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Solar - Geophysical Data

NO. 413 JANUARY 1979

Part II (Comprehensive Reports)

DATA FOR
JULY 1978
JUNE 1978
& MISCELLANEA

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

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SOLAR-GEOPHYSICAL DATA

No. 413

Issued in two parts

Helen E. Coffey, Editor

J. Virginia Lincoln, Chief
Solar-Terrestrial Physics Division

CONTENTS

PAGE

Part I (Prompt Reports)

Index for 1978 2

Data for December 1978 3-43

Data for November 1978 45-161

Part II (Comprehensive Reports)

Index for 1978 2

Data for July 1978 3-67

Data for June 1978 69-80

Miscellaneous Data 81-92

Geomagnetic Indices
October 1978 data

Energetic Solar Particles
May 1978 data
June 1978 data

INDEX FOR 1978 DATA PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

		1978 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
A.	SOLAR AND INTERPLANETARY PHENOMENA												
A.1	Sunspot Drawings	403A 47	404A 40	405A 48	406A 54	407A 46	409A 50	409A 38	410A 48	411A 46	412A 40	413A 48	
A.2a	Zurich Provisional Relative Sunspot Numbers Rz	402A 9	403A 9	404A 9	405A 9	406A 9	407A 9	408A 9	409A 9	410A 11	411A 11	412A 9	413A 11
A.2b	Zurich Final Sunspot Numbers Rz												
A.2c	American Relative Sunspot Numbers RA	402A 9	403A 9	404A 9	405A 9	406A 9	407A 9	408A 9	409A 9	410A 11	411A 11	412A 9	413A 11
A.3a	Mt. Wilson Magnetograms	403A 46	404A 40	405A 48	406A 54	407A 46	408A 50	409A 38	410A 48	411A 46	412A 40	413A 48	
A.3b	Mt. Wilson Magnetic Characteristics of Sunspots	403A108	404A 96	405A110	406A114	407A108	408A110	409A100	410A110	411A106	412A102	413A108	
A.3c	Kitt Peak Magnetograms	403A 46	404A 40	405A 48	406A 54	407A 46	408A 50	409A 38	410A 48	411A 46	412A 40	413A 48	
A.3d	Mean Solar Magnetic Field (Stanford)	402A 33	404A 33	404A 33	405A 36	406A 40	407A 40	409A 41	409A 31	410A 41	411A 40	412A 34	413A 42
A.4	H-alpha Filtergrams	403A 47	404A 40	405A 48	406A 54	407A 46	408A 50	409A 38	410A 48	411A 46	412A 40	413A 48	
A.5	Calcium Plage Drawings - McMath (or Catania)	403A 47	404A 40	405A 48	406A 54	407A 46	408A 50	409A 38	410A 48	411A 46	412A 40	413A 48	
A.5a	Calcium Plage (McMath) and Sunspot Regions	403A108	404A 96	405A110	406A114	407A108	408A110	409A100	410A110	411A106	412A102	413A108	
A.5b	McMath Daily Calcium Plage Indices	403A114	404A104	405A119	406A124	407A118	408A119	409A110	410A120	411A116	412A114	413A116	
A.6	H-alpha Synoptic Charts	403A 44	404A 38	405A 46	406A 52	407A 44	408A 48	409A 38	410A 46	411A 44	412A 38	413A 46	
A.6b	Synoptic Chart and Active Regions (Paris)	407B 4	408B 4	409B 4	410B 70	411B 4	412B 4	413A 4					
A.7f	Helium D3 Chromosphere (Big Bear)	402A 29	403A 36	404A 29	405A 31	406A 35	407A 34	408A 37	409A 28	410A 37	411A 36	---	413A 38
A.7g	Helium Synoptic Maps (KPNO)	402A 28	403A 35	404A 27	405A 32	406A 36	407A 36	408A 36	409A 29	410A 38	411A 35	412A 30	413A 36
A.7h	Coronal Line Emission (Sac Peak)	403A 46	404A 40	405A 48	406A 54	407A 46	408A 50	409A 38	410A 48	411A 46	412A 40	413A 48	
A.8aa	2800 MHz - Daily Values of Solar Flux (ARO-Ottawa)	402A 9	403A 9	404A 9	405A 9	406A 9	407A 9	408A 9	409A 9	410A 11	411A 11	412A 9	413A 11
A.8ac	2800 MHz - Daily Values of Adj. Solar Flux (ARO-Ottawa)	402A 9	403A 9	404A 9	405A 9	406A 9	407A 9	408A 9	409A 9	410A 11	411A 11	412A 9	413A 11
A.8g	Daily Values of Adjusted Solar Flux (APSL)	402A 9	403A 9	404A 9	405A 9	406A 9	407A 9	408A 9	409A 9	410A 11	411A 11	412A 9	413A 11
A.9cb	8.6 mm Radio Maps of the Sun (NOSC - La Posta)	403A 47	404A 40	405A 48	406A 54	407A 46	408A 50	409A 38	410A 48	411A 46	---	---	
A.9d	2 cm Radio Maps of the Sun (NOSC - La Posta)	403A 47	404A 40	405A 48	406A 54	407A 46	408A 50	409A 38	410A 48	411A 46	---	---	
A.10a	169 MHz - Interferometric Observations (Nancay)	402A 16	403A 20	404A 17	405A 17	406A 19	407A 20	408A 19	409A 17	410A 23	411A 20	412A 18	413A 21
A.10c	21 cm East-West Solar Scans (Fleurs)	402A 19	403A 23	404A 20	405A 20	406A 22	407A 23	408A 22	409A 20	410A 28	411A 23	412A 21	413A 24
A.10d	43 cm East-West Solar Scans (Fleurs)	402A 20	403A 24	404A 21	405A 21	406A 23	407A 24	408A 23	409A 21	410A 29	411A 24	412A 22	413A 25
A.10e	10.7 cm East-West Solar Scans (Ottawa-ARO)	402A 18	403A 22	404A 19	405A 19	406A 21	407A 22	408A 21	409A 19	410A 25	411A 22	412A 20	413A 23
A.10f	3 cm East-West Solar Scans (Toyokawa)	402A 17	403A 21	404A 18	405A 18	406A 20	407A 21	408A 20	409A 18	410A 24	411A 21	412A 19	413A 22
A.11k	Solar X-ray Radiation (SOLRAD 11)	403A116	404A108	405A122	406A129	407A123	408A123	410B 82	410A123	411A120	412A118	413A119	
A.11q	Solar X-ray (SMS/GOES)	402A 24	403A 29	404A 24	405A 29	406A 30	407A 29	408A 31	409A 25	410A 32	411A 29	412A 25	413A 30
A.11h	Solar X-ray (OSO-8; 1975-057A)	403A 46	404A 40	405A 48	406A 54	407A 46	408A 50	409A 38	410A 48	411A 46	---	---	
A.11i	Solar X-ray (Columbia U.)											---	
A.12ba	Cosmic Ray Protons (Pioneers 6 & 7)	402A 30	---	---	---	---	---	---	---	---	---	---	---
A.12bb	Cosmic Ray Protons (Pioneers 8 & 9)	402A 31	---	---	---	---	---	408A 43	---	---	---	412A 29	---
A.12e	Energetic Solar Particles (IMP H & J)	407B 33	408B 62	410B100	411B 88	413B 83	413B 88	413B 63					
A.12f	Energetic Solar Particles (GMS/SEM)	---	---	---	---	406A 44	---	408A 45	---	---	---	---	---
A.13a	Solar Wind (Pioneers 6 & 7)	402A 30	---	---	---	---	---	---	---	---	---	---	---
A.13ab	Solar Wind (Pioneers 8 & 9)	402A 31	---	---	---	---	---	408A 43	---	---	---	412A 29	---
A.13d	Solar Wind from IPS Measurements	402A 34	403A 37	404A 31	405A 37	406A 41	407A 35	408A 39	409A 33	410A 39	411A 37	412A 35	413A 39
A.13e	Solar Plasma (IMP H & J)	408B 83	408B 61	409B 35	410B 67	411B 53	412B 44	413B 62					
A.17	Interplanetary Magnetic Field (Pioneer 8)	---	---	---	---	---	---	---	---	---	---	---	---
A.17	Interplanetary Magnetic Field (Pioneer 9)	402A 31	---	---	---	---	---	408A 43	---	---	---	412A 29	---
A.17c	Inferred IP Magnetic Field	402A 32	403A 38	404A 32	406A 38	406A 38	407A 38	408A 40	409A 30	410A 40	411A 38	412A 32	413A 40
A.18	Interplanetary Electric Field (Pioneer 8)	---	---	---	---	---	---	---	---	---	---	---	---
A.18	Interplanetary Electric Field (Pioneer 9)	402A 31	---	---	---	---	---	---	---	---	---	412A 29	---
B.	IONOSPHERIC (AND RADIO WAVE PROPAGATION) PHENOMENA												
B.52	Graphs of Transmission Frequency Range	403A148	404A144	405A158	406A171	407A168	408A168	409A142	410A160	411A158	412A162	413A160	
B.53	Quality Figures Based on Frequency Ranges	403A150	404A146	405A157	406A170	407A167	408A170	409A144	410A162	411A160	412A161	413A159	
C.	FLARE-ASSOCIATED EVENTS												
C.1a	Optical Observations Flares	402A 12	403A 12	404A 12	405A 12	406A 12	407A 12	408A 12	409A 12	410A 14	411A 14	412A 12	413A 14
C.1ba	Optical Observations Flares (Standardized Data)	407B 8	408B 8	409B 8	410B 8	411B 8	412B 8	413B 8					
C.1d	Flare Patrol Observations	402A 15	403A 19	404A 16	405A 16	406A 18	407A 19	408A 18	409A 16	410A 22	411A 19	412A 17	413A 20
C.1d	Flare Patrol Observations	407A 22	408B 35	409B 24	410B 29	411B 25	412B 29	413B 35					
C.1e	Flare Indices (by day)	407A 21	408B 34	409B 23	410B 28	411B 24	412B 28	413B 34					
C.1f	Flare Indices (by Region)	408B 77	409B 47	410B 80	411B 66	412B 55	413B 80						
C.3	Solar Radio Waves - Outstanding Occurrences	407B 23	408B 36	409B 25	410B 30	411B 26	412B 30	413B 36					
	Solar Radio Waves - Fixed Frequencies - Selected	402A 21	403A 25	404A 22	405A 22	406A 24	407A 25	408A 24	409A 22	410A 26	411A 25	412A 23	413A 26
C.3t	43.25, 80 and 160 MHz Selected Bursts (Culgoora)	405B 45	405B 48	406B 62	407B 67	407A151	408A152	409A129	410A147	411A144	412A148	413A147	
C.4a	Solar Radio Spectral Obs. (Fort Davis)	403A132	404A122	405A138	406A144	407B 52	408A138	411B 72	411B 75	411A135			
C.4d	Solar Radio Spectral Obs. (Culgoora)	404B 56	405B 40	406B 64	407B 59	407A139	408A138	409A115	410A139	412B 60	412A134	413A134	
C.4e	Solar Radio Spectral Obs. (Weissenau)	403A132	404A122	405A138	406A144	407A139	408A138	409A115	410A139	411A135	412A134	413A134	
C.4f	Solar Radio Spectral Obs. (Sagamore Hill)	403A132	404A122	405A138	406A144	407B 52	408A138	409A115	410A139	411A135	412A134	413A134	
C.4h	Solar Radio Spectral Obs. (Dwingeloo)	403A132	404A122	405A138	---	---	---	---	---	411A135		413A134	
C.4i	Solar Radio Spectral Obs. (Durnten)	403A132	404A122	405A138	406A144	407A139	408A138	409A115	410A139	411A135	412A134	413A134	
C.4j	Solar Radio Spectral Obs. (Manila)	406B 70	404A122	405A138	406A144	407B 52	408A139	409A115	410A139	411A135	412A134	413A134	
C.5e	Solar X-ray (SMS/GOES)	402A 26	403A 29	404A 26	---	406A 32	407A 29	408A 33	409A 27	410A 34	411A 31	412A 27	413A 32
C.5f	Solar X-ray (Columbia U.)											---	
C.6	Sudden Ionospheric Disturbances	403A115	404A105	405A120	406A125	407A119	408A120	409A111	410A121	411A117	412A115	413A117	
D.	GEOMAGNETIC AND MAGNETOSPHERIC PHENOMENA												
D.1a	Geomagnetic Indices Kp, Kn, Ks, Km, Ap, aa, Cp	403A142	404A139	405A151	406A162	407A160	408A160	409A135	410A153	411A151	413B 82	413A152	
D.1ba	27-day Chart of Kp Indices	403A144	404A141	405A153	406A164	407A162	408A162	409A137	410A155	411A153	412A157	413A154	
D.1c	27-day Chart of C9											413A	
D.1d	Principal Magnetic Storms	403A145	404A143	405A156	406A167	407A165	408A165	409A140	410A158	411A156	412A160	413A157	
D.1e	Reduced Magnetograms			405A 39									
D.1f	Sudden Commencement and Solar Flare Effects	403A147	405B 55	406B 72	406A169	407A166	408A167	409A141	410A159	411A157	412A161	413A158	
D.1g	Equatorial Indices Dst	405B 53	405B 54	405A155	406A166	408B 80	408A164	409A139	410A157	411A155	412A159	413A156	
D.1h	Geomagnetic Substorm Log (Boulder)			404A 35	405A 39	406A 42	407A 41	408A 44	409A 34	410A 43	411A 41	412A 36	413A 43
F.	COSMIC RAYS												
F.1a	Cosmic Ray Neutron Counts (Deep River)	403A138	404A138	405A150	407B 70	407A155	408A155	410B 98	410A152	411A150	412A154		
F.1b	Cosmic Ray Neutron Counts (Climax)	406B 73	406B 73	406B 73	406A161	411A 69	411A 69	411A 69					
F.1e	Cosmic Ray Neutron Counts (Alert)	403A138	404A138	405A150	407B 70	407A155	408A155	410B 98	410A152	411A150	412A154		
F.1f	Cosmic Ray Neutron Counts (Calgary)												
F.1g	Cosmic Ray Neutron Counts (Sulphur Mountain)												
F.1h	Cosmic Ray Neutron Counts (Thule)												
F.1i	Cosmic Ray Neutron Counts (Kiel)	403A138	404A138	405A150	406A161	407A155	408A155	409A134	410A152	411A150	412A154	413A149	
F.1j	Cosmic Ray Neutron Counts (Tokyo)	403A138	404A138	405A150	406A161	407A155	408A155	409A134	410A152	411A150	412A154	413A149	
F.1k	Cosmic Ray Neutron Counts (Kula)												
H.	MISCELLANEOUS												
H.60	IUWDS Alert Decisions	402A 5	403A 5	404A 4	405A 4	406A 4	407A 4	408A 5	409A 5	410A 5	411A 4	412A 4	413A 5
H.62	Abbreviated Calendar Record	408B 70	409B 40	410B 72	411A 58	412B 48	413B 72						

Notes:

"410A 48" listed under 1978 Aug means that the sunspot drawings for August 1978 were contained in *Solar-Geophysical Data* Number 410 - Part I, beginning on page 48.

A = Part I, B = Part II.

----- = no data available.
blank = data not yet received.

JULY 1978 DATA

Contents

	Page
Active Regions	4-5
Synoptic Solar Maps	6-7
Solar Flares	
Hα Solar Flares (Standardized Data)	8-33
Daily Flare Indices	34
No-Flare Patrol Chart	35
Solar Radio Waves	
Worldwide Outstanding Occurrences at Fixed Frequencies	36-61
Energetic Solar Particles and Plasma	62-67

ACTIVE REGIONS

CARRINGTON ROTATION 1669

(June 3 to June 30, 1978)

Region No.	Coordinates Lat.	Coordinates Long.	Age at CMP	IMP.	Spot-less Region	Region No. in Rotation 1668	Activity at West Limb
1	15°N	355°	+1	1	x		disappeared
2	28 S	353	>6	1	x		dispersed
3	18 N	340	>6	1	x		dispersed
4	21 S	340	+2	2			dispersed
5	14 S	336	-2	1	x		decreasing
6	16 N	328	-4	2			stable
7	15 S	320	>6	1	x		dispersed
8	23 N	306	>6	1	x	(11)	decreasing
9	13 N	305	0	1	x		disappeared
10	18 N	300	>6	1	x	(14)	dispersed
11	18 N	281	>6	2		(16)	decreasing
12	17 N	267	-1	2			decreasing
13	17 N	261	>6	1	x		decreasing
14	23 S	255	>6	1	x	(21)	decreasing
15	17 N	244	+1	4			stable
16	13 S	240	+5	2			dispersed
17	23 N	212	>6	1	x	(22)	dispersed
18	17 N	209	>6	3			decreasing
19	23 N	209	+4	1	x		dispersed
20	25 S	200	>6	1	x	(24)	decreasing
21	31 S	197	+6	1	x		dispersed
22	20 N	190	-1	2			dispersed
23	13 N	188	>6	1	x	(26+27)	decreasing
24	26 N	187	+2	2			decreasing
25	21 S	174	>6	1	x		dispersed
26	21 N	172	>6	1	x	(28)	decreasing
27	16 N	166	>6	1	x		dispersed
28	17 N	163	0	4			decreasing
29	20 N	151	>6	3			decreasing
30	12 N	149	>6	1	x		dispersed
31	26 N	143	>6	1	x		dispersed
32	13 N	136	+2	4			decreasing
33	23 S	116	+5	2			decreasing
34	24 S	110	>6	2		(37)	decreasing
35	34 S	109	>6	1	x	(36)	dispersed
36	21 N	98	>6	1	x	(40)	dispersed
37	13 S	97	>6	1	x		decreasing
38	13 N	97	0	2			decreasing
39	24 S	91	-3	1	x		dispersed
40	40 N	88	>6	1	x		disappeared
41	15 S	86	>6	1	x	(42)	decreasing
42	32 N	82	>6	2			dispersed
43	21 N	80	>6	2		(43)	decreasing
44	15 N	76	>6	1	x		dispersed
45	18 S	67	>6	1	x		dispersed
46	17 N	63	>6	5			decreasing
47	16 S	59	-1	2			decreasing
48	25 N	58	>6	3		(47)	decreasing
49	19 S	47	>6	7			decreasing
50	23 N	34	>6	3		(49+50)	decreasing
51	24 N	33	+2	4			decreasing
52	29 N	26	>6	2			decreasing
53	30 S	0	>6	1	x		dispersed

ACTIVE REGIONS

CARRINGTON ROTATION 1670

(June 30 to July 27, 1978)

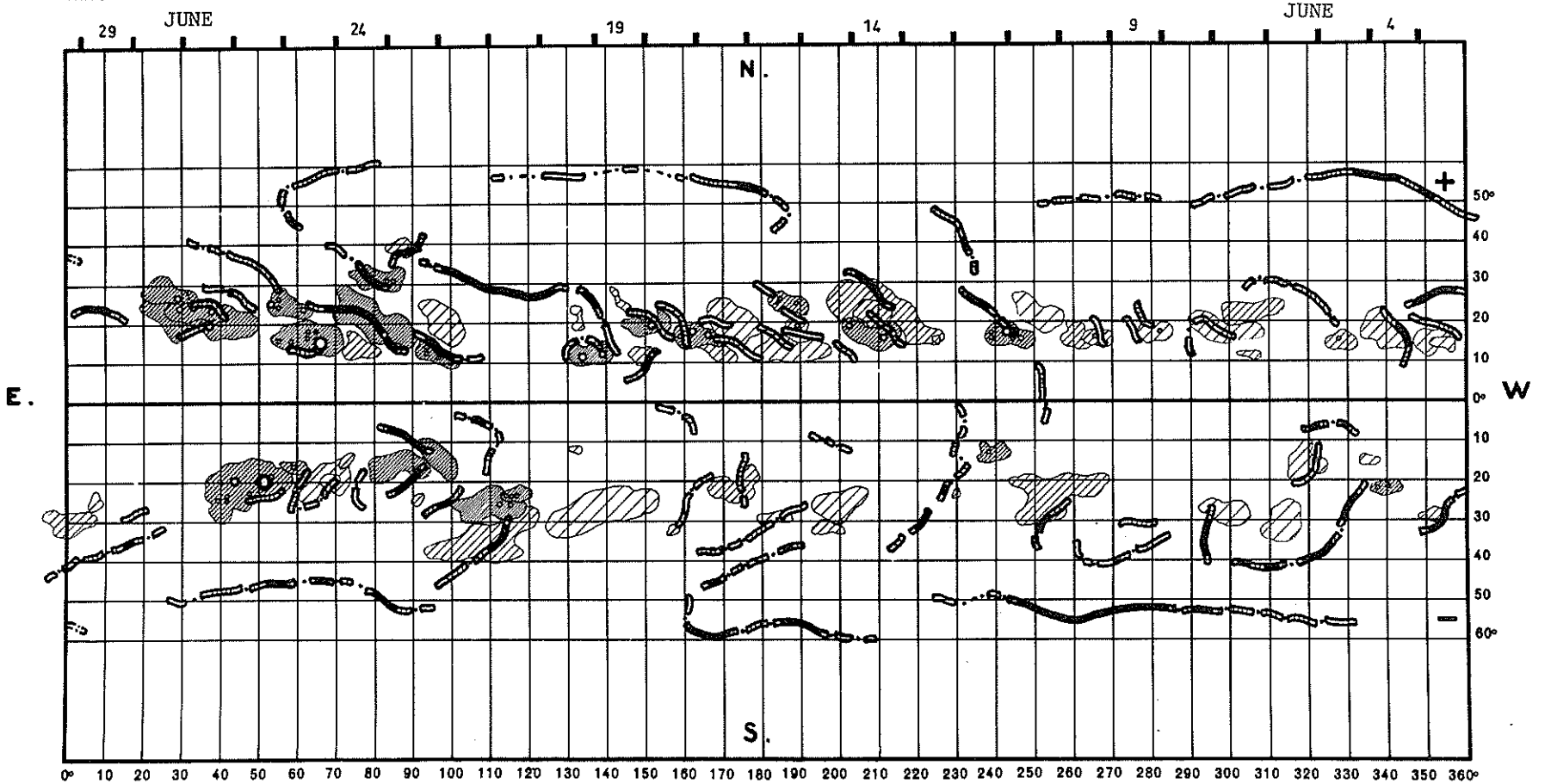
Region No.	Coordinates Lat.	Coordinates Long.	Age at CMP	IMP.	Spot-less Region	Region No. in Rotation 1669	Activity at West Limb
1	34°N	348°	+5	1	x		disappeared
2	17 N	342	>6	2			decreasing
3	29 S	342	-2	1	x		disappeared
4	11 N	336	-3	1	x		decreasing
5	16 N	330	>6	1	x	(1)	decreasing
6	28 N	328	+2	3			decreasing
7	23 S	325	0	2			stable
8	28 S	319	-4	2			stable
9	23 N	318	>6	1	x		dispersed
10	14 S	314	>6	2			stable
11	22 N	304	+4	1	x		decreasing
12	17 N	301	-1	2			decreasing
13	19 S	291	+5	2			decreasing
14	21 N	282	>6	3			decreasing
15	24 S	266	>6	1	x		dispersed
16	21 N	265	-3	3			increasing
17	29 S	258	>6	1	x		dispersed
18	21 S	252	>6	1	x	(14)	decreasing
19	19 N	243	>6	1	x	(15)	dispersed
20	19 S	242	+3	4			decreasing
21	21 N	217	>6	1	x	(17)	dispersed
22	17 N	209	>6	1	x	(18)	dispersed
23	19 S	200	>6	2			decreasing
24	26 N	194	>6	2			decreasing
25	32 S	180	>6	1	x		disappeared
26	27 S	175	+6	1	x		decreasing
27	18 N	168	>6	7			decreasing
28	27 N	162	>6	2			dispersed
29	13 S	150	>6	1	x		disappeared
30	17 N	139	>6	3			decreasing
31	15 N	138	>6	1	x		decreasing
32	12 N	123	+3	2			dispersed
33	24 S	121	+3	2			decreasing
34	38 S	121	-2	2			decreasing
35	19 N	114	0	2			decreasing
36	13 N	108	-3	2			decreasing
37	20 N	107	>6	2			decreasing
38	29 S	104	>6	1	x	(34)	dispersed
39	21 S	98	-5	2			(?)
40	13 N	100	>6	2		(38)	decreasing
41	21 S	98	>6	1	x		decreasing
42	18 S	88	>6	1	x		decreasing
43	15 S	74	+4	1	x		dispersed
44	27 S	71	+5	1	x		disappeared
45	20 N	68	>6	1	x	(46)	decreasing
46	17 S	64	>6	1	x		decreasing
47	28 N	51	>6	1	x	(48)	dispersed
48	25 S	40	>6	1	x	(49)	dispersed
49	23 N	34	>6	1	x	(50)	decreasing
50	20 S	28	>6	1	x		dispersed
51	28 N	26	>6	1	x	(51)	decreasing
52	19 N	25	+3	2			dispersed
53	30 N	13	>6	1	x	(52)	decreasing
54	27 N	11	+4	2			decreasing

SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1669

JUNE 3 TO JUNE 30, 1978

MEUDON OBSERVATORY

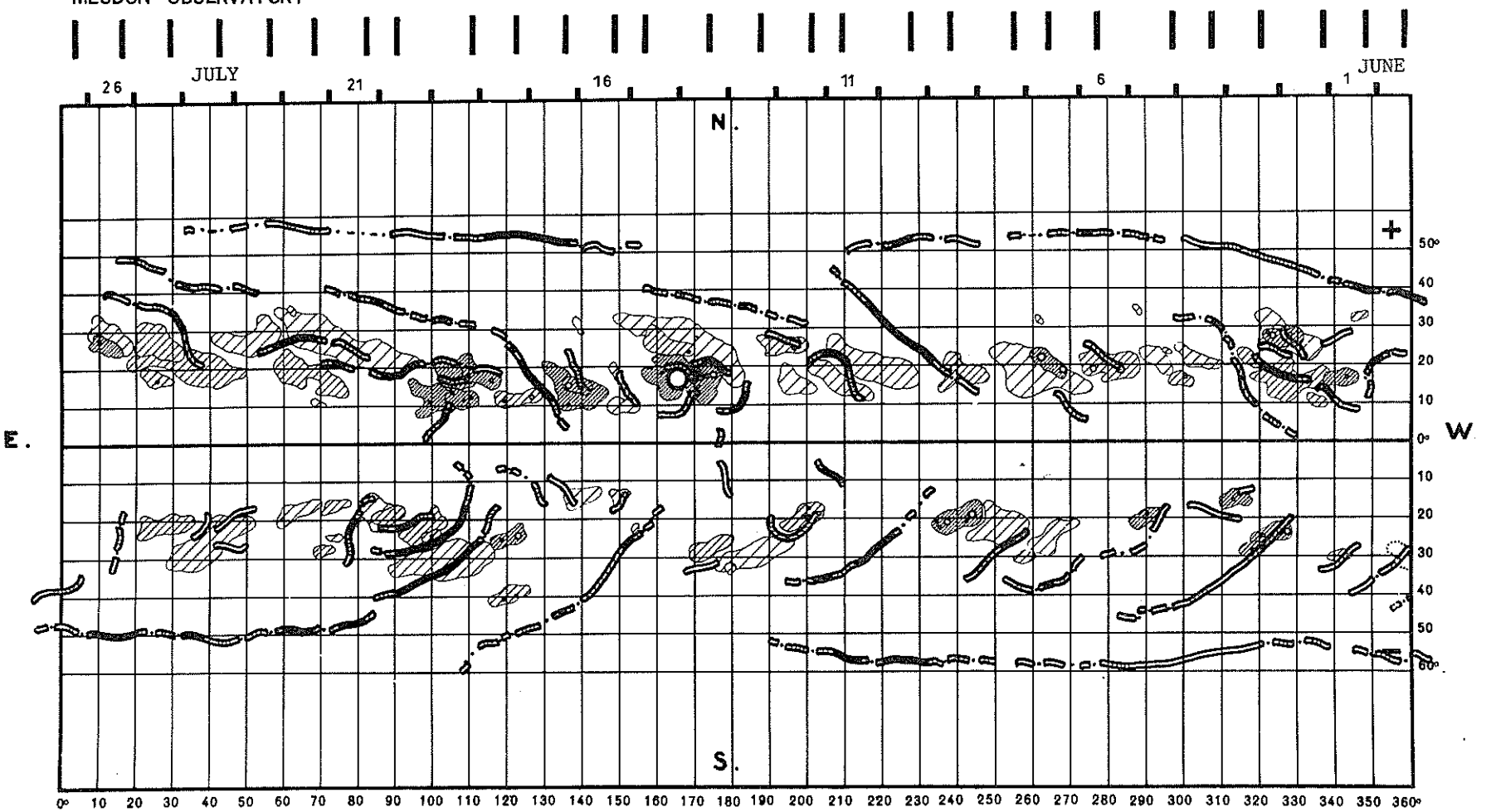


SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1670

JUNE 30 - JULY 27, 1978

MEUDON OBSERVATORY



7 Jul 78

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR AREA Sq. Deg.		
	JUL																	
	01	0207	0213	NO FLARE PATROL														
934 MANI	01	0304	0306	0316	N25	W40	.700	15376	28.1	12	-N		P		120	1.7		Y5
935 CATA	01	0635E	0635	0645	S19	W65	.924	15375	26.4	10D	-B	1	P	0635	28			Y5
936 MEUD	01	0821	0824	0834	N16	E09	.273	15381	2.0	13	-F		C					Y5
937 KHAR	01	0857E		0921D	S21	W58	.879	15375	27.0	24D	-F		P	0858			D	Y5
GRP67938	01	0900	0902	0922	N16	E07	.256	15381	1.9	22	-F							
MEUC	01	0900	0902	0910	N16	E09	.273	15381	2.1	10	-F		C				E	
KHAR	01	0910E		0934D	N17	E05	.258	15381	1.8	24D	-N		P	0924			D	
939 KHAR	01	0917E		0930D	N28	W90	1.000		24.6	13D	-F		P					Y5
940 CATA	01	0950E	0950	1010	S16	W75	.972	15375	25.8	20D	-N	2	P	0950	39			Y5
941 KHAR	01	1025E		1040D	N25	W46	.760	15376	28.0	15D	-F		P	1033				Y5
GRP67942	01	1033+2	1035 1045	1105	S20	W59	.885	15375	27.0	32	1N						E	
KHAR	01	1033E	1035	1100D	S20	W59	.885	15375	27.0	27D	1N		P	1035			E	
CATA	01	1035	1045	1105	S20	W60	.892	15375	26.9	30	1N	2	C	1045	112	2.5		
943 KHAR	01 IMP.1 NO # RAMY2	1113E	1230	1253D	N28	W90	1.000		24.7	100D	?F		P				T	Y5
GRP67944	01	1123+7	1123 1135	1158D	N21	E66	.918	15385	6.4	35	-N						D	
KHAR	01	1123E	1123	1158D	N21	E68	.930	15385	6.6	35D	-N		P	1127			D	
CATA	01	1130	1135	1155D	N21	E65	.911	15385	6.4	25D	1N	2	P	1135	84			
945 TACH	02	0534		0617	N18	W90	1.000	15368	25.5	43	1B		C	0535	264		Y	Y5
946 KHAR	02 IMP.1 NO # CATA1	0900E	0900	0924D	N28	W90	1.000	15373	25.6	24D	?N		P	0906			T	Y5
947 KHAR	02	0907E	0914	0931D	N18	W90	1.000	15368	25.6	24D	-F		P	0916				Y5
948 KHAR	02	0916E		0925D	N21	E54	.824	15385	6.4	9D	-F		P	0918			D	Y5
GRP67949	02	0931E	0934 0941	1004D	N30	W90	1.000	15373	25.6	33	N							
KHAR	02 IMP.1 NO # CATA1	0931E	0934	1004D	N28	W90	1.000	15373	25.6	33D	?N		P				T	
KHAR	02	0934E	0941	0951D	N33	W90	1.000	15373	25.6	17D	-F		P					
950 KHAR	02	0937E	0941	1001D	S17	W90	1.000	15375	25.7	24D	-F		P					Y5
951 KANZ	03	1003	1003	1015	S29	W24	.636		1.6	12	-F	1					EG	Y5
GRP67952	03	1255+1	1322+2	1510D	N18	W09	.298	15381	2.9	135	-F						GJ	
LVOV	03	1255E	1324	1510D	N17	W09	.284	15381	2.9	135D	-F		C	1324	200	2.1	CJ	
KANZ	03	1256	1322	1347D	N19	W10	.320	15381	2.8	51D	-N	2					G	
953 VORO	04	0008	0009	0013	N28	W13	.466	15388	3.0	5	-B		C	0009	72	.8	DJ	Y5
GRP67954	04	0533+2	0536+4	0607	N27	W18	.491	15388	2.9	34	-N				110	1.3	JU	
CULG	04	0533	0536	0610	N28	W18	.503	15388	2.9	37	-N		C	0536	100	1.2	U	
ABST	04	0534	0537	0604	N27	W18	.491	15388	2.9	30	-N		C	0537	114	1.4	FJ	
HITK	04	0534E	0538	0600D	N27	W19	.499	15388	2.8	26D	-B		C	0538			D	
TACH	04	0535	0540	0546D	N27	W18	.491	15388	2.9	11D	1F		C	0540	220	2.5	E	
MANI	04	0537E	0539	0557D	N26	W17	.470	15388	3.0	20D	-F		V		110	1.2		
GRP67955	04	0724	0732 0740	0800	N27	W19	.499	15388	2.9	36	-N				110	1.3	FJZ	
ABST	04	0724	0732	0802	N27	W20	.508	15388	2.8	38	-N		C	0732	157	1.9	FJZ	
BUCA	04	0730E		0800	N28	W19	.511	15388	2.9	30D	-N		C	0740	107	1.3		
CATA	04	0735	0740	0755	N27	W19	.499	15388	2.9	20	-N	1	C	0740	112	1.3		
956 MEUD	04	0856E	0856	0902	N28	W21	.528	15388	2.8	6D	-F		C				E	Y5
957 MEUD	04	0934		0939D	N28	W19	.511	15388	3.0	5D	-F		C				DK	Y5

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS
	DATE JUL	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg	
GRP67958	04	0940	0945+3	1010	N27	W20	.508	15388	2.9	30	-N				120	1.4	D
CATA	04	0940	0945	1010	N27	W20	.508	15388	2.9	30	-B	2	C	0945	140	1.6	
KIEV	04	0941E	0948	1010D	N27	W20	.508	15388	2.9	290	-F		C	0948	100	1.2	D
959 KHAR	04	1105E		1150D	N26	W22	.516	15388	2.8	450	-N		P	1112			D Y5
960 LVOV	04	1418	1434	1510	N26	W25	.546	15388	2.7	52	-F		C	1434	150	1.8	D Y5
	04	2016	2032	NO FLARE PATROL													
	04	2041	2102	NO FLARE PATROL													
GRP67961	04	2223+0	2223	2231	S25	W24	.596	15389	3.1	8	-F						DJ
VORO	04	2223		2232	S25	W24	.596	15389	3.1	9	-N		C	2226	81	1.0	DJ
MANI	04	2223E	2223U	2229	S25	W24	.596	15389	3.1	6D	-F		V		15	.2	
GRP67962	04	2225+3	2227+2	2234	N20	E15	.379	15385	6.1	9	-F				70	.8	DH
CULG	04	2225	2227U	2235	N20	E15	.379	15385	6.1	10	-F		C	2227	50	.6	
VORO	04	2228	2229	2232	N20	E15	.379	15385	6.1	4	-N		C	2229	90	1.0	DH
963 MANI	04	2321E	2321U	2332	S25	W23	.587	15389	3.2	110	-F		V		20	.2	Y5
964 ABST	05	0639E	0641	0651D	N28	W33	.643	15388	2.8	120	-F		P	0641	79	1.0	D Y5
965 KHAR	05	0825E	0835	0835D	S25	W30	.651	15389	3.1	100	-F		P				DH Y5
GRP67966	05	1118>9	1140 1150+5	1308	S27	W29	.659	15389	3.3	110	-B				100	1.3	EZ
RAMY	05	1113	1140	1409	S26	W28	.641	15389	3.4	171	-B	4	C		113		Z F
HTPR	05	1139	1155	1250	S25	W29	.641	15389	3.3	71	-N		C	1155	100	1.1	E
KHAR	05	1141E	1206	1310D	S28	W29	.668	15389	3.3	89D	1N		P	1204	150	2.1	E
CATA	05	1145	1150	1155D	S28	W28	.660	15389	3.4	10D	-B	2	P	1150	112	1.5	Z
MCMA	05	1211E		1305	S27	W29	.659	15389	3.3	540	-B		P	1211	80	1.1	E
GRP67967	05	1307+4	1311+1 1327+2	1339	N27	W36	.666	15388	2.8	32	-N				40	.5	EL
MCMA	05	1307	1328	1345	N27	W37	.677	15388	2.8	38	-B		C	1328	45	.6	EL
KHAR	05	1308E	1311	1327D	N27	W36	.666	15388	2.8	190	-F		P				E
RAMY	05	1311	1329	1339	N27	W36	.666	15388	2.8	28	-B	4	C		46		
RAMY	05	1311	1312	1339	N27	W36	.666	15388	2.8	28	-N	4	C		26		
HTPR	05	1324	1327	1332	N27	W36	.666	15388	2.9	8	-F		C	1327	30	.4	
GRP67968	05	1507+0	1508+1	1522	N27	W37	.677	15388	2.9	15	-N				50	.7	
HTPR	05	1507	1509	1520	N27	W37	.677	15388	2.9	13	-F		C	1509	30	.4	
RAMY	05	1507	1508	1522	N27	W37	.677	15388	2.9	15	-B	4	C		52		F
MCMA	05	1508E		1530D	N27	W37	.677	15388	2.9	22D	-N		C	1508	80	1.2	E
GRP67969	05	1614+3	1618+2	1624	N27	W37	.677	15388	2.9	10	-N				40	.5	E
MCMA	05	1614	1619	1624	N27	W38	.687	15388	2.8	10	-N		C	1619	70	1.0	E
HTPR	05	1617	1620	1623	N27	W37	.677	15388	2.9	6	-F		C	1620	30	.4	
RAMY	05	1617	1618	1631	N27	W37	.677	15388	2.9	14	-B	4	C		26		
GRP67970	05	1633+2	1637+1	1710	S26	W32	.677	15389	3.3	37	-N				20	.3	
HTPR	05	1633	1638	1641	S25	W32	.669	15389	3.3	8	-F		C	1638	20	.2	
RAMY	05	1635	1637	1710	S26	W31	.668	15389	3.4	35	-B	3	C		20		F
HTPR	05	1653		1706D	S25	W33	.678	15389	3.2	13D	-F		C	1701	30	.3	
MCMA	05	1700E		1708D	S27	W33	.694	15389	3.2	8D	-N		C	1708	40	.6	E
971 MCMA	05	1733E		1800	S21	W02	.412	15386	5.6	27D	-F		C	1736	60	.7	E Y5
GRP67972	05	1748	1803+5 2022	2028	S27	W33	.694	15389	3.3	160	-B				140	1.9	FH
PALE	05	1748	1808	1959	S27	W33	.694	15389	3.3	131	-B	3	C		188		DE F
MCMA	05	1750E	1803	2028D	S27	W33	.694	15389	3.3	158D	-B		C	1803	90	1.4	FH
PALE	05	2021	2022	2028	S27	W33	.694	15389	3.4	7	-N	3	C		51		H F
973 PALE	05	2039	2043	2046	S27	W33	.694	15389	3.4	7	-N	3	C		22		F Y5
974 PALE	05	2058	2102	2107	S27	W33	.694	15389	3.4	9	-N	3	C		51		DE Y5
GRP67975	05	2112+2	2117+6	2131	N26	W40	.702	15388	2.9	19	-N				40	.6	D
MCMA	05	2112	2117	2128	N27	W40	.707	15388	2.9	16	-N		C	2117	25	.4	D
PALE	05	2114	2123	2133	N26	W40	.702	15388	2.9	19	-N	3	C		48		DE

10
Jul 78

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY			COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	JUL									MIN								
GRP67976	06	0735+5	0735+7	0749	S26	W40	.750	15389	3.3	14	-F				50	.8	J	
BUCA	06	0735		0746	S26	W39	.741	15389	3.4	11	-F		C	0740	64	1.0		
CATA	06	0735	0735	0750D	S27	W40	.756	15389	3.3	15D	-N	1	P	0735	28	.4	T	
ABST	06	0737E	0740	0749D	S26	W40	.750	15389	3.3	12D	-F		P	0740	87	1.4	DJ	
HTPR	06	0740	0742	0748	S26	W40	.750	15389	3.3	8	-F		C	0742	40	.5	E	
GRP67977	06	0932+4	0939+3	0952	S26	W41	.759	15389	3.3	20	-F				60	.9	EJ	
ABST	06	0932	0939	0947	S26	W41	.759	15389	3.3	15	-F		C	0939	87	1.4	DJ	
KHAR	06	0932E	0942	1000D	S27	W43	.782	15389	3.2	28D	-F		P				E	
KANZ	06	0933	0941	0952	S25	W41	.753	15389	3.3	19	-B	2						
HTPR	06	0936		0943D	S26	W41	.759	15389	3.3	7D	-F		C	0936	40	.5	E	
978 KHAR	06	1010E	1013	1020D	S27	W43	.782	15389	3.2	10D	-F		P				E	Y5
GRP67979	06	1030+5	1040+5	1050	S27	W41	.765	15389	3.4	20.	-N				70	1.1	J	
KHAR	06	1030E	1040	1046D	S27	W43	.782	15389	3.2	16D	-N		P				E	
CATA	06	1035	1045	1050	S28	W41	.770	15389	3.4	15	-N	2	C	1045	56	.9	T	
ABST	06	1041E	1041	1049D	S26	W41	.759	15389	3.4	8D	-F		P	1041	87	1.4	DJ	
980 MCMA	06	1131E		1140	S28	W42	.779	15389	3.3	9D	-F		C	1131	25	.4	D	Y5
GRP67981	06	1206+8	1209+6 1300	1304D	S27	W42	.773	15389	3.4	58	-N				45	.7	E	
MCMA	06	1206	1209	1235	S28	W42	.779	15389	3.4	29	-N		C	1209	35	.5	E	
RAMY	06	1214	1215	1409	S26	W42	.768	15389	3.4	115	-N	3	C		51			
MCMA	06	1258	1300	1304	S28	W42	.779	15389	3.4	6	-N		C	1300	30	.5	E	
982 RAMY	06	1414	1414	1419	S26	W42	.768	15389	3.4	5	-N	3	C		16			Y5
983 MCMA	06	1439	1442	1455	S21	E38	.701	15400	9.5	16	-F		C	1442	20	.3	D	Y5
GRP67984	06	1502+8	1512+1	1612	S27	W43	.782	15389	3.4	70	-N							
RAMY	06	1502	1512	1612	S26	W43	.776	15389	3.4	70	-N	3	C		152		FDE	
MCMA	06	1510	1513	1514D	S28	W43	.787	15389	3.4	4D	-N		C	1513	35	.5	E	
985 MCMA	06	1550	1555	1625	S21	E38	.701	15400	9.5	35	-N		C	1551	30	.4	E	Y5
986 RAMY	06	1639	1640	1644	N09	W62	.882	15387	2.3	5	-N	3	C		16		F	Y5
GRP67987	06	1716>9	1724+7 1740+6	1814	S27	W45	.798	15389	3.3	58	-F				35	.6		
MCMA	06	1716	1724	1735	S28	W43	.787	15389	3.5	19	-F		C	1724	30	.5	E	
RAMY	06	1730	1740	1805D	S27	W46	.807	15389	3.3	35D	-N	3	C		25		F	
RAMY	06	1730	1731	1805D	S27	W46	.807	15389	3.3	35D	-F	3	C		20		F	
MCMA	06	1742	1746	1814	S27	W47	.815	15389	3.2	32	-F		C	1746	35	.6	D	
988 MCMA	06	1753	1754	1815	S21	E36	.680	15400	9.4	22	-F		C	1754	30	.4	E	Y5
989 MCMA	06	1855E	1907	1940	S20	E88	1.000	15397	13.4	45D	-N		C	1907			D	Y5
990 MCMA	06	1934	1935	1938	S21	E35	.670	15400	9.4	4	-N		C	1935	15	.2	D	Y5
991 MCMA	06	2028	2035	2050	S27	W48	.823	15389	3.3	22	-N		C	2035	40	.7	E	Y5
GRP67992	06	2110+1	2115+0	2125	S18	E78	.984	15397	12.7	15	-F							
MCMA	06	2110	2115	2125	S19	E77	.981	15397	12.7	15	-N		C	2115			E	
VORO	06	2111	2115	2125	S18	E80	.989	15397	12.9	14	-F		C	2115	63		D	
993 CULG	06	2258	2302	2321	S22	E31	.637	15400	9.3	23	-F		C	2302	60	.8		Y5
994 CULG	06	2355	2357	0053	S25	W52	.847	15389	3.1	58	-N		C	2357	50	1.0	I	Y5
GRP67995	07	0009	0010 0105+7	0141	S19	E71	.958	15397	12.3	92	-N				40		JK	
VORO	07	0009	0010	0015	S19	E71	.958	15397	12.3	6	-N		C	0010	63		DJ	
CULG	07	0010U	0112U	0150U	S20	E75	.975	15397	12.6	100D	-N		C	0112	40			
VORO	07	0051	0105	0130D	S19	E71	.958	15397	12.4	39D	1F		C	0105	90		JK	
PALE	07	0103E	0109U	0132	S17	E71	.956	15397	12.4	23D	-N	3	C		31		DE	
996 CULG	07	0151	0158	0232	S28	W51	.851	15389	3.3	41	-F		C	0158	20	.4		Y5
997 CULG	07	0400	0409	0455	S27	W53	.862	15389	3.2	55	-N		C	0409	80	1.6		Y5
998 CULG	07	0405	0410	0442	S20	E30	.611	15400	9.4	37	-F		C	0410	40	.5		Y5
999 ABST	07	0530	0533	0540D	N15	E90	1.000	15403	14.0	10D	2N		P	0533	201		BFG	Y5

Hα SOLAR FLARES

JULY 1978

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY	MIN.		CONC	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	JUL																	
GRP68000	07	0650+1	0653+1	0702	S19	E72	.962	15397	12.7	12	-N				70		D	
BUCA	07	0650	0654	0705	S20	E70	.954	15397	12.5	15	-N		C	0654	53			
ABST	07	0651	0653	0659	S19	E74	.971	15397	12.8	8	1F		C	0653	87		D	
1 HTPR	07	0659	0700	0703	N18	W31	.554	15390	5.0	4	-F		C	0700	10	.1		Y5
GRP68002	07	0709+1	0715+1	0735	N13	E09	.225	15395	8.0	26	-F						G	
HTPR	07	0709	0716	0740	N13	E08	.214	15395	7.9	31	-F		C	0716	40	.4	E	
ABST	07	0710	0715	0729	N14	E10	.249	15395	8.0	19	-F		C	0715	96	1.1	DG	
3 KHAR	07	0845E	0914	0958D	N27	W72	.953		2.0	73D	-F		P	0914			D	Y5
4 KHAR	07	0910E	0910	0913D	S24	W59	.896	15389	3.0	3D	-F		P				D	Y5
5 KHAR	07	0927E	0927	0930D	S25	W55	.870	15389	3.3	3D	-F		P				D	Y5
GRP68006	07	0946+1	0951+7	1010	N15	E90	1.000	15403	14.2	24	-N						AGK	
ABST	07	0946	0951	1014	N15	E90	1.000	15403	14.2	28	1N	*	C	0951	122		AFGK	
KHAR	07	0947E	0957	1015D	N15	E90	1.000	15403	14.2	28D	1N	*	P	1005				
HTPR	07	0947	0952	1004	N15	E90	1.000	15403	14.2	17	-N	*	C	0952	30			
MONT	07	0954E	0958	1006D	N16	E90	1.000	15403	14.2	12D	-B	*	C	0958	40		D	
7 KHAR	07	0947E		1010	S25	W57	.884	15389	3.1	23D	-F		P				E	Y5
GRP68008	07	1053+9	1104+1	1127	N18	E90	1.000	15403	14.2	34	1N				80		ADG	
KHAR	07	1053E	1105	1200	N18	E90	1.000	15403	14.2	67D	1N		P	1107				
ABST	07	1056	1104	1127D	N18	E90	1.000	15403	14.2	31D	1N		P	1104	96		ADG	
HTPR	07	1102	1105	1110	N15	E90	1.000	15403	14.2	8	-N		C	1105		.7		
GRP68009	07	1105+7	1115 1125	1140	S26	W55	.873	15389	3.3	35	-N				70	1.4	F	
KHAR	07	1033E		1200	S25	W55	.870	15389	3.3	87D	-F	*	P				T	
CATA	07	1105	1125	1140D	S27	W55	.876	15389	3.3	35D	-N	*	P	1125	84	1.8		
TEHR	07	1112	1115	1131	S26	W56	.880	15389	3.3	19	-N	*	C		64		F	
10 KHAR	07	1107E	1123	1200	N31	E90	1.000		14.2	53D	?F		P					Y5
	IMP.1 NO		: HTPR2	ABST1	CATA1													
11 HTPR	07	1205	1212	1230	S26	W57	.887	15389	3.2	25	-F		C	1212	70	1.2	E	Y5
GRP68012	07	1211	1214+1	1227	S19	E65	.925	15397	12.4	16	-B							
HTPR	07	1211	1214	1222	S20	E67	.938	15397	12.5	11	-N		C	1214	60	1.4	E	
TEHR	07	1212E	1215	12310	S18	E64	.918	15397	12.3	19D	1B	2	C		159		F	
13 HTPR	07	1234	1238	1246	S20	E67	.938	15397	12.5	12	-F		C	1238	30	.7		Y5
GRP68014	07	1312+1	1314+1	1324	N24	W62	.892	15388	2.9	12	-F				35	.8	E	
MCMA	07	1312	1315	1325	N24	W62	.892	15388	2.9	13	-F		C	1315	50	1.2	E	
HTPR	07	1313	1314	1323	N24	W63	.899	15388	2.8	10	-F		C	1314	20	.4	E	
15 MCMA	07	1424	1426	1432	S16	W49	.790	15384	3.9	8	-F		C	1426	50	.9	E	Y5
GRP68016	07	1437+0	1441+2	1533	S26	W57	.887	15389	3.3	56	-B				70	1.5	E	
HTPR	07	1437	1441	1530	S26	W58	.894	15389	3.3	53	-B		C	1441	80	1.5	E	
MCMA	07	1437	1443	1535	S27	W57	.890	15389	3.3	58	-B		C	1443	60	1.5	E	
17 MCMA	07	1526	1535	1546	S16	W49	.790	15384	4.0	20	-N		C	1535	50	.9	E	Y5
18 MCMA	07	1552	1604	1635	S27	W57	.890	15389	3.4	43	-F		C	1604	25	.6	DK	Y5
GRP68019	07	1618+1	1622+0	1630	S20	E23	.539	15400	9.4	12	-F				25	.3	E	
HTPR	07	1618	1622	1628	S20	E24	.549	15400	9.5	10	-F		C	1622	20	.2		
MCMA	07	1619	1622	1632	S21	E23	.549	15400	9.4	13	-N		C	1622	30	.4	E	
GRP68020	07	1620>9	1717	1722D	S16	W50	.800	15384	3.9	62	-N						E	
MCMA	07	1620		1800	S16	W50	.800	15384	3.9	100	-N		C	1700	60	1.1	E	
PALE	07	1710	1717	1722	S16	W51	.810	15384	3.9	12	-N	3	C		25		DE	
21 MCMA	07	1622	1626	1640	S22	E66	.935	15397	12.6	18	-N		C	1626	30	.9	E	Y5
GRP68022	07	1636+4	1643 1656+3	1710	S27	W59	.903	15389	3.3	34	-N				50	1.1	E	
MCMA	07	1636	1643	1710	S27	W58	.896	15389	3.3	34	-N		C	1643	70	1.7	E	
HTPR	07	1640	1656	1715	S26	W59	.900	15389	3.3	35	-F		C	1656	50	1.0	E	
PALE	07	1647E	1659	1709	S27	W61	.915	15389	3.1	22D	-N	3	C		51		DE	
23 MCMA	07	1656	1700	1706	S22	E66	.935	15397	12.7	10	-N		C	1700	15	.5	D	Y5

