27		F K
ISTA	09	0855		0920	S17	W20		07	7.9	25	SN							E
GOES	09	1106	1139	1215						69		C 1.9						
RAMY	09	1934	1956	2012D	S21	W24	4235	07	8.0	38D	SF		3	C		52		F
PALE	09	1937	1937	1942	S21	W23	4235	07	8.1	5	SF	C 2.4	3	C		63		

H - ALPHA SOLAR FLARES

17
Jul 83

JULY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
PEKG	10	0215	0220	0235	S14	W32		07	7.7	20	SN			C	0220	67	.9	E
LEAR	10	0216	0221	0239	S16	W32	4234	07	7.7	23	SF		3	C		110		F
GOES	10	0320	0324	0328						8		B 6.9						
LEAR	10	0441	0446	0457	S11	W16	4236	07	9.0	16	SF		3	C		49		F
LEAR	10	0448	0448	0453	S18	E33	4237	07	12.7	5	SF	C 2.4	3	C		23		
CATA	10	0800	0805	0835	S21	W32		07	7.9	35	S		2	C	0805	140	1.9	
PEKG	10	0836E	0836	0859	S20	W33		07	7.8	23D	SF			P	0836	118	1.6	E
GOES	10	0954	1000	1005						11		C 1.2						
RAMY	10	1218	1229	1236	S21	W33	4235	07	8.0	18	SF	C 1.9	3	C		27		
RAMY	10	1513	1516	1628	S11	W22	4236	07	9.0	75	SB		3	C		139		
HOLL	10	1513	1516	1602	S11	W22	4236	07	9.0	49	SB	M 1.1	3	C		121		E
RAMY	10	1514	1518	1521	S19	E26	4237	07	12.6	7	SF		3	C		53		
RAMY	10	1543	1545	1549D	S18	E27	4237	07	12.7	6D	SB		3	C		94		K
RAMY	10	1543	1549	1549D	S18	E27	4237	07	12.7	6D	SB		3	C		143		FEK
HOLL	10	1544	1548	1612	S19	E26	4237	07	12.6	28	SB	B 7.5	3	C		107		FE
PALE	10	1718	1720	1723D	S18	E26	4237	07	12.7	5D	SF		3	C		74		F
RAMY	10	1753	1807	1836	S13	W22	4236	07	9.1	43	SB	C 1.1	3	C		165		
RAMY	10	1839	1842	1940	S21	W37	4235	07	7.9	61	1B		3	C		191		K
RAMY	10	1839	1850	1940	S21	W37	4235	07	7.9	61	1B	B 8.4	3	C		341		FEK
RAMY	10	1933	1933	1942	S18	E25	4237	07	12.7	9	SN		3	C		32		
PALE	10	2035	2040U	2042D	S18	E25	4237	07	12.8	7D	SF		3	C		31		
GOES	10	2049	2105	2111						22		B 4.5						
GOES	10	2221	2226	2234						13		C 1.0						
GOES	11	0004	0007	0009						5		B 6.2						
PALE	11	0018	0020	0033	S19	E20	4237	07	12.5	15	SF		3	C		31		
PALE	11	0026	0031	0049	S22	W40	4235	07	7.9	23	SF		3	C		79		F
LEAR	11	0148	0149	0205	S18	E22	4237	07	12.8	17	SF	C 6.9	3	C		21		
LEAR	11	0236	0238	0308	S12	W28	4236	07	9.0	32	SN		3	C		86		F
PALE	11	0236	0237	0248D	S13	W27	4236	07	9.1	12D	SF		3	C		37		F
LEAR	11	0314	0318	0337	S20	W41	4235	07	8.0	23	SF		3	C		44		
YUNN	11	0727	0730	0735	S19	W44		07	8.0	8	1N			C		141	2.2	
LEAR	11	0730	0733	0738	S21	W45	4235	07	7.9	8	SN		3	C		79		F
BUCA	11	0730E		0750	S21	W46		07	7.8	20D	1F	C 2.0		C	0730	150	2.5	
LEAR	11	0737	0738	0755	S11	W30	4236	07	9.1	18	SF		3	C		40		
RAMY	11	1151	1225	1247	S21	W47	4235	07	7.9	56	SN		3	C		37		F
RAMY	11	1248	1301	1436	S22	W52	4235	07	7.5	108	1B		3	C		243		FE
RAMY	11	1318	1322	1410	S12	W34	4236	07	9.0	52	SF		3	C		45		K
RAMY	11	1318	1335	1410	S12	W34	4236	07	9.0	52	SN		3	C		85		K
HOLL	11	1330E	1335U	1407	S10	W34	4236	07	9.0	37D	SF		3	C		56		F
HOLL	11	1330E	1411	1447D	S20	W53	4235	07	7.5	77D	1N		3	C		169		F
HOLL	11	1334	1334	1335D	S22	W51	4235	07	7.6	1D	1F		3	C		182		
PALE	11	1717	1721	1757	S17	W54	4235	07	7.6	40	SN		3	C		138		F
RAMY	11	1721	1726	1729D	S18	W55	4235	07	7.5	8D	SN	C 5.6	3	C		53		F
HOLL	11	1721	1730	1755D	S15	W51	4235	07	7.9	34D	SN		3	C		53		F K
HOLL	11	1721	1744	1755D	S15	W51	4235	07	7.9	34D	SN		3	C		26		K
GOES	11	2119	2125	2135						16		C 2.0						
GOES	12	0054	0058	0102						8		B 8.9						
GOES	12	0357	0402	0408						11		B 5.4						
GOES	12	0504	0509	0516						12		B 7.0						
LEAR	12	0642	0650	0706	S11	W42	4236	07	9.1	24	SF	C 2.0	3	C		37		
GOES	12	0740	0741	0746						6		B 6.5						
RAMY	12	1228	1234	1238	S15	W53	4236	07	8.5	10	SF	C 1.0	3	C		54		
RAMY	12	1339	1342	1356	S19	W62	4235	07	7.8	17	SN		3	C		24		
HOLL	12	1340E	1342U	1345	S23	W70	4235	07	7.2	5D	SN		2	C		50		
GOES	12	1811	1815	1821						10		C 1.7						
HOLL	12	1821E	1821U	1830	S16	W68	4235	07	7.6	9D	SF		2	C		39		F
HOLL	12	1924E	1926	1933D	S15	W60	4235	07	8.3	9D	SF		2	C		15		
GOES	12	1958	2000	2009						11		B 8.1						
GOES	12	2103	2108	2112						9		C 1.4						
GOES	13	0511	0516	0518						7		B 6.5						
LEAR	13	0714	0723	0729	S20	W66	4235	07	8.2	15	SB	C 1.7	3	C		76		
GOES	13	1009	1014	1018						9		C 1.2						
RAMY	13	1236	1237	1243	S11	W61	4236	07	8.9	7	SF		3	C		29		
RAMY	13	1341	1341	1359	S22	W77	4235	07	7.6	18	SF		3	C		22		
GOES	13	1416	1421	1426						10		B 6.8						
RAMY	13	1446	1453	1504	S20	W74	4235	07	8.0	18	SN	C 1.9	3	C		61		
RAMY	13	1657	1658	1721	S16	E47	4240	07	17.3	24	SN		3	C		78		
RAMY	13	1947	1950	2016	S16	E44	4240	07	17.2	29	SF		3	C		66		

H - ALPHA SOLAR FLARES

JULY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Time (UT)	Area Measurement			Remarks
																Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)		
▲	HOLL	13	1949	1949	1958	S16 E43	4240	07	17.1	9	SN		3	C		17			F
	LEAR	14	0017	0020	0026	S15 E42	4240	07	17.2	9	SF		2	C		53			
	HOLL	14	0022E	0022U	0031	S16 E42	4240	07	17.2	9D	SF		2	C		82			
	[	YUNN	14	0322	0324	0327	S16 W23		07 12.4	5	SN			C		157		1.9	
		LEAR	14	0323	0323	0334	S16 W24	4237	07 12.3	11	SF	C 1.8	3	C		101			F
		PEKG	14	0329E	0329	0335	S16 W25		07 12.2	6D	SF			C	0329	63		.8	E
		GOES	14	0725	0732	0740				15		B 9.2							
		BUCA	14	0740	0745U	0758	S20 W80		07 8.2	18	1B			C	0745	54			A
		LEAR	14	0749	0754	0759	S20 W81	4235	07 8.1	10	SN		3	C					
		PEKG	14	0750	0753	0758	S19 W80		07 8.2	8	SN			C	0753	29			D
		PEKG	14	0750	0805	0838	S19 W90		07 7.5	48	N	C 1.1		C	0805				A
		CATA	14	0750	0755	0800	S20 W80		07 8.2	10	S		2	C	0755	45			
		PEKG	14	0800	0805	0820	N15 W15		07 13.2	20	SF			C	0805	34		.4	D
		CATA	14	0925	0930	0935	N12 E85		07 20.8	10	1		2	C	0930	56			
		GOES	14	1125	1132	1136				11		C 3.5							
		CATA	14	1130	1135	1145D	S17 W31		07 12.1	15D	1		2	P	1135	169		2.2	
		GOES	14	1214	1219	1228				14		B 8.7							
		RAMY	14	1305	1308	1317	S16 E35	4240	07 17.2	12	SF		3	C		21			
		HOLL	14	1427	1435	1458	S17 W29	4237	07 12.4	31	SF		3	C		34			
		HOLL	14	1435	1440	1448	S09 W79	4236	07 8.7	13	SF		3	C		21			
		[	HOLL	14	1449	1501	S09 W80	4236	07 8.6	29	1N		3	C		93			F K
			HOLL	14	1449	1511	S09 W80	4236	07 8.6	29	SF		3	C		18			K
			RAMY	14	1500	1501	S11 W89	4236	07 7.9	8	SF		3	C		25			
			RAMY	14	1542	1543	S17 W30	4237	07 12.4	11	SF		3	C		35			
		[	RAMY	14	1556	1601	S10 W77	4236	07 8.9	12	SF		3	C		14			F
			HOLL	14	1556	1600	S10 W74	4236	07 9.1	12	SN		3	C		24			
			GOES	14	1814	1820	1824			10		C 1.1							
			RAMY	14	1938	1949	1958	N18 E26	4246	07 16.8	20	SF		3	C		27		
			GOES	14	2113	2114	2118			5		B 7.5							
			GOES	14	2118	2123	2127			9		C 1.9							
			HOLL	14	2218	2220	2231	S09 W80	4236	07 8.9	13	SF		3	C		11		
		[	GOES	14	2232	2240	2250			18		C 2.5							
			HOLL	14	2234	2242	2258	N14 E70	4247	07 20.2	24	SN		3	C		62		
			PALE	14	2236	2247U	2307	N15 E75	4247	07 20.6	31	SF	C 1.1	3	C		51		
			PEKG	14	2311	2314	2321	S27 E90		07 22.0	10	N			C	2314			Y
			LEAR	15	0029	0029	0036	N17 E22	4246	07 16.7	7	SF		3	C		27		F
			GOES	15	0049	0053	0056			7		C 1.3							
			GOES	15	0101	0104	0106			5		C 4.1							
			PEKG	15	0114E	0115	0130	S22 W90		07 8.1	16D	N		P	0115				A
			GOES	15	0427	0430	0433			6		B 7.9							
			LEAR	15	0857	0857	0905	S20 W36	4237	07 12.6	8	SF		3	C		19		
			GOES	15	1143	1147	1158			15		C 1.9							
		[	RAMY	15	1152E	1152	1234	N16 E66	4247	07 20.5	42D	SN		3	C		81		F K
			RAMY	15	1152E	1216	1234	N16 E66	4247	07 20.5	42D	SN		3	C		31		K
			RAMY	15	1245	1245	1252	S15 E24	4240	07 17.3	7	SN		3	C		36		
		[	RAMY	15	1613	1613	1623	S11 E35		07 18.3	10	SF		3	C		20		
			HOLL	15	1614	1614	1625	S11 E34		07 18.2	11	SF		3	C		22		F
			GOES	15	1756	1759	1802			6		B 6.7							
			LEAR	16	0752	0755	0833	N17 E07	4246	07 16.9	41	SF		3	C		44		FS
			PEKG	16	0812E	0812	0840	N16 E06		07 16.8	28D	SF			C	0812	50		.5
			RAMY	16	1218	1224	1236	N15 E53	4247	07 20.5	18	SF		3	C		81		
			RAMY	16	1252	1254	1311	N16 E54	4247	07 20.6	19	SF		3	C		76		F
		[	RAMY	16	1938	1938	1950	S18 W53	4237	07 12.8	12	SF	C 1.0	3	C		30		F
			HOLL	16	1940	1940	1946	S18 W53	4237	07 12.8	6	SN		3	C		42		F
			HOLL	16	1956	1956	2013	S14 E06	4240	07 17.3	17	SF		3	C		21		F
			HOLL	16	2035	2036	2042	S10 E19	4249	07 18.3	7	SF		3	C		22		F
		[	HOLL	16	2101	2103	2116	S15 E05	4240	07 17.3	15	SF		3	C		41		F
			RAMY	16	2102	2108	2113	S14 E02	4240	07 17.0	11	SF	B 6.0	3	C		32		
		[	RAMY	16	2123	2124	2140	N13 E33	4245	07 19.4	17	SF		3	C		26		
			HOLL	16	2123	2123	2136	N13 E37	4245	07 19.7	13	SF		3	C		20		F
			HOLL	17	0034	0039	0125	S17 W56	4237	07 12.8	51	SF		3	C		21		F
			GOES	17	0214	0240	0240			26		B 8.8							
			PEKG	17	0256E	0256	0310	N15 E58		07 21.5	14D	SN			C	0256	59		1.2
		[	GOES	17	1014	1018	1020			6		B 7.4							
			CATA	17	1015	1015	1030	S16 W06		07 17.0	15	S		2	C	1015	56		.6
			GOES	17	1302	1324	1325			23		B 7.7							
			RAMY	17	1455	1457	1540	S14 W04	4240	07 17.3	45	SN		3	C		156		F

H - ALPHA SOLAR FLARES

19
Jul 83

JULY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF/ Region	CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks	
																Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)		
HOLL	17	1455	1458	1530D	S14	W06	4240	07	17.2	35D	SN	3	C			80		F	
[	RAMY	17	1632	1633	1636	N14	E26	4245	07	19.7	4	SN	3	C		49		
[	HOLL	17	1632	1632	1638	N13	E23	4245	07	19.4	6	SF	3	C		32		
[	HOLL	17	1807	1812	1831D	S13	W06	4240	07	17.3	24D	SF	C 1.3	3	C		70	F
[	PALE	17	1810	1814	1836	S15	W05	4240	07	17.4	26	SF	3	C		44	F	
	RAMY	17	1920	1925	1934	S14	W07	4240	07	17.3	14	SF	3	C		49			
	GOES	17	1921	1929	1933						12								
	RAMY	17	1923	1929	1935	N14	E24	4245	07	19.6	12	SF	B 5.6	3	C		39		
	PEKG	18	0035	0040	0046	N11	E19		07	19.5	11	SN		C	0040	42	.4	E	
	PEKG	18	0040E	0040	0116	S05	E13		07	19.0	36D	SF		C	0040	34	.4	E	
	LEAR	18	0334	0337	0351	S06	W09	4251	07	17.5	17	SF		C		43			
	LEAR	18	0422	0425U	0433	N11	E17	4245	07	19.5	11	SF		C		26			
	LEAR	18	0534	0535	0542	S19	W72	4237	07	12.7	8	SF	C 1.3	3	C		17		
[	LEAR	18	0618	0625	0709	N14	E43	4247	07	21.5	51	SF		C		46		K
[	LEAR	18	0618	0635	0709	N14	E43	4247	07	21.5	51	SF	B 8.8	3	C		78	FSK
	BUCA	18	0625	0632	0715	N16	E42		07	21.5	50	SN		C	0632	86	1.2		
	CATA	18	0635E	0640	0725	N14	E42		07	21.5	50D	1		P	0640	225	3.1		
[	RAMY	18	1323	1326	1348	S15	W16	4240	07	17.3	25	SF		C		42		
[	HOLL	18	1323	1326	1346	S15	W17	4240	07	17.3	23	SF		C		48		F
[	RAMY	18	1407	1408	1415	N12	E11	4245	07	19.4	8	SF		C		26		
[	HOLL	18	1407	1408	1420	N10	E12	4245	07	19.5	13	SF		C		23		
[	RAMY	18	1413	1413	1421	N17	E28	4247	07	20.7	8	SF		C		36		
[	HOLL	18	1413	1414	1422	N17	E28	4247	07	20.7	9	SF		C		59		
	HOLL	18	1635	1654	1704	N11	E11	4245	07	19.5	29	SF		C		34			
	HOLL	18	1651	1653	1708	N16	E23	4247	07	20.4	17	SN		C		166		U	
	HOLL	18	1940	1955	2059	N11	E11	4245	07	19.6	79	SF	C 1.9	3	C		77		
	LEAR	19	0337	0353	0425	S15	W25	4240	07	17.3	48	SF		C		157		F	
	PEKG	19	0400E	0400	0400D	S15	W25		07	17.3	48D	SF		P	0400	67	.8	F	
	LEAR	19	0425	0428	0430	N15	E20	4247	07	20.7	5	SF		C		20		F	
	CATA	19	0755	0800	0810	S18	W25		07	17.4	15	S		C	0800	56	.7	D	
	ISTA	19	0756		0804	S30	W34		07	16.7	8	SN							
	RAMY	19	1142	1147	1222	S09	W18	4249	07	18.1	40	SF		C		38			
	HOLL	19	1307	1320	1338	S10	W18	4249	07	18.2	31	SF		C		45			
[	RAMY	19	1354	1404	1426	N16	E15	4247	07	20.7	32	SF		C		79		
[	HOLL	19	1355	1406	1417	N14	E15	4247	07	20.7	22	SF		C		41		
[	RAMY	19	1400	1417	1521	S12	E63		07	24.3	81	SF		C		45		K
[	RAMY	19	1400	1436	1521	S12	E63		07	24.3	81	1N		C		135		K
[	HOLL	19	1433	1441	1519	S13	E63		07	24.4	46	1N		C		136		F
[	HOLL	19	1448	1517	1600	S09	W19	4249	07	18.2	72	SF		C		42		
[	RAMY	19	1451	1457	1509	S09	W19	4249	07	18.2	18	SF		C		32		
[	RAMY	19	1515	1518	1614	S09	W21	4249	07	18.1	59	SF		C		45		K
[	RAMY	19	1515	1552	1614	S09	W21	4249	07	18.1	59	SF		C		45		K
	HOLL	19	1708	1711	1736	S08	W22	4249	07	18.1	28	SN		C		98		F	
[	PALE	19	1711E	1713U	1736D	S13	W23	4249	07	18.0	25D	SF		C		76		F
[	RAMY	19	1711	1714	1734	S08	W22	4249	07	18.1	23	SF		C		78		
	HOLL	19	1851	1851	1859	N11	E41	4253	07	22.9	8	SF	B 7.6	3	C		19		
	HOLL	19	1914	1919	2004	S16	W32	4240	07	17.4	50	SF	B 5.9	2	C		31		
[	HOLL	20	0105E	0106U	0115D	N14	E09	4247	07	20.7	10D	SN		C		84		F
[	YUNN	20	0112E	0112U	0117	N14	E09		07	20.7	5D	SN		P	0112	79	.8	
	LEAR	20	0439	0509	0513	S10	W28	4249	07	18.1	34	SF		C		33		F	
	LEAR	20	0546	0548	0602	S09	W30	4249	07	18.0	16	SF	C 1.0	3	C		28	F	
	PALE	20	1756	1803	1809	S12	W34	4249	07	18.2	13	SF		C		40			
	GOES	20	2032	2035	2043						11								
	HOLL	20	2354E	2354U	0002D	N12	W20	4245	07	19.5	8D	SF		C		30			
[	MANI	21	0025	0027	0034	N08	E13		07	22.0	9	SF		V		30	.3	
[	LEAR	21	0027	0027	0036	N08	E13	4255	07	22.0	9	SF		C		23		
[MANI	21	0131	0135	0145	N08	E13		07	22.0	14	SF	C 1.8	1	V		50	.5	F
[	LEAR	21	0132	0137	0144	N08	E12	4255	07	22.0	12	SF		C		53		F
	LEAR	21	0244	0251	0315	N08	E11	4255	07	21.9	31	SF		C		70		F	
	MANI	21	0254E	0254U	0307D	N08	E12		07	22.0	13D	SF		V		65	.7	F	
	LEAR	21	0511	0513	0519	N12	W23	4245	07	19.5	8	SF		C		74			
	GOES	21	1139	1143	1152						13		B 7.1						
	GOES	21	1153	1157	1204						11		B 9.1						
	GOES	21	1457	1506	1522						25		C 1.9						
	HOLL	21	1658	1659	1702	N08	E03	4255	07	21.9	4	SF	C 1.1	3	C		46		
[	PALE	21	1735	1742	1811	S11	W46	4249	07	18.3	36	SF		C		65		F
[HOLL	21	1736	1738	1756	S10	W46	4249	07	18.3	20	SN	C 2.0	3	C		42		F

20
Jul 83

H - ALPHA SOLAR FLARES

JULY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks	
																Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)		
RAMY	21	1752	1754	1805	S11	W47	4249	07	18.2	13	SF		3	C		102		F	
RAMY	21	1807	1807	1826	S09	W49	4249	07	18.1	19	SF		3	C		41			
RAMY	21	1856	1901	1936	S09	W50	4249	07	18.0	40	SF		3	C		65		F	
RAMY	21	1937	1950	2017	N12	W30	4245	07	19.6	40	SF		3	C		65		F	
RAMY	21	1957	1959	2036	S07	W51		07	18.0	39	SN		3	C		128		F	
GOES	21	2315	2331	2337						22		B 9.2							
[	HOLL	21	2332E	2332U	0005D	N17	W01	4247	07	21.9	33D	SF		3	C		95		UF
[	HOLL	21	2332E	2332U	2350D	N12	E10	4253	07	22.7	18D	SF		3	C		43		F
	HOLL	22	0114	0116	0120D	N11	E09	4253	07	22.7	6D	SF		3	C		29		F
[	LEAR	22	0236	0304	0331	S08	W52		07	18.2	55	SF		3	C		83		F
[	MANI	22	0237E	0252	0325	S07	W53		07	18.1	48D	SF		1	V		60	1.0	F
	GOES	22	0349	0355	0402					13		B 8.4							
[	LEAR	22	0748	0800	0840	S14	E25	4254	07	24.2	52	1N		3	C		263		UF
[	WEND	22	0749	0756	0838	S14	E26		07	24.3	49	1N	C 1.7		C	0756	225	2.7	G
[	CATA	22	0750	0752	0835D	S15	E25		07	24.2	45D	1		2	P	0752	337	4.1	
	GOES	22	1041	1044	1046					5		C 1.8							
	WEND	22	1147	1156	1204	S06	W55		07	18.4	17	SF			C	1156	38	.7	
	RAMY	22	1252	1253	1337	S07	W57		07	18.3	45	SN		3	C		43		
[	HOLL	22	1321	1416	1445D	S05	W61		07	18.0	84D	1F		3	C		193		K
[	HOLL	22	1321	1442	1445D	S05	W61		07	18.0	84D	1N		3	C		148		K
	RAMY	22	1355	1415	1417	S07	W59		07	18.2	22	SF		3	C		18		
[	WEND	22	1423	1440	1448	N11	W41		07	19.5	25	SF			C	1440	38	.5	
[	RAMY	22	1424	1430	1451	N11	W41	4245	07	19.5	27	SF		3	C		78		
[	HOLL	22	1424	1432	1454	N13	W41	4245	07	19.5	30	SF	C 1.3	3	C		74		F
[	WEND	22	1439	1449	1506	S05	W59		07	18.2	27	SF			C	1449	75	1.5	
[	RAMY	22	1440	1442	1500	S07	W56		07	18.4	20	SN	C 2.1	3	C		39		F
[	HOLL	22	1441	1442	1524D	S05	W56		07	18.4	43D	1N		4	C		148		F
[	WEND	22	1447	1552	1600D	S06	W56		07	18.4	73D	SF	C 2.0		C	1552	38	.7	
[	HOLL	22	1541E	1551	1551D	S06	W59		07	18.2	10D	1N		4	C		140		
[	RAMY	22	1543	1552	1652	S08	W62		07	18.0	69	SN		3	C		112		F K
[	RAMY	22	1543	1638	1652	S08	W62		07	18.0	69	SN		3	C		138		K
	GOES	22	1632	1640	1644			4260		12		C 3.0							
	RAMY	22	1652	1738	1746	S05	W62		07	18.1	54	SF		3	C		55		
	RAMY	22	1807	1814	1827	N07	W13	4255	07	21.8	20	SF		3	C		53		
[	RAMY	22	1815	1818	1838	S07	W59		07	18.3	23	SF		3	C		31		
[	HOLL	22	1817	1818	1902	S06	W61	4260	07	18.2	45	SN		3	C		19		F
	RAMY	22	1837	1840	1851	N07	W13	4255	07	21.8	14	SF		3	C		41		
[	HOLL	22	1929	1940	1947	S06	W59	4260	07	18.4	18	SF		3	C		17		
	CATA	23	0710	0710	0720	S05	W65		07	18.4	10	S		2	C	0710	56		
	CATA	23	0925E	0945	0950D	S07	W70		07	18.1	25D	1		2	P	0945	112		
	GOES	23	1218	1231	1238					20		C 3.7							
	HOLL	23	1450	1502	1520	S04	W26	4256	07	21.7	30	SF		3	C		25		
	RAMY	23	1457	1458	1529	S07	W80	4260	07	17.6	32	SF	C 6.2	3	C		16		
[	HOLL	23	1508	1512	1529	S06	W78	4260	07	17.8	21	SF		3	C		48		K
[	HOLL	23	1508	1519	1529	S06	W78	4260	07	17.8	21	SN		3	C		13		K
[	GOES	23	1515	1518	1523			4260		8		C 1.6							
	GOES	23	1637	1640	1642					5		C 1.8							
	HOLL	23	1837	1903	1943	N08	W26	4255	07	21.8	66	SF		3	C		54		F
	GOES	23	1934	1941	1947					13		C 2.4							
[	HOLL	23	2000	2002	2012	S05	W83	4260	07	17.6	12	SF		3	C		23		K
[	HOLL	23	2000	2008	2012	S05	W83	4260	07	17.6	12	SN		3	C		19		K
	GOES	24	0025	0030	0033					8		C 1.7							
	GOES	24	0447	0455	0500					13		C 2.0							
	GOES	24	0608	0620	0626					18		C 2.1							
[	GOES	24	0744	0748	0750					6		C 1.2							
[	CATA	24	0745	0745	0750D	S07	W90		07	17.6	5D	1		2	P	0745	56		
	GOES	24	0819	0822	0828					9		C 1.9							
	GOES	24	0907	0910	0915					8		C 2.0							
	GOES	24	0951	0957	1005					14		C 1.8							
	GOES	24	1054	1100	1105					11		C 9.2							
	CATA	24	1105E	1105	1110D	S07	W90		07	17.7	5D	1		2	P	1105	84		
	GOES	24	1149	1154	1158					9		C 1.8							
	GOES	24	1247	1253	1306					19		C 2.9							
[	HOLL	24	1340	1353	1502	S06	W41	4256	07	21.5	82	SN		3	C		64		K
[	HOLL	24	1340	1444	1502	S06	W41	4256	07	21.5	82	SF	C 9.0	3	C		26		K
[	HOLL	24	1436	1436	1444	N09	W36	4255	07	21.9	8	SF		3	C		24		
[	HOLL	24	1439	1440	1453	N10	W26	4253	07	22.7	14	SF		3	C		48		
[	RAMY	24	1507	1517	1537	S07	W41	4256	07	21.6	30	SF		3	C		119		

H - ALPHA SOLAR FLARES

21
Jul 83

JULY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement			Remarks
												Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
HOLL	24	1507	1517	1535	S05	W42	4256	07 21.5	28	SN	3 C		78		
HOLL	24	1523	1529	1543	N10	W26	4253	07 22.7	20	SF	3 C		29		
RAMY	24	1524	1534	1539	N07	W37	4255	07 21.9	15	SF	3 C		32		
HOLL	24	1526	1527	1533	N12	W70	4245	07 19.4	7	SF	3 C		15		
RAMY	24	1554	1558	1602	S06	W42	4256	07 21.5	8	SF	3 C		73		F
RAMY	24	1603	1604	1611	S06	W42	4256	07 21.5	8	SF	3 C		41		
HOLL	24	1708	1717	1728	S05	W43	4256	07 21.5	20	SN	3 C		50		
GOES	24	1844	1849	1852					8		C 1.2				
PALE	24	2148	2154	2255	N11	W74	4245	07 19.3	67	1N	3 C		120		F
GOES	25	0050	0106	0125					35		C 2.7				
GOES	25	0130	0150	0210					40		C 5.0				
GOES	25	0353	0401	0421			4251		28		M 2.9				
LEAR	25	0438	0442	0447	N07	W46	4255	07 21.7	9	SF	3 C		36		
BUCA	25	0710	0715U	0725	S14	E25		07 27.2	15	SF		0715	107	1.3	E
CATA	25	0710	0715	0730	S15	E27		07 27.3	20	S	2 C	0715	84	1.0	
CATA	25	1035	1040	1040D	N06	W51		07 21.6	5D	S	2 P	1040	112	1.8	
GOES	25	1038	1052	1119			4249		41		M 2.9				
KAND	25	1108E	1112	1122	N09	W53		07 21.5	14D	SF	C 1.6		21	.4	D
RAMY	25	1141E	1150U	1202D	N07	W48	4255	07 21.9	21D	1F	3 C		189		
RAMY	25	1307	1310	1316	S06	W55	4256	07 21.4	9	SF	3 C		29		
GOES	25	1511	1511	1526					15		C 1.9				
GOES	25	1707	1713	1720					13		C 2.1				
HOLL	25	1844	1845	1851	N08	W56	4255	07 21.6	7	SF	3 C		17		
GOES	25	1913	1927	2047			4256		94		C 2.6				
HOLL	25	1955	2001	2008D	S05	W59	4256	07 21.4	13D	SF	2 C		15		
HOLL	25	2012	2022	2038	S04	W59	4256	07 21.4	26	SF	3 C		29		F
GOES	25	2125	2140	2150			4255		25		C 2.0				
HOLL	25	2140E	2140U	2147	N05	W60	4255	07 21.4	7D	SN	2 C		27		
HOLL	25	2308E	2309U	2319D	N14	W85	4245	07 19.5	11D	SF	2 C		12		
GOES	26	0519	0520	0531					12		C 1.0				
GOES	26	1140	1208	1230			4263		50		C 8.3				
RAMY	26	1304	1307	1312	S09	E89		08 2.2	8	SF	3 C		28		
GOES	26	1636	1715	1800			4263		84		C 5.8				
HOLL	26	2053	2054	2112	N10	W56	4253	07 22.7	19	SF	C 1.7		27		
GOES	26	2144	2152	2158					14		C 1.7				
PALE	26	2245	2245	2250	N05	W71	4255	07 21.6	5	SF	3 C		15		
HOLL	26	2245E	2245U	2251	N07	W70	4255	07 21.7	6D	SN	3 C		23		
PALE	27	0007	0009	0010	N06	W74	4255	07 21.5	3	SF	3 C		21		
LEAR	27	0032	0032	0041	S02	W79	4256	07 21.1	9	SF	C 2.0		20		
GOES	27	0644	0647	0652					8		C 2.2				
LEAR	27	0829	0830	0840	S03	W88	4256	07 20.8	11	SF	C 1.7		12		
CATA	27	0955	0955	1000	S09	E90		08 3.2	5	S	2 C	0955	28		
CATA	27	1130	1130	1145D	S09	E90		08 3.2	15D	1	2 P	1130	56		
GOES	27	1157	1200	1207					10		C 1.5				
GOES	27	1344	1345	1354					10		C 1.8				
PALE	27	1758	1806	1810	S08	E86	4263	08 3.2	12	SF	C 1.8		10		
HOLL	27	1802	1807	1813	S10	E83	4263	08 3.0	11	SF	3 C		14		
RAMY	27	1823	1825	1825	S10	E84	4263	08 3.1	2	SF	3 C		9		
RAMY	27	1831	1834	1836	S10	E82	4263	08 2.9	5	SF	3 C		7		
PALE	27	1851E	1912U	1922	S09	E89	4263	08 3.5	31D	SF	3 C		11		
HOLL	27	1918	1942	1955	S11	E82	4263	08 3.0	37	SF	3 C		21		
RAMY	27	1937	2006	2016	S10	E84	4263	08 3.1	39	SF	3 C		31		
PALE	27	2121	2131	2143	S08	E86	4263	08 3.3	22	SF	3 C		24		
RAMY	27	2149E	2154	2158	S08	E81	4263	08 3.0	9D	SF	3 C		48		
RAMY	27	2204	2204	2210D	S10	E84	4263	08 3.2	6D	SF	3 C		14		
PALE	27	2212	2213	2231	S08	E89	4263	08 3.6	19	SF	3 C				
HOLL	27	2251	2259	2315	S10	E80	4263	08 3.0	24	SN	3 C		25		
PALE	27	2307	2308	2317	S05	E86	4263	08 3.4	10	SF	3 C				
GOES	27	2328	2355	0022			4263		54		M 1.3				
LEAR	28	0001E	0024	0039	S11	E74	4263	08 2.6	38D	SN	3 C		38		
LEAR	28	0046	0056	0136	S10	E83	4263	08 3.3	50	SF	3 C		32		
LEAR	28	0137	0144	0202	S09	E80	4263	08 3.1	25	SF	3 C		33		
GOES	28	0220	0235	0250					30		C 2.0				
GOES	28	0427	0430	0434					7		C 1.5				
GOES	28	0506	0532	0610			4263		64		C 5.9				
ISTA	28	0706		0715	S13	E78		08 3.2	9	SF					D
ISTA	28	0744		0754	S13	E78		08 3.2	10	SF					D

H - ALPHA SOLAR FLARES

JULY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Time (UT)	Measurement Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	Remarks
GOES	28	1020	1023	1028					8	C 1.4					
GOES	28	1100	1103	1105					5	C 2.1					
[	RAMY	28	1129	1202	1348	S10 E75	4263	08 3.1	139	SN	C 3.0	3	C	57	K
	RAMY	28	1129	1234	1348	S10 E75	4263	08 3.1	139	SN	C 3.0	3	C	47	K
	WEND	28	1139E	1156	1208	S09 E75		08 3.1	29D	SN			C	1156	25
	KAND	28	1218E	1224	1316	S09 E80		08 3.5	58D	1N C 1.1			C	42	2.8 A
	WEND	28	1238E	1238	1303	S09 E74		08 3.1	25D	SN C 2.6			C	1238	31
	RAMY	28	1304	1305	1309	N11 W83	4253	07 22.3	5	SF		3	C	36	
	HOLL	28	1329	1412	1433	S14 E72	4263	08 3.0	64	SN C 1.4		3	C	29	F
	RAMY	28	1358	1401	1436	S10 E79	4263	08 3.5	38	SF B 8.9		3	C	27	K
	RAMY	28	1358	1411	1436	S10 E79	4263	08 3.5	38	SF C 1.8		3	C	23	K
	GOES	28	1651	1654	1658				7	C 1.6					
	RAMY	28	1750	1805	1833	S08 E71	4263	08 3.1	43	SN		3	C	18	
	HOLL	28	1750	1800U	1808	S08 E69	4263	08 2.9	18	SF C 2.0		2	C	11	
	PALE	28	1758	1805	1807	S07 E70	4263	08 3.0	9	SF C 4.4		3	C	9	
	GOES	28	1854	1902	1929				35	C 3.6					
	PALE	28	2007	2008	2011	S06 E69	4263	08 3.0	4	SF		3	C	6	
	PALE	28	2120	2121	2131	S08 E67	4263	08 2.9	11	SF		3	C	16	
GOES	29	0002	0015	0040					38	C 2.0					
GOES	29	0131	0132	0142					11	C 1.7					
GOES	29	0209	0230	0312					63	C 3.4					
[	LEAR	29	0353	0408	0528	S12 E64	4263	08 3.0	95	1N		3	C	134	F K
	LEAR	29	0353	0502	0528	S12 E64	4263	08 3.0	95	SN M 1.0		3	C	56	K
	PURP	29	0358	0402	0541	S14 E66		08 3.2	103	1B			C	0402	113
	GOES	29	0609	0612	0614				5	C 2.0					
	GOES	29	1116	1119	1121				5	C 2.0					
	GOES	29	1254	1257	1259				5	C 1.6					
	GOES	29	1304	1307	1320				16	C 1.9					
	RAMY	29	1341	1342	1352	S17 E70	4267	08 3.9	11	SF		3	C	14	
	HOLL	29	1611	1641	1700D	S17 E68	4267	08 3.8	49D	SF		3	C	81	F
	RAMY	29	1646	1649	1653	S19 E69	4267	08 4.0	7	SF C 3.4		3	C	29	
	HOLL	29	1714	1740	1821	S18 E67	4267	08 3.8	67	SF		3	C	51	F
	GOES	29	2101	2116	2142				41	C 4.7					
LEAR	30	0117	0120	0127	S12 E60	4263	08 3.6	10	SF		3	C	25		
LEAR	30	0524	0525	0538	N13 W24	4269	07 28.4	14	SF		3	C	21		
LEAR	30	0800	0806	0815	N14 W25	4269	07 28.4	15	SF		3	C	23	FH	
LEAR	30	0905	0907	0919D	N13 W25	4269	07 28.5	14D	SF		3	C	21	F	
[	RAMY	30	1114	1125	1213	N13 W28	4269	07 28.4	59	SB C 3.5		3	C	162	K
	RAMY	30	1114	1132	1213	N13 W28	4269	07 28.4	59	SB		3	C	119	K
	CATA	30	1120	1125	1145D	N14 W28		07 28.4	25D	S		1	P	1125	84
	RAMY	30	1148	1210	1211	S10 E48	4263	08 3.1	23	SF		3	C	40	
	HOLL	30	1418	1421	1430	N14 W30	4269	07 28.3	12	SF		3	C	23	
	HOLL	30	1438	1516	1548	N14 W30	4269	07 28.3	70	SB		3	C	154	
	RAMY	30	1454	1514	1544D	N13 W30	4269	07 28.4	50D	SB		3	C	144	
	RAMY	30	1819	1827	1839	S06 E41	4263	08 2.8	20	SB		3	C	144	
	HOLL	30	1820	1828	1840	S06 E41	4263	08 2.8	20	1B		3	C	158	H
	HOLL	30	1912	1914	1917	S06 E39	4263	08 2.7	5	SB C 4.9		3	C	62	
	HOLL	30	1921	1923	1935	N14 W34	4269	07 28.2	14	SF C 8.3		3	C	20	
	HOLL	30	1930	1930	1934	S09 E44	4263	08 3.1	4	SF		3	C	22	F
	HOLL	30	1941	1946	1959	N14 W34	4269	07 28.2	18	SF		3	C	42	
	HOLL	30	1950	1953	1958	S08 E45	4263	08 3.2	8	SF C 1.8		3	C	25	
	HOLL	30	2145	2201	2248	N14 W34	4269	07 28.3	63	SB		2	C	148	FE
	RAMY	30	2148	2153	2218D	N12 W35	4269	07 28.3	30D	SB C 1.7		3	C	161	
	PALE	30	2149E	2154U	2203D	N13 W34	4269	07 28.3	14D	SN C 7.6		3	C	156	
	RAMY	30	2156	2200	2202	S06 E38	4263	08 2.8	6	SN		3	C	35	
	PALE	30	2158E	2201U	2203D	S05 E39	4263	08 2.8	5D	SF		3	C	51	
	GOES	30	2230	2233	2236				6	C 2.2					
	HOLL	30	2235	2235	2246	S08 E43	4263	08 3.2	11	SB		3	C	44	
	GOES	30	2315	2318	2320				5	C 1.7					
PALE	31	0108	0116	0121	S08 E44	4263	08 3.3	13	SF		3	C	24		
LEAR	31	0125	0126	0130	S07 E53	4268	08 4.0	5	SF C 2.0		3	C	22		
[	LEAR	31	0147	0147	0149	N13 W34	4269	07 28.5	2	SN C 4.7		3	C	52	F
	PURP	31	0148E	0148	0200	N11 W34		07 28.5	12D	SB			P	0148	24
	LEAR	31	0151	0216	0254	S08 E42	4263	08 3.2	63	SN		3	C	118	F
	PALE	31	0153E	0218U	0334D	S06 E40	4263	08 3.1	101D	SN		3	C	144	F
	PURP	31	0200E	0200	0339	S08 E40		08 3.1	99D	SN			C	0200	113
	LEAR	31	0540	0540	0554	S06 E32	4263	08 2.6	14	SF		3	C	43	E
√	PURP	31	0624	0627	0641	S10 E32		08 2.7	17	SB			C	0627	26

H - ALPHA SOLAR FLARES

23
Jul 83

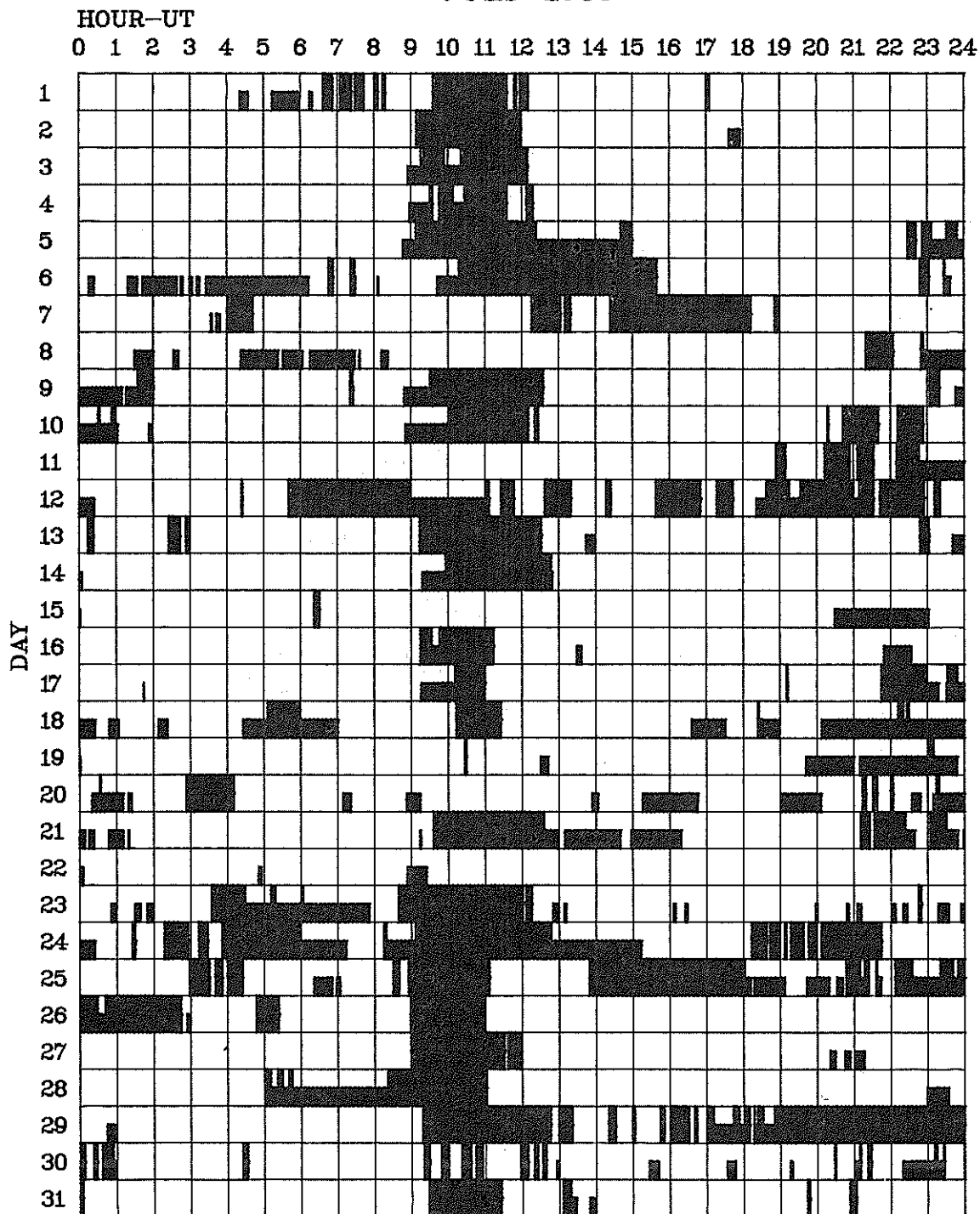
JULY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
LEAR	31	0624	0627	0636	S09	E32	4263	08	2.7	12	SN		3	C		52		F
LEAR	31	0652	0653	0659	N13	W37	4269	07	28.5	7	SN		3	C		57		
LEAR	31	0742	0743	0759	S16	E45	4267	08	3.7	17	SF		3	C		18		
CATA	31	0755	0755	0805	S18	E39		08	3.3	10	S		1	C	0755	84	1.2	
CATA	31	0825	0840	1005	S08	E44		08	3.7	100	S		2	C	0840	84	1.2	
LEAR	31	0829	0909	0927D	S10	E29	4263	08	2.5	58D	IN		3	C		220		F
PURP	31	0831E	0831	0846D	S09	E47		08	3.9	15D	SF			C	0831	53	.8	
CATA	31	0850	0905	1025	S12	E44		08	3.7	95	S		2	C	0905	56	.8	
CATA	31	1025	1025	1030	S12	W10		07	30.7	5	S		2	C	1025	28	.3	
GOES	31	1126	1129	1131						5								
RAMY	31	1146	1151	1203	S21	E48	4267	08	4.2	17	SF		3	C		48		
HOLL	31	1355	1437	1441	N15	W43	4269	07	28.3	46	SF		3	C		47		
HOLL	31	1411	1412	1440	S08	E47	4268	08	4.1	29	SF		3	C		20		
GOES	31	1716	1755	1823						67								
PALE	31	1907	1910	1923	S07	E22	4263	08	2.4	16	SF		3	C		44		
HOLL	31	1908	1909	1925	S08	E21	4263	08	2.4	17	SN		3	C		59		F
PALE	31	2151E	2156U	2214	S08	E29	4263	08	3.1	23D	SN		3	C		129		F

"Remarks":

- | | |
|--|---|
| <p>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 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.</p> | <p>O = Observations have been made in the H and K lines of Ca II.
 P = Flare shows helium D3 in emission.
 Q = Flare shows Balmer continuum in emission.
 R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
 S = Brightness follows disappearance of filament in same position.
 T = Region active all day.
 U = Two bright branches, parallel or converging.
 V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.
 W = Great increase in area after time of maximum intensity.
 X = Unusually wide H-alpha line.
 Y = System of loop-type prominences.
 Z = Major sunspot umbra covered by flare.</p> |
|--|---|

INTERVALS OF NO FLARE PATROL OBSERVATION FOR PRECEDING SOLAR FLARE TABLE JULY 1983



Observatories included in total patrol:

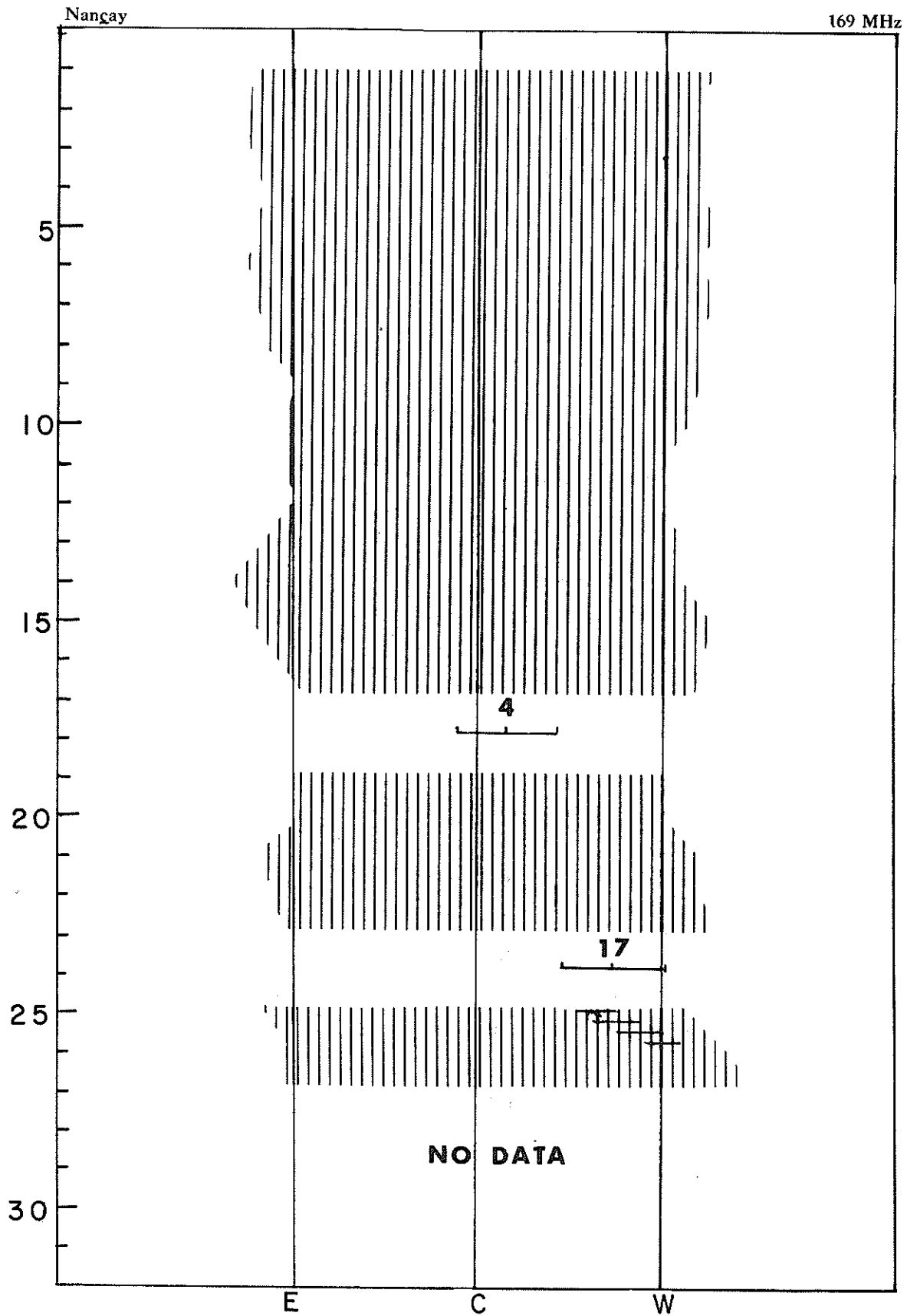
Bucharest	Holloman	Kandilli	Manila	Purple Mt.
Catania	Istanbul	Learmonth	Palehua	Ramey
			Peking	Wendelstein

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

25
Jul 83

JULY 1983



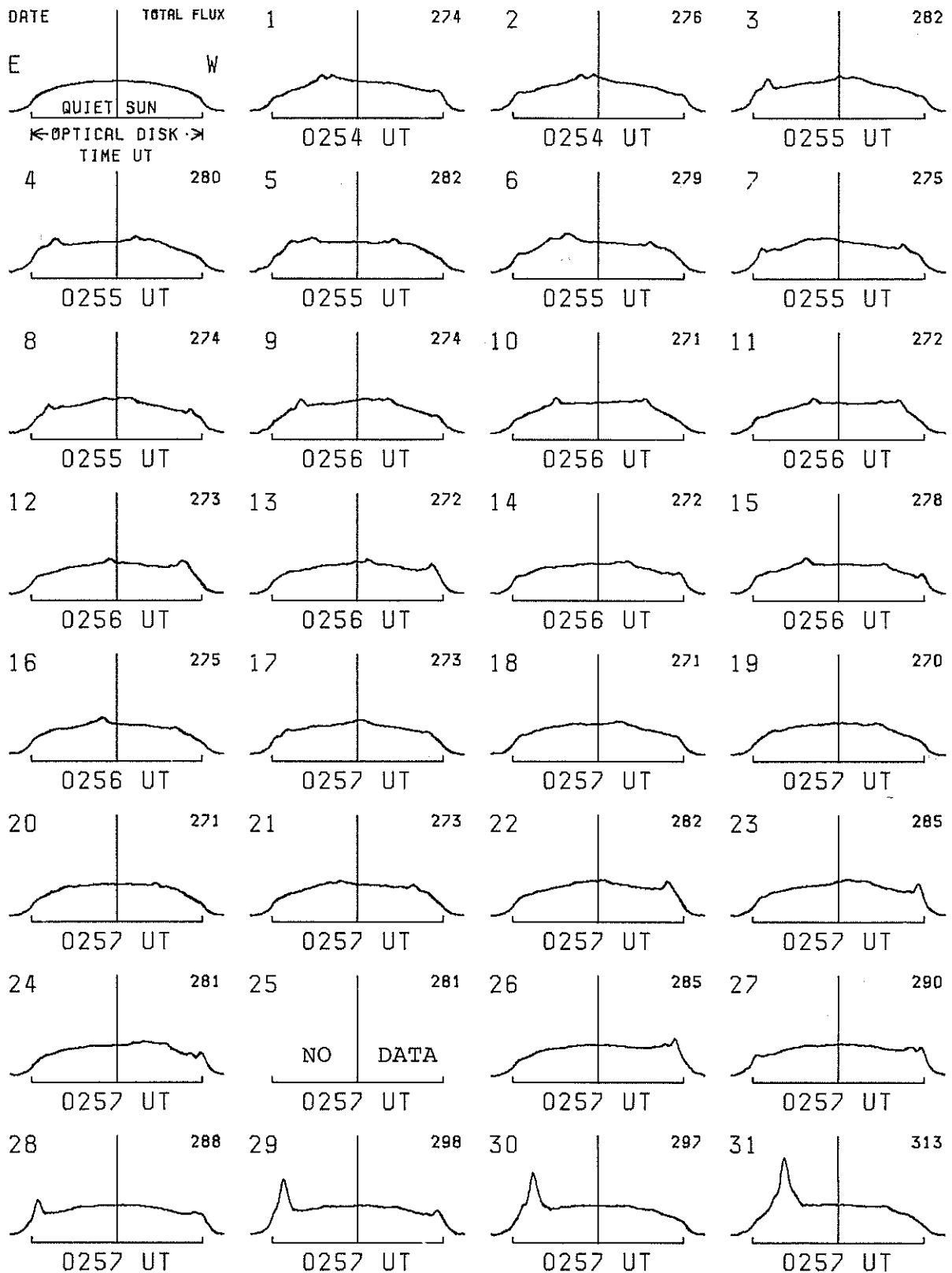
26
Jul 83

EAST-WEST SOLAR SCANS

JULY 1983

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC

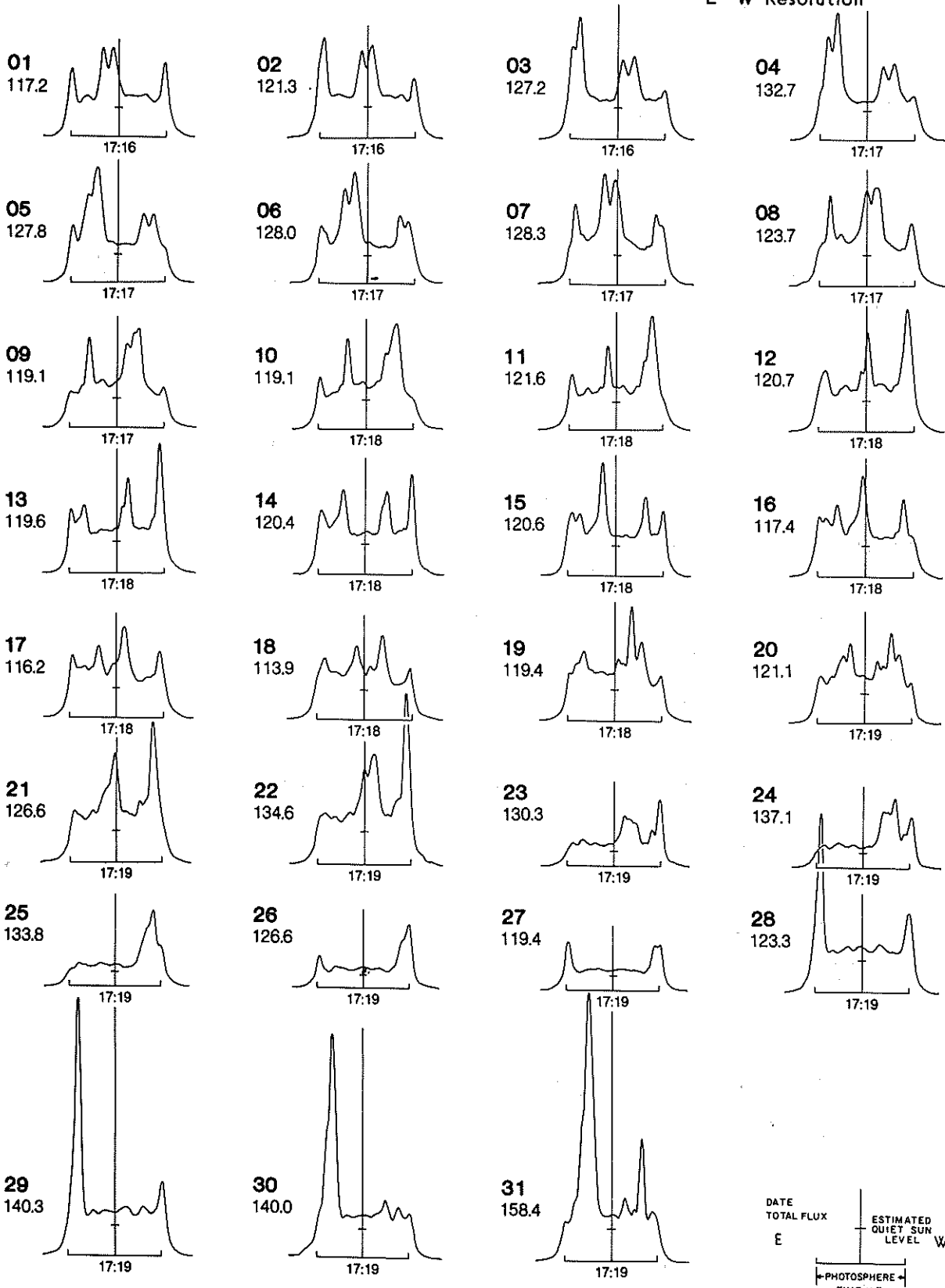


EAST-WEST SOLAR SCANS

JULY 1983

ALGONQUIN RADIO OBSERVATORY
CANADA

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



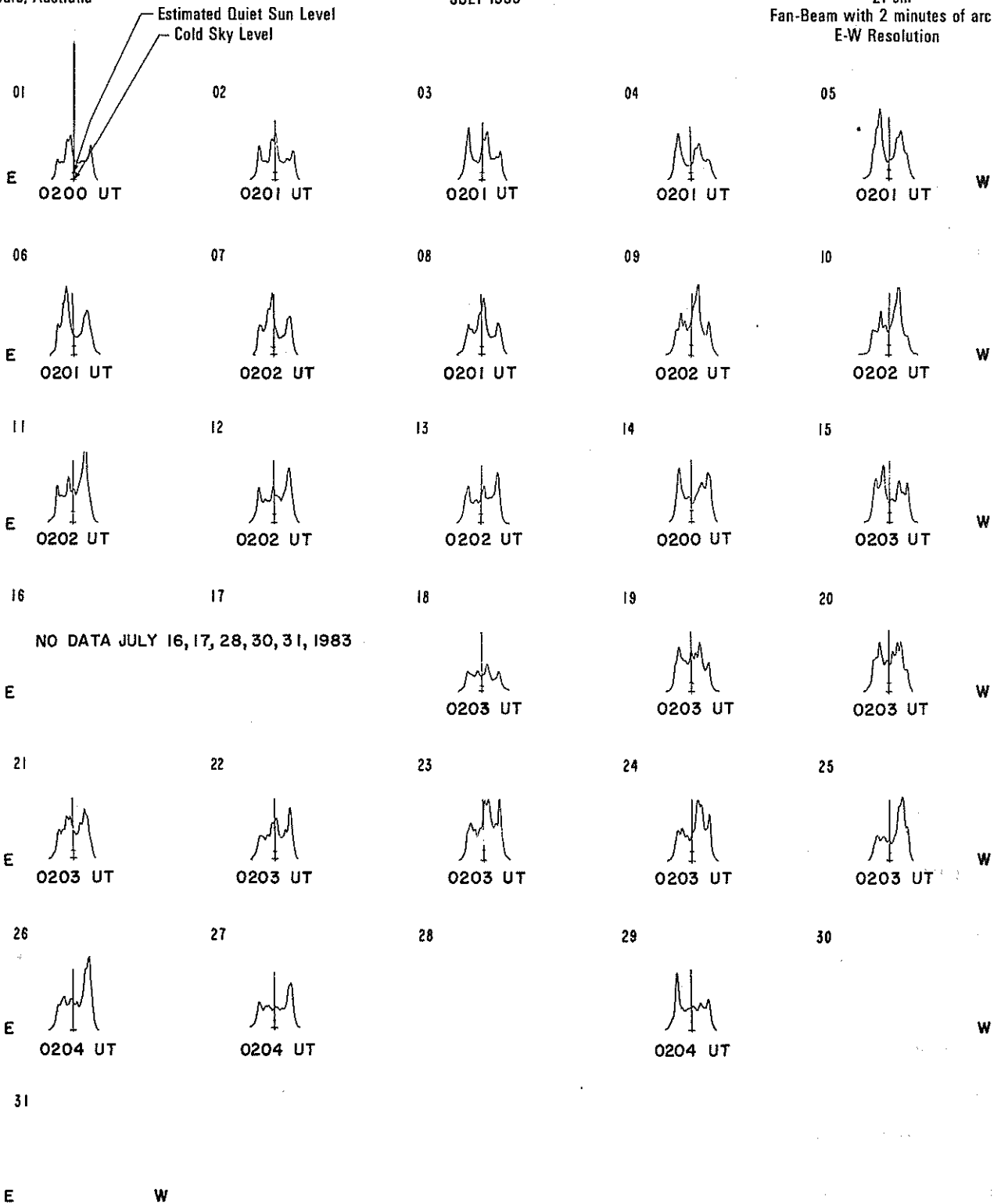
28
Jul 83

EAST-WEST SOLAR SCANS

Fleurs, Australia

JULY 1983

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

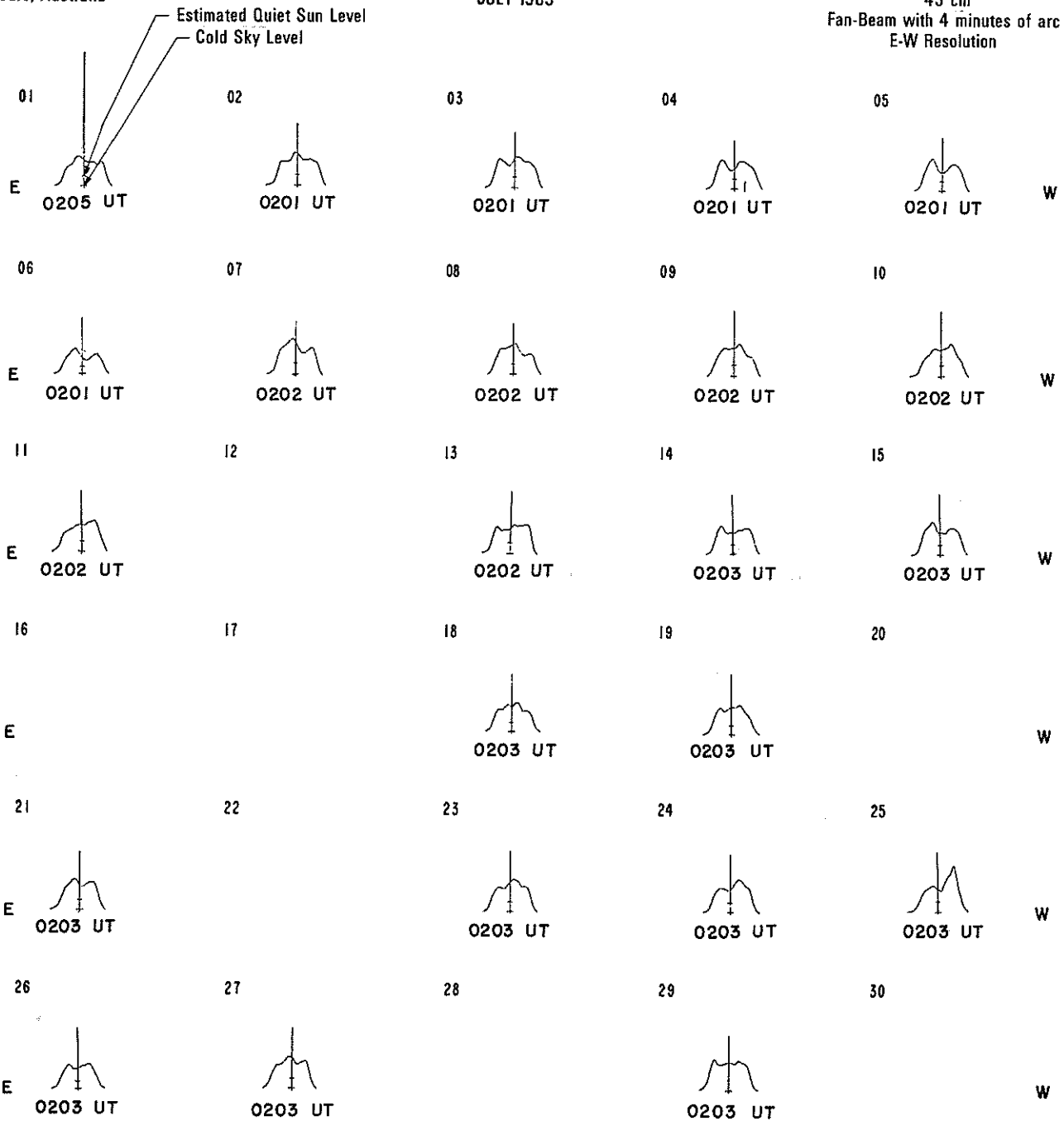


EAST-WEST SOLAR SCANS

Fleurs, Australia

JULY 1983

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



NO DATA JULY 12, 16, 17, 20, 22, 28, 30, 31, 1983

E W

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1983

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 ⁻²² W/m ² Hz)	Mean		
01	2695	LEAR	8 S	0505.5	0505.6	.1	33.0			QL=6 ST=2 TYP=3
	2695	LEAR	47 GB	0809.8	0809.8	.2	139.0			QL=6 ST=2 TYP=5
	2800	OTTA	21 GRF	1315.0	1350.0	175.0	7.0	3.5		
	2695	ATHN	4 S/F	1331.8	1333.6	10.2	34.0			QL=6 ST=2 TYP=3
	2800	OTTA	4 S/F	1332.0	1333.5	12.0	36.0	11.4		
	8800	ATHN	47 GB	1332.8	1333.6	9.0	65.0			QL=6 ST=2 TYP=5
	2695	SGMR	4 S/F	1332.8	1333.6	6.2	34.0			QL=6 ST=2 TYP=3
	8800	SGMR	47 GB	1333.1	1333.6	5.5	64.0			QL=6 ST=2 TYP=5
	2800	OTTA	31 ABS	1610.0	1645.0	90.0	-4.2	-2.1		
2800	OTTA	22 GRF	2110.0	2235.0	210.0	2.8	1.0			
03	2695	PENT	1 S	0025.0	0025.1	1.0	3.6	1.6		
04	8800	LEAR	8 S	0306.3	0306.6	.5	19.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0306.5	0306.6	.3	11.0			QL=6 ST=2 TYP=3
	2800	OTTA	21 GRF	1135.0	1155.0	35.0	2.8	1.2		
	2800	OTTA	1 S	1146.5	1147.0	3.0	5.2	1.7		
	8800	SGMR	8 S	1147.8	1148.3	.7	16.0			QL=6 ST=2 TYP=3
	2800	OTTA	21 GRF	1445.0	1520.0	50.0	2.8	1.4		
	2800	OTTA	3 S	1448.0	1449.0	4.0	41.0	14.0		
	2695	ATHN	4 S/F	1448.0	1448.6	5.6	35.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	1448.0	1448.6	5.6	36.0			QL=6 ST=2 TYP=3
	8800	SGMR	4 S/F	1448.6	1448.8	2.5	42.0			QL=6 ST=2 TYP=3
	2695	SGMR	8 S	1448.6	1449.0	1.4	46.0			QL=6 ST=2 TYP=3
	2800	OTTA	29 PBI	1452.0	1452.0	17.0	5.2	1.7		
	2800	OTTA	20 GRF	1730.0	1740.0	40.0	2.8	1.4		
	2800	OTTA	20 GRF	1835.0	1940.0	195.0	4.4	2.2		
2695	PENT	20 GRF	2200.0	2355.0	230.0D	6.2				
05	8800	ATHN	4 S/F	0630.1	0631.5	3.5	13.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0653.8	0654.0	.3	11.0			QL=6 ST=2 TYP=3
	2800	OTTA	260 FAL	1510.0	1555.0	45.0	-2.8	-1.4		
	2800	OTTA	240 R	1845.0	1900.0	15.0	2.8	1.4		
	2800	OTTA	1 S	2231.2	2231.8	2.0	2.4	.8		
06	2800	OTTA	20 GRF	1450.0	1540.0	90.0	2.4	1.4		
	2800	OTTA	20 GRF	2055.0	2105.0	35.0	2.8	1.4		
	2800	OTTA	20 GRF	2230.0	2240.0	30.0	2.4	1.2		
07	2800	OTTA	20 GRF	0000.0	0025.0	60.0	2.4	1.2		
	8800	LEAR	20 GRF	0023.1	0027.8	15.4	16.0			QL=6 ST=2 TYP=2
	2695	LEAR	20 GRF	0025.1	0035.1	20.9	16.0			QL=6 ST=2 TYP=2
	2695	ATHN	4 S/F	0354.3	0355.1	5.0	15.0			QL=5 ST=2 TYP=3
	8800	ATHN	4 S/F	0418.3	0418.6	4.8	44.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	0646.3	0650.1	6.2	18.0			QL=5 ST=2 TYP=3
	8800	LEAR	20 GRF	0708.3	0718.5	16.7	11.0			QL=6 ST=2 TYP=2
	8800	ATHN	4 S/F	0709.6	0711.6	3.0	18.0			QL=5 ST=2 TYP=3
	8800	LEAR	8 S	0735.0	0735.1	.3	13.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	0834.0	0837.6	10.0	20.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	0834.0	0837.8	10.0	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	20 GRF	0834.1	0837.8	15.9	24.0			QL=6 ST=2 TYP=2
	2695	LEAR	20 GRF	0834.3	0837.6	16.3	23.0			QL=6 ST=2 TYP=2
	2695	SGMR	4 S/F	1409.8	1411.8	2.3	29.0			QL=6 ST=2 TYP=3
	8800	ATHN	47 GB	1411.1	1411.8	2.5	130.0			QL=6 ST=3 TYP=5
	8800	SGMR	47 GB	1411.5	1411.6	.8	169.0			QL=6 ST=2 TYP=5
	2695	ATHN	8 S	1411.6	1411.8	2.0	30.0			QL=6 ST=3 TYP=3
	8800	SGMR	4 S/F	2039.1	2040.3	2.7	32.0			QL=6 ST=2 TYP=3
8800	PALE	8 S	2039.3	2040.8	1.7	19.0			QL=6 ST=2 TYP=3	
8800	PALE	4 S/F	2054.8	2057.3	7.0	35.0			QL=6 ST=2 TYP=3	
8800	SGMR	4 S/F	2055.3	2057.3	3.5	31.0			QL=6 ST=2 TYP=3	
08	2695	LEAR	8 S	0034.8	0035.1	1.0	15.0			QL=6 ST=2 TYP=3
	8800	PALE	20 GRF	0056.5	0059.1	12.5	23.0			QL=6 ST=2 TYP=2
	8800	LEAR	20 GRF	0059.6	0111.3	34.4	26.0			QL=6 ST=2 TYP=2
	2695	LEAR	20 GRF	0103.3	0112.3	30.7	15.0			QL=6 ST=2 TYP=2
	8800	PALE	47 GB	0109.0	0112.1	13.6	54.0			QL=6 ST=2 TYP=5
	2695	PENT	1 S	0116.0	0116.5	2.0	3.0	1.5		
	8800	PALE	47 GB	0122.6	0122.6	13.9	59.0			QL=6 ST=2 TYP=5
	8800	LEAR	8 S	0450.0	0450.5	1.6	7.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0602.3	0604.8	15.7	39.0			QL=6 ST=3 TYP=3
	2695	LEAR	8 S	0604.6	0605.3	1.9	7.0			QL=6 ST=2 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