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR AREA Sq. Deg.		
	JUL																	
GRP68024	07	1728>9	1802+2	1830	S16	W52	.819	15384	3.8	62	-N				60	1.0		
PALE	07	1728	1804U	18040	S16	W51	.810	15384	3.9	360	-N	*	C		37		DE	
RAMY	07	1748	1802	1830	S17	W54	.840	15384	3.7	42	-N	*	C		80			
25 RAMY	07	1802	1827	1830	S27	W59	.903	15389	3.3	28	-B	3	C		63			Y5
26 MCMA	07	1823		1850	N16	E90	1.000	15403	14.5	27	-N		C					Y5
27 PALE	08	0210	0219	0229	S16	W56	.855	15384	3.9	19	-N	3	C		65		FDE	Y5
28 ABST	08	0748	0758	0807	S21	E15	.480	15400	9.5	19	-F		C	0758	87	1.0	DJ	Y5
GRP68029	08	0752E	0826+1	0835	S13	W61	.889	15384	3.8	43	-F						HJ	
KHAR	08	0752E		0837	S15	W60	.885	15384	3.8	450	-F		P	0815			EH	
ABST	08	0824E	0826	0833	S13	W62	.897	15384	3.7	9D	-F		P	0826	87	2.0	DJ	
KHAR	08	0827E	0827	0834	S13	W62	.897	15384	3.7	7D	-N		P	0829			D	
GRP68030	08	0752>9	0827+0	0832	N15	E90	1.000	15403	15.1	40	1N				70		ADGJ	
KHAR	08	0752E	0827	0903	N15	E90	1.000	15403	15.1	710	1N	*	P	0825				
HTPR	08	0823	0827	0832	N13	E90	1.000	15403	15.1	9	-N	*	C	0827	50			
ABST	08	0824E	0827	0832	N16	E90	1.000	15403	15.1	8D	1N	*	P	0827	87		ADGJ	
GRP68031	08	0838E	0913	0932	S15	W60	.885	15384	3.9	54	-F						DJ	
KHAR	08	0838E		0938	S16	W58	.871	15384	4.0	60D	-N		P	0838				
ABST	08	0908E	0913	0925	S15	W62	.900	15384	3.7	17D	-F		P	0913	87	2.0	DJ	
32 KHAR	08	0854E		0948	S18	E15	.441	15400	9.5	54D	-F		P	0916			E	Y5
GRP68033	08	0954>9	1029	1046	S16	W59	.879	15384	4.0	52	1F						DJ	
KHAR	08	0954E		1047	S17	W57	.865	15384	4.1	53D	1N		P	0954			T	
ABST	08	1025	1029	1044	S16	W61	.894	15384	3.9	19	1F		C	1029	105	2.3	DJ	
34 KHAR	08	1122E		1224	S17	W57	.865	15384	4.2	62D	?N		P	1132			T	Y5
	IMP.1 NO : HTPR2 MCMA2				CATA1													
35 RAMY	08	1225	1227	1251	S16	W61	.894	15384	3.9	26	-N	3	C		55		F	Y5
GRP68036	08	1251>9	1255 1303	1312	S16	W62	.901	15384	3.9	21	-F							
MCMA	08	1251	1255	1310	S16	W62	.901	15384	3.9	19	-F		C	1255	50	1.2	E	
RAMY	08	1302	1303	1314	S16	W62	.901	15384	3.9	12	-N	3	C		78		F	
37 HTPR	08	1252	1302	1316	S25	W08	.494	15391	7.9	24	-F		C	1302	50	.5	E	Y5
38 RAMY	08	1301	1304	1314	S26	W70	.960	15389	3.3	13	-N	3	C		22		F	Y5
39 RAMY	08	1334	1335	1353	S16	W62	.901	15384	3.9	19	-N	3	C		32		F	Y5
GRP68040	08	1407+1	1414	1420	N15	E83	.991	15403	14.8	13	-N						D	
MCMA	08	1407E		1419	N15	E85	.995	15403	15.0	12D	-N		C	1410			D	
KANZ	08	1408	1414	1420	N15	E82	.989	15403	14.7	12	-N	2						
41 RAMY	08	1434	1435	1438	S16	W62	.901	15384	4.0	4	-N	3	C		33		F	Y5
GRP68042	08	1444+0	1445+1	1450	S19	E51	.819	15397	12.4	6	-N				25	.4	D	
MCMA	08	1444E	1446	1451	S19	E49	.801	15397	12.3	7D	-N		C	1446	25	.4	D	
RAMY	08	1444	1445	1448	S19	E53	.837	15397	12.6	4	-N	3	C		20			
GRP68043	08	1449+3	1450 1500+4	1514	S25	W72	.967	15389	3.2	25	-F				20		D	
RAMY	08	1449	1450	1454	S26	W71	.964	15389	3.3	5	-N	3	C		14			
HUAN	08	1452	1504	1518	S25	W73	.971	15389	3.1	26	-F	1	C	1504	20		D	
RAMY	08	1458	1500	1509	S26	W71	.964	15389	3.3	11	-N	3	C		21			
44 HUAN	08	1533		1555	S15	W67	.933	15384	3.6	22	-F	1	C					Y5
45 HUAN	08	1543		1559	S20	E09	.426	15400	9.3	16	-F	1	C					Y5
46 HUAN	08	1649		1702	S20	E09	.426	15400	9.4	13	-F	1	C					Y5
47 HUAN	08	1716		1727	S15	W67	.933	15384	3.7	11	-F	1	C					Y5
48 HUAN	08	1742		1757	S20	E09	.426	15400	9.4	15	-F	1	C					Y5
GRP68049	08	1749	1750 1829	1953	S26	W75	.979	15389	3.1	124	-F							
HUAN	08	1749	1750	1953	S26	W74	.976	15389	3.2	124	-F	1	C	1750	40			
HUAN	08	1826	1829	1831	S26	W77	.985	15389	3.0	5	-F	*	C	1829	20		D	

Hα SOLAR FLARES

JULY 1978

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE JUL	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg	
50 HUAN	08	1809	1812	1818	S15	W67	.933	15384	3.7	9	-F	1	C	1812	30		Y5
51 HUAN	08	1852		1925	S15	W67	.933	15384	3.8	33	-F	1	C	1904	40		Y5
GRP68052	08	1946	1950+1	2021	N16	E82	.989	15403	15.0	35	?N						
HUAN	08	1946	1950	2017	N15	E85	.995	15403	15.2	31	N	2	C	1950	80		E
	IMP.1 S IMP.2																
PALE	08	1947E	1951U	2024	N18	E79	.980	15403	14.7	370	2B	3	C		230		FDE
GRP68053	08	1959+4	2008	2045	S15	W66	.927	15384	3.9	46	-N						
HUAN	08	1959		2046D	S15	W67	.933	15384	3.8	470	-N	1	P	2020	30		
PALE	08	2003	2008	2044	S16	W65	.922	15384	4.0	41	-B	3	C		41		DE
54 HUAN	08	2016		2021	S20	E06	.412	15400	9.3	5	-F	1	C				Y5
55 HUAN	08	2109		2118D	S15	W67	.933	15384	3.9	90	-F	1	P				Y5
56 HUAN	08	2117		2118D	S16	E03	.339	15400	9.1	10	-F	1	P	2118	20	.2	D Y5
57 VORO	08	2237	2238	2241	S21	E08	.436	15400	9.5	4	-N		C	2238	45	.5	E Y5
58 VORO	09	0142	0145	0150	N14	E75	.964	15403	14.7	8	?F		C	0145	116		DJ Y5
	IMP.1 NO : PALE1																
59 VORO	09	0153	0155	0158	N20	E75	.964	15403	14.7	5	-F		C	0155	72		D Y5
GRP68060	09	0527>9	0527 0553	0556	S20	E02	.403	15400	9.4	29	-F						J
ABST	09	0527E	0527	0554	S19	E02	.387	15400	9.4	270	-F		P	0527	79	.9	DJ
ABST	09	0550	0553	0558	S22	E03	.436	15400	9.5	8	-F		C	0553	114	1.3	EJ
GRP68061	09	0703		0715	N14	E71	.944	15403	14.6	12	-N				60		DJ
MITK	09	0703		0718	N14	E72	.949	15403	14.7	15	-N		C	0707		.4	
ABST	09	0707E	0707	0711	N15	E71	.944	15403	14.6	40	1F		P	0707	87		DJ
GRP68062	09	0703+7	0712	0721	S24	W87	1.000	15389	2.8	18	-N						ADG
MITK	09	0703		0721	S24	W90	1.000	15389	2.5	18	-N	*	C	0716		.2	
ABST	09	0710	0712	0720	S25	W85	.999	15389	2.9	10	1F	*	C	0712	87		ADG
GRP68063	09	0714+1	0722	0734	N13	E79	.980	15403	15.2	20	-N						DJ
ABST	09	0714	0722	0732	N14	E78	.976	15403	15.2	18	1F		C	0722	87		DJ
MITK	09	0715		0735	N13	E80	.983	15403	15.3	20	-N		C	0725		.3	
64 ABST	09	0735E	0739	0757	N19	E78	.976	15403	15.2	220	?F		P	0739	87		DJ Y5
	IMP.1 NO : MITK2			CATA1													
GRP68065	09	0808	0817	0841	N18	E75	.964	15403	15.0	33	1F						DJK
ABST	09	0808	0817	0841	N19	E77	.972	15403	15.1	33	1F		C	0817	87		DJK
CATA	09	0830E	0830	0835D	N18	E73	.955	15403	14.8	5D	1N	1	P	0830	112		T
GRP68066	09	0846	0852 0855	0912D	N18	E72	.950	15403	14.8	26	?F						JZ
	IMP.1 NO : CATA1																
ABST	09	0846	0852	0912D	N18	E75	.964	15403	15.0	260	1F		P	0852	87		DJZ
ABST	09	0849	0855	0912D	N19	E70	.939	15403	14.6	230	1F		P	0855	87		DJ
67 ABST	09	0919E	0921	0930D	N19	E78	.976	15403	15.2	110	?F		P	0921	87		DJ Y5
	IMP.1 NO : CATA1																
68 ABST	09	0950E	0951	0954D	S18	W04	.376	15400	9.1	40	-F		P	0951	87	1.0	D Y5
GRP68069	09	1007+3	1013+2	1116	N18	E69	.933	15403	14.6	69	1B						EH
KHAR	09	1007E	1013	1026	N18	E70	.939	15403	14.7	19D	1B		P	1012			EHT
CATA	09	1010	1015	1030	N14	E68	.926	15403	14.5	20	1B	2	C	1015	112		
CATA	09	1010	1015	1105	N18	E70	.939	15403	14.7	55	1B	2	C	1015	84		T
KHAR	09	1037E		1126	N21	E70	.940	15403	14.7	49D	-N		P	1037			EHT
GRP68070	09	1133+8	1145+0	1203	N18	E71	.944	15403	14.8	30	1B				90		KZ
MCMA	09	1133E	1145	14110	N18	E72	.950	15403	14.9	158D	1B		C	1145	70	2.1	EKZ
CATA	09	1140	1145	1155	N18	E70	.939	15403	14.7	15	1B	2	P	1145	112		T
TEHR	09	1141	1145	1203	N18	E71	.944	15403	14.8	22	-B	2	C		102		FDE
GRP68071	09	1139+1	1142+3	1210	S21	W02	.419	15400	9.3	31	-N				120	1.3	EHZ
MCMA	09	1139	1142	1210	S21	W03	.421	15400	9.3	31	-N		C	1142	80	1.2	EH
CATA	09	1140	1145	1155D	S21	W02	.419	15400	9.3	15D	-N	2	P	1145	168	1.9	Z

14
Jul 78

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
	JUL																
GRP68072	09	1212	1214 1245	1633	N19	E70	.939	15403	14.8	261	1B						E
TEHR	09	1212	1245	1302D	N18	E70	.939	15403	14.8	50D	-B	*	V		152		FDE
TEHR	09	1212	1214	1302D	N18	E70	.939	15403	14.8	50D	-B	*	V		102		FDE
RAMY	09	1252E	1300	1634D	N19	E70	.939	15403	14.8	222D	2B	*	C		306		DE
RAMY	09	1252E	1424	1634D	N19	E70	.939	15403	14.8	222D	1B	*	C		115		DE
HUAN	09	1503	1505	1509	N20	E70	.939	15403	14.9	6	-N	*	C	1505	40		T
HUAN	09	1543	1550	1556	N19	E69	.933	15403	14.8	13	-F	*	C	1550	30		
HUAN	09	1559		1632	N19	E70	.939	15403	14.9	33	-N	*	C	1614	50		
73 RAMY	09	1349	1351	1356	S16	W75	.973	15384	4.0	7	-N	3	C		9		Y5
GRP68074	09	1500+8	1510+3	1538	S19	E39	.702	15397	12.5	38	-N				45	.6	
RAMY	09	1500	1510	1545	S19	E39	.702	15397	12.6	45	-B	3	C		54		
HUAN	09	1508	1513	1530	S20	E40	.718	15397	12.6	22	-N	1	C	1513	40	.6	
GRP68075	09	1637	1649	1710	N17	E69	.933	15403	14.9	33	-N				70		E
MCMA	09	1544E		1646D	N18	E70	.939	15403	14.9	62D	1N	*	P	1645	100	2.7	EFT
HUAN	09	1637		1710	N20	E70	.939	15403	14.9	33	-N	*	C	1655	45		E
HUAN	09	1647	1649	1657	N14	E65	.905	15403	14.6	10	-N	*	C	1649	50		E
GRP68076	09	1735+2	1740	1816D	S19	E36	.670	15397	12.4	41	1N				270	3.6	
HUAN	09	1735		1747D	S19	E37	.681	15397	12.5	120	1N	1	P	1741	180	2.5	E
PALE	09	1737	1740	1816D	S19	E36	.670	15397	12.4	39D	1B	3	C		363		FDE
GRP68077	09	1801+1	1802+0	1804	S21	W04	.423	15400	9.5	3	-F				50	.6	
PALE	09	1801	1802	1805	S20	W06	.414	15400	9.3	4	-N	3	C		45		FDE
HUAN	09	1802	1802	1803	S22	W03	.436	15400	9.5	1	-F	1	C	1802	60	.6	
GRP68078	09	1811+4	1822 1841	2127	N19	E68	.927	15403	14.9	196	2B				230		KLXY
PALE	09	1640E	1841U	2123	N17	E67	.920	15403	14.7	283D	2B	*	C		408		FDE
MCMA	09	1811E	1822	2200D	N20	E70	.939	15403	15.0	229D	2B	*	C	1822	280	30.5	EFKLXY
HUAN	09	1815		1937	N20	E69	.934	15403	14.9	82	1N	*	C	1820	180		E
HUAN	09	2130E		2131D	N19	E68	.927	15403	15.0	1D	-F	*	P	2130	25		D
79 PALE	09	2204	2226	2254	N18	E65	.907	15403	14.8	50	-B	3	C		46		F Y5
80 PALE	09	2301	2415	0017	N18	E64	.900	15403	14.8	76	-B	3	C		65		F Y5
GRP68081	10	0137	0143	0258	N19	E64	.900	15403	14.9	81	1B						
PALE	10	0137	0143	0258	N18	E63	.892	15403	14.8	81	1B	3	C		188		FDE
MANI	10	0150E	0150U	0224D	N20	E65	.908	15403	15.0	34D	1B		P		180	3.6	
GRP68082	10	0219+6	0221+5	0239	N20	W34	.600	15409	7.5	20	-B				150	1.9	F
PALE	10	0219	0221	0242	N20	W35	.612	15409	7.5	23	1B	3	C		157		F
MANI	10	0225	0226	0235	N20	W34	.600	15409	7.6	10	-N		V		150	.2	
83 PALE	10	0312	0314	0414	N18	E62	.885	15403	14.8	62	1B	3	C		218		Z F Y5
	10	0349	0412	NO FLARE PATROL													
84 TACH	10	0426E		0438D	N19	E61	.878	15403	14.8	12D	?N		C	0426	230	4.7	E Y5
	IMP.1 NO ‡ PALE1																
85 TACH	10	0436E	0439	0457D	N20	W39	.660	15409	7.3	21D	-N		C	0439	133	1.8	D Y5
GRP68086	10	0500E	0510+5 0523+1	0543	N18	E64	.900	15403	15.0	43	2N				290	6.8	J
TACH	10	0500E	0501	0506D	N20	E63	.894	15403	14.9	6D	1N		C	0501	159	3.5	D
ABST	10	0502	0523	0541	N14	E60	.866	15403	14.7	39	1B		C	0523	227	4.3	FJ
ABST	10	0506	0511	0534	N19	E69	.933	15403	15.4	28	-N		C	0511	87		DJ
ABST	10	0509	0515	0524	N21	E67	.922	15403	15.2	15	-F		C	0515	79		DJ
TACH	10	0509E	0510	0516D	N20	E65	.908	15403	15.1	7D	1N		C	0510	186	4.4	E
TACH	10	0521E	0524	0530D	N15	E61	.875	15403	14.8	9D	2N		C	0524	354	7.7	E
TACH	10	0533E	0533	0545D	N20	E63	.894	15403	15.0	12D	1N		C	0533	186		E
GRP68087	10	0555>9	0622+3 0635	0734	N18	E61	.877	15403	14.8	99	3B				680	14.5	HIJKUX
ABST	10	0500E	0622	1054D	N17	E63	.892	15403	14.9	354D	3B		P	0622	960		FHIJK
CATA	10	0555E	0635	0710D	N18	E60	.869	15403	14.7	75D	3B	2	P	0635	702	14.6	T
ATHN	10	0603	0625	0712	N17	E59	.860	15403	14.7	69	2B	1		0625	721	13.3	
CULG	10	0606	0624	0638D	N17	E61	.876	15403	14.8	32D	2B		P	0624	500	10.0	ZX
BUCA	10	0618E		0759	N19	E58	.853	15403	14.6	101D	2B		C	0626	537	10.7	U
ISTA	10	0630E		0710	N20	E65	.908	15403	15.1	40D	1N						
KHAR	10	0650E	0650	0730	N20	E64	.901	15403	15.1	40D	1N		P				BE

Hα SOLAR FLARES

JULY 1978

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE JUL	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg		
88 CULG	10	0613	0622	0635U	N22	W37	.646	15409	7.5	22D	-F		C	0622	30	.4		Y5
89 ABST	10	0615	0617	0636	N26	E61	.886	15403	14.8	21	-F		C	0617	87	1.8	DJ	Y5
GRP68090	10	0827E	0855 0921	1015	N18	E59	.861	15403	14.8	108	1F						EH	
KHAR	10	0827E	0855	1018	N18	E61	.877	15403	14.9	111D	1F	*	P	0942			EH	
MONT	10	0842E	0921	1012	N18	E58	.852	15403	14.7	90D	1N	*	C	0921	220			
91 KHAR	10 IMP.1	0840E NO	0850 MONT2	0905 AEST1	N18 CATA1	E90	1.000	15410	17.1	25D	?F		P	0851				Y5
GRP68092	10	1033>9	1143	1208	N18	E57	.843	15403	14.7	95	-N						E	
KHAR	10	1033E		1158	N18	E58	.852	15403	14.8	85D	-F	*	P	1050			ET	
RAMY	10	1128	1143	1217	N19	E57	.845	15403	14.8	49	-B	*	C		112			
GRP68093	10	1241	1245+7 1318+5	1415	N18	E57	.843	15403	14.8	94	1B				140	2.6		
ZURI	10	1241E	1321	1321D	N18	E57	.843	15403	14.8	40D	1B		P	1321	240	4.7		
RAMY	10	1241	1252	1434	N19	E56	.836	15403	14.7	113	-B	4	C		78		F	
RAMY	10	1241	1344	1434	N19	E56	.836	15403	14.7	113	1B	4	C		226		F	
KHAR	10	1242E	1245	1252D	N21	E60	.872	15403	15.0	10D	-N		P				D	
KANZ	10	1308E	1323	1329D	N17	E56	.833	15403	14.7	21D	1B	2						
HUAN	10	1309	1318	1400	N17	E55	.824	15403	14.7	51	-N	2	C	1318	140	2.6	E	
MCMA	10	1312		1415	N20	E60	.871	15403	15.1	63	1B		C	1320	100	2.2	E	
94 MCMA	10	1436	1438	1441D	N14	E88	.999	15410	17.2	5D	-F		C	1438			D	Y5
GRP68095	10	1452+1	1458+5	1515	N19	E56	.836	15403	14.8	23	-N				20	.4	D	
RAMY	10	1452	1503	1538	N19	E55	.827	15403	14.7	46	-B	4	C		23		F	
HUAN	10	1452	1458	1505	N19	E57	.845	15403	14.9	13	-F	1	C	1458	20	.3	D	
MCMA	10	1453		1515	N18	E56	.834	15403	14.8	22	-N		C	1500	25	.5	D	
GRP68096	10	1546+4	1550+2 1557+1	1615	N16	E55	.823	15403	14.8	29	-N				45	.8	K	
MCMA	10	1546	1558	1615	N15	E56	.831	15403	14.9	29	1N		C	1558	125	2.2	EK	
HUAN	10	1549	1550	1558	N19	E56	.836	15403	14.9	9	-F	1	C	1550	20	.3	D	
RAMY	10	1550	1552	1647	N19	E55	.827	15403	14.8	57	-N	3	C		45		FDE	
HUAN	10	1553	1557	1603	N13	E55	.820	15403	14.8	10	-F	1	C	1557	40	.7		
GRP68097	10	1655+9	1707 1732+3	1806D	N17	E54	.814	15403	14.8	71	2B				340	5.9	HKUVZ	
RAMY	10	1655	1734	1737D	N19	E54	.817	15403	14.8	42D	2B	3	C		438		FDE	
RAMY	10	1655	1707	1908D	N19	E54	.817	15403	14.8	133D	-B	3	C		69		FDE	
MCMA	10	1700	1735	1907D	N16	E55	.823	15403	14.8	127D	1B		C	1735	225	4.0	FHKVZ	
HUAN	10	1704	1732	1808D	N17	E54	.814	15403	14.8	64D	1N	2	P	1732	225	3.8	E	
PALE	10	1729E	1734	1806	N18	E55	.825	15403	14.9	37D	2B	3	C		445		UDE	
98 RAMY	10	1702	1726	1810	S19	E25	.553	15397	12.6	68	-B	3	C		23			Y5
GRP68099	10	1819	1825 1920	2118	N17	E54	.814	15403	14.8	179	1B						EHU	
PALE	10	1819	1920	2123	N17	E54	.814	15403	14.8	184	1B	*	C		338		UDE	
PALE	10	1819	1825	2123	N17	E54	.814	15403	14.8	184	1N	*	C		164		UDE	
MCMA	10	1913E		2025D	N16	E55	.823	15403	14.9	72D	1B	*	C	1918	150	2.7	F	
HUAN	10	1917E		1930D	N17	E54	.814	15403	14.9	13D	1N	*	P	1920	125	2.1	E	
MCMA	10	2028	2040	2105D	N17	E52	.795	15403	14.8	37D	1B	*	C	2040	125	2.1	F	
VORO	10	2100E		2113	N19	E52	.798	15403	14.8	13D	1N	*	C	2100	143	2.4	H	
GRP68100	10	2125>9	2136+1 2154	2205	N17	E53	.805	15403	14.9	40	-N				110	1.9	FHK	
PALE	10	2125	2136	2222	N17	E53	.805	15403	14.9	57	-N	3	C		123		F	
VORO	10	2133	2137	2157	N19	E52	.798	15403	14.8	24	1N		C	2137	143	2.4	HK	
CULG	10	2136	2137	2205	N17	E53	.805	15403	14.9	29	-N		C	2137	80	1.4		
VORO	10	2153	2154	2156	N13	E55	.820	15403	15.0	3	-N		C	2154	63	1.1	D	
101 VORO	10	2232	2233	2237	N18	E50	.776	15403	14.7	5	-N		C	2233	81	1.3	D	Y5
GRP68102	10	2241+7	2248+3 2303	2309	N17	E52	.795	15403	14.8	28	-N				120	2.0	HK	
CULG	10	2241	2251	2345	N16	E52	.793	15403	14.8	64	1N		C	2251	130	2.1	FK	
PALE	10	2246	2248	2252D	N17	E52	.795	15403	14.8	6D	1B	3	C		175		FDE	
VORO	10	2247	2248	2258	N18	E50	.776	15403	14.7	11	-N		C	2248	90	1.5	E	
MANI	10	2248	2250	2255	N17	E48	.753	15403	14.6	7	-N		V		100	1.5	F	
VORO	10	2258	2259	2303	N21	E56	.839	15403	15.2	5	-N		C	2259	63	1.1	D	
VORO	10	2301	2303	2309	N13	E55	.820	15403	15.1	8	-F		C	2303	72	1.2	DH	

Hα SOLAR FLARES

JULY 1978

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	JUL																	
GRP68103	10	2358+0	2359+3	0016	S20	E20	.513	15397	12.5	18	-F						E	
CULG	10	2358	2402	0015	S20	E20	.513	15397	12.5	17	-F		C	2402	20	.2		
VORO	10	2358	2359	0017	S20	E21	.523	15397	12.6	19	-F		C	2359	63	.7	E	
GRP68104	11	0052+3	0055+4	0117	N17	E49	.763	15403	14.7	25	-N				120	1.9	HJ	
VORO	11	0052	0058	0117	N18	E49	.765	15403	14.7	25	1B		C	0058	179	2.7	HJ	
MANI	11	0054	0055	0105	N17	E47	.742	15403	14.6	11	-N		V		120	1.8		
CULG	11	0055	0059	0120	N15	E50	.771	15403	14.8	25	-N		C	0059	80	1.3	T	
GRP68105	11	0122+0	0124+6	0134	N15	E47	.738	15403	14.6	12	-N						J	
VORO	11	0122	0124	0129	N16	E47	.740	15403	14.6	7	-B		C	0124	134	1.9	DJ	
CULG	11	0122	0130	0138	N14	E48	.748	15403	14.7	16	-N		C	0130	50	.8	FT	
106 VORO	11	0142	0143	0150	N21	E55	.829	15403	15.2	8	-N		C	0143	54	.9	D	Y5
107 CULG	11	0225	0232U	0236D	N11	E51	.777	15403	14.9	110	-F		P	0232	40	.6	FT	Y5
	11	0300	0304	NO FLARE PATROL														
GRP68108	11	0304E	0337+3	0345	N15	E49	.760	15403	14.8	41	1N				140	2.2	F	
PALE	11	0304E	0340U	0352D	N17	E49	.763	15403	14.8	48D	-B	3	C		110		F	
CULG	11	0315E	0315E	0330	N15	E50	.771	15403	14.9	15D	-F		P	0315	40	.6	FBT	
TACH	11	0337E	0337	0345D	N15	E46	.727	15403	14.6	8D	1N		V	0337	176	2.5	E	
	11	0306	0315	NO FLARE PATROL														
GRP68109	11	0353+0	0400+2	0418D	N17	E51	.784	15403	15.0	25	2B				400	6.5	FJU	
TACH	11	0353E	0402	0415D	N15	E51	.781	15403	15.0	22D	2B		C	0402	396	6.5	EFJ	
PALE	11	0353	0400U	0418D	N17	E49	.763	15403	14.8	25D	2B	3	C		505		U F	
MANI	11	0359E	0402	0406D	N18	E55	.825	15403	15.3	7D	1N		V		170	2.9	FE	
110 TACH	11	0426E		0447D	N12	E81	.986	15410	17.3	21D	1N		C	0432	176		EY	Y5
GRP68111	11	0540E	0545	0620D	N16	E48	.751	15403	14.8	40	2B						E	
TACH	11	0540E	0545	0612D	N15	E51	.781	15403	15.1	32D	2B		C	0447	352	5.8	ETB	
CATA	11	0610E	0610	0620D	N17	E46	.731	15403	14.7	10D	1B	2	P	0610	224	3.3	T	
112 CULG	11	0607	0611U	0612D	N21	W50	.782	15409	7.5	5D	-N		P	0611	60	1.0		Y5
GRP68113	11	0702	0711	0725	N18	E45	.722	15403	14.7	23	-F				70	1.0	E	
MONT	11	0702	0711	0721	N18	E46	.733	15403	14.7	19	-F		C	0711	60		E	
BUCA	11	0705E		0728	N18	E45	.722	15403	14.7	23D	-N		C	0705	85	1.3		
GRP68114	11	0815E	0815	0825	N16	E47	.740	15403	14.9	10	-F						D	
KHAR	11	0815E	0815	0825	N14	E47	.736	15403	14.9	10D	-F		P				D	
KHAR	11	0819E	0819	0825	N19	E48	.757	15403	14.9	6D	-F		P					
115 ABST	11	0824	0833	0854	S19	E17	.475	15397	12.6	30	-F		C	0833	87	1.0	DJ	Y5
116 KHAR	11	0829E		0829D	N16	E47	.740	15403	14.9		-F		P				D	Y5
GRP68117	11	0836+0	0838+1	0841	N17	E45	.719	15403	14.7	5	-F				70	1.0	DJ	
MONT	11	0836	0838	0841	N18	E46	.733	15403	14.8	5	-F		C	0838	50		E	
ABST	11	0836	0838	0842	N17	E45	.719	15403	14.7	6	-N		C	0838	96	1.4	DJ	
ZURI	11	0838E	0839	0840	N17	E45	.719	15403	14.7	20	-F		P	0839	70	1.1		
KHAR	11	0840E		0840D	N17	E44	.708	15403	14.7		-F		P				D	
GRP68118	11	0856+1	0902+1	0919	N13	E48	.746	15403	15.0	23	-N				90	1.4	DJ	
ABST	11	0856	0902	0927	N14	E48	.748	15403	15.0	31	-N		C	0902	96	1.5	DJ	
HTPR	11	0857	0903	0910	N13	E48	.746	15403	15.0	13	-N		C	0903	80	1.2		
GRP68119	11	0933+3	0936+1 0943+1	1000	N18	E45	.722	15403	14.8	27	-N				70	1.0	EJK	
ABST	11	0933	0936	1042D	N19	E45	.725	15403	14.8	69D	1N		P	0936	218	3.2	FJK	
MONT	11	0935	0937	0956	N18	E45	.722	15403	14.8	21	-F		C	0937	50		E	
HTPR	11	0936	0937	1000	N18	E45	.722	15403	14.8	24	-N		C	0937	70	1.0	E	
KANZ	11	0940E		1041	N19	E45	.725	15403	14.8	61D	-N	*						
TEHR	11	0942E	0944U	0953	N20	E46	.738	15403	14.9	11D	-B	2	C		127			
HERS	11	0943E	0943	1002	N18	E45	.722	15403	14.8	19D	1N		P	0949	187	2.7	E	
GRP68120	11	1010>9	1015 1029+6	1048	N35	W85	.994	15407	5.0	38	1F				110		DG	
KHAR	11	1010E	1042	1048D	N36	W88	.998	15407	4.8	38D	-F		P	1042				
MONT	11	1015	1031	1046	N35	W85	.994	15407	5.1	31	-N		C	1031	110		G	
KHAR	11	1015E	1015	1048D	N34	W84	.992	15407	5.1	33D	-F		P	1012			D	
KANZ	11	1018	1035	1048	N36	W81	.986	15407	5.4	30	-F	2					G	
ABST	11	1022	1029	1042D	N34	W88	.998	15407	4.8	20D	1N		P	1029	114		DG	

Hα SOLAR FLARES

JULY 1978

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR. DAY	MIN.		CONC	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg	
	JUL																
121 ABST	11	1027	1034	1042D	N19	W54	.817	15409	7.4	15D	-F		P	1034	87	1.5	DJ Y5
GRP68122	11	1031+1	1056+2 1104+2	1301	N18	E45	.722	15403	14.8	150	2B				680	9.9	EHIKLM
KHAR	11	1002E	1105	1318D	N19	E45	.725	15403	14.8	196D	2B	*	P	1105	500	7.5	EHV
MONT	11	1031	1057	1145D	N18	E45	.722	15403	14.8	74D	2B	*	C	1057	660		H
HTPR	11	1032	1034	1035	N18	E45	.722	15403	14.8	3	-F	*	C	1034	40	.6	E
TEHR	11	1037E	1040U	1046	N20	E46	.738	15403	14.9	9D	-B	*	C		127		
MCMA	11	1037E	1056	1415	N18	E47	.744	15403	15.0	218D	2B	*	C	1056	700	10.9	HILRUX
ZURI	11	1044E	1106	1219D	N18	E46	.733	15403	14.9	95D	3B	*	P	1106	860	13.0	
KANZ	11	1044	1057	1119D	N19	E46	.736	15403	14.9	35D	2B	*					UJ
CATA	11	1045	1056	1105D	N18	E46	.733	15403	14.9	20D	2B	*	P	1056	674	10.2	
HTPR	11	1045		1223D	N18	E48	.755	15403	15.0	98D	2B	*	C	1100	850	11.9	EFIKMT
WEND	11	1049	1057	1128D	N18	E43	.699	15403	14.7	39D	2N	*	P		800	11.5	
TEHR	11	1054E	1058U	1150	N20	E46	.738	15403	14.9	56D	1B	*	C		382		
HERS	11	1104E	1104	1253D	N18	E45	.722	15403	14.8	109D	1B	*	P	1106	230	3.3	E
RAMY	11	1154E	1157U	1411	N19	E44	.713	15403	14.8	137D	1B	*	C		205		FDE
GRP68123	11	1033+1	0956 1035+1	1055	S20	W28	.594	15400	9.3	22	-F						EJ
ABST	11	0951	0956	1042D	S20	W29	.604	15400	9.2	51D	-F	*	P	0956	79	1.0	DJ
ABST	11	1033	1036	1042D	S20	W28	.594	15400	9.3	9D	-F	*	P	1036	131	1.7	FJ
HTPR	11	1034	1035	1050	S21	W28	.603	15400	9.3	16	-F	*	C	1035	20	.2	E
KHAR	11	1039E	1042	1059D	S19	W29	.596	15400	9.3	20D	-F	*	P				E
GRP68124	11	1232E	1232	1338D	N15	E42	.679	15403	14.7	66	1N						EI
LVOV	11	1232E	1232	1314D	N15	E45	.715	15403	14.9	42D	1N	*	C	1232	200	3.1	BI
HUAN	11	1244E		1338D	N16	E40	.658	15403	14.5	54D	-N	*	P	1247	80	1.1	E
125 KANZ	11	1059		1106D	N19	W55	.826	15409	7.3	7D	-F	2					Y5
GRP68126	11	1134+1	1136+3	1146	S30	E33	.723	15401	14.0	12	-F				100	1.4	EG
ZURI	11	1134	1136	1142	S30	E33	.723	15401	14.0	8	-N		C	1136	130	2.0	
MCMA	11	1135	1139	1147	S30	E33	.723	15401	14.0	12	-N		C	1139	60	.9	E
HTPR	11	1135	1137	1146	S30	E28	.685	15401	13.6	11	-F		C	1137	100	1.2	EG
KHAR	11	1136E	1136	1146D	S29	E33	.715	15401	14.0	10D	-F		P				
127 RAMY	11	1215	1301	1314D	N19	W55	.826	15409	7.4	59D	-B	2	C		67		Y5
GRP68128	11	1219	1254	1317	S19	W29	.596	15400	9.3	58	-F				25	.3	D
RAMY	11	1219	1254	1314D	S19	W28	.585	15400	9.4	55D	-N	2	C		25		
HUAN	11	1244E		1317	S20	W31	.625	15400	9.2	33D	-F	1	P	1300	20	.2	D
129 MCMA	11	1328	1336	1344	N15	E70	.938	15410	16.8	16	-F		C	1336	15	.5	D Y5
GRP68130	11	1351+1		1400D	N17	E43	.696	15403	14.8	9	-N				60	.8	E
HTPR	11	1351		1357D	N18	E43	.699	15403	14.8	6D	-N	*	C	1353	40	.6	E
HUAN	11	1352		1400D	N17	E43	.696	15403	14.8	8D	-N	*	P	1353	85	1.1	E
GRP68131	11	1410+9	1415+4 1425+0	1434	S22	W27	.602	15400	9.6	24	-N				60	.7	EK
HTPR	11	1410	1418	1428	S22	W26	.592	15400	9.6	18	-N		C	1418	50	.6	EK
LVOV	11	1415	1415	1420D	S25	W20	.571	15400	10.1	5D	-F		P	1415	150	1.9	
MCMA	11	1415	1419	1445	S23	W26	.602	15400	9.6	30	-N		C	1419	40	.5	E
HUAN	11	1416E		1418D	S23	W27	.611	15400	9.6	2D	-N	1	P	1417	50	.6	E
UPIC	11	1419E	1425U	1432	S22	W27	.602	15400	9.6	13D	-F		P	1425	102	64.0	
RAMY	11	1419	1419	1439	S19	W28	.585	15400	9.5	20	-N	3	C		69		FDE
TEHR	11	1425E	1425U	1431	S19	W28	.585	15400	9.5	6D	-N	2	C		64		
GRP68132	11	1424+1	1428+3	1448	N19	W56	.835	15409	7.4	24	-N						F
RAMY	11	1424	1431	1454	N19	W55	.826	15409	7.5	30	-N	*	C		31		
UPIC	11	1425	1428U	1441	N19	W57	.844	15409	7.3	16	1F	*	P	1428	143	132.0	F
GRP68133	11	1425+2	1427+4	1439	S19	E13	.442	15397	12.6	14	-N				40	.4	E
UPIC	11	1425	1428	1445	S18	E13	.429	15397	12.6	20	-N		P	1428	163	90.0	
RAMY	11	1427	1427	1430	S19	E13	.442	15397	12.6	3	-B	3	C		27		
MCMA	11	1427	1431	1439	S20	E14	.463	15397	12.7	12	-F		C	1431	40	.5	E
GRP68134	11	1452+8	1506 1533	1609	N18	E41	.676	15403	14.7	77	-N						EK
HUAN	11	1452		1606	N17	E41	.673	15403	14.7	74	-N	1	C	1550	85	1.1	E
HTPR	11	1453		1516D	N17	E41	.673	15403	14.7	23D	-F		C	1458	50	.7	E
MCMA	11	1455E		1612D	N18	E45	.722	15403	15.0	77D	-B		C	1458	60	.9	EK
UPIC	11	1500	1506	1520	N19	E40	.667	15403	14.6	20	1N		P	1506	224	151.0	T
HTPR	11	1525E		1610	N17	E41	.673	15403	14.7	45D	-F		C	1537	50	.7	E
RAMY	11	1529	1533	1627	N19	E42	.691	15403	14.8	58	-N	3	C		28		FDE
UPIC	11	1537	1551	1556	N18	E39	.652	15403	14.6	19	1N		P	1551	204	139.0	T

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE JUL	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
GRP68135	11	1613+2	1613+6	1627	N16	E39	.645	15403	14.6	14	-N				70	.9	H
RAMY	11	1529	1613	1627	N19	E42	.691	15403	14.8	58	-N	3	C		66		FDE
HUAN	11	1613	1619	1623D	N14	E37	.614	15403	14.5	10D	-N	1	P	1619	40	.5	
MCMA	11	1613	1619	1644D	N17	E40	.661	15403	14.7	31D	-B		C	1619	90	1.2	EW
UPIC	11	1615	1616	1626	N16	E38	.633	15403	14.5	11	-N		P	1616	82	52.0	T
GRP68136	11	1642+6	1650+3	1706	N18	E41	.676	15403	14.8	24	-N				120	1.6	
RAMY	11	1642	1650	1706	N18	E41	.676	15403	14.8	24	-N	*	C		141		FDE
UPIC	11	1645	1653	1700D	N18	E39	.652	15403	14.6	15D	1N	*	P	1653	184	122.0	
PALE	11	1646E	1650U	1651D	N17	E42	.685	15403	14.8	5D	-B	*	C		75		F
MCMA	11	1647E		1736D	N18	E42	.687	15403	14.8	49D	-B	*	C	1653	125	1.7	E
HTPR	11	1648	1653	1706	N17	E40	.661	15403	14.7	18	-N	*	C	1653	80	1.0	E
137 RAMY	11	1645	1649	1659	N19	W56	.835	15409	7.5	14	-N	3	C		24		F Y5
GRP68138	11	1713+0	1715+0	1724	N17	E40	.661	15403	14.7	11	-N				35	.5	
RAMY	11	1713	1715	1724	N18	E41	.676	15403	14.8	11	-B	*	C		34		F
HTPR	11	1713	1715	1723	N17	E40	.661	15403	14.7	10	-F	*	C	1715	40	.5	E
139 HUAN	11	1826	1827	1828	N15	E40	.655	15403	14.8	2	-F	1	C	1827	20	.2	D Y5
GRP68140	11	1907+0	2007 2025+1	2106	N17	E41	.673	15403	14.9	119	1B				160	2.2	U
PALE	11	1907	2026U	2106	N17	E41	.673	15403	14.9	119	1B	3	C		212		U F
HUAN	11	1907E		1916	N13	E42	.675	15403	14.9	9D	-N	1	P	1910	30	.4	
MCMA	11	2006	2007	2010	N16	E42	.682	15403	15.0	4	-F		C	2007	35	.5	E
MCMA	11	2017	2025	2111D	N18	E38	.640	15403	14.7	54D	-B		C	2025	110	1.5	E
GRP68141	11	2159	2231+1	2320	N18	E38	.640	15403	14.8	81	2B						FUY
PALE	11	2159	2232	2325	N20	E38	.647	15403	14.8	86	2B	3	C		878		U F
CULG	11	2230E	2231	2320	N17	E37	.623	15403	14.7	50D	1B		P	2231	220	3.1	UY
MANI	11	2242E	2242U	2255	N18	E38	.640	15403	14.8	13D	2F		V		400	5.4	
GRP68142	11	2219+7	2221 2235	2237	N20	W60	.871	15409	7.4	18	-F						
CULG	11	2219	2221U	2237	N21	W60	.872	15409	7.4	18	-F		P	2221	30	.6	
PALE	11	2226	2235	2236	N20	W60	.871	15409	7.4	10	-N	3	C		60		FDE
GRP68143	12	0012	0017 0048+1	0104D	N16	E36	.607	15403	14.7	52	-N						J
CULG	12	0012	0017U	0040	N16	E37	.619	15403	14.8	28	-F	*	C	0017	50	.7	FJ
PALE	12	0030E	0048U	0144	N18	E36	.614	15403	14.7	74D	-B	*	C		148		FDE
CULG	12	0046	0049	0104	N12	E36	.595	15403	14.7	18	-N	*	C	0049	50	.6	
144 CULG	12	0019	0020	0025	N35	W90	.999	15407	5.3	6	-N		C	0020	10		Y5
145 CULG	12	0110	0112	0132	N15	E36	.603	15403	14.7	22	-N	*	C	0112	20	.3	F Y5
146 CULG	12	0230	0235	0240	N13	E62	.882	15410	16.8	10	-F		C	0235	30	.6	Y5
GRP68147	12	0236+2	0255+4	0340	N18	E35	.602	15403	14.7	64	1B				210	2.6	U
CULG	12	0236	0259	0305D	N16	E35	.594	15403	14.7	29D	1N		P	0259	170	2.1	
PALE	12	0238	0259	0340	N18	E35	.602	15403	14.7	62	2B	3	C		510		U F
MANI	12	0249E	0251U	0251D	N18	E36	.614	15403	14.8	2D	1N		V		200	2.6	
TEHR	12	0253E	0255U	0300D	N18	E36	.614	15403	14.8	7D	1B	2	V		222		DE
148 CULG	12	0438E	0440	0450	S32	E22	.664	15401	13.8	12D	-F		C	0440	10	.1	Y5
149 CULG	12	0446	0447	0509	N19	W68	.927	15409	7.1	23	-N		C	0447	20	.5	J Y5
GRP68150	12	0515+6	0531+2	0544	N17	E33	.572	15403	14.7	29	-N						
MITK	12	0515E		0534D	N17	E33	.572	15403	14.7	19D	1N	*	P	0534	240	3.1	
CULG	12	0521	0531	0543	N15	E33	.563	15403	14.7	22	-N	*	C	0531	40	.5	F
TEHR	12	0529E	0533U	0545	N18	E36	.614	15403	14.9	16D	-B	*	C		127		DE
151 CULG	12	0517	0520	0545	N21	W65	.908	15409	7.3	28	-N		C	0520	40	1.0	Y5
152 CULG	12	0556E	0559U	0559D	N12	E61	.873	15410	16.8	3D	-N		P	0559	60	1.2	Y5
153 CATA	12	0755	0800	0805	S22	W56	.871	15391	8.1	10	-N	2	C	0800	56	1.1	Y5
154 MONT	12	0806	0809	0816	N19	W66	.914	15409	7.4	10	-F		C	0809	50		E Y5

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
	JUL																
GRP68155	12	0809+1	0811+2	0828	N18	E32	.563	15403	14.7	19	-F				50	.6	E
MONT	12	0809	0813	0830	N16	E32	.554	15403	14.7	21	-F		C	0813	60		E
MEUD	12	0809	0813	0823	N18	E33	.576	15403	14.8	14	-F		C				E
HTPR	12	0809	0811	0830	N18	E33	.576	15403	14.8	21	-F		C	0811	50	.6	ET
BUCA	12	0810	0811	0835	N18	E31	.551	15403	14.7	25	-N		C	0811	31	.4	E
UPIC	12	0815E		0825	N19	E30	.543	15403	14.6	100	-N		P	0815	102	61.0	
GRP68156	12	0900+5	0901 0908+3	0919	N18	E32	.563	15403	14.8	19	-N						E
CATA	12	0900	0910	0915D	N17	E32	.559	15403	14.8	15D	1B	1	P	0910	281	3.4	
MONT	12	0900	0901	0920	N17	E31	.545	15403	14.7	20	-N		C	0901	110		E
HTPR	12	0901	0909	0917	N18	E33	.576	15403	14.9	16	-N		C	0909	90	1.1	E
BUCA	12	0902	0911	0920	N17	E30	.532	15403	14.6	18	-N		C	0911	95	1.2	
ZURI	12	0903	0909	0917	N18	E32	.563	15403	14.8	14	1N		C	0909	310	3.8	
UPIC	12	0905	0908	0931	N19	E30	.543	15403	14.6	26	1N		P	0908	224	134.0	F
MEUD	12	0912E	0912	0914D	N18	E33	.576	15403	14.9	2D	-N		C				E
GRP68157	12	0900+3	0913+1	0925	N17	W68	.926	15409	7.3	25	-N				70		D
MONT	12	0900	0914	0928	N17	W68	.926	15409	7.3	28	-F	*	C	0914	50		D
ZURI	12	0903	0913	0921	N18	W69	.932	15409	7.2	18	1N	*	C	0913	90		
GRP68158	12	0921+1	0923+1 0937+0	0943	N18	E31	.551	15403	14.7	22	-N				60	.7	E
MONT	12	0921	0924	0945	N17	E31	.545	15403	14.7	24	-N		C	0924	80		E
ZURI	12	0921	0923	0939D	N18	E32	.563	15403	14.8	18D	-N		P	0923	120	1.5	
BUCA	12	0922	0923	0950	N18	E31	.551	15403	14.7	28	-N		C	0923	47	.6	E
HTPR	12	0922	0924	0935	N18	E33	.576	15403	14.9	13	-N		C	0924	40	.5	E
KANZ	12	0927E	0937	0948	N18	E31	.551	15403	14.7	21D	-N	2					E
KHAR	12	0931E	0937	0941D	N18	E32	.563	15403	14.8	10D	-F		P				E
159 KANZ	12	0958	1002	1007	N19	W68	.927	15409	7.3	9	-F	2					Y5
GRP68160	12	1000+1	1005+5 1017+3	1035	N17	E31	.545	15403	14.7	35	-N				120	1.4	EU
HTPR	12	1000	1017	1035	N18	E32	.563	15403	14.8	35	-N		C	1017	80	1.0	E
CATA	12	1000	1010	1015	N13	E31	.529	15403	14.7	15	-N	2	C	1010	112	1.3	
TEHR	12	1001	1005U	1026	N11	E28	.479	15403	14.5	25	-F	2	C		64		F
KANZ	12	1001	1010	1015	N13	E30	.514	15403	14.7	14	-F	2					
MONT	12	1012	1019	1038	N17	E31	.545	15403	14.8	26	-N		C	1019	80		E
BUCA	12	1013	1018	1041	N17	E30	.532	15403	14.7	28	-B		C	1018	95	1.2	E
KANZ	12	1013	1018	1041	N18	E30	.538	15403	14.7	28	-B	2					
KHAR	12	1015E	1015	1041D	N18	E32	.563	15403	14.8	26D	-N		P	1015	165	2.0	E
CATA	12	1015	1020	1030	N17	E30	.532	15403	14.7	15	1B	2	P	1020	168	2.0	
WEND	12	1017		1027	N18	E30	.538	15403	14.7	10	-F		P				U
MCMA	12	1039E		1110	N18	E31	.551	15403	14.8	31D	-N		C	1045	125	1.5	E
GRP68161	12	1050+3	1056+2	1059	N15	E57	.840	15410	16.7	9	-F				50	.9	
MCMA	12	1050	1056	1059	N15	E56	.831	15410	16.7	9	-N		C	1056	40	.7	E
HTPR	12	1051	1056	1059	N15	E58	.849	15410	16.8	8	-F		C	1056	60	1.1	
KANZ	12	1053	1058	1100	N15	E57	.840	15410	16.7	7	-F	2					
KHAR	12	1053E	1056	1058D	N15	E58	.849	15410	16.8	5D	-N		P				D
GRP68162	12	1114+3	1118+2	1137	N22	E36	.633	15403	15.2	23	-F				25	.3	D
KHAR	12	1114E	1119	1122D	N22	E36	.633	15403	15.2	8D	-F		P				D
HTPR	12	1116	1120	1136	N22	E36	.633	15403	15.2	20	-F		C	1120	20	.3	
MCMA	12	1117	1118	1138	N20	E35	.611	15403	15.1	21	-N		C	1118	30	.4	D
GRP68163	12	1141+3	1145+0	1148	N15	E57	.840	15410	16.8	7	-F				30	.6	D
MCMA	12	1141	1145	1148	N15	E56	.831	15410	16.7	7	-F		C	1145	25	.4	D
RAMY	12	1144	1145	1147	N16	E59	.858	15410	16.9	3	-N	3	C		25		
GRP68164	12	1145+5	1148+7 1210	1217	N17	E33	.572	15403	15.0	32	-F				50	.6	E
RAMY	12	1145	1152	1217	N17	E30	.532	15403	14.7	32	-N	3	C		57		
MCMA	12	1146	1155	1225	N20	E35	.611	15403	15.1	39	-N		C	1155	110	1.2	E
HTPR	12	1146	1148	1203	N22	E36	.633	15403	15.2	17	-F		C	1148	20	.3	
BUCA	12	1150	1153	1210	N17	E31	.545	15403	14.8	20	-F		C	1153	40	.5	
HTPR	12	1210	1210	1217	N14	E33	.560	15403	15.0	7	-F		C	1217	20	.2	E
165 RAMY	12	1148	1200	1222	N19	W67	.920	15409	7.5	34	-B	3	C		96		Y5
166 RAMY	12	1149	1152	1203	N16	E59	.858	15410	16.9	14	-N	3	C		23		Y5
GRP68167	12	1213+4	1215+3	1219	S23	W41	.746	15400	9.4	6	-F						E
MCMA	12	1213	1215	1219	S24	W41	.752	15400	9.4	6	-F		C	1215	35	.5	E
ZURI	12	1213	1215	1217	S23	W40	.737	15400	9.5	4	-F		C	1215	120	1.9	
RAMY	12	1217	1218	1222	S21	W41	.735	15400	9.4	5	-N	3	C		24		