31
Jul 83

JULY 1983

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 ⁻²² W/m ² Hz)	Mean		
08	8800	LEAR	47 GB	0742.6	0743.8	3.5	300.0			
	2695	LEAR	8 S	0744.1	0744.1	.2	11.0			QL=6 ST=2 TYP=5
	2695	SGMR	4 S/F	1302.3	1303.6	3.8	13.0			QL=6 ST=2 TYP=3
	8800	SGMR	4 S/F	1303.0	1303.6	2.8	13.0			QL=6 ST=2 TYP=3
	8800	SGMR	8 S	2127.5	2128.3	1.6	47.0			QL=6 ST=2 TYP=3
10	2695	LEAR	4 S/F	0805.6	0806.8	2.2	23.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	1500.0	1515.0	120.0	5.4	1.8		
	2800	OTTA	21 GRF	1720.0	1805.0	180.0	4.0			
	8800	PALE	47 GB	1806.3	1806.3	1.3	230.0			QL=6 ST=2 TYP=5
	2800	OTTA	21 GRF	1841.0	1905.0	80.0	9.2	4.8		
	2695	SGMR	8 S	1845.8	1846.3	.5	15.0			QL=6 ST=2 TYP=3
	8800	SGMR	4 S/F	1848.8	1849.8	8.8	21.0			QL=6 ST=2 TYP=3
	8800	PALE	8 S	1849.1	1849.6	1.5	17.0			QL=6 ST=2 TYP=3
	2800	OTTA	46F C	1841.0	1850.0	13.0	19.4	8.2		
2800	OTTA	1 S	2222.0	2223.0	5.0	5.2	2.5			
11	2800	OTTA	20 GRF	1245.0	1300.0	160.0	10.4	5.2		
	8800	ATHN	20 GRF	1251.6	1307.1	61.9	15.0			QL=6 ST=2 TYP=2
	2695	ATHN	20 GRF	1251.8	1300.1	53.2	11.0			QL=6 ST=2 TYP=2
	8800	SGMR	8 S	1258.5	1258.8	.3	15.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	1550.0	1615.0	70.0	2.2	1.1		
	2800	OTTA	22 GRF	1720.0	1850.0	470.0	7.6	3.8		
12	2800	OTTA	240 R	1510.0	1630.0	80.0	3.6	1.8		
	2800	OTTA	20 GRF	1810.0	1850.0	65.0	2.8	1.4		
	2800	OTTA	20 GRF	1925.0	2000.0	95.0	3.0	1.6		
	2695	PENT	20 GRF	2200.0	2255.0	180.0	2.4	1.8		
13	2695	LEAR	4 S/F	0722.3	0723.1	2.7	18.0			QL=6 ST=2 TYP=3
	2695	ATHN	8 S	0722.5	0723.1	1.6	16.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1656.5	1657.5	3.0	2.4	.8		
	2800	OTTA	21 GRF	1920.0	2000.0	105.0	2.6	1.3		
	2800	OTTA	1 S	1946.5	1947.2	2.0	3.6	1.2		
14	2695	PENT	1 S	0102.2	0103.0	1.5	4.4	1.4		
	2695	LEAR	8 S	0322.3	0322.5	.8	8.0			QL=6 ST=2 TYP=3
	8800	LEAR	8 S	0322.3	0322.5	.8	6.0			QL=6 ST=2 TYP=3
	2800	OTTA	4 S/F	1128.0	1131.5	8.0	13.4	3.4		
	2800	OTTA	20 GRF	1215.0	1216.5	20.0	2.6	1.3		
	2800	OTTA	240 R	2135.0	2155.0	20.0	2.0	1.0		
	2800	OTTA	21 GRF	2230.0	2235.0	30.0	2.0	1.0		
	2800	OTTA	1 S	2234.0	2235.8	2.0	4.4	2.2		
	2695	PENT	21 GRF	2320.0	0005.0	150.00	4.4			
15	2695	LEAR	8 S	0102.8	0103.1	1.5	6.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1146.9	1147.0	2.0	3.6	1.7		
	8800	SGMR	8 S	1626.8	1627.3	.8	22.0			QL=6 ST=2 TYP=3
16	2800	OTTA	20 GRF	1930.0	2100.0	180.0	2.2	1.0		
	8800	PALE	8 S	2031.6	2031.6	.4	46.0			QL=6 ST=2 TYP=3
17	2800	OTTA	27A RF	1250.0		270.0	2.6	2.4		
	2800	OTTA	24 R	1250.0	1310.0	20.0	2.6	1.3		
	2800	OTTA	24 P R	1310.0		230.0	2.6			
	2800	OTTA	20 GRF	1452.0	1456.0	20.0	2.6	1.3		
	2800	OTTA	20 GRF	1520.0	1525.0	13.0	2.0	1.0		
	2800	OTTA	26 FAL	1700.0	1720.0	20.0	-2.6	-1.3		
	2800	OTTA	20 GRF	1810.0	1816.0	50.0	2.0	1.0		
	2800	OTTA	20 GRF	1918.0	1927.0	30.0	2.0	1.0		
	2800	OTTA	20 GRF	1935.0	2010.0	150.0	4.0	2.0		
18	2800	OTTA	22 GRF	1555.0	1645.0	110.0	4.4	1.5		
	2800	OTTA	20 GRF	1935.0	2010.0	150.0	4.0	2.0		
	2800	OTTA	240 R	1355.0	1435.0	40.0	2.4			
	2800	OTTA	20 GRF	1440.0	1520.0	90.0	2.2	1.5		
19	2800	OTTA	20 GRF	1705.0	1720.0	55.0	3.6	1.8		
	2800	OTTA	20 GRF	1905.0	1930.0	85.0	2.4	1.4		
	2800	OTTA	27A RF	1455.0		200.0	2.6	2.4		
	2800	OTTA	24 R	1455.0	1505.0	10.0	2.6	1.3		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1983

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 ⁻²² W/m ² Hz)	Mean (W/m ² Hz)		
21	2800	OTTA	24P R	1505.0		170.0	2.6			
	2800	OTTA	20 GRF	1730.0	1735.0	13.0	2.0	1.1		
	2800	OTTA	26 FAL	1755.0	1815.0	20.0	-2.6	-1.3		
	2800	OTTA	20 GRF	1920.0	2000.0	165.0	7.2	3.4		
	2695	PENT	240 R	2245.0	2325.0	40.0	4.6	2.3		
22	2800	OTTA	21 GRF	1439.0	1441.0	40.0	4.6	2.3		
	2800	OTTA	40 F	1441.0	1441.3	2.0	9.6			
	2800	OTTA	1 S	1634.0	1635.9	4.0	4.4	1.6		
	2800	OTTA	20 GRF	1735.0	1820.0	95.0	2.8	1.4		
	2800	OTTA	20 GRF	1920.0	1930.0	65.0	2.0	1.6		
	2800	OTTA	32 ABS	2030.0	2135.0	100.0	-3.8	-2.4		
23	2695	LEAR	8 S	0639.8	0640.0	.3	29.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	1055.0	1100.0	45.0	5.0	2.6		
	2800	OTTA	20 GRF	1215.0	1325.0	180.0	3.6	2.4		
	2800	OTTA	20 GRF	1530.0	1630.0	150.0	2.0	1.5		
	2800	OTTA	20 GRF	1855.0	1920.0	60.0	2.0	1.0		
	2800	OTTA	20 GRF	2330.0	0110.0	145.00	6.2			
24	2800	OTTA	22 GRF	1145.0	1250.0	125.0	3.0	1.8		
	2800	OTTA	20 GRF	1455.0	1640.0	220.0	6.4	3.2		
	2800	OTTA	20 GRF	1845.0	1910.0	100.0	2.0			
	2800	OTTA	21 GRF	2145.0	2230.0	175.0	6.8	3.4		
	2800	OTTA	46F C	2148.0	2156.5	17.0	118.0	42.4		
	2695	SGMR	47 GB	2149.0	2152.3	12.6	93.0			QL=6 ST=2 TYP=5
	8800	PALE	49 GB	2151.3	2152.8	11.0	550.0			QL=6 ST=2 TYP=6
	8800	SGMR	47 GB	2151.6	2152.8	9.0	400.0			QL=6 ST=2 TYP=5
25	2695	LEAR	8 S	0019.3	0019.3	.2	62.0			QL=1 ST=2 TYP=3
	2695	LEAR	47 GB	0355.8	0357.3	8.5	100.0			QL=6 ST=2 TYP=5
	8800	LEAR	47 GB	0356.0	0357.6	6.3	56.0			QL=6 ST=2 TYP=5
	2695	ATHN	47 GB	0356.6E	0357.5	2.90	96.0			QL=5 ST=3 TYP=5
	8800	ATHN	8 S	0357.0E	0357.5	1.80	36.0			QL=5 ST=3 TYP=3
	8800	PALE	8 S	0357.1	0357.6	.9	38.0			QL=6 ST=2 TYP=3
	8400	BERN	45 C	1042.0	1044.5	24.0	44.0			ONLY PAPER REC
	8800	SGMR	4 S/F	1042.8E	1044.6	3.50	45.0			QL=6 ST=2 TYP=3
	2695	SGMR	8 S	1043.0E	1043.8	1.00	15.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	1640.0	1725.0	90.0	2.4	1.2		
	8800	PALE	8 S	1658.5	1658.6	.3	22.0			QL=6 ST=2 TYP=3
	2800	OTTA	22 GRF	2135.0	2140.0	20.0	2.6			
26	2800	OTTA	1 S	1152.0	1154.2	10.0	9.4	3.1		
	2800	OTTA	20 GRF	1325.0	1350.0	150.0	2.2	1.8		
	2800	OTTA	20 GRF	1650.0	1900.0	220.0	3.0	1.5		
	2800	OTTA	20 GRF	2100.0	2145.0	95.0	2.2	1.1		
	2695	PENT	20 GRF	2245.0	2355.0	135.0	2.0	1.3		
27	2800	OTTA	27F RF	1245.0		240.0	2.6	2.3		
	2800	OTTA	24 R	1245.0	1300.0	15.0	2.6	1.5		
	2800	OTTA	24P R	1250.0		190.0	2.6			
	2800	OTTA	26 FAL	1610.0	1645.0	35.0	-2.6	-1.5		
	2800	OTTA	40 F	2125.0	2125.7	4.0	5.4			
	2695	PENT	20 GRF	2335.0	2345.0	45.0	5.0	2.5		
28	8800	LEAR	20 GRF	0505.0	0525.6	130.0	6.0			QL=6 ST=3 TYP=2
	2695	LEAR	20 GRF	0505.0	0552.6	175.0	6.0			QL=6 ST=3 TYP=2
	2800	OTTA	21 GRF	1205.0	1300.0	145.0	3.8	2.0		
	2800	OTTA	1 S	1207.0	1209.0	5.0	6.0			
	2800	OTTA	240 R	1720.0	1740.0	20.0	2.4	1.2		
	2800	OTTA	20 GRF	1855.0	1920.0	55.0	3.0	1.7		
29	2800	OTTA	20 GRF	1305.0	1350.0	80.0	2.6			
	2800	OTTA	20 GRF	1600.0	1705.0	170.0	5.0	2.5		
	2800	OTTA	21 GRF	2100.0	2115.0	150.0	7.0	4.0		
	2800	OTTA	1 S	2104.0	2104.5	1.0	2.4	1.2		
	2800	OTTA	1 S	2107.0	2107.6	1.5	8.4	2.8		
30	2800	OTTA	1 S	1121.8	1122.3	1.5	4.4	2.1		
	2695	SGMR	4 S/F	1122.0	1127.8	8.8	45.0			QL=6 ST=2 TYP=3
	2800	OTTA	8 S	1123.8	1123.9	.2	8.8			

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

33
Jul 83

JULY 1983

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 ⁻²² W/m ² Hz)	Mean		
30	8800	SGMR	4 S/F	1125.8	1127.8	2.3	25.0			
	2800	OTTA	46F C	1126.0	1127.8	4.0	35.0	11.4		QL=6 ST=2 TYP=3
	8400	BERN	3 S	1126.0	1127.8	5.0U	33.0			
	2800	OTTA	21 GRF	1410.0	1530.0	110.0	4.2	2.1		
	2800	OTTA	46F C	1510.0	1515.5	10.0	96.0	32.0		
	8400	BERN	4 S/F	1510.0	1515.4	24.0	176.0			
	8800	SGMR	47 GB	1512.3	1512.6		13.0			QL=6 ST=3 TYP=5
	2695	SGMR	47 GB	1512.8	1515.5		96.0			QL=6 ST=3 TYP=5
	2800	OTTA	8 S	1535.0	1535.1	.3	12.2	6.1		
	2800	OTTA	20 GRF	1625.0	1642.0	55.0	2.8	1.4		
	2800	OTTA	40 F	1825.5	1827.0	1.8	42.0			
	2800	OTTA	240AR	2148.0	2214.0	26.0	3.4	1.7		
	2800	OTTA	28 PRE	2149.0	2149.5	2.5	6.2			
	2800	OTTA	4 S/F	2151.5	2154.5	12.0	63.0	17.6		
	2695	SGMR	47 GB	2152.1	2154.6	8.7	79.0			QL=6 ST=2 TYP=5
	8800	SGMR	8 S	2154.6	2154.8	.5	18.0			QL=6 ST=2 TYP=3
	31	2695	PENT	21 GRF	0020.0	0150.0	100.0D	13.0		
2695		LEAR	8 S	0117.3	0117.6	.8	5.0			QL=6 ST=2 TYP=3
2695		PENT	1 S	0146.0	0146.2	1.0	8.8	4.0		
2695		LEAR	8 S	0146.3	0146.3	.3	15.0			QL=6 ST=2 TYP=3
2695		LEAR	8 S	0214.8	0215.1	.5	8.0			QL=6 ST=2 TYP=3
2695		LEAR	8 S	0652.1	0652.3	.2	7.0			QL=6 ST=2 TYP=3
2800		OTTA	23 GRF	1400.0	1740.0	400.0	8.4	4.0		
2800		OTTA	20 GRF	1508.0	1512.0	14.0	3.4	1.4		
2800		OTTA	1 S	1717.0	1718.5	4.0	5.6	2.8		
2800		OTTA	1 S	1722.5	1723.5	2.5	2.2	1.1		
2800		OTTA	21 GRF	2100.0	2145.0	215.0	7.8	4.4		
2800		OTTA	3 S	2126.0	2129.0	6.0	11.6	5.5		
2695		SGMR	8 S	2128.3	2128.6	.5	15.0			QL=6 ST=2 TYP=3
2800		OTTA	20 GRF	2153.0	2156.0	25.0	3.0	1.4		
8800		SGMR	8 S	2153.6	2153.8	.7	20.0			QL=6 ST=2 TYP=3

Observatories:

BERN = Berne MANI = Manila OTTA = Ottawa ARO PENT = Penticton SGMR = Sagamore Hill
LEAR = Learmonth ATHN = Athens PALE = Palehua

Explanation of Type Code:

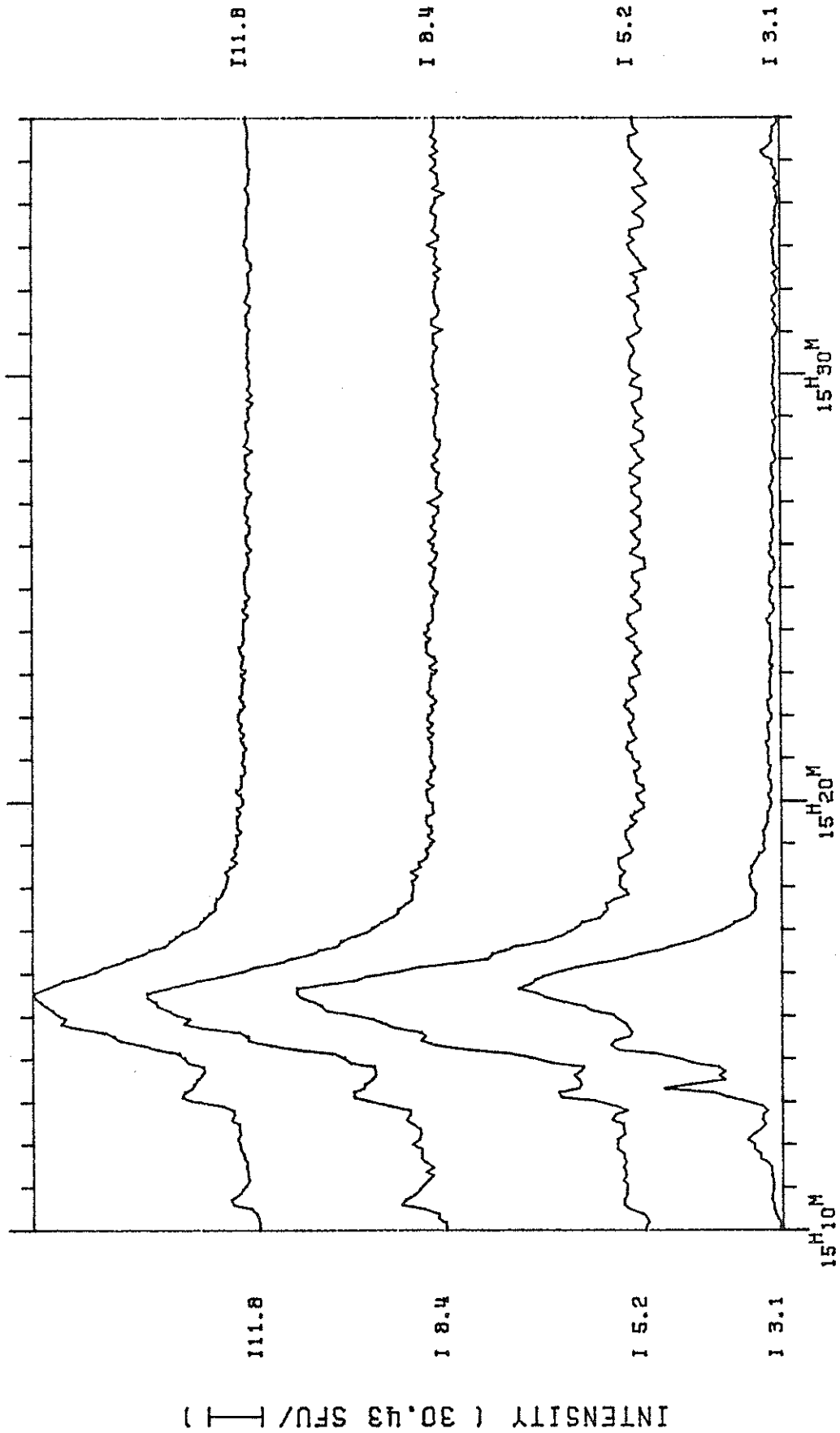
1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset on Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm In Progress
3 Simple 2	20 Simple 3	26 Fall	32 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple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

Remarks:

QL = Quality (1=poor to 6=excellent)
ST = Status (1=real time; 2=final; 3=correction; 4=deletion)
TYP = Type (1=noise storm; 2=rise in base level; 3=minor; 4=group; 5=major; 6=major plus; 7=Castelli U-type burst)

INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND

INTEGRATION TIME = 6000 MS



UT ON JULY 30 1983

BOULDER GEOMAGNETIC
SUBSTORM LOG

35
Jul 83

July 1983

DATE	ONSET TIME	DIR	COMMENTS	DATE	ONSET TIME	DIR	COMMENTS
07/01			Field intermittently unsettled with no significant substorm activity.	07/22			Field intermittently unsettled.
					0750		Weak substorm Lynn Lake to Ft. Smith.
					0950		Weak substorm vicinity College.
07/02			Field intermittently unsettled.	07/23	0620	East	
	0710	East	Weak substorm.		0745	East	Slow drift westward from Lynn Lake.
	1145	West			0845	West	
	1215		Localized substorm at College.		0955		Localized substorm vicinity Anchorage.
07/03			Field intermittently unsettled.	07/24			Field at magstorm level through 1800 UT and active balance of day.
	0825	West					
07/04			Field intermittently unsettled.	07/25			Field active through 1600 UT and unsettled balance of day.
	0910		Weak substorm, Ft. Smith to Lynn Lake.		0325	East	Several injections.
	1530		Initial onset at Inuvik, slow expansion eastward to Norman Wells and northward to Sachs Harbour.		0415		Localized substorm vicinity NAQ.
					0810		Localized substorm vicinity College.
07/05			Field intermittently unsettled.		0855	West	
	0850	West			1220	West	
					1340	West	
07/06			Field intermittently unsettled.	07/26			Field unsettled all day.
	0250		Localized substorm near NAQ*.		1325	West	
	0825		Localized substorm near College.	07/27			Field unsettled all day.
	0915	West			0945	West	
	1025	West			07/28		Field unsettled after 0400 UT with no distinctive substorm activity.
	1140	West			07/29		Field unsettled all day.
	1530	West	Weak substorm.		0230	East	
07/07			Field intermittently active.		1045	West	Several injections with recovery near 1430 UT.
	0900	West		07/30			Field intermittently active.
	1225	West			0535	West	Weak substorm.
07/21			Field intermittently unsettled.		1020	West	Moderate substorm.
	0340		Localized substorm vicinity NAQ.		1305		Localized substorm vicinity College.
	0850	West		07/31			Field intermittently unsettled.
	1100		Localized substorm vicinity College.		0840	West	Weak substorm.
					1215	West	

*Note: Narsarssuaq became operational on 19 April 1983. For convenience, it will be identified by the call letters NAQ.

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	JAN 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2029	JAN 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2030	FEB 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2031	MAR 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2032	MAR 30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2033	APR 26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2034	MAY 23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2035	JUN 19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2036	JUL 16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2037	AUG 12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2038	SEP 8	TA	AT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2039	OCT 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2040	NOV 1	AT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2041	NOV 28	TA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2042	DEC 25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983	JAN 21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2043	JAN 21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2044	FEB 17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2045	MAR 16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2046	APR 12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2047	MAY 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2048	JUN 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2049	JUL 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2050	JUL 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

= 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. The Thule magnetometer ceased operating in August 1981.

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
2030	JAN 30	III																										
2031	FEB 26																											
2032	MAR 25																											
2033	APR 21																											
2034	MAY 18																											
2035	JUN 14																											
2036	JUL 11																											
2037	AUG 7																											
2038	SEP 3																											
2039	SEP 30																											
2040	OCT 27																											
2041	NOV 23																											
2042	DEC 20																											
2043	JAN 16																											
2044	FEB 12																											
2045	MAR 11																											
2046	APR 7																											
2047	MAY 4																											
2048	MAY 31																											
2049	JUN 27																											
2050	JUL 24																											

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 that affect the Earth during the given Bartels Rotation.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

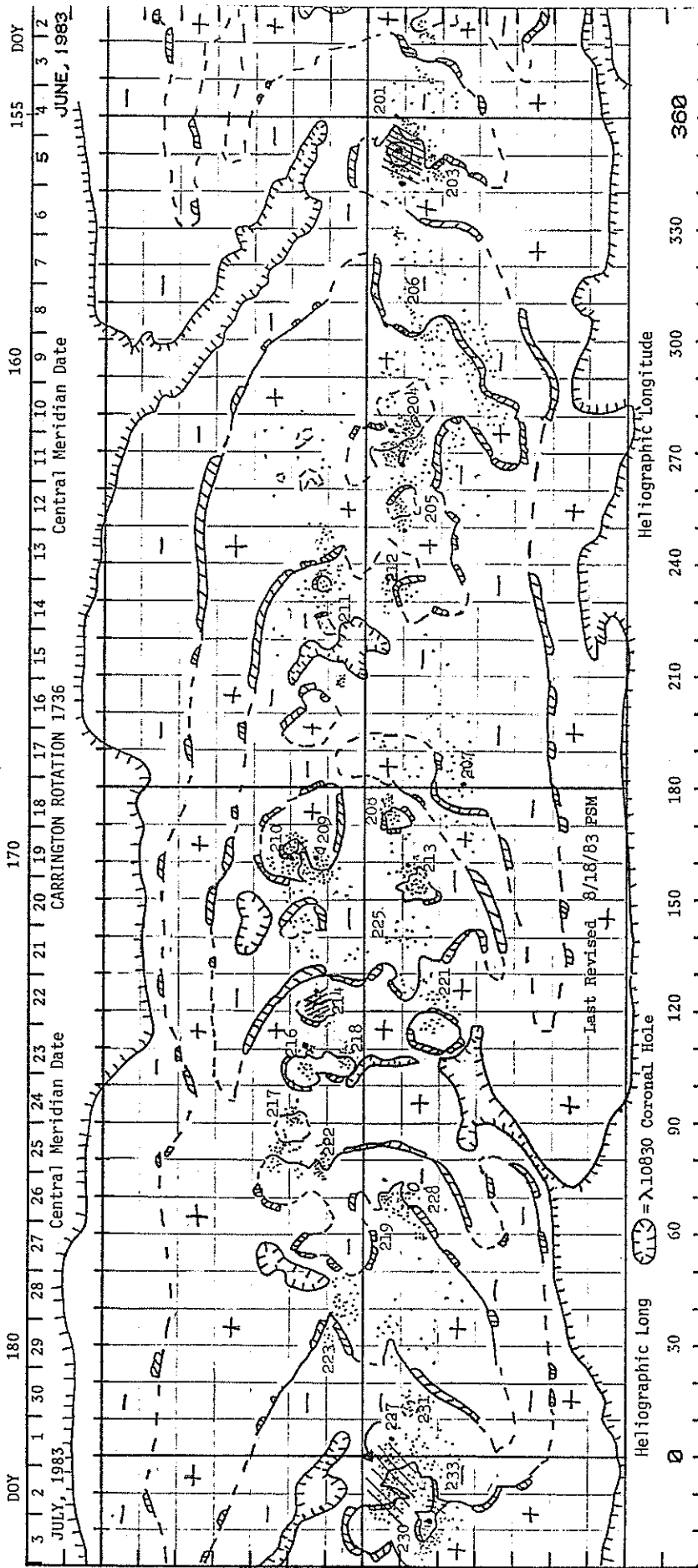
1983

1982

day	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July
01	49	89	22	-31	42	-9	-81	.	25	69	.	-23
02	19	102	53	-15	.	.	.	.	38	65	.	-50
03	19	84	37	-18	.	-89	-8	11	52	52	.	-28
04	52	66	18	-38	10	-81	15	33	61	35	.	15
05	85	68	-6	.	-42	-73	45	38	63	12	.	44
06	105	55	-41	-63	.	-22	.	51	50	-3	.	51
07	81	30	-54	-61	-90	-2	.	.	29	-15	0	39
08	63	-27	-76	-68	-64	.	54	65	21	-43	12	17
09	59	-55	-90	.	-29	53	84	.	.	-51	30	33
10	33	-74	-93	-54	-20	46	93	48	-15	-45	45	27
11	-30	-93	-96	-21	26	37	69	30	-44	-27	28	-4
12	-87	-124	-100	1	29	53	.	.	-48	-3	.	-60
13	-118	-125	-70	19	43	84	16	2	-43	10	.	-108
14	-121	-120	-35	34	28	84	-19	-25	-29	27	.	-120
15	-144	-112	-7	37	.	.	-22	-44	-11	31	.	-107
16	-149	.	-1	52	8	39	-104	-62	9	10	.	-89
17	-141	-49	4	.	57	10	-102	-27	16	5	.	-20
18	-124	-28	-43	.	.	.	-67	-19	13	-9	-91	7
19	-93	-14	55	.	64	-87	-37	-5	15	-69	-56	27
20	-59	12	33	22	32	-119	-7	.	-11	-87	-28	41
21	-32	40	.	33	.	.	24	19	.	-96	-1	97
22	-16	44	.	.	.	.	27	15	.	-47	23	96
23	-12	26	17	.	.	-25	.	.	-66	-11	53	82
24	5	10	45	12	.	-3	-1	.	-59	6	72	25
25	32	8	.	-1	.	31	.	-23	-34	36	101	9
26	39	18	54	-31	.	.	-49	-34	-15	64	67	11
27	47	36	55	-58	-31	31	-66	-42	.	101	23	-4
28	46	72	34	.	6	3	.	-17	.	117	27	-35
29	25	57	20	.	42	-14	.	-20	36	-12	33	-37
30	39	52	.	.	59	-51	.	1	.	.	26	-39
31	64	.	-11	.	35	-91	.	18	.	.	.	-21

DOT SYMBOL INDICATES NO DATA AVAILABLE FOR THE DAY.

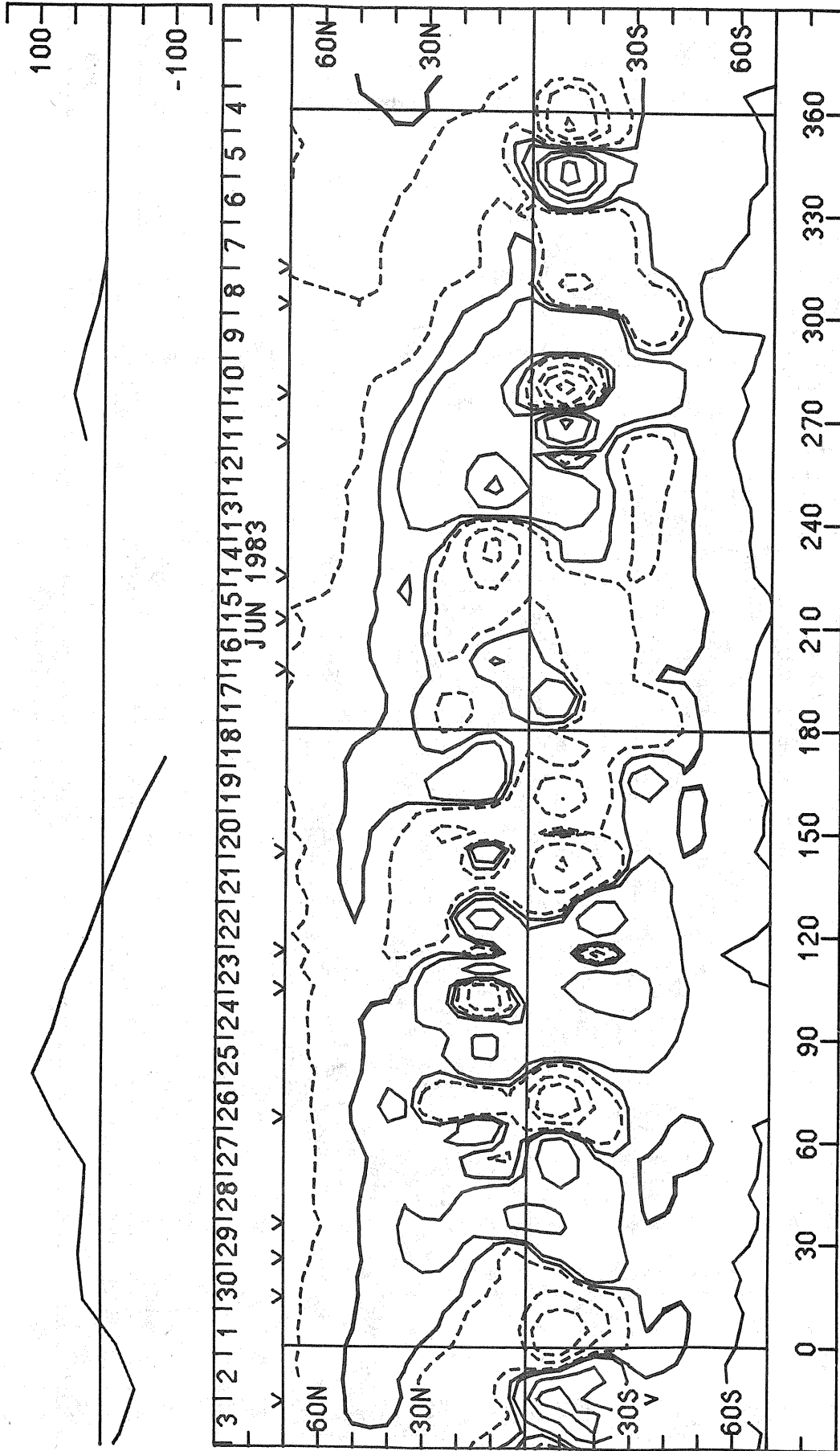
H α SYNOPSIS CHART CARRINGTON ROTATION 1736 (PRELIMINARY)



SOLAR MAGNETIC FIELD SYNOPSIS CHART
 CARRINGTON ROTATION 1736

Stanford Solar Observatory

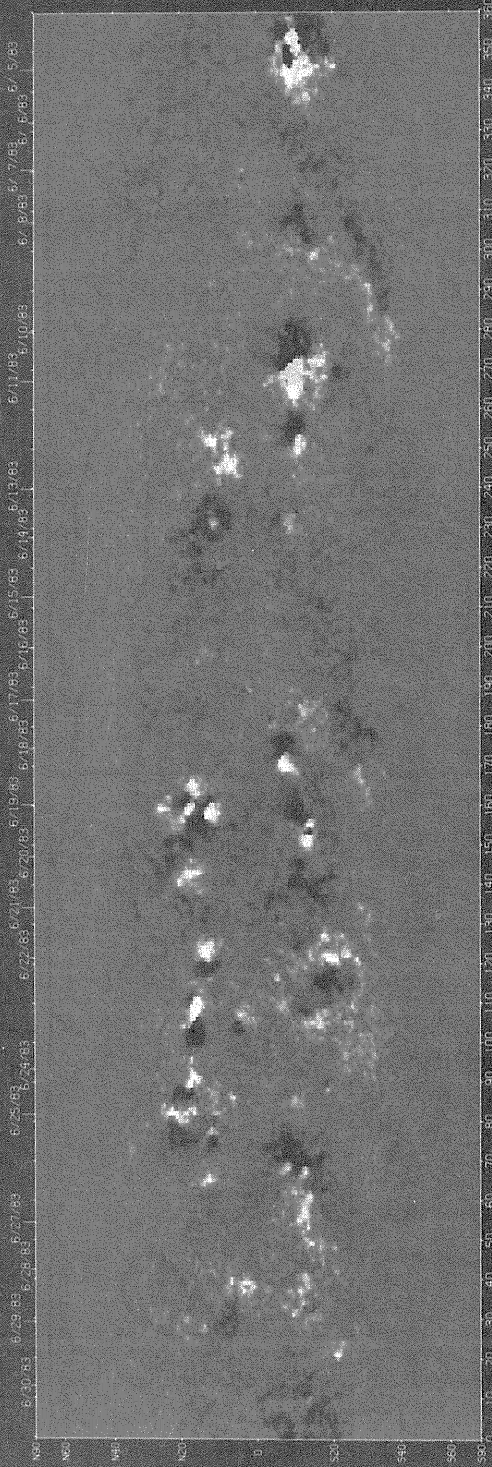
0, ±100, 200, 500... μT



1736

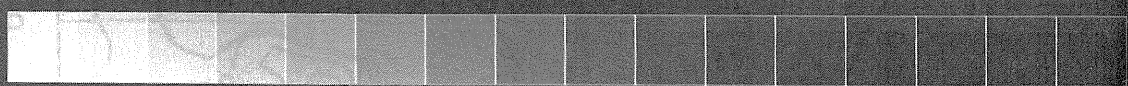
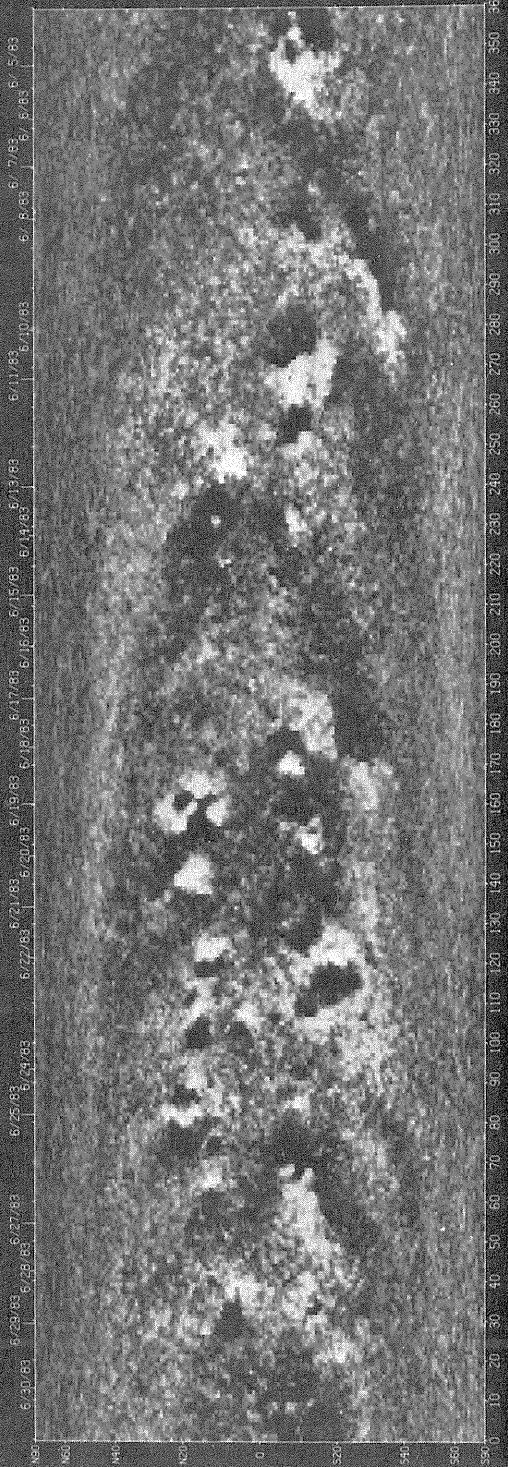
3151.004
KPN0 SYN VICTR22 07/14/83 12.40.04 NFICT= 2

CARRINGTON ROTATION 1736 FLUX



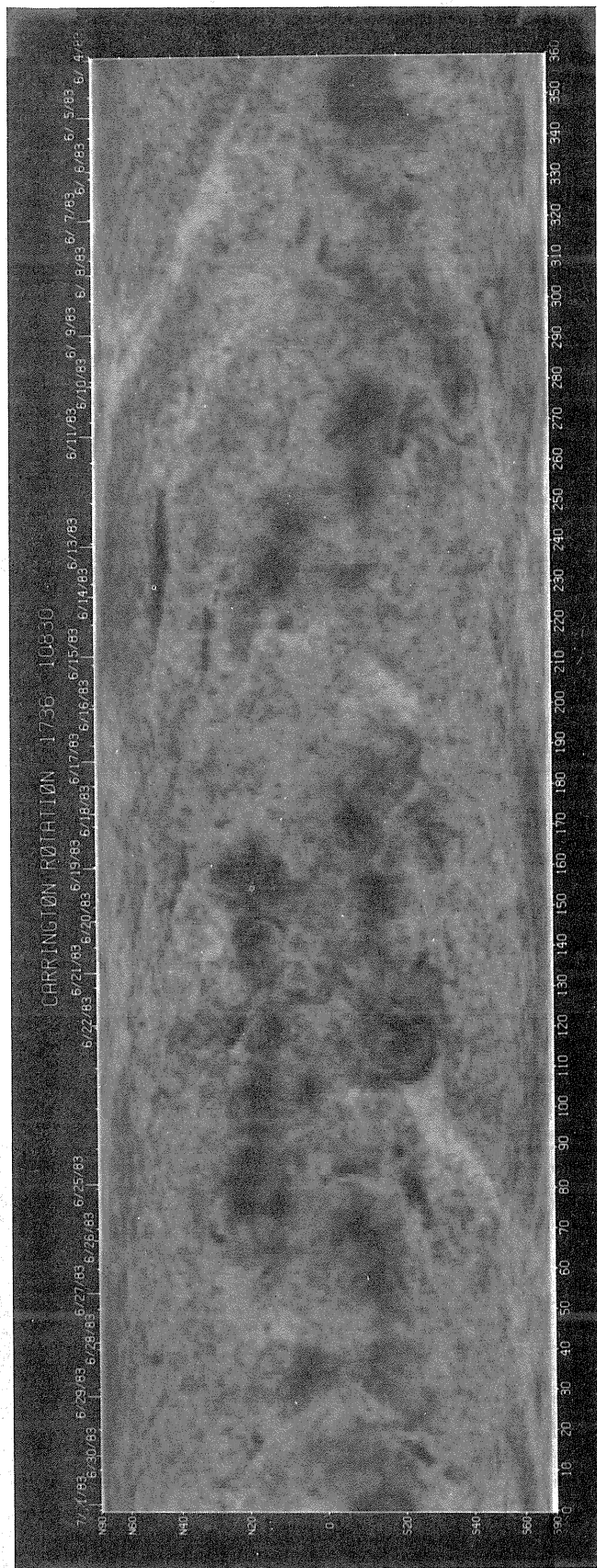
KPNO SOLAR MAGNETIC FIELD SYNOPSIS CHART

CARRINGTON ROTATION 1736 POLARITY



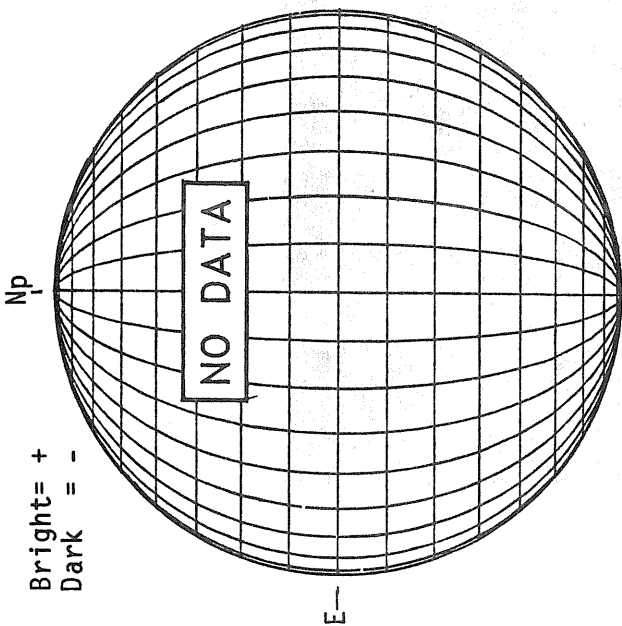
HELIUM 10830Å SYNOPTIC MAPS
CARRINGTON ROTATION 1736

KITT PEAK NATIONAL OBSERVATORY

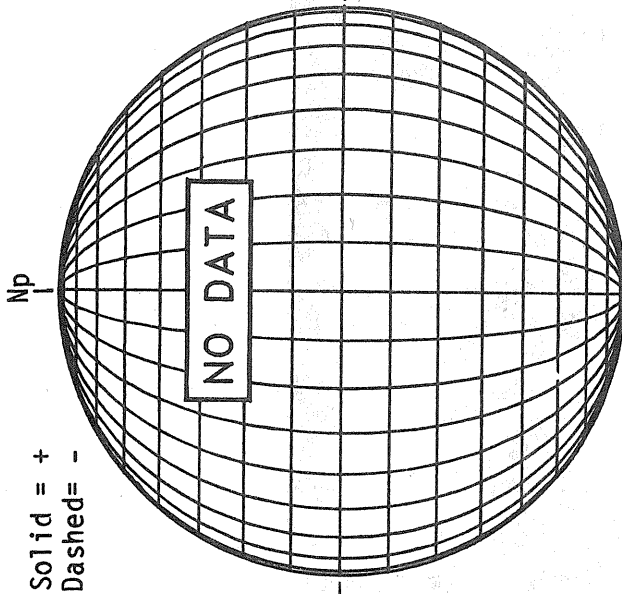


J U N E 01, 1 9 8 3 (P=-15.67, B₀=-0.70, L₀= 47.66)

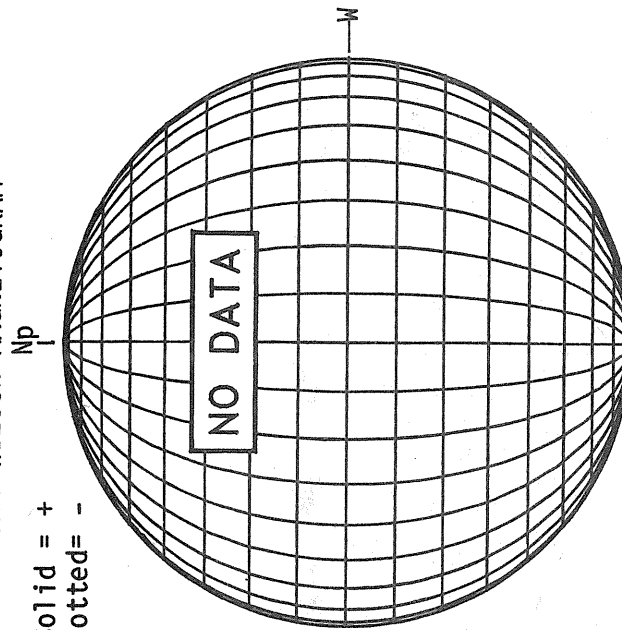
KITT PEAK MAGNETOGRAM



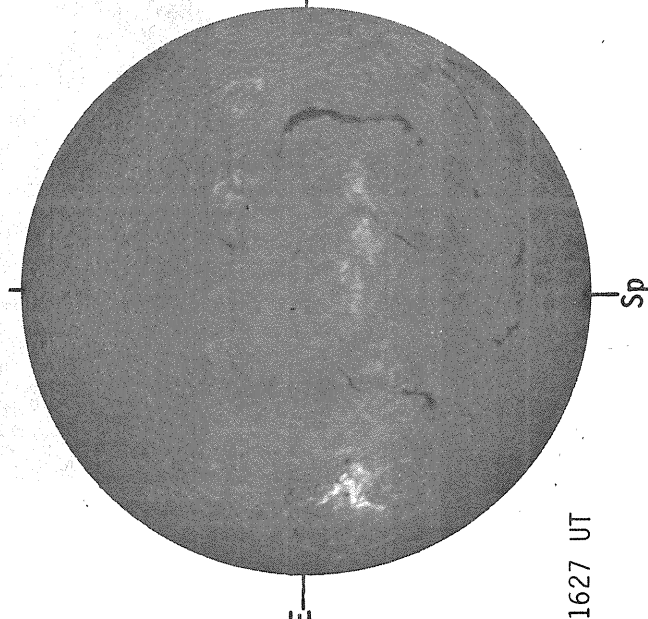
STANFORD MAGNETOGRAM



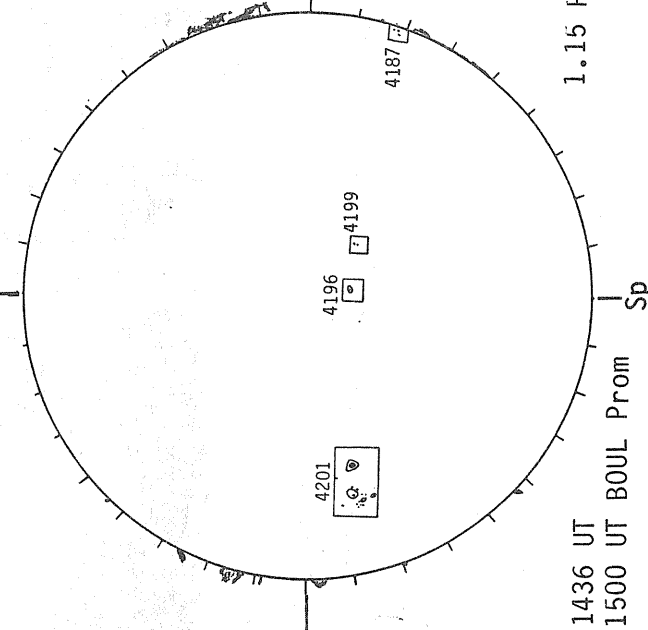
MT. WILSON MAGNETOGRAM



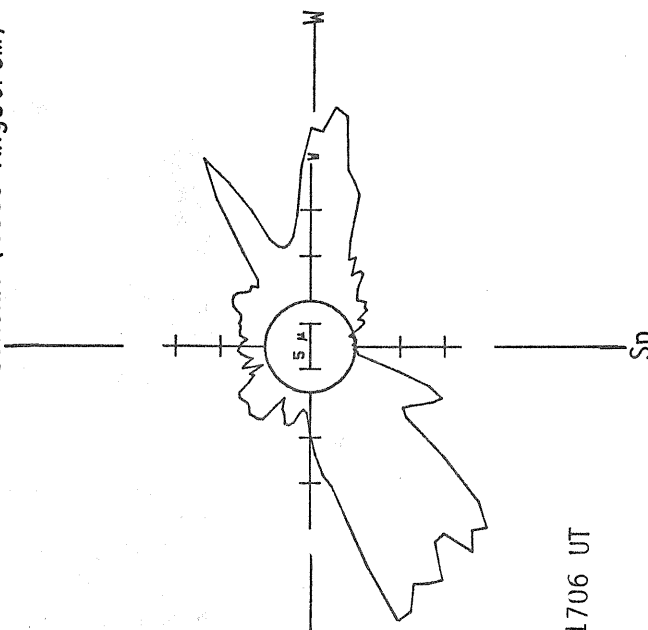
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

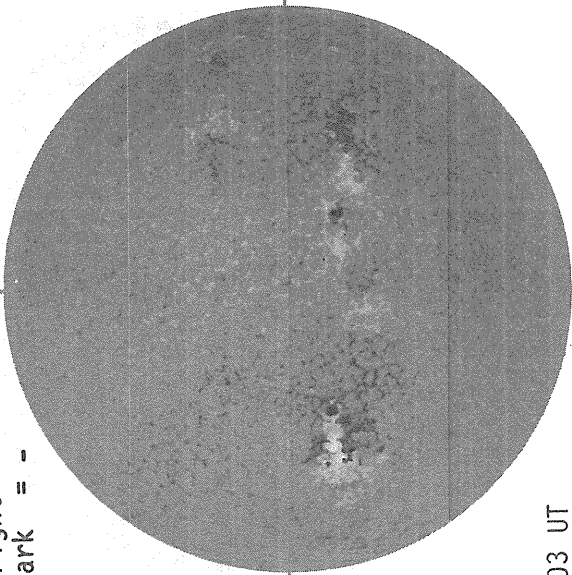


JUNE 02, 1983 (P=-15.30, B₀=-0.58, L₀= 34.42)

KITT PEAK MAGNETOGRAM

Np

Bright = +
Dark = -

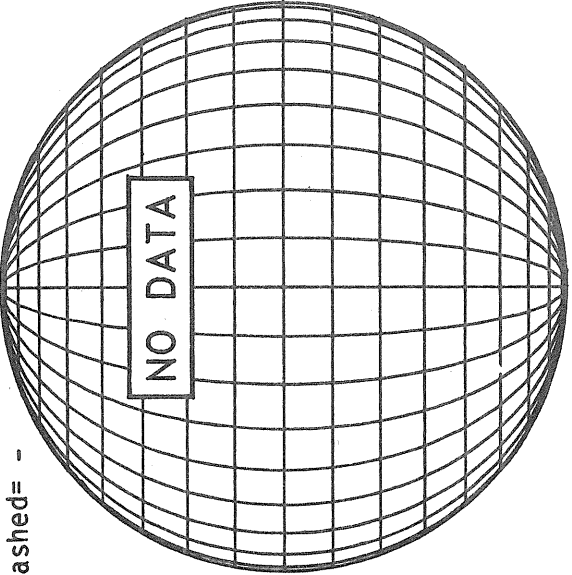


1603 UT

STANFORD MAGNETOGRAM

Np

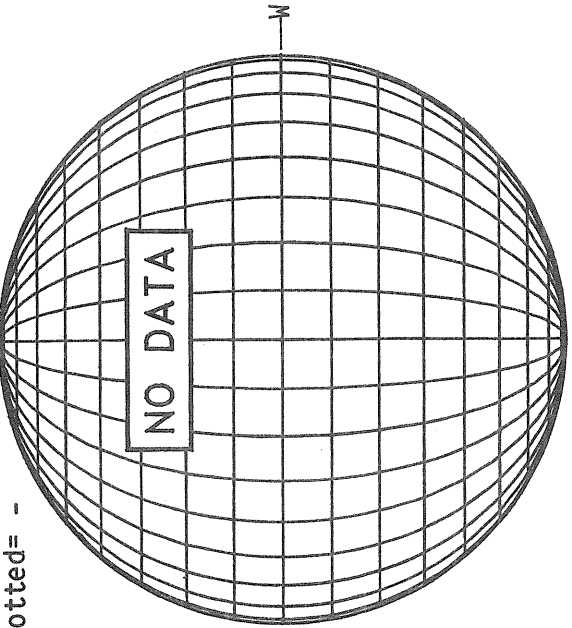
Solid = +
Dashed = -



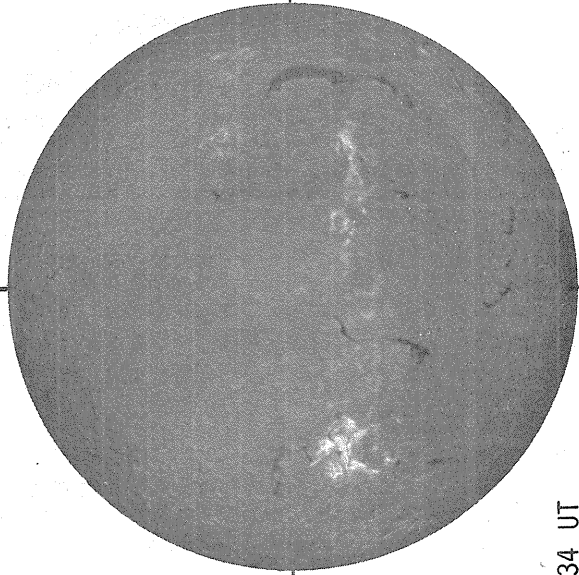
MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted = -



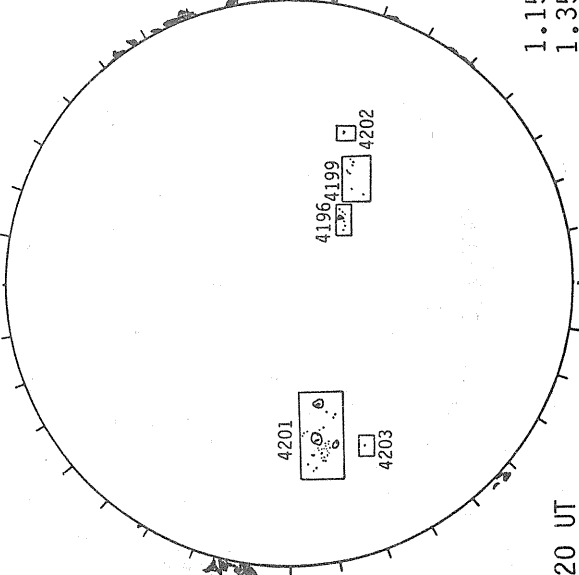
SACRAMENTO PEAK H-ALPHA



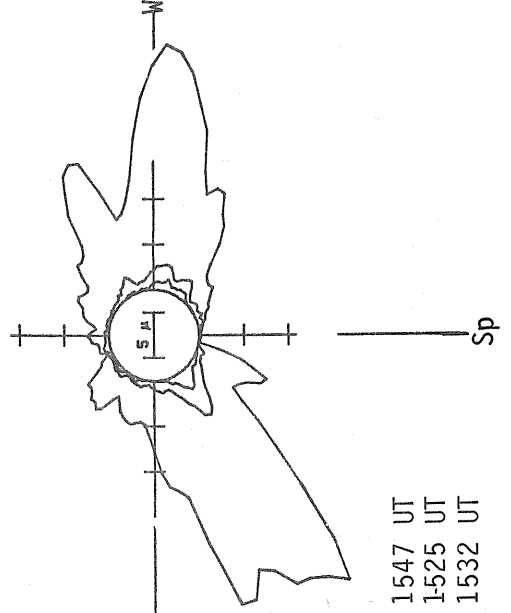
1434 UT

BOULDER SUNSPOTS

SACRAMENTO PEAK CORONA (5303 Angstrom)



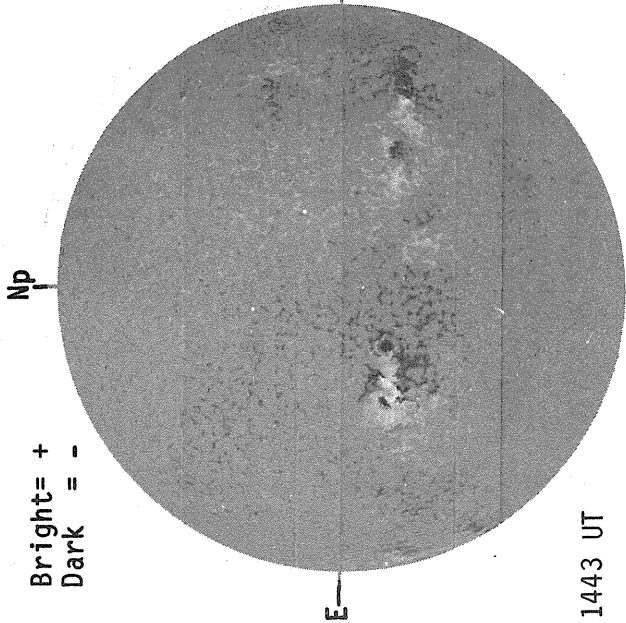
1420 UT
1435 UT BOUL Prom



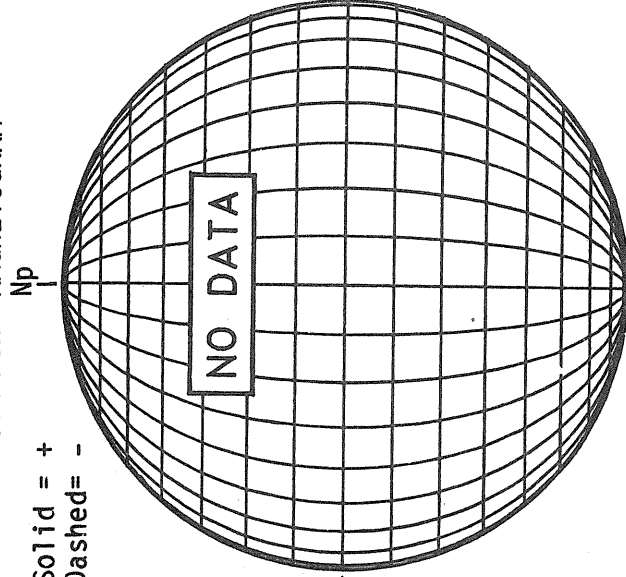
1.15 R₀ 1547 UT
1.35 R₀ 1525 UT
1.45 R₀ 1532 UT

JUNE 03, 1983 (P=-14.92, B₀=-0.46, L₀= 21.19)

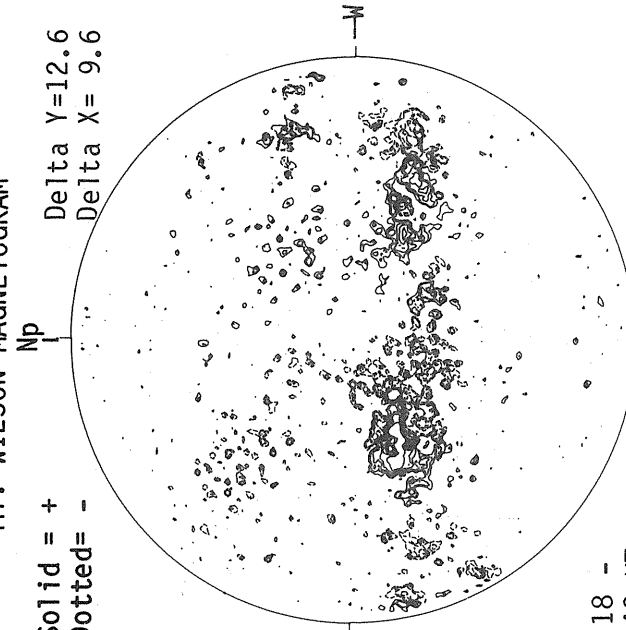
KITT PEAK MAGNETOGRAM



STANFORD MAGNETOGRAM

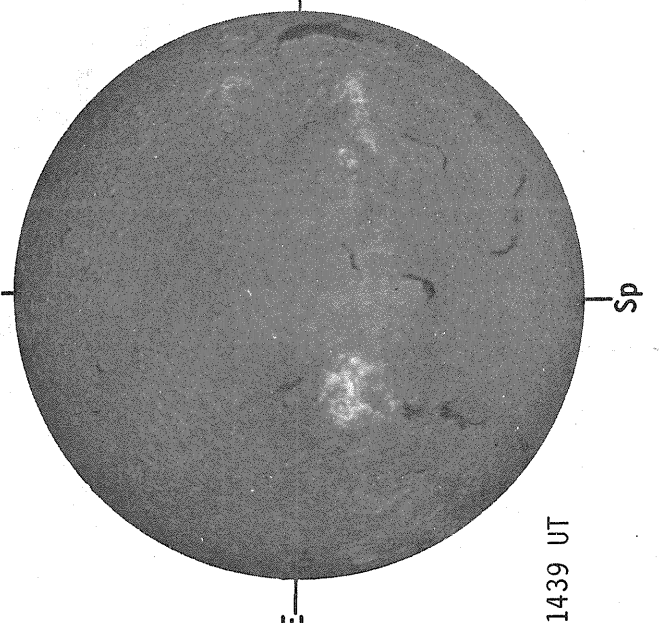


MT. WILSON MAGNETOGRAM

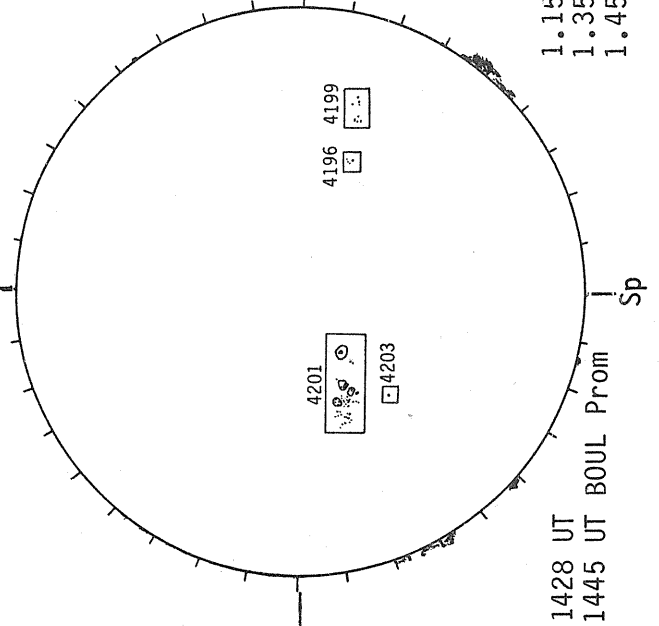


17.18 -
18.43 UT

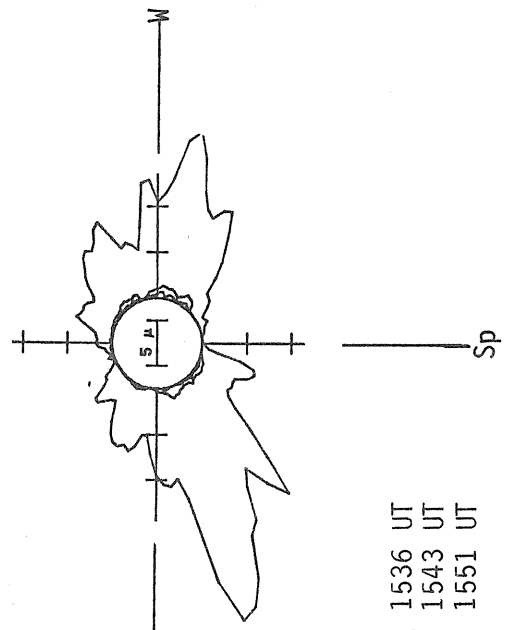
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS

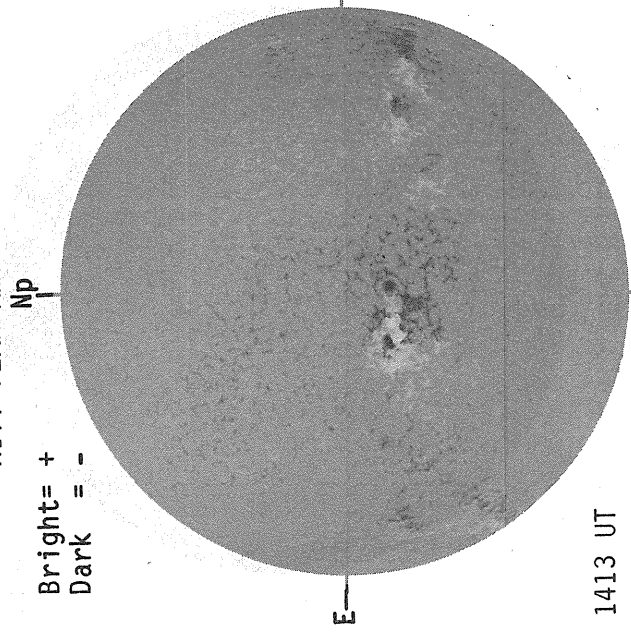


SACRAMENTO PEAK CORONA (5303 Angstrom)



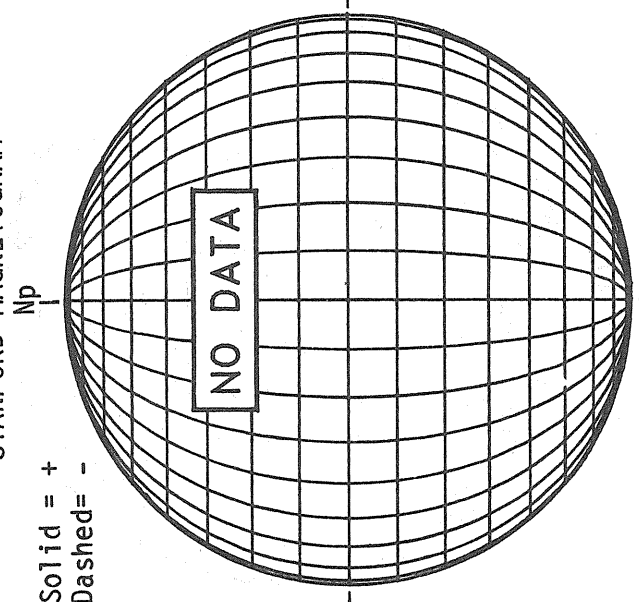
JUNE 04, 1983 (P=-14.54, B₀=-0.34, L₀= 7.96)

KITT PEAK MAGNETOGRAM



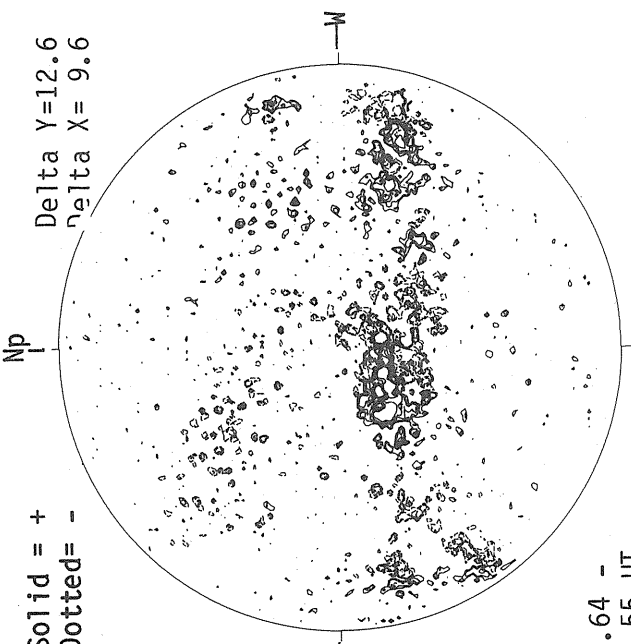
Bright = +
Dark = -

STANFORD MAGNETOGRAM



Solid = +
Dashed = -

MT. WILSON MAGNETOGRAM



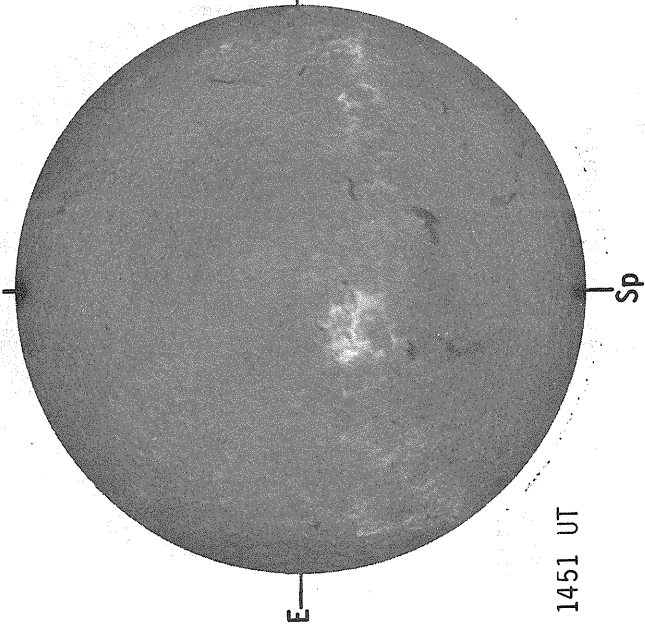
Solid = +
Dotted = -

Delta Y = 12.6
Delta X = 9.6

1413 UT

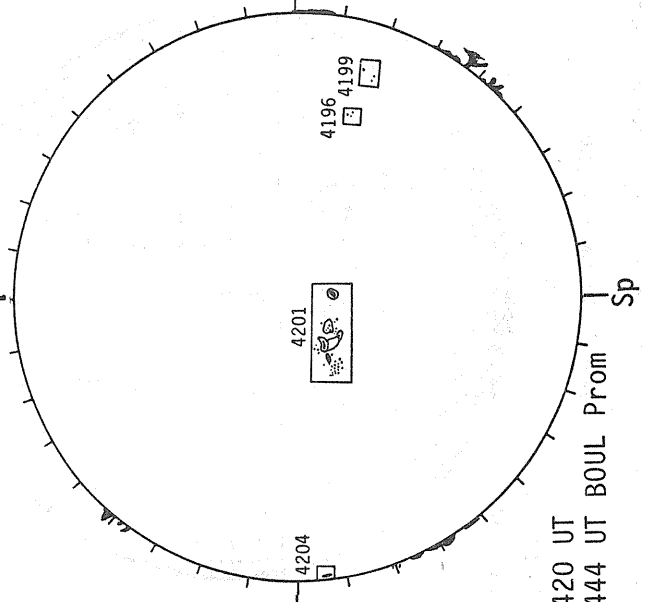
16.64 -
17.55 UT

SACRAMENTO PEAK H-ALPHA



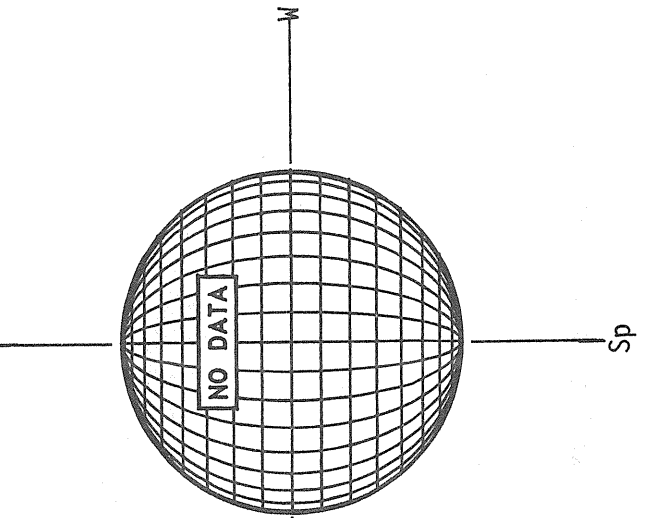
1451 UT

BOULDER SUNSPOTS



1420 UT
1444 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



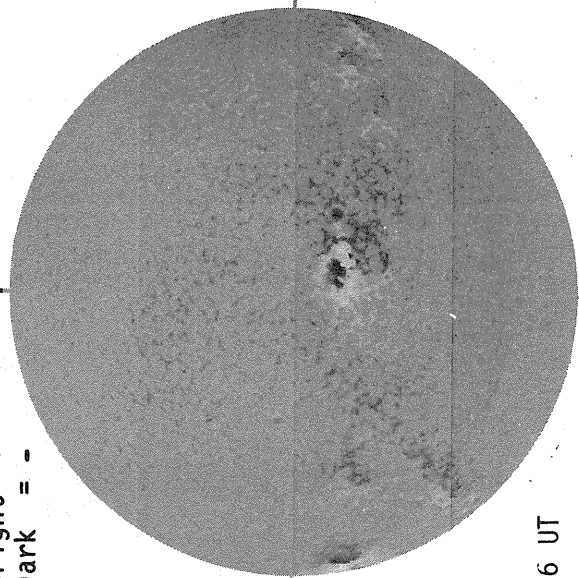
NO DATA

JUNE 05, 1983 (P=-14.15, B₀=-0.22, L₀= 354.72)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -

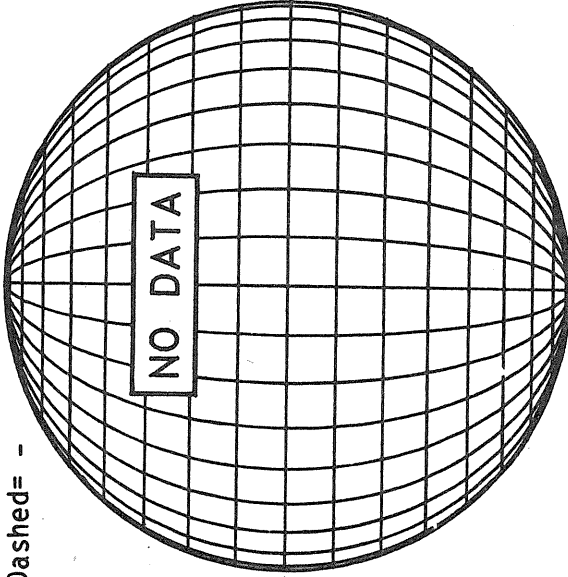


1546 UT

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed = -



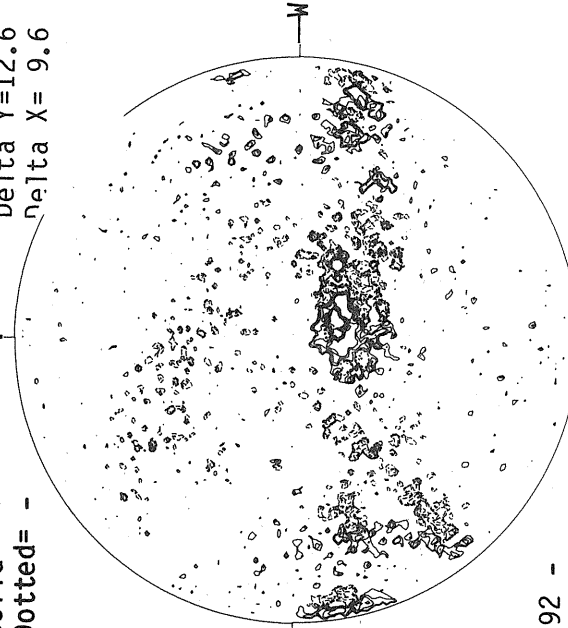
NO DATA

MT. WILSON MAGNETOGRAM

Np

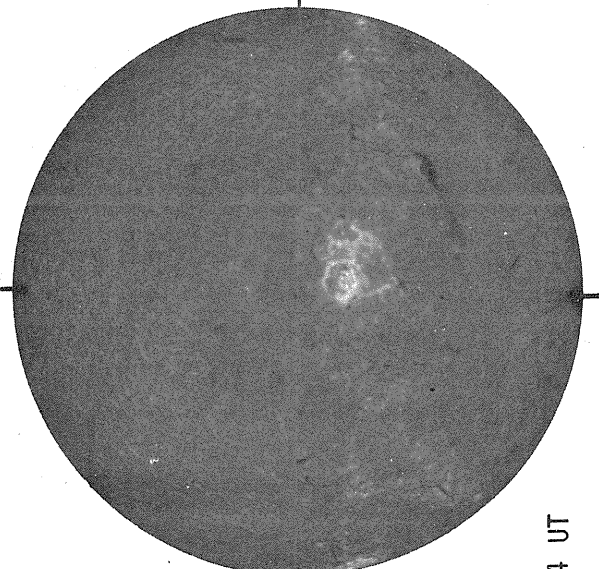
Solid = +
Dotted = -

Delta Y=12.6
Delta X= 9.6



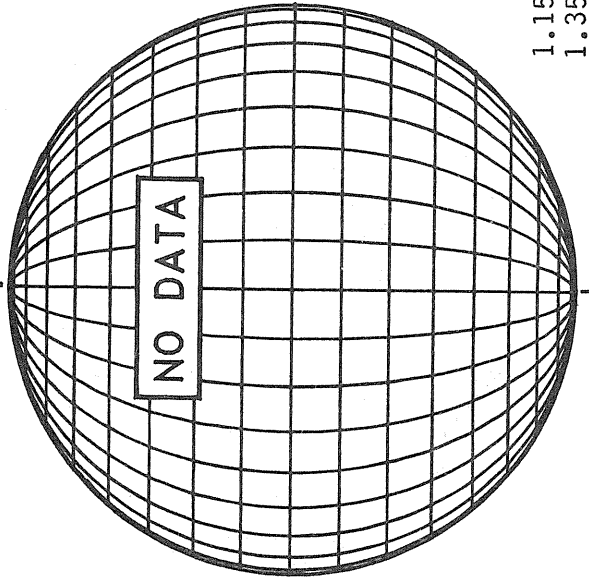
16.92 -
17.82 UT

SACRAMENTO PEAK H-ALPHA



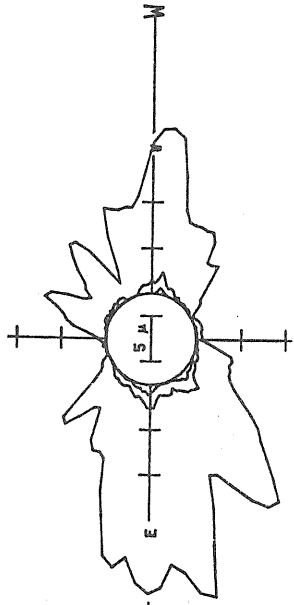
1434 UT

BOULDER SUNSPOTS



NO DATA

SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R₀ 1600 UT
1.35 R₀ 1547 UT
1.45 R₀ 1553 UT

Sp

Sp

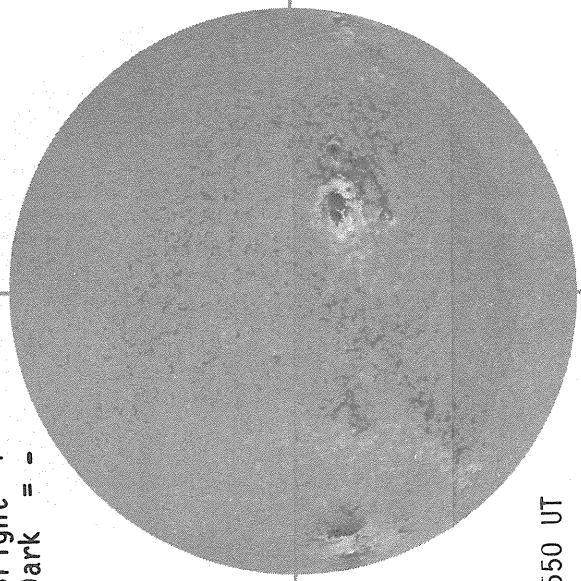
Sp

JUNE 06, 1983 (P=-13.76, B₀=-0.10, L₀= 341.49)

KITT PEAK MAGNETOGRAM

Np

Bright = +
Dark = -

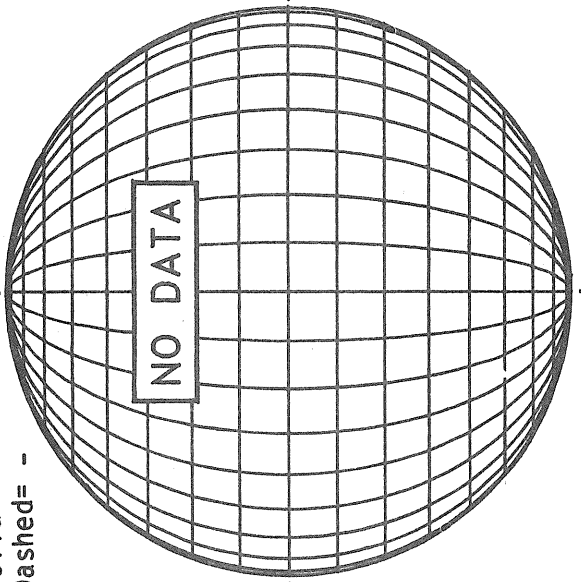


1550 UT

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed = -



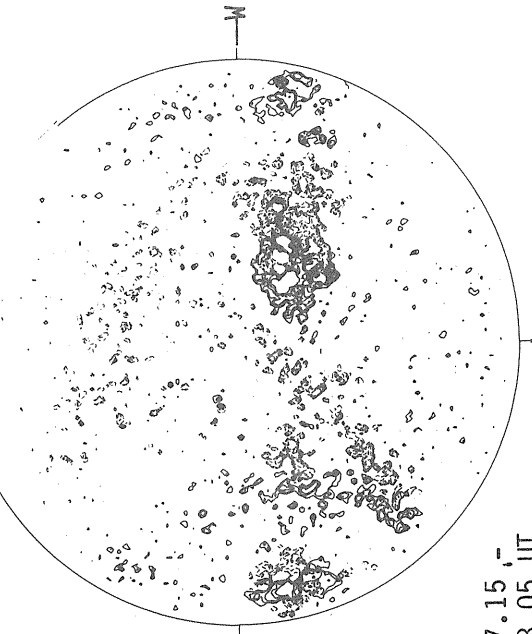
NO DATA

MT. WILSON MAGNETOGRAM

Np

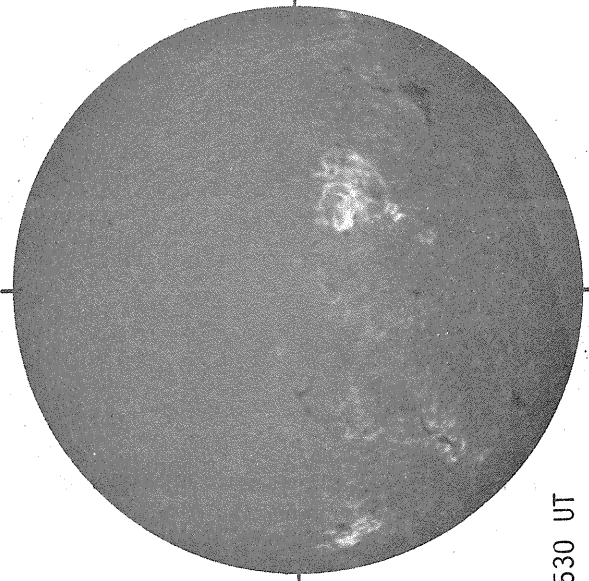
Solid = +
Dotted = -

Delta Y = 12.6
Delta X = 9.6



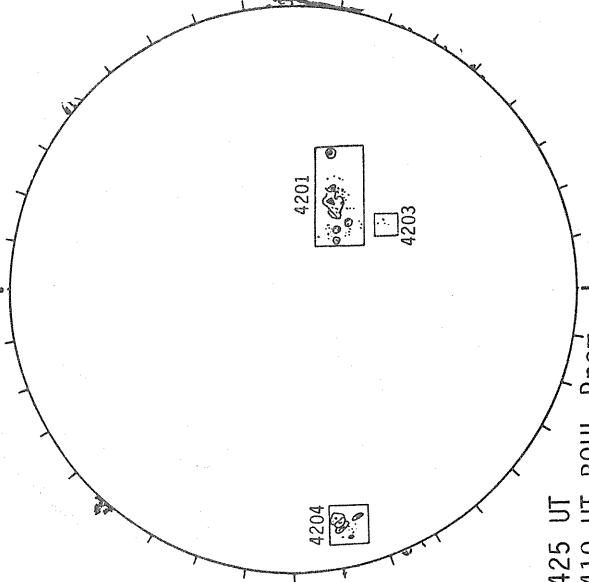
17.15 UT
18.05 UT

SACRAMENTO PEAK H-ALPHA



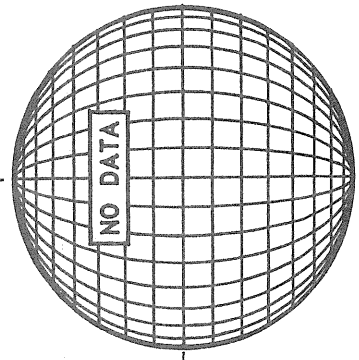
1530 UT

BOULDER SUNSPOTS



1425 UT
1410 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



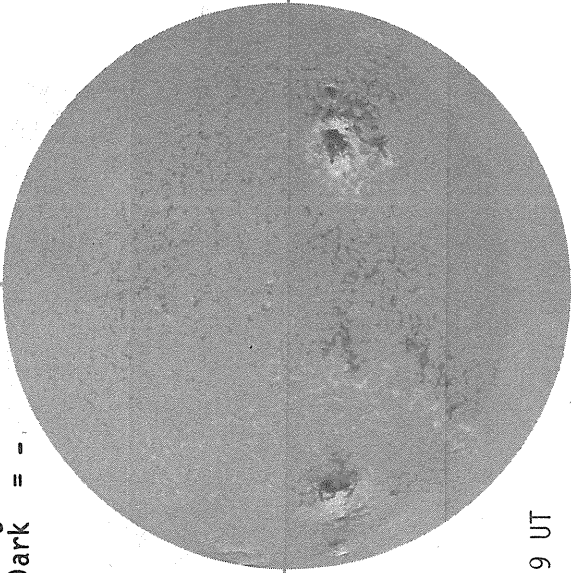
NO DATA

JUNE 07, 1983 ($P=-13.36$, $B_0=+0.02$, $L_0=328.25$)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -

Np

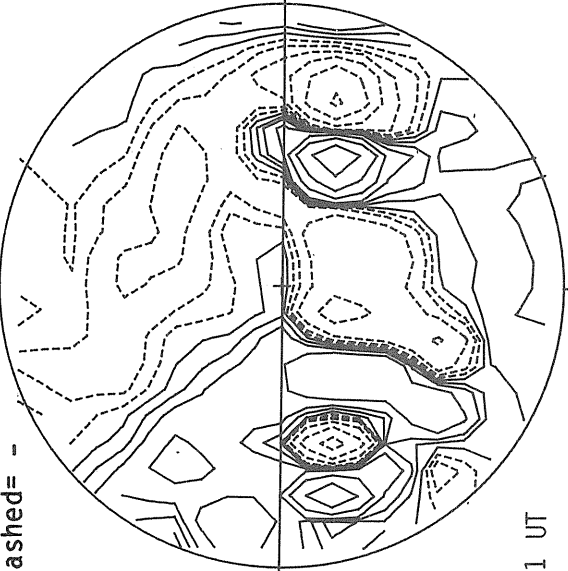


1329 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

Np



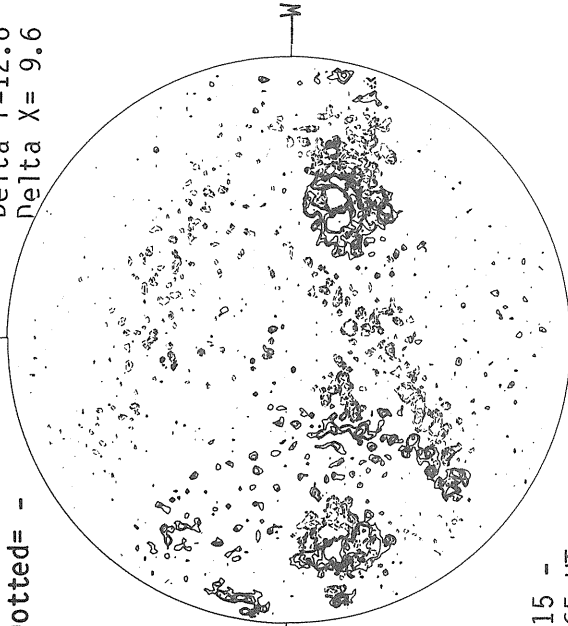
2301 UT

MT. WILSON MAGNETOGRAM

Solid = +
Dotted = -

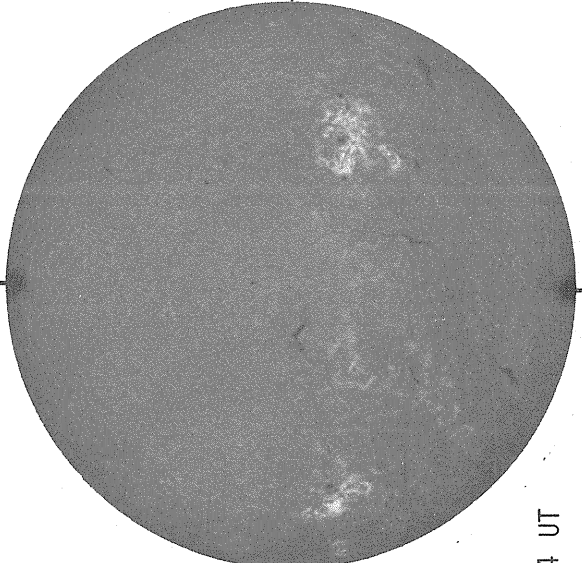
Np

Delta Y = 12.6
Delta X = 9.6



17.15 -
18.65 UT

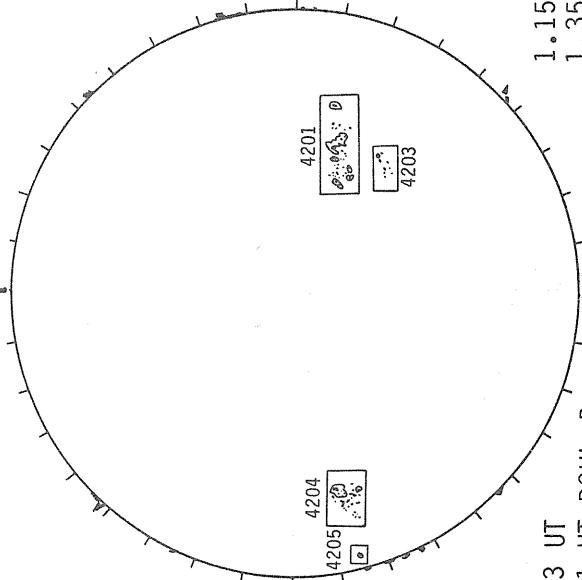
SACRAMENTO PEAK H-ALPHA



1334 UT

BOULDER SUNSPOTS

SACRAMENTO PEAK CORONA (5303 Angstrom)



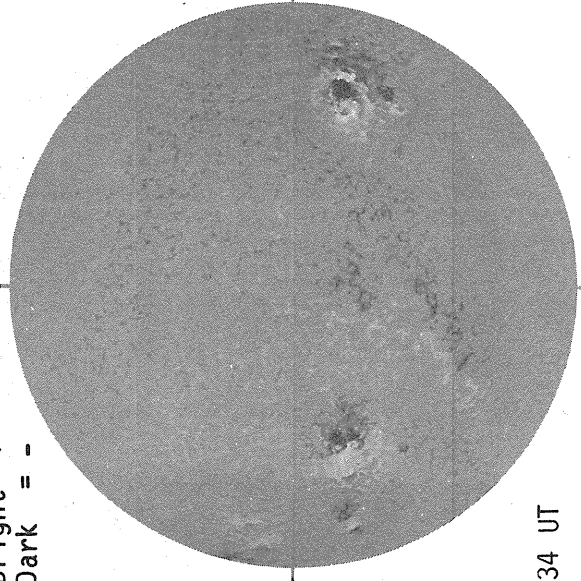
1423 UT
1441 UT BOUL Prom

1.15 R₀ 1757 UT
1.35 R₀ 1744 UT
1.45 R₀ 1750 UT

JUNE 08, 1983 (P=-12.96, B₀=+0.14, L₀= 315.02)

KITT PEAK MAGNETOGRAM

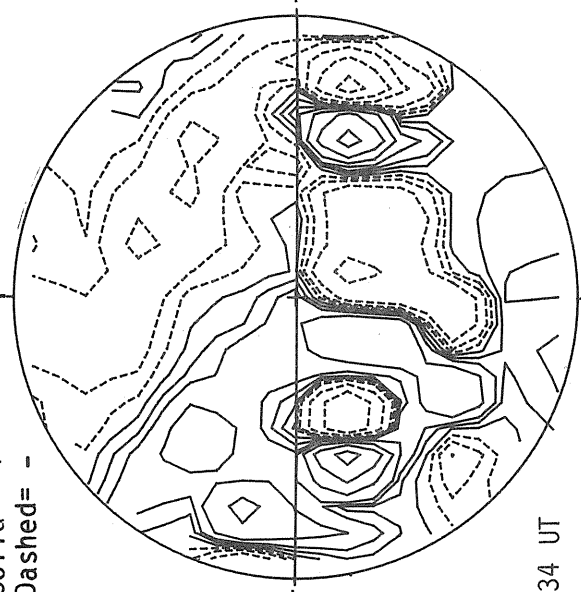
Bright= +
Dark = -



1334 UT

STANFORD MAGNETOGRAM

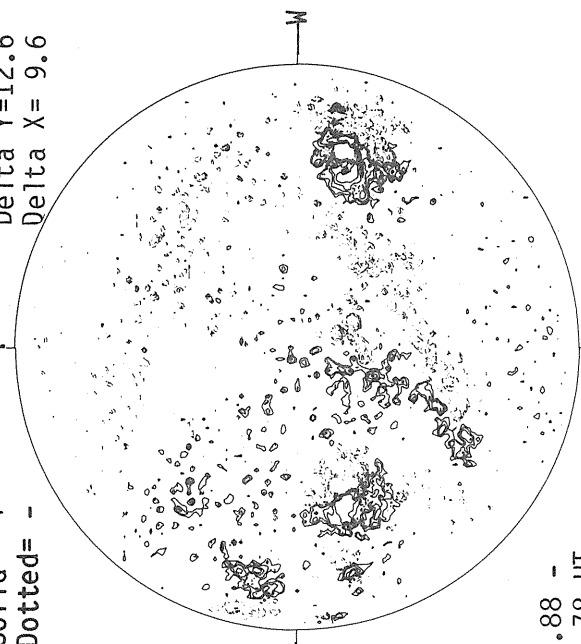
Solid = +
Dashed = -



1834 UT

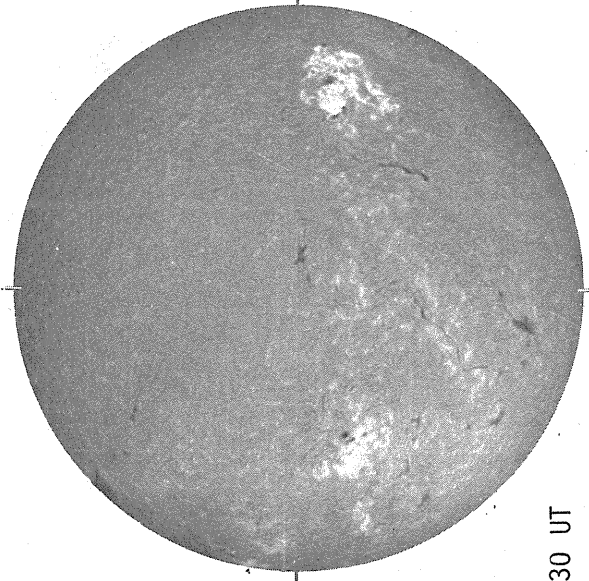
MT. WILSON MAGNETOGRAM

Solid = +
Dotted = -



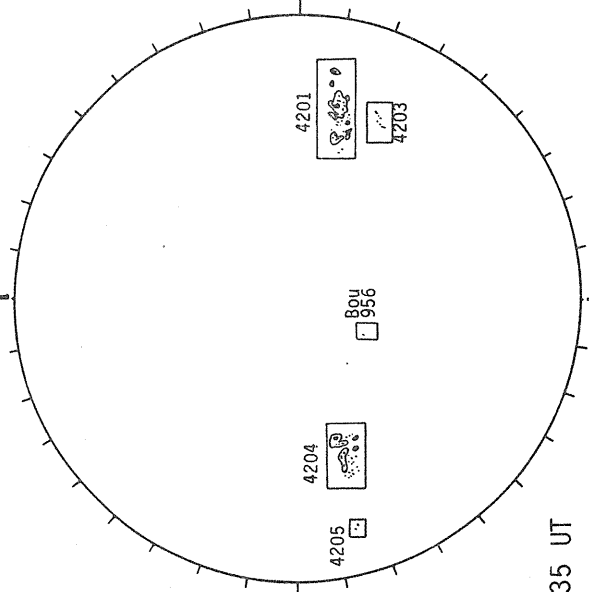
18.88 -
19.78 UT

BOULDER H-ALPHA



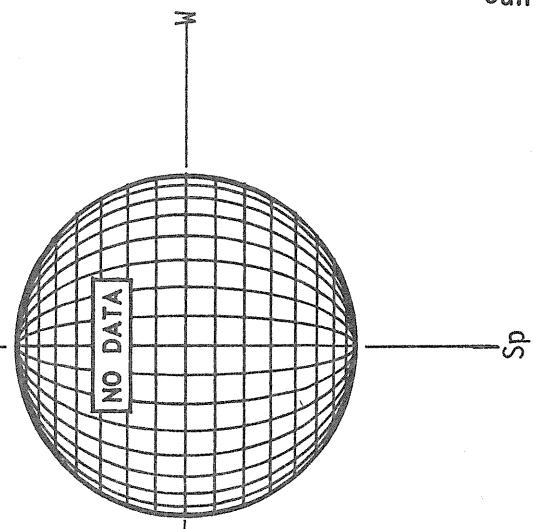
1430 UT

BOULDER SUNSPOTS



1335 UT

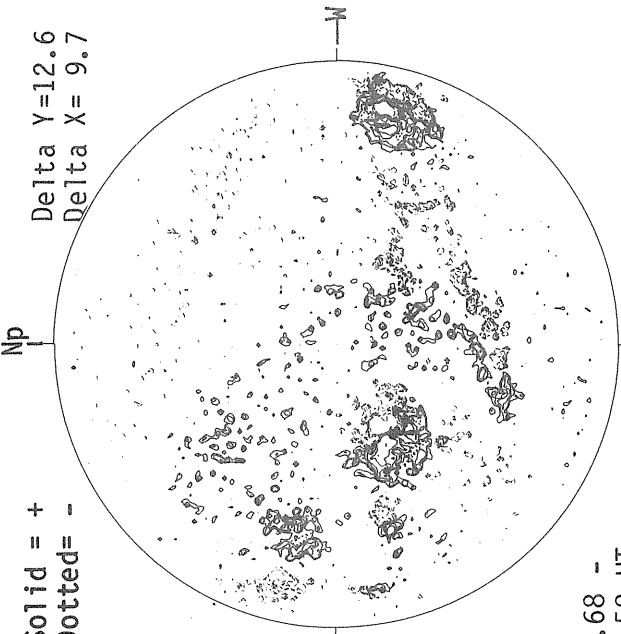
SACRAMENTO PEAK CORONA (5303 Angstrom)



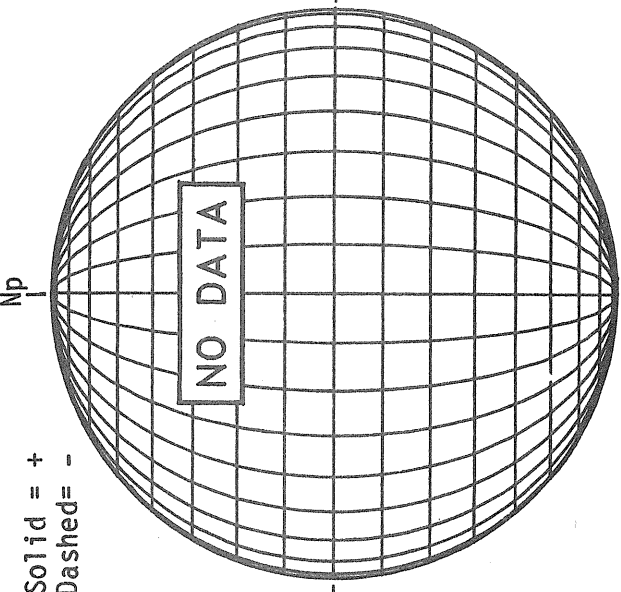
1430 UT

J U N E 09, 1 9 8 3 (P=-12.56, B₀=+0.26, L₀= 301.78)

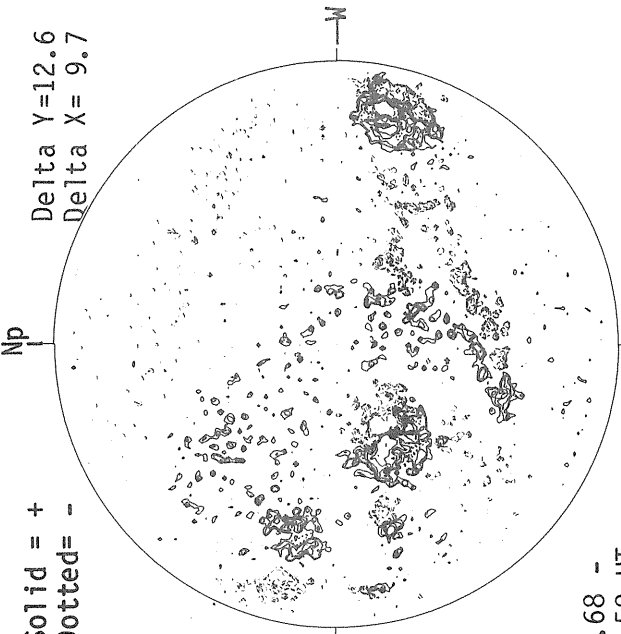
KITT PEAK MAGNETOGRAM



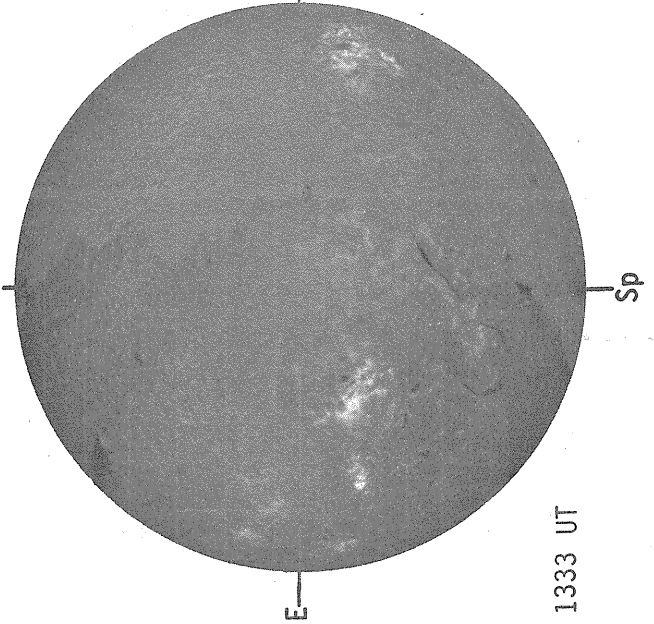
STANFORD MAGNETOGRAM



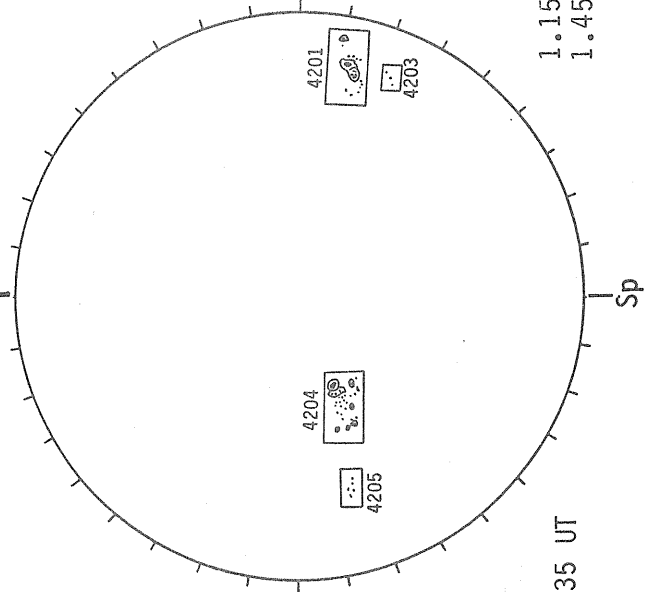
MT. WILSON MAGNETOGRAM



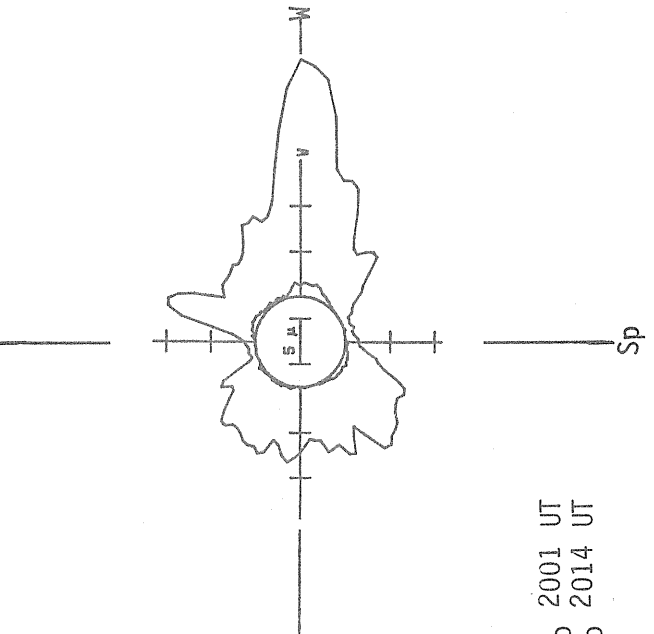
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

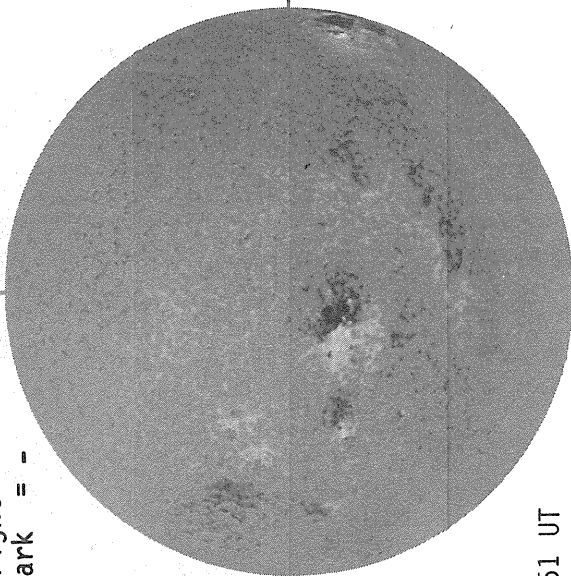


JUNE 10, 1983 (P=-12.15, B₀=+0.38, L₀= 288.55)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -

Np

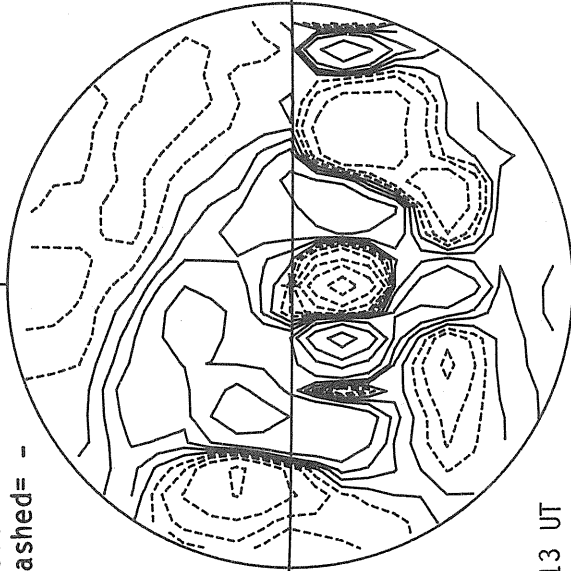


1551 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

Np

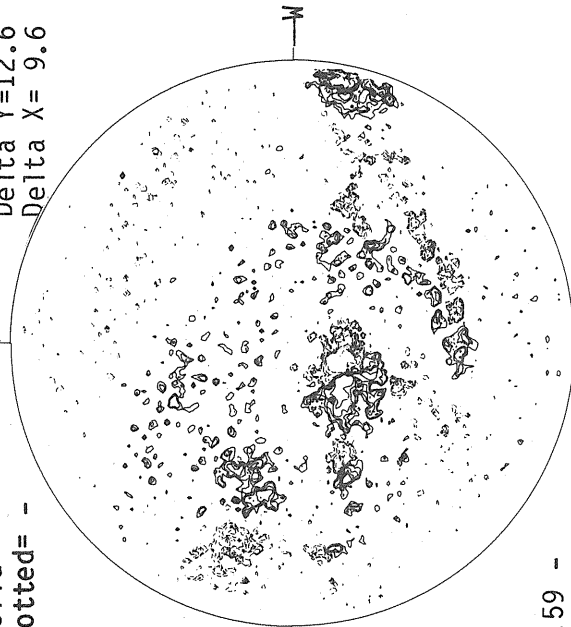


1813 UT

MT. WILSON MAGNETOGRAM

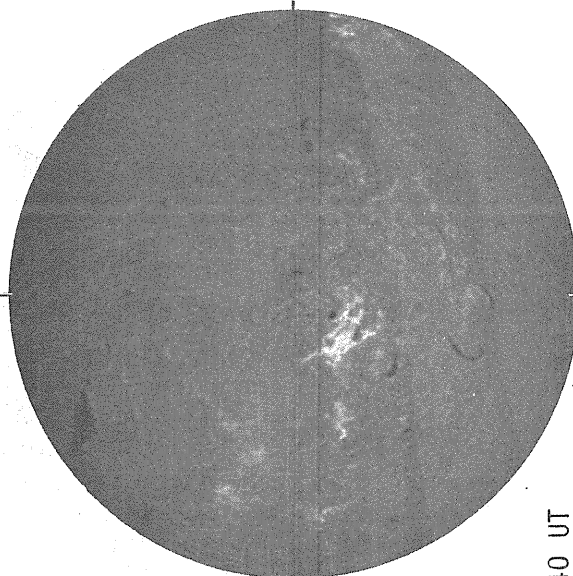
Solid = +
Dotted = -

Np



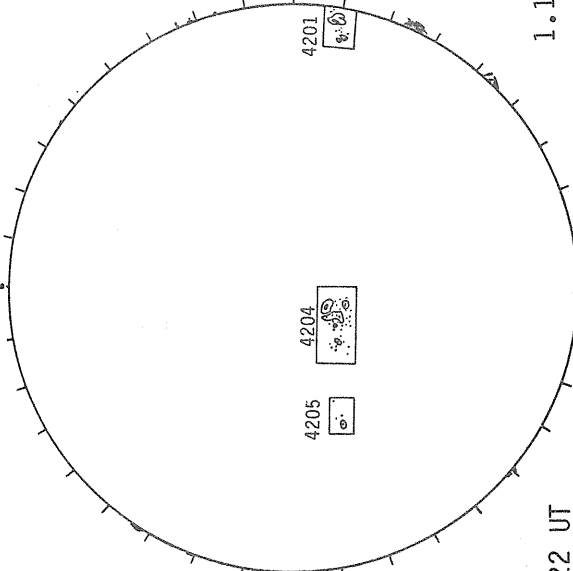
17.59 -
18.50 UT

BOULDER H-ALPHA



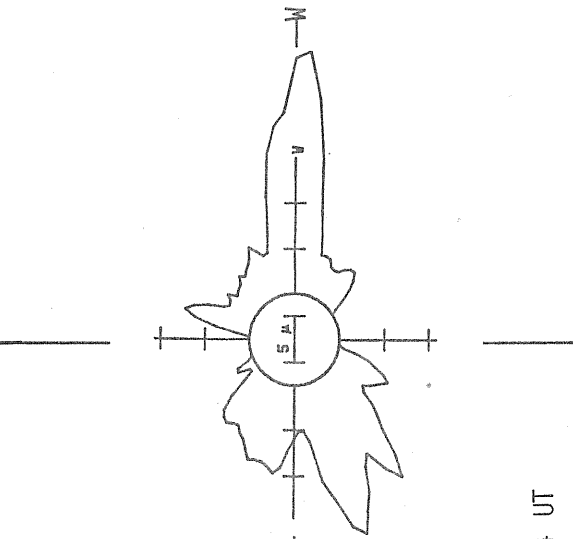
1740 UT

BOULDER SUNSPOTS



1622 UT
1740 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



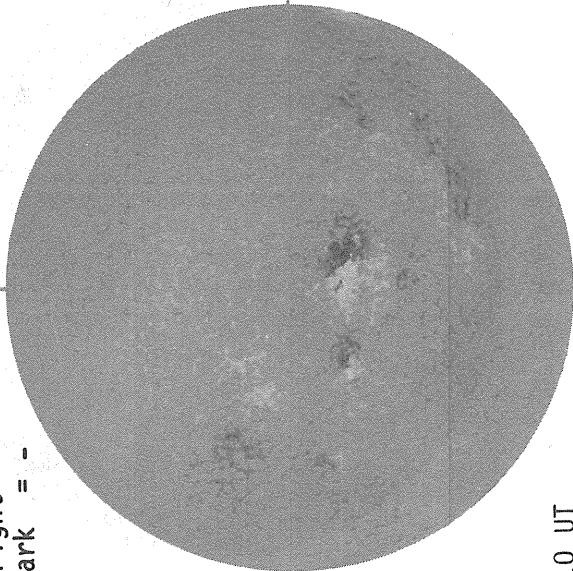
1.15 R₀ 1514 UT

JUNE 11, 1983 (P=-11.74, B₀=+0.50, L₀= 275.31)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np

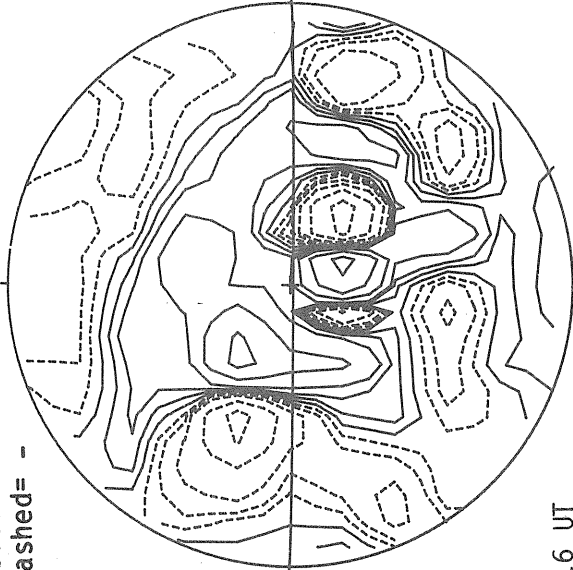


1410 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

Np

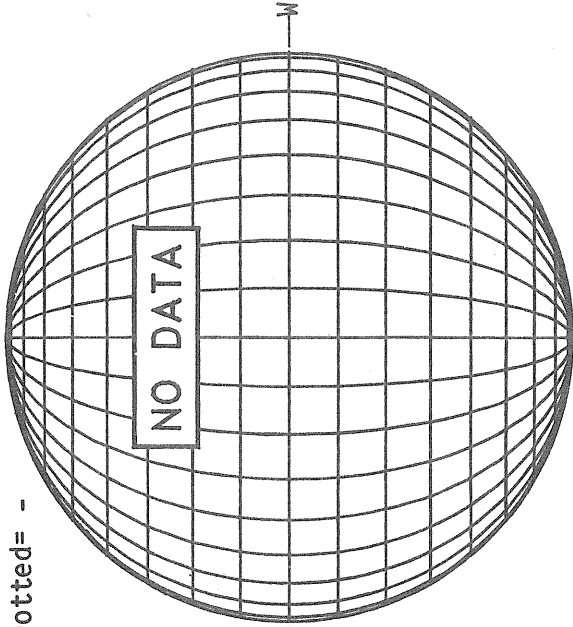


2016 UT

MT. WILSON MAGNETOGRAM

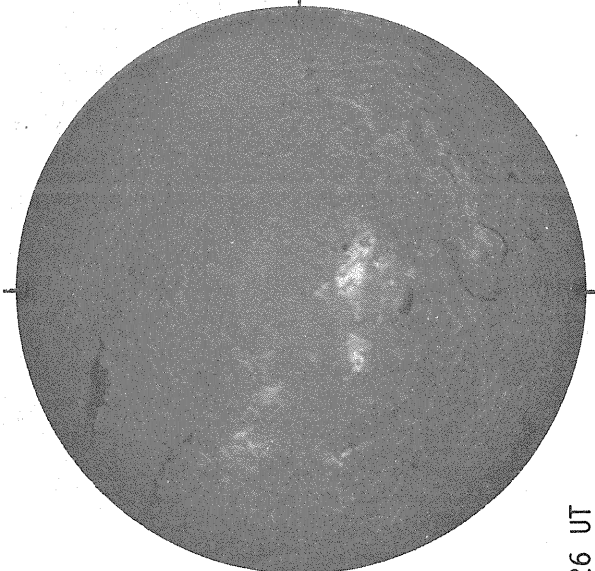
Solid = +
Dotted = -

Np



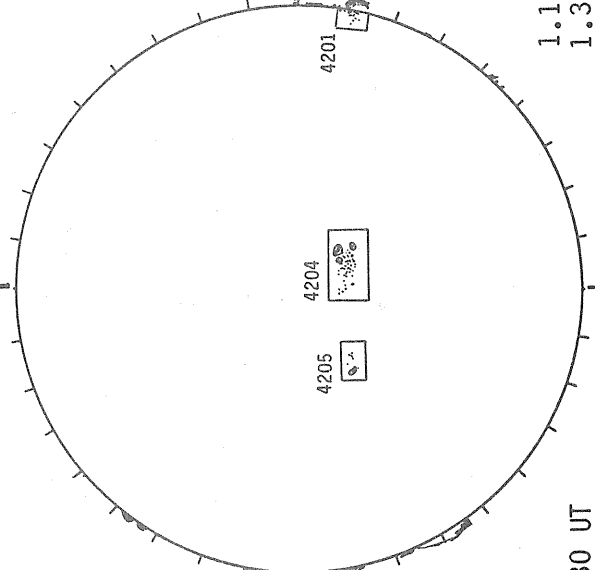
NO DATA

SACRAMENTO PEAK H-ALPHA



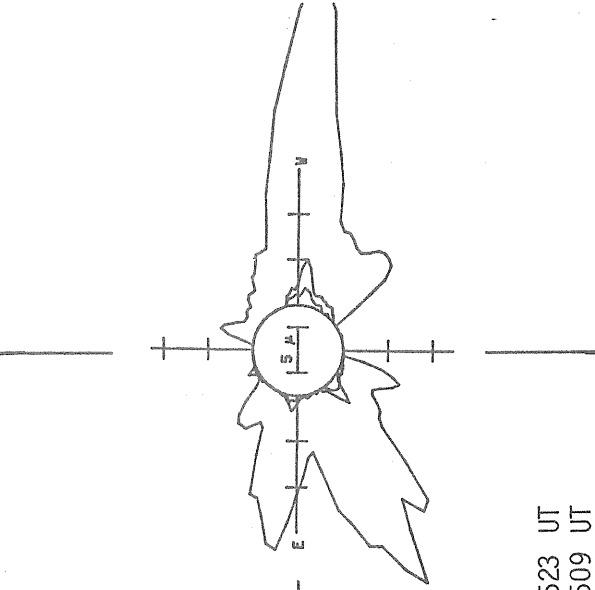
1526 UT

BOULDER SUNSPOTS



1330 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)



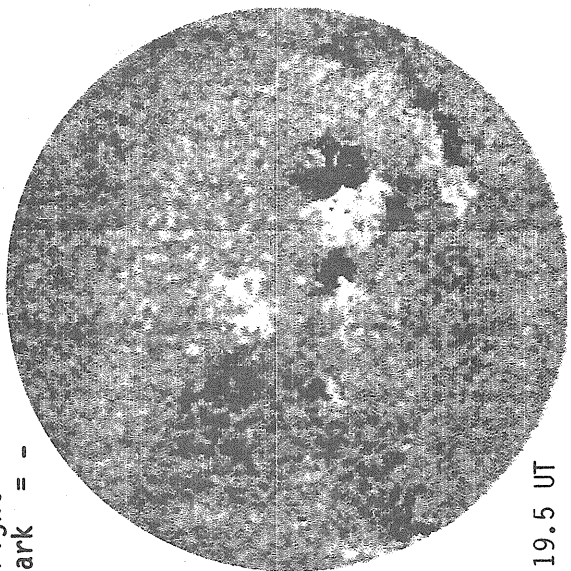
1515 UT

1.15 R₀ 1523 UT
1.35 R₀ 1509 UT
1.45 R₀ 1515 UT

JUNE 12, 1983 (P=-11.32, B₀=+0.63, L₀=262.07)

MT. WILSON MAGNETOGRAM

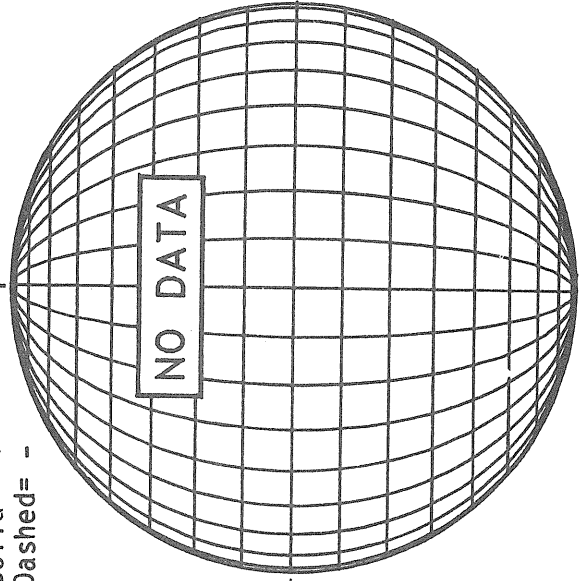
Bright = +
Dark = -



18.6-19.5 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

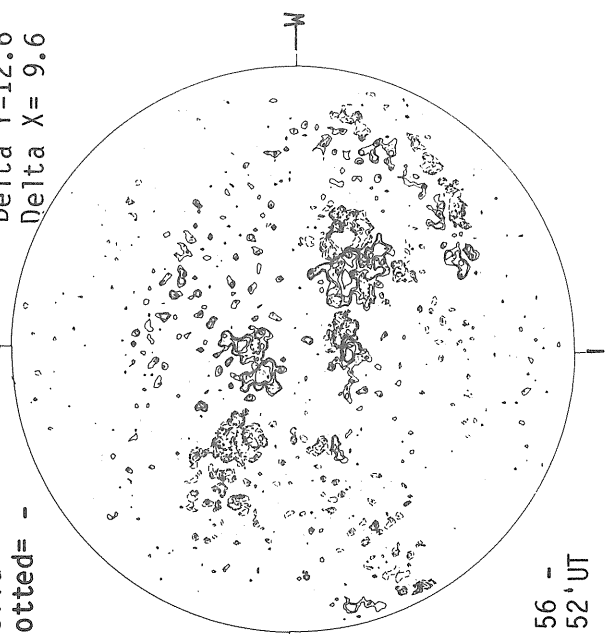


18.56 -
19.52 UT

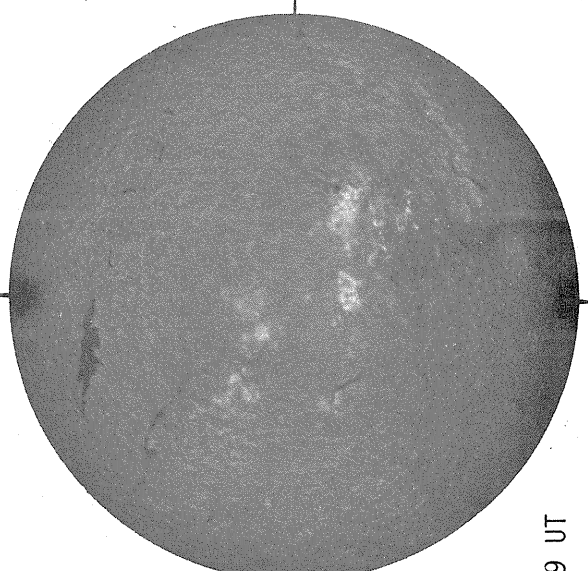
MT. WILSON MAGNETOGRAM

Solid = +
Dotted = -

Delta Y = 12.6
Delta X = 9.6

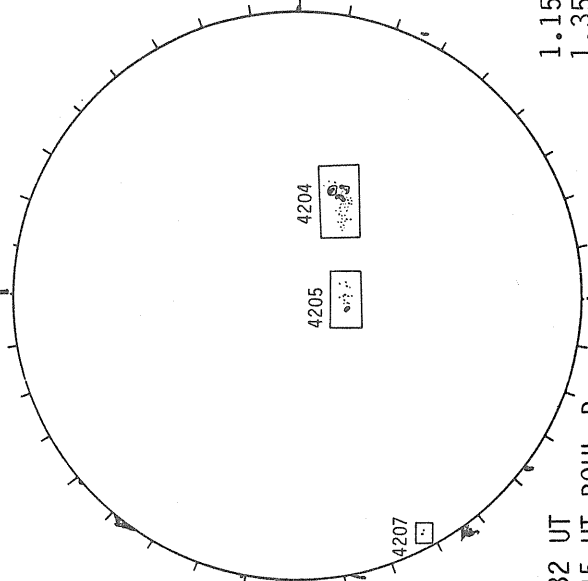


SACRAMENTO PEAK H-ALPHA



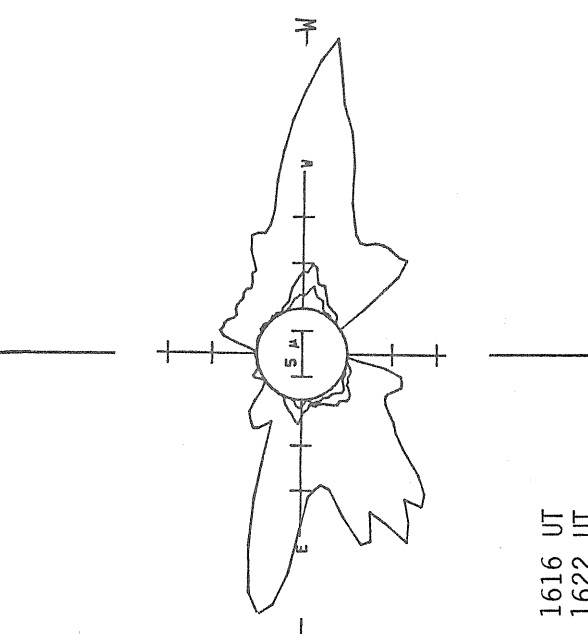
1439 UT

BOULDER SUNSPOTS



1532 UT
1545 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



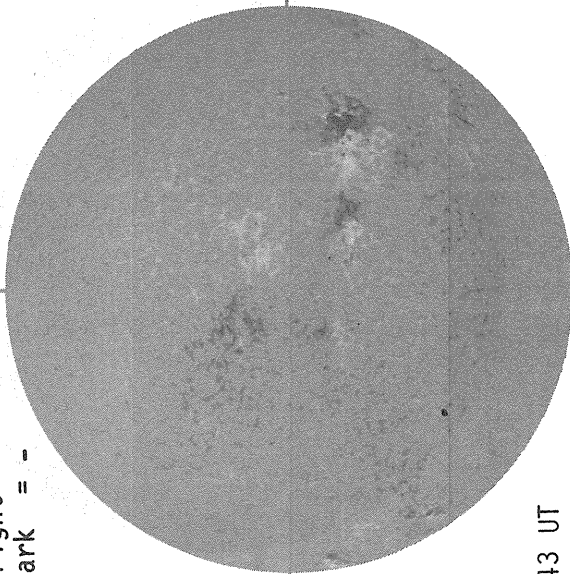
1.15 R₀ 1616 UT
1.35 R₀ 1622 UT
1.45 R₀ 1630 UT

JUNE 13, 1983 (P=-10.90, B₀=+0.75, L₀=248.84)

KITT PEAK MAGNETOGRAM

Np

Bright = +
Dark = -



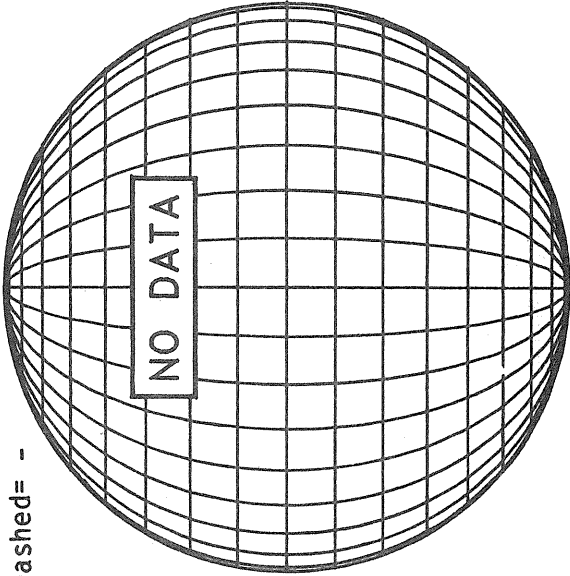
E

1543 UT

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed = -

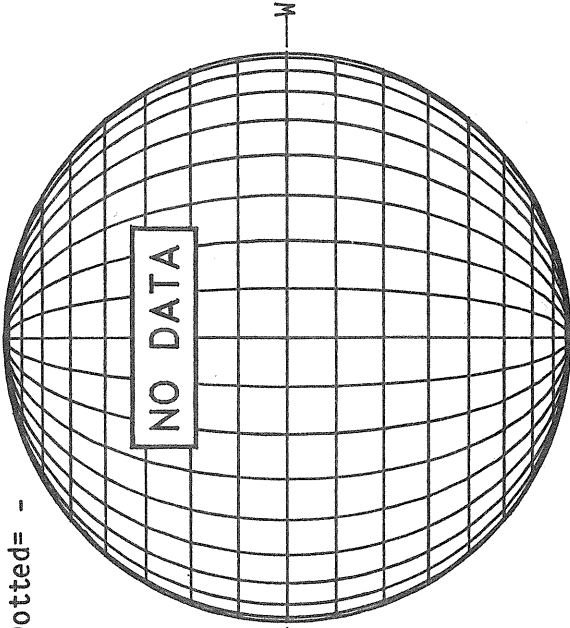


NO DATA

MT. WILSON MAGNETOGRAM

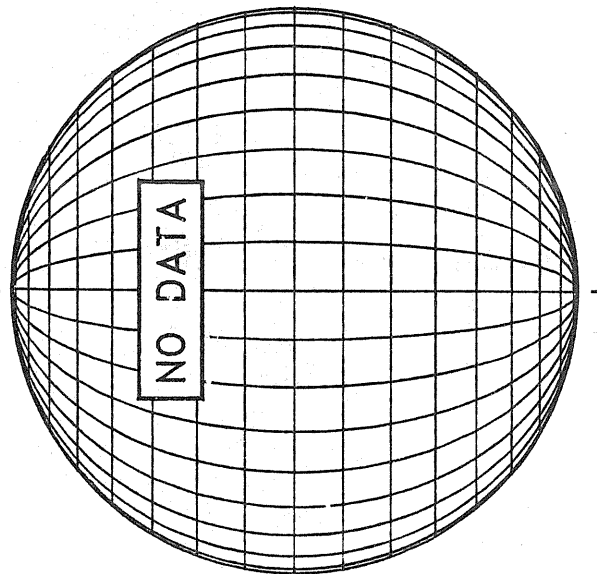
Np

Solid = +
Dotted = -



NO DATA

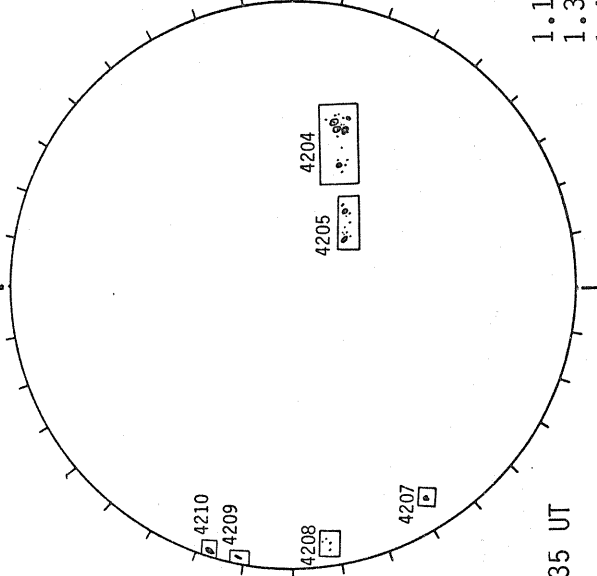
SACRAMENTO PEAK H-ALPHA



NO DATA

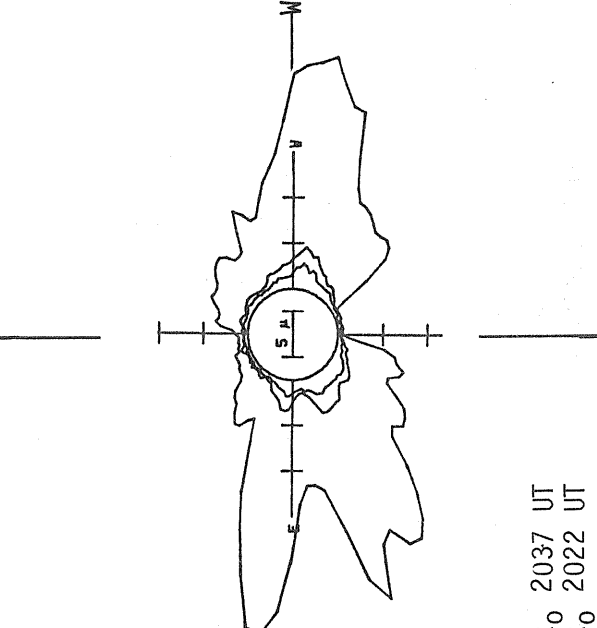
E

BOULDER SUNSPOTS



1435 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)



Sp

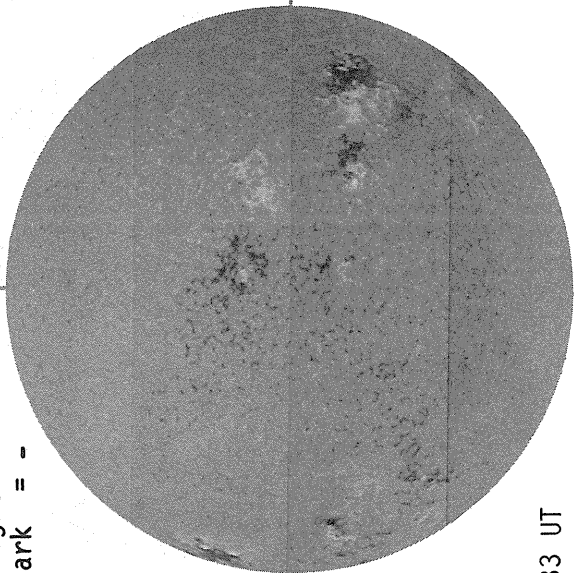
1.15 R₀ 2037 UT
1.35 R₀ 2022 UT
1.45 R₀ 2030 UT

J U N E 14, 1 9 8 3 (P=-10.48, B₀=+0.87, L₀= 235.60)

KITT PEAK MAGNETOGRAM

Np

Bright = +
Dark = -

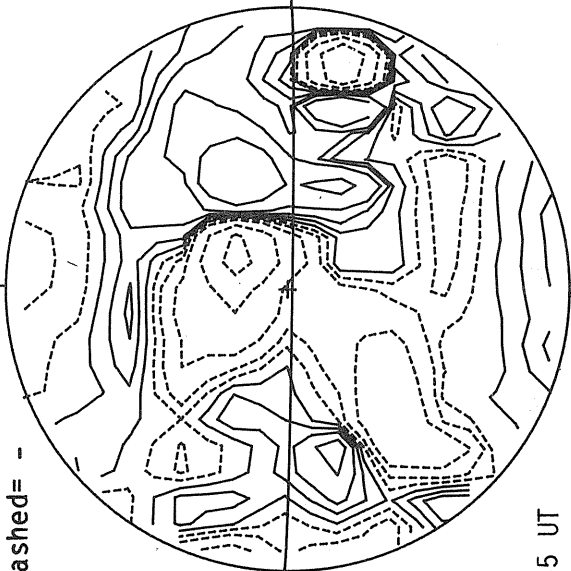


1333 UT

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed = -



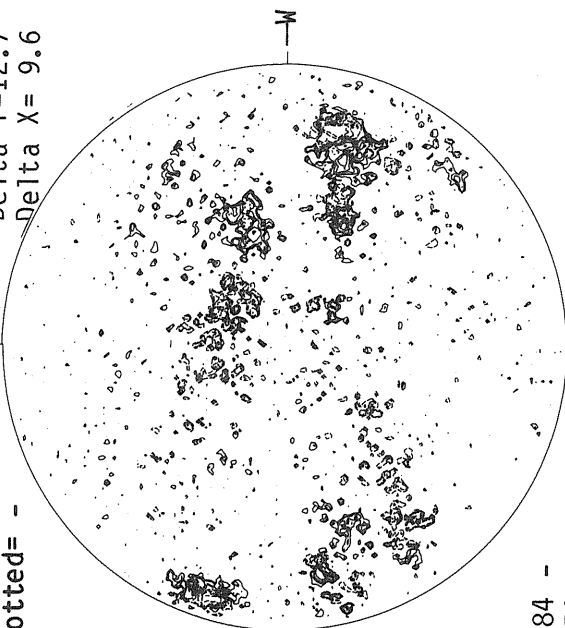
1845 UT

MT. WILSON MAGNETOGRAM

Np

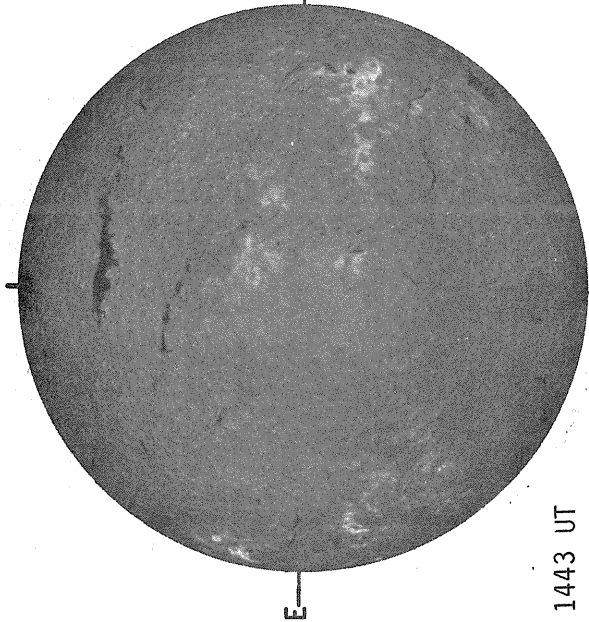
Solid = +
Dotted = -

Delta Y = 12.7
Delta X = 9.6



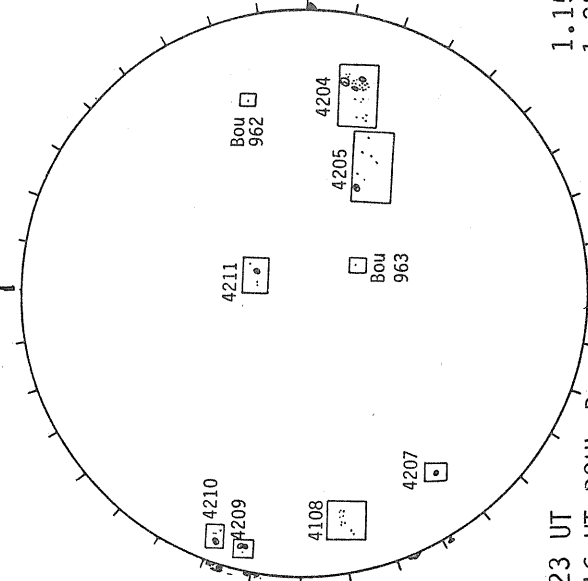
21.84 -
22.74 UT

SACRAMENTO PEAK H-ALPHA



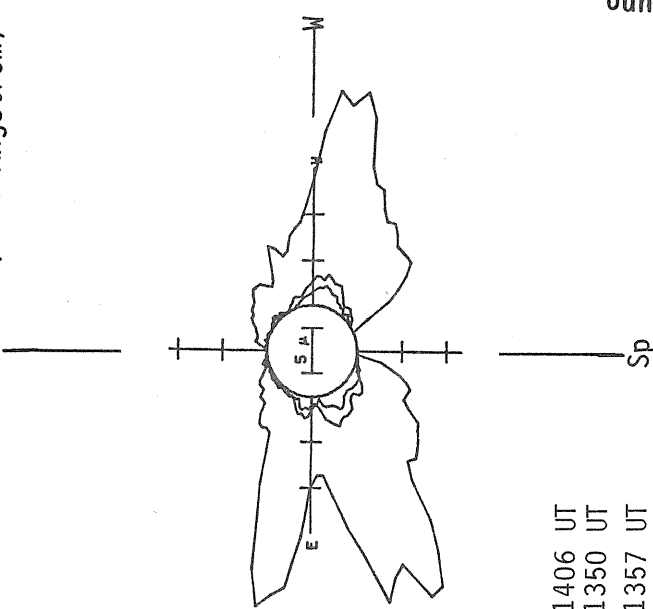
1443 UT

BOULDER SUNSPOTS



1423 UT
1616 UT BOUL Prom

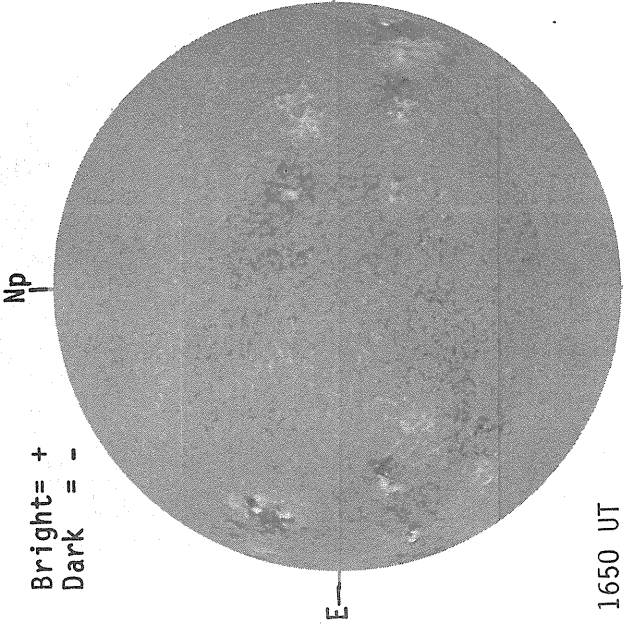
SACRAMENTO PEAK CORONA (5303 Angstrom)



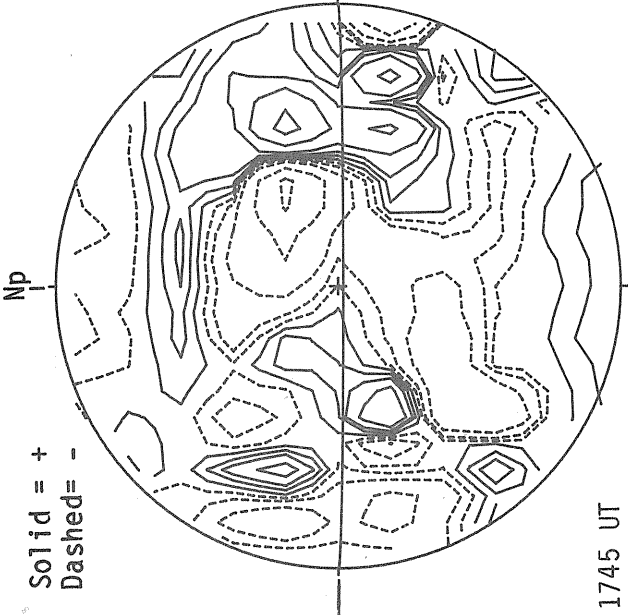
1.15 R₀ 1406 UT
1.35 R₀ 1350 UT
1.45 R₀ 1357 UT

JUNE 15, 1983 (P=-10.06, B₀=+0.98, L₀= 222.37)

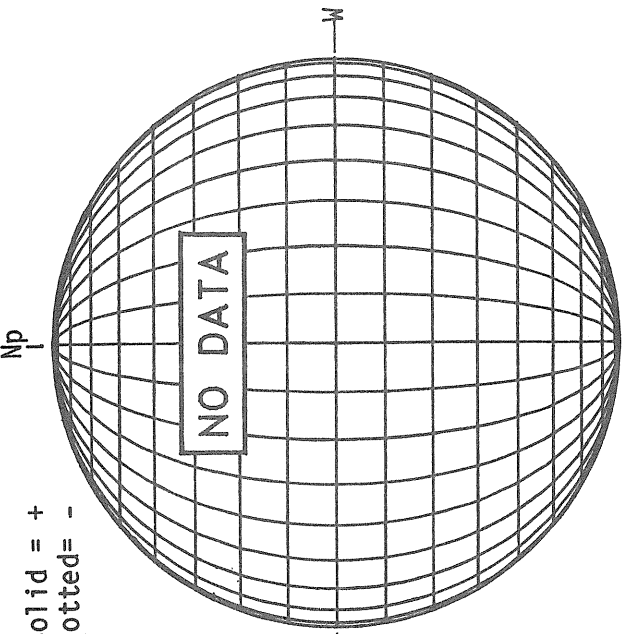
KITT PEAK MAGNETOGRAM



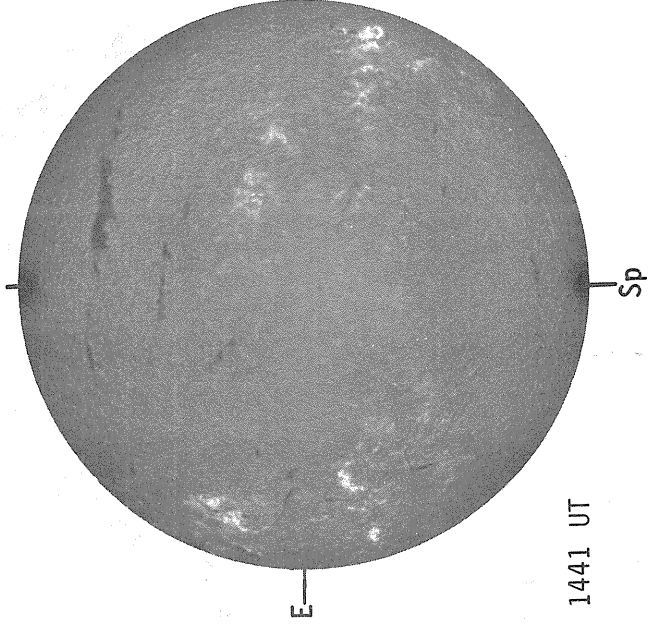
STANFORD MAGNETOGRAM



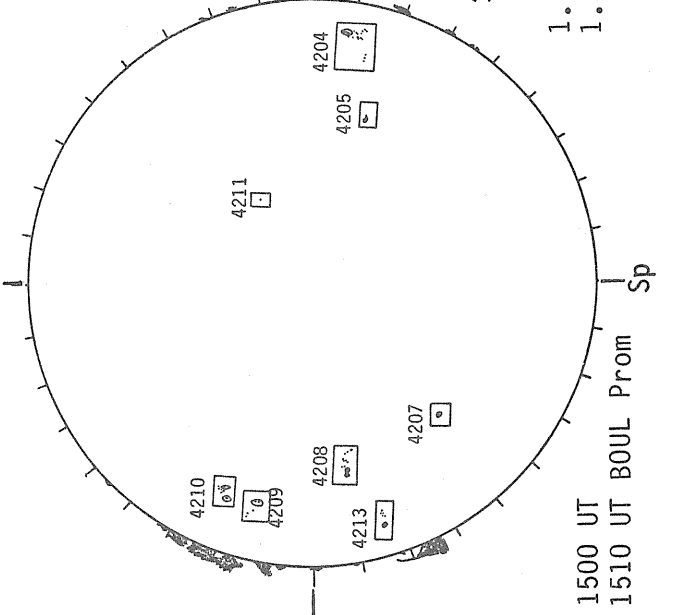
MT. WILSON MAGNETOGRAM



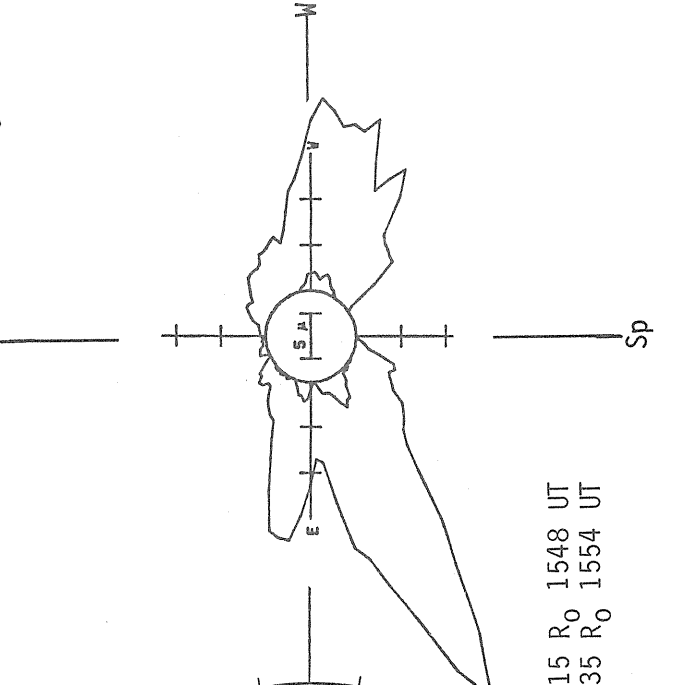
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

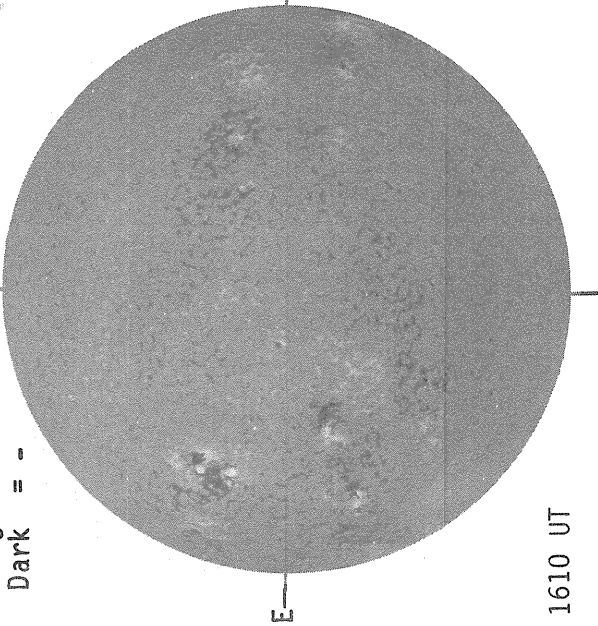


JUNE 16, 1983 (P=-9.63, B₀=+1.10, L₀=209.13)