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR AREA Sq. Deg.		
	JUL																	
168 RAMY	12	1223	1228	1230	N19	W67	.920	15409	7.5	7	-B	3	C		43			Y5
169 RAMY	12	1247	1248	1256	N19	W67	.920	15409	7.5	9	-B	3	C		26			Y5
170 RAMY	12	1303	1309	1323	N19	W68	.927	15409	7.4	20	-B	3	C		49			Y5
GRP68171	12	1315>9	1325+3	1358	N18	E29	.525	15403	14.7	43	-N				90	1.1	EH	
MCMA	12	1300	1327	1410	N18	E29	.525	15403	14.7	70	-B	*	C	1327	90	1.1	EH	
HTPR	12	1315	1325	1345	N18	E30	.538	15403	14.8	30	-F	*	C	1325	50	.6	E	
KHAR	12	1317E	1326	1359D	N18	E29	.525	15403	14.7	42D	-N	*	P				E	
KHAR	12	1317E	1317	1320D	N14	E29	.504	15403	14.7	3D	-F	*	P				E	
RAMY	12	1319	1327	1411	N17	E29	.519	15403	14.7	52	-N	*	C		81		FDE	
TEHR	12	1321	1328	1408	N18	E28	.511	15403	14.7	47	-N	*	C		95		F	
ZURI	12	1325	1325	1349	N18	E30	.538	15403	14.8	24	-N	*	C	1325	140	1.8		
HUAN	12	1327E		1338	N17	E28	.506	15403	14.7	11D	-N	*	P	1329	75	.9	E	
GRP68172	12	1324	1331+5 1353+6	1405	N19	W70	.938	15409	7.3	41	-N							
RAMY	12	1324	1336	1444	N19	W68	.927	15409	7.5	80	-N	3	C		48			
KHAR	12	1331E	1331	1337D	N20	W69	.933	15409	7.4	6D	-F		P				E	
LVOV	12	1351E	1353	1400	N18	W70	.938	15409	7.3	9D	1F		C	1353	100		D	
KANZ	12	1353	1358	1402	N19	W71	.944	15409	7.3	9	-F	2						
MCMA	12	1353	1356	1400	N18	W72	.949	15409	7.2	7	-B		C	1356	25	.8	D	
ZURI	12	1353	1355	1403	N18	W71	.944	15409	7.3	10	-N		C	1355	50			
KHAR	12	1354E	1355	1359D	N17	W73	.954	15409	7.1	5D	-N		P				E	
HERS	12	1354E	1354	1403	N21	W65	.908	15409	7.7	9D	1N		P	1356	72	2.3	E	
HTPR	12	1354	1355	1404	N19	W70	.938	15409	7.3	10	-F		C	1355	20			
TEHR	12	1356	1359	1416	N20	W68	.927	15409	7.5	20	-N	2	C		64			
GRP68173	12	1435+1	1437+2	1445	N18	E28	.511	15403	14.7	10	-N				30	.4	EL	
KANZ	12	1435	1438	1446	N18	E28	.511	15403	14.7	11	-N	2						
MCMA	12	1435	1439	1500	N18	E29	.525	15403	14.8	25	-B		C	1439	40	.5	EL	
HTPR	12	1435	1437	1445	N18	E30	.538	15403	14.9	10	-F		C	1437	20	.2	E	
RAMY	12	1435	1438	1445	N17	E28	.506	15403	14.7	10	-B	3	C		28			
HUAN	12	1436	1437	1438	N17	E27	.492	15403	14.6	2	-F	1	C	1437	20	.2	D	
174 MCMA	12	1523	1525	1530	S32	E19	.647	15401	14.1	7	-F		C	1525	40	.5	E	Y5
175 HTPR	12	1530	1535	1540	N18	E30	.538	15403	14.9	10	-F		C	1535	20	.2		Y5
176 MCMA	12	1546	1547	1553	N18	W73	.954	15409	7.2	7	-N		C	1547	25	.8	EHLV	Y5
GRP68177	12	1553+2	1606+3	1639	N16	E28	.500	15403	14.8	46	-N						EHJKL	
MCMA	12	1553	1609	1930D	N17	E28	.506	15403	14.8	217D	-B		C	1609	150	1.8	EKLJ	
HTPR	12	1554	1607	1630	N17	E30	.532	15403	14.9	36	-N		C	1607	60	.7	EF	
HUAN	12	1555		1616D	N14	E31	.532	15403	15.0	21D	-N	1	P	1602	80	.9	E	
RAMY	12	1555E	1555U	1559	N16	E27	.487	15403	14.7	4D	-N	3	C		22		F H	
RAMY	12	1601	1602	1639	N16	E27	.487	15403	14.7	38	-B	3	C		589		F H	
RAMY	12	1601	1606	1639	N16	E27	.487	15403	14.7	38	-N	3	C		100		F H	
HUAN	12	1606		1616D	N17	E27	.492	15403	14.7	10D	-F	1	P	1609	120	1.4	E	
178 RAMY	12	1644	1646	1650	N19	W69	.933	15409	7.5	6	-N	2	C		21		F	Y5
179 RAMY	12	1658	1701	1713	N19	W70	.938	15409	7.5	15	-N	2	C		25		F	Y5
GRP68180	12	1700+2	1703+4	1711	S24	W42	.761	15400	9.6	11	-N				50	.8	V	
MCMA	12	1700	1703	1711	S24	W44	.779	15400	9.4	11	-N		C	1703	50	.7	EV	
HTPR	12	1701	1703	1711	S24	W40	.743	15400	9.7	10	-F		C	1703	40	.5		
RAMY	12	1702	1707	1711	S21	W42	.745	15400	9.6	9	-N	2	C		66		F	
181 MCMA	12	1713	1719	1727	N18	W74	.959	15409	7.2	14	-F		C	1719	30	1.2	D	Y5
182 HTPR	12	1739	1740	1750	N17	W72	.949	15409	7.3	11	-F		C	1741	20		E	Y5
GRP68183	12	1756+5	1800+2	1811D	N16	E28	.500	15403	14.8	15	-N				70	.8		
RAMY	12	1756	1800	1811	N16	E26	.473	15403	14.7	15	-N	*	C		53		F	
PALE	12	1759	1802	1850	N17	E29	.519	15403	14.9	51	-N	*	V		88		FDE	
HUAN	12	1801		1805D	N14	E28	.490	15403	14.9	4D	-N	*	P	1802	60	.7		
184 MCMA	12	1757	1802	1825	N12	E58	.847	15410	17.1	28	-F		C	1802	25	.5	D	Y5
GRP68185	12	2049+1	2055+3	2125	N17	E25	.466	15403	14.7	36	1B				230	2.6	EUX	
PALE	12	2049	2058	2120	N17	E27	.492	15403	14.9	31	1B	3	C		288		UDE	
MCMA	12	2050	2055	2130	N17	E24	.452	15403	14.7	40	1B		C	2055	175	2.1	EX	
186 PALE	12	2052	2052	2107	S20	W45	.769	15400	9.5	15	-N	3	C		47		FDE	Y5

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	JUL																	
GRP68187	12	2147+1	2149+3	2211	N14	E28	.490	15403	15.0	24	-N		C		100	1.2		
MCMA	12	2147	2150	2215	N14	E28	.490	15403	15.0	28	-N		C	2150	100	1.2	E	
VORO	12	2147	2149	2203	N14	E28	.490	15403	15.0	16	-B		C	2149	116	1.3		
CULG	12	2147E	2151	2238	N12	E29	.497	15403	15.1	51D	-N		C	2151	100	1.2	F	
PALE	12	2148	2152	2207	N17	E27	.492	15403	14.9	19	-B	3	C		86		FDE	
188 CULG	12	2256	2257	2300	N13	E26	.457	15403	14.9	4	-F		C	2257	20	.2		Y5
GRP68189	12	2326+2	2329+1	2335	N17	E23	.439	15403	14.7	9	-N						J	
CULG	12	2326	2330	0002D	N16	E22	.418	15403	14.6	36D	-N		C	2330	30	.3		
VORO	12	2327	2329	2333	N18	E23	.446	15403	14.7	6	-N		C	2329	45	.5	EJ	
PALE	12	2328	2330	2334	N17	E26	.479	15403	14.9	6	-B	3	C		175		FDE	
MANI	12	2330E	2330U	2335	N17	E24	.452	15403	14.8	5D	-N		V		120	1.3	F	
190 CULG	12	2359	2400	0002D	S32	E12	.613	15401	13.9	3D	-F		P	2400	10	.1	G	Y5
191 VORO	13	0019	0020	0023	N18	E23	.445	15403	14.7	4	-N		C	0020	90	1.0	E	Y5
GRP68192	13	0025+0	0026+1	0031	N16	W78	.976	15409	7.2	6	-F				35		D	
MANI	13	0025	0027	0032	N16	W78	.976	15409	7.2	7	-F		P		20	.5		
VORO	13	0025	0026	0029	N17	W78	.976	15409	7.2	4	-N		C	0026	45		D	
GRP68193	13	0225+0	0227+1	0300	N17	E87	.997	15415	19.6	35	-F						D	
VORO	13	0225	0227	0238D	N18	E87	.997	15415	19.6	13D	-F		C	0227	63		D	
CULG	13	0225E	0228U	0300	N17	E88	.999	15415	19.7	35D	-N		P	0228	20			
194 CULG	13	0242	0305U	0322	N18	W80	.982	15409	7.1	40	-F		C	0305	50		T	Y5
195 CULG	13	0320	0325	0343	N18	E22	.432	15403	14.8	23	-F		C	0325	30	.3	T	Y5
196 CULG	13	0410E	0416	0443	N19	W80	.982	15409	7.2	33D	-F		C	0416	50		T	Y5
GRP68197	13	0445	0449+1	0530	N20	W81	.985	15409	7.1	45	1F				80		D	
CULG	13	0445	0450	0530	N19	W80	.982	15409	7.2	45	1N		C	0450	80		T	
TACH	13	0447E	0449	0500D	N21	W82	.988	15409	7.0	13D	1F		C	0449	88		D	
GRP68198	13	0540+1	0544+1	0548	N14	E23	.419	15403	15.0	8	-F				40	.4	K	
CULG	13	0540	0544	0548	N14	E23	.419	15403	15.0	8	-F		C	0544	40	.4	FT	
HTPR	13	0541	0544	0548	N14	E23	.419	15403	15.0	7	-F		C	0544	20	.2		
TACH	13	0542E	0545	0550D	N16	E21	.404	15403	14.8	8D	-N		C	0545	64	.8	EK	
GRP68199	13	0625+1	0627+1	0632	N15	E23	.425	15403	15.0	7	-F				35	.4	F	
CULG	13	0625	0627	0632D	N15	E23	.425	15403	15.0	7D	-F		P	0627	50	.6	FT	
HTPR	13	0626	0628	0632	N16	E24	.445	15403	15.1	6	-F		C	0628	20	.2		
GRP68200	13	0650+3	0659+1	0705	N19	W81	.985	15409	7.2	15	1N				70		DJ	
CULG	13	0650E	0657U	0657D	N19	W82	.988	15409	7.1	7D	-N		P	0657	50		T	
ABST	13	0653	0659	0705	N19	W81	.985	15409	7.2	12	1F		C	0659	96		DJ	
CATA	13	0655E	0700	0705	N16	W80	.983	15409	7.3	10D	1N	2	P	0700	56			
201 KHAR	13	0731E	0731	0737D	N20	W85	.994	15409	6.9	6D	-F		P				D	Y5
GRP68202	13	0742+1	0744+1	0754	N16	E24	.445	15403	15.1	12	-N				60	.7	J	
HTPR	13	0742	0744	0754	N16	E22	.417	15403	15.0	12	-N		C	0744	40	.4	E	
ABST	13	0743	0745	0749D	N15	E25	.453	15403	15.2	6D	-N		P	0743	87	1.0	DJ	
KANZ	13	0743		0746D	N17	E23	.438	15403	15.0	3D	-F	1						
KHAR	13	0744E	0744	0748D	N17	E25	.465	15403	15.2	4D	-N		P					
GRP68203	13	0811>9	0827+6 0848	0907	N18	W85	.994	15409	7.0	56	-F				40			
MONT	13	0811	0827	0844	N19	W81	.985	15409	7.3	33	-F		C	0827	40		D	
MONT	13	0829	0833	0838	N15	W86	.996	15409	6.9	9	-F		C	0833	40			
ZURI	13	0836	0848	0906	N16	W86	.996	15409	6.9	30	1F		C	0848	130			
KANZ	13	0838E		0907D	N20	W85	.994	15409	7.0	29D	-F	1						
KHAR	13	0903E		0910D	N20	W86	.996	15409	6.9	7D	-F		P					
204 MONT	13	0835	0836	0841	N35	W90	.999		6.6	6	-F		C	0836	50		D	Y5
GRP68205	13	0913+1	0913+3	0922	N14	E22	.404	15403	15.0	9	-F						D	
HTPR	13	0913	0913	0920	N14	E21	.390	15403	15.0	7	-F		C	0913	10	.1		
MEUD	13	0914	0916	0918D	N14	E22	.404	15403	15.0	4D	-F		C				D	
ZURI	13	0914	0914	0922	N14	E22	.404	15403	15.0	8	-F		C	0914	90	1.0		
KANZ	13	0915E	0924	0928	N15	E22	.411	15403	15.0	13D	-F	1						
206 ZURI	13	0930	0934	0942	N20	W83	.990	15409	7.2	12	-F		C	0934	60			Y5

Hα SOLAR FLARES

JULY 1978

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	JUL																	
GRP68207	13	0954	1020+0	1052	N16	E21	.404	15403	15.0	58	-F							
KANZ	13	0954	1020	1053	N16	E21	.404	15403	15.0	59	-F	1						
KHAR	13	1002E	1002	1012D	N18	E16	.357	15403	14.6	10D	-F		P					
TEHR	13	1018	1020	1051	N14	E22	.404	15403	15.1	33	-N	2	C		64			
GRP68208	13	1022+1	1025+1	1036	N18	E50	.775	15410	17.2	14	-F							
TEHR	13	1022	1025	1036	N18	E50	.775	15410	17.2	14	-N	2	C		95			
KANZ	13	1023	1026	1035	N18	E50	.775	15410	17.2	12	-F	1						
GRP68209	13	1053	1107 1116	1135	N16	E21	.404	15403	15.0	42	-N						E	
KANZ	13	1053	1107	1135	N16	E18	.363	15403	14.8	42	-B	*					E	
KHAR	13	1103E	1123	1149D	N17	E22	.425	15403	15.1	46D	-F	*	P	1114			E	
ZURI	13	1114E	1116	1134	N14	E21	.390	15403	15.0	20D	-F	*	P	1116	50	.6		
210 HUAN	13	1627	1634	1644	N14	E16	.319	15403	14.9	17	-F	1	C	1634	50	.5	E	Y5
	13	1812	2001	NO FLARE PATROL														
211 PALE	13	2004E	2005U	2044D	N17	E14	.323	15403	14.9	40D	-N	3	C		51		F	Y5
	13	2005	2137	NO FLARE PATROL														
	13	2231	2241	NO FLARE PATROL														
212 CULG	13	2300	2310	2350	N13	E13	.269	15403	14.9	50	-F		C	2310	120	1.3		Y5
213 CULG	13	2350	2352	2358	N19	E17	.379	15403	15.3	8	-F		C	2352	30	.3		Y5
214 CULG	14	0502	0503	0513	N16	E13	.299	15403	15.2	11	-F		C	0503	30	.3		Y5
GRP68215	14	0526+1	0529+0	0543	N15	E10	.252	15403	15.0	17	-N				50	.5	FJ	
CULG	14	0526	0529	0545	N15	E10	.252	15403	15.0	19	-N		C	0529	50	.5	F	
MANI	14	0527	0529	0540	N15	E10	.252	15403	15.0	13	-N		P		50	.5	F	
ABST	14	0527	0529	0538	N16	E08	.245	15403	14.8	11	-F		C	0529	87	.9	EJ	
ABST	14	0527	0529	0543	N13	E09	.216	15403	14.9	16	-F		C	0529	87	.9	DJ	
216 MONT	14	0803	0807	0822	N15	E10	.252	15403	15.1	19	-N		C	0807	110		E	Y5
217 TEHR	14	0858	0900	0905	N18	E04	.248	15403	14.7	7	-N	3	C		32			Y5
GRP68218	14	0913+2	0915+1	0927	S23	W64	.928	15400	9.6	14	-F				50			
ZURI	14	0913	0915	0929	S25	W66	.942	15400	9.4	16	-F		C	0915	50			
TEHR	14	0915	0916	0924	S22	W63	.920	15400	9.7	9	-N	3	C		64			
219 CATA	14	0940E	1000	1005D	N11	E09	.194	15403	15.1	25D	-N	2	P	1000	45	.5		Y5
GRP68220	14	1100+3	1105+5	1150	N15	E07	.222	15403	15.0	50	-N				150	1.5		
MCMA	14	1100	1110	1225D	N14	E07	.208	15403	15.0	85D	-B		C	1110	100	1.1	E	
KANZ	14	1101	1110	1221	N15	E07	.222	15403	15.0	80	-B	2					FT	
ZURI	14	1101	1109	1145	N15	E07	.222	15403	15.0	44	1N		P	1109	200	2.2		
TEHR	14	1103	1105	1124	N16	E03	.211	15403	14.7	21	-N	3	C		95		F	
MEUD	14	1103E		1116D	N15	E08	.231	15403	15.1	13D	-N		C				CE	
UPIC	14	1112E		1125D	N14	E06	.198	15403	14.9	13D	1N		P	1112	245	125.0		
221 MCMA	14	1123	1127	1140D	S25	E55	.873	15413	18.6	17D	-F		C	1127	20	.4	D	Y5
GRP68222	14	1132+1	1136+2	1152	N15	E71	.943	15415	19.8	20	-N				50		E	
KANZ	14	1132	1138	1147	N15	E70	.937	15415	19.7	15	-N	2						
MCMA	14	1133	1138	1156	N15	E72	.949	15415	19.9	23	-B		C	1138	30	1.0	E	
ZURI	14	1133	1137	1159	N15	E72	.949	15415	19.9	26	1F		P	1137	70			
TEHR	14	1134E	1136	1142	N17	E68	.926	15415	19.6	8D	-N	2	C		64			
GRP68223	14	1143>9	1202+1	1231	S25	E55	.873	15413	18.6	48	-N						OGH	
MCMA	14	1143	1203	1240D	S25	E55	.873	15413	18.6	57D	-N		C	1203	20	.4	DH	
KANZ	14	1200	1202	1221	S25	E56	.880	15413	18.7	21	-B	2					G	
GRP68224	14	1340+2	1345+1	1400	S25	E51	.843	15413	18.4	20	-N						OGH	
LOCA	14	1340	1345	1400	S25	E51	.843	15413	18.4	20	1N		V	1345	102	2.1		
KANZ	14	1342	1346	1350	S24	E51	.839	15413	18.4	8	-F	2					G	
MCMA	14	1342	1345	1400	S25	E54	.866	15413	18.6	18	-N		C	1345	20	.4	DH	
225 RAMY	14	1404	1408	1417	N18	E03	.244	15403	14.8	13	-N	3	C		26			Y5

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	JUL																	
GRP68226	14	1411	1438+2	1446	S23	E51	.836	15413	18.4	35	-N		C		20	.4	DGHK	
MCMA	14	1411		1447	S25	E54	.866	15413	18.6	36	-B		C	1439	20	.4	DHK	
RAMY	14	1436E	1438	1445	S23	E52	.844	15413	18.5	9D	-N	3	C		24		H	
KANZ	14	1437	1438	1445	S24	E51	.839	15413	18.4	8	-N	2					G	
TEHR	14	1437E	1440	1447	S23	E48	.811	15413	18.2	10D	-F	1	C		32			
GRP68227	14	1557	1600 1631+1	1656	N14	E04	.183	15403	15.0	59	-N						E	
RAMY	14	1557	1600	1702	N15	E02	.190	15403	14.8	65	-N	*	C		89			
MCMA	14	1625E	1631	1718D	N14	E04	.183	15403	15.0	53D	1N	*	C	1631	200	2.0	E	
MEUD	14	1628	1632	1650	N15	E05	.206	15403	15.1	22	-N	*	C				E	
HUAN	14	1629	1632	1647	N13	E04	.167	15403	15.0	18	-N	*	C	1632	65	.6	E	
GRP68228	14	1604+0	1605+1	1612	S24	E52	.847	15413	18.6	8	-N				30	.6	D	
MEUD	14	1604	1605	1611	S24	E50	.831	15413	18.4	7	-N		C				D	
HUAN	14	1604	1606	1611	S24	E53	.855	15413	18.6	7	-F	1	C	1606	20	.4	D	
MCMA	14	1604	1606	1612	S25	E53	.858	15413	18.6	8	-N		C	1606	25	.5	D	
RAMY	14	1604	1606	1612	S23	E52	.844	15413	18.6	8	-N	3	C		26			
GRP68229	14	1650+6	1657+2	1703	S24	E52	.847	15413	18.6	13	-F				25	.5	D	
MCMA	14	1650	1657	1702D	S25	E53	.858	15413	18.7	12D	-N		C	1657	25	.5	D	
HUAN	14	1656	1659	1703	S24	E52	.847	15413	18.6	7	-F	1	C	1659	20	.3	D	
GRP68230	14	1733+0	1733+1	1737	N17	W01	.222	15403	14.7	4	-N				60	.6		
PALE	14	1733	1733	1738	N17	E03	.227	15403	15.0	5	-N	3	C		133		F	
RAMY	14	1733	1733	1737	N18	E01	.239	15403	14.8	4	-N	3	C		73			
MCMA	14	1733	1734	1737	N15	W03	.194	15403	14.5	4	-E		C	1734	40	.4	D	
HUAN	14	1733	1733	1735	N07	W04	.085	15403	14.4	2	-N	2	C	1733	50	.5		
GRP68231	14	1800+6	1806+2	1812	S24	E51	.839	15413	18.6	12	-F				30	.5	DH	
MCMA	14	1800	1806	1815	S25	E51	.843	15413	18.6	15	-N		C	1806	40	.7	DH	
HUAN	14	1805	1808	1812	S24	E51	.839	15413	18.6	7	-F	1	C	1808	25	.4	D	
RAMY	14	1806	1807	1811	S23	E51	.836	15413	18.6	5	-F	3	C		26		H	
232 HUAN	14	1929	1931	1935	N18	W03	.244	15403	14.6	6	-F	1	C	1931	15	.2	D	Y5
233 HUAN	14	1955	1958	2005	N17	E05	.237	15403	15.2	10	-F	1	C	1958	20	.2	D	Y5
234 CULG	14	2225	2235	2240	S19	W76	.979	15400	9.2	15	-F		C	2235	20			Y5
235 CULG	14	2301	2305	2318	N18	W02	.241	15403	14.8	17	-F		C	2305	20	.2		Y5
236 CULG	14	2320	2325	2345	N19	E03	.260	15403	15.2	25	-F		C	2320	30	.3		Y5
GRP68237	15	0035	0055+6	0134	N16	W01	.203	15403	14.9	59	1B				240	2.5	UYZ	
CULG	15	0035	0057	0150	N14	E00	.168	15403	15.0	75	1B		C	0057	230	2.3	UY	
MITK	15	0036E	0101	0127D	N14	W01	.169	15403	15.0	51D	1B		C	0101	280	2.9		
PALE	15	0046E	0135U	0140	N17	W03	.225	15403	14.8	54D	-N	3	C		29		FDE	
MANI	15	0053E	0055	0115	N22	E02	.306	15403	15.2	22D	1B		V		200	2.1	ZE	
CULG	15	0132	0140	0233	N18	W01	.237	15403	15.0	61	-N		C	0140	30	.3	F	
238 CULG	15	0230	0235	0250	N18	W03	.242	15403	14.9	20	-N		C	0235	20	.2		Y5
GRP68239	15	0404+1	0405+5	0423	N18	W05	.251	15403	14.8	19	-B				60	.6		
CULG	15	0404	0410	0429	N18	W06	.257	15403	14.7	25	-N		C	0410	80	.8		
PALE	15	0405E	0405U	0418	N17	W04	.230	15403	14.9	13D	-B	3	C		26		FDE	
TEHR	15	0405	0409	0423	N18	W05	.251	15403	14.8	18	-B	2	C		64			
240 PALE	15	0407	0413	0418	S23	E44	.776	15413	18.5	11	-N	3	C		133			Y5
241 CULG	15	0511	0516	0530	N13	E25	.441	15410	17.1	19	-F		C	0516	60	.7		Y5
GRP68242	15	0522	0531+6	0555	S24	E42	.763	15413	18.4	33	-N						U	
CULG	15	0522	0534	0606	S25	E43	.777	15413	18.4	44	-N		C	0534	60	1.0		
TACH	15	0525E	0531	0555D	S23	E42	.758	15413	18.4	30D	1N		C	0531	159	2.5	EU	
TEHR	15	0536E	0537	0551	S24	E41	.754	15413	18.3	15D	-N	3	C		95		F	
243 CULG	15	0620	0626	0632D	S20	W87	1.000	15400	8.7	12D	-F		P	0626	30			Y5
GRP68244	15	0651>9	0715+4 0726+7	0743	N28	W02	.403	15403	15.1	52	-F				80	.9	E	
HTPR	15	0651	0715	0745	N28	W03	.405	15403	15.1	54	-F		C	0715	40	.4	E	
ABST	15	0708	0719	0752	N28	W04	.407	15403	15.0	44	-F		C	0719	79	.9	D	
MONT	15	0712	0726	0744	N28	W02	.403	15403	15.2	32	-F		C	0726	50		E	
ABST	15	0713	0733	0755	N28	W02	.403	15403	15.2	42	-F		C	0733	105	1.2	D	
TEHR	15	0725	0729	0737	N28	W02	.403	15403	15.2	12	-F	3	C		95		F	
BUCA	15	0730E		0742	N28	W02	.403	15403	15.2	12D	-F		C	0731	15	.2	E	
CATA	15	0735E	0735	0740D	N22	W02	.306	15403	15.2	5D	-N	2	P	0735	84	.9		