KITT PEAK MAGNETOGRAM

Np

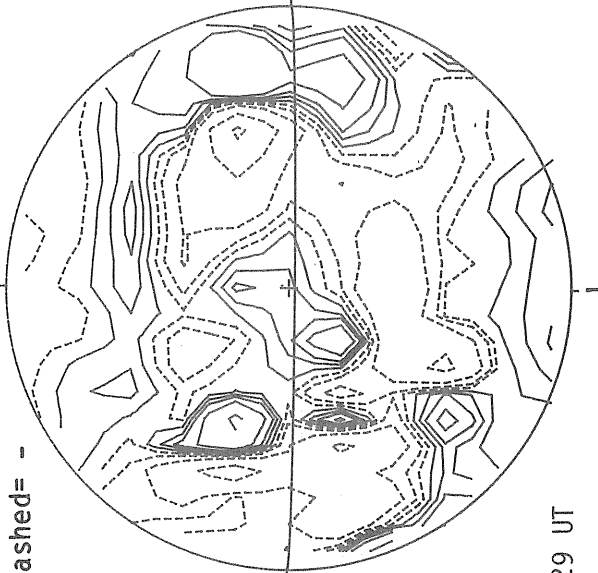
Bright = +
Dark = -



STANFORD MAGNETOGRAM

Np

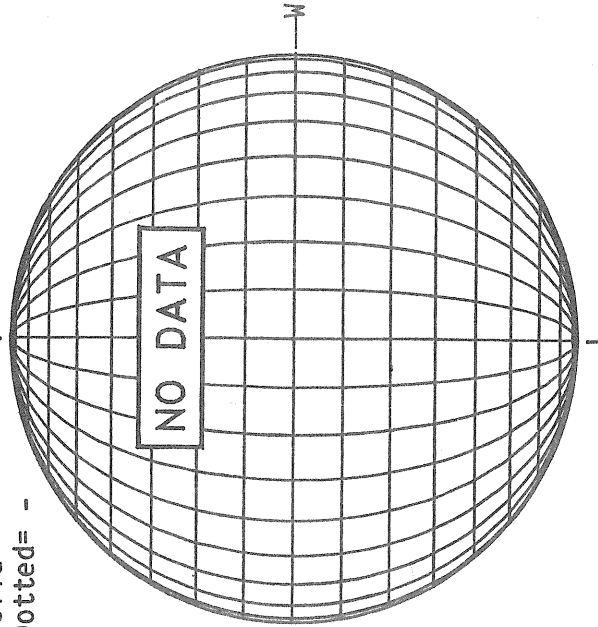
Solid = +
Dashed = -



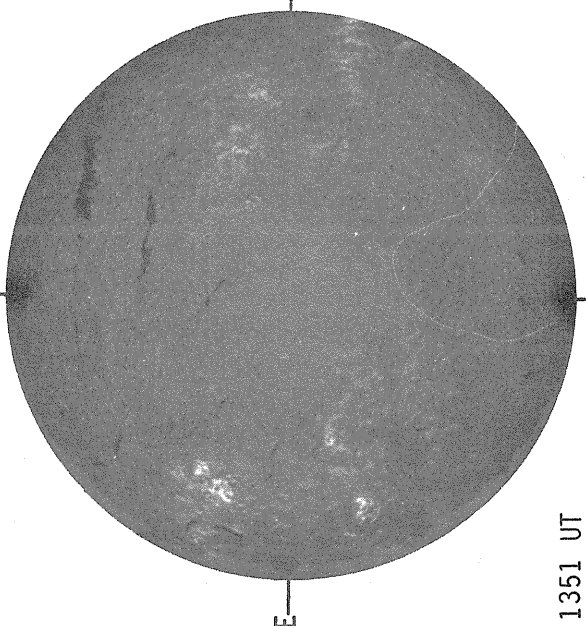
MT. WILSON MAGNETOGRAM

Np

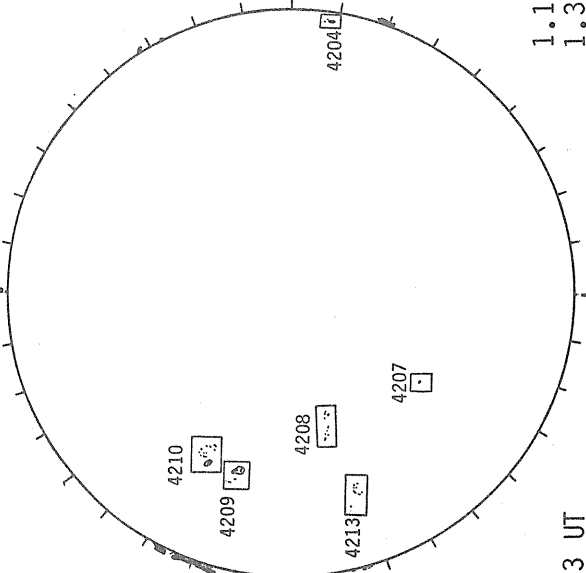
Solid = +
Dotted = -



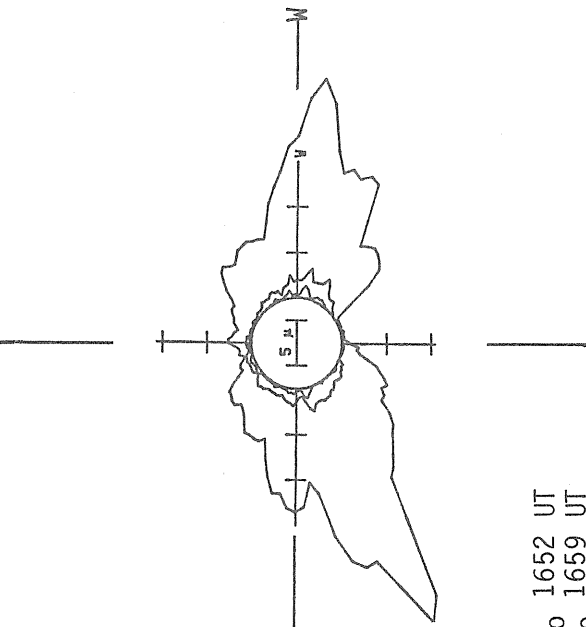
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



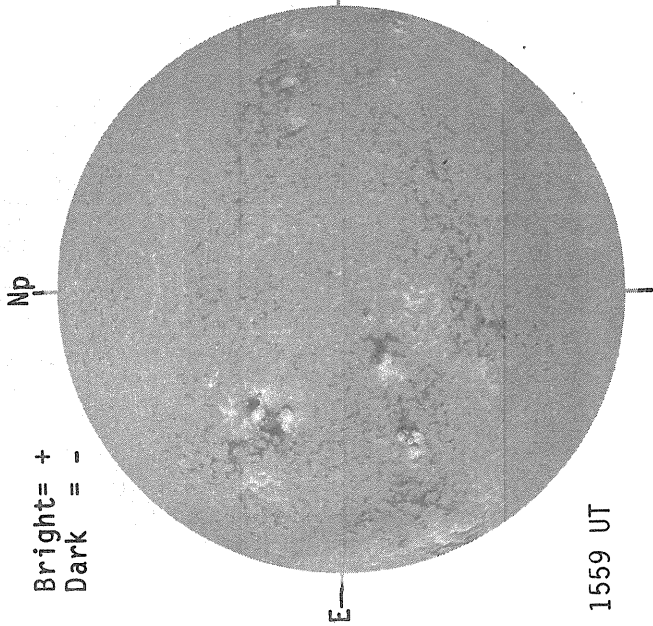
SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R₀ 1652 UT
1.35 R₀ 1659 UT
1.45 R₀ 1705 UT

JUNE 17, 1983 (P=- 9.20, B₀=+1.22, L₀= 195.89)

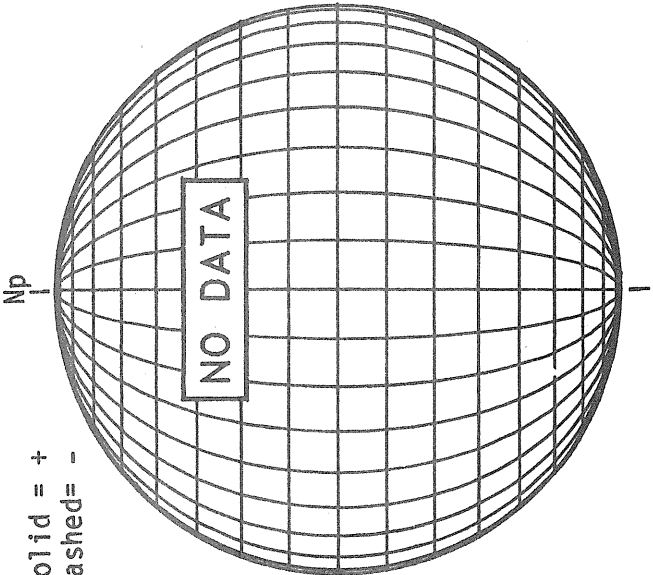
KITT PEAK MAGNETOGRAM



Bright= +
Dark = -

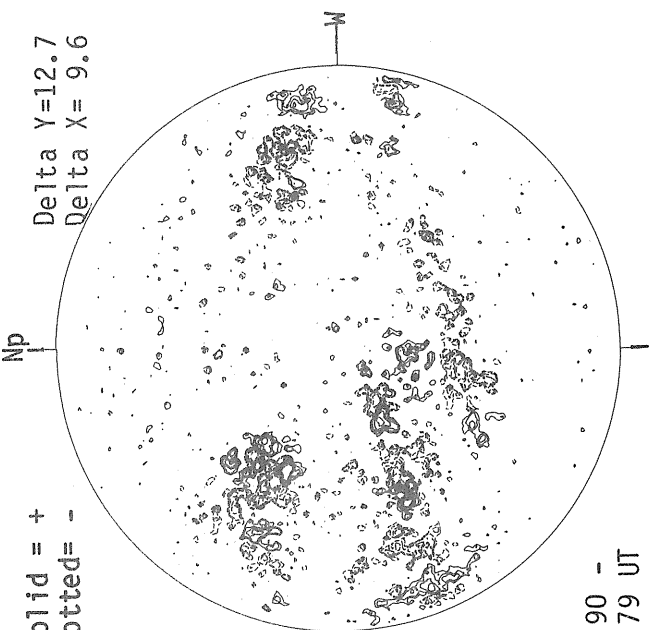
1559 UT

STANFORD MAGNETOGRAM



Solid = +
Dashed = -

MT. WILSON MAGNETOGRAM

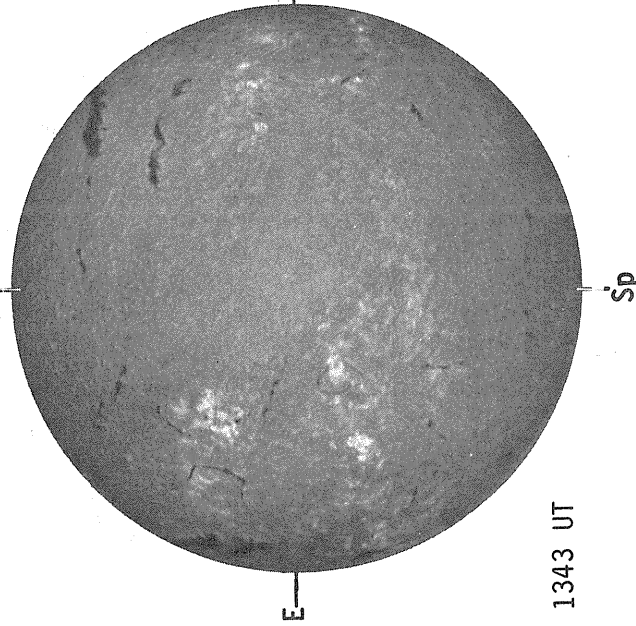


Solid = +
Dotted = -

Delta Y=12.7
Delta X= 9.6

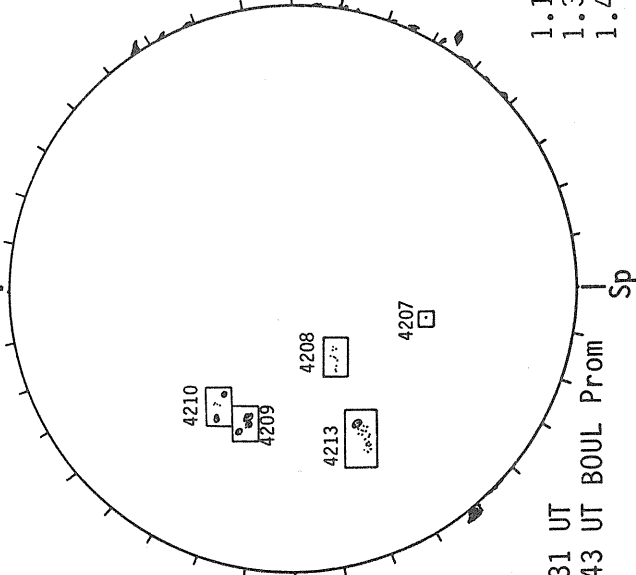
18.90 -
19.79 UT

BOULDER H-ALPHA



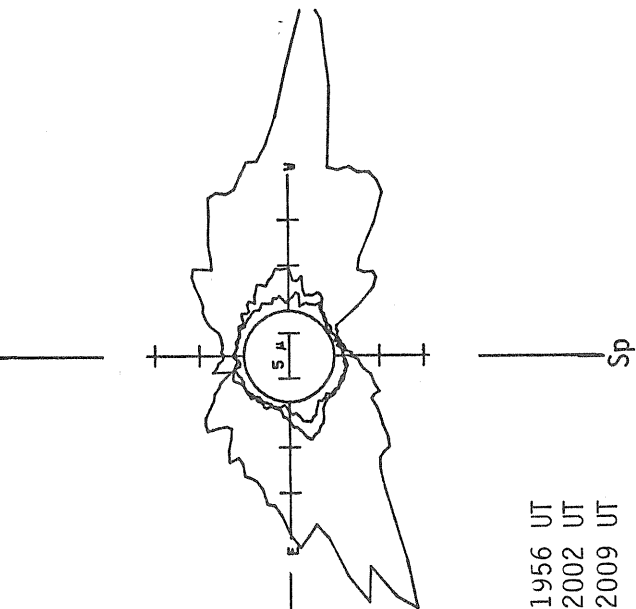
1343 UT

BOULDER SUNSPOTS



1331 UT
1343 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R₀ 1956 UT
1.35 R₀ 2002 UT
1.45 R₀ 2009 UT

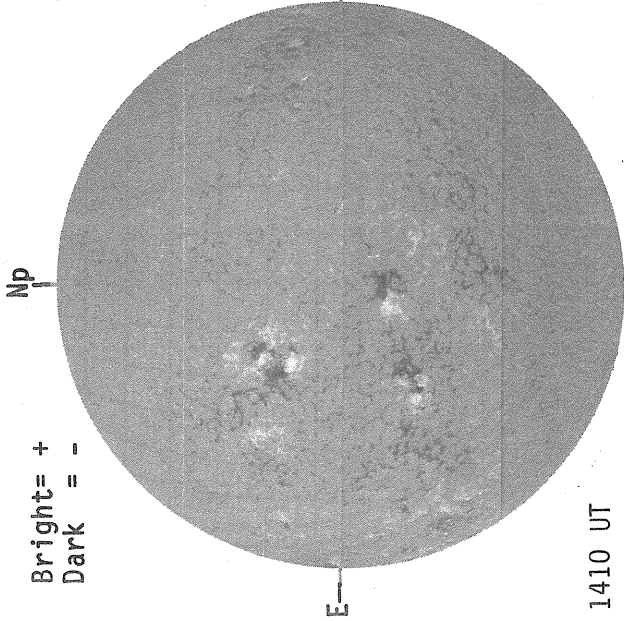
Sp

Sp

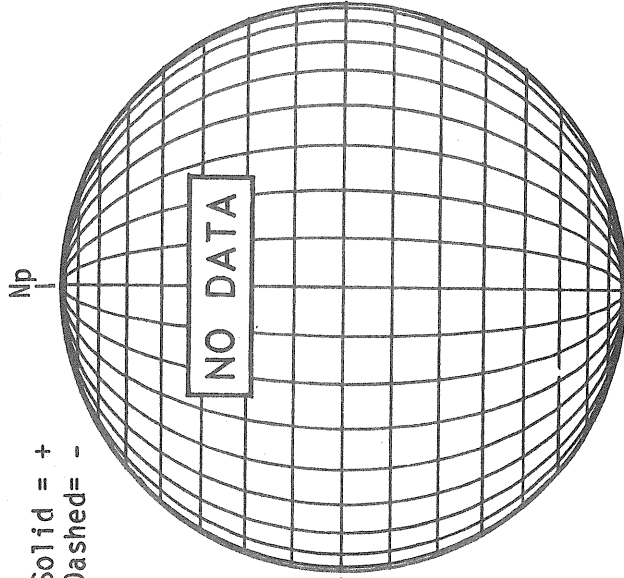
Sp

JUNE 18, 1983 (P=- 8.76, B₀=+1.34, L₀= 182.66)

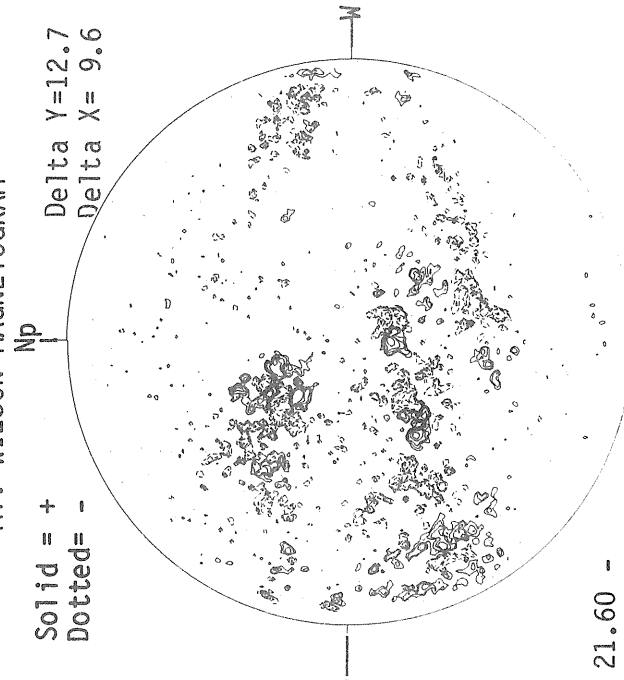
KITT PEAK MAGNETOGRAM



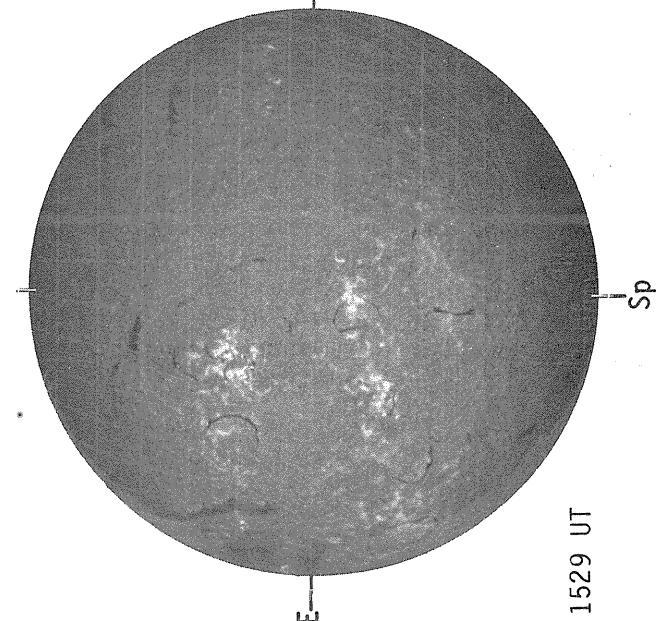
STANFORD MAGNETOGRAM



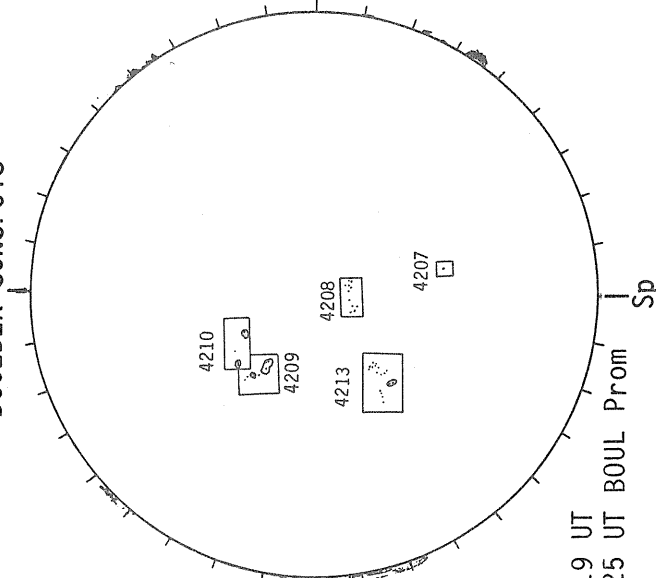
MT. WILSON MAGNETOGRAM



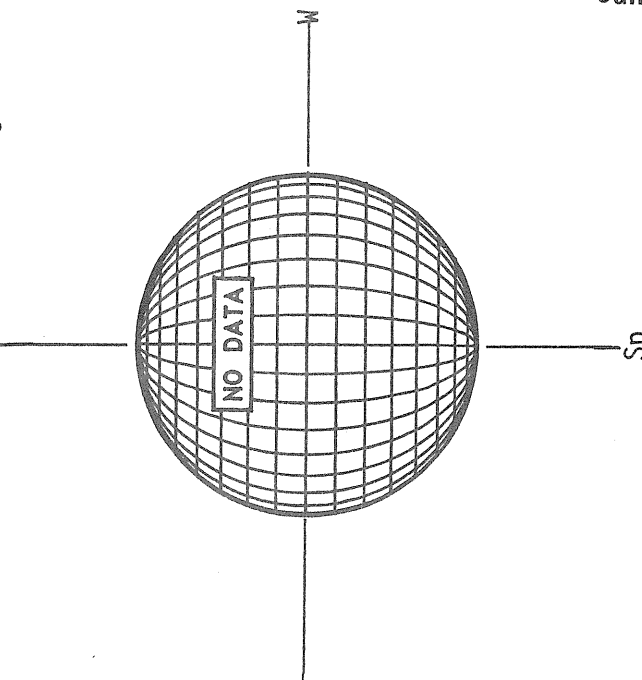
BOULDER H-ALPHA



BOULDER SUNSPOTS

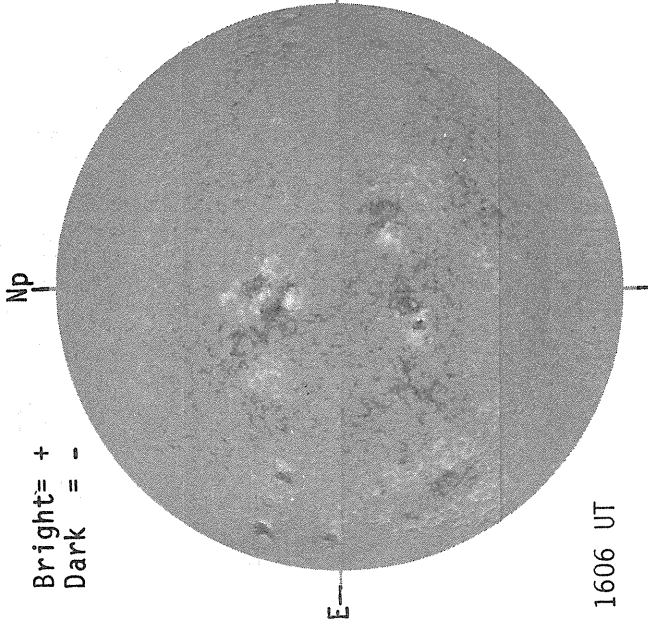


SACRAMENTO PEAK CORONA (5303 Angstrom)

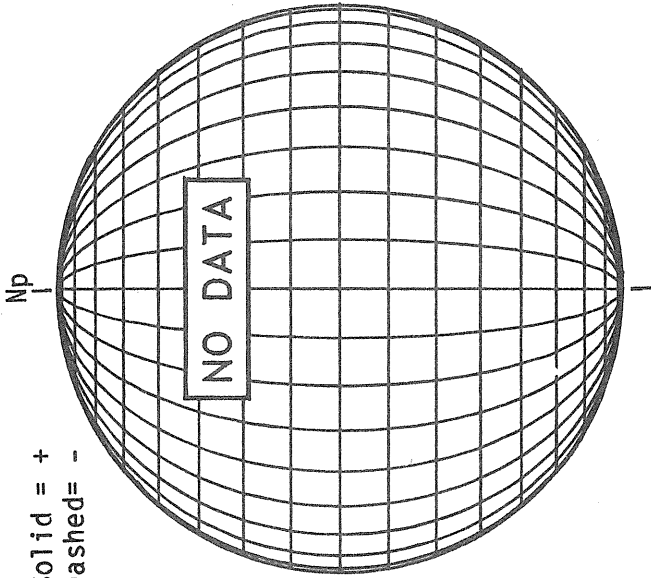


JUNE 19, 1983 (P=-8.33, B₀=+1.46, L₀=169.42)

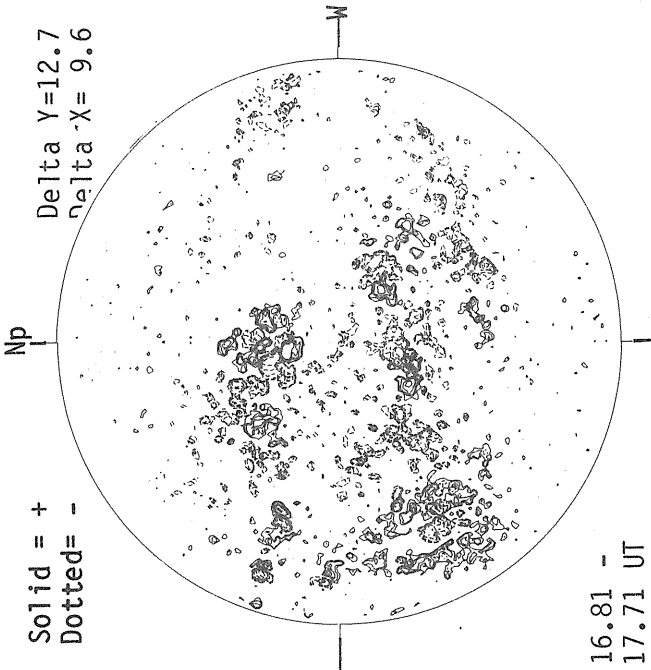
KITT PEAK MAGNETOGRAM



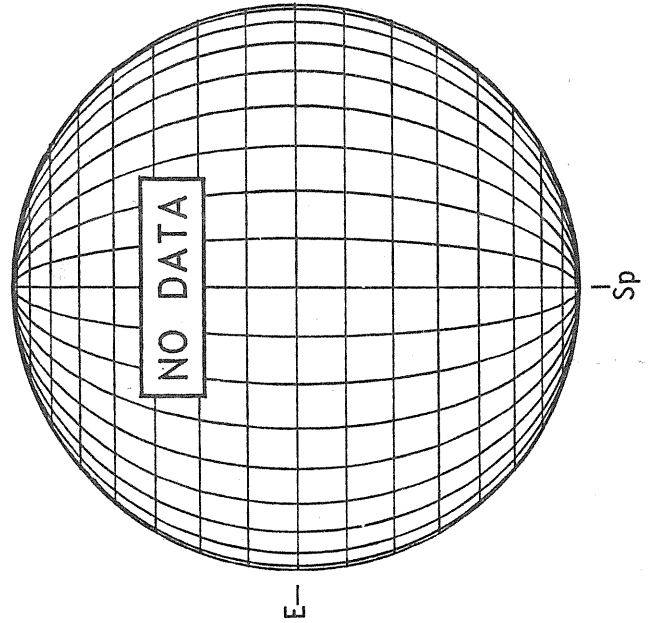
STANFORD MAGNETOGRAM



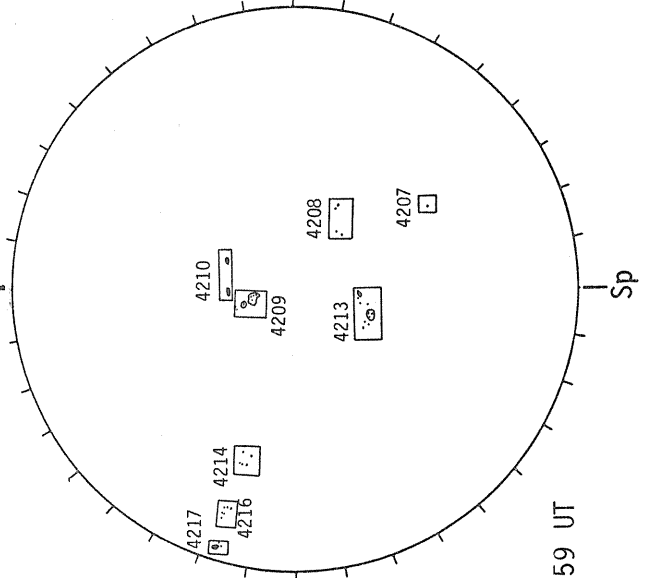
MT. WILSON MAGNETOGRAM



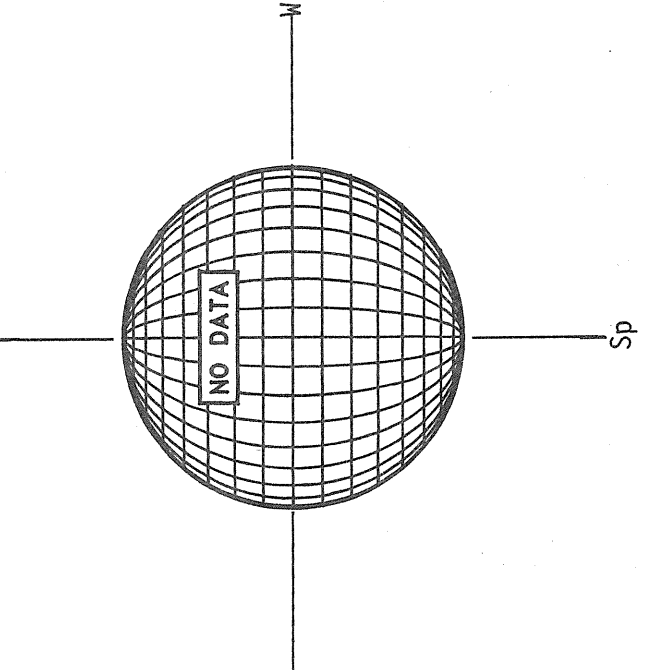
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



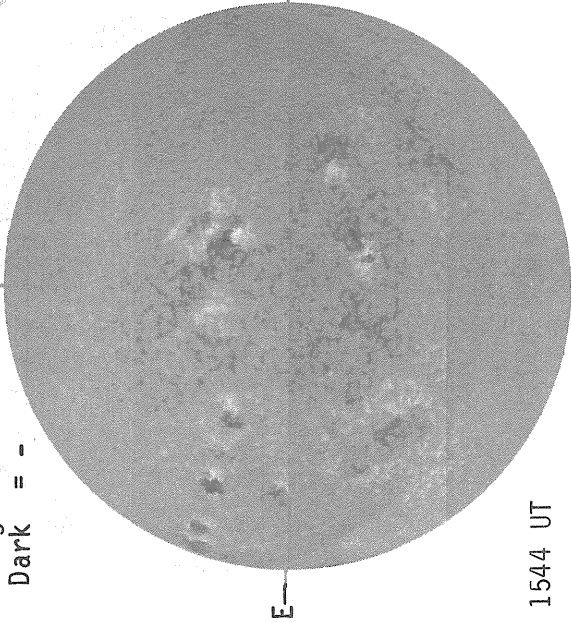
SACRAMENTO PEAK CORONA (5303 Angstrom)



JUNE 20, 1983 (P=-7.89, B₀=+1.58, L₀=156.18)

KITT PEAK MAGNETOGRAM

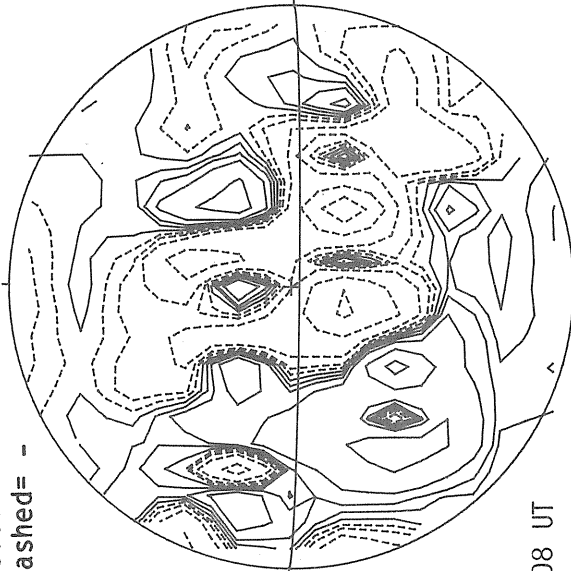
Bright= +
Dark = -



1544 UT

STANFORD MAGNETOGRAM

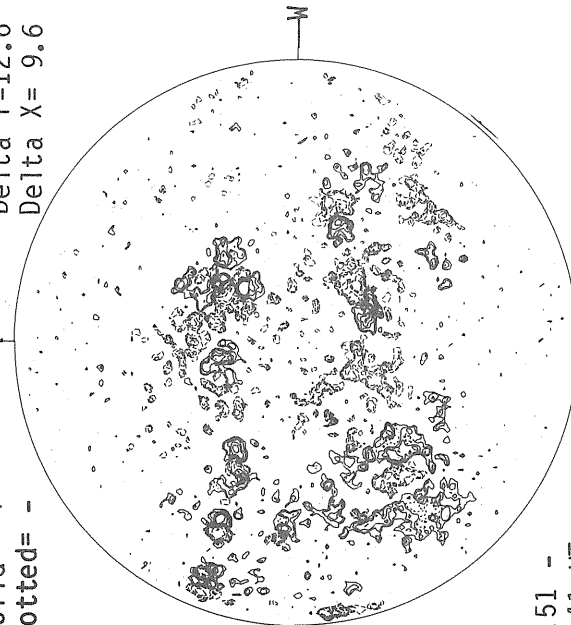
Solid = +
Dashed = -



2108 UT

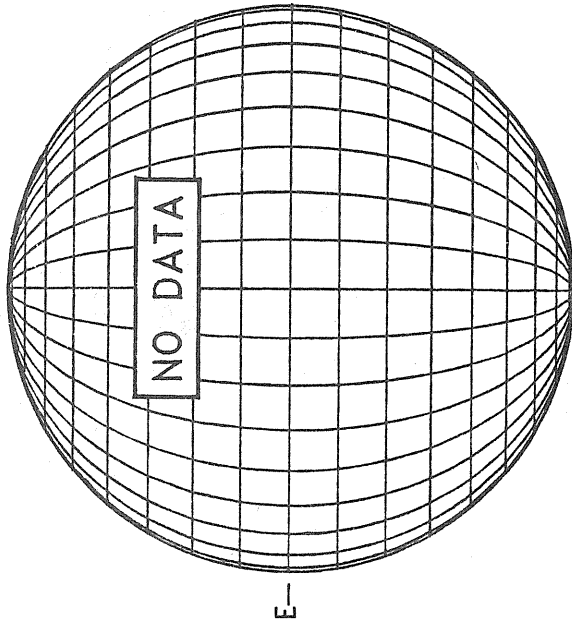
MT. WILSON MAGNETOGRAM

Solid = +
Dotted = -



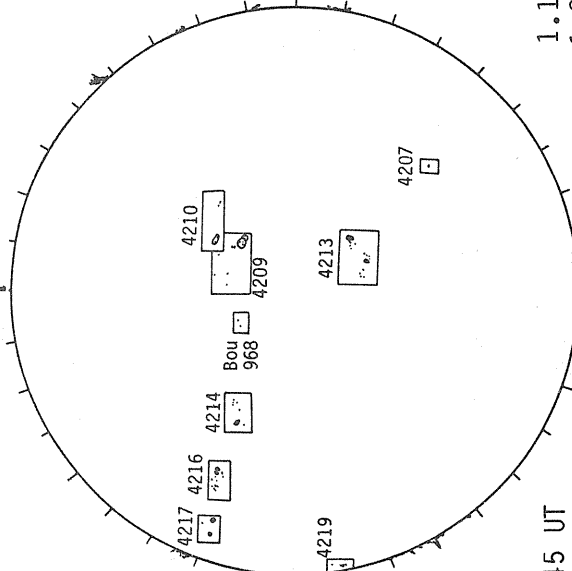
17.51 -
18.41 UT

SACRAMENTO PEAK H-ALPHA



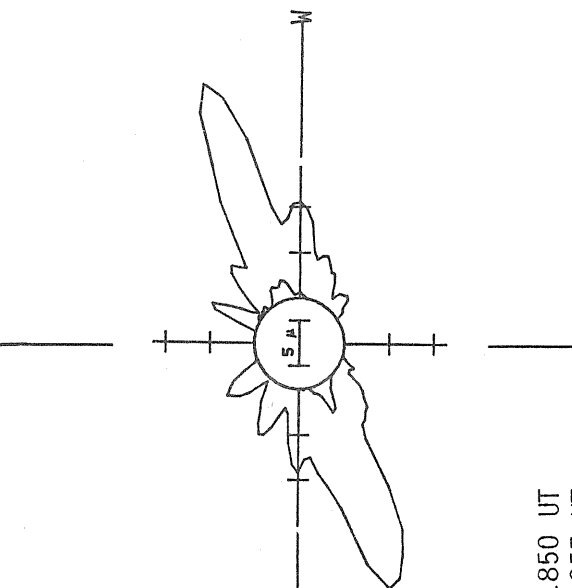
Sp

BOULDER SUNSPOTS



1445 UT
1450 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

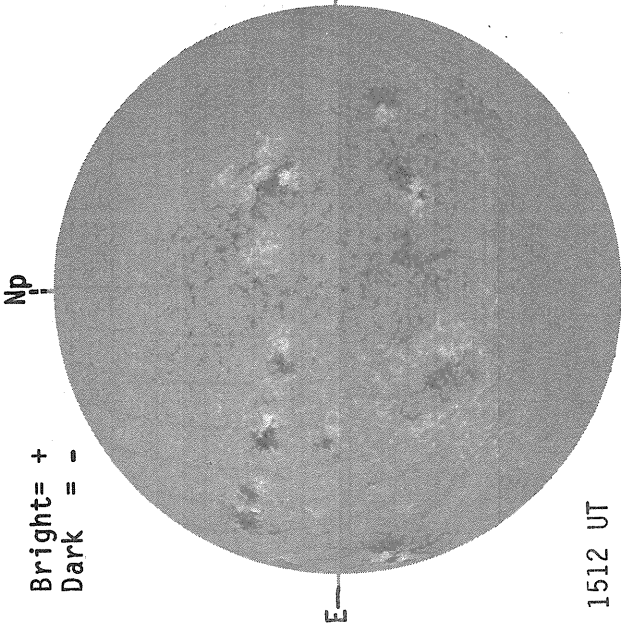


1.15 R₀ 1850 UT
1.35 R₀ 1857 UT

JUNE 21, 1983 (P=-7.45, B₀=+1.69, L₀=142.95)

KITT PEAK MAGNETOGRAM

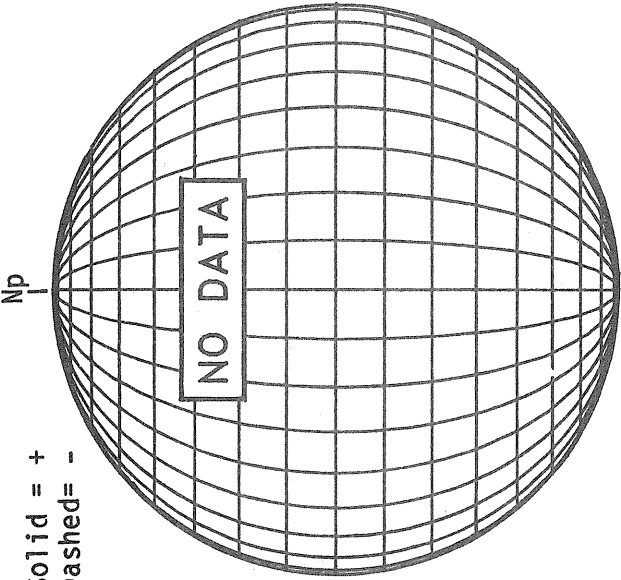
Bright = +
Dark = -



1512 UT

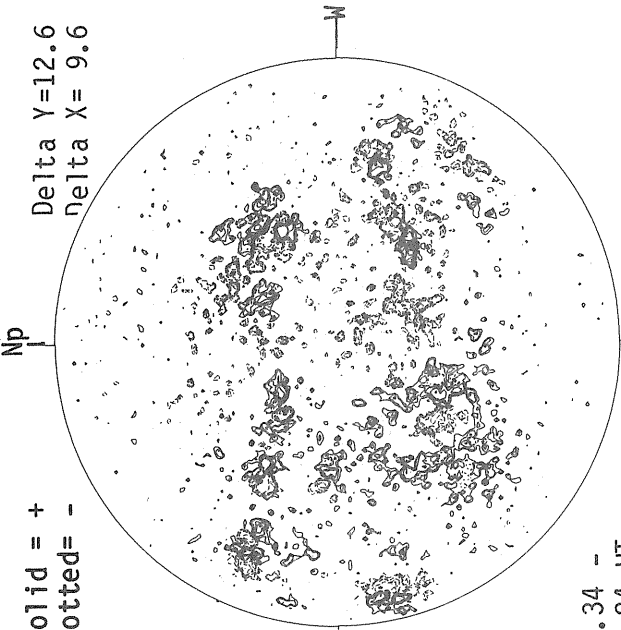
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



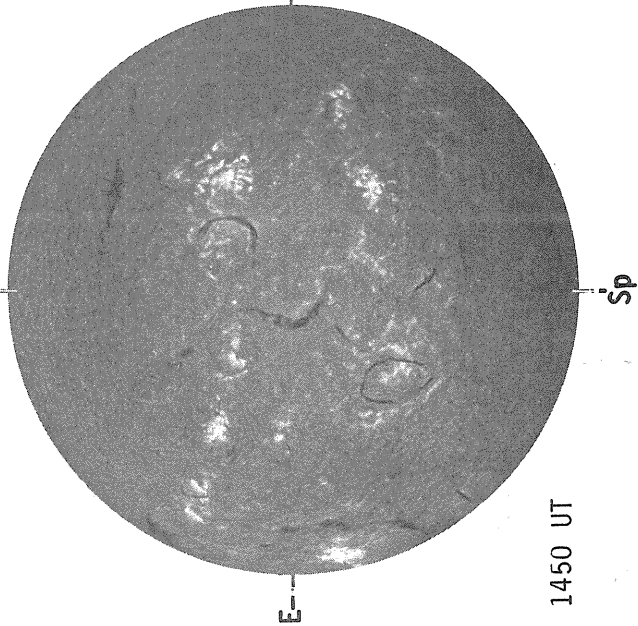
MT. WILSON MAGNETOGRAM

Solid = +
Dotted = -



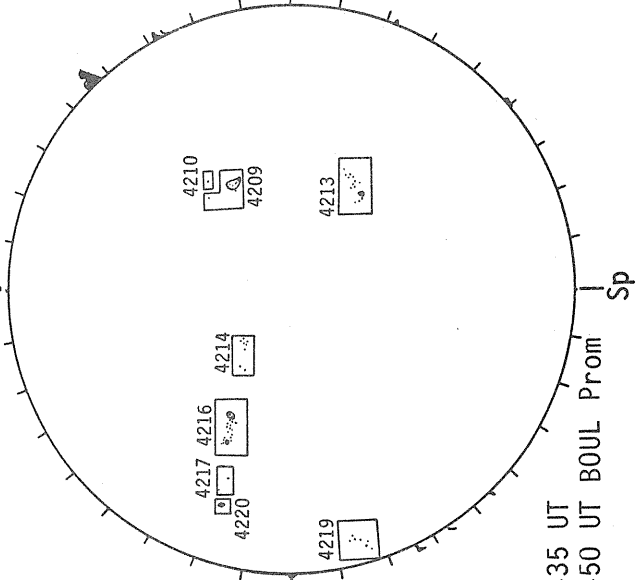
17.34 -
18.24 UT

BOULDER H-ALPHA



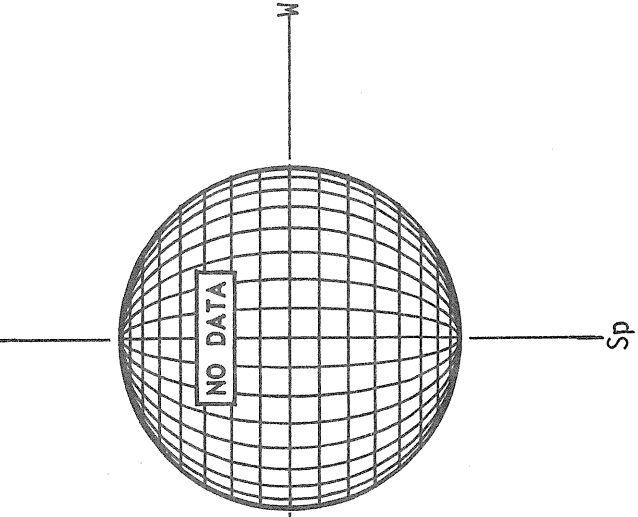
1450 UT

BOULDER SUNSPOTS



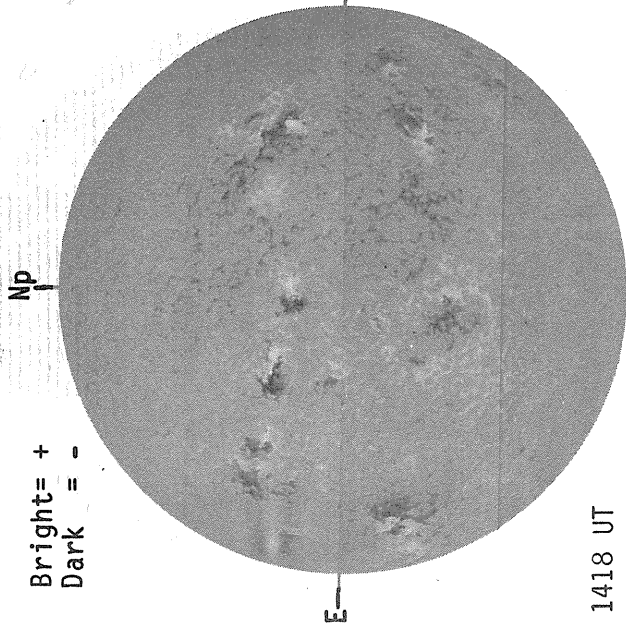
1435 UT
1450 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

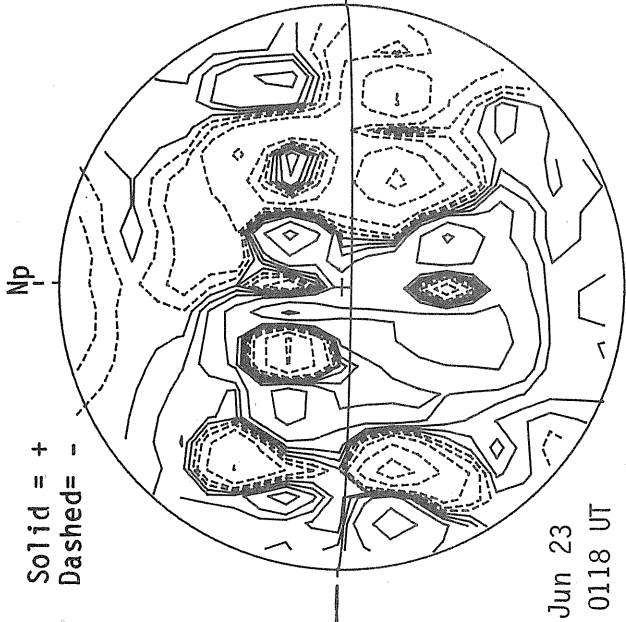


JUNE 22, 1983 (P=-7.01, B₀=+1.81, L₀=129.71)

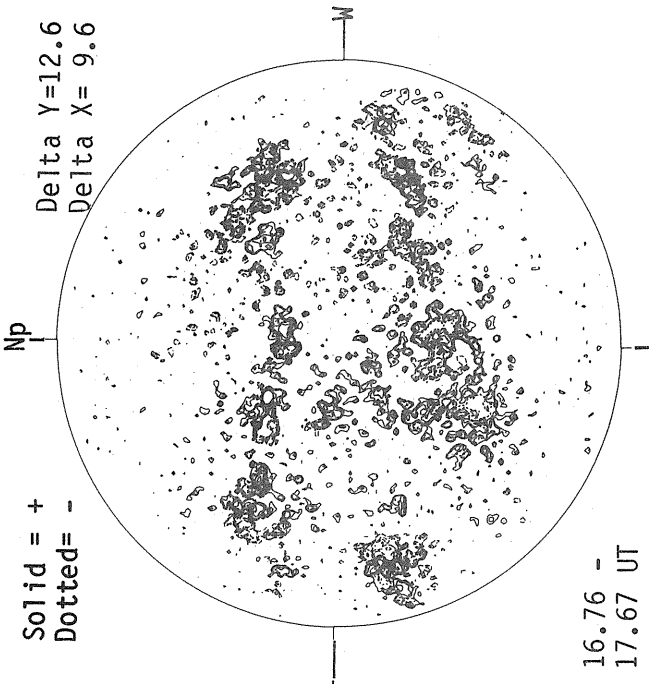
KITT PEAK MAGNETOGRAM



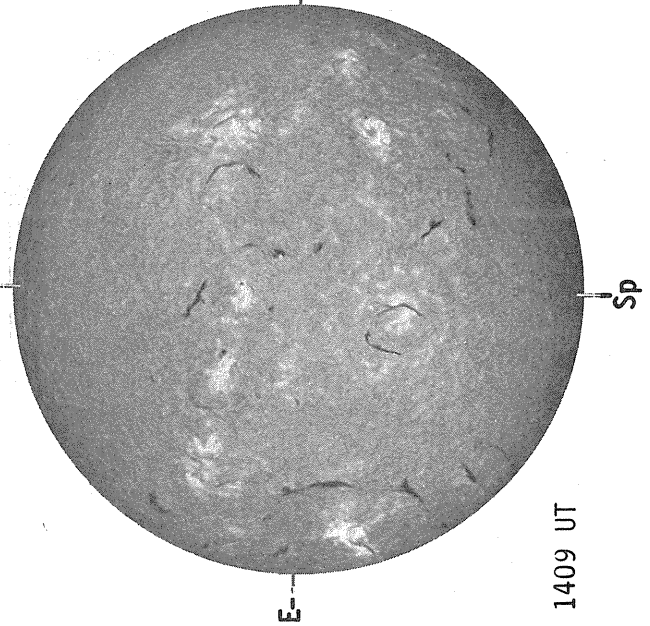
STANFORD MAGNETOGRAM



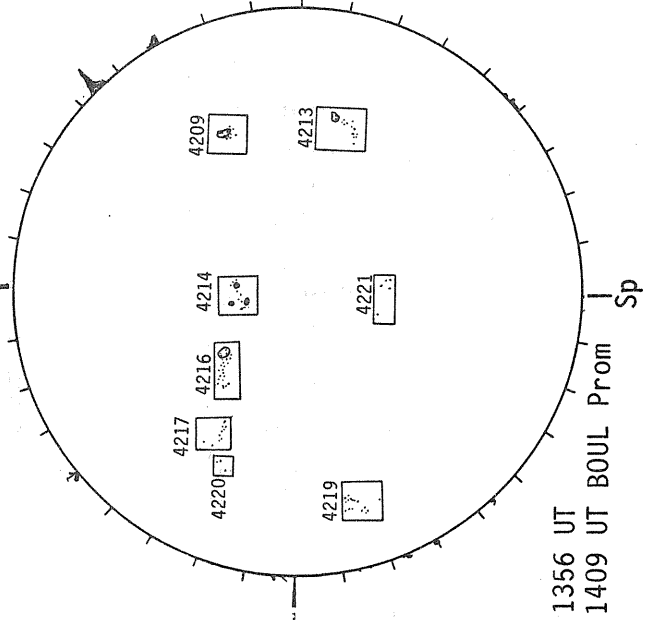
MT. WILSON MAGNETOGRAM



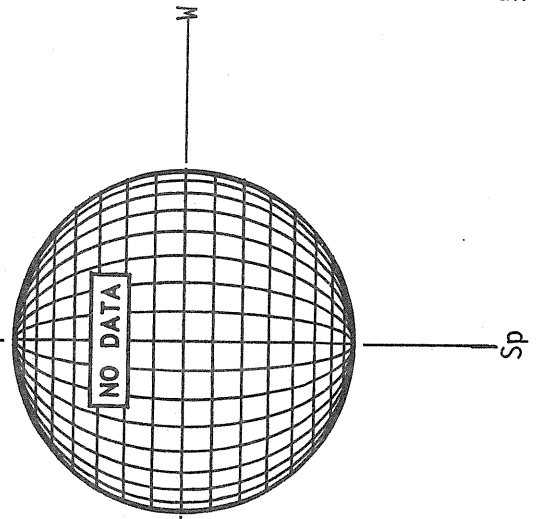
BOULDER H-ALPHA



BOULDER SUNSPOTS



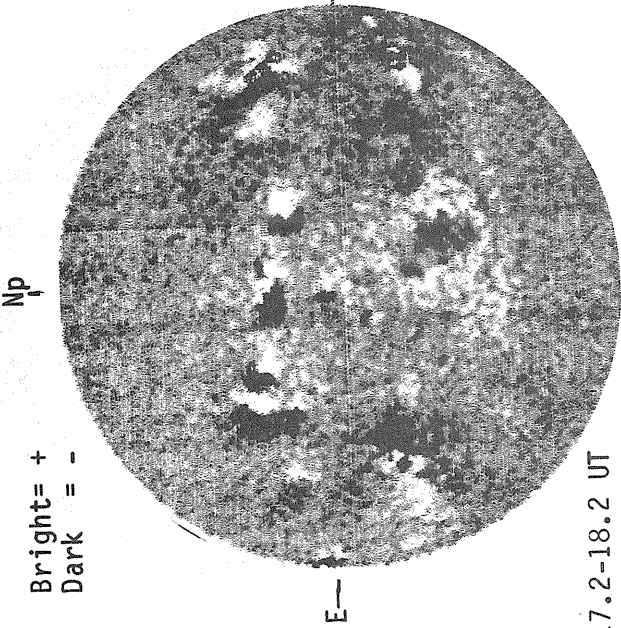
SACRAMENTO PEAK CORONA (5303 Angstrom)



JUNE 23, 1983 (P=- 6.56, B₀=+1.93, L₀= 116.47)

MT. WILSON MAGNETOGRAM

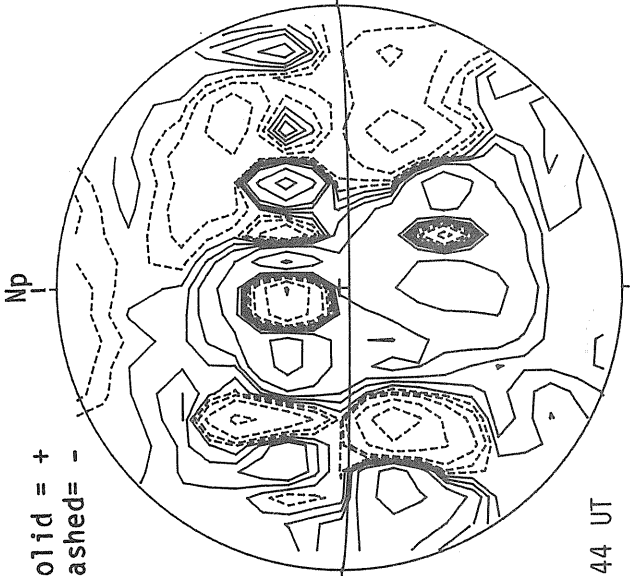
Bright = +
Dark = -



17.2-18.2 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

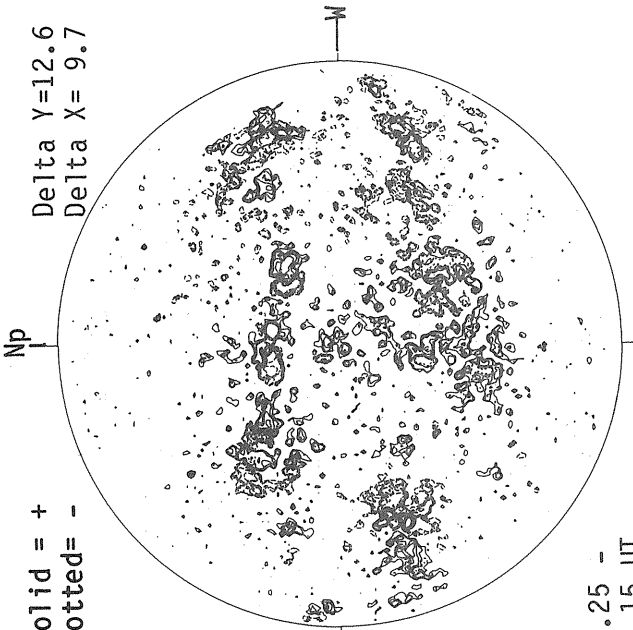


2144 UT

MT. WILSON MAGNETOGRAM

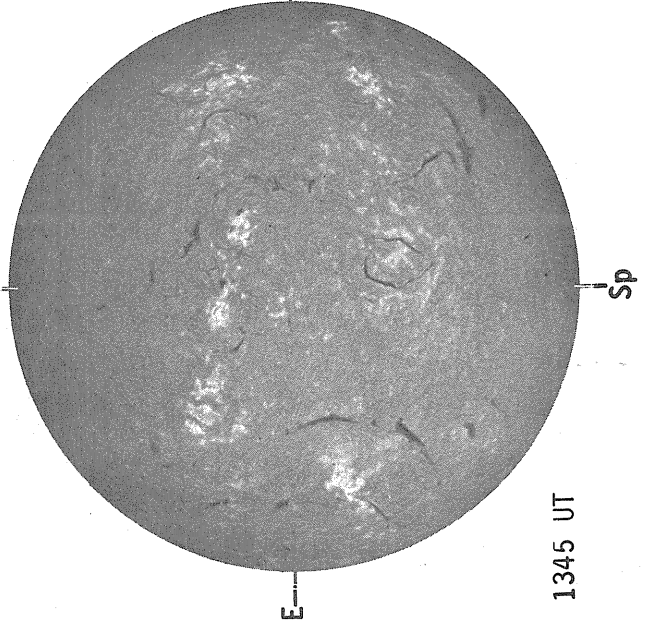
Solid = +
Dotted = -

Delta Y = 12.6
Delta X = 9.7



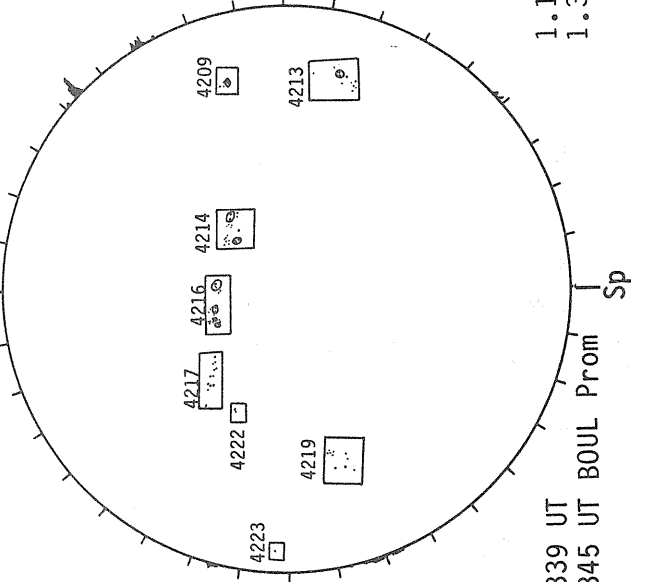
17.25 -
18.15 UT

BOULDER H-ALPHA



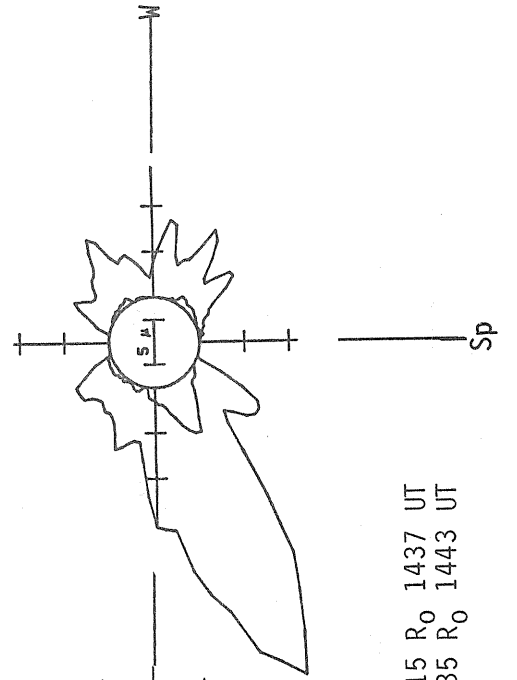
1345 UT

BOULDER SUNSPOTS



1339 UT
1345 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

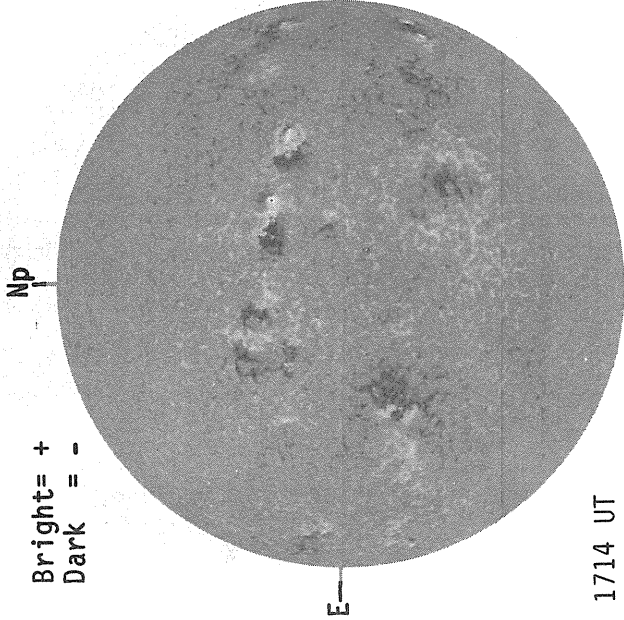


1.15 R₀ 1437 UT
1.35 R₀ 1443 UT

JUNE 24, 1983 (P=-6.12, B₀=+2.04, L₀=103.23)

KITT PEAK MAGNETOGRAM

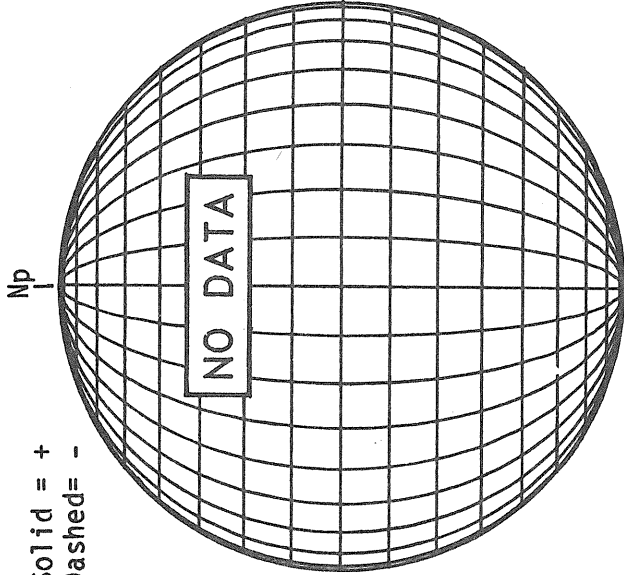
Bright = +
Dark = -



1714 UT

STANFORD MAGNETOGRAM

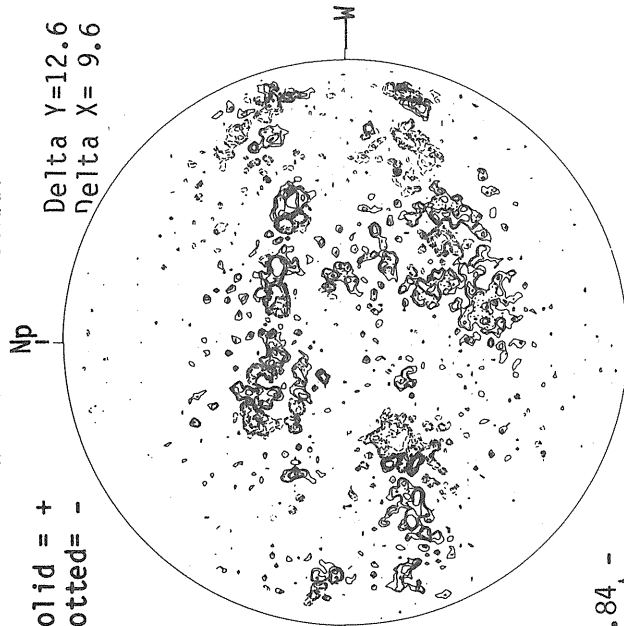
Solid = +
Dashed = -



17.84 -
18.75 UT

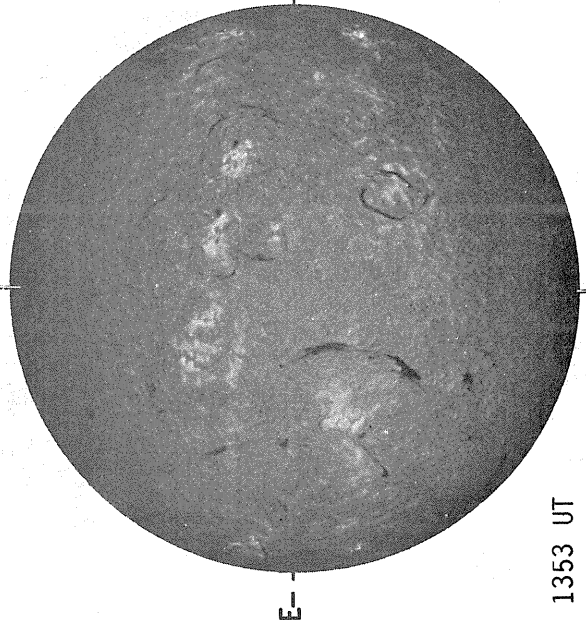
MT. WILSON MAGNETOGRAM

Solid = +
Dotted = -



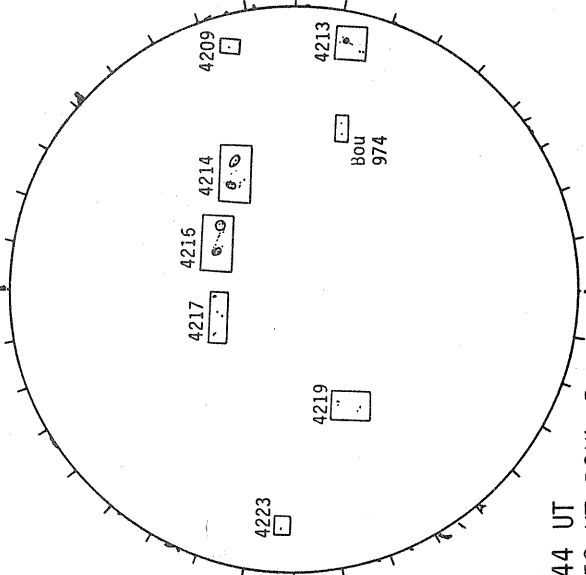
Delta Y = 12.6
Delta X = 9.6

BOULDER H-ALPHA



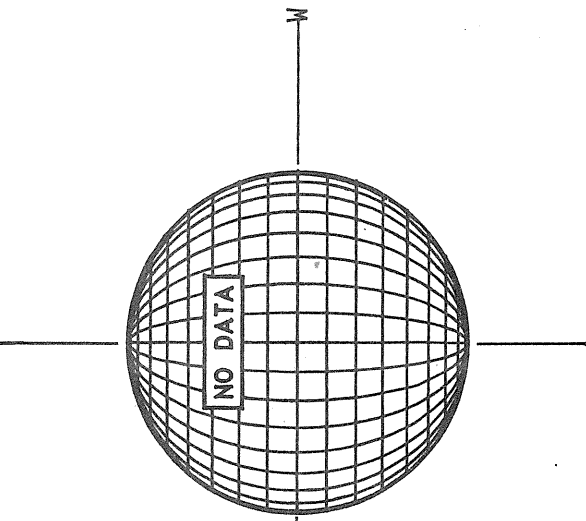
1353 UT

BOULDER SUNSPOTS



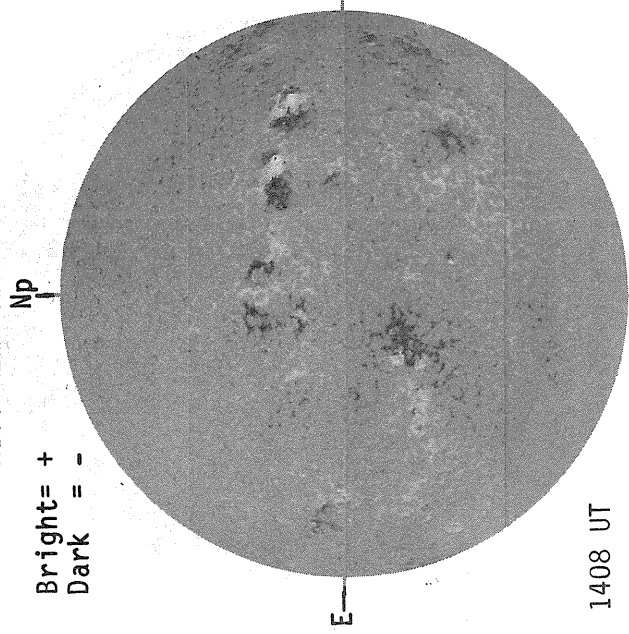
1344 UT
1353 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



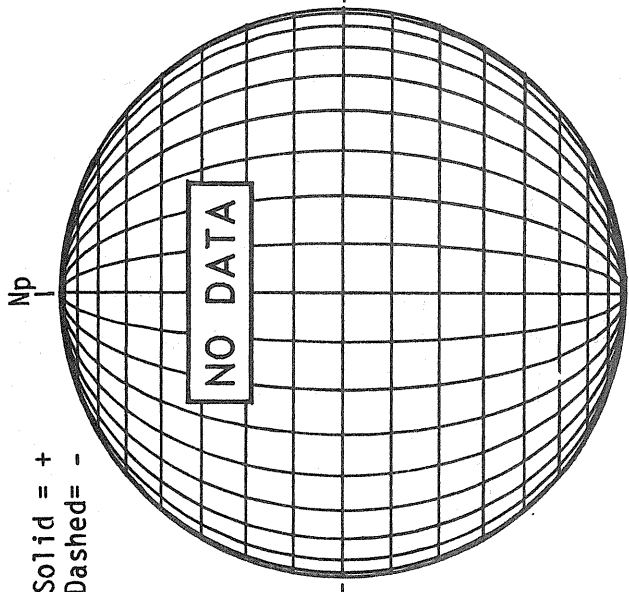
JUNE 25, 1983 (P=-5.67, B₀=+2.16, L₀=90.00)

KITT PEAK MAGNETOGRAM



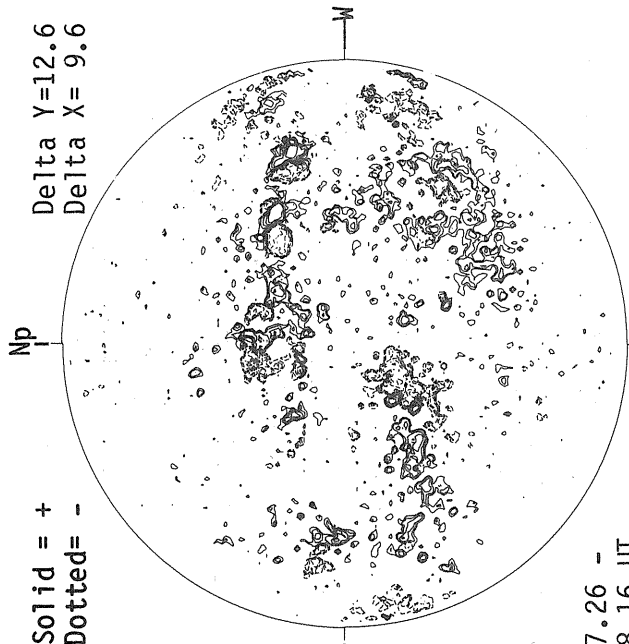
Bright= +
Dark = -

STANFORD MAGNETOGRAM



Solid = +
Dashed = -

MT. WILSON MAGNETOGRAM

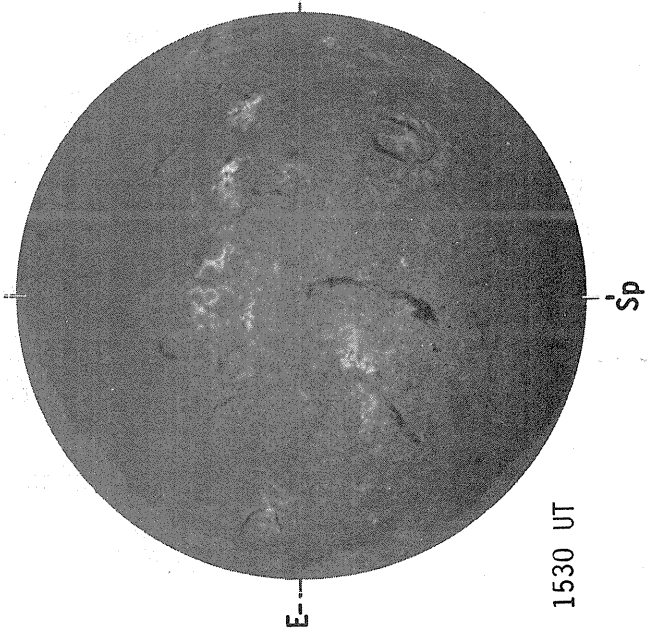


Delta Y=12.6
Delta X=9.6

1408 UT

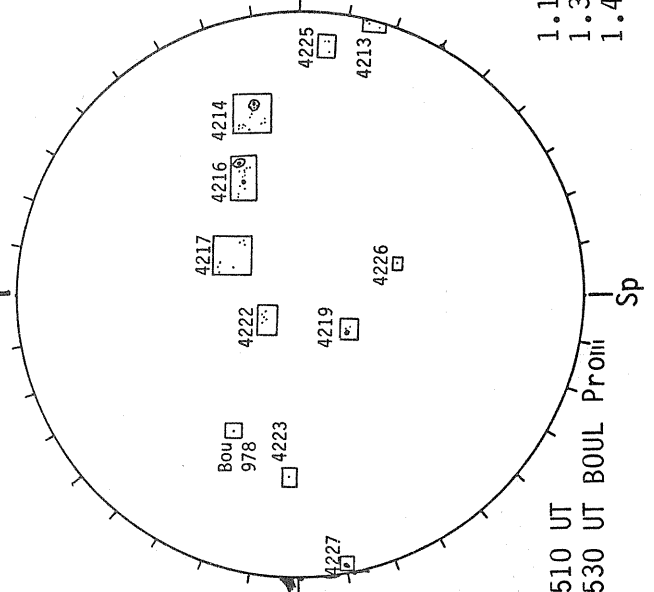
17.26 -
18.16 UT

BOULDER H-ALPHA



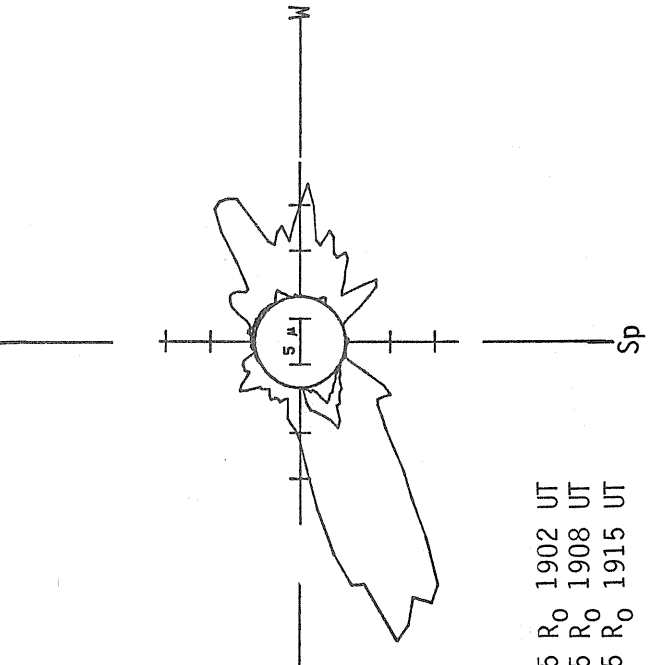
1530 UT

BOULDER SUNSPOTS



1510 UT
1530 UT BOUL Profil

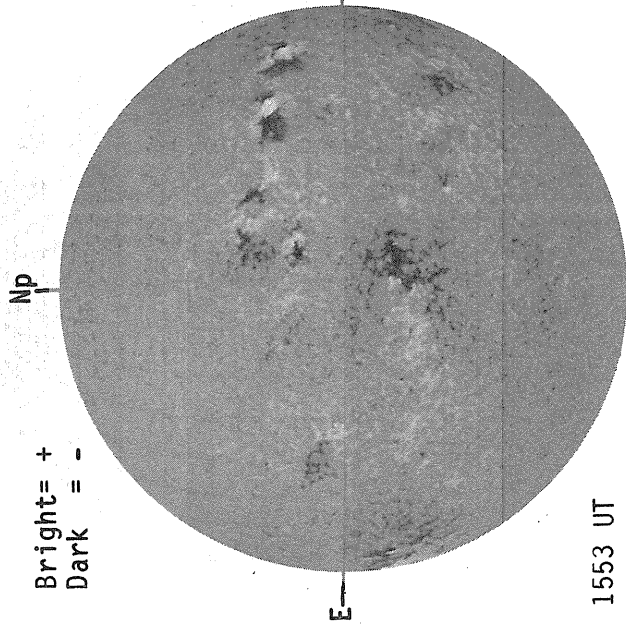
SACRAMENTO PEAK CORONA (5303 Angstrom)



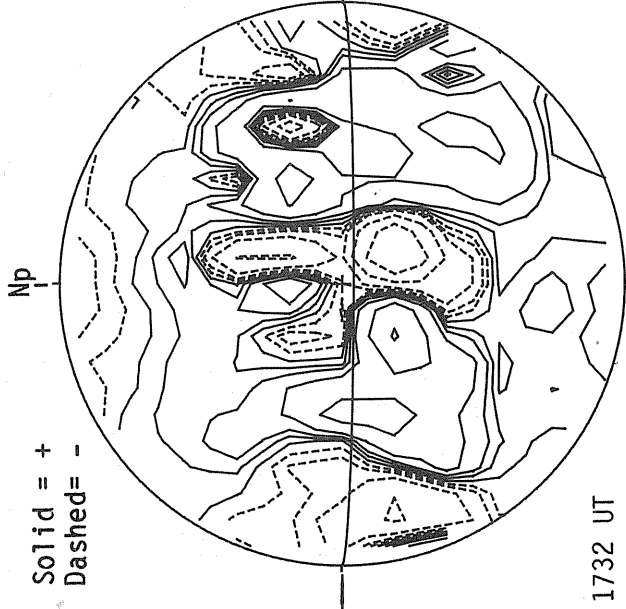
1.15 R₀ 1902 UT
1.35 R₀ 1908 UT
1.45 R₀ 1915 UT

JUNE 26, 1983 (P=-5.22, B₀=+2.27, L₀=76.76)

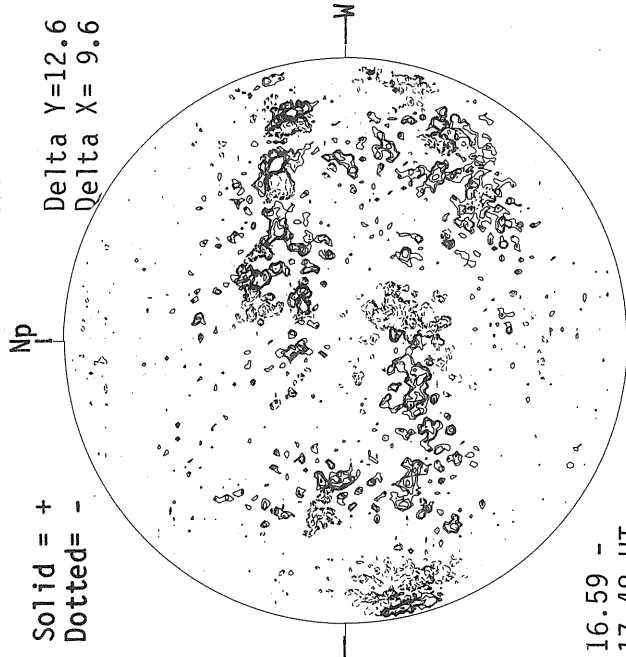
KITT PEAK MAGNETOGRAM



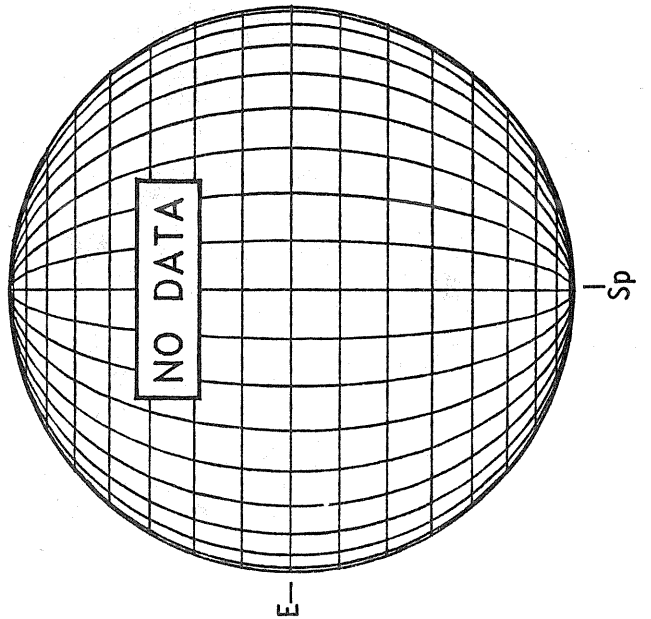
STANFORD MAGNETOGRAM



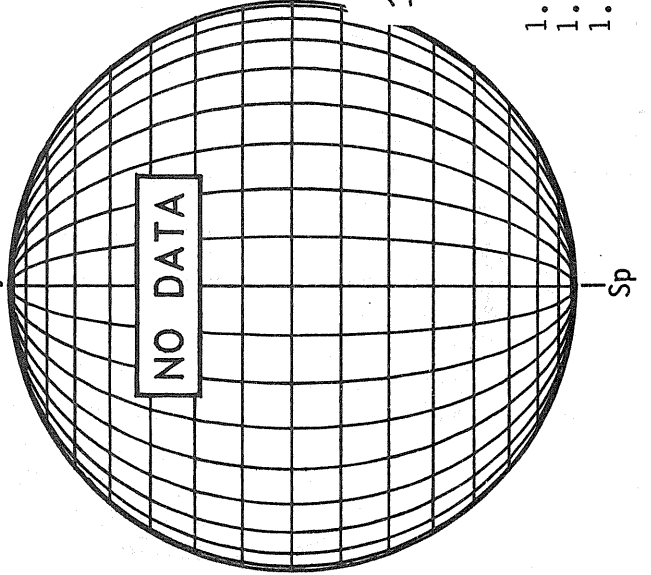
MT. WILSON MAGNETOGRAM



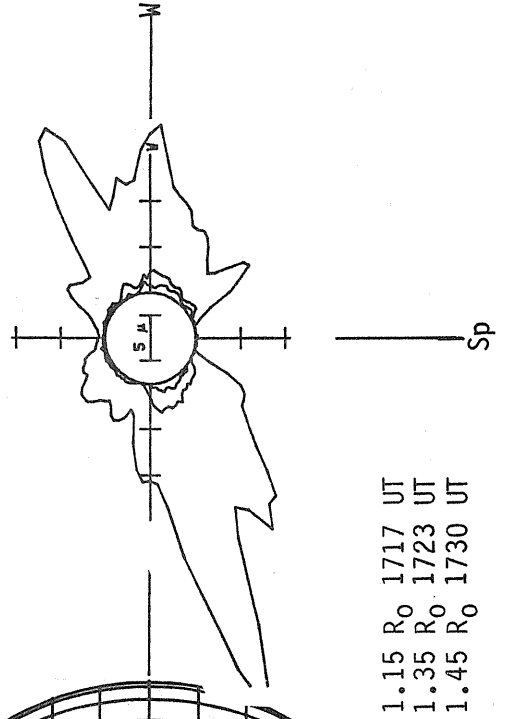
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS

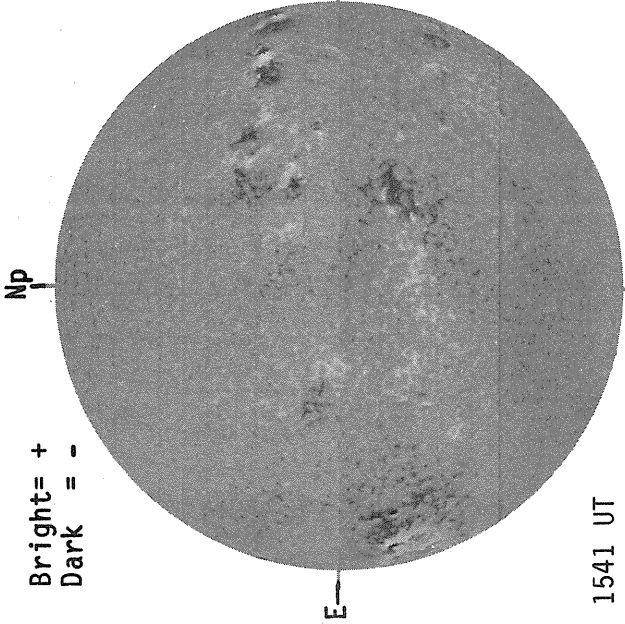


SACRAMENTO PEAK CORONA (5303 Angstrom)



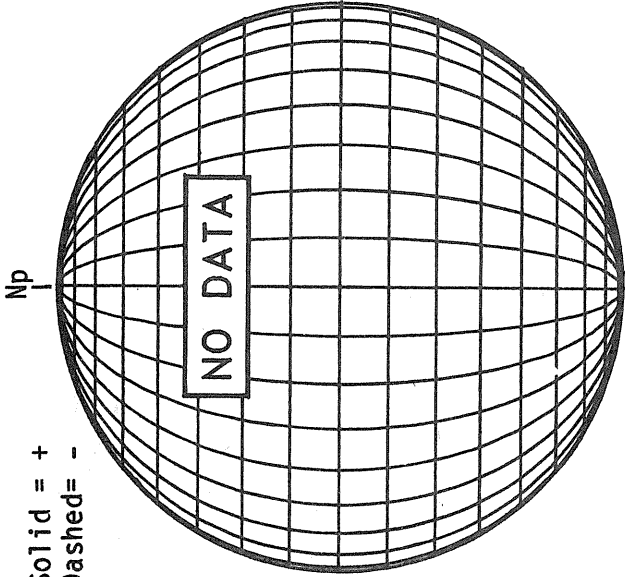
JUNE 27, 1983 (P=-4.77, B₀=+2.39, L₀=63.52)

KITT PEAK MAGNETOGRAM



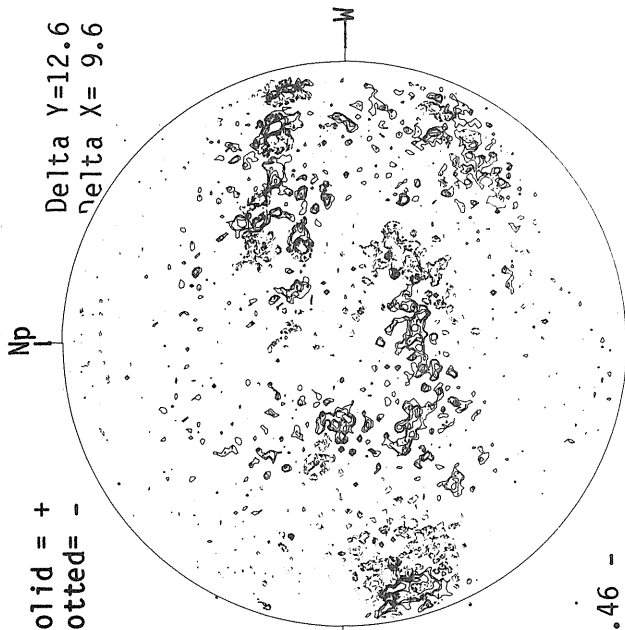
Bright = +
Dark = -

STANFORD MAGNETOGRAM



Solid = +
Dashed = -

MT. WILSON MAGNETOGRAM



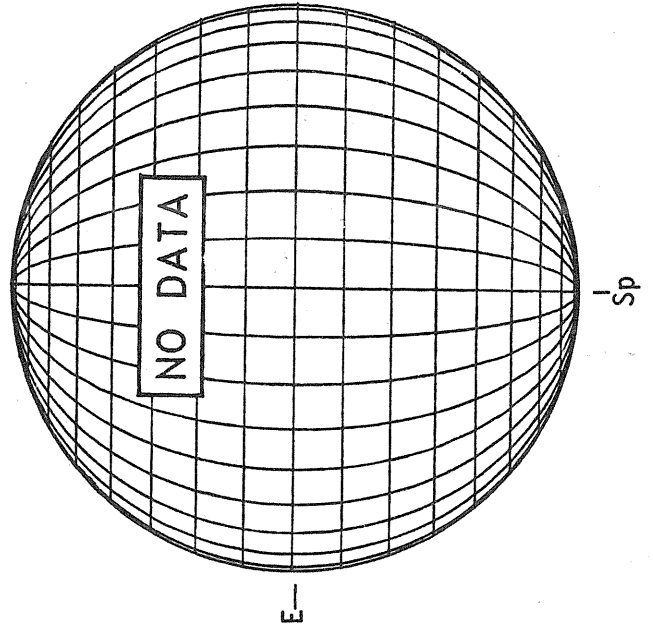
Solid = +
Dotted = -

Delta Y = 12.6
Delta X = 9.6

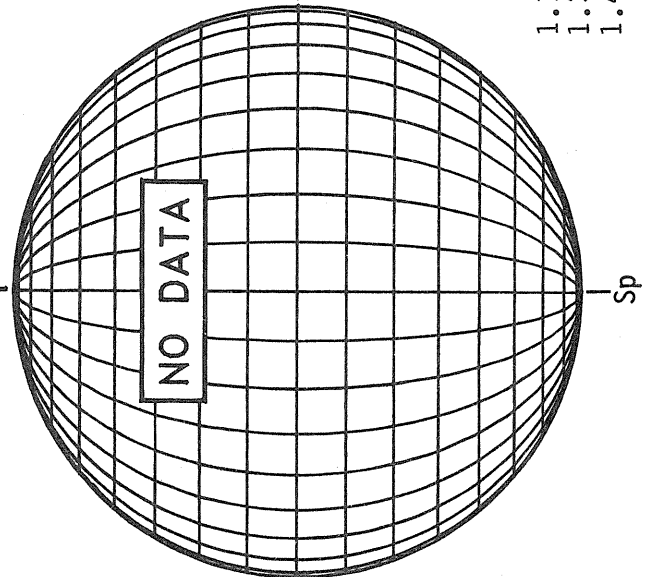
1541 UT

16.46 -
17.37 UT

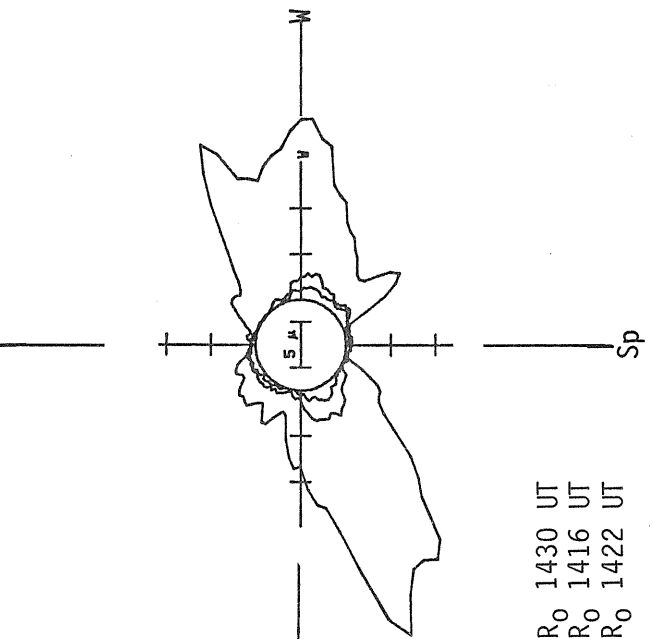
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



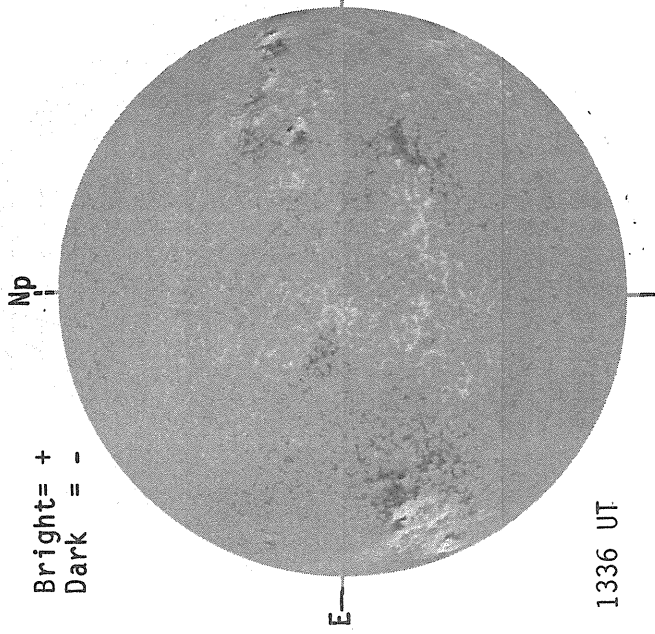
SACRAMENTO PEAK CORONA (5303 Angstrom)



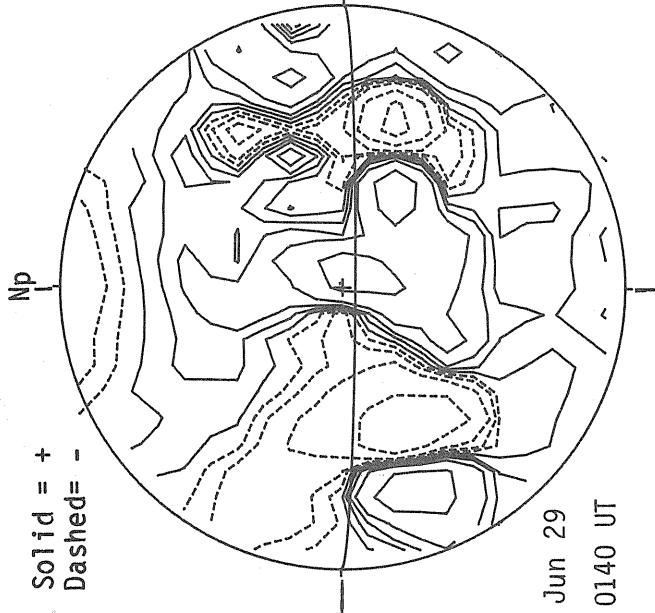
1.15 R₀ 1430 UT
1.35 R₀ 1416 UT
1.45 R₀ 1422 UT

J U N E 28, 1 9 8 3 (P=- 4.32, B₀=+2.50, L₀= 50.29)

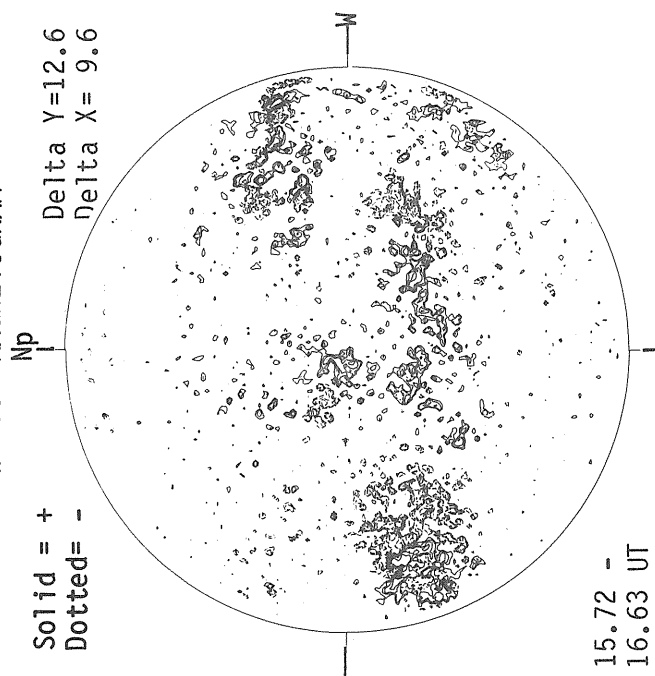
KITT PEAK MAGNETOGRAM



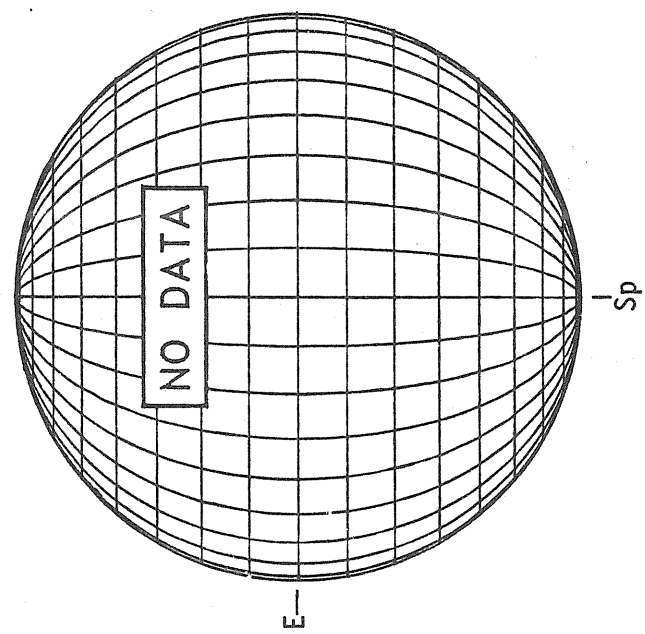
STANFORD MAGNETOGRAM



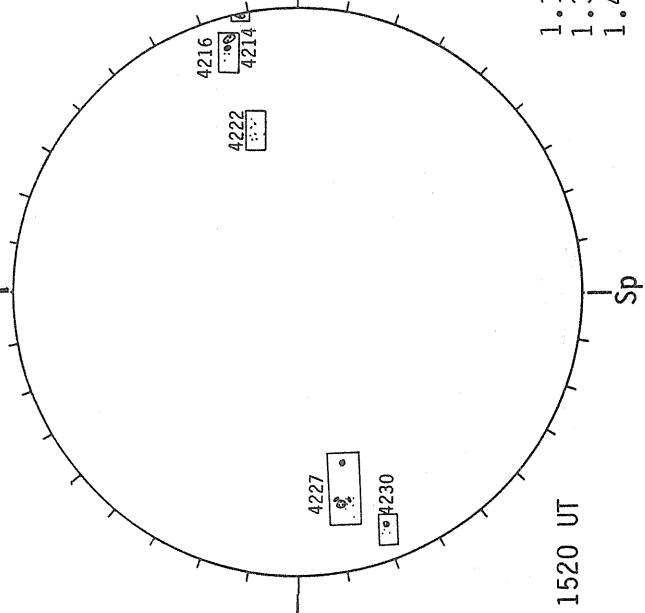
MT. WILSON MAGNETOGRAM



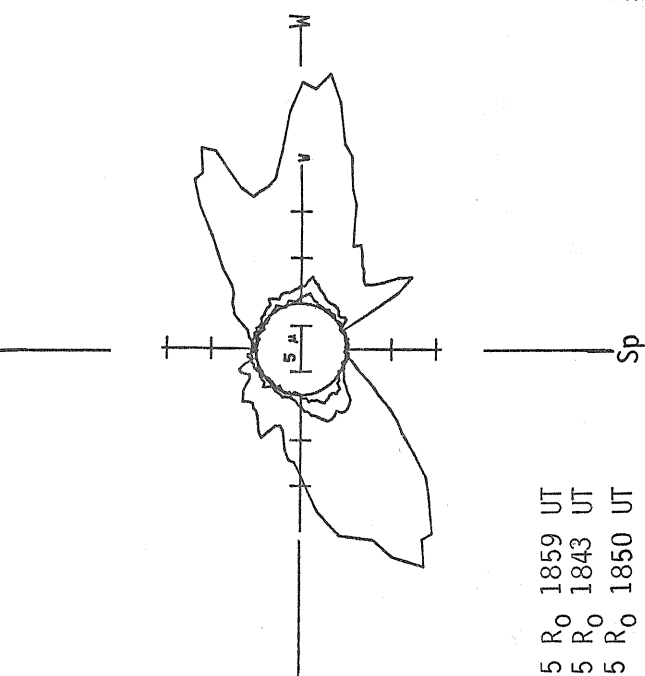
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS

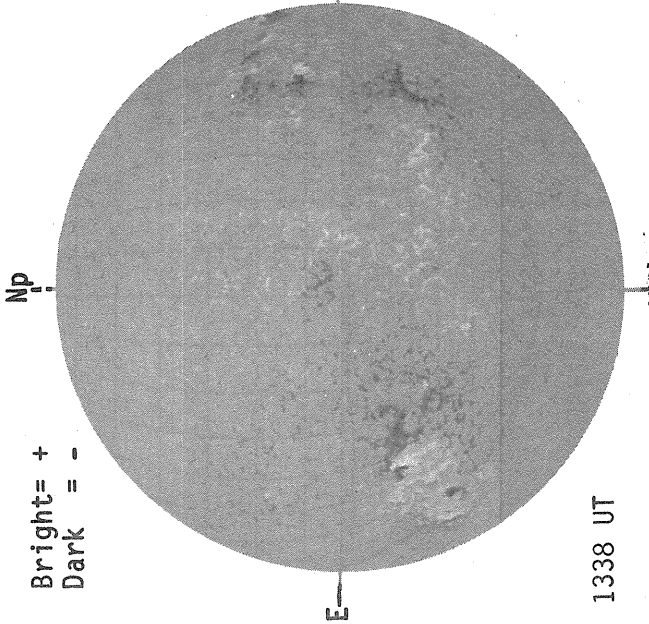


SACRAMENTO PEAK CORONA (5303 Angstrom)



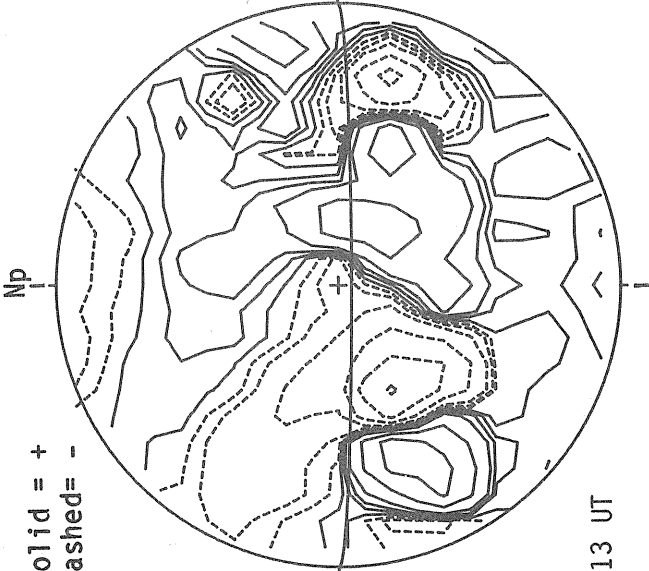
JUNE 29, 1983 (P=-3.87, B₀=+2.61, L₀=37.05)

KITT PEAK MAGNETOGRAM



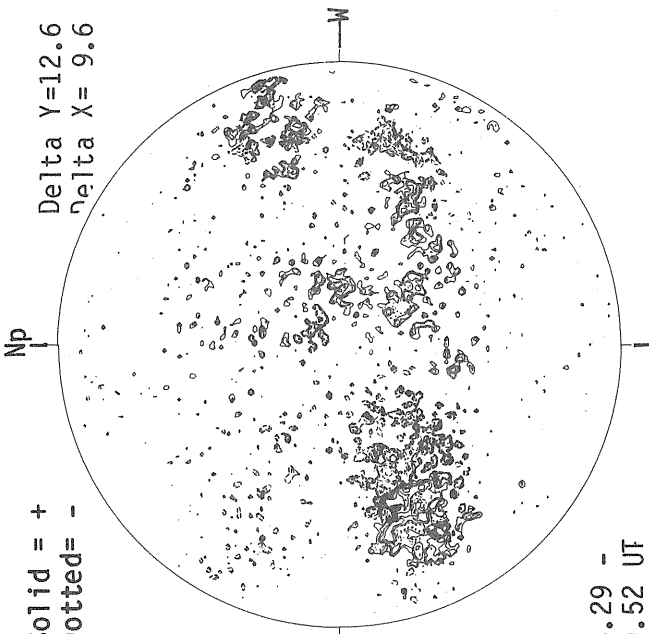
1338 UT

STANFORD MAGNETOGRAM



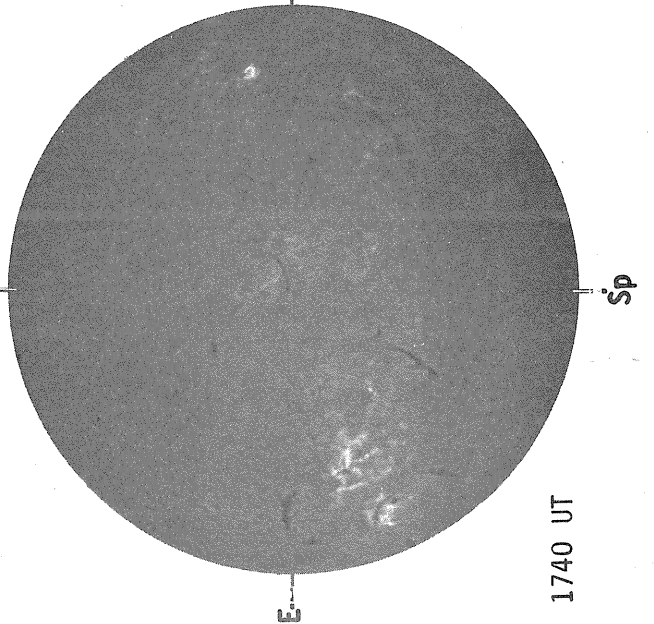
2013 UT

MT. WILSON MAGNETOGRAM



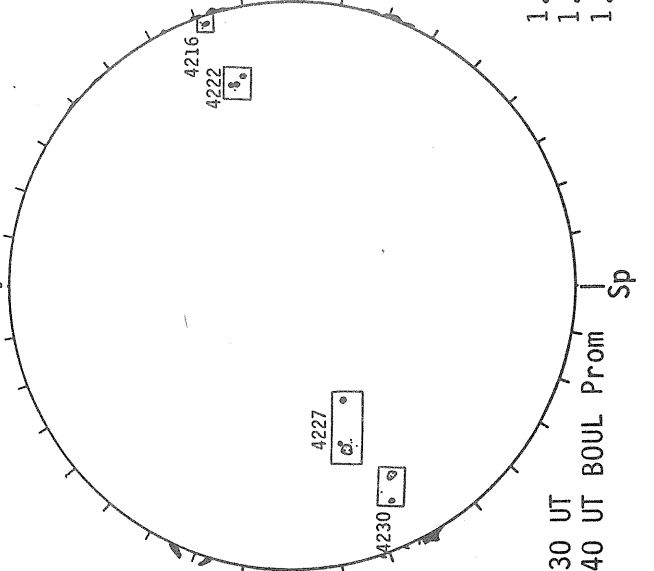
18.29 -
19.52 UT

BOULDER H-ALPHA



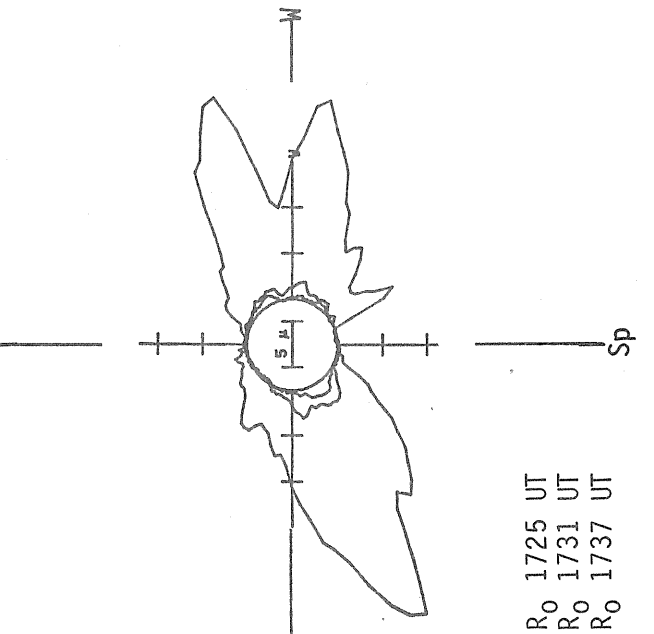
1740 UT

BOULDER SUNSPOTS



1530 UT
1640 UT BOUL Prom

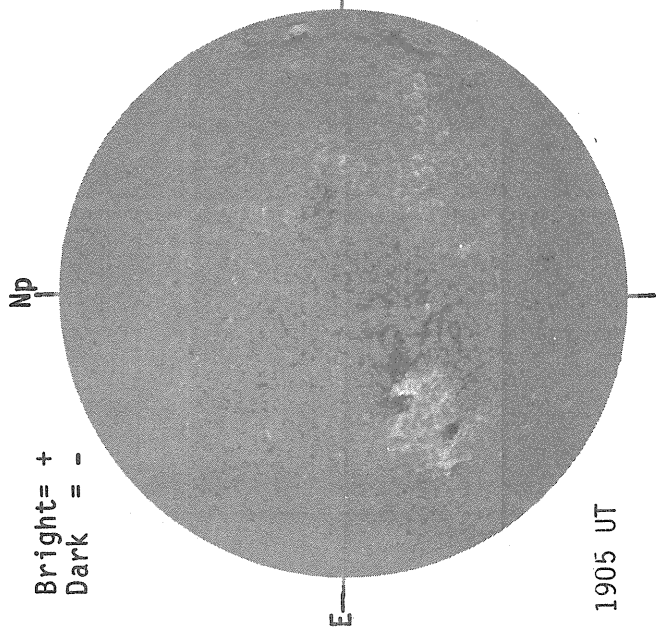
SACRAMENTO PEAK CORONA (5303 Angstrom)



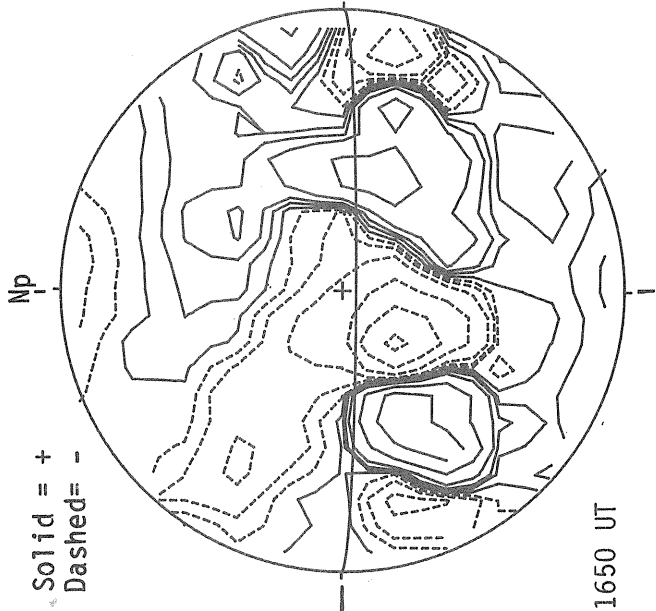
1.15 R₀ 1725 UT
1.35 R₀ 1731 UT
1.45 R₀ 1737 UT

JUNE 30, 1983 (P=-3.41, B₀=+2.73, L₀=23.81)

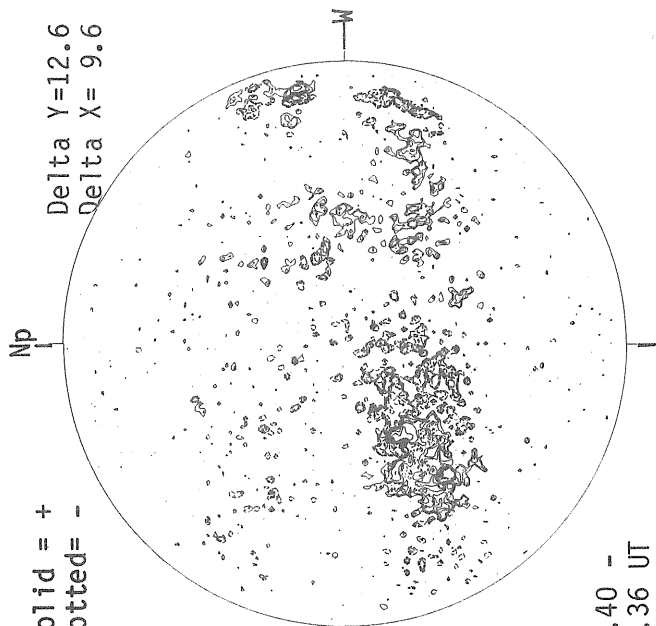
KITT PEAK MAGNETOGRAM



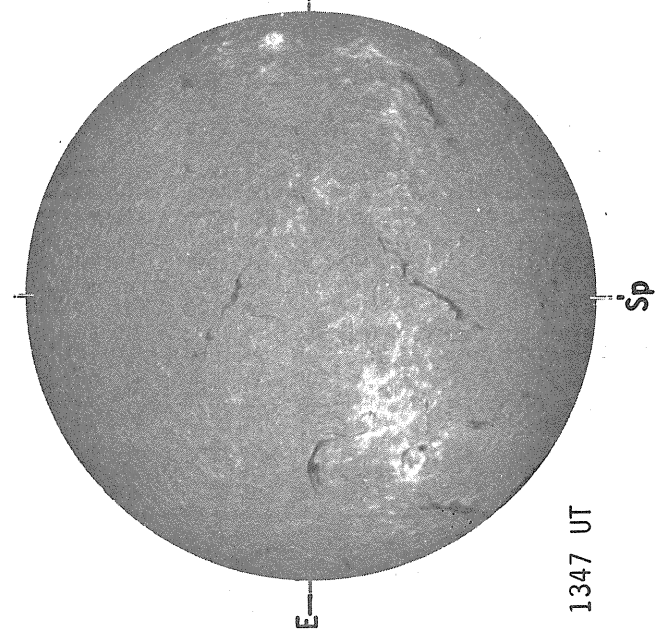
STANFORD MAGNETOGRAM



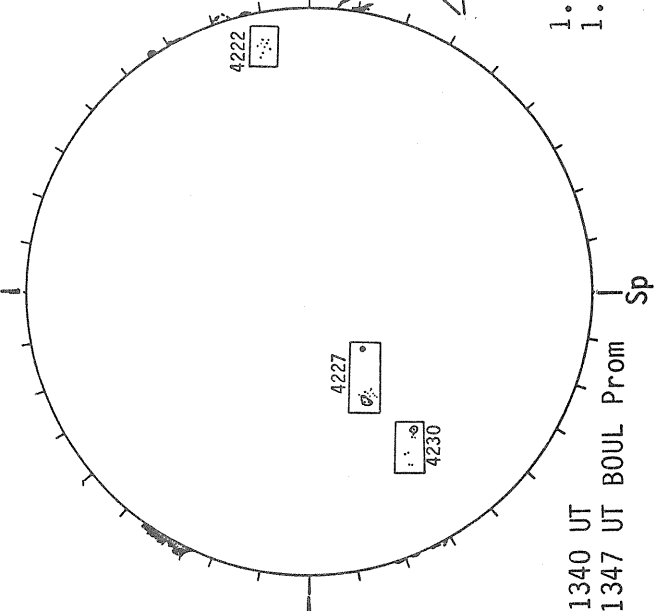
MT. WILSON MAGNETOGRAM



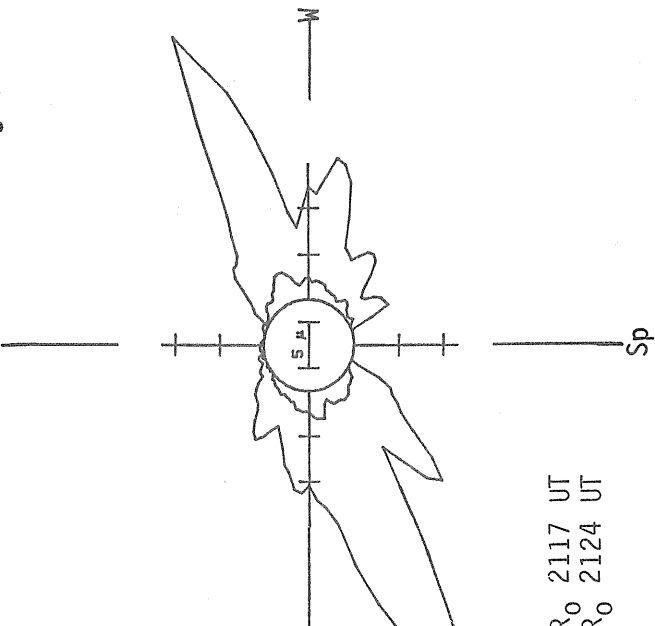
BOULDER H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time			Lat	CMD	CMP		Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day	(UT)			Mo	Day							
4196		RAMY	05	26	1250	S09	E76	06	1.2		B	CAO	50	2	7	2
4196	23689	MWIL	05	26	1430	S08	E79	06	1.5	2	(AP)					
4196		BOUL	05	26	1431	S11	E74	06	1.2		B	CSO	60	2	8	3
4196		HOLL	05	26	1506	S08	E72	06	1.0		B	CSO	30	2	9	4
4196		PALE	05	26	1855	S09	E71	06	1.1		B	CSO	40	2	9	3
4196		ATHN	05	27	0700	S10	E68	06	1.4		A	HSX	50	1	2	3
4196		RAMY	05	27	1200	S10	E63	06	1.2		B	CAO	50	2	11	3
4196		HOLL	05	27	1408	S09	E67	06	1.6		A	HSX	60	1	1	4
4196		BOUL	05	27	1415	S08	E66	06	1.5		A	HSX	40	1	2	3
4196	23689	MWIL	05	27	1600	S08	E65	06	1.5	4	(AP)					
4196		LEAR	05	28	0140	S09	E60	06	1.6		B	CSO	40	5	3	3
4196		RAMY	05	28	1340	S10	E54	06	1.6		A	HAX	70	2	2	2
4196		HOLL	05	28	1403	S08	E53	06	1.6		A	HSX	60	2	2	3
4196		BOUL	05	28	1443	S08	E53	06	1.6		A	HSX	60	2	3	3
4196	23689	MWIL	05	28	1500	S09	E54	06	1.7	5	(BP)					
4196		MANI	05	28	2335	S08	E49	06	1.7			CSO	100	4	3	3
4196		LEAR	05	29	0130	S09	E46	06	1.5		A	HAX	40	3	2	3
4196		ATHN	05	29	0630	S10	E43	06	1.5		A	HAX	30	2	2	2
4196		RAMY	05	29	1217	S10	E41	06	1.6		A	HAX	40	1	1	3
4196		BOUL	05	29	1405	S08	E38	06	1.4		A	HSX	50	3	1	3
4196	23689	MWIL	05	29	1600	S09	E39	06	1.6	4	(AP)					
4196		PALE	05	29	1817	S10	E38	06	1.6		B	CAO	50	4	3	4
4196		LEAR	05	30	0047	S10	E34	06	1.6		A	HSX	90	3	2	3
4196		MANI	05	30	0125	S09	E34	06	1.6			HSX	100	3	2	3
4196		ATHN	05	30	0630	S12	E30	06	1.5		A	HSX	50	1	2	1
4196		RAMY	05	30	1153	S09	E28	06	1.6		A	HAX	50	3	1	3
4196	23689	MWIL	05	30	1600	S09	E25	06	1.5	4	(AP)					
4196		PALE	05	30	1650	S10	E23	06	1.4		A	HSX	60	1	2	3
4196		MANI	05	31	0050	S10	E20	06	1.5			CSO	100	7	4	3
4196		LEAR	05	31	0104	S11	E19	06	1.5		A	HSX	80	5	2	3
4196		ATHN	05	31	0630	S11	E17	06	1.6		B	CSO	70	4	2	3
4196		RAMY	05	31	1300	S10	E12	06	1.4		B	CSO	80	12	7	4
4196	23689	MWIL	05	31	1414	S10	E14	06	1.6	4	(BY)					
4196		PALE	05	31	1715	S11	E09	06	1.4		B	CSO	80	10	12	3
4196		HOLL	05	31	1805	S10	E15	06	1.9		B	CSO	70	10	8	4
4196		LEAR	06	01	0405	S10	E09	06	1.8		B	CSO	60	14	9	3
4196		MANI	06	01	0529	S10	E08	06	1.8			CSO	80	13	9	3
4196		ATHN	06	01	0600	S11	E03	06	1.5			CHO	40	3	3	3
4196		RAMY	06	01	1235	S11	W03	06	1.3		B	CAO	60	8	8	4
4196		BOUL	06	01	1436	S10	W02	06	1.5		A	HSX	40	1	1	3
4196		HOLL	06	01	1445	S11	W01	06	1.5		B	CSO	70	4	3	3
4196		PALE	06	01	1957	S09	W04	06	1.5		B	CAO	50	4	3	2
4196		MANI	06	01	2252	S10	W03	06	1.7			CSO	90	5	8	3
4196		ATHN	06	02	0605	S12	W10	06	1.5			CRO	30	2	2	3
4196		RAMY	06	02	1135	S10	W13	06	1.5		B	CAO	60	9	4	4
4196		HOLL	06	02	1413	S10	W15	06	1.5		B	CSO	60	5	4	2
4196		BOUL	06	02	1420	S12	W15	06	1.5		B	CSO	60	9	5	3
4196		PALE	06	02	1720	S10	W17	06	1.4		B	CSO	40	3	3	3
4196		MANI	06	02	2249	S10	W19	06	1.5			CSO	90	6	3	3
4196		LEAR	06	03	0315	S10	W20	06	1.6		B	CSO	60	7	9	2
4196		ATHN	06	03	0630	S07	W23	06	1.5		A	HSX	30	1	1	2
4196		ATHN	06	03	1035	S08	W24	06	1.6		A	HSX	40	2	2	3
4196		RAMY	06	03	1145	S09	W26	06	1.5		B	CAO	50	6	3	4
4196		HOLL	06	03	1415	S09	W28	06	1.5		A	HSX	30	2	1	3
4196		BOUL	06	03	1428	S10	W29	06	1.4		B	CRO	30	4	3	3
4196	23689	MWIL	06	03	1500	S09	W25	06	1.7	4	(BP)					
4196		PALE	06	03	1743	S10	W29	06	1.6		A	HSX	30	4	2	4
4196		MANI	06	04	0005	S10	W33	06	1.5			HSX	50	2	2	3
4196		LEAR	06	04	0135	S09	W34	06	1.5		B	CAO	20	3	3	3
4196		ATHN	06	04	0730	S10	W37	06	1.5		A	HSX	30	2	1	2
4196		RAMY	06	04	1147	S09	W40	06	1.5		A	HAX	30	4	2	4
4196		HOLL	06	04	1420	S09	W41	06	1.5		A	AXX	20	2	2	3
4196		BOUL	06	04	1420	S11	W40	06	1.6		B	BXO	20	3	3	3
4196	23689	MWIL	06	04	1500	S10	W41	06	1.5	3	(AP)					
4196		PALE	06	04	1823	S09	W43	06	1.5		B	CSO	20	3	2	4
4196		LEAR	06	05	0125	S09	W47	06	1.5		A	HAX	10	1	1	3
4196		MANI	06	05	0300	S10	W48	06	1.5			HRX	30	2	1	3
4196		ATHN	06	05	0620	S09	W49	06	1.6		A	HSX	20	1	1	3
4196		RAMY	06	05	1143	S08	W54	06	1.4		A	AXX	20	2	1	3
4196		HOLL	06	05	1413	S09	W54	06	1.5		A	AXX	10	1	1	4
4196	23689	MWIL	06	05	1530	S09	W55	06	1.5	3	(AP)					

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

75
JUN 83

JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)		Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual	
4196	23689	PALE	06	05	1754	S09 W56	06 1.5		A	AXX	10	1	1	4
4196		MWIL	06	06	1500	S09 W68	06 1.5	3	(B)					
4196		HOLL	06	06	1545	S09 W68	06 1.5		A	AXX	10	3	2	3
4196		PALE	06	06	1800	S08 W70	06 1.5		A	AXX		1		3
4196		LEAR	06	07	0115	S09 W77	06 1.3		B	BXO	10	2	4	1
		LEAR	05	28	0140	S11 E67	06 2.1		A	AXX		1		3
0001	23701	RAMY	06	07	1259	S16 W69	06 2.3		B	CSO	20	2	1	4
0001		HOLL	06	07	1445	S16 W70	06 2.3		A	AXX		1		3
0001		MWIL	06	07	1515	S17 W70	06 2.3	2	(AP)					
		MANI	05	28	2335	S09 E61	06 2.6			AXX	10	1		3
4201	23694	LEAR	05	29	0130	S09 E86	06 4.5		A	HHX	140	1	3	3
4201		ATHN	05	29	0630	S10 E83	06 4.5		A	HHX	50	1	4	2
4201		RAMY	05	29	1217	S11 E80	06 4.5		B	CKO	160	2	4	3
4201		MWIL	05	29	1600	S08 E79	06 4.6	4	(AP)					
4201		PALE	05	29	1817	S09 E77	06 4.5		B	CSO	210	2	4	4
4201		LEAR	05	30	0047	S12 E77	06 4.8		B	DHO	410	8	10	3
4201		MANI	05	30	0125	S11 E77	06 4.9			DKO	560	6	10	3
4201		ATHN	05	30	0630	S12 E72	06 4.7		B	DSO	190	2	9	1
4201		RAMY	05	30	1153	S11 E71	06 4.8		B	EHO	310	9	12	3
4201		MWIL	05	30	1600	S10 E71	06 5.0	4	(B)					
4201	23694	PALE	05	30	1650	S12 E68	06 4.8		BG	EHO	600	5	12	3
4201		MANI	05	31	0050	S11 E65	06 4.9			EKI	1010	15	12	3
4201		LEAR	05	31	0104	S11 E65	06 4.9		BG	EKI	1030	17	12	3
4201		ATHN	05	31	0630	S12 E60	06 4.8		BGD	EHI	500	7	14	3
4201		RAMY	05	31	1300	S10 E59	06 5.0		B	EKI	640	22	12	4
4201		MWIL	05	31	1414	S10 E58	06 5.0	5	(D)					
4201		PALE	05	31	1715	S10 E56	06 4.9		B	EKO	590	19	13	3
4201		HOLL	05	31	1805	S10 E55	06 4.9		BGD	EKI	610	15	12	4
4201		LEAR	06	01	0405	S09 E51	06 5.0		BGD	EKI	510	31	13	3
4201		MANI	06	01	0529	S10 E50	06 5.0			EKI	860	33	13	3
4201	23694	ATHN	06	01	0600	S13 E48	06 4.9			EKO	640	12	12	3
4201		RAMY	06	01	1235	S10 E45	06 4.9		B	EKI	650	42	14	4
4201		BOUL	06	01	1436	S11 E43	06 4.8		BGD	EHO	540	23	13	3
4201		HOLL	06	01	1445	S10 E45	06 5.0		BGD	EKI	580	24	14	3
4201		PALE	06	01	1957	S09 E43	06 5.1		BGD	EHI	560	21	13	2
4201		MANI	06	01	2252	S10 E40	06 5.0			EKI	900	42	13	3
4201		ATHN	06	02	0605	S12 E35	06 4.9			EKI	660	19	13	3
4201		RAMY	06	02	1135	S11 E35	06 5.1		BGD	FKI	670	68	16	4
4201		HOLL	06	02	1413	S10 E37	06 5.4		BG	FKI	600	25	17	2
4201		BOUL	06	02	1420	S09 E31	06 4.9		BGD	FHI	560	39	17	3
4201	23694	PALE	06	02	1720	S10 E33	06 5.2		BGD	FKI	660	39	17	3
4201		MANI	06	02	2249	S10 E28	06 5.1			FKI	800	55	16	3
4201		LEAR	06	03	0315	S10 E26	06 5.1		BGD	FKI	640	50	17	2
4201		ATHN	06	03	1035	S13 E21	06 5.0			FHI	630	41	17	3
4201		RAMY	06	03	1145	S10 E23	06 5.2		BGD	FKI	540	69	17	4
4201		HOLL	06	03	1415	S09 E20	06 5.1		BGD	FKI	800	51	17	3
4201		BOUL	06	03	1428	S09 E19	06 5.0		BGD	FKI	620	59	18	3
4201		MWIL	06	03	1500	S09 E17	06 4.9	5	(D)					
4201		PALE	06	03	1743	S09 E18	06 5.1		BGD	FKI	870	56	17	4
4201		MANI	06	04	0005	S09 E15	06 5.1			FKI	980	65	17	3
4201	23694	LEAR	06	04	0135	S10 E14	06 5.1		BGD	FKI	860	55	17	3
4201		ATHN	06	04	0730	S10 E10	06 5.1		BGD	FKI	680	32	18	2
4201		RAMY	06	04	1147	S09 E09	06 5.2		BGD	FKI	680	91	18	4
4201		BOUL	06	04	1420	S09 E07	06 5.1		BGD	FKI	780	50	18	3
4201		HOLL	06	04	1420	S09 E08	06 5.2		BGD	FKI	1000	54	18	3
4201		MWIL	06	04	1500	S09 E08	06 5.2	6	(D)					
4201		PALE	06	04	1823	S09 E05	06 5.1		BGD	FKI	950	68	18	4
4201		LEAR	06	05	0125	S08 E03	06 5.3		BGD	FKI	1320	48	19	3
4201		MANI	06	05	0300	S08 E01	06 5.2			FKI	1400	59	19	3
4201		ATHN	06	05	0620	S10 W03	06 5.0		BGD	FKI	910	41	18	3
4201	23694	RAMY	06	05	1143	S09 W04	06 5.2		BGD	FKI	1290	79	20	3
4201		HOLL	06	05	1413	S09 W05	06 5.2		BGD	FKC	1100	57	20	4
4201		MWIL	06	05	1530	S09 W05	06 5.3	5	(D)					
4201		PALE	06	05	1754	S09 W07	06 5.2		BGD	FKC	1400	77	20	4
4201		LEAR	06	06	0102	S10 W09	06 5.4		BGD	FKI	1520	54	20	3
4201		ATHN	06	06	0630	S08 W14	06 5.2		BGD	FKI	1360	40	19	3
4201		RAMY	06	06	1300	S08 W18	06 5.2		GD	FKC	1890	99	21	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)			Lat CMD	CMP Mo Day		Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4201		BOUL	06	06	1425	S07 W18	06	5.3		GD	FKI	1280	75	20	3
4201	23694	MWIL	06	06	1500	S09 W17	06	5.3	6	(D)					
4201		HOLL	06	06	1545	S10 W20	06	5.2		GD	FKC	1660	59	20	3
4201		PALE	06	06	1800	S09 W21	06	5.2		GD	FKC	1750	98	21	3
4201		LEAR	06	07	0115	S09 W24	06	5.2		GD	FKC	1410	51	20	1
4201		MANI	06	07	0445	S09 W26	06	5.2			FKC	1620	49	22	3
4201		ATHN	06	07	0845	S08 W27	06	5.3			FKC	1450	32	20	2
4201		RAMY	06	07	1259	S09 W31	06	5.2		GD	FKC	1820	99	22	4
4201		BOUL	06	07	1423	S08 W31	06	5.3		BGD	FKI	1200	56	20	3
4201		HOLL	06	07	1445	S10 W32	06	5.2		BGD	FKC	1710	80	20	3
4201	23694	MWIL	06	07	1515	S10 W30	06	5.4	5	(D)					
4201		PALE	06	07	1918	S09 W35	06	5.2		BGD	FKI	1390	67	20	3
4201		MANI	06	08	0058	S09 W37	06	5.3			FKI	1630	62	21	3
4201		LEAR	06	08	0105	S09 W36	06	5.3		BGD	FKC	1400	60	22	2
4201		RAMY	06	08	1140	S08 W44	06	5.2		BGD	FKI	1240	71	20	3
4201		BOUL	06	08	1335	S08 W42	06	5.4		BGD	FKI	1100	34	23	3
4201		HOLL	06	08	1409	S10 W45	06	5.2		BGD	FKI	1480	55	20	2
4201	23694	MWIL	06	08	1445	S09 W45	06	5.2	6	(D)					
4201		PALE	06	08	1720	S09 W47	06	5.2		BGD	FKI	1170	42	21	3
4201		LEAR	06	09	0100	S10 W51	06	5.2		BGD	FKI	1190	43	22	3
4201		MANI	06	09	0117	S09 W51	06	5.2			FKI	2050	34	22	3
4201		RAMY	06	09	1100	S08 W56	06	5.3		BGD	FKI	1290	42	23	3
4201		HOLL	06	09	1412	S09 W58	06	5.2		BGD	FKI	1330	17	21	2
4201		BOUL	06	09	1435	S10 W58	06	5.2		BGD	FKI	1030	16	23	3
4201	23694	MWIL	06	09	1500	S09 W58	06	5.3	6	(D)					
4201		PALE	06	09	1922	S09 W62	06	5.2		BGD	FKI	1390	28	21	2
4201		MANI	06	09	2319	S09 W63	06	5.2			FKI	2940	24	22	3
4201		LEAR	06	10	0355	S10 W63	06	5.4		BGD	FKI	1100	25	22	3
4201		ATHN	06	10	0700	S10 W70	06	5.0		BGD	FKI	1320	12	21	2
4201		RAMY	06	10	1130	S08 W70	06	5.2		BGD	FKI	930	30	21	3
4201	23694	MWIL	06	10	1445	S09 W70	06	5.4	6	(D)					
4201		HOLL	06	10	1509	S10 W70	06	5.4		BGD	FKI	1100	20	20	3
4201		BOUL	06	10	1622	S09 W70	06	5.4		BGD	FKI	700	14	20	2
4201		MANI	06	11	0026	S09 W73	06	5.5			EKI	1380	13	15	3
4201		LEAR	06	11	0048	S10 W72	06	5.6		BGD	EKI	1190	11	14	2
4201		ATHN	06	11	0630	S08 W74	06	5.7			FKO	520	9	18	3
4201		RAMY	06	11	1111	S08 W76	06	5.8		BGD	EKI	570	10	11	3
4201		BOUL	06	11	1330	S10 W79	06	5.6		BGD	DSO	210	11	10	3
4201		HOLL	06	11	1436	S09 W78	06	5.8		BG	EKO	860	4	15	4
4201	23694	MWIL	06	11	1520	S09 W80	06	5.6	3	(B)					
4201		PALE	06	11	1735	S10 W83	06	5.5		BGD	EKO	550	3	14	3
4201		LEAR	06	12	0034	S09 W78	06	6.2		A	AXX	90	3	3	3
4203		MANI	06	01	2252	S17 E46	06	5.5			AXX	10	2	1	3
4203		RAMY	06	02	1135	S20 E38	06	5.4		B	CAO	50	3	3	4
4203		HOLL	06	02	1413	S18 E37	06	5.4		A	AXX	10	2	1	2
4203		BOUL	06	02	1420	S17 E37	06	5.4		A	AXX	10	1	1	3
4203		PALE	06	02	1720	S18 E34	06	5.3		A	AXX	10	1	1	3
4203		MANI	06	02	2249	S18 E35	06	5.6			BRO	30	3	4	3
4203		LEAR	06	03	0315	S18 E28	06	5.3		A	AXX	10	1	1	2
4203		ATHN	06	03	1035	S22 E22	06	5.1		A	AXX	10	1	1	3
4203		RAMY	06	03	1145	S18 E24	06	5.3		B	CAO	20	2	3	4
4203		HOLL	06	03	1415	S17 E23	06	5.3		A	AXX		1		3
4203		BOUL	06	03	1428	S18 E21	06	5.2		A	AXX		1		3
4203	23695	MWIL	06	03	1500	S17 E23	06	5.4	2	(P)					
4203		PALE	06	03	1743	S17 E22	06	5.4		A	AXX		1		4
4203		RAMY	06	06	1300	S19 W13	06	5.5		B	BXO	10	5	3	3
4203		BOUL	06	06	1425	S18 W14	06	5.5		B	BXO	10	4	3	3
4203	23699	MWIL	06	06	1500	S20 W14	06	5.6	4	(B)					
4203		HOLL	06	06	1545	S20 W15	06	5.5		B	CRO	30	4	5	3
4203		PALE	06	06	1800	S19 W16	06	5.5		B	CRO	20	10	5	3
4203		LEAR	06	07	0115	S19 W21	06	5.4		B	DSO	40	6	4	1
4203		MANI	06	07	0445	S19 W22	06	5.5			DSO	120	5	5	3
4203		ATHN	06	07	0845	S18 W25	06	5.5		B	CSO	50	4	5	2
4203		RAMY	06	07	1259	S18 W28	06	5.4		B	DAO	70	24	6	4
4203		BOUL	06	07	1423	S18 W28	06	5.5		B	BX1	40	10	5	3
4203		HOLL	06	07	1445	S19 W28	06	5.5		B	DAO	50	12	5	3
4203	23699	MWIL	06	07	1515	S19 W28	06	5.5	4	(B)					
4203		PALE	06	07	1918	S19 W30	06	5.5		B	CSO	50	13	5	3
4203		MANI	06	08	0058	S19 W34	06	5.4			CSO	50	7	6	3
4203		LEAR	06	08	0105	S19 W35	06	5.4		B	CSO	30	6	5	2

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

77
JUN 83

JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation			Lat	CMD	CMP		Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day	Time (UT)			Mo	Day							
4203		RAMY	06	08	1140	S18	W41	06	5.4		B	CA0	30	7	6	3
4203		BOUL	06	08	1335	S14	W42	06	5.4		B	CS0	40	7	4	3
4203		HOLL	06	08	1409	S19	W42	06	5.4		B	CRO	40	6	6	2
4203	23699	MWIL	06	08	1445	S18	W43	06	5.3	4	(BP)					
4203		PALE	06	08	1720	S18	W45	06	5.3		B	CRO	30	5	4	3
4203		LEAR	06	09	0100	S18	W48	06	5.4		B	CRO	30	6	5	3
4203		MANI	06	09	0117	S19	W49	06	5.3			CRO	50	4	4	3
4203		RAMY	06	09	1100	S17	W55	06	5.3		B	DAO	80	3	5	3
4203		HOLL	06	09	1412	S18	W55	06	5.4		B	BX0	10	4	6	2
4203		BOUL	06	09	1435	S17	W56	06	5.3		B	BX0	20	3	5	3
4203	23699	MWIL	06	09	1500	S18	W56	06	5.4	2	(B)					
4203		PALE	06	09	1922	S18	W59	06	5.3		B	BX0	10	3	4	2
4203		MANI	06	09	2319	S18	W62	06	5.2			BXX	40	2	4	3
4203		LEAR	06	10	0355	S19	W61	06	5.5		A	AXX		1		3
	23696	MWIL	06	04	1500	S09	E22	06	6.3	2	(AF)					
4206		BOUL	06	08	1335	S12	E08	06	9.2		A	AXX		2	1	3
4206		LEAR	06	09	0100	S15	E03	06	9.3		B	BXX	10	2	2	3
4206		RAMY	06	09	1100	S16	W04	06	9.2		A	XX	10	4	2	3
4206		HOLL	06	09	1412	S15	W06	06	9.1		A	AXX		1		2
4206	23702	MWIL	06	09	1500	S16	W06	06	9.2	2	(AF)					
4206		RAMY	06	10	1130	S15	W18	06	9.1		A	AXX	10	1	1	3
	23698	MWIL	06	05	1530	S34	E55	06	10.0	2	(AP)					
		HOLL	06	11	1436	S17	W07	06	11.1		A	AXX		1		4
		BOUL	06	14	1423	N13	W43	06	11.4		A	AXX		1		3
4204		RAMY	06	04	1147	S08	E87	06	11.0		A	HHX	250	1	3	4
4204		BOUL	06	04	1420	S07	E82	06	10.7		A	HHX	310	1	3	3
4204		HOLL	06	04	1420	S09	E83	06	10.8		B	DHO	450	2	7	3
4204	23697	MWIL	06	04	1500	S08	E85	06	11.0	2	(AP)					
4204		PALE	06	04	1823	S09	E85	06	11.1		B	DHO	360	2	5	4
4204		LEAR	06	05	0125	S08	E79	06	11.0		B	DHO	450	3	6	3
4204		MANI	06	05	0300	S08	E78	06	11.0			DHO	580	5	7	3
4204		ATHN	06	05	0620	S10	E76	06	11.0		B	DAO	520	3	5	3
4204		RAMY	06	05	1143	S10	E75	06	11.1		B	DKO	710	5	10	3
4204		HOLL	06	05	1413	S08	E74	06	11.1		B	EK1	980	9	11	4
4204	23697	MWIL	06	05	1530	S08	E72	06	11.0	5	(BP)					
4204		PALE	06	05	1754	S09	E74	06	11.3		B	EK1	1040	19	11	4
4204		LEAR	06	06	0102	S09	E66	06	11.0		B	DH1	550	10	9	3
4204		ATHN	06	06	0630	S10	E64	06	11.1		B	DKO	810	16	9	3
4204		RAMY	06	06	1300	S10	E61	06	11.1		B	EK1	1310	42	11	3
4204		BOUL	06	06	1425	S11	E58	06	11.0		BG	DK1	730	28	10	3
4204	23697	MWIL	06	06	1500	S08	E60	06	11.1	5	(BY)					
4204		HOLL	06	06	1545	S10	E60	06	11.2		BGD	EK1	1020	28	12	3
4204		PALE	06	06	1800	S09	E60	06	11.3		B	EK1	1260	41	12	3
4204		LEAR	06	07	0115	S09	E55	06	11.2		BGD	EK1	850	27	11	1
4204		MANI	06	07	0445	S09	E55	06	11.3			EK1	1090	27	12	3
4204		ATHN	06	07	0845	S10	E49	06	11.0			EK1	610	21	12	2
4204		RAMY	06	07	1259	S10	E50	06	11.3		BGD	EKC	1140	65	12	4
4204		BOUL	06	07	1423	S10	E45	06	11.0		B	DK1	800	27	9	3
4204		HOLL	06	07	1445	S08	E48	06	11.2		BGD	EKC	990	46	12	3
4204	23697	MWIL	06	07	1515	S08	E46	06	11.1	5	(D)					
4204		PALE	06	07	1918	S09	E46	06	11.3		BD	EK1	840	35	12	3
4204		MANI	06	08	0058	S09	E44	06	11.3			EK1	1040	39	12	3
4204		LEAR	06	08	0105	S09	E42	06	11.2		BGD	DKC	730	36	11	2
4204		RAMY	06	08	1140	S09	E36	06	11.2		BGD	EK1	800	59	11	3
4204		BOUL	06	08	1335	S10	E34	06	11.1		BD	EK1	600	39	11	3
4204		HOLL	06	08	1409	S10	E36	06	11.3		BD	EK1	1080	53	12	2
4204	23697	MWIL	06	08	1445	S09	E33	06	11.1	5	(D)					
4204		PALE	06	08	1720	S09	E34	06	11.3		BD	EK1	900	67	12	3
4204		LEAR	06	09	0100	S10	E30	06	11.3		BD	EK1	710	60	12	3
4204		MANI	06	09	0117	S09	E30	06	11.3			EK1	1020	61	12	3
4204		RAMY	06	09	1100	S10	E23	06	11.2		BD	EK1	690	67	13	3
4204		HOLL	06	09	1412	S09	E23	06	11.3		BD	EK1	840	39	12	2
4204		BOUL	06	09	1435	S09	E22	06	11.3		BD	EK1	700	30	12	3
4204	23697	MWIL	06	09	1500	S09	E19	06	11.1	5	(D)					
4204		PALE	06	09	1922	S10	E20	06	11.3		BD	EK1	780	67	11	2

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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation			Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual		
			Mo	Day	Time (UT)											
4204		MANI	06	09	2319	S10 E18	06 11.3			EK1	960	56	11	3		
4204		LEAR	06	10	0355	S10 E15	06 11.3			BD EK1	1000	49	14	3		
4204		ATHN	06	10	0700	S10 E14	06 11.3			EK1	770	32	12	2		
4204	23697	RAMY	06	10	1130	S10 E10	06 11.2			EK1	760	85	13	3		
4204		MWIL	06	10	1445	S09 E05	06 11.0	5		(D)						
4204		HOLL	06	10	1509	S09 E08	06 11.2			BD EK1	660	45	13	3		
4204		BOUL	06	10	1622	S09 E08	06 11.3			BD EK1	650	35	13	2		
4204		MANI	06	11	0026	S10 E04	06 11.3			EK1	880	47	13	3		
4204		LEAR	06	11	0048	S10 E04	06 11.3			BD EK1	780	36	13	2		
4204		ATHN	06	11	0630	S11 E02	06 11.4			BD EK1	510	57	12	3		
4204		RAMY	06	11	1111	S10 W03	06 11.2			BD EK1	620	85	13	3		
4204		BOUL	06	11	1330	S09 W04	06 11.3			BD ESI	400	60	12	3		
4204		HOLL	06	11	1436	S08 W04	06 11.3			BGD ESI	560	52	13	4		
4204	23697	MWIL	06	11	1520	S09 W07	06 11.1	5		(B)						
4204		PALE	06	11	1735	S09 W07	06 11.2			BGD EK1	530	49	13	3		
4204		LEAR	06	12	0034	S10 W10	06 11.3			BG	500	35	16	3		
4204		ATHN	06	12	0630	S09 W16	06 11.1			EH1	390	30	11	2		
4204		RAMY	06	12	1210	S08 W18	06 11.2			BGD EK1	510	67	13	4		
4204		23697	MWIL	06	12	1445	S09 W21	06 11.0	5		(B)					
4204			HOLL	06	12	1506	S08 W17	06 11.4			B	480	41	12	2	
4204			BOUL	06	12	1532	S08 W19	06 11.2			BGD EK1	310	58	13	3	
4204			PALE	06	12	1840	S09 W20	06 11.3			BGD EH1	380	42	12	3	
4204			LEAR	06	13	0130	S09 W23	06 11.3			BGD EH1	380	33	16	3	
4204	LEAR		06	13	0130	S09 W23	06 11.3			BGD FH1	380	33	16	3		
4204	RAMY		06	13	1204	S08 W29	06 11.3			BGD ESI	380	43	15	3		
4204	BOUL		06	13	1435	S09 W30	06 11.4			BGD EAI	230	24	14	3		
4204	23697		MWIL	06	13	1500	S09 W35	06 11.0	5		(BP)					
4204			HOLL	06	13	1810	S10 W34	06 11.2			BD	560	28	12	2	
4204		LEAR	06	14	0035	S09 W37	06 11.2			B	310	33	13	3		
4204		ATHN	06	14	0615	S11 W37	06 11.5			B	290	22	12	2		
4204		HOLL	06	14	1411	S09 W45	06 11.2			B	350	21	13	2		
4204		BOUL	06	14	1423	S09 W44	06 11.3			B	220	28	14	3		
4204		23697	MWIL	06	14	1545	S09 W50	06 10.9	5		(BP)					
4204			PALE	06	14	1720	S09 W46	06 11.3			BGD EAI	300	24	12	3	
4204			LEAR	06	15	0443	S09 W57	06 10.9			B	130	17	4	2	
4204			ATHN	06	15	0615	S10 W58	06 10.9			B	190	6	10	2	
4204	RAMY		06	15	1328	S08 W62	06 10.9			B	180	8	10	2		
4204	BOUL		06	15	1500	S08 W58	06 11.3			B	200	24	14	3		
4204	23697		MWIL	06	15	1500	S08 W61	06 11.0	5		(BP)					
4204			PALE	06	15	1810	S08 W61	06 11.2			B	220	11	10	3	
4204			LEAR	06	16	0121	S08 W66	06 11.1			B	190	3	3	3	
4204			ATHN	06	16	0624	S10 W72	06 10.9			A	140	1	2	2	
4204		RAMY	06	16	1305	S08 W76	06 10.8			A	160	1	3	4		
4204		BOUL	06	16	1423	S09 W75	06 11.0			B	90	3	3	3		
4204		23697	MWIL	06	16	1500	S08 W77	06 10.8	3		(AP)					
4204			HOLL	06	16	1633	S09 W76	06 11.0			A	200	1	2	4	
4204			PALE	06	16	1830	S08 W78	06 10.9			A	160	1	2	3	
4205			23700	MWIL	06	06	1500	S10 E81	06 12.7	3		(B)				
4205	HOLL			06	06	1545	S12 E80	06 12.7			B	30	2	5	3	
4205	LEAR			06	07	0115	S10 E77	06 12.8			B	360	2	5	1	
4205	MANI			06	07	0445	S10 E76	06 12.9				CSO	400	3	5	3
4205	ATHN			06	07	0845	S11 E69	06 12.6			B	130	2	5	2	
4205	RAMY			06	07	1259	S12 E69	06 12.7			B	130	4	5	4	
4205	BOUL			06	07	1423	S13 E70	06 12.9			A	50	1	1	3	
4205	23700	HOLL		06	07	1445	S10 E69	06 12.8			A	140	3	1	3	
4205		MWIL		06	07	1515	S11 E69	06 12.8	4		(BF)					
4205		PALE		06	07	1918	S12 E68	06 12.9			A	60	1	1	3	
4205		MANI	06	08	0058	S11 E65	06 12.9				HSX	110	2	2	3	
4205		LEAR	06	08	0105	S11 E64	06 12.9			A	20	2	2	2		
4205		RAMY	06	08	1140	S12 E58	06 12.9			A	40	2	1	3		
4205		BOUL	06	08	1335	S12 E57	06 12.9			A	50	2	2	3		
4205		HOLL	06	08	1409	S12 E56	06 12.8			A	30	3	2	2		
4205		23700	MWIL	06	08	1445	S11 E56	06 12.8	3		(AF)					
4205			PALE	06	08	1720	S12 E56	06 12.9			A	30	2	2	3	
4205	LEAR		06	09	0100	S12 E51	06 12.9			B	30	5	3	3		
4205	MANI		06	09	0117	S12 E51	06 12.9				CSO	60	4	3	3	
4205	RAMY		06	09	1100	S12 E45	06 12.9			B	60	5	3	3		
4205	HOLL		06	09	1412	S11 E42	06 12.8			B	50	7	4	2		
4205	BOUL		06	09	1435	S11 E43	06 12.8			B	10	5	5	3		
4205	23700		MWIL	06	09	1500	S11 E43	06 12.9	4		(BF)					