Hα SOLAR FLARES

JULY 1978

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	JUL																	
245 ABST	15	0802	0804	0820	N19	W03	.258	15403	15.1	18	-F		C	0804	114	1.2	D	Y5
GRP68246	15	1040+2	1050 1059+7	1205	N17	E24	.450	15410	17.2	85	-N						EJ	
ABST	15	1040	1059	1102D	N16	E24	.443	15410	17.2	22D	-F		P	1059	87	1.0	DJ	
HTPR	15	1040	1050	1150	N16	E24	.443	15410	17.2	70	-F		C	1050	40	.4	E	
MONT	15	1042	1106	1116D	N16	E24	.443	15410	17.2	34D	-F		C	1106	50		E	
KHAR	15	1049E	1105	1138D	N18	E23	.444	15410	17.2	49D	-N		P	1105				
CATA	15	1050E	1115	1115D	N17	E24	.450	15410	17.3	25D	-B	2	P	1115	168	1.9	T	
MCMA	15	1055E		1205D	N17	E23	.436	15410	17.2	70D	-N		P	1120	120	1.3	E	
KIEV	15	1117E	1120	1216	N17	E25	.463	15410	17.3	59D	-F		C	1120	100	1.5	D	
GRP68247	15	1046+2	1056+3	1113	N14	W06	.197	15403	15.0	27	-F				60	.6	EJ	
ABST	15	1046	1059	1102D	N13	W06	.183	15403	15.0	16D	-F		P	1059	87	.9	DJ	
MONT	15	1048	1056	1110	N14	W05	.189	15403	15.1	22	-F		C	1056	60		E	
MCMA	15	1055E		1115	N15	W10	.251	15403	14.7	20D	-F		P	1056	40	.4	E	
248 RAMY	15	1318	1322	1346	N19	E52	.796	15415	19.5	28	-N	4	C		33			Y5
249 HTPR	15	1329	1330	1334	N26	W37	.663	15394	12.8	5	-F		C	1330	20	.2		Y5
GRP68250	15	1343+1	1344+1	1354	N15	W08	.230	15403	15.0	11	-N				50	.5	EH	
HTPR	15	1343	1344	1352	N15	W08	.230	15403	15.0	9	-F		C	1344	20	.2	E	
MCMA	15	1344	1345	1350D	N14	W07	.206	15403	15.0	6D	-N		C	1345	50	.5	E	
RAMY	15	1344	1345	1355	N18	W10	.289	15403	14.8	11	-N	4	C		69		H	
GRP68251	15	1424+1	1425+0 1431	1443	N18	W11	.299	15403	14.8	19	1B				250	2.6	V	
MCMA	15	1424	1425	1500	N18	W12	.310	15403	14.7	36	1B		C	1425	200	2.1	E	
HTPR	15	1424	1425	1440	N18	W13	.320	15403	14.6	16	1B		C	1425	230	2.3	EV	
TEHR	15	1425	1431U	1443	N19	W10	.303	15403	14.9	18	1B	1	C		300		F	
RAMY	15	1425	1425	1428D	N18	W10	.289	15403	14.9	3D	1B	4	V		310		F	
252 HTPR	15	1446	1450	1453	N23	W09	.352	15403	14.9	7	-F		C	1450	30	.3		Y5
253 HUAN	15	1950		2007	N18	W15	.343	15403	14.7	17	-F	1	C	1956	45	.5	E	Y5
	15	2047	2106	NO FLARE PATROL														
254 CULG	16	0422	0429	0507	N10	E51	.776	15415	20.0	45	-F		C	0429	50	.8		Y5
GRP68255	16	0430+3	0434+3	0446	N18	E42	.685	15415	19.3	16	-F				60	.8		
CULG	16	0430	0437	0446	N18	E42	.685	15415	19.3	16	-F		P	0437	50	.7		
TACH	16	0431E	0435	0440D	N18	E48	.753	15415	19.8	9D	1F		C	0435	220	3.2	E	
PALE	16	0433	0434	0435D	N20	E41	.680	15415	19.3	2D	-N	3	C		56		FDE	
256 CULG	16	0600	0603	0611	N14	E45	.712	15415	19.6	11	-F		C	0603	20	.2		Y5
257 ABST	16	0724	0730	0736	N18	E42	.685	15415	19.5	12	-F		C	0730	140	1.9	F	Y5
GRP68258	16	0758	0807+6	0842	N18	W22	.430	15403	14.7	44	-F				90	1.0	DJ	
ABST	16	0758	0807	0842	N18	W22	.430	15403	14.7	44	-F		C	0807	96	1.1	DJ	
KHAR	16	0810E	0813	0840D	N18	W22	.430	15403	14.7	30D	-F		P	0813	80	.9	D	
259 KHAR	16	1207E	1207	1213D	N20	E42	.691	15415	19.7	6D	-F		P				D	Y5
GRP68260	16	1221+1	1229+1	1246	N28	W18	.487	15403	15.2	25	-N						E	
MCMA	16	1221	1230	1246	N28	W19	.496	15403	15.1	25	-N		C	1230	60	.7	E	
MEUD	16	1222	1229	1245	N28	W18	.487	15403	15.2	23	-N		C				E	
KHAR	16	1230E	1230	1237D	N28	W16	.471	15403	15.3	7D	-F		P	1230	165	1.9		
261 RAMY	16	1254	1256	1314	N18	W22	.430	15403	14.9	20	-B	3	C		98		F	Y5
GRP68262	16	1559+3	1601+1	1609	N16	W24	.443	15403	14.9	10	-F							
KANZ	16	1559	1601	1607D	N14	W24	.431	15403	14.9	8D	-F	1						
RAMY	16	1602	1602	1609	N18	W24	.456	15403	14.9	7	-N	3	C		21			
GRP68263	16	1612+1	1612+1	1630	N15	W23	.422	15403	14.9	18	-N						D	
MEUD	16	1612	1612	1625	N13	W23	.411	15403	15.0	13	-N		C				D	
RAMY	16	1613	1613	1634	N18	W24	.456	15403	14.9	21	-B	3	C		49			
264 RAMY	16	1647	1647	1650	N18	W24	.456	15403	14.9	3	-N	3	C		30			Y5
GRP68265	16	1947+1	1948+0	1952	N17	W25	.463	15403	14.9	5	-B				80	.9		
RAMY	16	1947	1948	1953	N18	W26	.482	15403	14.9	6	-B	3	C		90			
PALE	16	1948	1948	1950	N17	W25	.463	15403	15.0	2	-B	3	C		68		FDE	

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY			COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	JUL									MIN.								
GRP68266	16	2346+3	2350+1	0004	N13	W27	.470	15403	15.0	18	-N				60	.7	E	
CULG	16	2346	2350	0010	N13	W28	.484	15403	14.9	24	-F		C	2350	40	.5		
VORO	16	2349	2351	2357	N13	W27	.470	15403	15.0	8	-B		C	2351	81		E	
267 CULG	16	2349	2354	0020U	S17	W62	.905	15397	12.3	31D	-N		C	2354	50	1.2	J	Y5
GRP68268	17	0018+4	0022+3	0035	S25	E20	.578	15413	18.5	17	-N						JU	
MITK	17	0018E	0023	0036D	S26	E20	.590	15413	18.5	18D	1F		C	0023	230	2.9	E	
CULG	17	0020E	0025	0117D	S28	E19	.606	15413	18.4	57D	-N		C	0025	150	1.9	U	
VORO	17	0022	0023	0030	S25	E21	.586	15413	18.6	8	-B		C	0023	63	.7	DJ	
PALE	17	0022	0022	0033	S23	E20	.555	15413	18.5	11	-N	3	C		29		FDE	
GRP68269	17	0033+4	0038+1	0050	S28	E69	.960	15422	22.2	17	-F				70		D	
CULG	17	0033	0039	0056D	S29	E69	.962	15422	22.2	23D	-F		C	0039	50			
VORO	17	0037	0038	0044	S28	E70	.964	15422	22.3	7	-F		C	0038	99		D	
GRP68270	17	0154+3	0157+6	0224	N14	W28	.488	15403	15.0	30	-N						J	
CULG	17	0154	0203	0235	N14	W27	.473	15403	15.1	41	-N		C	0203	130	1.5		
PALE	17	0156	0157	0218	N17	W29	.516	15403	14.9	22	-B	3	C		66		FDE	
MITK	17	0157E		0230D	N14	W30	.516	15403	14.8	33D	-N		C	0157			E	
VORO	17	0157	0200	0217	N13	W28	.484	15403	15.0	20	1B		C	0200	233	2.7	J	
GRP68271	17	0242+6	0249+4	0308	N13	W29	.498	15403	14.9	26	-N				120	1.4	H	
CULG	17	0242	0252	0323	N13	W29	.498	15403	14.9	41	-N		C	0252	120	1.3		
PALE	17	0246	0249	0307	N17	W29	.516	15403	14.9	21	-N	3	C		97		FDE	
MITK	17	0246E	0253	0309D	N14	W30	.516	15403	14.9	23D	-N		C	0253			EH	
VORO	17	0248		0258	N11	W29	.492	15403	14.9	10	-B		C	0251	125	1.4		
272 CULG	17	0444E	0520U	0629	N23	E62	.887	15420	21.8	105D	-F		C	0520	60	1.4	G	Y5
GRP68273	17	0501+3	0509 0522	0531	N15	W03	.189	15410	17.0	30	-F						DJK	
CULG	17	0501	0509	0531	N15	W03	.189	15410	17.0	30	-F		C	0509	20	.2	K	
ABST	17	0504	0522	0530	N16	W04	.211	15410	16.9	26	-F		P	0522	87	.9	DJ	
274 ABST	17	0558	0601	0608	N14	W32	.544	15403	14.8	10	-F		P	0601	79	1.0	DJ	Y5
275 ABST	17	0642	0644	0646	N17	E30	.529	15415	19.5	4	-F		C	0644	87	1.0	DG	Y5
GRP68276	17	0748+4	0754+0	0810	N29	W30	.609	15403	15.1	22	-F						EH	
ZURI	17	0748	0754	0820	N29	W30	.609	15403	15.1	32	1F		C	0754	220	2.9		
MONT	17	0752	0754	0800	N29	W30	.609	15403	15.1	8	-F		C	0754	50		EH	
277 ABST	17	0752	0801	0815D	N21	W38	.648	15403	14.5	23D	-F		P	0801	87	1.2	DJ	Y5
GRP68278	17	0901+1	0915+1 0930	0958	S19	W65	.928	15397	12.5	57	1N				110			
MONT	17	0901	0916	1021	S19	W65	.928	15397	12.5	80	-N		C	0916	110			
ZURI	17	0902	0930	0958	S20	W65	.929	15397	12.5	56	1N		C	0930	120			
CATA	17	0910E	0915	0925D	S20	W65	.929	15397	12.5	15D	1N	2	P	0915	112			
TEHR	17	0939	0943	0957	S18	W63	.914	15397	12.7	18	1B	2	C		127			
GRP68279	17	1030+1	1032 1039+2	1048	N14	W33	.557	15403	15.0	18	-N						EJ	
ZURI	17	1030	1032	1044	N14	W33	.557	15403	15.0	14	-B		C	1032	130	1.6		
WEND	17	1030		1048	N14	W30	.516	15403	15.2	18	-N							
MONT	17	1031	1039	1044	N15	W33	.561	15403	15.0	13	-N		C	1033	60		E	
TEHR	17	1038E	1041	1043D	N18	W34	.586	15403	14.9	5D	1B	2	V		222			
MCMA	17	1040E		1055	N14	W34	.571	15403	14.9	15D	-N		C	1041	60	.7	E	
ABST	17	1047E	1048	1053D	N14	W33	.557	15403	15.0	6D	1F		P	1048	236	2.9	EJ	
GRP68280	17	1120>9	1126 1216	1235	N20	W30	.545	15403	15.2	75	-F						DK	
MCMA	17	1120	1126	1245	N21	W30	.552	15403	15.2	85	-N		C	1126	30	.4	DK	
ZURI	17	1210	1216	1224	N19	W31	.552	15403	15.2	14	-F		C	1216	70	.9		
281 MCMA	17	1256	1258	1320	N14	W35	.585	15403	14.9	24	-F		C	1258	40	.5	E	Y5
282 RAMY	17	1301E	1301U	1310	N16	W07	.232	15410	17.0	9D	-N	3	C		23			Y5
GRP68283	17	1350+3	1356+0 1405+5	1424D	N16	W35	.591	15403	15.0	34	-N				120	1.5	L	
KANZ	17	1342	1409	1435	N18	W34	.586	15403	15.0	53	-B	2						
MCMA	17	1350	1356	1420D	N14	W37	.611	15403	14.8	30D	-N		C	1356	75	1.0	EL	
RAMY	17	1352	1410	1450	N17	W36	.608	15403	14.9	58	-B	3	C		47		FDE	
ZURI	17	1352	1356	1408	N14	W35	.585	15403	15.0	16	-N		C	1356	160	2.0		
KANZ	17	1353	1356	1418	N14	W35	.585	15403	15.0	25	-B	2						
LOCA	17	1402E	1405	1425	N19	W30	.540	15403	15.3	23D	-N		V	1405	61	.8		

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY	MIN.		CONF	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
	JUL																
GRP68284	17	1424+2	1427+3 1436	1447	N15	W35	.588	15403	15.0	23	-N				80	1.0	L
RAMY	17	1352	1427	1450	N17	W36	.608	15403	14.9	58	-N	3	C		106		FDE
KANZ	17	1424	1436	1449	N15	W34	.574	15403	15.1	25	-B	2					
MCMA	17	1425	1428	1500	N14	W37	.611	15403	14.8	35	-B		C	1428	80	1.1	EL
ZURI	17	1426	1430	1444	N14	W35	.585	15403	15.0	18	-N		C	1430	140	1.8	
WEND	17	1426		1443	N14	W33	.557	15403	15.1	22	-N		V				
HUAN	17	1428	1428	1439	N14	W35	.585	15403	15.0	11	-N	1	C	1428	60	.7	
TEHR	17	1435	1428U	1445	N17	W35	.595	15403	15.0	10	-B	2	C		63		
285 RAMY	17	1558	1600	1608	N19	E25	.475	15415	19.5	10	-N	3	C		20		Y5
GRP68286	17	1623+1	1625+3	1640	N17	E27	.489	15415	19.7	17	-N						H
MCMA	17	1623	1627	1640	N16	E27	.483	15415	19.7	17	-N		C	1627	50	.6	EH
RAMY	17	1623	1625	1645	N19	E25	.475	15415	19.6	22	-B	3	C		100		F
RAMY	17	1623	1628	1645	N19	E25	.475	15415	19.6	22	-F	3	C		167		F
KANZ	17	1624	1628	1638	N17	E27	.489	15415	19.7	14	-N	2					H
287 RAMY	17	1800	1802	1814	N18	E23	.442	15415	19.5	14	-B	3	C		66		F Y5
GRP68288	17	1835+5	1840+0	1850	N15	W11	.260	15410	16.9	15	-N				70	.7	
MCMA	17	1835	1840	1855	N17	W10	.274	15410	17.0	20	-N		C	1840	40	.4	E
RAMY	17	1839	1840	1851	N14	W11	.249	15410	17.0	12	-N	3	C		88		F
PALE	17	1839	1840	1849	N15	W12	.272	15410	16.9	10	-B	3	C		75		FDE
HUAN	17	1840		1845	N15	W11	.260	15410	17.0	5	-F	1	C				E
GRP68289	17	1949+2	1951+2	2007	N15	W12	.272	15410	16.9	18	-N				45	.5	
RAMY	17	1949	1951	2011	N14	W12	.262	15410	16.9	22	-B	3	C		69		F
MCMA	17	1950	1953	2005	N17	W10	.274	15410	17.1	15	-N		C	1953	50	.5	E
PALE	17	1951	1951	1957	N15	W13	.285	15410	16.9	6	-N	3	C		23		DE
HUAN	17	1952E		2009	N15	W12	.272	15410	16.9	170	-F	1	P	1955	40	.4	
GRP68290	17	2028+7	2035+2	2055	N19	W37	.628	15403	15.1	27	-N				30	.4	
RAMY	17	2028	2035	2056D	N17	W40	.658	15403	14.9	280	-B	3	C		45		F
MCMA	17	2028	2035	2110	N21	W31	.564	15403	15.5	42	-N		C	2035	40	.5	E
HUAN	17	2030		2052D	N20	W35	.608	15403	15.2	220	-N	1	P	2034	25	.3	D
HUAN	17	2032		2040	N20	W36	.620	15403	15.2	8	-F	1	C	2037	20	.2	D
PALE	17	2035	2037	2057	N17	W39	.645	15403	14.9	22	-B	3	C		23		DE
GRP68291	17	2115+5	2120+3	2140	N15	W39	.640	15403	15.0	25	-N				40	.5	E
MCMA	17	2115	2123	2150	N14	W40	.650	15403	14.9	35	-B		C	2123	50	.7	E
PALE	17	2120	2120	2130	N17	W39	.645	15403	15.0	10	-N	3	C		32		DE
GRP68292	17	2133+0	2134+1	2206	N20	W40	.668	15403	14.9	33	-N				120	1.6	K
MCMA	17	2133	2135	2206D	N20	W38	.644	15403	15.0	330	-B		C	2135	75	1.0	E
PALE	17	2133	2134	2223	N17	W40	.658	15403	14.9	50	-N	3	C		118		FDE
VORO	17	2133	2135	2158	N20	W49	.767	15403	14.2	25	1N		C	2135	152	2.4	K
GRP68293	17	2159+2	2202	2214	N16	W13	.295	15410	16.9	15	-N						
MCMA	17	2159		2206D	N17	W12	.295	15410	17.0	7D	-N		C	2206	80	.9	E
PALE	17	2201	2202	2214	N15	W14	.298	15410	16.9	13	-B	3	C		26		FDE
294 CULG	17	2234E	2240	2258D	N21	W37	.636	15403	15.2	240	-B		P	2240	70	.9	Y5
GRP68295	18	0018+0	0020+4	0100	N21	W42	.694	15403	14.9	42	1N				190	2.7	
PALE	18	0018	0020	0111	N17	W42	.682	15403	14.9	53	-N	3	C		137		FDE
VORO	18	0018	0024	0049	N21	W48	.759	15403	14.4	31	1N		C	0024	251	3.9	
CULG	18	0042E		0046D	N22	W37	.640	15403	15.3	40	-N		P	0043	60	.8	
296 ABST	18	0538E	0539	0545D	N14	W14	.287	15410	17.2	7D	-F		P	0539	61	.7	D Y5
297 BUCA	18	0800	0803	0812	N14	W44	.699	15403	15.0	12	-F		C	0803	15	.2	E Y5
298 BUCA	18	0820		0832	N19	W44	.710	15403	15.0	12	-F		C	0823	15	.2	Y5
GRP68299	18	0844+1	0855+3 0906	0923	N18	W44	.708	15403	15.1	39	-N				80	1.1	EHLU
MONT	18	0844	0857	0926D	N19	W43	.699	15403	15.1	42D	-N		C	0857	110		EH
HTPR	18	0845	0858	0920	N18	W43	.696	15403	15.1	35	-F		C	0858	60	.8	E
CATA	18	0845	0855	0925	N18	W44	.708	15403	15.1	40	-B	2	C	0855	84	1.2	
BUCA	18	0845		0923	N19	W44	.710	15403	15.1	38	-N		C	0900	63	.9	
KHAR	18	0858E	0858	0924D	N17	W44	.705	15403	15.1	26D	-N		P	0923	100	1.5	BCDL
TEHR	18	0903E	0906	0919	N18	W44	.708	15403	15.1	16D	1B	2	C		222		U

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	JUL																	
GRP68300	18	0925>9	0940 0947	1000	N15	W46	.724	15403	14.9	35	-N				35	.5	E	
HTPR	18	0925		0939D	N15	W44	.701	15403	15.1	140	-F		C	0927	20	.3		
BUCA	18	0927		0957	N15	W46	.724	15403	14.9	30	-N		C	0929	47	.7	E	
CATA	18	0935	0940	0945D	N14	W46	.723	15403	14.9	10D	-N	2	P	0940	56	.8		
KHAR	18	0941E	0941	1000D	N15	W46	.724	15403	15.0	19D	-F		P	0942			BE	
HONT	18	0945E	0947	1012	N15	W46	.724	15403	15.0	27D	-N		C	0947	100		E	
301 KANZ	18	1226E	1229	1235	N18	W17	.364	15410	17.2	9D	-F	2						Y5
GRP68302	18	1306+1	1310+6	1322	N19	W46	.733	15403	15.1	16	-B				50	.7	EU	
MCMA	18	1306		1309D	N20	W46	.735	15403	15.1	3D	-B		C	1308	50	.8	E	
HTPR	18	1307	1310	1320	N18	W45	.719	15403	15.2	13	-F		C	1310	50	.7	E	
KANZ	18	1308E	1313	1320	N20	W45	.724	15403	15.2	12D	-B	2						
RAMY	18	1311E	1313	1324	N17	W49	.761	15403	14.9	13D	-B	3	C		33		FDE	
TEHR	18	1314E	1316	1324	N18	W46	.730	15403	15.1	10D	-B	2	C		95		U	
303 HTPR	18	1313	1330	1340	N17	W16	.342	15410	17.4	27	-F		C	1330	20	.2	E	Y5
GRP68304	18	1419+2	1428+4	1450	N18	W20	.402	15410	17.1	31	-N							
KANZ	18	1419	1432	1453	N19	W18	.386	15410	17.2	34	-N	2						
HUAN	18	1421E	1430	1447	N19	W18	.386	15410	17.2	26D	-N	1	P	1430	30	.3		
RAMY	18	1421	1428	1451	N14	W22	.401	15410	16.9	30	1B	3	C		241		FDE	
TEHR	18	1430E	1432	1445	N15	W22	.407	15410	17.0	15D	1B	2	C		254		F	
MCMA	18	1432E		1455	N19	W19	.398	15410	17.2	23D	-N		C	1432	100	1.1	E	
305 KANZ	18	1532		1533D	N19	W18	.386	15410	17.3	1D	-N	2						Y5
GRP68306	18	1533+2	1538	1552D	N19	W48	.754	15403	15.0	19	-B							
KANZ	18	1533		1533D	N21	W46	.738	15403	15.2		-F	1						
RAMY	18	1535	1538	1552D	N17	W51	.782	15403	14.8	17D	-B	3	C		34		FDE	
307 RAMY	18	1534	1534	1543	N19	E12	.318	15415	19.5	9	-N	3	C		55		FDE	Y5
GRP68308	18	1719+3	1724+2	1858	N17	W51	.782	15403	14.9	99	-N				110	1.8	Z	
RAMY	18	1719	1724	1737D	N17	W51	.782	15403	14.9	18D	-N	3	C		95		Z F	
PALE	18	1722	1726	1851	N17	W51	.782	15403	14.9	89	-N	3	C		118		FDE	
HUAN	18	1835E		1904D	N22	W48	.761	15403	15.2	29D	-F	1	P	1835	35	.5		
GRP68309	18	1927	1953+6	2010D	N17	W52	.792	15403	14.9	43	2B				450	7.5		
PALE	18	1927	1959	2010D	N17	W53	.802	15403	14.8	43D	2B	3	C		520			
RAMY	18	1948E	1957	2000D	N17	W52	.792	15403	14.9	12D	2B	3	V		388		FDE	
RAMY	18	1948E	1953	2000D	N17	W52	.792	15403	14.9	12D	1B	3	V		352		FDE	
	18	2042	2051	NO FLARE PATROL														
	18	2059	2100	NO FLARE PATROL														
	18	2240	2244	NO FLARE PATROL														
310 VORO	19	0141	0142	0144	S21	W11	.467	15413	18.2	3	-F		C	0142	27	.3	D	Y5
311 VORO	19	0149	0149	0151	S21	W11	.467	15413	18.3	2	-F		C	0149	36	.4	D	Y5
GRP68312	19	0324	0326+0	0331	N19	00	.247	15415	19.1	7	-N				100	1.0	U	
PALE	19	0324	0326	0332	N20	E02	.266	15415	19.3	8	-B	3	C		110		FDE	
TEHR	19	0325E	0326	0330	N19	W01	.248	15415	19.1	5D	-N	3	C		95		U	
GRP68313	19	0510E	0515+3	0535	N20	W63	.891	15403	14.5	25	1N				120	2.7	E	
CULG	19	0510E	0516	0600	N23	W63	.894	15403	14.5	50D	1N		C	0516	110	2.2		
MITK	19	0513E	0515	0526D	N18	W63	.890	15403	14.5	13D	1N		C	0515	100	2.1	E	
TACH	19	0514E		0526	N22	W65	.907	15403	14.3	12D	1N		C	0514	172	4.0	E	
TEHR	19	0515E	0518	0535	N17	W56	.831	15403	15.0	20D	-B	2	C		95		DE	
314 CULG	19	0555	0611	0636D	S28	W68	.957	15401	14.1	41D	-F		C	0611	40		S	Y5
315 ABST	19	0709E	0713	0715D	N16	W63	.889	15403	14.6	6D	-F		P	0713	44	.9	D	Y5
GRP68316	19	0944+1	0946+0	0953	N12	W32	.537	15410	17.0	9	-F				80	1.0	E	
HTPR	19	0944	0946	0953	N13	W34	.567	15410	16.9	9	-F		C	0946	90	1.1	E	
MONT	19	0945	0946	0951	N12	W32	.537	15410	17.0	6	-F		C	0946	80			
BUCA	19	0945		1005	N10	W30	.503	15410	17.2	20	-F		C	0946	71	.8		
317 ABST	19	1049E	1052	1100	S22	W18	.530	15413	18.1	11D	-F		P	1052	44	.4	D	Y5
318 HTPR	19	1204	1206	1220	N19	W08	.281	15415	18.9	16	-F		C	1206	30	.3	E	Y5
319 RAMY	19	1221	1222	1236	N18	W01	.231	15415	19.4	15	-N	3	C		20		F	Y5