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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4205		PALE	06 09 1922	S11 E40	06 12.8		B	DAO	70	8	4	2
4205		MANI	06 09 2319	S12 E38	06 12.8			CAO	80	8	4	3
4205		LEAR	06 10 0355	S11 E35	06 12.8		B	CSO	120	8	5	3
4205		ATHN	06 10 0700	S11 E32	06 12.7		B	CAO	80	4	5	2
4205		RAMY	06 10 1130	S12 E30	06 12.7		B	CAO	80	12	5	3
4205	23700	MWIL	06 10 1445	S11 E30	06 12.9	4	(BF)					
4205		HOLL	06 10 1509	S09 E28	06 12.7		B	CSO	70	8	6	3
4205		BOUL	06 10 1622	S09 E27	06 12.7		B	CSO	60	4	6	2
4205		MANI	06 11 0026	S11 E23	06 12.7			CSO	60	6	6	3
4205		LEAR	06 11 0048	S10 E22	06 12.7		B	CSO	60	7	7	2
4205		ATHN	06 11 0630	S13 E19	06 12.7		B	DSO	60	7	5	3
4205		RAMY	06 11 1111	S12 E18	06 12.8		B	DAO	100	14	5	3
4205		BOUL	06 11 1330	S10 E15	06 12.7		B	CAO	50	7	4	3
4205		HOLL	06 11 1436	S09 E16	06 12.8		B	CSO	90	10	5	4
4205	23700	MWIL	06 11 1520	S10 E15	06 12.8	4	(B)					
4205		PALE	06 11 1735	S10 E14	06 12.8		B	DSO	90	13	5	3
4205		LEAR	06 12 0034	S10 E10	06 12.8		B	DSO	140	8	7	3
4205		ATHN	06 12 0630	S10 E06	06 12.7		B	DSO	80	6	6	2
4205		RAMY	06 12 1210	S09 E03	06 12.7		B	DAO	70	20	6	4
4205	23700	MWIL	06 12 1445	S10 E03	06 12.8	5	(B)					
4205		HOLL	06 12 1506	S10 E02	06 12.8		B	DSO	70	12	6	2
4205		BOUL	06 12 1532	S09 W01	06 12.6		B	CSO	60	15	7	3
4205		PALE	06 12 1840	S10 W02	06 12.6		B	DSO	70	12	8	3
4205		LEAR	06 13 0130	S09 W05	06 12.7		B	DSO	80	12	7	3
4205		RAMY	06 13 1204	S11 W12	06 12.6		B	DSI	100	9	7	3
4205		BOUL	06 13 1435	S10 W13	06 12.6		B	CSO	60	13	7	3
4205	23700	MWIL	06 13 1500	S11 W12	06 12.7	3	(BF)					
4205		HOLL	06 13 1810	S10 W15	06 12.6		B	DSO	50	5	7	2
4205		LEAR	06 14 0035	S10 W18	06 12.7		B	DSO	40	9	8	3
4205		ATHN	06 14 0615	S11 W20	06 12.8		B	DSO	30	3	6	2
4205		HOLL	06 14 1411	S11 W26	06 12.6		B	CSO	60	8	10	2
4205		BOUL	06 14 1423	S12 W27	06 12.6		B	CSO	50	8	11	3
4205	23700	MWIL	06 14 1545	S11 W27	06 12.6	3	(BF)					
4205		PALE	06 14 1720	S10 W28	06 12.6		B	CSO	50	6	9	3
4205		LEAR	06 15 0443	S10 W30	06 12.9		B	CSO	20	2	1	2
4205		ATHN	06 15 0615	S11 W34	06 12.7		B	CHO	50	4	5	2
4205		RAMY	06 15 1328	S10 W35	06 12.9		B	CSO	20	4	4	2
4205		BOUL	06 15 1500	S10 W36	06 12.9		B	CSO	20	4	3	3
4205	23700	MWIL	06 15 1500	S11 W34	06 13.1	4	(AF)					
4205		PALE	06 15 1810	S10 W38	06 12.9		A	HRX	20	2	2	3
4205		LEAR	06 16 0121	S12 W41	06 13.0		B	BXO	20	3	3	3
4205		RAMY	06 16 1305	S10 W48	06 12.9		A	AXX	20	1	2	4
4205	23700	MWIL	06 16 1500	S11 W49	06 12.9	2	(BP)					
4205		HOLL	06 16 1633	S10 W50	06 12.9		A	AXX	10	1		4
	23704A	MWIL	06 13 1500	N12 W12	06 12.7	2	(AP)					
		RAMY	06 10 1130	N12 E46	06 13.9		A	AXX	10	1	1	3
4212		HOLL	06 14 1411	S09 W06	06 14.1		A	AXX		1		2
4212		BOUL	06 14 1423	S08 W07	06 14.1		A	AXX		1		3
4212	23704B	MWIL	06 14 1545	S09 W07	06 14.1	2	(AP)					
4212		HOLL	06 17 1545	S11 W47	06 14.1		A	AXX	10	1	1	3
4211		RAMY	06 13 1204	N12 E14	06 14.6		B	BXO	20	3	2	3
4211	23705	MWIL	06 13 1500	N12 E11	06 14.5	2	(B)					
4211		HOLL	06 13 1810	N12 E10	06 14.5		B	BXO	10	5	3	2
4211		LEAR	06 14 0035	N12 E06	06 14.5		B	BXO	20	5	4	3
4211		ATHN	06 14 0615	N10 E03	06 14.5		B	BXO	10	3	3	2
4211		HOLL	06 14 1411	N12 W03	06 14.4		B	BXO	10	5	4	2
4211		BOUL	06 14 1423	N11 W03	06 14.4		B	CSO	40	4	5	3
4211	23705	MWIL	06 14 1545	N12 W04	06 14.4	2	(AP)					
4211		PALE	06 14 1720	N12 W05	06 14.3		B	CRO	10	3	3	3
4211		LEAR	06 15 0443	N11 W11	06 14.4		B	BXO	20	1	3	2
4211		ATHN	06 15 0615	N10 W11	06 14.4		B	BXO	10	2	2	2
4211		RAMY	06 15 1328	N12 W17	06 14.3		A	AXX	10	1	1	2
4211		BOUL	06 15 1500	N10 W18	06 14.3		A	AXX		1		3
4211	23705	MWIL	06 15 1500	N11 W18	06 14.2	2	(AP)					
4211		PALE	06 15 1810	N12 W19	06 14.3		A	AXX		1		3
4211		LEAR	06 16 0121	N10 W23	06 14.3		A	AXX		1		3
4211		RAMY	06 16 1305	N12 W28	06 14.4		A	AXX	10	1	1	4

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)		Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4211	23705	MWIL	06	16	1500	N11	W30	06	14.4	2	(AP)				
4211		HOLL	06	16	1633	N11	W29	06	14.5		A	AXX			4
4211		PALE	06	16	1830	N11	W31	06	14.4		A	AXX	10	1	3
4211		LEAR	06	19	0130	N12	W63	06	14.3		A	AXX			4
		HOLL	06	16	1633	N10	W21	06	15.1		A	AXX		1	4
4207		LEAR	06	12	0034	S27	E80	06	18.3		A	AXX	30	1	3
4207		RAMY	06	12	1210	S27	E72	06	18.1		A	HAX	60	1	4
4207	23703	MWIL	06	12	1445	S26	E71	06	18.1	3	(AP)			2	
4207		HOLL	06	12	1506	S26	E71	06	18.1		A	HSX	50	1	2
4207		BOUL	06	12	1532	S27	E68	06	17.9		B	CRO	30	2	2
4207		PALE	06	12	1840	S26	E70	06	18.2		A	HSX	20	1	3
4207		LEAR	06	13	0130	S27	E66	06	18.2		A	HSX	20	1	3
4207		RAMY	06	13	1204	S29	E60	06	18.2		B	CAO	50	2	3
4207		BOUL	06	13	1435	S27	E59	06	18.2		A	HSX	50	2	3
4207	23703	MWIL	06	13	1500	S26	E58	06	18.1	3	(AP)			2	
4207		HOLL	06	13	1810	S26	E56	06	18.1		A	HSX	20	1	2
4207		LEAR	06	14	0035	S27	E53	06	18.2		A	HSX	20	4	3
4207		HOLL	06	14	1411	S26	E46	06	18.2		A	HSX	20	1	2
4207		BOUL	06	14	1423	S27	E44	06	18.0		A	HSX	40	1	3
4207	23703	MWIL	06	14	1545	S27	E43	06	18.0	4	(AP)				
4207		PALE	06	14	1720	S27	E45	06	18.2		A	HSX	20	1	3
4207		LEAR	06	15	0443	S28	E39	06	18.2		A	HSX	10	2	2
4207		ATHN	06	15	0615	S28	E38	06	18.2		A	HSX	20	1	2
4207		RAMY	06	15	1328	S27	E34	06	18.2		A	HSX	30	1	2
4207		BOUL	06	15	1500	S25	E31	06	18.0		A	HSX	20	1	3
4207	23703	MWIL	06	15	1500	S27	E36	06	18.4	4	(AP)				
4207		PALE	06	15	1810	S27	E32	06	18.3		A	HSX	10	1	3
4207		LEAR	06	16	0121	S27	E28	06	18.2		A	HRX	30	1	3
4207		ATHN	06	16	0624	S28	E28	06	18.5		A	HRX	20	1	2
4207		RAMY	06	16	1305	S27	E21	06	18.2		A	HRX	30	1	4
4207		BOUL	06	16	1423	S25	E20	06	18.1		A	AXX	10	1	3
4207	23703	MWIL	06	16	1500	S27	E21	06	18.3	4	(AP)				
4207		HOLL	06	16	1633	S27	E20	06	18.2		A	HSX	20	1	4
4207		PALE	06	16	1830	S28	E18	06	18.2		A	HSX	20	1	3
4207		ATHN	06	17	1000	S29	E13	06	18.4		A	HSX	30	1	3
4207		RAMY	06	17	1328	S27	E08	06	18.2		A	HRX	20	1	2
4207		BOUL	06	17	1331	S26	E07	06	18.1		A	HRX	10	1	3
4207	23703	MWIL	06	17	1445	S27	E08	06	18.2	3	(AP)				
4207		HOLL	06	17	1545	S27	E08	06	18.3		A	AXX	10	1	3
4207		LEAR	06	18	0530	S27	E00	06	18.2		A	HRX	10	1	2
4207		ATHN	06	18	0800	S28	W03	06	18.1		A	AXX	20	1	3
4207		HOLL	06	18	1330	S27	W03	06	18.3		A	HSX	20	1	4
4207	23703	MWIL	06	18	1445	S26	W04	06	18.3	3	(AP)				
4207		BOUL	06	18	1519	S26	W06	06	18.2		A	HRX	10	1	3
4207		RAMY	06	18	1755	S27	W07	06	18.2		A	HSX	20	1	2
4207		PALE	06	18	1818	S27	W06	06	18.3		A	HRX	10	1	3
4207		MANI	06	19	0120	S26	W11	06	18.2			HRX	30	1	2
4207		LEAR	06	19	0130	S27	W11	06	18.2		A	AXX	10	2	4
4207		ATHN	06	19	0645	S27	W15	06	18.1		A	AXX	10	1	3
4207		RAMY	06	19	1330	S27	W18	06	18.2		A	HSX	20	1	2
4207	23703	MWIL	06	19	1500	S27	W17	06	18.3	4	(AP)				
4207		HOLL	06	19	1515	S26	W16	06	18.4		A	AXX	10	1	4
4207		BOUL	06	19	1559	S26	W20	06	18.1		A	AXX	10	1	3
4207		PALE	06	19	1759	S26	W19	06	18.3		A	AXX	10	1	3
4207		ATHN	06	20	0600	S26	W24	06	18.4		A	AXX	10	1	3
4207		RAMY	06	20	1220	S27	W29	06	18.3		A	HAX	30	1	4
4207		HOLL	06	20	1440	S27	W30	06	18.3		A	AXX	10	1	4
4207		BOUL	06	20	1445	S27	W30	06	18.3		A	AXX	10	1	3
4207	23703	MWIL	06	20	1545	S27	W31	06	18.2	3	(AP)				
4207		PALE	06	20	2106	S27	W33	06	18.3		A	AXX	10	1	3
4207		ATHN	06	21	0600	S29	W38	06	18.3		A	AXX	10	1	2
4207		RAMY	06	21	1300	S27	W43	06	18.2		A	AXX	10	1	3
4207		HOLL	06	21	1432	S26	W43	06	18.3		A	AXX		1	3
4207	23703	MWIL	06	21	1530	S27	W43	06	18.3	3	(AP)				
4207		PALE	06	21	1730	S27	W44	06	18.3		A	AXX	10	1	3
4208		LEAR	06	13	0130	S06	E76	06	18.8		B	BXO	10	3	3
4208		RAMY	06	13	1204	S07	E69	06	18.7		B	BXI	60	6	3
4208		BOUL	06	13	1435	S07	E66	06	18.6		B	CRO	30	4	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

81
JUN 83

JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)		Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4208	23706	MWIL	06	13	1500	S06 E69	06 18.8	3	(B)				
4208		HOLL	06	13	1810	S06 E65	06 18.6		B BXO	20	4	5	2
4208		LEAR	06	14	0035	S07 E63	06 18.7		B BXO	20	8	6	3
4208		ATHN	06	14	0615	S08 E59	06 18.7		A AXX	20	1	1	2
4208		HOLL	06	14	1411	S06 E56	06 18.8		B BXO	20	12	7	2
4208		BOUL	06	14	1423	S09 E53	06 18.6		B BXI	20	11	8	3
4208	23706	MWIL	06	14	1545	S07 E53	06 18.6	3	(B)				
4208		PALE	06	14	1720	S07 E54	06 18.8		B BXO	30	9	7	3
4208		LEAR	06	15	0443	S07 E46	06 18.6		B BXO	110	6	6	2
4208		ATHN	06	15	0615	S10 E45	06 18.6		B BXO	30	5	8	2
4208		RAMY	06	15	1328	S08 E42	06 18.7		B CAO	60	16	7	2
4208		BOUL	06	15	1500	S06 E39	06 18.5		B CSO	50	12	6	3
4208	23706	MWIL	06	15	1500	S07 E43	06 18.8	3	(B)				
4208		PALE	06	15	1810	S08 E40	06 18.8		B CRO	60	16	8	3
4208		LEAR	06	16	0121	S07 E36	06 18.8		B DAO	60	12	7	3
4208		ATHN	06	16	0624	S07 E35	06 18.9		B DSO	30	6	5	2
4208		RAMY	06	16	1305	S07 E29	06 18.7		B DAO	50	1	7	4
4208		RAMY	06	16	1305	S07 E29	06 18.7		B DAO	50	11	7	4
4208		BOUL	06	16	1423	S07 E29	06 18.8		B DRO	30	9	6	3
4208	23706	MWIL	06	16	1500	S07 E28	06 18.7	3	(B)				
4208		HOLL	06	16	1633	S07 E27	06 18.7		B BXO	40	8	5	4
4208		PALE	06	16	1830	S08 E26	06 18.7		B CRO	50	13	7	3
4208		ATHN	06	17	1000	S09 E19	06 18.8		B CSO	40	3	4	3
4208		RAMY	06	17	1328	S07 E16	06 18.8		B CAO	40	11	6	2
4208		BOUL	06	17	1331	S07 E14	06 18.6		B CRO	20	10	5	3
4208	23706	MWIL	06	17	1445	S07 E13	06 18.6	4	(BP)				
4208		HOLL	06	17	1545	S06 E14	06 18.7		B CRO	60	11	7	3
4208		LEAR	06	18	0530	S07 E07	06 18.8		B DRO	40	9	5	2
4208		ATHN	06	18	0800	S08 E04	06 18.6		B BXO	60	10	6	3
4208		HOLL	06	18	1330	S07 E01	06 18.6		B DSI	60	17	8	4
4208	23706	MWIL	06	18	1445	S06 E01	06 18.7	2	(B)				
4208		BOUL	06	18	1519	S07 E01	06 18.7		B BXO	20	10	6	3
4208		RAMY	06	18	1755	S06 W01	06 18.7		B DAO	70	14	8	2
4208		PALE	06	18	1818	S06 W01	06 18.7		B BXO	50	16	7	3
4208		MAN I	06	19	0120	S07 W07	06 18.5		B DSO	100	14	7	2
4208		LEAR	06	19	0130	S07 W06	06 18.6		B DSO	40	14	7	4
4208		ATHN	06	19	0645	S07 W09	06 18.6		B DSO	30	5	6	3
4208		RAMY	06	19	1330	S06 W14	06 18.5		B BXO	30	16	7	2
4208	23706	MWIL	06	19	1500	S06 W14	06 18.6	4	(B)				
4208		HOLL	06	19	1515	S07 W14	06 18.6		B BXO	20	6	7	4
4208		BOUL	06	19	1559	S07 W15	06 18.5		B BXO	20	4	7	3
4208		PALE	06	19	1759	S05 W15	06 18.6		B BXO	20	6	7	3
4208		RAMY	06	20	1220	S06 W23	06 18.8		B BXO	20	2	4	4
4208		RAMY	06	21	1300	S08 W44	06 18.2		B BXX	20	3	6	3
4210		BOUL	06	13	1435	N18 E81	06 19.8		A HSX	120	1	2	3
4210	23707	MWIL	06	13	1500	N18 E85	06 20.1	3	(AP)				
4210		HOLL	06	13	1810	N19 E78	06 19.7		A HSX	30	1	1	2
4210		LEAR	06	14	0035	N18 E74	06 19.7		A HSX	100	1	2	3
4210		MAN I	06	14	0319	N18 E74	06 19.8		B HSX	130	1	2	3
4210		ATHN	06	14	0615	N18 E72	06 19.7		A HSX	30	1	1	2
4210		HOLL	06	14	1411	N18 E66	06 19.6		B CSO	100	3	4	2
4210		BOUL	06	14	1423	N18 E66	06 19.6		B CSO	160	4	5	3
4210	23707	MWIL	06	14	1545	N18 E66	06 19.7	5	(BF)				
4210		PALE	06	14	1720	N18 E65	06 19.7		B CSO	120	3	4	3
4210		LEAR	06	15	0443	N19 E59	06 19.7		B CSO	60	8	4	2
4210		ATHN	06	15	0615	N17 E58	06 19.7		B CSO	100	3	6	2
4210		RAMY	06	15	1328	N17 E54	06 19.7		B DAO	110	9	5	2
4210	23707	MWIL	06	15	1500	N18 E50	06 19.4	4	(AP)				
4210		BOUL	06	15	1500	N19 E51	06 19.5		B DSO	80	8	5	3
4210		PALE	06	15	1810	N18 E51	06 19.6		B DSO	140	9	7	3
4210		LEAR	06	16	0121	N18 E46	06 19.6		B DHO	170	8	6	3
4210		ATHN	06	16	0624	N18 E44	06 19.6		B DSO	90	6	6	2
4210		RAMY	06	16	1305	N18 E40	06 19.6		B DSO	140	14	6	4
4210		BOUL	06	16	1423	N18 E38	06 19.5		B CAO	130	14	8	3
4210	23707	MWIL	06	16	1500	N18 E38	06 19.5	4	(BP)				
4210		HOLL	06	16	1633	N18 E38	06 19.6		BG CSO	130	13	6	4
4210		PALE	06	16	1830	N18 E37	06 19.6		B CSO	160	11	6	3
4210		ATHN	06	17	1000	N14 E30	06 19.7		B DAO	100	4	5	3
4210		RAMY	06	17	1328	N17 E26	06 19.5		B DAO	90	13	8	2
4210		BOUL	06	17	1331	N17 E25	06 19.5		B DSO	150	13	6	3

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JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)		Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Heml)	Spot Count	Long. Extent (Deg)	Qual
4210	23707	MWIL	06	17	1445	N18 E25	06	19.5	4	(BY)					
4210		HOLL	06	17	1545	N17 E24	06	19.5		B	DSO	160	15	8	3
4210		LEAR	06	18	0530	N17 E16	06	19.4		B	DSO	130	13	7	2
4210		ATHN	06	18	0800	N14 E15	06	19.5			DSO	50	3	4	3
4210		HOLL	06	18	1330	N18 E11	06	19.4		B	DAO	110	10	8	4
4210	23707	MWIL	06	18	1445	N18 E11	06	19.5	4	(BY)					
4210		BOUL	06	18	1519	N16 E12	06	19.5		B	DSO	100	6	7	3
4210		RAMY	06	18	1755	N18 E11	06	19.6		B	DAO	100	8	8	2
4210		PALE	06	18	1818	N17 E09	06	19.4		B	DSO	50	7	8	3
4210		MANI	06	19	0120	N17 E05	06	19.4			DSO	110	12	8	2
4210		LEAR	06	19	0130	N17 E05	06	19.4		B	DSO	80	13	8	4
4210		ATHN	06	19	0645	N14 E02	06	19.4		BG	CSO	50	3	3	3
4210		RAMY	06	19	1330	N18 W01	06	19.5		B	DAO	60	8	8	2
4210	23707	MWIL	06	19	1500	N17 W06	06	19.2	4	(AP)					
4210		HOLL	06	19	1515	N18 W02	06	19.5		BG	CSO	60	7	8	4
4210		BOUL	06	19	1559	N16 W03	06	19.4		B	DSO	50	3	8	3
4210		PALE	06	19	1759	N18 E03	06	20.0		B	DSO	40	5	8	3
4210		ATHN	06	20	0600	N15 W08	06	19.6		BG	DAO	50	3	8	3
4210		RAMY	06	20	1220	N18 W14	06	19.4		B	DAO	50	4	9	4
4210		HOLL	06	20	1440	N18 W16	06	19.4		B	BXO	20	6	8	4
4210		BOUL	06	20	1445	N18 W14	06	19.5		B	CSO	30	7	8	3
4210	23707	MWIL	06	20	1545	N17 W20	06	19.1	3	(AP)					
4210		PALE	06	20	2106	N17 W15	06	19.7		B	CAO	30	4	3	3
4210		ATHN	06	21	0600	N16 W18	06	19.9		B	CSO	20	4	3	2
4210		RAMY	06	21	1300	N19 W23	06	19.8		B	CSO	20	6	6	3
4210		HOLL	06	21	1432	N18 W23	06	19.9		B	BXO	10	6	5	3
4210		BOUL	06	21	1435	N18 W23	06	19.9		A	HRX	10	1	1	3
4210		PALE	06	21	1730	N18 W25	06	19.8		B	BXO	10	4	5	3
4210		LEAR	06	22	0101	N18 W29	06	19.8		B	BXO	10	2	4	2
4209		RAMY	06	13	1204	N15 E84	06	19.9		B	DSO	160	2	7	3
4209		BOUL	06	13	1435	N12 E80	06	19.6		A	HSX	130	1	2	3
4209	23708	MWIL	06	13	1500	N14 E85	06	20.1	3	(AP)					
4209		HOLL	06	13	1810	N13 E77	06	19.6		A	HAX	40	1	1	2
4209		LEAR	06	14	0035	N13 E74	06	19.6		A	HSX	140	1	2	3
4209		ATHN	06	14	0615	N13 E72	06	19.7		A	HSX	30	1	1	2
4209		HOLL	06	14	1411	N13 E68	06	19.7		B	CSO	160	3	4	2
4209		BOUL	06	14	1423	N12 E68	06	19.7		B	CSO	130	3	7	3
4209	23708	MWIL	06	14	1545	N14 E69	06	19.9	4	(AP)					
4209		PALE	06	14	1720	N13 E67	06	19.8		B	CSO	100	3	4	3
4209		LEAR	06	15	0443	N13 E60	06	19.7		B	CSO	50	13	5	2
4209		ATHN	06	15	0615	N09 E58	06	19.6		B	CSO	80	2	4	2
4209		RAMY	06	15	1328	N12 E57	06	19.9		B	CAO	130	5	5	2
4209		BOUL	06	15	1500	N13 E53	06	19.6		B	CSO	120	5	6	3
4209	23708	MWIL	06	15	1500	N13 E53	06	19.6	5	(BP)					
4209		PALE	06	15	1810	N12 E54	06	19.8		B	CSO	150	5	6	3
4209		LEAR	06	16	0121	N13 E49	06	19.8		B	CSO	160	6	5	3
4209		ATHN	06	16	0624	N13 E46	06	19.7		B	CSO	60	5	3	2
4209		RAMY	06	16	1305	N12 E44	06	19.9		B	DAO	150	8	5	4
4209		BOUL	06	16	1423	N12 E40	06	19.6		B	CKO	210	6	5	3
4209	23708	MWIL	06	16	1500	N13 E42	06	19.8	5	(BP)					
4209		HOLL	06	16	1633	N13 E42	06	19.9		B	CSO	170	8	5	4
4209		PALE	06	16	1830	N12 E41	06	19.9		B	CSO	140	9	7	3
4209		ATHN	06	17	1000	N09 E34	06	20.0		B	DAO	90	5	4	3
4209		RAMY	06	17	1328	N13 E30	06	19.8		B	DAO	160	16	6	2
4209		BOUL	06	17	1331	N12 E28	06	19.7		B	DAO	170	11	5	3
4209	23708	MWIL	06	17	1445	N13 E28	06	19.7	4	(B)					
4209		HOLL	06	17	1545	N13 E28	06	19.8		B	DSO	190	11	5	3
4209		LEAR	06	18	0530	N13 E22	06	19.9		B	DKO	210	9	4	2
4209		ATHN	06	18	0800	N12 E19	06	19.8			DAO	280	6	8	3
4209		HOLL	06	18	1330	N14 E18	06	19.9		BD	DKI	260	12	6	4
4209	23708	MWIL	06	18	1445	N14 E16	06	19.8	4	(B)					
4209		BOUL	06	18	1519	N12 E16	06	19.8		BG	DKI	210	10	5	3
4209		RAMY	06	18	1755	N13 E16	06	20.0		BD	DKO	230	7	5	2
4209		PALE	06	18	1818	N14 E14	06	19.8		B	DAO	200	10	5	3
4209		MANI	06	19	0120	N13 E10	06	19.8			DKO	540	13	5	2
4209		LEAR	06	19	0130	N13 E10	06	19.8		BG	DKI	240	14	4	4
4209		ATHN	06	19	0645	N10 E12	06	20.2		BG	DKO	220	8	5	3
4209		RAMY	06	19	1330	N15 E05	06	19.9		B	DKO	200	16	6	2
4209	23708	MWIL	06	19	1500	N14 E13	06	20.6	5	(BY)					
4209		HOLL	06	19	1515	N16 E04	06	19.9		BG	CKO	220	15	6	4

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

83
JUN 83

JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time		Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day	(UT)										
4209		BOUL	06	19	1559	N12 E02	06	19.8		B	DKO	190	8	5	3
4209		PALE	06	19	1759	N15 E03	06	20.0		B	DKO	220	14	5	3
4209		ATHN	06	20	0600	N11 W04	06	19.9		BG	DKO	200	11	7	3
4209		RAMY	06	20	1220	N15 W08	06	19.9		BG	CKI	210	18	7	4
4209		HOLL	06	20	1440	N16 W09	06	19.9		B	CKO	210	10	8	4
4209		BOUL	06	20	1445	N14 W08	06	20.0		B	CKO	150	11	11	3
4209	23708	MWIL	06	20	1545	N15 W11	06	19.8	4	(D)					
4209		PALE	06	20	2106	N15 W13	06	19.9		B	CKO	220	14	4	3
4209		ATHN	06	21	0600	N14 W15	06	20.1		B	DKO	100	13	6	2
4209		RAMY	06	21	1300	N13 W22	06	19.9		BG	DKI	180	17	3	3
4209		HOLL	06	21	1432	N14 W23	06	19.9		B	CAI	140	14	4	3
4209		BOUL	06	21	1435	N15 W20	06	20.1		B	CAO	120	8	5	3
4209	23708	MWIL	06	21	1530	N14 W24	06	19.8	4	(B)					
4209		PALE	06	21	1730	N14 W25	06	19.8		B	CAI	130	11	4	3
4209		LEAR	06	22	0101	N13 W28	06	19.9		BG	CKO	150	11	3	2
4209		ATHN	06	22	0615	N12 W31	06	19.9		BG	CKO	140	8	3	3
4209		RAMY	06	22	1258	N14 W36	06	19.8		B	CAO	130	12	6	2
4209		BOUL	06	22	1356	N16 W35	06	19.9		B	DSO	130	15	3	3
4209	23708	MWIL	06	22	1515	N13 W36	06	19.9	4	(BP)					
4209		HOLL	06	22	1557	N13 W38	06	19.8		BG	DAI	140	9	3	4
4209		PALE	06	22	1820	N13 W39	06	19.8		B	CAO	120	12	3	2
4209		LEAR	06	23	0058	N13 W42	06	19.9		B	DAO	100	10	3	3
4209		ATHN	06	23	0600	N08 W43	06	20.0			DAO	80	3	3	3
4209		RAMY	06	23	1236	N14 W49	06	19.8		B	DAO	60	10	4	4
4209		BOUL	06	23	1339	N14 W48	06	19.9		B	CSI	60	8	2	3
4209		HOLL	06	23	1438	N13 W49	06	19.9		B	CSO	40	4	3	3
4209		PALE	06	23	2030	N14 W53	06	19.8		B	CSO	30	5	3	1
4209		LEAR	06	24	0033	N14 W56	06	19.8		B	CAO	40	8	3	3
4209		ATHN	06	24	0630	N14 W57	06	20.0		B	CSO	50	3	2	3
4209		BOUL	06	24	1344	N14 W61	06	20.0		A	AXX	20	1		3
4209		RAMY	06	24	1402	N15 W63	06	19.8		B	CAO	40	5	2	4
4209	23708	MWIL	06	24	1530	N13 W64	06	19.8	3	(AP)					
4209		PALE	06	24	1947	N14 W66	06	19.8		A	AXX		1		3
4209		HOLL	06	24	2340	N14 W69	06	19.8		A	AXX		1		2
4209		LEAR	06	25	0030	N13 W70	06	19.7		A	AXX	10	1	1	2
4213		LEAR	06	15	0443	S13 E65	06	20.1		B	BXO	60	1	8	2
4213		ATHN	06	15	0615	S16 E64	06	20.1		B	BXO	20	3	8	2
4213		RAMY	06	15	1328	S14 E61	06	20.2		B	BXO	50	8	6	2
4213		BOUL	06	15	1500	S12 E58	06	20.0		B	CSO	60	6	6	3
4213	23709	MWIL	06	15	1500	S13 E61	06	20.2	4	(B)					
4213		PALE	06	15	1810	S12 E58	06	20.1		B	CSO	60	6	6	3
4213		MAN I	06	15	2237	S14 E56	06	20.2			CRO	70	6	7	2
4213		LEAR	06	16	0121	S13 E54	06	20.1		B	CSO	40	6	6	3
4213		ATHN	06	16	0624	S14 E54	06	20.4		B	DSO	60	7	6	2
4213		RAMY	06	16	1305	S13 E49	06	20.2		B	DAO	100	12	7	4
4213		BOUL	06	16	1423	S12 E47	06	20.1		B	CRI	20	13	7	3
4213	23709	MWIL	06	16	1500	S13 E47	06	20.2	3	(BP)					
4213		HOLL	06	16	1633	S13 E46	06	20.2		B	CRI	90	15	7	4
4213		PALE	06	16	1830	S13 E45	06	20.2		B	CSO	110	14	7	3
4213		MAN I	06	17	0330	S14 E41	06	20.2			CRO	150	15	7	2
4213		ATHN	06	17	1000	S16 E38	06	20.3		B	DSO	130	12	6	3
4213		RAMY	06	17	1328	S13 E35	06	20.2		BG	DAO	120	20	8	2
4213		BOUL	06	17	1331	S13 E32	06	20.0		B	DSI	100	23	8	3
4213	23709	MWIL	06	17	1445	S13 E32	06	20.0	4	(B)					
4213		HOLL	06	17	1545	S12 E33	06	20.1		BG	BXO	140	24	8	3
4213		LEAR	06	18	0530	S13 E25	06	20.1		BG	DAO	110	17	8	2
4213		ATHN	06	18	0800	S14 E23	06	20.1			DAO	130	11	8	3
4213		HOLL	06	18	1330	S11 E20	06	20.1		BG	DAO	110	26	7	4
4213	23709	MWIL	06	18	1445	S12 E18	06	20.0	4	(BY)					
4213		BOUL	06	18	1519	S13 E18	06	20.0		B	DAO	100	19	7	3
4213		RAMY	06	18	1755	S12 E18	06	20.1		BG	DAO	120	17	9	2
4213		PALE	06	18	1818	S12 E18	06	20.1		BG	DSO	100	22	8	3
4213		MAN I	06	19	0120	S14 E14	06	20.1			DSO	170	22	8	2
4213		LEAR	06	19	0130	S13 E14	06	20.1		B	DAO	80	28	8	4
4213		ATHN	06	19	0645	S13 E10	06	20.0		BG	DAO	70	14	9	3
4213		RAMY	06	19	1330	S11 E05	06	19.9		BG	DAO	110	25	10	2
4213	23709	MWIL	06	19	1500	S12 E05	06	20.0	5	(D)					
4213		HOLL	06	19	1515	S11 E06	06	20.1		BGD	DAI	130	22	9	4
4213		BOUL	06	19	1559	S12 E03	06	19.9		BG	DAO	130	13	7	3
4213		PALE	06	19	1759	S12 E04	06	20.1		BG	DAO	120	22	8	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)		Lat	CMD	CMP Mo Day		Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual	
4213		ATHN	06	20	0600	S12	W04	06	19.9		BGD	DKO	230	17	8	3
4213		RAMY	06	20	1220	S13	W07	06	20.0		BGD	DAO	160	10	9	4
4213		HOLL	06	20	1440	S12	W08	06	20.0		BG	CSO	110	14	7	4
4213		BOUL	06	20	1445	S12	W08	06	20.0		BG	DSO	70	20	9	3
4213	23709	MWIL	06	20	1545	S12	W09	06	20.0	4	(BY)					
4213		PALE	06	20	2106	S11	W12	06	20.0		BG	DAO	80	16	9	3
4213		ATHN	06	21	0600	S13	W16	06	20.0		BG	DKO	130	16	7	2
4213		RAMY	06	21	1300	S11	W21	06	20.0		BG	DAO	120	19	9	3
4213		HOLL	06	21	1432	S13	W22	06	19.9		B	DSO	60	22	8	3
4213	23709	BOUL	06	21	1435	S11	W21	06	20.0		B	DSO	50	14	8	3
4213		MWIL	06	21	1530	S12	W22	06	20.0	4	(BY)					
4213		PALE	06	21	1730	S12	W23	06	20.0		B	DSO	80	20	8	3
4213		LEAR	06	22	0101	S13	W28	06	19.9		B	DAO	110	17	8	2
4213		ATHN	06	22	0615	S11	W30	06	20.0		B	DAO	110	9	8	3
4213		RAMY	06	22	1258	S12	W35	06	19.9		BG	DAO	70	12	10	2
4213	23709	BOUL	06	22	1356	S07	W35	06	20.0		BG	CSO	80	18	8	3
4213		MWIL	06	22	1515	S13	W35	06	20.0	4	(BY)					
4213		HOLL	06	22	1557	S13	W36	06	19.9		B	CSO	100	18	7	4
4213		PALE	06	22	1820	S13	W38	06	19.9		B	DSO	100	17	8	2
4213		LEAR	06	23	0058	S12	W41	06	19.9		B	DA1	130	14	7	3
4213		ATHN	06	23	0600	S18	W42	06	20.0			DHO	200	7	8	3
4213		RAMY	06	23	1236	S12	W49	06	19.8		BG	DKO	150	14	8	4
4213		BOUL	06	23	1339	S11	W47	06	20.0		BG	CSO	150	11	5	3
4213	23709	HOLL	06	23	1438	S12	W48	06	20.0		BG	DAO	170	10	6	3
4213		MWIL	06	23	1500	S13	W49	06	19.9	4	(B)					
4213		PALE	06	23	2030	S12	W52	06	19.9		BG	DAO	110	7	5	1
4213		LEAR	06	24	0033	S12	W55	06	19.9		B	DAO	220	10	6	3
4213		ATHN	06	24	0630	S12	W53	06	20.3		B	DKO	150	7	7	3
4213	23709	BOUL	06	24	1344	S11	W62	06	19.9		B	CSO	120	7	6	3
4213		RAMY	06	24	1402	S12	W63	06	19.8		BG	DAO	190	12	4	4
4213		MWIL	06	24	1530	S13	W62	06	20.0	4	(B)					
4213		PALE	06	24	1947	S12	W66	06	19.8		B	DAO	80	6	6	3
4213		HOLL	06	24	2340	S12	W67	06	19.9		B	DAO	90	3	6	2
4213		LEAR	06	25	0030	S13	W69	06	19.8		B	DSO	100	4	4	2
4213		ATHN	06	25	0655	S12	W76	06	19.6		B	DAO	140	5	10	2
4213		RAMY	06	25	1305	S12	W75	06	19.9		B	DAO	130	3	4	3
4213	23709	HOLL	06	25	1445	S13	W77	06	19.8		B	DSO	80	2	4	3
4213		BOUL	06	25	1510	S13	W78	06	19.7		B	BXO	60	3	10	2
4213		MWIL	06	25	1545	S13	W76	06	19.9	3	(B)					
4213		PALE	06	25	1954	S13	W80	06	19.8		B	CSO	100	4	4	2
		LEAR	06	19	0130	N17	E17	06	20.4		A	AXX	10	2	1	4
		RAMY	06	20	1220	S09	E02	06	20.7		B	BXO	30	2	4	4
4225	23723	RAMY	06	24	1402	S04	W48	06	21.0		A	AXX	10	1	1	4
4225		MWIL	06	24	1530	S04	W48	06	21.1	2	(AP)					
4225		RAMY	06	25	1305	S03	W59	06	21.1		B	CSO	20	2	3	3
4225		HOLL	06	25	1445	S05	W61	06	21.0		B	CAO	20	2	5	3
4225	23723	BOUL	06	25	1510	S05	W62	06	21.0		B	BXO	40	3	5	2
4225		MWIL	06	25	1545	S04	W60	06	21.2	3	(B)					
4225		PALE	06	25	1954	S04	W64	06	21.0		B	CRO	20	2	4	2
4225		ATHN	06	26	0630	S03	W69	06	21.1		A	HSX	40	1	1	3
4225	23723	LEAR	06	26	0657	S04	W72	06	20.9		A	HSX	20	1	1	2
4225		MWIL	06	26	1500	S05	W77	06	20.9	3	(AP)					
		BOUL	06	20	1445	N13	E07	06	21.1		A	AXX	10	3	2	3
	23710	MWIL	06	18	1445	S05	E34	06	21.2	2	(AP)					
	23729	MWIL	06	26	1500	S04	W66	06	21.7	2	(AP)					
		RAMY	06	20	1220	S05	E18	06	21.9		A	AXX	10	1	1	4
4224	23724	BOUL	06	24	1344	S09	W35	06	21.9		B	BXO	20	2	3	3
4224		RAMY	06	24	1402	S09	W37	06	21.8		B	CAO	10	3	3	4
4224		MWIL	06	24	1530	S09	W38	06	21.8	3	(B)					
4224		PALE	06	24	1947	S08	W40	06	21.8		B	BXO	10	2	3	3
4224		HOLL	06	24	2340	S09	W43	06	21.8		B	BXO	10	3	4	2
4224		LEAR	06	25	0030	S08	W45	06	21.6		A	AXX	1	1	2	2
4224		RAMY	06	25	1305	S07	W50	06	21.8		B	BXO	20	2	2	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

85
JUN 83

JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)			Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hem1)	Spot Count	Long. Extent (Deg)	Qual
	23715	MWIL	06	20	1545	S18 E20	06 22.2	2	(AF)					
		HOLL	06	18	1330	S17 E52	06 22.5		A	AXX	2	2	4	
4214	23711	MWIL	06	18	1445	N13 E53	06 22.6	3	(AP)					
4214		RAMY	06	18	1755	N13 E53	06 22.7		A	AXX	10	1	2	
4214		MANI	06	19	0120	N13 E46	06 22.5			AXX	10	1	2	
4214		LEAR	06	19	0130	N13 E46	06 22.5		A	HRX	20	1	4	
4214		ATHN	06	19	0645	N12 E51	06 23.1		A	BXO	30	3	3	
4214		RAMY	06	19	1330	N14 E41	06 22.7		B	BXO	30	8	4	
4214	23711	MWIL	06	19	1500	N14 E40	06 22.7	4	(B)					
4214		HOLL	06	19	1515	N16 E41	06 22.7		B	CAO	30	7	5	
4214		BOUL	06	19	1559	N12 E37	06 22.5		B	CRO	20	5	4	
4214		PALE	06	19	1759	N15 E38	06 22.6		B	DSO	40	6	4	
4214		ATHN	06	20	0600	N12 E32	06 22.7		B	DAO	170	6	6	
4214		HOLL	06	20	1440	N15 E28	06 22.7		B	CRO	40	8	7	
4214		BOUL	06	20	1445	N13 E26	06 22.6		B	DSO	30	8	7	
4214	23711	MWIL	06	20	1545	N14 E26	06 22.6	4	(B)					
4214		PALE	06	20	2106	N14 E24	06 22.7		B	CAO	40	7	6	
4214		ATHN	06	21	0600	N12 E19	06 22.7		B	DSO	40	6	9	
4214		RAMY	06	21	1300	N13 E15	06 22.7		B	CAO	40	16	7	
4214		HOLL	06	21	1432	N14 E14	06 22.7		B	BXO	10	15	7	
4214		BOUL	06	21	1435	N12 E14	06 22.7		B	CRO	20	8	6	
4214	23711	MWIL	06	21	1530	N14 E13	06 22.6	4	(B)					
4214		PALE	06	21	1730	N13 E12	06 22.6		B	CSO	50	15	7	
4214		LEAR	06	22	0101	N13 E08	06 22.6		B	DSO	110	14	6	
4214		ATHN	06	22	0615	N11 E05	06 22.6		B	CSO	100	10	5	
4214		RAMY	06	22	1258	N13 E01	06 22.6		B	DSO	70	18	6	
4214		BOUL	06	22	1356	N14 W01	06 22.5		B	DSI	50	13	5	
4214	23711	MWIL	06	22	1515	N12 W01	06 22.6	5	(BY)					
4214		HOLL	06	22	1557	N13 W01	06 22.6		B	DAO	130	20	6	
4214		PALE	06	22	1820	N13 W03	06 22.5		B	DSO	80	17	6	
4214		LEAR	06	23	0058	N13 W06	06 22.6		B	DAI	220	30	6	
4214		ATHN	06	23	0600	N10 W06	06 22.8			DHO	160	9	6	
4214		RAMY	06	23	1236	N13 W12	06 22.6		B	DAO	200	28	7	
4214		BOUL	06	23	1339	N13 W12	06 22.7		B	DAO	230	27	7	
4214		HOLL	06	23	1438	N13 W13	06 22.6		B	DAO	240	19	7	
4214	23711	MWIL	06	23	1500	N12 W13	06 22.6	5	(B)					
4214		PALE	06	23	2030	N13 W16	06 22.6		B	DAO	180	17	7	
4214		LEAR	06	24	0033	N13 W19	06 22.6		B	DKI	320	26	7	
4214		ATHN	06	24	0630	N14 W19	06 22.8		B	DKO	310	17	7	
4214		BOUL	06	24	1344	N14 W25	06 22.7		B	DSO	270	24	8	
4214		RAMY	06	24	1402	N13 W27	06 22.5		B	DKO	380	42	8	
4214	23711	MWIL	06	24	1530	N12 W27	06 22.6	5	(B)					
4214		PALE	06	24	1947	N13 W29	06 22.6		B	DAO	250	20	7	
4214		HOLL	06	24	2340	N13 W32	06 22.6		B	DSO	290	20	8	
4214		LEAR	06	25	0030	N13 W33	06 22.5		B	DAI	280	28	8	
4214		ATHN	06	25	0655	N13 W36	06 22.6		B	DKO	290	13	10	
4214		RAMY	06	25	1305	N13 W38	06 22.7		BG	DKO	270	26	8	
4214		HOLL	06	25	1445	N13 W40	06 22.6		B	DKI	230	19	8	
4214		BOUL	06	25	1510	N14 W40	06 22.6		B	CKO	260	14	8	
4214	23711	MWIL	06	25	1545	N12 W41	06 22.6	4	(B)					
4214		PALE	06	25	1954	N13 W43	06 22.6		B	DAO	220	19	7	
4214		ATHN	06	26	0630	N13 W48	06 22.6		B	CAO	160	4	5	
4214		LEAR	06	26	0657	N13 W49	06 22.6		B	CSO	230	11	8	
4214	23711	MWIL	06	26	1500	N12 W55	06 22.5	5	(BP)					
4214		LEAR	06	27	0026	N13 W58	06 22.6		B	CSO	230	6	5	
4214		ATHN	06	27	0630	N13 W63	06 22.5		A	HHX	160	1	3	
4214		RAMY	06	27	1110	N13 W65	06 22.6		A	HKX	310	1	4	
4214		HOLL	06	27	1401	N13 W69	06 22.4		A	HHX	270	1	4	
4214	23711	MWIL	06	27	1500	N12 W69	06 22.4	5	(AP)					
4214		BOUL	06	27	1520	N12 W71	06 22.3		A	HSX	60	1	2	
4214		PALE	06	27	1810	N12 W72	06 22.3		A	HHX	180	1	3	
4214		LEAR	06	28	0047	N13 W73	06 22.5		A	HHX	160	1	4	
4214		ATHN	06	28	0800	N16 W75	06 22.6			HKX	180	1	4	
4214	23711	MWIL	06	28	1445	N12 W81	06 22.5	3	(BY)					
4214		BOUL	06	28	1520	N12 W71	06 23.3		A	HSX	60	1	2	
4214		PALE	06	28	1835	N12 W83	06 22.5		A	HSX	100	1	2	
4221		RAMY	06	22	1258	S18 E03	06 22.8		B	BXO	20	7	8	
4221		BOUL	06	22	1356	S16 E01	06 22.7		B	BXO	10	5	7	

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4221	23719	MWIL	06 22 1515	S18 E02	06 22.8	4	(B)					
4221		PALE	06 22 1820	S17 W01	06 22.7		B	CSO	20	4	3	2
4221		LEAR	06 23 0058	S17 W05	06 22.7		B	CRO	10	3	3	3
4221		RAMY	06 23 1236	S16 W09	06 22.8		B	BXO	20	6	6	4
		RAMY	06 22 1258	N03 E03	06 22.8		A	AXX		1		2
	23712	MWIL	06 18 1445	N00 E57	06 22.9	1	(AP)					
4215		HOLL	06 18 1330	S05 E58	06 22.9		A	AXX		1		4
4215		MANI	06 19 0120	S05 E52	06 22.9			AXX	20	1		2
4215		LEAR	06 19 0130	S07 E52	06 23.0		A	AXX		1		4
		HOLL	06 18 1330	N16 E60	06 23.1		A	AXX		1		4
		HOLL	06 22 1557	S00 E17	06 23.9		A	AXX	10	3	2	4
0002		HOLL	06 18 1330	N05 E68	06 23.7		A	AXX		1		4
0002		RAMY	06 20 1220	N04 E45	06 23.9		B	BXO	30	3	4	4
0002		HOLL	06 20 1440	N04 E44	06 23.9		B	BXO	10	3	3	4
0002	23716	MWIL	06 20 1545	N04 E43	06 23.9	2	(B)					
0002		PALE	06 20 2106	N04 E41	06 23.9		A	AXX	10	1	1	3
4216		RAMY	06 19 1330	N17 E59	06 24.0		B	DAO	50	5	4	2
4216	23713	MWIL	06 19 1500	N17 E50	06 23.4	4	(B)					
4216		BOUL	06 19 1559	N16 E54	06 23.8		B	CRO		6	5	3
4216		PALE	06 19 1759	N18 E56	06 24.0		B	DSO	80	6	5	3
4216		ATHN	06 20 0600	N15 E50	06 24.0		B	DAO	90	5	6	3
4216		RAMY	06 20 1220	N18 E47	06 24.1		B	DAO	160	11	6	4
4216		HOLL	06 20 1440	N18 E43	06 23.9		B	DSI	140	9	8	4
4216		BOUL	06 20 1445	N18 E43	06 23.9		B	DSI	110	12	8	3
4216	23713	MWIL	06 20 1545	N18 E43	06 23.9	4	(B)					
4216		PALE	06 20 2106	N17 E41	06 24.0		B	DAI	150	17	8	3
4216		ATHN	06 21 0600	N16 E37	06 24.1		B	DAI	190	25	8	2
4216		RAMY	06 21 1300	N17 E31	06 23.9		B	DAI	200	29	9	3
4216		HOLL	06 21 1432	N17 E31	06 24.0		B	DAI	130	34	9	3
4216		BOUL	06 21 1435	N14 E31	06 24.0		BG	DAI	110	18	8	3
4216	23713	MWIL	06 21 1530	N18 E30	06 23.9	5	(B)					
4216		PALE	06 21 1730	N17 E29	06 23.9		B	DAI	160	28	9	3
4216		LEAR	06 22 0101	N17 E25	06 23.9		BG	DAI	270	40	8	2
4216		ATHN	06 22 0615	N15 E20	06 23.8		BG	DKI	240	19	9	3
4216		RAMY	06 22 1258	N17 E18	06 23.9		B	DKO	280	41	10	2
4216		BOUL	06 22 1356	N18 E15	06 23.7		B	DHI	180	29	9	3
4216	23713	MWIL	06 22 1515	N17 E17	06 23.9	5	(B)					
4216		HOLL	06 22 1557	N17 E15	06 23.8		BG	DSI	350	34	10	4
4216		PALE	06 22 1820	N17 E14	06 23.8		B	DSO	280	31	9	2
4216		LEAR	06 23 0058	N17 E10	06 23.8		BG	DHI	390	41	10	3
4216		ATHN	06 23 0600	N14 E09	06 23.9		B	DKO	230	16	9	3
4216		RAMY	06 23 1236	N17 E04	06 23.8		B	EK1	280	41	11	4
4216		BOUL	06 23 1339	N16 E05	06 23.9		B	DSO	300	32	10	3
4216		HOLL	06 23 1438	N17 E02	06 23.8		B	EHI	370	19	11	3
4216	23713	MWIL	06 23 1500	N16 E02	06 23.8	6	(B)					
4216		PALE	06 23 2030	N17 W00	06 23.9		B	DHO	280	11	10	1
4216		LEAR	06 24 0033	N17 W04	06 23.7		BG	EHI	400	29	11	3
4216		ATHN	06 24 0630	N14 W05	06 23.9		B	DHI	340	20	9	3
4216		BOUL	06 24 1344	N16 W10	06 23.8		B	DKO	330	32	10	3
4216		RAMY	06 24 1402	N17 W10	06 23.8		B	EK1	390	51	12	4
4216	23713	MWIL	06 24 1530	N16 W11	06 23.8	5	(B)					
4216		PALE	06 24 1947	N17 W14	06 23.8		B	DSO	300	20	10	3
4216		HOLL	06 24 2340	N17 W17	06 23.7		B	EHO	260	18	11	2
4216		LEAR	06 25 0030	N16 W17	06 23.7		B	EHI	300	28	11	2
4216		ATHN	06 25 0655	N17 W21	06 23.7		B	EHO	330	15	12	2
4216		RAMY	06 25 1305	N17 W22	06 23.9		BG	EHO	300	28	11	3
4216		HOLL	06 25 1445	N17 W26	06 23.6		B	DSI	240	19	9	3
4216		BOUL	06 25 1510	N15 W25	06 23.7		B	DKO	200	13	10	2
4216	23713	MWIL	06 25 1545	N16 W26	06 23.7	5	(B)					
4216		PALE	06 25 1954	N16 W27	06 23.8		B	DSI	320	22	9	2
4216		ATHN	06 26 0630	N15 W32	06 23.8		B	DHO	240	6	8	3
4216		LEAR	06 26 0657	N17 W35	06 23.6		B	DHI	300	20	8	2
4216	23713	MWIL	06 26 1500	N16 W39	06 23.7	5	(B)					
4216		LEAR	06 27 0026	N17 W44	06 23.7		B	DSI	350	21	8	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

87
JUN 83

JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)	Mo	Day	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4216		ATHN	06 27 0630	N16	W47	06 23.7					B	DHO	300	5	8	3
4216		RAMY	06 27 1110	N16	W49	06 23.7					BGD	DKO	630	16	8	3
4216		HOLL	06 27 1401	N16	W52	06 23.6					B	DHI	400	10	10	3
4216	23713	MWIL	06 27 1500	N16	W52	06 23.7			5		(B)					
4216		BOUL	06 27 1520	N14	W64	06 22.8					BG	DHI	240	8	9	2
4216		PALE	06 27 1810	N17	W53	06 23.7					BD	DKI	300	9	9	3
4216		LEAR	06 28 0047	N17	W57	06 23.7					B	DHO	300	7	8	3
4216		ATHN	06 28 0800	N20	W58	06 23.9						DKO	250	4	7	3
4216	23713	MWIL	06 28 1445	N16	W64	06 23.8			5		(BY)					
4216		BOUL	06 28 1520	N14	W64	06 23.8					BG	DHI	240	8	9	2
4216		PALE	06 28 1835	N17	W66	06 23.8					BG	DHI	280	7	8	3
4216		MANI	06 28 2240	N17	W70	06 23.6						DHI	350	9	7	3
4216		LEAR	06 29 0140	N17	W70	06 23.7					B	EHI	320	8	11	3
4216		ATHN	06 29 0915	N16	W74	06 23.8					BG	DHI	260	7	9	2
4216		RAMY	06 29 1245	N18	W78	06 23.6					B	DAO	170	4	7	4
4216		BOUL	06 29 1530	N18	W79	06 23.6					B	CSO	160	3	7	3
4216		HOLL	06 29 1653	N17	W80	06 23.6					B	CAO	390	4	5	4
4216		PALE	06 29 1700	N16	W80	06 23.6					B	CSO	100	4	5	3
4216	23713	MWIL	06 29 2100	N16	W83	06 23.6			2		(AP)					
4216		MANI	06 30 0145	N16	W85	06 23.6						CSO	350	2	5	2
4216		LEAR	06 30 0305	N17	W86	06 23.6					A	HHX	110	2	5	2
0003		MANI	06 19 0120	N17	E66	06 24.1						CSO	50	3	3	2
0003		LEAR	06 19 0130	N17	E66	06 24.1					B	CSO	30	3	3	4
0003		HOLL	06 19 1515	N18	E58	06 24.1					B	CRO	60	6	5	4
4217		RAMY	06 19 1330	N18	E80	06 25.7					A	HSX	60	1	2	2
4217		BOUL	06 19 1559	N17	E81	06 25.8					A	HSX	50	1	1	3
4217		PALE	06 19 1759	N19	E78	06 25.7					A	HSX	20	1	1	3
4217		ATHN	06 20 0600	N17	E68	06 25.4					B	DAO	90	4	8	3
4217		RAMY	06 20 1220	N19	E64	06 25.4					B	DAO	140	10	7	4
4217		HOLL	06 20 1440	N21	E62	06 25.4					B	BXO	20	5	6	4
4217		BOUL	06 20 1445	N18	E60	06 25.2					B	DSO	100	3	8	3
4217	23717	MWIL	06 20 1545	N17	E57	06 25.0			4		(BP)					
4217		PALE	06 20 2106	N20	E59	06 25.4					B	DSO	70	4	8	3
4217		ATHN	06 21 0600	N18	E52	06 25.2					B	DAO	70	4	9	2
4217		RAMY	06 21 1300	N18	E49	06 25.3					B	DSO	60	5	10	3
4217		HOLL	06 21 1432	N21	E47	06 25.2					BG	DSO	40	5	10	3
4217		BOUL	06 21 1435	N16	E46	06 25.1					B	CSO	20	2	4	3
4217	23717	MWIL	06 21 1530	N19	E44	06 25.0			5		(BP)					
4217		PALE	06 21 1730	N20	E46	06 25.3					B	DSO	40	4	9	3
4217		LEAR	06 22 0101	N18	E42	06 25.2					BG	CSO	50	9	7	2
4217		ATHN	06 22 0615	N16	E35	06 24.9					B	CSO	50	4	4	3
4217		RAMY	06 22 1258	N18	E33	06 25.1					B	CSO	50	16	7	2
4217		BOUL	06 22 1356	N18	E31	06 24.9					B	BXI	30	9	6	3
4217	23717	MWIL	06 22 1515	N18	E30	06 24.9			4		(B)					
4217		HOLL	06 22 1557	N18	E31	06 25.0					B	BXO	70	15	6	4
4217		PALE	06 22 1820	N18	E32	06 25.2					B	ESO	70	8	12	2
4217		LEAR	06 23 0058	N18	E26	06 25.0					B	DRO	40	11	7	3
4217		ATHN	06 23 0600	N16	E21	06 24.8						DAO	70	7	7	3
4217		RAMY	06 23 1236	N17	E19	06 25.0					B	DSO	40	14	8	4
4217		BOUL	06 23 1339	N17	E18	06 24.9					B	BXO	30	12	8	3
4217		HOLL	06 23 1438	N17	E18	06 25.0					B	DRO	70	12	8	3
4217	23717	MWIL	06 23 1500	N17	E17	06 24.9			4		(B)					
4217		PALE	06 23 2030	N17	E15	06 25.0					B	DSO	50	10	8	1
4217		LEAR	06 24 0033	N18	E12	06 24.9					B	DRO	50	13	8	3
4217		ATHN	06 24 0630	N15	E11	06 25.1					B	DSO	60	7	8	3
4217		BOUL	06 24 1344	N17	E04	06 24.9					B	BXO	40	5	8	3
4217		RAMY	06 24 1402	N17	E04	06 24.9					B	CRO	20	9	5	4
4217	23717	MWIL	06 24 1530	N17	E03	06 24.9			3		(BP)					
4217		PALE	06 24 1947	N18	E01	06 24.9					B	BXO	30	7	9	3
4217		HOLL	06 24 2340	N17	W03	06 24.8					B	BXO	10	4	5	2
4217		LEAR	06 25 0030	N16	W01	06 24.9					B	ESO	40	12	12	2
4217		ATHN	06 25 0655	N17	W09	06 24.6					B	CRO	30	3	4	2
4217		RAMY	06 25 1305	N17	W10	06 24.8					B	CSO	20	4	6	3
4217		HOLL	06 25 1445	N18	W15	06 24.5					A	AXX		1		3
4217		BOUL	06 25 1510	N17	W10	06 24.9					B	BXO	40	7	8	2
4217	23717	MWIL	06 25 1545	N17	W10	06 24.9			4		(BP)					
4217		PALE	06 25 1954	N17	W15	06 24.7					B	BXO	10	2	4	2
4217		ATHN	06 26 0630	N16	W20	06 24.8					A	AXX	10	1	1	3
4217	23717	MWIL	06 26 1500	N16	W27	06 24.6			3		(AP)					

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JUNE 1983

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4226		RAMY	06	25	1305	S18 W06	06 25.1		A HAX	10	1	1	3
4226		HOLL	06	25	1445	S18 W08	06 25.0		B BXO		2	3	3
4226		BOUL	06	25	1510	S18 W08	06 25.0		A AXX	10	1		2
4226	23726	MWIL	06	25	1545	S19 W07	06 25.1	3	(AF)				
4226		PALE	06	25	1954	S18 W10	06 25.1		B BXO	20	4	3	2
0004	23725	MWIL	06	24	1530	N07 E07	06 25.2	2	(AP)				
0004		LEAR	06	27	0026	N07 W23	06 25.3		B CRO	10	2	3	3
0004		RAMY	06	27	1110	N05 W28	06 25.4		A HAX	20	1	1	3
0004		HOLL	06	27	1401	N05 W30	06 25.3		A AXX	10	2	2	3
0004	23731	MWIL	06	27	1500	N06 W31	06 25.3	4	(AP)				
4220	23714	MWIL	06	19	1500	N18 E77	06 25.5	2	(AP)				
4220	23714	MWIL	06	20	1545	N18 E64	06 25.5	3	(AP)				
4220		BOUL	06	21	1435	N16 E53	06 25.6		A HSX	30	1	1	3
4220	23714	MWIL	06	21	1530	N19 E52	06 25.6	4	(AP)				
4220		LEAR	06	22	0101	N18 E48	06 25.7		A HSX	30	2	1	2
4220		ATHN	06	22	0615	N17 E43	06 25.5		A HSX	60	1	2	3
4220		RAMY	06	22	1258	N18 E41	06 25.7		B CAO	30	2	3	2
4220		BOUL	06	22	1356	N17 E39	06 25.5		B CRO	20	3	2	3
4220	23714	MWIL	06	22	1515	N19 E39	06 25.6	4	(B)				
4220		HOLL	06	22	1557	N19 E39	06 25.6		B CRO	20	3	3	4
4220		LEAR	06	23	0058	N19 E34	06 25.6		A HAX	10	3	1	3
4220		ATHN	06	23	0600	N18 E29	06 25.5		AXX	20	1	1	3
4220		RAMY	06	23	1236	N18 E28	06 25.7		A AXX	10	1	1	4
4220		BOUL	06	23	1339	N18 E26	06 25.6		A AXX	10	1		3
4220		HOLL	06	23	1438	N19 E27	06 25.7		A AXX		1		3
4220	23714	MWIL	06	23	1500	N19 E26	06 25.6	2	(AP)				
4220		RAMY	06	24	1402	N19 E11	06 25.4		B CRO	20	5	6	4
4220	23714	MWIL	06	24	1530	N22 E11	06 25.5	3	(AP)				
4220		HOLL	06	24	2340	N18 E04	06 25.3		A AXX	10	1		2
4220		LEAR	06	25	0030	N20 E07	06 25.6		B BXO	10	4	5	2
4220		RAMY	06	25	1305	N19 W02	06 25.4		B CSO	20	4	5	3
4220		HOLL	06	25	1445	N20 W05	06 25.2		B BXO	10	3	2	3
4220	23714	MWIL	06	25	1545	N21 W05	06 25.3	3	(AF)				
4220		PALE	06	25	1954	N18 W07	06 25.3		A AXX		1	1	2
4220		LEAR	06	26	0657	N11 W14	06 25.2		B CAO	40	13	4	2
4220	23714	MWIL	06	26	1500	N21 W14	06 25.6	2	(AP)				
4220	23714	MWIL	06	28	1445	N19 W45	06 25.2	3	(AF)				
4220		LEAR	06	29	0140	N19 W53	06 25.0		B BXO		2	4	3
0005		HOLL	06	19	1515	N19 E80	06 25.7		A HSX	40	1	1	4
0005		HOLL	06	22	1557	N13 E41	06 25.8		A AXX	10	2	2	4
0005		PALE	06	22	1820	N13 E39	06 25.7		B CSO	30	3	3	2
0005		LEAR	06	23	0058	N12 E35	06 25.7		B CRO	10	4	3	3
0005		ATHN	06	23	0600	N12 E30	06 25.5		HAX	20	1	1	3
0005		RAMY	06	23	1236	N12 E29	06 25.7		B BXO	20	4	3	4
0005		BOUL	06	23	1339	N12 E26	06 25.5		A AXX	10	1		3
0005		HOLL	06	23	1438	N13 E27	06 25.6		B BXO	10	3	3	3
0005		PALE	06	23	2030	N13 E24	06 25.7		B BXO	10	3	3	1
0005		BOUL	06	25	1510	N09 E04	06 25.9		B BXO	20	5	3	2
4219	23718	MWIL	06	20	1545	S08 E77	06 26.4	3	(AP)				
4219		ATHN	06	21	0600	S12 E73	06 26.8		B FKO	360	11	15	2
4219		RAMY	06	21	1300	S10 E66	06 26.5		BG DAO	150	9	11	3
4219		HOLL	06	21	1432	S07 E66	06 26.6		BG DSO	190	15	8	3
4219		BOUL	06	21	1435	S13 E68	06 26.7		BG DSO	150	7	8	3
4219	23718	MWIL	06	21	1530	S09 E65	06 26.5	4	(BP)				
4219		PALE	06	21	1730	S08 E63	06 26.5		BG DSO	120	12	7	3
4219		LEAR	06	22	0101	S09 E60	06 26.5		BG DAO	160	18	6	2
4219		ATHN	06	22	0615	S09 E55	06 26.4		BG DSO	180	10	7	3
4219		RAMY	06	22	1258	S09 E52	06 26.4		BG DAO	150	19	10	2
4219		BOUL	06	22	1356	S11 E49	06 26.3		B CRI	100	16	7	3
4219	23718	MWIL	06	22	1515	S08 E51	06 26.5	4	(BP)				
4219		HOLL	06	22	1557	S07 E51	06 26.5		BG CAO	150	17	7	4
4219		PALE	06	22	1820	S07 E49	06 26.4		B DSO	110	24	7	2
4219		LEAR	06	23	0058	S08 E46	06 26.5		BG DAI	100	23	7	3
4219		ATHN	06	23	0600	S09 E43	06 26.5		DAO	50	7	6	3
4219		RAMY	06	23	1236	S08 E40	06 26.5		B CSO	70	23	7	4
4219		BOUL	06	23	1339	S10 E37	06 26.4		B BXO	10	10	7	3
4219		HOLL	06	23	1438	S08 E38	06 26.5		BG CRO	70	11	7	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

89
JUN 83

JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Observation Sta	Time		Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual	
			Mo	Day												UT
4219	23718	MWIL	06	23	1500	S08	E38	06	26.5	4	(BP)					
4219		PALE	06	23	2030	S08	E35	06	26.5		B	CSO	40	10	6	1
4219		LEAR	06	24	0033	S08	E32	06	26.4		B	CAO	40	11	5	3
4219		ATHN	06	24	0630	S12	E29	06	26.5		B	CSO	70	5	5	3
4219		BOUL	06	24	1344	S10	E24	06	26.4		B	BXO	30	4	3	3
4219		RAMY	06	24	1402	S10	E26	06	26.5		B	DRO	20	8	7	4
4219	23718	MWIL	06	24	1530	S09	E23	06	26.4	3	(BP)					
4219		PALE	06	24	1947	S09	E22	06	26.5		B	BXO	40	10	5	3
4219		HOLL	06	24	2340	S08	E17	06	26.3		B	BXO	10	6	3	2
4219		LEAR	06	25	0030	S08	E19	06	26.4		B	CSO	20	11	6	2
4219		ATHN	06	25	0655	S09	E11	06	26.1		A	HRX	10	1	2	2
4219		RAMY	06	25	1305	S08	E11	06	26.4		B	CSO	30	10	8	3
4219		HOLL	06	25	1445	S08	E10	06	26.4		B	CRO	20	8	6	3
4219		BOUL	06	25	1510	S08	E07	06	26.2		B	CSI	30	4	2	2
4219	23718	MWIL	06	25	1545	S08	E10	06	26.4	4	(BP)					
4219		PALE	06	25	1954	S07	E07	06	26.4		B	BXO	20	4	3	2
4219		LEAR	06	26	0657	S08	W02	06	26.1		B	BXO	10	2	4	2
4219	23718	MWIL	06	26	1500	S08	W06	06	26.2	3	(AP)					
4219		LEAR	06	27	0026	S09	W08	06	26.4		B	BXO	30	5	5	3
4219		ATHN	06	27	0630	S11	W10	06	26.5		B	CRO	20	3	4	3
4219		ATHN	06	27	0630	S11	W10	06	26.5		B	CRO	20	3	4	3
4219		RAMY	06	27	1110	S10	W15	06	26.3		B	CAO	40	14	9	3
4219		HOLL	06	27	1401	S11	W16	06	26.4		B	BXO	30	10	7	3
4219	23718	MWIL	06	27	1500	S08	W17	06	26.3	3	(AP)					
4219		PALE	06	27	1810	S10	W18	06	26.4		B	BXO	20	7	7	3
4219		LEAR	06	28	0047	S11	W21	06	26.5		B	CRO	40	7	6	3
4219		LEAR	06	29	0140	S09	W37	06	26.3		A	AXX		1		3
4222	23720	MWIL	06	22	1515	N12	E41	06	25.7	3	(B)					
4222	23720	MWIL	06	23	1500	N12	E27	06	25.7	3	(B)					
4222		LEAR	06	24	0033	N12	E22	06	25.7		B	BXO	10	5	3	3
4222		ATHN	06	24	0630	N09	E21	06	25.8		A	AXX	10	1	1	3
4222	23720	MWIL	06	24	1530	N12	E18	06	26.0	2	(B)					
4222		PALE	06	24	1947	N13	E17	06	26.1		B	BXO	20	4	4	3
4222		LEAR	06	25	0030	N12	E14	06	26.1		A	AXX	10	2		2
4222		RAMY	06	25	1305	N11	E07	06	26.1		B	CSO	10	2	3	3
4222		HOLL	06	25	1445	N11	E05	06	26.0		B	BXO	10	5	4	3
4222	23720	MWIL	06	25	1545	N11	E05	06	26.0	3	(BF)					
4222		PALE	06	25	1954	N11	E03	06	26.1		B	BXO	20	4	3	2
4222		ATHN	06	26	0630	N08	W02	06	26.1		B	DSO	100	4	5	3
4222		LEAR	06	26	0657	N11	W04	06	26.0		B	CAO	40	13	14	2
4222	23720	MWIL	06	26	1500	N11	W08	06	26.0	4	(B)					
4222		LEAR	06	27	0026	N12	W13	06	26.0		B	DAO	70	13	5	3
4222		ATHN	06	27	0630	N10	W17	06	26.0		B	DSO	40	2	5	3
4222		RAMY	06	27	1110	N11	W19	06	26.0		B	DAO	60	8	5	3
4222		HOLL	06	27	1401	N10	W22	06	25.9		B	CSO	80	5	6	3
4222	23720	MWIL	06	27	1500	N11	W22	06	26.0	4	(BF)					
4222		BOUL	06	27	1520	N09	W35	06	25.0		B	CSI	40	7	8	2
4222		PALE	06	27	1810	N11	W24	06	26.0		B	DAO	100	5	6	3
4222		LEAR	06	28	0047	N11	W28	06	25.9		B	DAO	70	11	6	3
4222		ATHN	06	28	0800	N14	W28	06	26.2			CSO	60	6	5	3
4222	23720	MWIL	06	28	1445	N11	W35	06	26.0	4	(B)					
4222		BOUL	06	28	1520	N09	W35	06	26.0		B	CSI	40	7	8	2
4222		PALE	06	28	1835	N11	W38	06	25.9		B	CSO	50	6	6	3
4222		MANI	06	28	2240	N11	W41	06	25.9			CSO	70	8	6	3
4222		LEAR	06	29	0140	N11	W41	06	26.0		B	CSO	30	8	6	3
4222		ATHN	06	29	0915	N08	W44	06	26.1		B	DSO	50	6	5	2
4222		RAMY	06	29	1245	N12	W48	06	25.9		B	DSO	60	9	4	4
4222		BOUL	06	29	1530	N13	W49	06	25.9		B	DSI	110	5	6	3
4222		HOLL	06	29	1653	N10	W52	06	25.8		B	BXO	30	8	6	4
4222		PALE	06	29	1700	N11	W49	06	26.0		B	DSO	50	5	4	3
4222	23720	MWIL	06	29	2100	N10	W52	06	26.0	4	(B)					
4222		MANI	06	30	0145	N11	W56	06	25.9			CSO	130	22	8	2
4222		LEAR	06	30	0305	N11	W57	06	25.8		B	DAO	80	12	6	2
4222		ATHN	06	30	0650	N10	W58	06	25.9		B	DRO	60	6	8	3
4222		BOUL	06	30	1340	N11	W60	06	26.1		B	CRI	80	9	6	3
4222		RAMY	06	30	1410	N13	W63	06	25.8		B	DAO	130	17	7	4
4222		HOLL	06	30	1450	N11	W64	06	25.8		B	CRO	20	9	7	3
4222	23720	MWIL	06	30	1500	N09	W63	06	25.9	3	(B)					
4222		PALE	06	30	1816	N12	W66	06	25.8		B	DAO	120	10	6	4
4222		LEAR	07	01	0035	N11	W68	06	25.9		B	DAO	120	11	6	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