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	JUL																	
GRP68320	19	1321+0	1322+5	1400	N16	W60	.865	15403	15.1	39	-N		C		60	1.2	E	
HTPR	19	1321	1323	1345	N16	W60	.865	15403	15.1	24	-F		C	1323	40	.8	E	
KANZ	19	1321	1327	1400	N17	W60	.866	15403	15.1	39	-F	2					EF	
RAMY	19	1321	1322	1405	N15	W63	.889	15403	14.8	44	-N	3	C		61		F	
TEHR	19	1323E	1327	1342D	N18	W60	.866	15403	15.1	19D	-B	2	C		127		DE	
321 RAMY	19	1337	1340	1405	N18	W05	.245	15415	19.2	28	-N	3	C		55		F	Y5
322 RAMY	19	1428	1429	1436	N18	W05	.245	15415	19.2	8	-N	3	C		45		F	Y5
323 RAMY	19	1540	1541	1547	N18	W06	.251	15415	19.2	7	-N	3	C		36		F	Y5
324 HUAN	19	2050		2056	N15	W70	.937	15403	14.6	6	-F	1	C					Y5
	19	2112	2143	NO FLARE PATROL														
GRP68325	20	0002+7	0012+4	0057	N17	W70	.937	15403	14.8	55	1N				90		H	
CULG	20	0002	0015	0140	N20	W71	.943	15403	14.7	98	1N		C	0015	100		T	
MITK	20	0006E	0016	0057D	N17	W71	.942	15403	14.7	51D	1N		C	0016	190		EH	
PALE	20	0009	0012	0042	N17	W68	.924	15403	14.9	33	-N	3	C		38		FDE	
MANI	20	0011E	0014	0019D	N17	W70	.937	15403	14.8	8D	-N		V		90	1.9	F	
	20	0148	0152	NO FLARE PATROL														
326 CULG	20	0230	0240	0306	S27	W21	.612	15413	18.5	36	-N		C	0240	70	.9	F	Y5
GRP68327	20	0307	0320 0333	0345	S23	W24	.593	15413	18.3	38	1N				240	2.9	F	
CULG	20	0307	0320	0425	S24	W24	.603	15413	18.3	78	-N		C	0320	120	1.5	F	
TEHR	20	0329E	0333	0344	S16	W24	.523	15413	18.3	15D	1B	2	C		222		F	
TACH	20	0333E		0345D	S23	W24	.593	15413	18.3	12D	1F		V	0333	265	3.4	E	
328 CULG	20	0421	0431	0442	N23	W76	.967	15403	14.5	21	-F		C	0431	40		T	Y5
329 ABST	20	0506E	0526	0535	N23	W75	.963	15403	14.6	29D	-F		P	0526	52		D	Y5
330 CULG	20	0513	0528	0540	S26	W80	.993	15401	14.2	27	-N		C	0528	30			Y5
331 ABST	20	0536E	0549	0559D	N19	W79	.978	15403	14.3	23D	-F		P	0549	70		DK	Y5
332 ABST	20	0558E	0559	0601D	N13	W44	.697	15410	16.9	3D	-F		P	0559	52	.7	D	Y5
333 ABST	20	0605E	0605	0609D	N19	W07	.272	15415	19.7	4D	-F		P	0605	52	.6	D	Y5
334 CULG	20	0630	0637	0652	N24	W75	.963	15403	14.6	22	-N		C	0637	40		T	Y5
GRP68335	20	0707>9	0718+4	0726	N17	W17	.353	15415	19.0	19	-F				90	1.0		
ABST	20	0707E	0718	0722D	N16	W19	.371	15415	18.9	15D	-F		P	0718	70	.8	D	
ABST	20	0721	0722	0726	N19	W16	.360	15415	19.1	5	-F		C	0722	110	1.2	E	
GRP68336	20	0737+2	0741+1	0748	N21	W76	.967	15403	14.6	11	-N				50		E	
MONT	20	0737	0742	0748	N21	W76	.967	15403	14.6	11	-F		C	0742	50		E	
KANZ	20	0733E	0742	0750	N22	W74	.958	15403	14.8	12D	-B	1						
HTPR	20	0739	0741	0746	N21	W77	.971	15403	14.5	7	-N		C	0741	60		E	
337 ABST	20	0812E	0817	0838D	N18	W09	.274	15415	19.7	26D	-F		P	0817	61	.7	DK	Y5
338 HTPR	20	0903	0905	0907	N21	W79	.978	15403	14.5	4	-F		C	0905	20			Y5
339 CATA	20	1015E	1015	1020	N10	W43	.681	15410	17.2	5D	-N	2	P	1015	28	.3		Y5
340 HTPR	20	1146	1148	1200	S17	E23	.522	15423	22.2	14	-F		C	1148	20	.2	E	Y5
GRP68341	20	1200+6	1209 1221+0	1313	N21	W78	.975	15403	14.6	73	-N				25		D	
RAMY	20	1200	1221	1312	N18	W75	.963	15403	14.9	72	-B	3	C		22			
RAMY	20	1200	1209	1312	N18	W75	.963	15403	14.9	72	-N	3	C		14			
HTPR	20	1206	1221	1313	N21	W80	.982	15403	14.5	67	-N		C	1221	30			
MCMA	20	1215E	1221	1315	N22	W80	.981	15403	14.5	60D	-N		C	1221			D	
ZURI	20	1223E	1231	1247	N21	W79	.978	15403	14.6	24D	1N		P	1231	60			
TEHR	20	1308E	1311	1315	N21	W73	.953	15403	15.1	7D	-B	2	C		64			

Hα SOLAR FLARES

JULY 1978

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE JUL	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
GRP68342	20	1304+2	1307+4	1315	N18	W46	.729	15410	17.1	11	-N				90	1.3	K	
MCMA	20	1304	1308	1318	N18	W46	.729	15410	17.1	14	-B		C	1308	70	1.0	E	
HTPR	20	1305	1308	1315	N18	W46	.729	15410	17.1	10	-B		C	1308	130	1.8	K	
ZURI	20	1305E	1309	1315	N18	W45	.718	15410	17.2	100	1B		P	1309	160	2.4		
RAMY	20	1306	1307	1316	N16	W47	.737	15410	17.0	10	-N	3	C		67		F	
KIEV	20	1307E	1309	1315D	N18	W46	.729	15410	17.1	80	-F		C	1309	100	1.5	D	
TEHR	20	1308E	1311	1314	N18	W47	.740	15410	17.0	60	-B	2	C		64		F	
GRP68343	20	1321+1	1323+1	1337	N21	W78	.975	15403	14.7	16	-N				60			
MCMA	20	1321	1324	1345	N22	W80	.981	15403	14.6	24	-B		C	1324			D	
RAMY	20	1321	1324	1341	N18	W75	.963	15403	14.9	20	-N	3	C		49		F	
ZURI	20	1321	1323	1335D	N21	W79	.978	15403	14.6	140	1B		P	1323	80			
HTPR	20	1321	1324	1331	N21	W80	.982	15403	14.6	10	-N		C	1324	60			
TEHR	20	1322	1324	1335	N21	W73	.953	15403	15.1	13	-N	2	C		64			
GRP68344	20	1431+2	1435+0	1440	N21	W80	.982	15403	14.6	9	-F						D	
ZURI	20	1431	1435	1439	N21	W80	.982	15403	14.6	8	-F		C	1435	100			
MCMA	20	1433	1435	1441	N22	W81	.984	15403	14.5	8	-F		C	1435			D	
GRP68345	20	1505+8	1514 1529	1540	N21	W83	.990	15403	14.4	35	-N						E	
KANZ	20	1505	1529	1541	N22	W83	.990	15403	14.4	36	-N	2						
MCMA	20	1510E	1514	1535D	N21	W83	.990	15403	14.4	25D	-N		C	1514			E	
ZURI	20	1513	1539	1539	N21	W80	.982	15403	14.6	26	-F		P	1539	50			
GRP68346	20	1557+9	1608+2	1616	N21	W83	.990	15403	14.4	19	-B				35		D	
KANZ	20	1557	1609	1616D	N22	W83	.990	15403	14.4	19D	-B	2						
HTPR	20	1605	1608	1615	N21	W85	.994	15403	14.3	10	-N		C	1608	25		D	
RAMY	20	1606	1610	1617	N18	W76	.967	15403	15.0	11	-B	3	C		42			
MCMA	20	1607E	1608	1616	N22	W83	.990	15403	14.4	90	-B		C	1608			D	
347 HTPR	20	1642	1706	1718	N18	W22	.426	15415	19.0	36	-F		C	1706	10	.1	DK	Y5
GRP68348	20	1702	1711+1	1725	N17	W48	.749	15410	17.1	23	-F				30	.5	D	
HTPR	20	1702	1711	1725	N17	W48	.749	15410	17.1	23	-N		C	1711	30	.4	D	
MCMA	20	1705E	1712	1718D	N18	W48	.751	15410	17.1	13D	-F		C	1712	25	.4	D	
349 CULG	20	2209	2231U	2310	N22	W82	.987	15403	14.8	61	1F		C	2231	70		FJ	Y5
350 TACH	21	0413E		0429D	N18	W88	.998	15403	14.6	16D	2F		V	0413	265		D	Y5
GRP68351	21	0451E	0453+0	0510	N18	W85	.994	15403	14.8	19	-N				45		D	
TEHR	21	0451E	0453	0510	N17	W83	.990	15403	15.0	19D	-N	2	C		64		DE	
TACH	21	0452E	0453	0456D	N20	W88	.998	15403	14.6	4D	-N		C	0453	33		D	
352 ABST	21	0507E	0507	0513	N21	W27	.512	15415	19.2	60	-F		P	0507	61	.7	D	Y5
GRP68353	21	0602+2	0608+2	0617	N21	W90	1.000	15403	14.5	15	1N				80		D	
TACH	21	0602	0608	0617D	N22	W89	.999	15403	14.6	15D	1B		C	0608	101		D	
HTPR	21	0604	0609	0617	N21	W90	1.000	15403	14.5	13	-F		C	0609	30			
CATA	21	0605E	0610	0615D	N20	W90	1.000	15403	14.5	10D	1N	2	P	0610	84			
354 ABST	21	0624E	0636	0639D	N18	W32	.558	15415	18.9	15D	-F		P	0636	79	1.0	DJ	Y5
355 ABST	21	0707E	0716	0717D	S16	E10	.392	15423	22.0	10D	-F		P	0716	70	.8	F	Y5
356 KHAR	21	0727E	0736	0739D	S39	W37	.825	15430	18.5	12D	-F		P				D	Y5
GRP68357	21	0736	0749	0853D	N24	W90	.999	15403	14.6	77	?F						EH	
KHAR	21	0736		0828D	N22	W90	.999	15403	14.6	52D	F		P	0756			EHT	
	IMP.1 NO : HTPR2 HITK2 CATA1 ABST1																	
KHAR	21	0738E	0749	0853D	N27	W90	.999	15403	14.6	75D	1F		P	0749			DH	
GRP68358	21	0739+6	0743+2	0751	N15	W90	1.000	15403	14.6	12	-N				25		DH	
KHAR	21	0739E	0743	0752D	N15	W88	.998	15403	14.7	13D	-N		P	0743			DH	
CATA	21	0740	0745	0750	N12	W90	1.000	15403	14.6	10	-N	2	C	0745	28			
HITK	21	0745		0747D	N15	W90	1.000	15403	14.6	2D	-N		C	0746		.2		
359 KHAR	21	0838E		0845D	N19	W33	.576	15415	18.9	7D	-F		P	0838			D	Y5
360 KHAR	21	0838E	0841	0848D	N12	W60	.863	15410	16.9	10D	-F	*	P	0841	90	1.8	D	Y5
GRP68361	21	0909>9	0932 1014	1030D	N21	W89	.999	15403	14.7	81	-N						EK	
KHAR	21	0909E	0932	1045D	N23	W90	.999	15403	14.6	96D	1N		P	1023			EKT	
HTPR	21	1005	1014	1030	N21	W90	1.000	15403	14.7	25	-F		C			.2		
KHAR	21	1040E	1047	1102D	N19	W88	.998	15403	14.8	22D	-F		P	1046			DT	

30
Jul 78

Hα SOLAR FLARES

JULY 1978

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE JUL	START	MAX. PHASE	END	APPROX LAT.	APPROX LONG. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
362 KHAR	21	1055E	1055	11150	N12	W60	.863	15410	17.0	200	-F		P					Y5
GRP68363	21	1111>9	1124+2	1140	N22	W90	.999	15403	14.7	29	1N						EK	
KHAR	21	1111E	1126	12010	N22	W90	.999	15403	14.7	500	1N	*	P				EKT	
CATA	21	1120	1125	1140	N21	W90	1.000	15403	14.7	20	1N	*	C	1125	84			
RAMY	21	1123	1124	1128	N27	W88	.998	15403	14.9	5	-N	*	C		20			
GRP68364	21	1118>9	1203	1248	N13	W60	.863	15410	17.0	90	-N						E	
KHAR	21	1118E		12010	N12	W59	.854	15410	17.0	430	1F		P	1147	100	2.1	E	
RAMY	21	1200	1203	1248	N14	W61	.872	15410	16.9	48	-N	3	C		28			
365 RAMY	21	1237	1237	1249	N17	W89	.999	15403	14.9	12	-N	3	C		7			Y5
366 RAMY	21	1307	1307	1354	N14	W61	.872	15410	17.0	47	-N	3	C		22			Y5
GRP68367	21	1506+1	1507+1	1513	N17	W63	.889	15410	16.9	7	-F				25	.6	D	
HTPR	21	1506	1508	1512	N20	W65	.905	15410	16.8	6	-F		C	1509	20	1.4	D	
RAMY	21	1507	1507	1513	N14	W62	.880	15410	17.0	6	-N	3	C		29			
368 RAMY	21	1717	1717	1720	N11	W64	.896	15410	16.9	3	-N	3	C		16			Y5
369 RAMY	21	1843	1845	1856	N11	W65	.903	15410	16.9	13	-B	3	C		33			Y5
370 RAMY	21	1857	1900	19260	N17	W90	1.000	15403	15.0	290	1B	3	C					Y5
	21	2120	2140	NO FLARE PATROL														
	21	2155	2203	NO FLARE PATROL														
	21	0149	0219	NO FLARE PATROL														
	21	0040	0110	NO FLARE PATROL														
	21	0006	0030	NO FLARE PATROL														
371 CULG	21	2212	2217	2254	N13	W68	.924	15410	16.8	42	-F		C	2217	60		T	Y5
372 CULG	21	2250	2254	2315	N19	W40	.662	15415	19.0	25	-F		C	2254	30	.4		Y5
373 CULG	21	2340	2352	0025	S24	W02	.484		21.8	45	-N		C	2352	30	.3		Y5
374 CULG	22	0501	0506	0520	S21	E41	.741	15429	25.3	19	-F		C	0506	60	.9		Y5
375 CULG	22	0515	0515	0528	N22	W11	.344		21.4	13	-F		C	0515	20	.2		Y5
376 HTPR	22	0527	0538	0545	N18	E45	.717	15428	25.6	18	-N		C	0538	70	1.0	D	Y5
GRP68377	22	0611+4	0625+2	0654	S20	E40	.726	15429	25.3	43	-F						D	
CULG	22	0611	0625	0653	S21	E39	.722	15429	25.2	42	-F		C	0625	40	.6		
HTPR	22	0615	0627	0655	S20	E41	.736	15429	25.3	40	-F		C	0627	10	.2	D	
378 ABST	22	0618E	0621	06300	N27	E58	.860	15428	26.6	120	-F		P	0621	61	.7	DG	Y5
GRP68379	22	0659E	0734+3	0759D	N19	E43	.697	15428	25.5	60	-F						HK	
ABST	22	0659E	0734	0757D	N19	E44	.708	15428	25.6	580	1F		P	0734	148	2.1	FK	
KHAR	22	0705E	0737	0759D	N19	E42	.685	15428	25.4	540	-F		P	0723	120	1.7	DHT	
380 KHAR	22	0717E		0750D	N28	E56	.846	15428	26.5	330	-F		P	0723	90	1.8	D	Y5
GRP68381	22	0835+1	0835+3	0845	N12	W39	.632	15415	19.4	10	-F				50	.6	AD	
KHAR	22	0835E	0836	0849D	N12	W41	.658	15415	19.3	140	-F		P	0843	110	1.5	D	
CATA	22	0835	0835	0845	N12	W39	.632	15415	19.4	10	-N	2	C	0835	45	.5		
MEUD	22	0836	0838	0842	N13	W39	.633	15415	19.4	6	-F		C					
HTPR	22	0836	0838	0844	N13	W38	.620	15415	19.5	8	-F		C	0838	40	.5	A	
382 ABST	22	0852E	0859	09000	S17	W03	.377	15423	22.1	80	-F		P	0859	50	.6	DG	Y5
383 KHAR	22	0854E	0858	09080	N19	E42	.685	15428	25.5	140	-F		P	0858	110	1.6	DT	Y5
GRP68384	22	1004+3	1014+2	1036	S19	E38	.700	15429	25.3	32	-F						EH	
KHAR	22	1004E	1014	10370	S19	E38	.700	15429	25.3	330	-F		P	1014	110	1.7	EH	
HTPR	22	1007	1016	1035	S20	E39	.716	15429	25.3	28	-F		C	1016	20	.3	E	
385 KHAR	22	1022	1026	10350	N27	E37	.663	15428	25.2	130	-F		P	1026			DH	Y5
GRP68386	22	1738+4	1747+0	1759	S15	W08	.366	15423	22.1	21	-F				45	.5	E	
HTPR	22	1738	1747	1800	S15	W09	.372	15423	22.1	22	-F		C	1747	40	.4	E	
MCMA	22	1742	1747	1758	S15	W08	.366	15423	22.1	16	-N		C	1747	45	.5	E	
387 MCMA	22	1941E		19510	N27	E33	.621	15428	25.3	100	-N		C	1942	30	.4	E	Y5

Hα SOLAR FLARES

JULY 1978

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	JUL																	
	22	1951	2015	NO FLARE PATROL														
	22	2016	2144	NO FLARE PATROL														
388 VORO	23	0033	0035	0039	S16	W14	.426	15423	22.0	6	-F		C	0035	54	.6	DH	Y5
389 VORO	23	0211	0212	0215	S16	W14	.426	15423	22.0	4	-F		C	0212	45	.5	E	Y5
390 VORO	23	0221	0222	0229	S16	W14	.426	15423	22.0	8	-F		C	0222	45	.5	E	Y5
GRP68391	23	0238+4	0245	02490	S20	W68	.947	15413	18.0	11	-N				70		GHJ	
CULG	23	0238	0251	03280	S20	W69	.952	15413	17.9	500	1N		C	0251	90		FG	
VORO	23	0242	0245	0249	S21	W68	.948	15413	18.0	7	-N		C	0245	63		DHJ	
392 ABST	23	0502	0600	0614D	N17	E24	.444	15428	25.0	720.	-F		P	0600	87	1.0	FK	Y5
393 ABST	23	0504	0606	0614D	N12	W51	.775	15415	19.4	70D	-F		P	0606	131	2.0	FJK	Y5
394 ABST	23	0700E	0709	08260	N17	E24	.444	15428	25.1	860	-F		P	0709	87	1.0	FK	Y5
395 KANZ	23	0820	0824	0848	N13	W52	.787	15415	19.4	28	-F	1						Y5
396 ABST	23	0916E	0916	09370	S17	W18	.474	15423	22.0	21D	-F		P	0916	61	.7	EGJ	Y5
GRP68397	23	1448+0	1454	1528	N18	W60	.866	15415	19.1	40	-B						S	
MEUD	23	1448		1530	N20	W59	.859	15415	19.2	42	1N		C	1500	150	3.0	E	
RAMY	23	1448	1454	1525	N17	W61	.873	15415	19.0	37	-B	3	C		55		F S	
	23	1640	2145	NO FLARE PATROL														
	23	2151	2156	NO FLARE PATROL														
398 ZURI	24	0758	0802	0808	S24	W24	.607		22.5	10	-F		C	0802	100	1.3		Y5
399 ZURI	24	1304	1306	1316	S22	E11	.488	15429	25.4	12	-F		C	1306	50	.6		Y5
400 KANZ	24	1312		13200	N22	E90	.999	15440	31.3	8D	-F	1						Y5
401 KANZ	24	1357		1401	N22	E90	.999	15440	31.3	4	-F	1						Y5
GRP68402	24	1410+2	1418	1434	S24	E80	.993	15436	30.6	24	-F						E	
KANZ	24	1410		1417D	S24	E81	.994	15436	30.7	7D	-F	1						
ZURI	24	1412	1418	1434	S23	E79	.990	15436	30.5	22	1F		C	1418	60			
MCMA	24	1413		14200	S25	E80	.993	15436	30.6	7D	-F		C				E	
	24	1631	1633	NO FLARE PATROL														
	24	2100	2125	NO FLARE PATROL														
	24	2202	2215	NO FLARE PATROL														
403 CULG	25	0042	0045	0053	S21	W67	.944	15416	20.0	11	-F		C	0045	20			Y5
404 CULG	25	0140	0144	0202	N25	E12	.389	15428	26.0	22	-F		C	0144	50	.6		Y5
405 HTPR	25	0608	0610	0612	N27	E17	.456	15428	26.5	4	-F		C	0610	40	.5	D	Y5
406 ZURI	25	0802E	0802	0822	S22	W70	.959	15416	20.1	20D	?F		P	0802	80			Y5
	IMP.1 NO 1 MONT2 CATA1																	
407 ZURI	25	1000	1006	1014	S22	W71	.964	15416	20.1	14	-F		C	1006	50			Y5
GRP68408	25	1350+9	1400+2	1406	S24	W72	.970	15416	20.2	16	-F				60			
ZURI	25	1350	1402	1406	S22	W73	.972	15416	20.1	16	-F		C	1402	60			
CATA	25	1355	1400	1400D	S24	W72	.970	15416	20.2	5D	-N	2	P	1400	56			
RAMY	25	1359	1400	1405	S25	W71	.967	15416	20.3	6	-F	3	C		23			
GRP68409	25	2142+0	2144+6	2201	S19	W83	.996	15416	19.7	19	1F				120		H	
VORO	25	2142	2144	2158	S21	W85	.999	15416	19.5	16	1F		C	2144	90		H	
CULG	25	2142E	2150	2203	S18	W82	.995	15416	19.8	21D	1N		C	2150	160			
410 VORO	25	2300	2302	2306	S22	W88	1.000	15416	19.4	6	-N		C	2302	27		D	Y5
411 CULG	26	0056	0102	0108	S16	W67	.937	15421	21.0	12	-N		C	0102	20	.6		Y5
412 CULG	26	0512	0518	0527	N18	W10	.276	15428	25.5	15	-F		C	0518	30	.3		Y5
413 ISTA	26	0813E		08210	N10	W15	.269		25.2	8D	-F							Y5
414 KANZ	26	1150	1153	1201	N37	E90	.998	15441	2.2	11	-B	2						Y5

Hα SOLAR FLARES

JULY 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	JUL																	
415 KANZ	26	1446		1512	N37	E90	.998	15441	2.4	26	-F	2						Y5
	26	1855	1922	NO FLARE PATROL														
416 RAMY	26	1942E	1944	1949	N39	E90	.998	15441	2.6	7D	-F	3	C					Y5
417 HTPR	27	0549	0555	0605	S21	W33	.666	15429	24.8	16	-F		C	0555	100	1.4	E	Y5
418 KHAR	27	0815E		0853	N36	E88	.997	15441	2.9	38D	-N		P	0838			DHT	Y5
419 KHAR	27	0933E	0933	0941D	N36	E88	.997	15441	3.0	8D	-F		P	0933			DHT	Y5
420 KANZ	27	1016	1019	1024	N36	E88	.997	15441	3.0	8	-F	*					T	Y5
421 KHAR	27	1016E		1035D	N11	E36	.588	15434	30.1	19D	-F		V	1034			D	Y5
422 KANZ	27	1019	1024	1040	N20	E51	.784	15440	31.3	21	-F	2						Y5
423 KHAR	27	1030E		1045D	N36	E88	.997	15441	3.0	15D	-F		P	1039			DHT	Y5
424 KANZ	27	1059		1108	N20	E90	.999	15443	3.2	9	-F	2					T	Y5
425 RAMY	27	1428	1432	1456	N37	E83	.988	15441	2.8	28	-F	3	C					Y5
426 RAMY	27	1543	1545	1552	N37	E82	.986	15441	2.8	9	-N	3	C					Y5
427 MCMA	27	1820E		1847	N36	E86	.994	15441	3.2	27D	-F		C	1820			D	Y5
	27	2212	2302	NO FLARE PATROL														
	27	0149	0157	NO FLARE PATROL														
	28	0140	0200	NO FLARE PATROL														
428 ABST	28	0754	0757	0800	N12	E79	.979	15445	3.3	6	?F		P	0757	87		EJ	Y5
	IMP.1 NO		MITK2	HTPR2	MONT2	ZURI2	CATA1 L											
429 KANZ	28	1045	1049	1107	N17	E58	.847	15444	1.8	22	-F	2						Y5
GRP68430	28	1410+1	1413+1	1421	N27	W26	.542	15428	26.6	11	-F						DH	
KANZ	28	1410	1413	1421	N27	W26	.542	15428	26.6	11	-F	2						
MCMA	28	1411	1414	1420	N27	W27	.553	15428	26.6	9	-F		C	1414	25	.3	DH	
431 KANZ	28	1425	1425	1429	N22	E89	.999	15443	4.3	4	-B	2					D	Y5
432 CULG	28	2150	2155	2201	N38	W88	.996	15442	22.3	11	-F		C	2155	40			Y5
GRP68433	29	0134	0141 0242	0244	N27	W31	.595	15428	26.7	7D	-F						U	
CULG	29	0134	0242	0244	N28	W30	.591	15428	26.8	7D	-N		C	0242	90	1.1	U	
MITK	29	0135E	0141	0158D	N27	W32	.605	15428	26.7	23D	-F		C	0141				
434 CULG	29	0558	0600	0611	N15	E64	.895	15443	3.0	13	-F		C	0600	20	.5		Y5
435 KHAR	29	0825E		0845D	N36	E61	.894	15441	2.9	20D	-F		P	0843	60	1.4	E	Y5
436 KHAR	29	0843E		0845D	S21	E75	.979	15446	4.0	2D	-F		P	0843	50		DT	Y5
437 KHAR	29	0907E	0907	0917D	S21	E75	.979	15446	4.0	10D	-F		P				DT	Y5
438 KHAR	29	0930E	0934	0947D	S22	E74	.976	15446	3.9	17D	-F		P				DT	Y5
GRP68439	29	0957+7	1003>9	1033	N27	W36	.648	15428	26.7	36	-F				70	.9	EJ	
KHAR	29	0957E	1013	1043D	N27	W38	.670	15428	26.6	46D	-F		P	1013	110	1.5	E	
HTPR	29	0959	1005	1040	N26	W36	.643	15428	26.7	41	-F		C	1005	30	.4	E	
ABST	29	1000	1003	1030	N26	W36	.643	15428	26.7	30	-F		C	1003	87	1.2	DJ	
ZURI	29	1000	1010	1028	N27	W36	.648	15428	26.7	28	-F		C	1010	60	.8		
KANZ	29	1004	1008	1016	N27	W36	.648	15428	26.7	12	-N	2						
440 ABST	29	1026	1031	1040	N36	E64	.912	15441	3.2	14	-F		C	1031	87	1.9	D	Y5
GRP68441	29	1026>9	1049+5	1116	N22	E72	.947	15443	3.8	50	1N							
KHAR	29	1008E	1050	1220D	N23	E73	.952	15443	3.9	132D	2N	*	P	1049	490		CE	
HTPR	29	1026	1052	1135	N22	E75	.961	15443	4.1	69	-F	*	C	1052	90		E	
ABST	29	1028	1054	1116	N24	E75	.962	15443	4.1	48	2N	*	C	1054	262		F	
ZURI	29	1038	1050	1050D	N22	E70	.936	15443	3.7	12D	2N	*	P	1050	240			
KANZ	29	1039	1051	1105D	N22	E69	.930	15443	3.6	26D	-N	*					F	
TEHR	29	1045E	1049	1102	N19	E65	.903	15443	3.3	17D	-B	*	C		127		DE	
WEND	29	1047E		1108D	N22	E71	.942	15443	3.8	21D	2N	*	P		300		F	