JUNE 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time (UT)			Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hem1)	Spot Count	Long. Extent (Deg)	Qual
4222		MANI	07	01	0050	N11 W69	06 25.8		DAO	160	14	6	3	
4222		ATHN	07	01	0640	N13 W69	06 26.1		DSO	140	2	6	2	
4222		RAMY	07	01	1325	N12 W76	06 25.8		DAO	130	7	7	3	
4222		BOUL	07	01	1330	N10 W75	06 25.9		BXO	100	8	8	3	
4222	23720	MWIL	07	01	1530	N10 W76	06 25.9	3	(BF)					
4222		PALE	07	01	1754	N10 W80	06 25.7		CSO	60	7	10	4	
4222		LEAR	07	02	0040	N11 W81	06 25.9		DAO	90	5	10	3	
0006		RAMY	06	20	1220	S09 E78	06 26.4		CSO	90	9	4	4	
0006		HOLL	06	20	1440	S08 E80	06 26.6		BXO	30	7	3	4	
0006		BOUL	06	20	1445	S09 E76	06 26.3		CSO	80	4	6	3	
0006		PALE	06	20	2106	S08 E74	06 26.4		CRO	40	7	7	3	
	23732	MWIL	06	27	1500	S12 W14	06 26.6	4	(BP)					
0007	23721	MWIL	06	23	1500	S13 E55	06 27.8	3	(AF)					
0007		RAMY	06	25	1305	S12 E27	06 27.6		A	10	1	1	3	
0007		HOLL	06	25	1445	S12 E25	06 27.5		A	10	2	1	3	
0007	23727	MWIL	06	25	1545	S12 E25	06 27.5	2	(B)					
4228		RAMY	07	02	1245	S08 W66	06 27.6		A	30	1	1	4	
4228		HOLL	07	02	1415	S09 W66	06 27.6		A		1		4	
4228	23738	MWIL	07	02	1500	S10 W66	06 27.7	3	(AF)					
		BOUL	06	25	1510	N15 E30	06 27.9		A	10	1		2	
4223		LEAR	06	23	0058	N05 E77	06 28.8		A	10	1	1	3	
4223		ATHN	06	23	0600	N05 E75	06 28.9		AXX	50	1	1	3	
4223		RAMY	06	23	1236	N03 E71	06 28.8		A	30	1	1	4	
4223		BOUL	06	23	1339	N03 E69	06 28.7		A	20	1	1	3	
4223		HOLL	06	23	1438	N06 E69	06 28.8		A	20	1	1	3	
4223	23722	MWIL	06	23	1500	N04 E69	06 28.8	4	(AP)					
4223		PALE	06	23	2030	N06 E67	06 28.9		A	10	1	1	1	
4223		LEAR	06	24	0033	N05 E65	06 28.9		A	20	2	1	3	
4223		ATHN	06	24	0630	S01 E61	06 28.8		A	40	1	2	3	
4223		BOUL	06	24	1344	N03 E58	06 28.9		A	20	1		3	
4223		RAMY	06	24	1402	N03 E58	06 28.9		A	20	3	2	4	
4223	23722	MWIL	06	24	1530	N04 E55	06 28.8	2	(AP)					
4223		PALE	06	24	1947	N04 E53	06 28.8		A		1		3	
4223		HOLL	06	24	2340	N04 E51	06 28.8		A	10	1	1	2	
4223		LEAR	06	25	0030	N03 E50	06 28.8		A	40	1	1	2	
4223		ATHN	06	25	0655	N03 E46	06 28.7		A	10	1	1	2	
4223		RAMY	06	25	1305	N02 E43	06 28.8		A	20	1	1	3	
4223		HOLL	06	25	1445	N04 E42	06 28.8		A	10	1	1	3	
4223		BOUL	06	25	1510	N04 E39	06 28.5		A	10	1		2	
4223	23722	MWIL	06	25	1545	N04 E42	06 28.8	4	(AP)					
4223		PALE	06	25	1954	N04 E39	06 28.7		A	10	1	1	2	
4223		ATHN	06	26	0630	S01 E33	06 28.7		A	30	1	1	3	
4223		LEAR	06	26	0657	N03 E33	06 28.8		A	20	1	1	2	
4223	23722	MWIL	06	26	1500	N04 E28	06 28.7	4	(AP)					
4223		LEAR	06	27	0026	N03 E23	06 28.7		A	20	1	1	3	
4223		ATHN	06	27	0630	N02 E20	06 28.8		A	10	1	1	3	
4223		RAMY	06	27	1110	N03 E16	06 28.7		A	20	1	1	3	
4223		HOLL	06	27	1401	N03 E16	06 28.8		B	10	2	4	3	
4223	23722	MWIL	06	27	1500	N04 E15	06 28.7	3	(AP)					
4223		PALE	06	27	1810	N04 E13	06 28.7		A	10	2	1	3	
0008	23735	MWIL	06	30	1500	N26 W05	06 30.2	2	(AF)					
0008		PALE	06	30	1816	N26 W06	06 30.3		B	10	2	3	4	
	23743	MWIL	07	05	1530	S19 W70	06 30.3	2	(AP)					
4231		LEAR	06	30	0305	S12 E11	07 1.0		B	10	3	3	2	
4231		ATHN	06	30	0650	S13 E07	06 30.8		B	10	2	2	3	
4231		RAMY	06	30	1410	S12 E04	06 30.9		B	10	6	2	4	
4231		HOLL	06	30	1450	S12 E04	06 30.9		B	10	2	1	3	
4231	23734	MWIL	06	30	1500	S12 E04	06 30.9	2	(AP)					
4231		PALE	06	30	1816	S12 E01	06 30.8		A	10	1	1	4	
4231		MANI	07	01	0050	S12 W03	06 30.8		AXX	10	1		3	
4231		RAMY	07	02	1245	S14 W17	07 1.2		A	10	1	1	4	
4231		HOLL	07	04	1417	S12 W48	07 1.0		B	20	3	3	2	
4231		RAMY	07	04	1438	S11 W49	06 30.9		B	20				
	23739	MWIL	07	02	1500	N23 W22	06 30.9	2	(AP)					

SUDDEN IONOSPHERIC DISTURBANCES

91
Jun 83

June 1983

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type					Known Flare	NOAA/SESC Region
						SWF	SEA	SPA	LF-SPA	SES		
01	0112	0121		1-	1					1	NF	
01	0245	0251	0330	1	1					1	NF	
01	0446	0454	0520	1-	3				1	1	0435E	4201
01	0743	0806	0830	1	1				1		NF	
01	0901	0929U	0951	1	1		1				NF	
01	1029	1050	1101	1	1		1				*	
01	1120	1123	1200	2	3					2	1122E	4196
01	1159	1205	1217	1	1		1				NF	
01	1253	1302	1312	1-	5	2	3		1	3	1248	4201
01	1344	1358	1450	1+	5	3	3		1	11	1347	4197
01	2150	2206	2325	1-	3	1		1		5	*	
02	0130	0137	0200	1-	1				1		NF	
02	0247	0254	0307	1-	1			1			NF	
02	0515	0519	0530	1-	1				1		NF	
02	0950	1000	1008	1	3		2				NF	
02	1332	1335	1345	1	3		2				1336	4196
02	1524	1530	1600	1-	5	5	1	1	1	12	1521	No data
02	1630	1650	1730U	2+	3					2	NF	
03	0005	0046	0123	1-	1			1			0032E	4201
03	0218	0223	0300	2	1					1	NF	
03	0240	0316	0430	1-	1				1		0240	4201
03	0300	0310	0351	1-	1			1			0254	4201
03	0821	0833	0845	1-	1				1		0822	4201
03	0934	0941	0954	1	1		1				0930	No data
03	1006	1012	1020	1-	3			1		1	1004	No data
03	1144	1146	1230	1	3	3	4		1	2	1143	No data
03	1230	1240	1308	1	1		1				1235	No data
03	1255	1300	1330	2	1					1	1255	No data
03	1428	1435	1445	1-	5	2	1		1	7	1419	No data
03	1517	1523	1545	1	3					2	NF	
03	2022	2024	2045	1-	1					1	NF	
04	0137	0152	0215	1-	1			1			0133	4201
04	0215	0230	0324D	2	3	1		1		2	0215	4201
04	0324E	0334	0414	1-	1			1			0321	4201
04	1331	1336	1359	1	1		1				1316	4201
04	1415	1422	1445	1-	1					1	1430E	4201
04	1607	1615U	1647	1	1		1				1616	No data
04	1952	2001	2008	1+	5	4		1		10	1950	4201
05	0330	0345	0420	1-	3			1	1		0330	4201
05	0840	0855	0920	1-	1				1		0840	4201
05	1208	1212	1223	1-	3	2			1	5	1158	4201
05	1336	1340	1350	1-	1				1		1345	4204
05	1511	1528	1545	1-	1					1	NF	
05	1540	1555	1645	1+	5	5	1		1	16	1539	4201
05	1703	1713	1725	1-	5	3	1		1	9	1700	4201
05	1755	1758	1825	1-	5	2	1		1	11	1803	4199
05	1900	1925	2015	2+	1					1	1900	4201
05	1943	1946	1948	1-	3	1		1		2	1936	4204
05	2125	2135	2206	1-	1			1			2124	4201
05	2215	2232	2244D	1-	1			1			2217	4201
05	2247E	2311	2358	1	3			1		2	2248	4201
05	2307	2309	2313	1-	3	1				1	NF	
06	0020	0039	0127	1-	1			1			0020	4201
06	0136	0221	0305D	1	1			1			0138E	4201
06	0154	0224	0314D	1-	1				1		NF	
06	0303E	0312	0416	1	3	1		1	1	2	0304E	4201
06	0324	0332	0410	1	1				1		NF	
06	0425	0435	0500	1	5	2		1	2	2	0431E	No data
06	0516	0549	0620	1-	3	2		1	1		0516	4201
06	0638	0643	0702	1-	3			1	1		NF	

S U D D E N I O N O S P H E R I C D I S T U R B A N C E S

June 1983

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide- spread Index	Number of Station Reports by Type					Known Flare	NOAA/SESC Region
						SWF	SEA	SPA	LF- SPA	SES		
06	0751	0757	0844	1-	3	2		1	1	1	0749	No data
06	0827	0831	0845	1-	1				1		0827	No data
06	1147	1152	1210	1-	3	1			1		NF	
06	1330	1348	1557	2+	5	6	3	1	1	12	1329	4201
06	1741	1751	1816	1-	5	2	1	1	1	10	1742	4201
06	2128	2137	2224	1-	3			1	1	3	2128	4201
06	2228	2236	2306	1-	1			1			2225	4204
07	0008	0042	0209	1-	1			1			NF	
07	0240	0306	0356	1-	1			1			0240	4204
07	0418	0422	0442	1-	1			1			0419	4201
07	0627	0632	0658	1	1						NF	
07	0718	0759	0829	1	1		1				NF	
07	0835	0852	0920	1-	1				1		0835	4201
07	1229	1342	1500	1	1		1				NF	
07	1318	1335	1400	1-	3	1	1		1	2	NF	
07	1645	1647	1705	1	3		2			2	1646	4201
07	1730	1735	1815	1-	1					1	NF	
07	1908	1915	1930	1-	3					3	1905	4201
07	2040	2105	2215	1-	5	1		1		10	2039	4201
07	2058	2100	2110	1	3	2				4	NF	
07	2257	2259	2315	1-	1					1	NF	
08	0054	0130	0327	1	3			1	1	1	NF	
08	0606	0610	0636D	2	3	2		1	2	2	0603	4201
08	0743	0748	0806	1-	3	1		1	1		0742	No data
08	0854	0857	0915	1-	3	1			1		NF	
08	0958	1038	1130	1	3		1		1		NF	
08	1255	1312	1350	1	3	2	2		1	7	1248	4201
08	1350	1355	1422	1	2	1	2				NF	
08	1602	1615	1650	1	1		1				NF	
08	2120	2126	2155	1	1			1			2118	4201
09	0024	0031	0119	1-	3			1	1		NF	
09	0211	0221	0330	1-	3	1		1	1		0210	4201
09	0836	0917	1124	1	1			1			NF	
09	1015	1025	1100	1	3	1			1	1	1015	No data
09	2158	2205	2341	2	5	3		1		8	2158	4204
10	0211	0216	0236	1-	3			1	1		0212	4204
10	0238	0250	0347	1-	1			1			NF	
10	0626	0638	0710	1-	3				2		NF	
10	0809	0845U	0930	1	1		1				0819E	No data
10	0946	1018	1055	1	1		1				NF	
10	1332	1338	1420	1	3	1	2	1	1	6	1329	No data
10	1422	1428	1435	1-	3	1			1	3	1422	4204
10	1755	1808	1830	1	3	1				6	1751	4204
10	1800	1803	1825	1-	3	1			1	5	NF	
10	2117	2130	2222	1-	1			1			2116	4204
10	2305	2311	2330	1	1					1	NF	
10	2337	2339	2350	1-	1					1	NF	
11	0010	0015	0109	1-	3	1		1	1	2	0008	4204
11	0151	0201	0223	1-	1			1			0149	4204
11	0441	0448	0510	1-	1				1		0445E	No data
11	0552	0553	0610	1	1		1				*	
11	0653	0658	0810	1-	3	1	2	1	2	1	0651	4204
11	0730	0744	0800	1	1		1				NF	
11	1322	1326	1350	1-	3		1		1		1321	No data
12	1134	1155	1313	1	3		2				NF	
12	2230	2238	2310	1-	1			1			2230	4204
13	0117	0126	0240	1-	1			1			0121	4204
13	0214	0220	0310	1-	1			1			NF	

S U D D E N I O N O S P H E R I C D I S T U R B A N C E S

93
Jun 83

June 1983

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type					Known Flare	NOAA/SESC Region
						SWF	SEA	SPA	LF-SPA	SES		
13	0322	0335	0436	1-	3			1	1		NF	
13	1531	1540	1600	1-	1					1	1530	4204
13	2337	2345	0012	1-	3			1	1		2336E	4204
14	0437	0443	0510	1-	1					1	0435	4204
14	0842	0847	0902	1-	3					2	0836	4204
14	1018	1029	1038	1	1			1			NF	
14	1540	1541U	1606	1	1			1			NF	
14	1612	1624	1710	1	3			2			NF	
15	0116	0123	0219	1-	1			1			NF	
15	0436	0443	0506	1-	1			1			NF	
15	1345	1347U	1411	1	1			1			NF	
15	1402	1415	1510	1	1			1			NF	
15	2350	2356	0356	1-	1			1			2354E	4213
16	0240	0313	0356	1-	1			1			0230	4213
16	0308	0315	0354	1-	3			1	1		*	
16	0700	0720	0800	1-	1				1		NF	
16	0834	0850	0917	1	1			1			NF	
16	1241	1256	1310	1-	3			1			1241	No data
16	1328	1359U	1438	1-	1			1			1327	No data
16	1534	1538	1620	1-	5	5	4	1	1	12	1533	No data
16	2122	2128	2200	1-	1			1			2121	4213
17	0057	0106	0222	1	3	2		1	1		0101	4213
17	0420	0426	0450	1-	1				1		0428E	4209
17	0735	0738	0755	1-	3				2		NF	
18	2342	0000	0054	1-	1			1			2345	4208
19	0323	0340	0445	1-	3	1		1	1		NF	
19	0753	0754	0900	1	1			1			0745	4210
19	0948	1020	1045	1-	1			1			NF	
19	1257	1302	1325	1-	3	1			1	1	1257	No data
19	1406	1418	1430	1-	1			1			NF	
19	2001	2012	2038	1-	5	1		1		6	2001	4213
19	2041	2048	2158	1-	5	2			1	8	NF	
19	2106	2107	2150	1	1					1	2059	4216
19	2217	2223	2232	1-	1			1			2212	4216
19	2244	2307	2337	1-	1			1			2242	4213
19	2338	2343	0030	1-	5	3		1	1	8	2346E	4213
20	0344	0351	0430	1-	3			1	1		NF	
20	1346	1417U	1425	1-	1			1			NF	
20	1424	1432	1530	1+	5	3	4		1	8	1424	4213
20	1615	1625	1636	1	1			1			NF	
21	0202	0208	0310	1-	3	1		1	1	3	0202	No data
21	0412	0423	0444	1-	3			1	1		NF	
21	0509	0512	0537	1-	1			1			0519E	No data
21	0538	0540	0554	1-	1			1			NF	
21	1615	1625	1655	1-	5	2	1		1	8	NF	
21	2355	0003	0025D	1-	3			1	1		NF	
22	0028	0042	0140	1-	1				1		0023	4219
22	0248	0255	0337	1-	1			1			0246	4216
22	1800	1806	1842	1	3	1				3	1759	4216
22	1842	1847	1900	1-	3					3	1842	4216
23	0337	0344	0408	1-	1			1			0340E	No data
23	0640	0643	0704	1-	1				1		0639	4219
23	2154	2201	2238	1-	1			1			2200E	4216
24	0654	0706	0740	1-	3			1	1		0653	4219

S U D D E N I O N O S P H E R I C D I S T U R B A N C E S

June 1983

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type					Known Flare	NOAA/SESC Region
						SWF	SEA	SPA	LF-SPA	SES		
24	0742	0752	0832	1-	1			1			0744	4216
24	1033	1039	1117	1-	3	1		1	1	1	1035E	No data
24	1125	1230	1136	1+	3					2	NF	
24	1232	1239	1330	1-	3				1	4	1236E	No data
24	1434	1440	1536	1	1		1				NF	
24	2147	2159	2217	1-	3	1		1		6	NF	
25	1127	1136	1241	1-	5	2	4	1	1	5	NF	
25	1856	1904	1908	2	5	4		1		10	NF	
25	2050	2100	2304	2+	5	5		1		13	2051	No data
26	0432	0443	0550	2+	5	4		1	2	4	0436	4227
26	1403	1418	1514	1-	5	3		1	1	11	1407	4227
26	2133	2149	2220	1-	1			1			2134	4214
26	2350	0003	0032	1-	1			1			NF	
28	0130	0136	0200	1-	3	1		1	1	1	0129	4227
28	0250	0258	0400	1	3			1	1	2	0248	4227
28	0728	0735	0745	1	3		2				NF	
28	0816	0840	0848	1	1		1				NF	
28	2046	2052	0315	1-	1					1	2037	4230
29	1422	1431	1452	1	1		1				*	
29	1854	1915	2045	1-	3	1				3	1851	No data
29	2228	2246	2344D	2	5	3		1		7	*	
29	2344	2354	0048	1	3			1		3	2342	4227
30	1254	1318U	1401	1	1		1				NF	
30	1600	1642	1607	1	3			2			NF	
30	1814	1816	1835	1	3	1				7	1812	4227
30	2155	2204	2253	1	1			1			NF	

OBSERVATORIES REPORTING SIDs*

JUNE 1983

Ayrshire, Scotland (AY)	SES	Milton Freewater, Oregon, USA (A56)	SES
Darmstadt, GFR (DA)	SWF	Missoula, Montana, USA (A31)	SES, SWF
Durham, North Carolina, USA (A54)	SES	Panska Ves, Czechoslovakia (PU)	SEA, SWF, SES
Edenvale, South Africa (A52)	SES	Patterson, New Jersey, USA (A46)	SES
Frenchtown, Montana, USA (A56)	SES	Portage, Michigan, USA (A51)	SES
Hiraiso, Japan (HI)	SWF	Roswell, New Mexico, USA (RW)	SES
Houston, Texas, USA (A50)	SES	San Antonio, Texas, USA (SA)	SES
Huancayo, Peru (HU)	SWF	St. Cloud, Minnesota, USA (SC)	SES
Inubo, Japan (IN)	SPA	Tavares, Florida, USA (A49)	SES
Julliusruh, GDR (JU)	SWF	Trenton, New Jersey, USA (NJ)	SES
Kuhlungsborn, GDR (KU)	SPA, SEA	Tucson, Arizona, USA (A9)	SES
Lake Hiawatha, New Jersey, USA (A32)	SES	Upice, Czechoslovakia (UI)	SEA
Lintong, China (LT)	SPA	Valley Cottage, New York, USA (A01)	SES
Louisville, Kentucky, USA (A26)	SES	Vsetin, Czechoslovakia (VS)	SEA
Maui, Hawaii, USA (MI)	SWF		

*Observations are not necessarily continuous for each reporting station.

SIDs by NOAA/SESC REGION

June 1983

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
Region Number																																				
4196	1	1																																		
4197	1																																			
4199					1																															
4201	2		4	6	9	7	5	3	1																											
4204					2	1	1		1	4	3	1	3	2																						
4208																		1																		
4209																	1																			
4210																			1																	
4213															1	2	1		3	1																
4214																																				
4216																										1										
4219																				2																
4227																																				
4230																										2		2	1	1						
																										1		1								
X-Ray																																				
No Flare	5	5	3		2	4	8	5	2	6	1	1	2	3	4	2	1		4	3	4				3	2	1		2							
No Flare Patrol	2										1					1																		2		
No Data		1	6	1		3		1	1	2	2					3			1		2			1	2	1								1		
Event Totals	11	7	13	7	14	15	14	9	5	12	7	2	5	5	5	8	3	1	11	4	6	4	4	3	7	3	4		5	4	4					

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

97
Jun 83

JUNE 1983

Observation Day	Start End (UT)		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
05			LEAR				0112.5	0112.8	1				III	
			PALE				0112.6	0113.0	2				III	
			LEAR				0218.6	0218.8	1				III	
			LEAR				0301.3	0301.6	1				III	
			CULG				0331.5		1				IIIB	
	0408	1539	WEIS				0512.0	0751.0	1				IN	
			CULG	0615.0		1	0615.0		1				IIIB	
			CULG				0637.0		1				IIIB	
			WEIS				0802.9	0803.0	1				IIIB	
	0924	1805	BLEN	1412.8	1413.7	2							DCIM	
			BLEN	1442.7	1449.0	2							DCIM	
	1600	1833	WEIS				1705.0	1759.0	1				IN	
			WEIS				1802.4	1803.2	2				IIIG,U	
			PALE				1802.5	1803.1	1				III	
	2030	2400	CULG	2058.0	2213.0	1							IN	
		CULG				2107.0	2233.0	1				IS		
06			LEAR				0207.1	0207.5	1				III	
			CULG	0242.0	0653.0	1	0257.5	0650.5	1				IN	
	0530	1834	WEIS											
	0400	1805	BLEN	0545.5	0550.0	2							DCIM	
			CULG	0545.5	0549.5	1							DCIM,N	
			LEAR				0611.0	0613.0	1				III	
			WEIS				0725.0	1817.0	1				IN	
	0530	1834	WEIS				0916.6	0916.8	2				IIIG	
			LEAR				0918.8	0918.8	1				III	
			WEIS				0918.8	0919.0	3				IIIG	
			BLEN	1320.0	1320.2	2							DCIM	
			BLEN	1335.9	1406.0	3							DCIM	
			WEIS				1339.0	1834.0	2				IS	
			WEIS				1349.5	1354.7	1				II HARMONIC	
			WEIS				1350.0	1401.0	2				DCIM	
			WEIS				1359.4	1359.8	2				IIIG	
			WEIS				1415.0	1828.0	3				CONT,P	
			PALE				1633.0	2334.6	1				CONT	
	2030	2400	CULG	2058.0	2112.0	1	2056.5	2112.0	2				IS,C,DC	
			CULG	2130.0	2400.0	1	2130.0	2400.0	1				IS,C	
		CULG				2141.5	2332.0	1				IIIN		
07	0000	0730	CULG	0000.0	0240.0	1	0000.0	0200.0	1				IS,C	
			CULG				0018.0	0629.5	1				IIIN	
			LEAR				0029.8	0030.1	1				III	
			LEAR				0044.8	0045.1	1				III	
			LEAR				0128.8	0129.8	1				V	
			CULG				0129.0	0130.0	2				IIIGG	
			PALE				0129.1	0129.8	2				III	
			LEAR				0143.0	0929.0	1				CONT	
			CULG				0200.0	0705.5	2				IS,C	
			CULG				0306.5		2				IIIB	
	0400	1805	BLEN											
	0409	0843	WEIS				0411.0	1635.0	3				IN	
	0847	1835	WEIS				0509.0	1345.0	2				IIIN	
			CULG				0534.0	0534.5	3				IIIG	
			CULG				0545.5	0629.5					IIIS,W	
			CULG				0628.0		2				IIIB	
	2030	2400	CULG				2103.0	2400.0	1				IS,C,DC	
			CULG	2114.0	2312.0	1							IN	
	08	0000	0730	CULG				0000.0	0707.0	1				IS,C
				CULG	0058.0		1							IIIG
			LEAR				0106.8	0107.0	1				III	
			CULG	0114.0	0122.0	1							DCIM	
			CULG	0205.0	0701.0	1							IN	
0407		1441	WEIS				0541.0	1717.0	2				IN	
0400		1805	BLEN	0601.2	0601.4	2							DCIM	
			CULG	0601.5		1							DCIM	
			LEAR				0616.0	0642.0	1				CONT	
1445		1649	WEIS				0722.0	1814.0	2				IIIN	
			LEAR				0742.0	0929.0	1				CONT	
			WEIS				1200.0	1530.0	2				CONT	
		WEIS				1312.1	1314.0	3				IIIG		

S O L A R R A D I O E M I S S I O N
S P E C T R A L O B S E R V A T I O N S

99
Jun 83

J U N E 1 9 8 3

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
11	1110	1838	WEIS										
	2031	2400	CULG										
12			LEAR				0225.1	0225.5	1				III
	0000	0731	CULG				0225.5	0713.0	2				IIIG,N
			LEAR				0308.6	0321.6	1				G
			CULG				0318.5	0703.5	1				IIIN
			LEAR				0333.5	0334.0	1				III
	0358	1810	BLEN										
	0405	1623	WEIS				0413.1	0413.3	1				IIIG
			CULG				0421.0	0424.5	3				IIIG
			WEIS				0421.2	0422.0	2				IIIG
			LEAR				0421.3	0424.5	2				V
			WEIS				0424.2	0424.6	2				IIIG
			LEAR				0437.6	0438.1	1				V
			WEIS				0437.6	0438.0	2				IIIG
			LEAR				0454.8	0455.0	1				III
			LEAR				0508.3	0929.0	1				CONT
			WEIS				0508.4	0508.6	2				IIIB
			WEIS				0515.2	0517.6	2				IIIG
			WEIS				0526.2	0526.3	2				IIIB
			WEIS				0539.7	0540.1	1				IIIB
			WEIS				0656.2	0656.3	1				IIIB
			WEIS				0702.9	0703.8	2				IIIG
			WEIS				0707.7	0708.1	3				DCIM
			LEAR				0712.6	0713.3	2				III
			WEIS				0712.6	0713.1	3				IIIG
			WEIS				0818.0	0818.3	3				IIIB
			WEIS				1423.3	1423.7	2				IIIB
	2031	2400	CULG				2109.0	2400.0					IIIS,W
			CULG				2109.5	2346.5	2				IIIN
			CULG				2125.0	2335.0	2				RSDP,N
			CULG				2135.5	2316.0	1				IIIN
			PALE				2148.8	2149.5	2				V
			CULG				2149.0	2150.0	3				IIIG,V
			CULG			2229.0	2238.0	2					IIIGG
			CULG				2229.5	2348.5	3				IIIN
			PALE				2229.6	2229.8	2				III
13	0000	0732	CULG				0000.0	0435.5					IIIS,W
			CULG				0003.5	0004.0	3				IIIB,U
			PALE				0003.6	0004.1	2				III
			LEAR				0003.8	0004.1	1				III
			CULG				0011.5	0402.0	2				RSDP,N
			CULG				0011.5	0633.0	1				IIIN
			CULG			0027.5	0028.5	2			0028.0	0028.5	1
			LEAR				0027.5	0028.5	3				IIIG
			CULG			0119.5	0633.0	2					CONT
			LEAR				0127.6	0128.3	1				III
			PALE				0127.8	0128.1	2				III
			CULG			0314.0	0318.0	3					IIIG
	0448	1839	WEIS				0528.8	0528.9	1				IIIB
			WEIS				0620.8	0620.2	1				DCIM
			WEIS				0626.7	0628.7	1				DCIM
			WEIS				0632.9	0633.1	2				DCIM
	0358	1810	BLEN			1220.8	1226.0	3					DCIM
			WEIS				1220.8	1221.9	3				DCIM
			WEIS				1221.4	1221.7	1				IIIG
			WEIS				1224.3	1226.6	1				DCIM
			WEIS				1319.1	1319.4	1				IIIG
			SGMR				1319.3	1319.6	1				III
			WEIS				1444.5	1449.7	1				IIIB
			SGMR				1539.8	1540.3	1				V
			WEIS				1540.0	1540.3	1				IIIB
			WEIS				1542.7	1542.8	1				IIIB
			SGMR				1602.3	1604.3	1				V
			WEIS				1602.3	1610.7	1				V
			SGMR				1710.8	1711.1	1				V
			WEIS				1710.9	1711.12	2				IIIB
			PALE				1934.3	1936.3	2				V
			SGMR				1934.8	1937.3	1				V

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1983

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
13			PALE				1937.0	1937.5	1				III
			PALE				2029.3	2030.3	2				III
			SGMR				2029.5	2030.3	1				V
	2032	2400	CULG				2126.0	2254.5					IIIS,W
			CULG	2141.5	2321.5	1							IN
			CULG				2147.5		1				IIIB
		CULG				2210.0		1				IIIB	
14	0000	0732	CULG				0032.0		1				IIIB
			CULG				0107.5	0127.5					IIIS,W
			CULG				0109.5	0110.0	1				IIIB
			LEAR				0109.6	0109.8	1				III
			CULG	0603.5	0604.0	1							IIIG
	0406	1058	WEIS				0623.3	0623.7	2				DCIM
			CULG	0623.5	0624.0	1	0623.5	0624.0	3				IIIG
	1108	1214	WEIS										
			SGMR				1620.0	0000.0	1				CONT
			SGMR				1620.0	1745.0	1				V
	1354	1838	WEIS				1629.0	1703.0	3				IIIS,RS
	0359	1810	BLEN	1646.2	1659.7								DCIM
			WEIS				1659.6	1700.5	1				DCIM,RS
	2032	2400	CULG										
		CULG				2128.5	2157.0	1				IIIG,N	
		CULG	2252.0		2	2252.0		3				IIIB	
		CULG				2339.0		1				IIIB	
15	0000	0732	CULG				0229.0	0232.5	1				IIIG
			LEAR				0229.0	0232.0	1				V
			LEAR				0308.6	0310.8	2				III
			PALE				0308.8	0310.1	3				V
			CULG	0309.0	0309.5	1	0308.5	0311.0	3	0309.0	0310.5	3	IIIG,V
			CULG	0309.0	0313.0	3	0310.0	0341.5	3				II
			LEAR				0310.8	0330.0	1				II
			PALE				0311.0	0333.5	2				II
			CULG	0314.5	0315.0	1							IS
			LEAR				0330.0	0347.8	2				GG
			PALE				0333.5	0340.1	3				V
			CULG	0344.5	0346.5	2	0342.0	0348.0	2				IIIGG
	0359	1810	BLEN										
			LEAR				0435.8	0438.1	1				III
			CULG				0437.0	0617.0	1				IIIN
	0523	1746	WEIS				0616.3	0617.3	1				IIIG
			LEAR				0616.5	0617.3	1				III
			WEIS				0817.3	0822.3	3				IIIGG
			LEAR				0817.5	0822.0	1				III
			WEIS				1027.7	1028.4	1				IIIG
			WEIS				1031.7	1032.0	1				IIIG
			WEIS				1208.6	1209.9	3				IIIG
			SGMR				1208.8	1210.0	1				V
			PALE				1911.3	1914.0	2				III
2032	2400	CULG	2230.0	2310.0	1							IIIGG	
		CULG	2234.5	2235.0	2	2234.5	2235.0	1				IIIG	
		CULG				2350.0	2351.0	2				IIIG,U	
		LEAR				2350.3	2350.8	1				III	
16	0000	0732	CULG	0004.0	0700.0	1							IN
			CULG	0019.5	0020.0	1							IIIG
			CULG	0026.0		1							IIIB
			CULG				0106.0		1				IIIB
			CULG	0156.0	0156.5	2	0156.0	0156.5	2				IIIG
			CULG				0227.5	0228.5	2				IIIG
			LEAR				0227.6	0228.5	1				III
			PALE				0227.6	0228.3	1				III
			CULG	0308.5	0311.0	2	0308.5	0311.0	3				IIIG,U
			LEAR				0308.5	0310.3	2				III
			PALE				0309.1	0309.6	2				III
			LEAR				0621.3	0621.8	1				III
			CULG				0621.5		1				IIIG
	0509	1822	WEIS				0621.5	0621.8	1				IIIB
		CULG				0634.5	0635.0	1				IIIG	
		WEIS				0634.7	0635.0	1				IIIG	

S O L A R R A D I O E M I S S I O N
S P E C T R A L O B S E R V A T I O N S

101
Jun 83

J U N E 1 9 8 3

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
16			LEAR				0634.8	0640.1	1				III
			CULG	0651.0		1	0651.0						IIIB
			LEAR				0652.5	0653.0	1				III
			CULG				0658.0	0702.5					CONT,W
	0359	1008	BLEN	0701.4	0802.0	3	0701.4	0720.0	3				DCIM
			CULG	0701.5	0702.0	1							CONT
			LEAR				0703.1	0708.0	1				V
			LEAR				0721.0	0733.0	1				II
			LEAR				0803.1	0808.0	1				V
			WEIS				1103.7	1106.2	3				IIIGG
			SGMR				1104.0	1107.1	1				V
			WEIS				1210.6	1210.7	1				IIIG
			WEIS				1306.4	1307.3	1				IIIG
			WEIS				1446.8	1449.8	3				IIIGG
			SGMR				1534.6	1539.1	2				V
			WEIS				1534.8	1540.3	3				IIIGG/V
			WEIS				1536.7	1539.3	2				DCIM,RS
			WEIS				1542.6	1542.8	1				IIIG
			WEIS				1545.8	1547.1	1				IIIG
			WEIS				1551.4	1551.3	1				IIIG,DCIM
			SGMR				1651.3	1651.6	1				III
			WEIS				1651.4	1651.5	2				IIIB
	2032	2400	CULG	2110.0	2243.0	1							IN
		PALE				2114.5	2116.1	1				III	
		SGMR				2114.8	2116.1	1				V	
		CULG				2115.0	2115.5	2				IIIG	
		CULG				2115.5	2121.5	1				IIIS	
17	0000	0733	CULG	0017.0	0552.0	1							IN
			CULG	0056.0		1							DCIM
			LEAR				0056.8	0100.8	2				V
			PALE				0056.8	0100.3	3				V
			CULG	0057.0	0059.5								CONT,W
			CULG	0057.0	0100.0	1	0057.0	0100.0	3	0057.0	0100.0	3	IIIGG,V
			CULG				0111.0	0500.0	1				IIIN
			CULG				0119.0	0454.5	2				IIIN
			CULG				0340.0	0510.0	1				IS
			LEAR				0421.5	0422.3	1				V
			CULG				0435.5	0437.5	2				IIIGG
	0407	1050	WEIS				0435.7	0437.3	2				IIIGG
			LEAR				0435.8	0438.8	1				V
			WEIS				0454.4	0454.7	1				IIIG
			LEAR				0459.8	0500.3	1				III
			WEIS				0555.2	0555.6	2				IIIB
			CULG				0555.5		3				IIIB
			WEIS				1023.3	1023.7	2				IIIG
	0905	1810	BLEN				1029.5	1029.8	3				IIIG
			WEIS				1029.5	1029.8	2				IIIB,U
			BLEN				1055.8	1056.0	2				IIIG
			BLEN				1110.5	1110.9	2				IIIG
			BLEN				1135.0	1146.3	2				IIIGG
			BLEN				1208.5	1213.5	2				IIIGG
			BLEN	1229.5	1236.3	2	1229.5	1236.3	3				IIIGG
			BLEN	1340.2	1340.6	3	1340.2	1340.6	3				IIIG
	1434	1840	WEIS				1707.2	1707.3	3				IIIB
			WEIS				1725.2	1725.8	2				IIIB,U
			BLEN				1725.5	1726.0	2				IIIG
		SGMR				1725.6	1725.8	1				III	
		SGMR				1809.8	1810.3	1				V	
		WEIS				1809.9	1810.7	3				IIIGG	
		PALE				2108.6	2108.8	1				III	
2038	2400	CULG				2132.5	2144.0					IIIS,W	
18	0000	0733	CULG				0215.0	0215.5	1	0215.0	0215.5	1	IIIB
			LEAR				0215.1	0216.0	1				III
	0400	1810	BLEN				0904.8	0906.4	2				IIIG
	1142	1841	WEIS				1302.7	1303.4	1				IIIG
			WEIS				1604.9	1605.2	2				IIIG
	2033	2400	CULG	2232.5	2233.0								IIIG
19	0000	0715	CULG	0255.5	0257.0		0303.0	0323.0					POSS II,W

102
Jun 83

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1983

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
19			LEAR				0303.1	0322.8	1				GG
			CULG				0322.5		2				IIIB
	0400	1810	BLEN				0533.5	0533.6	1				IIIB
	0405	0810	WEIS				0548.9	0549.7	2				IIIG
			CULG				0549.5	0550.0	2				IIIB
			LEAR				0549.5	0549.8	1				III
			BLEN				0555.5	0605.5	3				IIIGG
			CULG	0555.5	0556.0	3	0555.5	0557.5	3				IIIG
			LEAR				0555.5	0558.3	1				III
			WEIS				0555.5	0557.3	3				IIIGG
			CULG	0605.0	0605.5	1							IIIG
			WEIS				0605.3	0605.6	2				DCIM
			WEIS				0630.9	0633.1	2				IIIGG
			CULG				0631.5	0633.0	2				IIIGG
			LEAR				0631.5	0634.6	1				V
			LEAR				0649.3	0649.8	1				III
			WEIS				0659.5	0649.8	1				IIIB
			LEAR				0700.3	0000.0	2				GG
			WEIS				0703.7	0704.4	1				IIIG
			BLEN	0706.3	0722.9	3	0706.3	0722.9	3				IIIGG
			WEIS				0706.3	0709.3	3				IIIG
			CULG				0707.5	0708.0	2				IIIG
			WEIS				0712.3	0712.8	3				IIIG
			BLEN				0742.8	0803.0	1				IIIGG
	0813	1841	LEAR				0748.5	0754.0	1				CONT
			WEIS				0841.6	0843.9	1				IIIG
			WEIS				0949.7	0951.2	3				IIIG
			WEIS				0954.5	0956.2	3				IIIG,U
			BLEN	1107.9	1119.3	2	1107.9	1119.3	2				IIIGG
			WEIS	1107.9	1108.2	2							DCIM,RS
			WEIS				1108.3	1111.7	3				IIIGG
			SGMR				1109.0	1109.3	1				V
			WEIS				1119.2	1119.4	1				IIIG
			WEIS				1128.7	1129.9	3				IIIGG
			SGMR				1140.8	1142.0	2				V
			BLEN				1140.9	1145.0	2				IIIGG
			WEIS				1140.9	1142.2	3				IIIG
			WEIS				1144.3	1144.9	3				IIIG
			SGMR				1144.6	1155.5	1				GG
			WEIS				1148.3	1148.7	2				IIIG
			BLEN				1154.9	1155.5	2				IIIG
			WEIS				1154.9	1156.3	3				IIIG
			WEIS				1218.1	1218.3	1				IIIB
			WEIS				1221.5	1221.7	1				IIIG
			WEIS				1239.4	1240.1	3				IIIG
			SGMR				1239.6	1240.0	1				V
			WEIS				1243.2	1243.5	1				IIIB
			WEIS				1252.3	1253.3	2				IIIG
			BLEN	1255.0	1259.0	2	1255.0	1302.1	3				IIIGG
			WEIS				1258.2	1258.9	1				IIIG
			WEIS				1320.0	1322.4	2				IIIG
			BLEN	1320.8	1321.8	2	1320.8	1321.8	2				IIIG
			SGMR				1320.8	1326.1	1				V
			WEIS				1325.9	1326.3	3				IIIB
			BLEN				1337.3	1337.3	2				IIIB
			WEIS				1358.1	1358.2	1				IIIB
			WEIS				1359.7	1400.0	3				IIIG
			BLEN				1359.8	1407.3	2				IIIGG
			SGMR				1359.8	1401.1	2				V
			WEIS				1401.8	1402.2	2				IIIG
			SGMR				1402.8	1415.0	1				GG
			WEIS				1405.4	1413.7	2				IIIGG
			BLEN	1501.6	1520.3	3	1501.6	1520.3	3				IIIGG
			SGMR				1501.6	1506.6	2				V
			WEIS				1501.7	1502.7	2				IIIG
			WEIS				1504.1	1507.6	3				IIIGG,U
			WEIS				1510.9	1514.2	3				IIIG
			SGMR				1511.6	1514.1	1				III
			SGMR				1604.1	1617.0	1				GG
			WEIS				1604.1	1604.5	2				IIIG
			BLEN	1609.4	1615.3	3	1609.4	1615.0	3				IIIGG

S O L A R R A D I O E M I S S I O N
S P E C T R A L O B S E R V A T I O N S

103
Jun 83

J U N E 1 9 8 3

Observation Day	Start End		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	(UT)	(UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
19			WEIS				1609.4	1610.1	3				111G
			WEIS				1613.9	1615.1	3				111G
			WEIS				1616.4	1618.8	2				111G
			PALE				2039.8	2041.1	2				111
			SGMR				2041.1	2042.0	1				V
			PALE				2052.8	2053.6	2				111
			SGMR				2053.0	2053.3	1				111
	2033	2400	CULG	2105.5	2106.0	1	2105.5	2106.0	2				111G
			PALE				2105.8	2106.3	2				111
			SGMR				2105.8	2106.1	1				111
			PALE				2120.1	2120.8	2				111
			CULG				2125.5	2129.0	1				111S
			CULG				2129.0	2142.0					111S,W
			CULG				2219.5	2220.0	3				111B
			PALE				2219.6	2220.1	3				111
			SGMR				2219.6	2219.8	1				111
			CULG				2231.0	2232.5	2				111G,V
			PALE				2231.0	2232.5	1				111
			SGMR				2231.8	2238.0	1				V
			PALE				2235.8	2238.1	2				111
			CULG	2236.0		2	2235.5	2238.0	3	2237.0	2237.5	2	111G
			CULG				2328.5	2329.0	2				111B
20			LEAR				0024.8	0026.0	1				V
	0000	0733	PALE				0024.8	0026.1	2				111
			CULG				0025.0	0026.0	1				111G
			CULG	0044.0	0050.0	1							111S
			CULG				0046.5	0049.5	1				111N
			PALE				0047.6	0056.5	2				111
			LEAR				0047.8	0048.0	1				111
			CULG				0048.0	0057.0	2				11
			LEAR				0048.0	0057.1	1				11
	0356	1810	CULG	0356.0		1	0356.0	0356.5	3				111G
			BLN				0356.3	0356.5	2				111G
			LEAR				0356.3	0357.0	1				111
			BLN				0507.5	0510.0	2				111G
			CULG				0507.5	0508.5	2				111G
	0405	1322	LEAR				0507.6	0510.0	1				V
			WEIS				0507.7	0509.6	1				111G
			BLN				0938.2	0838.4	3				111G
			WEIS				0938.3	0938.6	2				111B,U
			BLN				1306.0	1307.5	2				111GG
	1330	1841	WEIS										111G
			BLN				1348.4	1349.0	2				111G
			BLN				1520.6	1521.3	2				111G
	2033	2400	BLN	1733.1	1735.6	2	1733.1	1735.6	2				111GG
			CULG	2117.0	2400.0	1							IS
			CULG				2214.5	2216.5	1				111G
21	0000	0733	CULG	0000.0	0054.0	1							IS
			CULG				0031.0	0032.5	3				111G,U
			LEAR				0031.3	0033.5	1				111
			CULG	0054.0	0706.0	1							11N
			LEAR				0202.6	0203.8	1				111
			CULG				0318.0	0324.5	2				111G
			LEAR				0318.6	0319.3	1				111
	0400	1801	BLN	0414.1	0416.6	2	0414.1	0416.6	2				111G,U
	0405	1838	WEIS				0517.9	0521.8	3				111G
			BLN				0519.0	0521.6	2				111GG
			LEAR				0519.1	0521.8	2				111
			CULG	0520.5	0521.5	1	0519.0	0522.0	3				111G,V,U
			LEAR				0709.1	0711.0	2				111
			WEIS				0709.1	0710.8	3				111G
			CULG				0709.5		1				111B
			LEAR				0802.1	0801.3	1				111
			WEIS				1104.5	1104.7	1				111B
			WEIS				1135.7	1136.5	2				111G,U
			BLN	1211.8	1239.1	1	1211.8	1239.1	1				111G
			WEIS				1237.7	1238.6	2				111G
			SGMR				1310.8	1311.5	1				111
			BLN				1310.9	1311.5	1				111G

104
Jun 83

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1983

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
21			WEIS				1310.9	1311.6	1				IIIG	
			WEIS				1351.2	1351.3	2				IIIG	
			BLEN	1600.1	1602.7	3	1600.1	1602.7	3				IIIGG	
			SGMR				1600.3	1603.1	2				V	
			WEIS				1600.3	1603.1	3				IIIGG	
			WEIS				1616.8	1617.0	1				U	
		2033	2400	CULG										
22	0000	0733	CULG	0033.5	0034.0	2	0033.5	0034.0	2				IIIG	
			LEAR				0033.8	0034.0	1				III	
			LEAR				0058.3	0059.8	2				III	
			CULG	0058.5	0059.0	2	0058.5	0059.0	3	0058.5	0059.0	3	IIIG,U	
			PALE				0058.5	0059.1	3				III	
			LEAR				0132.3	0136.6	1				III	
			CULG				0234.5	0601.0	1				IIIN	
			LEAR				0234.5	0234.8	1				III	
			LEAR				0256.1	0259.6	1				III	
			LEAR				0309.3	0311.6	1				III	
			CULG	0504.0	0529.0	1							IIIGG,N	
			LEAR				0504.3	0504.8	1				III	
		0509	0935	WEIS			0515.0	0517.9	3				IIIG	
		0400	0752	BLEN	0515.9	0516.7	3	0504.0	0533.0	3				IIIGG
				CULG	0516.0	0517.0	3	0516.0	0518.0	3				IIIG,V
				LEAR				0516.0	0518.1	2				III
				WEIS				0527.7	0532.6	3				IIIGG
				LEAR				0528.5	0532.3	1				III
				CULG	0531.0	0533.0	3	0531.0	0532.5	3				IIIG
				BLEN				0600.9	0601.8	1				IIIG
				BLEN				0634.3	0717.0	3				IIIGG
				CULG				0645.0		2				IIIB
				WEIS				0715.8	0716.8	2				IIIG,DCIM
				WEIS				0809.0	0809.5	2				IIIG
				LEAR				0809.1	0809.8	1				III
		0908	1842	WEIS				1011.7	1012.4	1				IIIG
				WEIS				1105.9	1106.0	1				IIIB
				WEIS				1107.3	1107.5	1				U
				WEIS				1318.3	1318.6	2				IIIB
			SGMR				1319.8	1320.1	1				V	
			WEIS				1320.9	1321.7	2				IIIG	
			WEIS				1327.4	1327.7	1				IIIB	
	2034	2400	CULG	2130.0	2323.5	1							IN	
			CULG	2145.0	2149.0	1	2145.0	2149.5	1				IIIS	
			CULG				2159.5	2208.5	2				II	
			CULG	2309.0	2309.5	1	2308.5	2309.5	1				IIIG	
			LEAR				2323.5	2323.8	1				III	
23	0000	0734	CULG	0046.0	0138.0								IS,W	
			CULG	0410.0	0521.5	1	0410.0	0605.0	1				IIIN	
		0408	1034	WEIS				0709.7	0709.9	1				IIIB
				WEIS				0923.3	0924.9	3				IIIG
		1039	1233	WEIS				1101.6	1102.5	1				IIIG
				WEIS				1105.3	1107.1	1				IIIG
				WEIS				1108.8	1111.3	2				IIIG
				SGMR				1109.6	1112.5	1				V
		1401	1842	WEIS				1416.7	1416.9	1				IIIB
				WEIS				1524.4	1525.9	1				IIIG
		1500	1813	BLEN				1524.7	1558.0	2				IIIGG
				WEIS				1549.3	1549.6	2				IIIG
				WEIS				1552.1	1552.3	1				IIIG
				WEIS				1634.5	1634.8	2				IIIG
				BLEN				1649.3	1705.8	2				IIIGG
				WEIS				1649.5	1650.2	2				DCIM
				WEIS				1655.5	1655.7	2				DCIM
				SGMR				1836.0	1836.6	1				V
				PALE				1836.3	1836.6	1				III
				WEIS				1836.3	1836.6	1				IIIG
		2034	2400	CULG	2103.5	2400.0	1							IS
				CULG	2131.5	2133.0	2	2131.5	2133.0	2				IIIG,U
			CULG	2218.5	2330.0	2	2218.5	2330.0	2				IIIN	
			CULG	2250.5	2251.0	3	2250.5	2251.0	3				IIIG	
24	0000	0716	CULG	0000.0	0707.5	1							IS	

S O L A R R A D I O E M I S S I O N
S P E C T R A L O B S E R V A T I O N S

105
Jun 83

J U N E 1 9 8 3

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
24			CULG				0124.5	0125.5	3				IIIG,U
			LEAR				0124.6	0125.6	1				III
			CULG				0203.0	0627.0	1				IIIN
			CULG	0257.5	0259.5	3	0257.5	0300.0	3				IIIG,U
			LEAR				0259.0	0300.0	1				III
			PALE				0259.1	0300.1	2				III
			LEAR				0323.3	0326.1	1				III
			CULG				0324.5	0325.0	3				IIIB
			LEAR				0401.6	0401.8	1				III
	0400	1815	CULG	0431.5	0432.5	2	0431.5	0432.5	2				IIIG,U
			BLEN				0431.7	0434.0	3				IIIGG
			LEAR				0431.8	0432.3	1				V
			CULG				0542.0	0704.0	1				IS
			CULG				0658.0		2				IIIB,U
	0407	1615	WEIS				0658.1	0658.2	2				IIIB
			BLEN				0701.2	0712.7	3				IIIG
			WEIS				0712.4	0712.6	2				DCIM
	0725	0734	CULG				0833.2	0833.3	1				IIIB
			WEIS				1206.1	1207.0	3				IIIG
			BLEN				1247.9	1250.5	3				DCIM
			WEIS				1252.3	1254.3	3				DCIM
			WEIS				1432.7	1433.8	2				IIIG
			BLEN				1701.1	1702.0	2				V
	1730	1843	WEIS										V
	2085	2400	CULG	2105.0	2341.0	1	2206.0	2320.0	1				IS
25	0000	0734	CULG				0031.5	0623.5	1				IIIN
			CULG	0053.0		1	0053.0	0054.5	3	0053.5	0054.5	3	IIIG,V
			LEAR				0053.3	0054.5	2				V
			PALE				0053.3	0054.1	3				V
			LEAR				0147.3	0153.3	1				V
			CULG				0240.5	0435.0					IS,W
	0407	0524	WEIS				0458.7	0458.9	1				IIIB
			CULG	0504.0	0700.0		0558.5	0657.0	1				IS
			LEAR				0504.3	0504.6	1				III
			WEIS				0519.7	0520.0	1				IIIG
			LEAR				0558.6	0558.8	1				III
			LEAR				0617.1	0617.3	1				III
			LEAR				0623.6	0624.1	1				III
			LEAR				0655.5	0657.3	1				III
	0630	1843	WEIS				0655.6	0657.1	1				IIIG
	0400	1815	BLEN				0801.4	0801.9	3				IIIG
			LEAR				0801.5	0802.0	1				III
			WEIS				0801.7	0801.9	3				IIIB
			BLEN				0825.3	0830.0	2				IIIG
			WEIS				0829.7	0830.0	1				IIIG
			WEIS				0950.2	0950.4	1				IIIB
			BLEN	0958.0	1002.0	2	0958.0	1010.0	2				IIIGG
			WEIS				1008.4	1009.4	1				IIIG
			WEIS				1201.4	1201.7	2				IIIG
			BLEN	1324.1	1325.0	2	1324.1	1325.0	2				IIIG
			WEIS				1336.4	1338.2	3				IIIG,U
			WEIS				1402.5	1403.2	2				IIIG,U
			WEIS				1442.6	1442.7	1				IIIB
			WEIS				1501.2	1502.3	2				IIIG
			SGMR				1501.8	1502.3	1				V
			SGMR				1523.6	1524.0	1				V
			WEIS				1523.6	1523.9	2				IIIG
			WEIS				1528.7	1529.2	1				IIIG
			SGMR				1548.3	1548.6	1				V
			WEIS				1548.6	1548.8	2				IIIG
			WEIS				1733.2	1733.4	2				IIIG
			SGMR				1837.1	1840.1	1				V
			WEIS				1837.1	1837.4	1				IIIG,U
			PALE				1838.1	1841.1	1				III
			PALE				1853.0	1854.5	2				III
			PALE				2028.0	2028.3	2				V
			SGMR				2028.0	2028.3	1				V
			SGMR				2103.0	2103.3	1				V
	2085	2400	CULG	2119.5	2400.0	1							IN

106
Jun 83

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1983

Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
Day	Start (UT)	End (UT)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
25						2221.0	2326.5	1				IIIN	
						2222.5	2224.5	2				IIIG,N	
						2321.0		3				IIIG	
						2346.3	2346.6	1				III	
						2346.5	2348.0	3		2346.5	2348.0	2	IIIG,V
						2346.5	2346.6	1					V
26	0000	0734				0000.0	0206.5	1				IS	
						0008.5	0433.0	1				IIIN	
						0214.6	0220.5	1				III	
						0331.5	0335.5	1				V	
						0334.5	0335.0	3				IIIG,U	
	0400	1815	BLEN	0433.5	0438.3	1							DCIM
			CULG	0433.5	0435.5	2							CONT
			CULG							0436.5	0445.0	1	SWF
			CULG	0438.0	0438.5	1							DCIM
			CULG				0503.5	0504.5	3				IIIG,U
	0433	0837	WEIS				0503.6	0504.4	2				IIIG,U
			LEAR				0504.0	0504.6	1				III
			LEAR				0609.8	0610.1	1				III
			BLEN				0610.0	0615.4	2				IIIGG
			CULG	0620.0	0651.0	1							IN
	1157	1843	WEIS	1408.3	1409.8	2							DCIM
			BLEN	1408.5	1416.5	2	1408.5	1416.5	2				II DC
			WEIS				1409.6	1410.6	2				IIIG
			WEIS				1410.2	1424.5	3				II HARMONIC
			SGMR				1412.3	1420.3	1				II
2035	2400	CULG	2104.0	2141.5		2117.0	2224.0					IS,W	
		CULG				2253.0	2253.5	1				IIIG	
		CULG	2258.0	2259.0	2	2258.0	2259.0	3				IIIG	
		PALE				2258.3	2258.6	2				III	
		CULG				2312.0	2312.5	3				IIIG	
27	0000	0735	CULG			0013.0		2				IIIB,U	
			CULG			0015.0	0231.0	1				IIIN	
			CULG			0023.0	0024.0	3				IIIG	
			LEAR			0023.1	0023.6	1				III	
	0400	1815	BLEN			0544.2	0547.0	2				IIIGG	
	0408	1735	WEIS			0544.4	0544.5	2				IIIB	
			CULG			0544.5		2				IIIB	
			CULG			0546.0	0546.5	1				IIIG	
			WEIS			0546.3	0546.4	1				IIIB	
			CULG			0649.0	0650.0	3				IIIG,U	
			LEAR			0649.3	0650.3	2				III	
			WEIS			0649.4	0650.2	3				IIIG	
			WEIS			0758.0	0759.2	2				IIIG	
			LEAR			0758.1	0759.5	1				III	
			WEIS			0939.3	0939.7	2				IIIB,U	
			WEIS			1030.6	1033.4	3				IIIG,U	
			WEIS			1107.5	1107.8	1				IIIB,U	
			SGMR			1207.1	1207.5	1				III	
			WEIS			1207.1	1207.8	3				IIIG	
			SGMR			1257.3	1257.5	1				III	
			WEIS			1257.3	1257.6	2				IIIG	
			WEIS			1348.2	1349.1	1				IIIG	
			WEIS			1519.8	1520.1	1				IIIB	
			WEIS			1537.3	1537.6	1				IIIG	
			WEIS			1552.9	1553.9	3				DCIM	
			WEIS			1553.1	1554.7	2				IIIG,U	
			WEIS			1602.3	1605.9	3				IIIG,U	
			SGMR			1602.8	1605.1	1				V	
			WEIS	1605.7	1605.9	3							DCIM
			WEIS			1623.1	1623.2	1					IIIB
	1744	1826	WEIS										IS
	2035	2400	CULG	2103.5	2400.0	1							IIIG
			CULG				2127.0		2				IIIG
		CULG				2346.0	2347.0					IIIG	
28	0000	0735	CULG	0000.0	0028.0	1						IS	
			CULG	0028.0	0235.5	1						IN	
			CULG				0218.0	1				IIIB	

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

107
Jun 83

JUNE 1983

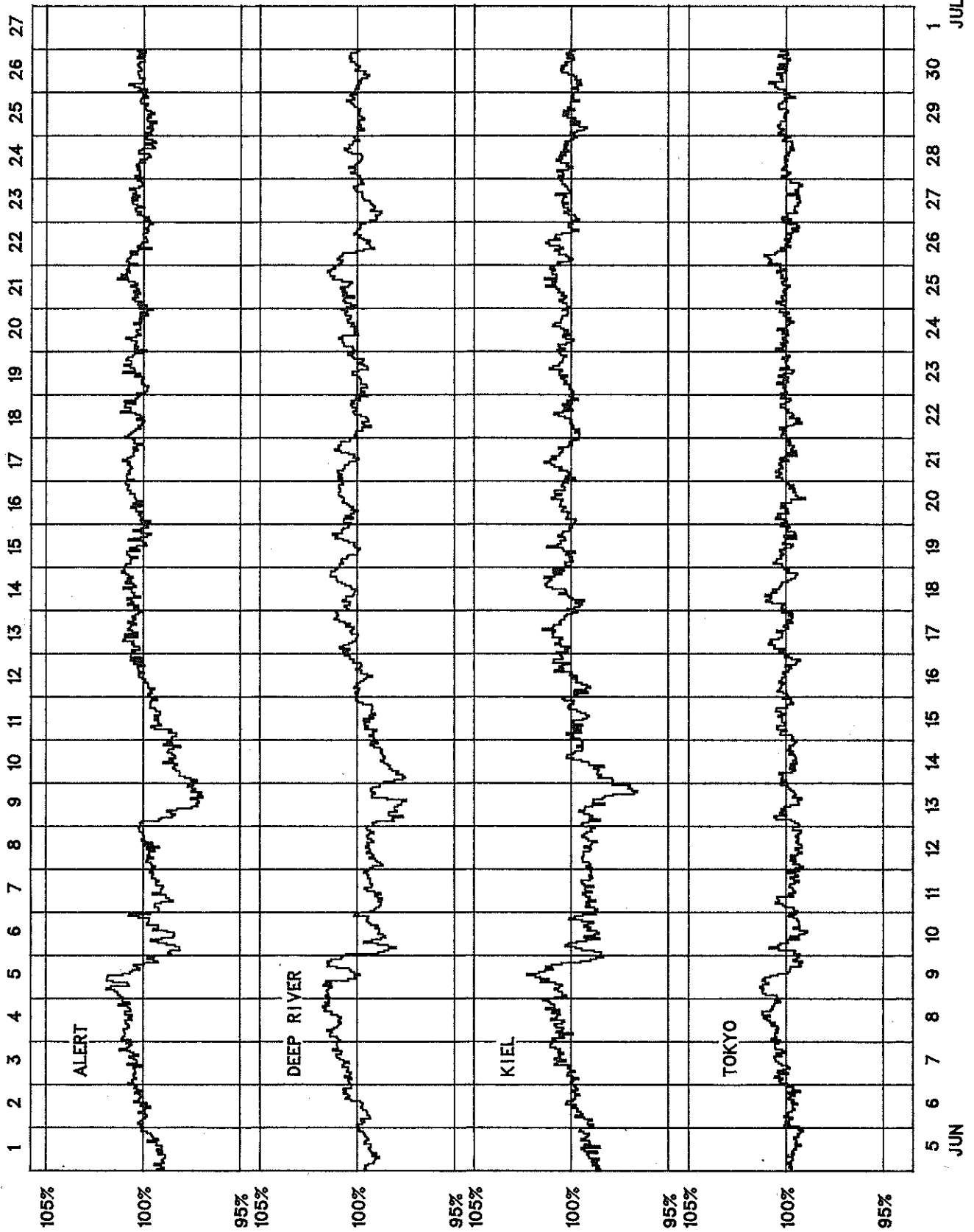
Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
28			LEAR				0218.1	0218.3	1				III
			CULG	0250.0	0253.5	1	0251.0	0251.5	2				IIIG
			LEAR				0252.6	0252.8	1				III
	0400	1426	BLEN										
	0408	1843	WEIS				0523.8	0525.0	2				IIIG
			CULG				0524.0	0526.0	2				IIIG,V
			LEAR				0524.3	0526.3	1				V
			LEAR				0720.3	0722.6	2				V
			WEIS				0720.4	0722.6	3				IIIG
			WEIS				1328.7	1328.9	2				DCIM
			WEIS				1330.2	1330.7	2				IIIG
			SGMR				1330.5	1330.6	1				III
			WEIS				1510.4	1510.7	2				IIIG
	2035	2400	CULG				2125.5		2				IIIG
		CULG				2139.0		2				IIIG	
		CULG				2339.5	2340.5	3				IIIG,U	
29	0000	0652	CULG				0343.5	0643.0	1				IIIN
			CULG	0400.0	0401.0	1							IIIG
	0508	1019	WEIS										
	0706	0735	CULG										
	1210	1815	BLEN				1619.9	1620.3	3				IIIG
	1024	1843	WEIS				1619.9	1620.7	2				IIIG
			SGMR				1623.0	1623.5	1				V
	2035	2400	CULG	2234.0	2235.0	1							CONT
			CULG				2235.5	2322.0					IV
			CULG				2239.0	2258.5	3				W
30	0000	0735	CULG	0021.0	0021.5	1	0020.5	0021.5	1				IIIG
	0400	1815	BLEN										
	0409	1138	WEIS										
	1206	1545	WEIS										
	1554	1843	WEIS				1610.8	1611.0	2				IIIG
	2035	2400	CULG				2117.5	2400.0	1				IS

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

- | | |
|--|-------------------------------|
| B = Single burst | RS = Reverse slope burst |
| G = Small group (< 10) of bursts | DP = Drifting pairs |
| GG = Large group (> 10) of burst | DC = Drifting Chains |
| C = Underlying continuum (particularly with Type I) | H = Herringbone |
| S = Storm in the sense of intermittent but apparently connected activity | W = Weak |
| N = Intermittent activity in this period | P = Pulsations |
| U = U-shaped burst of Type III | CONT = Continuum |
| | UNCLF = Unclassified activity |
| | DCIM = Fast drift |

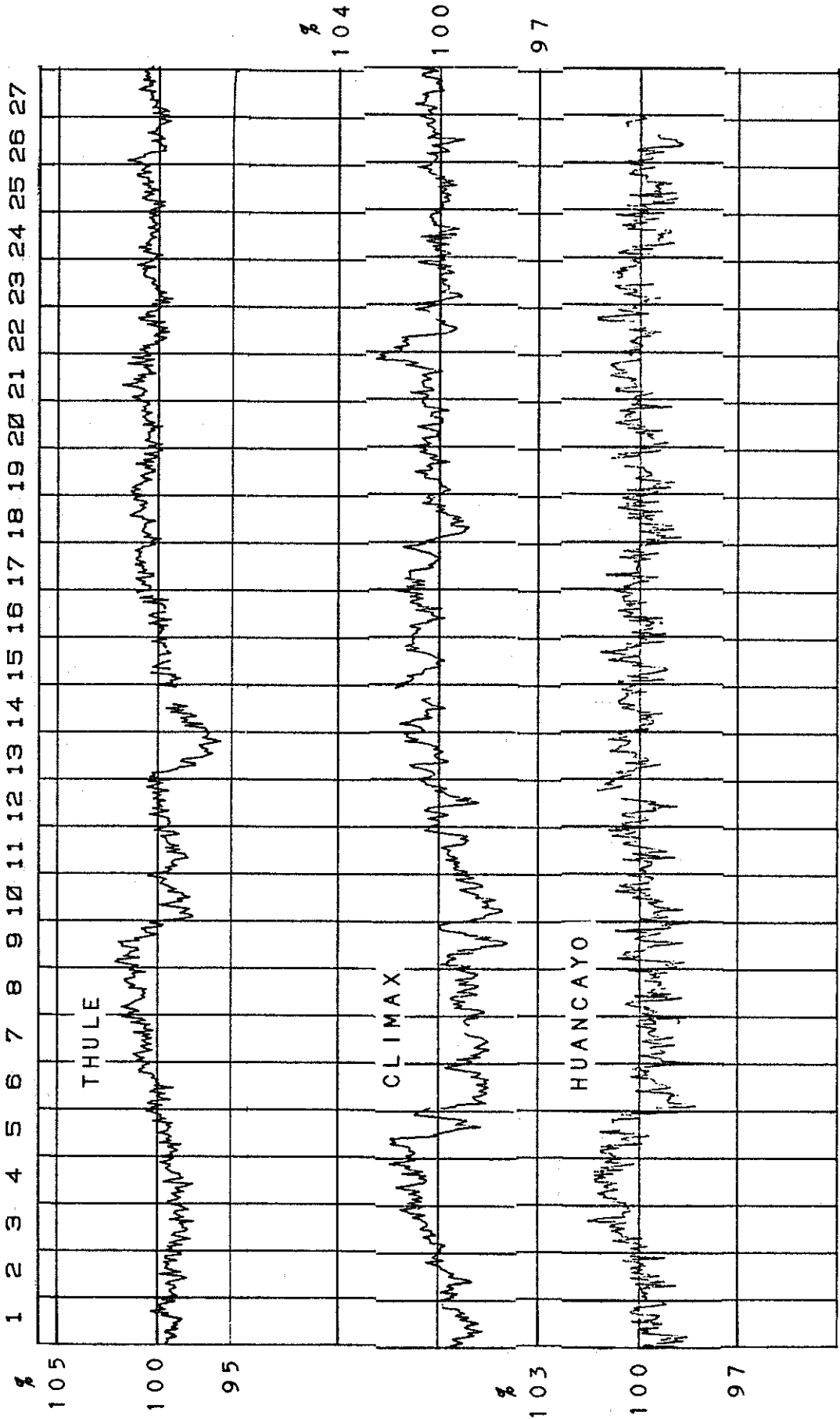
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2048 (June 1983-July 1983)



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2048 (June 1983—July 1983)



JUN 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 JUL 1983

COSMIC RAY INDICES
(Neutron Monitor)

JUNE 1983

Day	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	4041	6554.9	6232.7	5614.4	3644.0	3513.2	1718.9(36)
2	4034	6542.0	6223.1	5603.2	3635.1	3505.8	1724.4
3	4020	6512.7	6198.5	5588.9	3619.1	3497.7	1723.7
4	4031	6514.4	6212.5	5591.8	3617.1	3505.7	1724.8
5	4047	6555.5	6223.4	5614.7	3634.1	3510.5	1726.1
6	4072	6609.0	6258.3	5647.0	3655.3	3516.5	1732.0
7	4096	6638.7	6303.1	5691.1	3682.3	3536.2	1742.3
8	4111	6659.4	6336.7	5712.1	3699.3	3549.5	1749.8
9	4105	6656.2	6323.5	5707.3	3682.0	3538.7	1742.5
10	4032	6543.1	6203.2	5624.5	3626.4	3512.7	1723.8
11	4037	6549.5	6208.3	5616.6	3620.9	3518.3	1724.9
12	4060	6587.8	6214.2	5620.5	3630.7	3505.4	1728.1
13	3993	6473.7	6166.6	5580.5	3635.3	3518.2	1727.6
14	4011	6490.4	6164.8	5617.4	3615.8	3517.9	1729.8
15	4050	6546.3	6222.5	5656.5	3649.8	3528.9	1733.9
16	4068	6604.1	6255.6	5669.4	3664.3	3525.2	1738.4
17	4095	6636.4	6292.5	5700.9	3683.1	3531.8	1740.1
18	4094	6645.0	6301.0	5696.0	3689.8	3534.2	1736.1
19	4089	6624.5	6293.0	5685.7	3690.2	3527.8	1736.3
20	4085	6628.6	6296.8	5690.4	3691.6	3521.7	1736.6
21	4099	6643.0	6299.5	5693.8	3690.1	3526.8	1735.6
22	4074	6634.0	6253.1	5670.9	3660.0	3523.0	1730.3
23	4075	6625.0	6251.5	5691.1	3675.5	3526.7	1731.8
24	4079	6617.3	6285.8	5691.4	3678.5	3528.0	1734.0
25	4085	6638.6	6308.7	5708.5	3697.1	3530.8	1740.9
26	4072	6612.5	6262.8	5695.0	3686.2	3529.5	1738.3
27	4079	6619.6	6227.3	5682.1	3664.0	3511.0	1738.0
28	4072	6602.6	6266.9	5687.0	3669.3	3523.5	1730.7
29	4059	6589.1	6260.3	5663.5	3667.5	3530.5	1729.0
30	4069	6615.6	6258.6	5668.6	3672.9	3533.2	1729.2
Mean	4064	6593.3	6253.5	5659.4	3660.9	3522.6	1732.6

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

JUNE 1983

Day	Kp Three-Hourly Indices								Sum	Ap (2nT)	Cp	Km Three-Hourly Indices								Am	N	aa Provisional			
	1	2	3	4	5	6	7	8				1	2	3	4	5	6	7	8			S	M		
1	2	4+	3	2+	2	3	3-	2	21+	13	0.7	2-	4-	3	3-	2	2+	2	2-	22	24	20	26	18	
2	Q8A	1-	2-	2+	2+	3-	3-	2-	1+	15+	8	0.4	0+	1+	2	2+	2	1+	2-	13	17	13	12	19	
3	Q4	2	2-	2-	2+	1	2+	1	2-	14-	6	0.3	2-	2-	1+	2+	1+	2	1+	2-	12	17	6	12	11 CK
4	Q1	1+	1-	2	0+	0+	0+	0+	1	6+	3	0.1	1+	1	2-	1-	0+	0+	0+	1	6	10	2	7	5 CC
5	Q5	1-	1	1+	2+	2+	2	2-	2-	14-	6	0.3	1	1+	2	2+	2+	2+	1+	1	13	17	12	10	19 K
6		2	1+	3-	1+	3	4-	2	3-	19-	11	0.6	2-	1	3-	1+	2+	2+	2-	2+	15	24	10	13	22
7	Q6	2+	2+	2	2-	1+	2-	2	1-	14	6	0.3	2+	3-	2+	1+	1	1	2-	1-	12	14	6	11	9 C
8		0+	2-	2	3+	3	4-	3	3	20	12	0.7	0+	1+	2	3-	3	3	3-	3-	19	29	17	16	30
9	D4	2	2+	4	3	3	4+	5-	3+	27-	20	1.0	2+	3-	4-	3+	3-	3	4+	3+	34	38	20	21	38
10	D3	4	4-	3-	4	6+	6+	3	2	32	37	1.4	3+	4-	3	4	5-	4+	2+	2-	43	48	36	32	53
11		4-	3-	2+	2	2-	2-	3	2-	19-	10	0.6	4-	3	2+	2-	2-	1	3-	1+	19	23	10	19	15
12		3	3+	2+	3+	3	3+	3	4-	25	16	0.9	3+	3+	3-	3+	3	2+	3+	3+	30	38	16	26	30
13	D1	7	8-	6-	5-	5	4-	5	4-	42+	70	1.7	6+	7+	6-	5+	4+	3+	4+	3	118	102	98	145	55
14		4-	3	3	2	2+	2+	2	3-	21	12	0.7	4-	3	3	3	3-	2	2	3-	24	24	16	21	20
15		3+	3-	3	3+	3+	3+	4	2	25	17	0.9	3+	3	3	3	3-	3-	3+	2-	28	31	27	31	28
16	Q10A	2+	1+	1+	2	2+	3+	2-	2+	17-	8	0.5	2	1+	2-	2	2	3-	1-	2	13	19	11	14	16
17		2	2-	3	3-	3-	4+	4+	4-	24+	17	0.9	2	1+	3	2+	2+	3	3+	3	23	38	15	17	37
18	D2	3+	5	6-	4	4-	5+	4-	5-	35+	37	1.4	4-	5-	5	4-	3+	4+	3	4+	55	59	39	53	45
19	D5	3+	4-	4-	4-	4-	4-	3	3	28-	20	1.0	3+	4-	4	3+	3	3-	2+	3-	34	36	23	35	25
20		4-	3+	3-	3+	4	3+	3-	3-	26-	17	0.9	3	3+	3	3	3+	2+	2-	2+	27	36	26	33	30
21		3+	4	4	2+	3-	3+	4+	3	27	20	1.0	3	3+	3+	2+	2+	3-	4-	3	30	36	23	24	36
22		2-	2	2+	3-	4	5	5-	2+	25-	20	1.0	3-	3-	3-	3	4	4+	4	3	38	36	47	22	61
23		3	3-	5-	3+	3	3+	2	3	25	17	0.9	3+	3-	4	3+	3-	3-	2+	3	31	27	23	29	22
24	Q3	3-	2+	2	1-	1+	2-	1+	1-	12+	6	0.3	3	2+	2	1+	2-	1+	1+	1-	13	15	12	14	13 CK
25	Q2K	0+	0	0+	1	1	1	3	2	9-	5	0.2	0+	0+	0+	1	1	1-	2+	2	7	13	5	4	14 CC
26		1+	3-	2	2+	3+	4	2+	3	21	13	0.7	1+	3	2	2+	3-	3	2-	3-	21	29	11	15	25
27	Q9A	2-	1+	2+	2-	2-	2	2	3	16-	8	0.4	2-	2-	3	2	2-	2	2	2+	16	19	8	11	16
28		2+	1	1-	3-	4-	3+	3	3-	19+	12	0.7	2+	1-	1-	3-	3-	2+	2+	2+	17	32	11	14	30
29		2	3-	4-	4-	3+	2+	2-	2	21+	13	0.7	2+	3-	4-	3	3-	2	1+	1+	23	23	16	23	17
30	Q7A	2-	1+	2	2+	2	2	2-	2	15	7	0.3	1+	1	2	2+	2	2-	1+	2-	12	19	7	14	12 C
Mean										16	0.7										26	30	20	25	

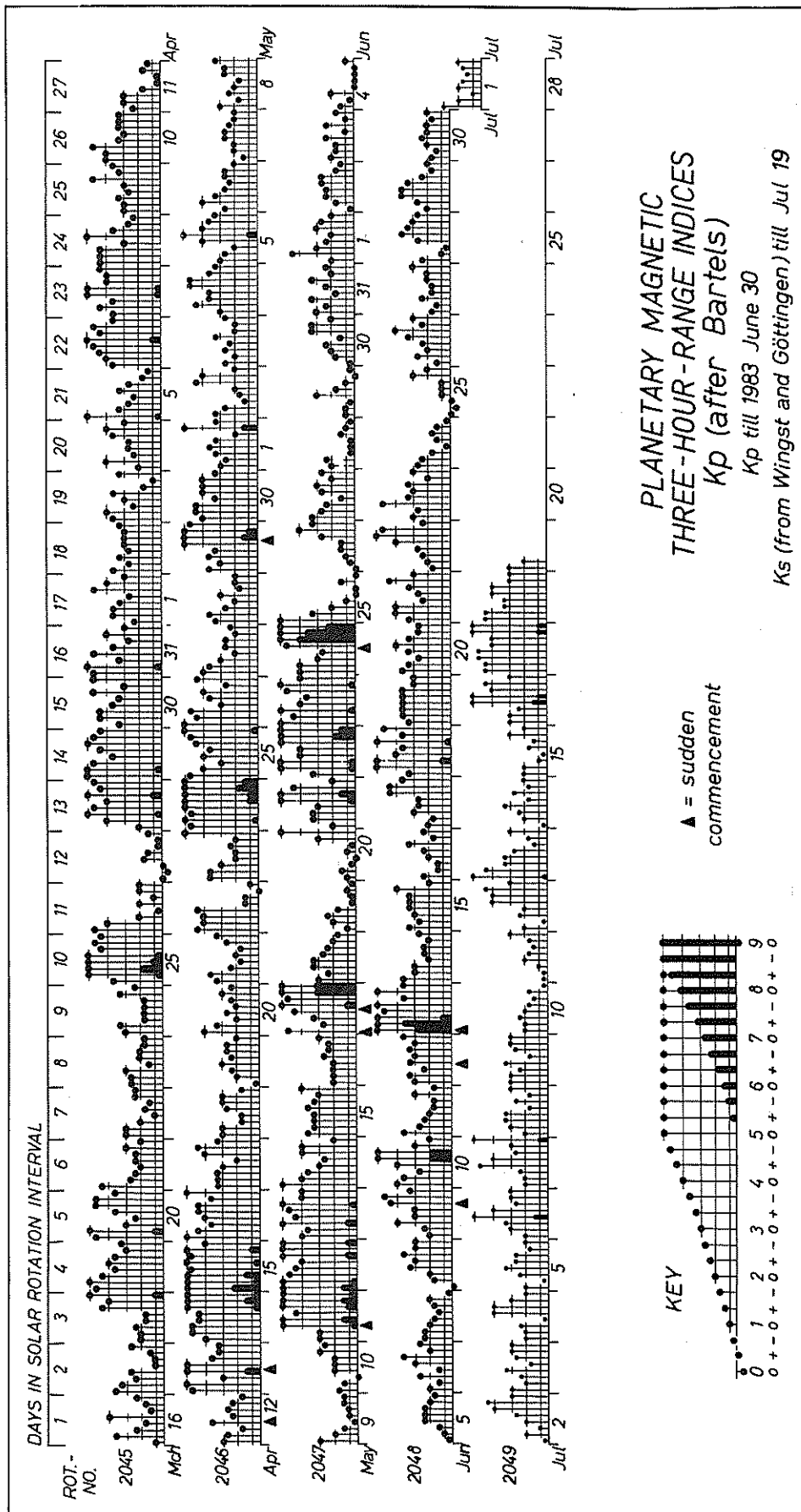
Day	Kn Three-Hourly Indices								An	Ks Three-Hourly Indices								As (1nT)		
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
1	2	4-	3	3-	2+	3-	2+	2	24	2-	4-	3-	3-	2-	2+	2-	1+	19		
2		1-	2-	2+	3-	3-	2+	2-	17	0	1+	2-	2	2	2-	1-	1	9		
3		2+	2	2	3	2-	3-	1+	2	17	1+	1	1-	2-	1-	1	1+	1+	8	
4		2-	1	2	1-	1	0+	1	1-	7	1-	1-	1+	0+	0	0	0	1	3	
5		2-	1+	2+	3-	3-	2+	2-	16	1-	1	2-	2	2-	2+	1+	0+	10		
6		2+	1+	3	2-	3	3-	2	2+	19	1	1-	2	1-	1+	2	1+	2+	10	
7		3-	3-	3-	2-	1+	2-	2	1+	15	2-	2+	2+	1+	0+	0	2-	0+	9	
8		1-	2-	2+	3+	3+	3+	3	24	0	1	1+	2	2+	3-	2+	2	14		
9		2	3-	4	4-	3	4-	4	3+	37	2+	2+	3+	3+	2	2	4+	3+	30	
10		3+	4-	3-	4-	5	5-	3-	2	43	4-	4-	3	4+	5-	4+	2+	1	44	
11		3	3-	2+	2+	2-	2-	3-	2	20	4-	3	2+	1	2-	1-	3-	1-	19	
12		3	3	2+	3+	3+	4-	3	4	35	4-	3+	3	3	1+	2	1+	2+	24	
13		6+	8-	6	6-	5	3+	4+	3	33	6+	7	5+	5	4-	3	4+	3	02	
14		3+	3	3+	3-	3-	2+	2+	2+	25	4-	3	3	2-	2+	2	1+	3-	24	
15		3+	3-	3	3+	3	3-	3+	2	29	4-	3	3	3	2+	3-	3	2-	28	
16		2-	1+	2-	2+	3-	3-	1+	2+	15	2+	1	2-	1+	1+	3-	0	2-	11	
17		2+	2-	4-	3-	3-	4-	3+	3	30	1+	1+	3-	1+	2-	2	3+	3-	17	
18		3+	5	5	4-	4-	4+	3+	4+	59	4	4	5-	3+	3	4	3-	4+	51	
19		3+	4	4-	3+	3+	3	3-	3-	36	3+	3+	4	3+	3-	3-	2	2+	31	
20		3	3+	3	3	3+	3-	2+	3	30	3	3+	3-	3	4-	2	1	2-	25	
21		3+	3+	4-	3-	3-	3	4-	3	32	3	3+	3	2+	2-	2+	3+	3+	27	
22		2	3-	3-	3	4-	4	4-	3-	33	3	3-	3-	3	5-	4+	5-	3+	44	
23		3	2+	4	3+	3-	3-	2+	3+	30	4-	3	4	3+	3	2+	2+	3-	32	
24		3-	3-	2+	1+	2-	2	2	1-	15	3	2+	1+	1	2-	1-	0+	0+	11	
25		1	0+	0+	1+	2-	1+	3-	2	11	0	0	0+	0+	0	0	2-	2-	4	
26		2-	3+	2-	3-	3+	4-	2+	3+	27	1-	3	2+	2-	2	2+	1	2	15	
27		2-	2-	3	2+	2	2+	2	3	19	1+	1+	3-	1+	1	2	2	2-	12	
28		2	1	1+	3	3+	3-	3-	2+	21	3-	1-	0+	2	2-	2-	2	2	13	
29		3-	3	4	3+	3-	2+	2-	2	27	2+	3-	3+	3	2+	1+	1+	1-	19	
30		2-	1+	2+	3-	2+	2+	2-	2	17	1	1	1+	2-	1	1-	1	1+	8	
Mean									29										22	

The Geophysikalisches Institut, University of Goettingen, prepares the quiet (Q) and disturbed (D) days, the geomagnetic planetary 3-hour-range indices (Kp), the average amplitude (Ap) and the magnetic character figures (Cp). The 10 most quiet days (Q1-Q10) and the five most disturbed days (D1-D5) are ordered from most quiet and from most disturbed, respectively. A and K mark quiet days that are not really quiet; an asterisk marks disturbed days that are not really disturbed. Geomagnetic 3-hour indices Km, Kn, Ks; daily mean values Am, An, As; and indices aa are prepared by M. Menvielle of the Institut de Physique du Globe, Paris, France. For the aa indices, daily north (N) and south (S) values and half-daily antipodal mean (M) values are given; quiet 24- and 48-hour intervals centered on 1200 UT are indicated by C if they are really quiet and by K if they are quiet with some slightly disturbed 3-hour periods.

DAILY AVERAGE INDICES A_p

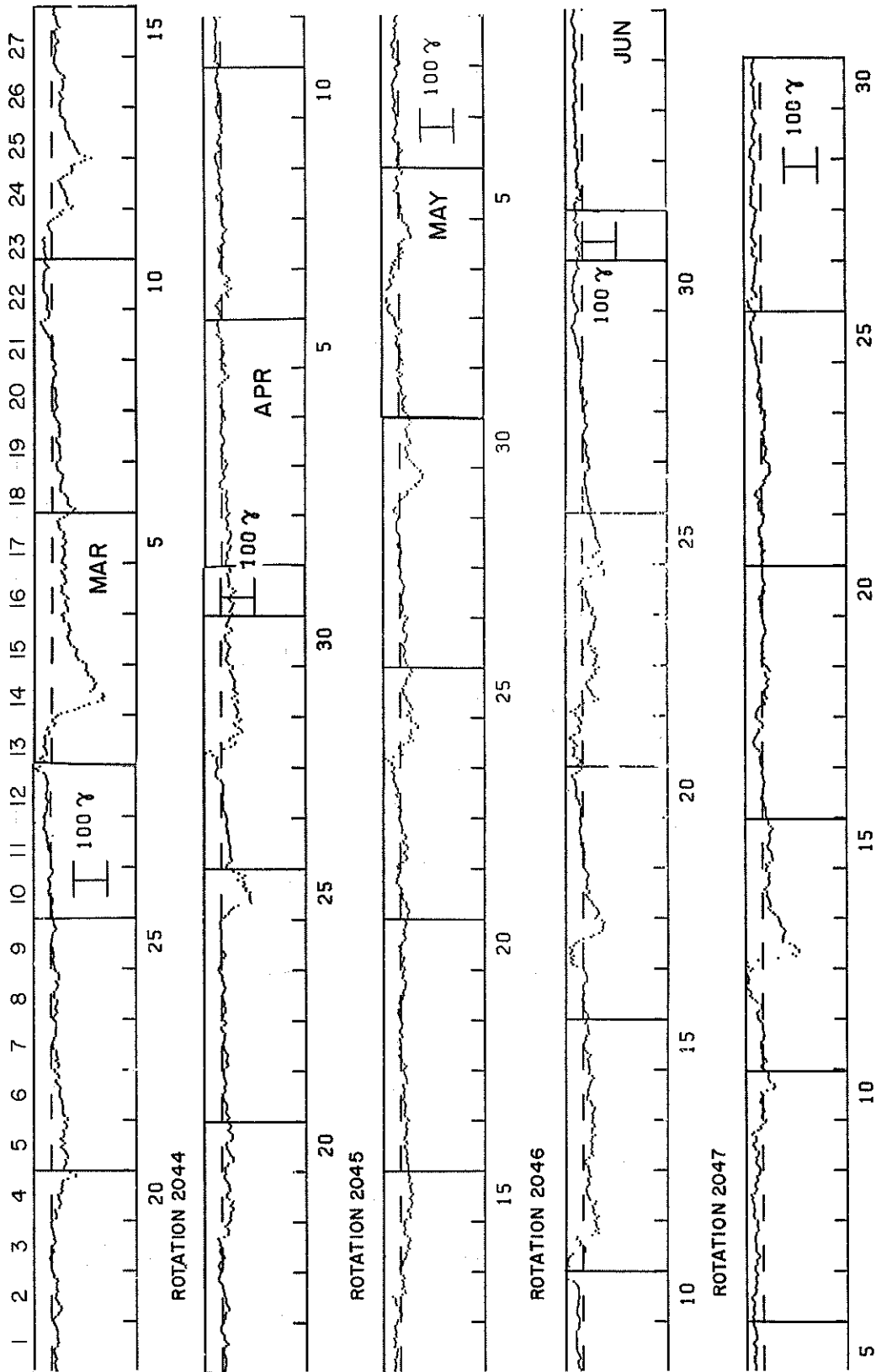
DAY	1982						1983					
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1	18	12	9	28	36	2	11	11	21	20	24	13
2	10	55	12	24	32	4	7	5	86	16	14	8
3	6	26	21	10	21	9	11	7	36	15	10	6
4	2	15	32	10	8	13	9	59	26	16	26	3
5	4	18	39	9	9	11	6	143	28	17	24	6
6	15	25	199	19	11	3	3	47	12	35	14	11
7	21	107	88	35	4	29	4	43	7	34	8	6
8	15	6	12	21	12	27	9	18	6	25	11	12
9	10	23	50	6	8	18	20	18	8	19	6	20
10	10	27	10	15	11	46	78	23	7	22	8	37
11	36	28	13	14	20	20	11	24	24	8	50	10
12	48	22	14	15	16	14	18	33	53	11	52	16
13	144	10	15	34	18	6	8	35	24	36	37	70
14	153	7	14	30	12	8	8	28	26	45	23	12
15	36	3	12	8	13	11	22	25	15	59	20	17
16	50	6	12	14	9	13	25	30	11	33	9	8
17	24	16	11	21	6	62	25	16	11	19	64	17
18	24	16	30	23	12	41	32	14	20	11	12	37
19	28	10	28	17	10	34	17	10	28	9	5	20
20	24	12	24	14	6	46	14	41	32	13	10	17
21	11	15	76	11	25	37	12	36	12	12	29	20
22	16	24	135	8	30	42	8	21	9	17	51	20
23	12	17	26	5	36	26	10	17	9	17	38	17
24	50	18	22	5	83	19	22	14	10	61	77	6
25	22	20	13	15	54	14	16	6	50	32	11	5
26	27	20	84	30	26	9	12	5	13	28	10	13
27	27	11	42	16	17	18	10	7	3	14	11	8
28	21	12	14	10	28	21	10	8	37	12	5	12
29	22	38	9	35	32	20	16		40	39	5	13
30	23	28	12	27	13	15	19		27	26	9	7
31	25	16		34		7	13		28		11	
MEAN	30	21	36	18	21	21	16	27	23	24	22	16

GEOMAGNETIC ACTIVITY INDICES



GEOMAGNETIC ACTIVITY INDICES
Hourly Equatorial Dst

by Bartels Rotation



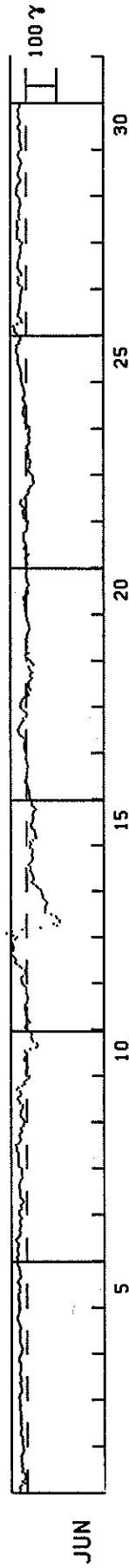
Note: Both the sensitivity indicator placed on the last day of the month and the zero reference level change from month to month.

HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

JUNE 1983

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	25	26	27	28	29	30						
1	23	15	24	17	15	17	21	19	16	18	20	13	13	17	15	17	16	18	19	15	12	10	11	12												
2	15	15	13	14	15	20	21	19	21	18	20	18	20	18	19	19	20	21	23	23	20	22	23	24												
3	25	24	22	16	17	18	19	21	22	18	19	20	23	23	20	19	20	19	19	24	26	26	21	18												
4	17	15	15	17	20	23	22	21	23	24	23	20	21	21	23	26	28	31	30	28	26	24	23	23												
5	24	23	24	27	27	27	22	24	23	21	25	30	30	27	21	19	21	21	23	23	25	27	30	31	30											
6	30	33	28	27	30	30	28	26	26	33	35	29	24	21	20	24	21	19	20	22	21	16	20	24												
7	24	23	17	17	19	12	9	15	20	21	21	20	22	24	23	23	20	19	14	15	16	17	15	17												
8	25	28	27	26	26	27	27	27	31	33	31	35	26	21	17	22	23	21	15	17	18	11	9	7												
9	9	13	19	20	18	19	14	12	12	21	24	29	26	19	19	21	33	27	14	6	7	0	7	-10												
10	3	4	1	-4	-3	0	0	6	7	5	0	2	6	-13	-32	-37	-33	-22	-18	-16	-17	-18	-15	-4												
11	4	4	-3	-11	-7	-2	0	3	1	4	6	5	4	-1	-3	-4	-4	-2	1	0	1	1	7	13												
12	14	16	10	3	3	3	16	3	22	32	38	34	36	43	48	51	43	43	41	44	47	50	36	30												
13	43	64	46	13	-46	-99	-89	-108	-107	-99	-95	-80	-60	-60	-62	-62	-65	-68	-63	-57	-53	-53	-50	-48												
14	-45	-37	-31	-23	-17	-24	-24	-22	-20	-17	-13	-14	-14	-6	-12	-18	-21	-21	-19	-20	-20	-20	-12	-11												
15	-16	-11	-22	-31	-30	-28	-28	-26	-20	-16	-15	-20	-22	-23	-23	-21	-23	-26	-31	-25	-18	-18	-17	-15												
16	-10	-10	-9	-9	-9	-5	-1	-1	4	3	-1	-2	-2	-1	-4	-4	-7	-4	-1	-1	2	2	-1	-1												
17	3	6	6	7	7	3	1	9	16	23	24	27	23	21	17	14	9	10	0	-2	1	8	15	18												
18	17	18	14	11	6	-7	-6	-2	-14	-9	-7	-8	-8	-14	-19	-12	-15	-20	-13	-9	-9	-24	-19	-14												
19	-6	1	4	-7	0	2	-3	-1	0	-3	2	-3	-1	-4	-7	-10	-10	-9	-7	-6	-2	-4	-1	1												
20	-1	4	3	3	5	4	4	8	7	3	-6	-7	-3	-4	-8	-7	-3	-2	-1	0	0	-2	-2	0												
21	1	-5	-2	0	2	-3	-9	-1	1	6	4	0	2	7	7	8	7	6	0	-4	-4	-4	-7	-7												
22	1	8	8	9	10	6	4	12	18	17	14	5	1	-5	-10	-7	-12	-16	-23	-26	-24	-23	-24	-21												
23	-13	-8	-7	-12	-13	-12	-16	-12	-6	-9	-8	-6	-7	-2	-3	-9	-11	-10	-11	-10	-7	-10	-13	-10												
24	-10	-4	4	3	-1	3	8	11	9	7	6	4	2	5	9	9	5	5	5	7	8	10	13	14												
25	15	16	14	14	16	17	18	21	23	26	27	27	26	26	30	32	32	29	30	22	22	18	18	20												
26	29	36	37	39	41	27	13	14	18	25	26	22	23	19	20	20	18	16	16	17	17	14	15	11												
27	11	20	26	24	24	24	15	13	19	23	27	25	25	24	23	19	21	18	16	16	16	17	13	12												
28	20	28	29	27	28	29	25	27	28	27	29	20	23	22	21	19	21	20	17	17	19	18	21	27												
29	32	30	29	30	28	25	20	16	19	24	25	25	22	20	19	17	13	17	19	23	25	24	21	15												
30	15	16	16	19	19	19	20	20	18	20	26	25	21	18	18	22	25	23	23	23	25	24	20	19	20											



PRINCIPAL MAGNETIC STORMS

JUNE 1983

Sta	Geomag Lat	Commencement		SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges			End Hour Day (UT)		
		Day	Time (UT) Type	D (Min)	H (Gamma)	Z (Gamma)		K (Min)	H (Gamma)	Z (Gamma)			
HYB	07.6N	08	1000 ..	..	..	..	09(7)	4	8	108	21	10 02
COL	64.6N	09	17-- ..	..	..	..	10(6)	7	190	1580	550	10 20
KGL	56.5S	09	1728 SC	1	10	5	09(7)	5	20	140	160	10 23	
BJI	28.5N	10	0454 SC		.6	19	1	10(5)	6	11	102	30	10 24
JAI	17.3N	10	0450 SC	-	.3	13	- 2		-	9	115	46	11 01
SHL	14.7N	10	0450 SC		.4	14	3		-	8	96	25	11 01
UJJ	13.5N	10	0450 SC	-	.2	18	- 3		-	7	122	37	11 01
ABG	09.5N	10	0450 SC	-	.3	17	- 2	10(5,6)	5	7	143	46	11 01
HYB	07.6N	10	0453 SC	-	.2	18	- 3	10(5,6)	5	7	149	28	11 01
GUA	04.0N	10	0453 ..	..	..	..	10(5)	5	--	80	20	10 22
ANN	01.5N	10	0450 SC	-	1.1	44	9		-	6	168	45	11 01
TRD	01.1S	10	0450 SC	-	.2	52	50		-	5	192	70	11 01
KGL	56.5S	10	0453 SC	3		25	- 10	10(6)	5	22	110	150	10 23
HYB	07.6N	11	1700 ..	..	..	..	12(6,8)	4	8	86	22	12 23
JAI	17.3N	12	0600 ..	..	..	..		-	13	198	54	13 22
SHL	14.7N	12	0600 ..	..	..	..		-	11	221	47	13 22
UJJ	13.5N	12	0600 ..	..	..	..		-	--	194	43	13 22
ABG	09.5N	12	0600 ..	..	..	..	13(2)	7	11	197	62	13 22
ANN	01.5N	12	0600 ..	..	..	..		-	10	319	95	13 22
TRD	01.1S	12	0600 ..	..	..	..		-	7	367	230	13 22
COL	64.6N	13	0117 SC*	- 15	+402	..	13(3)	7	196	1720	1400	14 07	
SIT	60.0N	13	0118 SC*	..	234	44 *	13(3)	8	--	--	800	13 21	
WIT	54.2N	13	0118 SC*	- 12 *	72 *	- 2	13(2)	7	40	275	175	14 04	
FRD	49.6N	13	0117 SC*	4	120	- 18	13(2)	8	46	332	160	16 --	
BJI	28.5N	13	0119 SC	7.7	57	3	13(2)	7	20	201	62	13 24	
HYB	07.6N	13	0117 SC	1.7*	59	- 8	13(2)	7	8	216	46	14 17	
GUA	04.0N	13	0118 ..	..	..	..	13(2)	8	10	320	50	13 19
PMG	18.6S	13	0118 SC*	.9*	77	72	13(1,2)	6	9	210	150	14 00	
HER	33.7S	13	0117 SC*	4	26	25	13(2)	7	46	189	166	13 24	
GNA	43.2S	13	0119 SC	- 6.7	20	- 36	13(2)	6	22	180	130	13 20	
CNB	43.9S	13	0118 SC*	3.7*	51	11	13(1,2,4)	6	35	210	104	13 13	
KGL	56.5S	13	0116 SC	9	50	12	13(7)	5	83	625	255	14 08	
KGL	56.5S	14	1426 SC	2	5	5	14(8) 15(1)	3	6	70	55	15 04	
COL	64.6N	17	11-- ..	..	..	..	18(6) 20(5)	6	171	1100	740	20 16
FRD	49.6N	17	---- ..	..	..	..	18(2,3,8)	5	20	136	67	24 --
HYB	07.6N	17	0700 ..	..	..	..	18(2)	5	6	117	28	19 17
GUA	04.0N	17	2224 ..	..	..	..	18(3)	5	10	140	30	18 19
KGL	56.5S	17	17-- ..	..	..	..	18(6,8)	5	--	--	--	19 04
WIT	54.2N	18	02-- ..	..	..	..	18(6)	6	23	215	55	19 01
GUA	04.0N	18	2104 ..	..	..	..	19(1)	5	10	80	20	19 16
HER	33.7S	18	02-- ..	..	..	..	18(3)	5	27	83	79	18 23
COL	64.6N	22	09-- ..	..	..	..	22(5,6,7) 23(3,6)	6	203	1040	590	23 20
HYB	07.6N	22	0600 ..	..	..	..	22(6)	4	7	109	58	24 04

ABG ALIBAG
ANN ANNAMALAINAGAR
BJI BEIJING
CNB CANBERRA
COL COLLEGE
FRD FREDERICKSBURG

GNA GNANGARA
GUA GUAM
HER HERMANUS
HON HONOLULU
HUA HUANCAYO

HYB HYDERABAD
IRK IRKUTSK
JAI JAIPUR
KGL KERGUELEN
PMG PORT MORESBY

SHL SHILLONG
SIT SITKA
TRD TRIVANDRUM
UJJ UJJAIN
WIT WITTEVEEN

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

117
Jun 83

JUNE 1983

PRELIMINARY REPORT ON RAPID VARIATIONS

Sudden Commencements (ssc)		Solar Flare Effects (sfe)
09 17 29	A: COI; B: WNG WIT VAL; C: NGK BDV CZT KGL DUM (si: C: EBR - bs: A: CLF - bps: B: MPO)	01 02 30 - 02 48 LNP 02 15 32 - 15 40 HAD MPO
10 04 53	A: MPO; B: WNG KGL; C: WIT NGK CLF GCK MMB SPT KAK KNY CZT DUM	04 14 15 - 14 33 WNG 06 13 37 - 14 46 WNG BDV AQU
12 09 44	A: NUR COI; B: SOD WNG AQU SPT; C: WIT NGK VAL BDV GCK AMS (sfe: MPO)	10 12 24 - 12 40 WIT 11 06 50 - 07 06 WNG
13 01 18	A: NUR WNG WIT VAL HAD CLF MMB AQU EBR COI SPT FRD KAK KNY LNP MPO CAA KGL DUM; B: NGK BDV GCK GNA AMS CZT	16 15 34 - 16 05 WNG WIT HAD BDV CLF AQU EBR SPT 25 11 28 - 12 02 WNG BDV 26 04 32 - 05 30 WNG MMB EBR KAK KNY LNP 26 14 08 - 15 09 WNG HAD CLF GCK SPT MPO

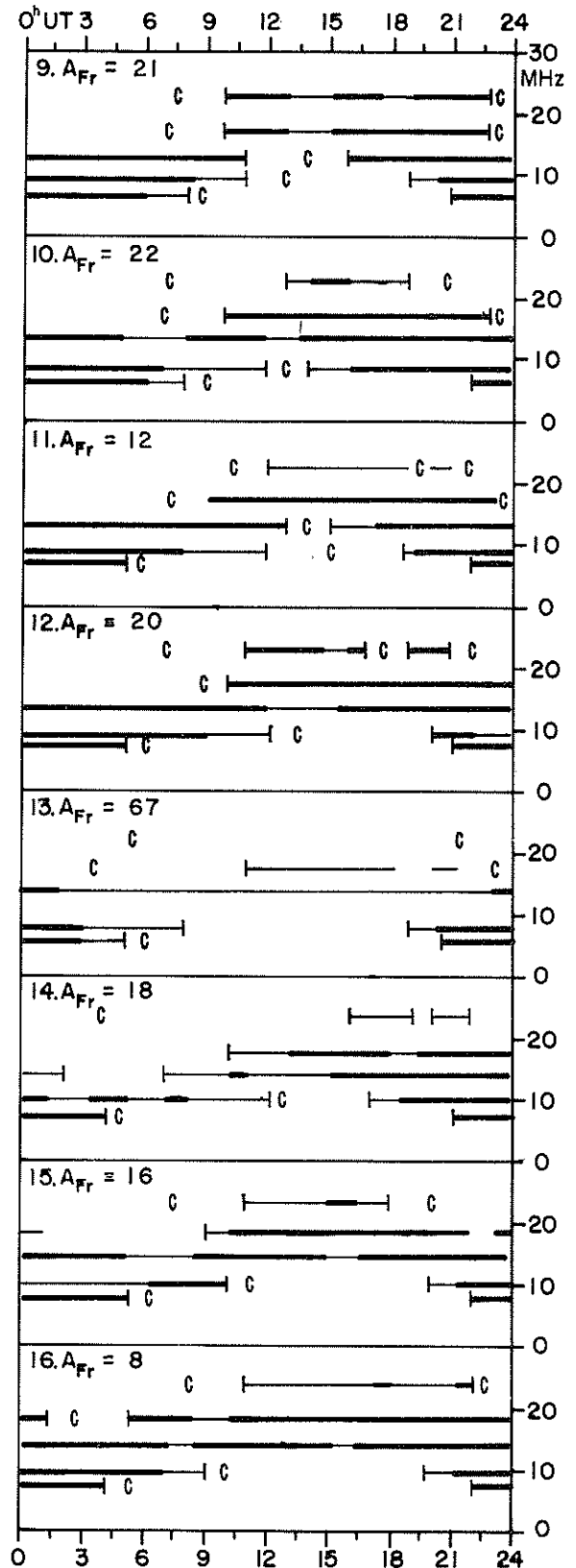
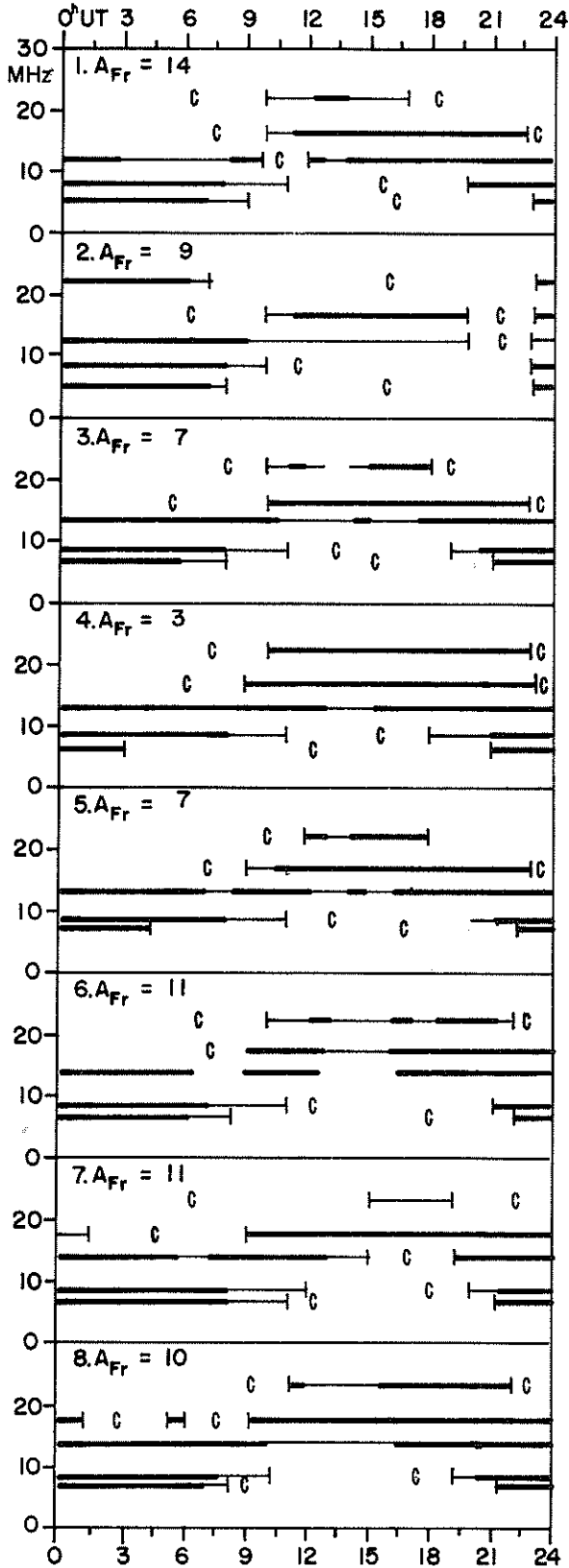
Reporting observatories: (up to the 31st July)

SOD NUR WNG WIT NGK VAL HAD BDV CLF GCK MMB AQU

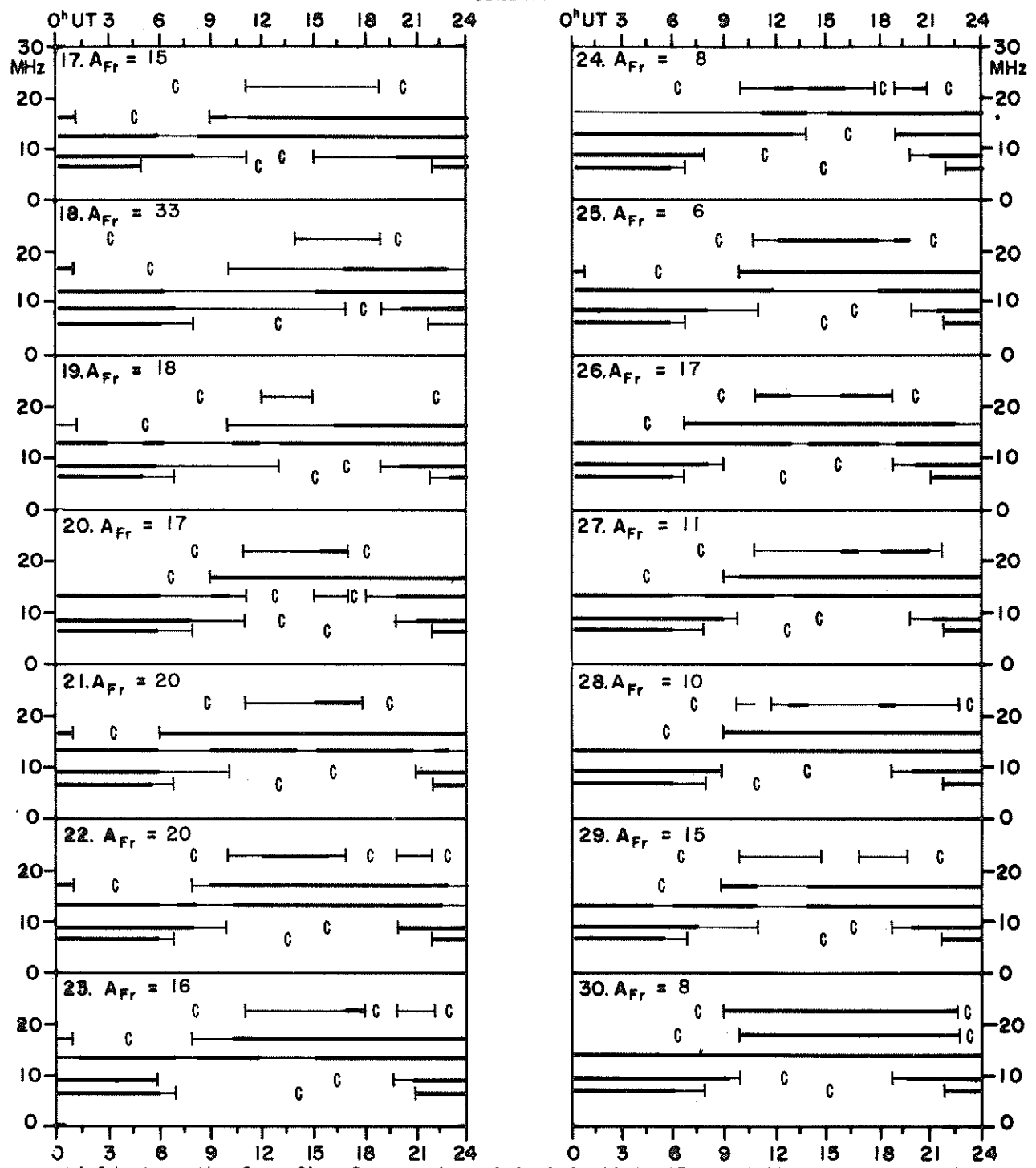
EBR COI SPT FRD KAK KNY LNP MPO GNA CAA AMS CZT KGL DUM

TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JUNE 1983



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH
JUNE 1983



Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Norddeich -New York circuit are represented above. Heavy solid lines represent field strengths ≥ -12 dB above $1 \mu\text{V/m}$ (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above $1 \mu\text{V/m}$ and -40 dB above $1 \mu\text{V/m}$ are represented by the fine line.

RADIO PROPAGATION QUALITY INDICES

JUNE 1983

Day	Tokyo	New York	Teheran	Oslo	Bracknell
1	5.5	5.8	8.7	6.6	6.6
2	6.9	6.3	7.1	8.8	7.1
3	6.6	6.3	5.4	9.9	8.7
4	5.8	6.9	6.1	6.5	7.2
5	6.0	6.3	6.1	5.7	5.6
6	4.6	6.0	3.7	6.5	6.3
7	6.1	7.2	7.2	6.1	5.9
8	6.2	8.0	7.1	6.6	5.8
9	4.5	6.4	5.0	5.0	4.9
10	3.8	6.3	5.0	8.6	6.2
11	5.0	6.7	5.3	9.3	7.9
12	4.5	6.2	5.4	7.8	8.1
13	1.2	1.2	1.4	3.1	3.3
14	4.0	4.2	5.4	5.1	4.8
15	4.1	5.0	6.1	3.7	7.3
16	4.5	5.7	4.4	8.4	7.4
17	5.8	6.4	4.7	7.9	9.6
18	4.4	3.9	4.7	7.5	8.5
19	4.3	4.6	4.3	6.0	9.9
20	4.7	5.5	5.0	9.1	9.9
21	4.7	4.8	6.3	5.2	7.4
22	4.7	5.3	5.3	4.1	4.8
23	4.7	4.5	6.4	4.5	4.8
24	6.9	5.8	7.3	5.1	3.6
25	6.9	6.1	7.3	4.5	2.6
26	6.0	7.5	5.6	4.5	5.5
27	4.8	6.5	5.6	4.5	3.6
28	5.2	6.7	5.6	4.5	3.9
29	4.6	4.9	5.4	5.1	4.1
30	5.2	6.7	7.5	3.6	5.3
Mean	5.1	5.8	5.7	6.1	6.2

CALCULATION OF QUALITY INDICES (Q)

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

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

The quality indices vary from 0.0 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they correspond to the average of the preceeding 27 days.

SCALE FOR QUALITY INDICES

- 0.0 - 1.0 = very poor
- 1.1 - 3.0 = poor
- 3.1 - 5.0 = fair
- 5.1 - 7.0 = normal
- 7.1 - 9.0 = good
- 9.1 - 9.9 = very good

122
Late
Dec 82

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1982

Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
Day	Start (UT)	End (UT)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
01	1357	2340	HARV				1426.0		2				IIIG
			HARV				1450.0	1521.0	1				IN,W
			HARV				1513.0	1515.0	1				IIIG
			HARV	1537.0		1	1537.0		1	1537.0		1	IIIGG
			HARV				1606.0	1608.0	1				IIIG,W
			HARV				1643.0		1	1643.0		1	IIIB,W
			HARV				1650.0	1652.0	2	1650.0	1652.0	1	IIIGG
			HARV	1701.0		1	1658.0	1705.0	2	1659.0	1701.0	1	IIIGG
			HARV				1707.0	1708.0	1				IIIG
HARV				2037.0		1				IIIG,W			
02	1357	2340	HARV				1358.0	1516.0	2				I
			HARV				1516.0	1603.0	1				I
			HARV				1603.0	2330.0	1				IN
			HARV	1704.0	1728.0	1							I
			HARV	1746.0	1832.0	2							IV
			HARV				1752.0		1				IV
			HARV	1834.0	1938.0	2							IV
			HARV	2037.0	2328.0	1							IN,W
			HARV				2106.0	2113.0	2	2106.0	2113.0	1	IIIGG
HARV				2124.0	2126.0	2				IIIGG			
03	1357	2340	HARV				1358.0	1707.0	3				IC
			HARV	1458.0		1							IIIB
			HARV	1502.0		2							IIIB
			HARV	1557.0	2213.0	1							IN,W
			HARV				1559.0		2	1559.0		1	IIIG
			HARV				1610.0	2107.0	2	1616.0	2107.0	1	IIIN
			HARV				1707.0	2025.0	1				I
			HARV				1742.0	1743.0	2	1742.0		1	IIIG
			HARV				1838.0	1839.0	1	1838.0	1839.0	1	IIIG
			HARV	1937.0	1938.0	2							IIIG
			HARV				2025.0	2300.0	1				IN
			HARV	2214.0		1							IIIB,W
			HARV	2222.0	2224.0	1							IIIG
			HARV	2235.0		2	2230.0	2231.0	2				UNCL
HARV				2303.0	2306.0	2				IIIGG			
04	1357	2340	HARV	1357.0	1632.0	1							I
			HARV				1358.0	2335.0	2				IC
			HARV				1511.0	2216.0	2	1617.0	1915.0	1	IIIN
			HARV				1622.0	1625.0	2	1622.0	1623.0	1	IIIGG
			HARV	1630.0		1	1629.0	1634.0	2	1629.0	1633.0	1	IIIGG
			HARV	1632.0	1812.0	1							IN,W
			HARV				1731.0		2	1731.0		2	IIIG
			HARV				1840.0	1841.0	2	1840.0	1841.0	1	IIIGG
			HARV				1848.0		2	1848.0		2	IIIG
			HARV	1945.0	1949.0	2							DCIM
			HARV	2004.0	2011.0	2							DCIM
			HARV	2110.0	2134.0	2							IV
			HARV	2138.0	2330.0	1							DCIM
			HARV	2305.0		1							IN,W
HARV	2311.0	2315.0	1							IIIG,W			
05	1357	2340	HARV				1358.0	2340.0	2				IC
			HARV	1400.0	1659.0	1							I
			HARV				1606.0	2300.0	2	1839.0	2117.0	2	IIIN
			HARV				1619.0	1728.0	2	1623.0	1720.0	2	IIIS
			HARV				1627.0	1628.0	2				IIIG
			HARV	1659.0	2034.0	1							IN,W
			HARV	1856.0		1							IIIG
			HARV				1958.0		2	1958.0		1	IIIG
			HARV	2000.0		2							IIIG
HARV	2034.0	2340.0	1							I			
HARV				2331.0	2332.0	2				IIIG			
06	1357	2340	HARV				1358.0	2340.0	2				IC
			HARV	1400.0	2325.0	1							IN
			HARV				1409.0		2				IIIG
HARV				1417.0		2	1417.0		1	IIIG			

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1982

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
06			HARV				1507.0	1508.0	2				11IG	
			HARV				1527.0	2258.0	2	1800.0	2010.0	2	11IN	
			HARV	1534.0		1	1534.0		2	1534.0		1	11IG	
			HARV				1646.0	1650.0	2	1646.0	1650.0	2	11IGG	
			HARV	1722.0	1727.0	2	1722.0	1727.0	2	1722.0	1727.0	2	11IGG	
			HARV	1743.0	1745.0	1	1743.0		2				11IG,W	
			HARV	1808.0	1812.0	2	1806.0	1812.0	2	1806.0	1812.0	2	11IGG	
			HARV	1825.0			1825.0	1826.0	2				11IG	
			HARV				1835.0		2	1835.0		1	11IG	
			HARV	1837.0	1840.0	1							11IG,W	
			HARV				1841.0	1842.0	2	1841.0	1842.0	2	11IGG	
			HARV				1938.0	1943.0	2	1938.0	1943.0	2	11IG	
			HARV	2026.0	2027.0	2	2026.0	2027.0	2	2026.0	2027.0	2	11IGG	
			HARV				2038.0	2039.0	2	2038.0	2039.0	2	11IGG	
			HARV				2059.0		2	2059.0		2	11IG,V	
			HARV	2113.0		1	2113.0		2				11IG	
		HARV				2303.0	2304.0	2				11IG		
07	1357	2340	HARV				1359.0	2350.0	2				I	
			HARV	1412.0	1413.0	1								11IG
			HARV	1417.0	2324.0	1								IN,W
			HARV				1509.0	2318.0	2	1937.0	2002.0	2		11IN
			HARV				1727.0	1728.0	2	1727.0	1728.0	2		11IG
			HARV	1740.0	1750.0	2								11IGG
			HARV	1904.0		1	1904.0		1					11IG
			HARV				1915.0		2	1915.0		1		11IG
			HARV				1919.0		2	1919.0		2		11IG
			HARV	2005.0		2								11IB
			HARV	2011.0		1	2011.0		1					11IG
			HARV				2022.0		2	2022.0		1		11IG,U
			HARV	2031.0	2034.0	1	2031.0	2034.0	2	2031.0	2034.0	2		11IGG,V,U
			HARV	2105.0		2								11IG
			HARV	2111.0		1								11IB,W
			HARV	2118.0		1	2117.0	2118.0	2	2117.0	2118.0	2		11IGG,V
			HARV				2128.0	2129.0	2	2128.0	2129.0	2		11IGG,V
			HARV				2144.0	2145.0	2	2145.0		1		11IG
			HARV	2200.0	2203.0	2	2156.0	2203.0	2	2158.0	2203.0	1		11IGG
			HARV				2222.0	2224.0	2	2222.0	2223.0	1		11IGG
HARV				2240.0	2043.0	2					11IGG			
HARV	2259.0	2303.0	1	2259.0	2303.0	2	2259.0		1		11IGG,V			
HARV	2306.0		2	2305.0	2306.0	2					11IG			
HARV	2315.0	2316.0	2								11IG			
HARV				2332.0	2335.0	2						11IGG		
HARV				2344.0	2349.0	2						11		
08	1357	2330	HARV				1359.0	2330.0	2				I	
			HARV				1419.0	2306.0	2				11IN	
			HARV				1427.0	1428.0	2				11IG	
			HARV				1432.0		2				11IG,U	
			HARV	1600.0	1744.0	1								IN,W
			HARV	1750.0	1813.0	1								IV W
			HARV				1910.0	1911.0	2	1910.0	1911.0	2		11IG
			HARV	2015.0	2325.0	1								IN,W
			HARV				2051.0	2052.0	2	2051.0	2052.0	1		11IG,U
			HARV				2143.0	2144.0	2					11IG,U
			HARV	2301.0	2303.0	1	2301.0	2303.0	1					11IG,W
09	1357	2345	HARV				1406.0		2				11IG	
			HARV				1407.0	1835.0	1				I	
			HARV	1515.0		1							11IB,W	
			HARV				1531.0	1532.0	1				11IG,W	
			HARV	1611.0	1850.0	1							IN,W	
			HARV				1625.0	1626.0	1				11IG	
			HARV				1629.0		2				11IG	
			HARV	1640.0		1							11IG	
			HARV	1718.0		1							11IG,W	
			HARV	1722.0		1							11IG,W	
			HARV				1825.0	1940.0	2					I
			HARV				1940.0	2355.0	1					IN
HARV				2026.0	2032.0	2	2026.0		1		11IGG			
10	1357	2345	HARV				1358.0	1430.0	1				I,DC	

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1982

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
10			HARV				1452.0	1453.0	2				IIIB
			HARV				1501.0	1628.0	3				IC
			HARV				1547.0	2233.0	2	1832.0	1836.0	1	IIIN
			HARV	1609.0	1920.0	1							IN
			HARV	1613.0		2							IIIG
			HARV				1628.0	1920.0	1				I
			HARV				1806.0		2				IIIG
			HARV				1920.0	2336.0	2				I
			HARV				2013.0		2	2013.0		1	IIIB
			HARV				2033.0	2034.0	3	2033.0	2034.0	2	IIIGG,V
			HARV				2147.0	2148.0	2	2148.0		1	IIIG
		HARV				2151.0	2152.0	2				IIIG	
11	1357	2345	HARV				1400.0	2148.0	2				IC
			HARV	1405.0	2321.0	1							IN
			HARV				1517.0	2112.0	1	1632.0	2111.0	1	IIIN
			HARV				1536.0	1537.0	2	1536.0	1537.0	2	IIIGG,V
			HARV	1558.0		1							IIIG
			HARV				1604.0	1606.0	2	1604.0	1606.0	1	IIIG
			HARV				1934.0		2	1934.0		2	IIIG
			HARV				1946.0	1952.0	2	1946.0	1952.0	2	IIIGG
			HARV				1954.0	1957.0	2	1954.0	1957.0	2	IIIGG
			HARV	2049.0	2050.0	1	2049.0	2050.0	2				IIIG
			HARV	2057.0	2107.0	1	2057.0	2107.0	2	2057.0	2107.0	1	IIIGG
		HARV				2122.0	2123.0	2	2122.0	2123.0	1	IIIG	
		HARV				2148.0	2335.0	3				IC	
		HARV	2158.0	2204.0	2							DCIM	
12	1357	2100	HARV				1357.0	2100.0	2				IC
			HARV	1401.0	2100.0	1							IN,W
			HARV				1445.0	1446.0	2				IIIG
			HARV	1741.0		1							IIIG
			HARV	1835.0	1836.0	2	1836.0		2				IIIG
			HARV				1925.0	1926.0	1	1925.0	1926.0	1	IIIG
13	1356	2345	HARV				1520.0	1920.0	2				IC
			HARV	1621.0	2103.0	1	1952.0	1957.0	3	1952.0	1956.0	3	IN,W
			HARV				1957.0	2336.0	2				IIIGG
			HARV										IC
14	1356	2345	HARV				1404.0	2331.0	2				I
			HARV				1418.0	2339.0	1				IIIN
			HARV	1619.0		1	1619.0		2				IIIG
			HARV				1649.0		2	1649.0		1	IIIG
			HARV				1710.0		2				IIIG
			HARV				2012.0	2024.0	3	2012.0	2024.0	2	IIIGG
			HARV				2026.0	2032.0	3	2026.0	2032.0	2	IIIGG
			HARV				2257.0	2258.0	1				IIIGG
15	1412	2345	HARV				1413.0	1640.0	1				I
			HARV	1425.0	2255.0	1	1542.0	1543.0	2				IN,W
			HARV	1631.0	1633.0	2	1631.0	1639.0	3	1631.0	1639.0	2	IIIG
			HARV	1631.0	1646.0	2							IIIGG,V
			HARV	1632.0	1638.0	2	1632.0	1656.0	3	1636.0	1654.0	2	IV
			HARV				1640.0	2020.0	3				II
			HARV				1654.0	2047.0	1	1656.0	2047.0	1	IC
			HARV	1703.0	1706.0	1	1703.0	1706.0	2	1703.0	1706.0	1	IIIN
			HARV				1911.0	1912.0	2	1911.0	1912.0	2	IIIGG
			HARV				1937.0		2	1937.0		2	IIIG
			HARV				2020.0	2340.0	2				I
		HARV	2211.0	2214.0	2							IV	
16	1412	2345	HARV				1415.0	1640.0	2				I
			HARV	1419.0	1427.0	2	1418.0	1424.0	2				IIIGG
			HARV				1423.0	1426.0	2				UNCL
			HARV				1435.0	2018.0	1				IIIN
			HARV	1501.0	1516.0	2							IV
			HARV	1524.0	2319.0	1							IN,W
			HARV	1611.0	1640.0	2							IV
		HARV				1640.0	2035.0	1				IN,W	

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1982

Observation		Decimetric Band			Metric Band			Dekametric Band			Spectral Type
Day	Start (UT) End (UT) Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
16	HARV	1647.0	1650.0	2							111G
	HARV				1653.0	1654.0	2	1653.0	1654.0	2	111G
	HARV				1817.0	1821.0	2	1817.0	1821.0	2	111G
	HARV				1919.0	1920.0	1				111G
	HARV				1924.0		2				111G
	HARV				2011.0	2013.0	2	2011.0	2013.0	2	111GG
	HARV	2037.0	2041.0	2	2037.0	2050.0	2				111GG
	HARV				2103.0	2106.0	2				111G
	HARV				2112.0		2	2112.0		1	111G
	HARV				2118.0		2				111G
17	1412 2345 HARV				1418.0	1422.0	1				1N,W
	HARV				1452.0	1453.0	1				111B,W
	HARV	1645.0		1	1645.0			1645.0		1	111G,U
	HARV				1649.0	1656.0	2	1649.0	1656.0	2	111GG
	HARV	1656.0		1							I
	HARV	1852.0	1905.0	2							IV
	HARV	1854.0	1857.0	3	1854.0	1917.0	3	1901.0	1911.0	2	II
	HARV	1905.0	1925.0	2	1905.0	1925.0	2				IV
	HARV	1925.0	2002.0	3	1926.0	2002.0	3				IV
	HARV	2027.0		1							111G,W
	HARV	2034.0									111G
	HARV	2034.0	2035.0	1							IV
	HARV	2109.0	2120.0	1							DCIM
	HARV				2116.0		1	2116.0		1	111B
	HARV				2128.0	2137.0	1	2128.0	2137.0	1	111GG
	HARV				2138.0	2148.0	3	2138.0	2148.0	2	111GG,V
	HARV				2148.0	2150.0	2				UNCL
	HARV				2154.0		1	2154.0		1	111B
	HARV	2158.0	2159.0	1	2158.0		1	2158.0		1	111G
18	1412 2350 HARV	1426.0	1758.0	1							1N,W
	HARV	1450.0	1503.0	1							DCIM
	HARV				1451.0	2153.0	1				111N
	HARV				1454.0	2323.0	1				1N,W
	HARV	1504.0	1505.0	2	1504.0	1510.0	3	1504.0	1509.0	2	111GG
	HARV	1506.0	1522.0	3							IV
	HARV				1512.0	1520.0	2				DCIM
	HARV	1527.0		1	1527.0		3	1527.0		1	111GG
	HARV	1632.0	1638.0	1							111G
	HARV	1651.0	1653.0	3							IV
	HARV										DCIM
	HARV				1653.0	1654.0	2				DCIM
	HARV				1703.0		2				111G
	HARV	1711.0		2	1711.0		2				111G
	HARV	1731.0	1737.0	2	1731.0	1737.0	2	1731.0	1733.0	2	111GG
	HARV	1744.0	1745.0	2							111GG
	HARV				1915.0	1917.0	2				111G
	HARV	1919.0		1							111G
	HARV				1928.0	1929.0	2				111G
	HARV	1948.0	1950.0	2							DCIM
	HARV	2025.0	2027.0	2							DCIM
	HARV				2200.0	2201.0	2				111G
	HARV	2241.0	2248.0	2	2241.0	2245.0	2				111G
	HARV	2250.0	2055.0	2							UNCL
	HARV	2328.0	2330.0	1							DCIM
19	1412 2350 HARV				1519.0	1520.0	2				111G
	HARV				1601.0	1602.0	2				111G
	HARV				1607.0	1630.0	1				I
	HARV	1620.0	1623.0	1							IW
	HARV				1625.0	1633.0	2	1630.0	1632.0	2	II
	HARV				1634.0	1635.0	2				111G
	HARV				1739.0	1740.0	1	1739.0	1740.0	1	111G
	HARV				2006.0	2008.0	2	2006.0	2008.0	2	111G
	HARV				2119.0	2121.0	2	2120.0	2121.0	1	111G
	HARV	2146.0		2							111G
	HARV	2248.0	2259.0	2							DCIM
	HARV				2250.0	2251.0	2				111G
	HARV				2258.0		2				111B
20	1412 2350 HARV				1542.0	1543.0	2				111G

126
Late
Dec 82

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1982

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
20			HARV				1757.0		1				IIIB
			HARV	1809.0		1							I
			HARV				2227.0		2				IIIG
			HARV				2251.0	2252.0	2				IIIG,U
			HARV				2331.0	2332.0	2				IIIG,U
			HARV				2335.0	2337.0	2				IIIG,U
21	1412	2350	HARV				1754.0		2				IIIB
			HARV				1820.0		1	1820.0		1	IIIB,W
			HARV				1928.0		2	1928.0		2	IIIG
			HARV				1939.0	1940.0	2	1939.0	1940.0	2	IIIG
			HARV				2155.0		1				IIIB
			HARV				2216.0	2218.0	2				IIIGG
			HARV				2225.0	2226.0	1				IIIG,W
			HARV				2233.0		1				IIIB,W
			HARV				2308.0	2310.0	2				IIIGG
			HARV				2312.0	2313.0	2	2312.0		1	IIIG
			HARV				2326.0	2329.0	2				IIIGG
			HARV				2334.0	2335.0	1				IIIG
22	1412	2345	HARV				1413.0	1414.0	3				IIIGG
			HARV				1523.0		1				IIIB,W
			HARV				1527.0		1				IIIB,W
			HARV				1653.0	1654.0	2	1653.0	1654.0	2	IIIG,U
			HARV				1655.0	1656.0	2	1656.0		2	IIIG,U
			HARV	1941.0	1943.0	1							IIIG,W
			HARV	2023.0	2024.0	1							I
			HARV	2039.0		2							IIIG
			HARV				2120.0	2121.0	1	2120.0	2121.0	1	IIIG,W
			HARV	2201.0	2202.0	1							DCIM,W
			HARV	2241.0	2242.0	1	2241.0	2242.0	1				IIIG,W
			HARV				2245.0		1				IIIG,W
23	1415	2350	HARV				1428.0	1429.0	3				IIIG
			HARV	1539.0		1							IIIG,W
			HARV	1552.0	1553.0	1							IIIG,W
			HARV				1737.0	1740.0	1	1737.0			IIIG,W
			HARV				1743.0			1743.0			IIIG,W
			HARV				1801.0	1802.0	1	1801.0	1802.0	1	IIIG,W
			HARV				1809.0		2	1809.0		2	IIIG
			HARV				1826.0		2	1826.0		2	IIIG
			HARV				1913.0	1917.0	2	1915.0	1916.0	1	IIIGG,U
			HARV				1921.0	1922.0	2	1921.0	1922.0	2	IIIG
			HARV				2017.0	2018.0	1				IIIG,W
			HARV				2033.0		2	2033.0		2	IIIG
			HARV	2240.0		1	2239.0	2240.0	2				IIIG
			HARV				2332.0	2334.0	2				IIIG
24	1415	2350	HARV				1425.0	2250.0	2				IIIN
			HARV				1735.0	1738.0	2	1736.0		1	IIIGG
			HARV				1740.0	1744.0	3	1740.0	1741.0	2	IIIGG
			HARV				1809.0	1810.0	2	1809.0		2	IIIG
			HARV				1824.0	1825.0	2				IIIG
			HARV				1839.0		2				IIIG
			HARV	1915.0	1917.0	2							IIIGG
			HARV				1929.0	1934.0	2	1929.0	1933.0	2	IIIGG
			HARV	1938.0	1940.0	2	1936.0	1940.0	3	1938.0	1940.0	2	IIIGG,U
			HARV				2028.0		2	2028.0		2	IIIG
			HARV				2031.0	2032.0	2				IIIG
			HARV				2108.0	2110.0	2	2108.0	2110.0	2	IIIGG
			HARV				2124.0	2125.0	3	2124.0	2125.0	2	IIIG
			HARV				2151.0		2				IIIG
			HARV				2202.0		1				IIIG
			HARV				2253.0	2256.0	2				IIIG
			HARV				2338.0		2				IIIG,U
			HARV				2344.0		2				IIIG
25	1415	2350	HARV				1417.0	2116.0	1				IN
			HARV				1525.0	2137.0	2	2059.0		1	IIIN
			HARV				1623.0		2	1623.0		2	IIIG
			HARV				1642.0		1	1642.0		1	IIIG,W

S O L A R R A D I O E M I S S I O N
S P E C T R A L O B S E R V A T I O N S

127
Late
Dec 82

D E C E M B E R 1 9 8 2

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
25			HARV				1656.0	1659.0	3	1656.0	1659.0	2	IIIGG
			HARV				1707.0	1708.0	3				IIIGG,V
			HARV				1754.0	1758.0	3	1754.0	1758.0	2	IIIGG
			HARV				1808.0		2	1808.0		1	IIIG
			HARV				1853.0		2				IIIG
			HARV				1948.0		2	1948.0		2	IIIG
			HARV				2010.0	2011.0	2	2010.0	2011.0	2	IIIG
			HARV				2116.0	2340.0	2				I
			HARV				2130.0	2132.0	2	2130.0	2132.0	2	IIIG
			HARV				2216.0	2219.0	3	2218.0	2219.0	2	IIIGG
26	1416	2400	HARV				1416.0	1548.0	2				IC
			HARV	1433.0	1434.0	1	1433.0	1434.0	1				IIIG,W
			HARV				1454.0	2256.0	2	1454.0	2103.0	1	IIIN
			HARV				1500.0	1504.0	2	1500.0	1504.0	2	IIIGG
			HARV	1506.0	1507.0		1505.0	1511.0	2	1505.0	1511.0	2	IIIGG
			HARV				1548.0	1854.0	2				I
			HARV				1854.0	2340.0	2				IC
			HARV				1954.0	1925.0	2	1924.0	1925.0	2	IIIG
			HARV				2026.0		2	2026.0		2	IIIG
			HARV				2032.0		2	2032.0		2	IIIG
			HARV				2218.0	2219.0	2	2218.0	2219.0	1	IIIG
			HARV				2243.0	2248.0	2	2245.0	2247.0	1	IIIGG
			HARV				2251.0	2252.0	2				IIIG
			HARV				2258.0	2259.0	2	2258.0	2259.0	1	IIIG
		HARV				2308.0		2				IIIG	
27	1415	2350	HARV				1415.0	1600.0	3				IC,DC
			HARV				1600.0	2008.0	2				IC
			HARV				1605.0		3	1605.0		2	IIIG
			HARV				1712.0	2350.0	2	1739.0	2350.0	1	IIIN
			HARV				1714.0	1717.0	2	1714.0	1715.0	2	IIIG
			HARV	1717.0	1718.0	1							DCIM
			HARV	1754.0	1757.0	1	1752.0	1757.0	2	1752.0	1757.0	2	IIIGG
			HARV	1837.0	1838.0	2	1836.0	1839.0	2	1836.0	1839.0	2	IIIGG,V
			HARV	1841.0	1845.0	1	1841.0	1847.0	3	1841.0	1847.0	2	IIIGG
			HARV				1944.0	1945.0	3	1944.0	1945.0	2	IIIG
			HARV				1953.0		2	1953.0		2	IIIG
			HARV				2008.0	2300.0	2				I
			HARV				2037.0	2038.0	2	2037.0	2038.0	1	IIIG
			HARV				2050.0	2054.0	3	2050.0	2054.0	2	IIIGG
			HARV				2222.0		2				IIIB
			HARV				2230.0		2				IIIB
		HARV				2236.0	2238.0	3	2236.0	2238.0	2	IIIGG	
		HARV				2304.0	2308.0	3	2304.0	2308.0	1	IIIG	
		HARV				2331.0	2334.0	2				IIIG	
		HARV				2339.0		2				IIIB	
28	1416	2350	HARV				1417.0	2345.0	2				IC,DC
			HARV				1430.0	1431.0	2				IIIG
			HARV				1451.0		2	1451.0		1	IIIG
			HARV				1457.0	1916.0	2	1457.0	1916.0	1	IIIN
			HARV				1553.0		2	1553.0		2	IIIG
			HARV	1738.0	2157.0	1	1651.0	1658.0	2	1651.0	1658.0	2	IIIGG
			HARV				1749.0	1750.0	2	1749.0	1750.0	2	IIIB
			HARV				1855.0	1856.0	2	1855.0	1856.0	2	IIIG
			HARV				2043.0	2046.0	2	2043.0	2046.0	2	IIIG
			HARV				2110.0	2111.0	2	2110.0	2111.0	1	IIIG
			HARV				2224.0	2225.0	2	2224.0	2225.0	1	IIIG
			HARV	2236.0	2238.0	2	2236.0	2238.0	2	2236.0	2238.0	1	IIIGG
			HARV				2244.0	2246.0	2	2245.0			IIIGG
			HARV	2252.0	2253.0	1	2251.0	2252.0	2				IIIG
		HARV	2257.0	2259.0	1	2257.0	2259.0	2				IIIG	
29	1410	2350	HARV				1416.0	2340.0	2				IC
			HARV	1518.0		2							IIIB
			HARV				1528.0	2349.0	2	1912.0	1940.0	1	IIIN
			HARV				1532.0	1533.0	2	1532.0	1533.0	1	IIIG
			HARV	1623.0	1632.0	1	1621.0	1633.0	3	1621.0	1633.0	2	IIIGG
		HARV				1806.0	1814.0	2	1806.0	1814.0	2	IIIGG	

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1982

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
29			HARV				1930.0	1931.0	3	1930.0	1931.0	2	IIIGG
			HARV	2037.0	2043.0	2	2032.0	2045.0	2	2032.0	2045.0	2	IIIGG
			HARV				2051.0	2052.0	2	2051.0	2052.0	2	IIIG
			HARV				2129.0	2130.0	2	2129.0	2130.0	2	IIIG
			HARV				2135.0	2137.0	2	2135.0	2137.0	2	IIIG
			HARV	2145.0	2149.0	2	2140.0	2149.0	3	2140.0	2149.0	2	IIIGG
			HARV	2156.0		1							IIIB,W
		HARV	2222.0		1							IIIG,W	
		HARV	2234.0	2237.0	2							IIIG	
30	1424	2345	HARV				1444.0	2311.0	2				IIIN
			HARV				1449.0		2				IIIG
			HARV	1450.0	1451.0	1	1451.0		1				IIIG
			HARV				1524.0	1525.0	1				IIIG
			HARV				1653.0	1654.0	2	1953.0	1954.0	1	IIIG
			HARV				1703.0	1707.0	2	1703.0	1707.0	1	IIIGG
			HARV				1709.0	1710.0	2				IIIG
			HARV				1713.0	1716.0	3	1713.0	1716.0	2	IIIGG
			HARV	1724.0	1726.0	1	1719.0	1726.0	2	1719.0	1726.0	2	IIIGG
			HARV	1740.0		1							IIIG,W
			HARV				1802.0	1803.0	2	1802.0	1803.0	1	IIIG
			HARV	1807.0	1811.0	2							IIIGG
			HARV				1822.0		2				IIIG
			HARV				1848.0		2				IIIG
			HARV	1919.0	1921.0	2	1919.0		2				IIIG
			HARV				1926.0	1927.0	2	1927.0		2	IIIG
			HARV				2006.0	2008.0	2	2007.0	2008.0	1	IIIG
		HARV				2010.0	2013.0	1	2010.0	2011.0	1	IIIG	
		HARV				2121.0		2	2121.0		1	IIIG	
		HARV				2137.0	2140.0	2	2137.0		1	IIIGG	
		HARV				2142.0	2143.0	2	2142.0		2	IIIGG	
		HARV				2155.0		2				IIIG	
31	1416	2400	HARV				1447.0		1				IIIG
			HARV				1522.0	1523.0	2	1522.0	1523.0	1	IIIG
			HARV				1646.0		2	1646.0			IIIG
			HARV				1843.0	1844.0	2	1823.0	1844.0	1	IIIG
			HARV				1927.0	1929.0	3	1924.0	1929.0	2	IIIGG
			HARV				1950.0	2339.0	2	1950.0			IIIN
			HARV				1954.0	2000.0	3	1954.0	2000.0	2	IIIGG,U
			HARV				2022.0	2025.0	2	2024.0	2025.0	1	IIIGG
			HARV				2127.0	2128.0	2	2127.0		1	IIIG
			HARV				2201.0		2	2201.0		1	IIIG
			HARV				2206.0		2				IIIG
		HARV				2216.0	2225.0	2	2220.0		1	IIIGG	

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

- | | |
|--|-------------------------------|
| B = Single burst | RS = Reverse slope burst |
| G = Small group (< 10) of bursts | DP = Drifting pairs |
| GG = Large group (> 10) of burst | DC = Drifting Chains |
| C = Underlying continuum (particularly with Type I) | H = Herringbone |
| S = Storm in the sense of Intermittent but apparently connected activity | W = Weak |
| N = Intermittent activity in this period | P = Pulsations |
| U = U-shaped burst of Type III | CONT = Continuum |
| | UNCLF = Unclassified activity |
| | DCIM = Fast drift |

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

MAY 1983

129
Late
May 83

PRELIMINARY REPORT ON RAPID VARIATIONS

Sudden Commencements (ssc)		Solar Flare Effects (sfe)
10	18 55 B: WNG FRD KAK KNY LNP MPO; C: WIT NGK BDV CLF GCK MMB AQU SPT	<u>01 02 55 - 03 25</u> HTY KNY <u>01 13 14 - 13 40</u> WNG
11	07 32 A: MPO; B: NUR WNG WIT LNP; C: SPT	03 12 03 - 12 11 CLF (si: B: DOB)
17	00 21 A: DOB NUR WNG WIT BDV VIC AQU COI SPT FRD MPO; B: SOD WNG HAD BDV CLF GCK EBR KAK HTY KNY LNP GNA CZT KGL DUM; C: MMB AMS	03 23 37 - 23 45 LNP <u>07 22 17 - 22 50</u> MMB KAK HTY KNY LNP <u>09 23 04 - 24 00</u> MMB KAK HTY KNY LNP
17	11 51 A: COI; B: WNG WIT SPT; C: BDV CLF EBR (bps: B: MPO)	10 12 08 - 12 25 SPT MPO <u>12 02 54 - 03 30</u> KAK KNY LNP
21	04 17 A: COI; B: LNP; C: BDV CLF EBR (si: MPO)	<u>14 07 25 - 07 29</u> BDV 15 08 46 - 09 09 LNP
21	12 26 B: WNG AQU COI MPO; C: NGK BDV GCK EBR	<u>15 09 11 - 09 19</u> HAD
24	12 39 A: NUR WNG WIT VIC AQU COI SPT FRD LNP MPO; B: SOD NGK HAD BDV GCK MMB EBR HTY KNY; C: CLF KAK AMS	23 11 12 - 11 22 MPO 25 23 22 - 23 30 LNP 28 14 05 - 14 15 SOD

Reporting Observatories: SOD DOB NUR WNG WIT NGK HAD BDV CLF WIT VIC
GCK MMB AQU EBR COI SPT FRD KAK HTY KNY LNP
MPO GNA AMS CZT KGL DUM

130
Late
May 83

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

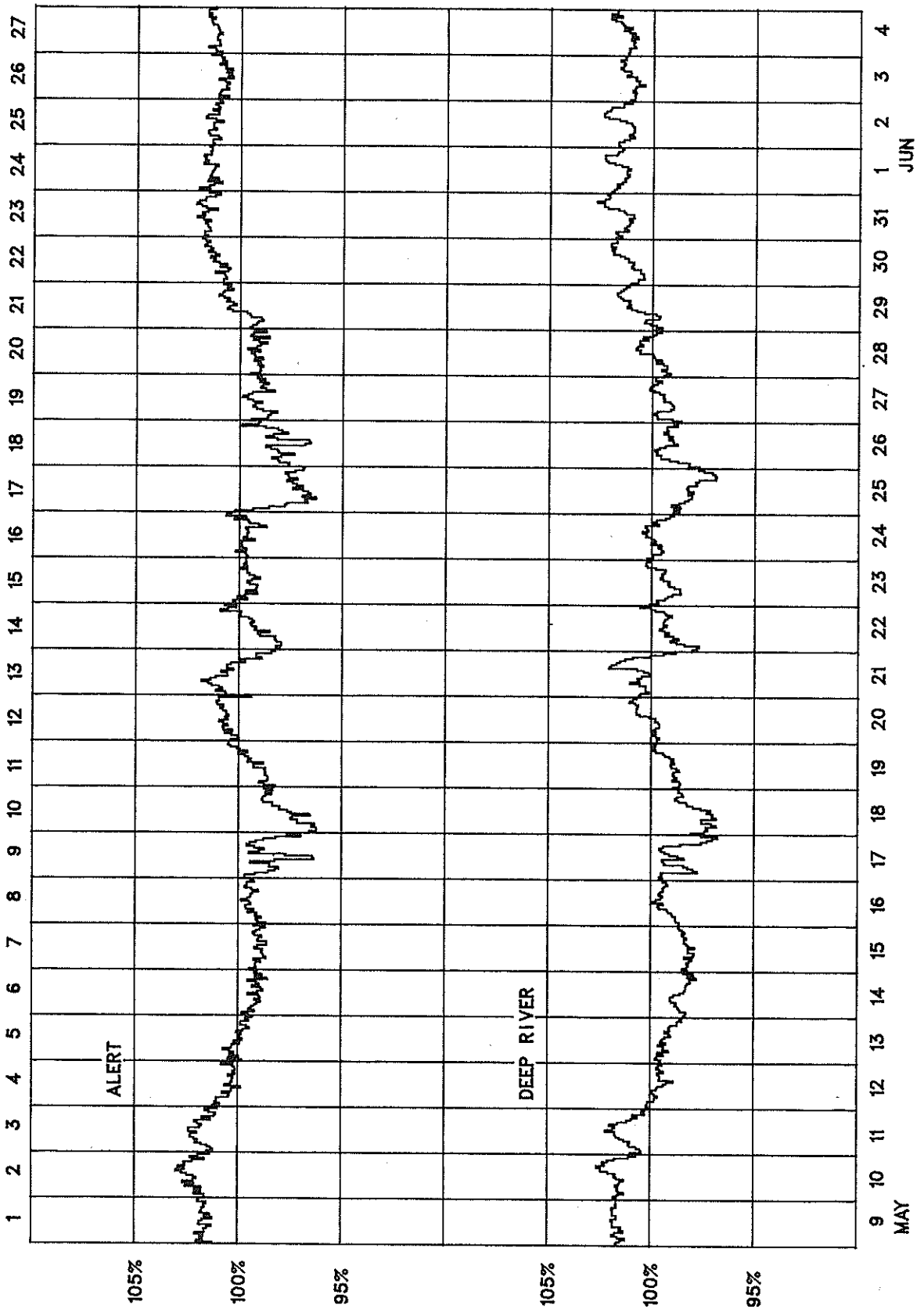
May 1983

Day	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300
1	6554.2	6206.7
2	6551.6	6171.8
3	6556.6	6208.0
4	6539.5	6200.4
5	6549.7	6234.7
6	6580.6	6236.8
8	6526.7	6195.8
9	6568.3	6233.5
10	6602.7	6237.5
11	6572.7	6200.9
12	6491.7	6111.4
13	6458.5	6084.4
14	6406.1	6036.9
15	6395.8	6025.0
16	6418.5	6086.6
17	6365.7	6048.1
18	6311.4	5996.1
19	6415.4	6076.8
20	6499.3	6142.2
21	6484.0	6167.6
22	6409.0	6077.5
23	6433.6	6096.9
24	6442.7	6121.1
25	6295.2	6011.5
26	6337.9	6076.6
27	6396.8	6101.8
28	6404.5	6129.0
29	6467.8	6176.8
30	6535.6	6206.6
31	6566.8	6233.3
MEAN	6474.8	6140.1

For less than 24-hour coverage, parentheses
enclose the number of hours for which data
are available.

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2047 (May 1983-June 1983)



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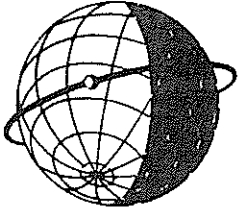
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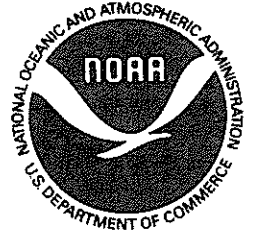
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