Hα SOLAR FLARES

JULY 1978

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE JUL	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONG	TYPE	TIME UT	MEAS. AREA Mfil. of Disk	CORR AREA Sq. Deg.		
442 KHAR	29	1116E		1220D	S22	E73	.972	15446	3.9	64D	?F		P				CET	Y5
	IMP.1	NO	HTPR2	KANZ1														
443 RAMY	29	1832	1836	1842	N23	E68	.925	15443	3.9	10	-N	3	C		67		F	Y5
444 CULG	29	2355	2400	0020	N33	E54	.840	15441	3.0	25	-F		C	2400	20	.4		Y5
445 CULG	30	0205	0216	0237	N28	W45	.745	15428	26.7	32	-F		C	0216	50	.8		Y5
446 CULG	30	0610	0613	0617	S22	E58	.892	15446	3.6	7	-F		C	0613	20	.4	T	Y5
447 ABST	30	0658	0708	0720	S21	E61	.910	15446	3.9	22	-F		C	0708	87	2.0	EJ	Y5
GRP68448	30	0804+1	0804+1	0815D	S19	E58	.884	15446	3.7	11	-F						E	
KHAR	30	0804E	0804	0810D	S21	E60	.903	15446	3.8	6D	-F		P				ET	
CATA	30	0805	0805	0815D	S18	E56	.867	15446	3.5	10D	-N	2	C	0805	28	.5		
449 KHAR	30	0940E		0953D	S21	E60	.903	15446	3.9	13D	?F		P	0945	100	2.2	EHT	Y5
	IMP.1	NO	HTPR2	CATA1	KANZ1													
GRP68450	30	0954	0957	1005D	S21	E56	.875	15446	3.6	11	-N						EH	
KANZ	30	0954	0957	1005	S20	E53	.848	15446	3.4	11	-N	2						
KHAR	30	1003E	1012	1036D	S22	E60	.905	15446	3.9	33D	-F		P	1006			BEHT	
GRP68451	30	1034+0	1037+4	1055	N36	E50	.818	15441	3.2	21	-F						EJ	
ABST	30	1034	1037	1055	N36	E50	.818	15441	3.2	21	-N		C	1037	87	1.5	DJ	
HTPR	30	1034	1039	1055	N36	E50	.818	15441	3.2	21	-F		C	1039	20	.3	E	
KHAR	30	1035E	1041	1102D	N37	E51	.829	15441	3.3	27D	-F		P	1036			E	
452 KHAR	30	1105E	1107	1111D	S22	E60	.905	15446	4.0	6D	-F		V	1107			ET	Y5
453 KHAR	30	1142E	1144	1155D	N38	E51	.833	15441	3.3	13D	-F		P				D	Y5
454 KHAR	30	1145E	1147	1153D	S22	E60	.905	15446	4.0	8D	-F		P	1147	88	2.0	EDT	Y5
GRP68455	30	1158+1	1202+0	1214	N36	E49	.810	15441	3.2	16	-F				40	.7	D	
KANZ	30	1158	1202	1212	N35	E48	.799	15441	3.1	14	-F	2						
HTPR	30	1158	1202	1215	N36	E50	.818	15441	3.2	17	-F		C	1202	20	.3	D	
RAMY	30	1159	1202	1211	N37	E46	.792	15441	2.9	12	-N	2	C		43			
KHAR	30	1203E	1203	1218D	N38	E51	.833	15441	3.3	15D	-N		P	1203	55	1.3	D	
456 KHAR	30	1203E		1221D	S22	E60	.905	15446	4.0	18D	-F		P				ET	Y5
457 RAMY	30	1559	1559	1605	S20	E52	.840	15446	3.6	6	-N	3	C		19			Y5
458 RAMY	30	1633	1634	1657	S21	E50	.827	15446	3.4	24	-N	3	C		23		F	Y5
459 CULG	31	0355	0359	0403	S23	E45	.793	15446	3.5	8	-F		C	0359	30	.5	T	Y5
460 CULG	31	0547	0555	0612	S24	E45	.798	15446	3.6	25	-F		C	0555	30	.5	T	Y5
461 CULG	31	0557	0604	0615	N20	E50	.773	15443	4.0	18	-F		C	0604	20	.3		Y5
GRP68462	31	0755E	0812+4	0826	N17	E33	.562	15443	2.8	31	-F						O	
KHAR	31	0755E	0816	0829D	N17	E33	.562	15443	2.8	34D	-F		P	0805	30	.4	D	
ZURI	31	0803E	0812	0822	N17	E33	.562	15443	2.8	14D	-F		P	0812	50	.6		
463 KHAR	31	0756E		0828D	N24	E51	.791	15443	4.2	32D	-F		P	0805	40	.7	D	Y5
464 KHAR	31	0801E		0812D	N26	W65	.907	15428	26.5	11D	-F		P	0805	30	.8	D	Y5
465 MCMA	31	1125	1126	1148	N17	E32	.549	15443	2.9	23	-F		C	1126	40	.5	E	Y5
466 CATA	31	1215	1215	1235	N17	E29	.508	15443	2.7	20	-N	1	C	1215	56	.6		Y5
	31	1921	1934	NO FLARE PATROL														
	31	2059	2114	NO FLARE PATROL														
	31	2118	2139	NO FLARE PATROL														

A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by a high speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the calcium II lines H and K.
P = Flare shows helium D_3 in emission.
Q = Flare shows the Balmer continuum in emission.
R = Marked asymmetry in Hα line suggests ejection of high velocity material.
S = Brightness follows disappearance of filament (same position).
T = Region active all day.
U = Two bright branches, parallel (||) or converging (Y).
V = Occurrence of an explosive phase: important and abrupt expansion in about a minute with or without important intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide Hα line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

JULY 1978

DAILY FLARE INDICES
Includes all Flares

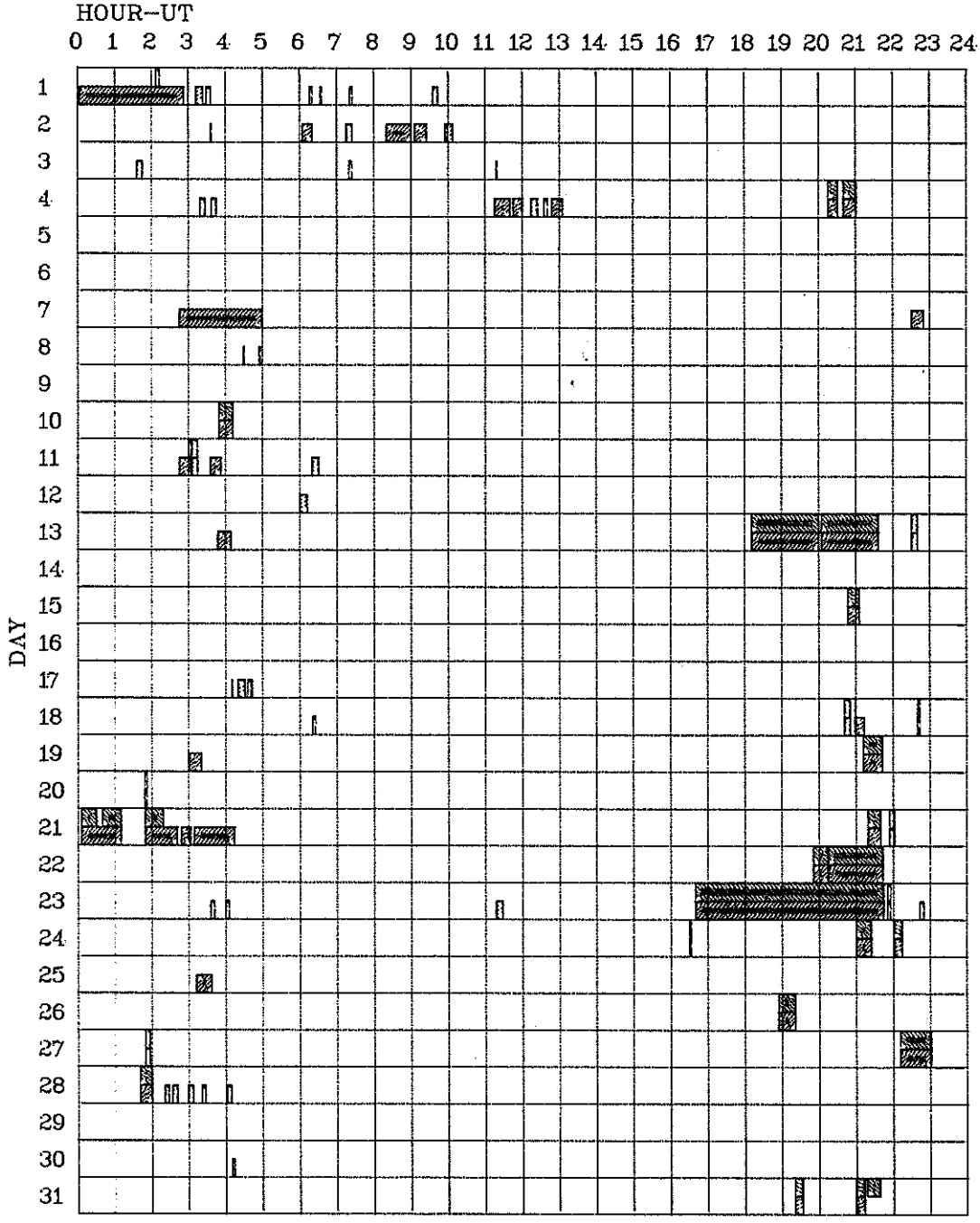
Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.
780701	21.96	23.9	780711	1206.32	23.8	780721	84.29	22.1
780702	11.19	24.0	780712	141.30	24.0	780722	34.42	22.1
780703	8.66	24.0	780713	75.79	20.5	780723	46.69	18.8
780704	46.60	23.4	780714	76.44	24.0	780724	9.41	23.3
780705	34.04	24.0	780715	110.09	23.7	780725	20.69	24.0
780706	32.43	24.0	780716	42.49	24.0	780726	14.05	23.6
780707	114.98	24.0	780717	102.61	24.0	780727	14.24	23.0
780708	63.72	24.0	780718	175.02	23.8	780728	7.01	23.7
780709	119.34	24.0	780719	57.45	23.5	780729	17.15	24.0
780710	440.13	23.6	780720	84.42	23.9	780730	16.26	24.0
						780731	18.58	23.2

When no Flare Index is given, it is 0 for that day.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

JULY 1978



Observatories included in total patrol:

Abastumani	Herstmonceux	Kanzelhohe	McMath-Hulbert	Tashkent
Athenes	Holloman	Kharkov	Meudon	Tehran
Bucharest	Huancayo	Kiev	Mitaka	Upice
Catania	Hurbanovo	Locarno	Monte Mario	Voroshilov
Culgoora	Istanboul	Lvov	Palehua	Wendelstein
Haute Provence	Kandilli	Manila	Ramey	Zurich

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
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
1	3100	CRIM	40	F	0610	0713	80 D	5	2		
	260	ONDR	45	C	0637	0640	4.5	78	14		
	234	POTS	45	C	0637.3	0639.9	3.9	240	20		
	237	TRST	41	F	0637.4	0639.9	3.1	595			O
	228	HARS	45	C	0637.5	0638 U	3.5	400	130		
	200	HIRA	46	C	0637.5	0639.8	3.5	600	100		O
	202	IZMI	7	C	0637.5	0640.5	3.3	600	250		
	113	POTS	45	C	0637.9	0638.5	3.9	2000	150		
	100	HIRA	46	C	0638.5	0638.8	3	2000 U	100 U		
	245	SGMR	44	NS	0914 E	2230.3	906 D	12.5			3G,SWF
	410	SGMR	44	NS	0914 E	2236.4	906 D	40.3			3G,SWF
	9400	HUAN		S	1213.4	1215.8	4	8.5	2.9		R
	7000	SAOP	22	GRF	1249.2			8.6			
	6100	KISV	20	GRF	1328	1345	22	11			
	7000	SAOP	22	GRF	1333.2			13.3			3 COMPONENTS
	9400	HUAN		S	1341.2	1345.4	23.2	13.7	5.9		O
	1420	ARCE	21	GRF	1352.8	1458.6	134				
	2800	OTTA	21	GRF	1410	1520	230	9.8	4.9		
	6100	KISV	21	GRF	1412	1416	10	7			
	1420	BOUL	4	SF	1412.5	1416	8	11	4		
	1470	BERL	4	S/F	1413	1416.4	10	12			
	3000	BERL	4	S/F	1413	1416.2	5	22			
	2695	BOUL	4	SF	1413	1417.5	6	22	7		
	2695	PENT	4	S/F	1414	1416.5	9	23.8	7		
	1420	ARCE	4	S/F	1414.3	1415.9	8				
	4995	BOUL	2	SF	1414.5E	1416	2.5D	9	3		
	9100	ARCE	20	GRF	1450.3	1540.7	132				
	9400	HUAN		S	1507.1	1525.8	56.7	10.2	3.8		O
	9400	HUAN		S	1521.2	1521.6	1.1	9.4	4.3		O
	9400	HUAN		S	2043	2043.7	1.8	13.7	4.1		R
2	260	ONDR	3	S	0636.4	0636.4	.3	15	.8		
	408	TRST	42	SER	1128.8	1128.9	.7	32			
	9400	HUAN		S	1152.1	1152.6	1	8.1	3.9		O
	260	ONDR	3	S	1324.1	1324.1	.2	15			
	9400	HUAN		S	1353.3	1407.1	47.5	14.6	3.8		O
	2695	BOUL	4	SF	1402.5	1406.5	10	37	12		
	113	POTS		C	1402.8	1405.4	8.9	1400			
	1470	BERL	4	S/F	1403	1407	10	29			
	18	MCMA	42	SER	1403	1408	18			2	
	9500	BERL	6	S	1403	1408	27	12			
	2695	ATHN	3	S	1403.2	1405.9	10.2	42.5	12.7		
	127	TORN	45	C	1403.2	1405	9	220	30		
	127	TORN			1403.2	1406		170			
	4995	BOUL	4	SF	1403.5	1405.5	5	18	6		
	1420	BOUL	45	C	1403.5	1407	8.5	24	8		
	3000	BERL	4	S/F	1403.7	1405.4	8.3	31			
	1420	ARCE	4	S/F	1403.9	1407.1	8.5				
	7000	SAOP	4	S/F	1404	1405.9	3.2	17			
	2695	SGMR	3	S	1404	1405.8	6	37.8	15.1		
	930	BORD	3	S	1404	1405.8	5	17	8		
	4995	ATHN	3	S	1404.4	1405.9	30	28.9	8.7		
	1415	SGMR	3	S	1404.5	1407.3	5.5	32.6	13		
	4995	SGMR	3	S	1404.6	1405.8	5.4	16.7	6.7		
	8800	ATHN	3	S	1404.9	1408.3	9.9	12.7	3.8		
	9100	ARCE	22	GRF	1405	1406.3	35				
	1415	ATHN	3	S	1405.3	1406	6.4	33	9.9		
	18	MCMA	42	SER	1447	1503	18			2	
	1420	BOUL	45	C	1457.5	1458.5	3.5D	4	1		
	2800	OTTA	1	S	1458	1501	5	2.8	1.4		
	1420	ARCE	2	S/F	1458.3	1459.9	4.6				
	2695	BOUL	45	C	1458.5	1502	4.5	5	2		
	410	SGMR	43	NS	1505	1842.2	555 D	36.1			CONT
	245	SGMR	43	NS	1505	1650.1	555 D	11.2			CONT
	2800	OTTA	21	GRF	1510	1525	50	2.2	1.1		
	2800	OTTA	1	S	1550	1550.2	2	1.4	.7		
	2800	OTTA	24	R	1720	1830	70	2.2	1.1		
	2800	OTTA	27A	RF	1720		310	2.2	1.9		
	2800	OTTA	24P	R	1830		215	2.2			
	2800	OTTA	1	S	2032	2033	3	2	1		
	9400	HUAN		S	2101.8	2103.4	2.8	8.1	4.4		O
	9400	HUAN		S	2113.5	2114	1.2	6.5	4.4		L
	410	SGMR	7	S	2145.2	2149.4	5	488	146		CONT
	4995	BOUL	8	S	2148	2149	1.5	32	11		
	1420	BOUL	2	SF	2148	2149	3	5	2		
	4995	MANI	3	S	2148.5	2149.3	3	35.6	11.6		
	9400	HUAN		S	2148.8	2149.3	1.2	22.6	7.4		L
	8800	SGMR	3	S	2148.9	2149.4	1.9	23.8	7.1		CONT
	4995	SGMR	3	S	2149	2149.4	2	37.8	11.3		CONT
	8800	MANI	8	S	2149	2149.3	.6	33.4	11		
	2695	SGMR	3	S	2149	2149.4	2	13.8	4.1		CONT
	2800	OTTA	4	S/F	2149	2149.1	3	18.4	5		
	1415	SGMR	1	S	2149.2	2149.5	2.4	8.4	2.5		CONT
	2695	BOUL	4	SF	2149.5	2150.5	2	8	3		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	2800	OTTA	26 FAL	2205	2230	25	-2.2	-1.1		
3	100	HIRA	46 C	0614 E	0616	16 D	250	50		0
	260	ONDR	46 C	0619.5	0621.3	10	29	8		
	536	ONDR	45 C	0620	0621.2	7	45	8.4		
	500	HIRA	46 C	0620	0621	7	60	15		0
	808	ONDR	45 C	0620.7	0622.3	6	30	5		
	200	HIRA	46 C	0622 E	0622 U	2 D	30 U	10 U		0
	3100	CRIM	1 S	0636	0636.2	.5	3.5	1		
	2800	OTTA	20 GRF	1255	1330	145	4	2.1		
	2800	OTTA	20 GRF	1820	1830	45	1.6	.8		
4	1415	HANI	3 S	0118.6	0119.4	1.1	218.9	72.9		
	3100	CRIM	1 S	0534	0536.5	4	2	1		
	3100	CRIM	25 R	0729	0820		2			
	3100	CRIM	1 S	0732.5	0733.5	2.5	4	1		
	3000	BERL	1 S	0733	0733.4	2	5			
	9100	ARCE	21 GRF	0916.5	0939.3	109				
	8900	BERN	45 C	0941.1	0943.4	12.5	12	33		-14
	10400	BERN	45 C	0941.1	0943.4	12.5	6	19		
	8400	BERN	45 C	0941.1	0943.4	12.5	13	34		-16
	2695	ATHN	20 GRF	0941.7	0943.6	14.4	8.5	5.1		
	4995	ATHN	3 S	0942.2	0943.5	11.2	39	11.7		
	3100	CRIM	1 S	0942.2	0944	4	7	2		
	3000	BERL	4 S/F	0942.5	0943.9	43	11			
	8800	ATHN	3 S	0942.8	0943.5	5.5	25.4	7.6		
	9500	BERL	4 S/F	0943	0943.4	34	19			
	9100	ARCE	45 C	0943.1	0944.3	4				
	1470	BERL	3 S	0943.7	0943.9	.8	6			
	1420	ARCE	8 S	0943.8	0943.9	.5				
	260	ONDR	4 S/F	1015.8	1015.8	1	22	10		
	536	ONDR	3 S	1301.4	1301.4	.2	18			
	2800	OTTA	20 GRF	1530		60	1.4	1		
	2800	OTTA	20 GRF	1905	2000	115	1.8	1.2		
5	260	ONDR	44 NS	0532 E		433	21			
	410	SGMR	44 NS	0916 E	1102	903 D	8.8			5,CONT
	245	SGMR	44 NS	0916 E	1017.5	903 D	46.3			5,CONT
	127	TORN	27 RF	1030 U	1215	140 U	50	15		
	405	KIEL	45 C	1130	1155	80	800	70		
	930	BORD	46 C	1132	1140	89	198	30		
	800	KIEL	45 C	1132	1140.5	92	1000	130		
	808	ONDR		1132.5	1155		110			
	808	ONDR		1132.5	1236.5		78			
	808	ONDR	49 GB	1132.5	1140	88	263	60		
	808	ONDR		1132.5	1259.2		104			
	2800	OTTA	28 PRE	1134	1147.5	20	13.2			
	3100	CRIM	28 RPE	1134	1145.5	19.5	6			
	3000	BERL	46 C	1135	1206.5	160	86			
	1470	BERL	46 C	1135	1235	190	325			
	9500	BERL	6 S	1135	1206.5	105	23			
	1415	SGMR	4 S/F	1135.5	1234.8	69.5	308.4	123.4		CONT
	1415	ATHN	14 C	1135.5	1235.7	84.5	307.4	92.2		
	1420	ARCE	23 GRF	1135.6	1142.7	120				
	1420	KIEL	45 C	1136	1236	69	550	240		
	536	ONDR	49 GB	1137	1154.3	82	370	49		
	536	ONDR		1137	1156.8		332			
	536	ONDR		1137	1233		53			
	602	KIEL	45 C	1137	1155	86	800	80		
	2695	ATHN	20 GRF	1137.8	1206.5	81.4	115.4	69.2		
	606	SGMR	47 GB	1137.8	1155	67.2	773	309.2		CONT
	7000	SAOP	20 GRF	1138.6			46.7	37		
	408	TRST	49 GB	1139.4	1156.7	62.9	330 D			
	240	KIEL	45 C	1140	1203	82	230	30		
	2650	DWIN	45 C	1140	1207	50	110	50		
	10400	BERN	20 GRF	1142.1	1207.6	320	12	35		
	8400	BERN	20 GRF	1142.1	1207.6	320	15	39		-11
	8900	BERN	20 GRF	1142.1	1207.6	320	14	38		-8
	9100	ARCE	20 GRF	1143.7	1207.3	69				
	113	POTS	45 C	1144	1203	82	30	12		
	228	HARS	47 GB	1145	1202.5	65	330	30		
	4995	ATHN	20 GRF	1145.2	1206.3	75.5	71.6	42.9		
	3100	CRIM	1 S	1146	1147.5	3.5	4	1		
	1420	ARCE		1152.9	1154.9	7				
	1420	ARCE	46 C/F	1152.9	1234.5	51.5				
	245	SGMR	7 C	1153	1203.2		478			CONT
	245	SGMR	7 C	1153	1158	54	124	191		CONT
	234	POTS	45 C	1153	1203	72	300	20		
	237	TRST	47 GB	1153.1	1203	52.9	600			50R
	410	SGMR	49 GB	1153.3	1155.3	53.7	976	391		CONT
	3100	CRIM	29 PBI	1153.5	1218	55	22			
	3100	CRIM	7 C	1153.5	1206.1	24	81			
	260	ONDR	49 GB	1154	1202.4	50	212	62		
	2800	OTTA	4 S/F	1154	1206.5	36	96	36.8		
	4995	SGMR	20 GRF	1154	1206	41	46.6	18.6		CONT

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	2695	SGMR	3 S	1156	1206.8	39	105	41.9		CONT
	1420	ARCE		1159.1	1203.1	25.5				
	9400	HUAN	S	1159.2	1206.1	18.3	20.7	10.4		L
	8800	SGMR	20 GRF	1202.5	1207	32.5	26.4	7.9		CONT
	8800	ATHN	3 S	1203.5	1207.5	9.8	36.2	21.7		
	18	MCMA	6 S	1223	1227	6			1	
	1420	ARCE		1224.6	1228.1	6.9				
	2800	OTTA	29 PBI	1230	1230	170	9.6	3		
	1420	ARCE		1231.5	1232.7	2.1				
	1420	ARCE		1233.6	1234.5	10				
	930	BORD		1236.6			155			
	2800	OTTA	240AR	1610	1900	170	6			
	8800	ATHN	4 S/F	1612.5	1616.9	8.8	79.5	23.9		
	800	KIEL	45 C	1740	1822.5	62	260	130		
	1415	SGMR	45 C	1742.1	1820		59.4			2,CONT
	1415	SGMR	45 C	1742.1	1800.5	67.2	34.2	10.3		2,CONT
	2800	OTTA	40 F	1745	1800	45	26			
	245	SGMR	7 C	1747	1804.1	63	26.9	8.1		2,CONT
	410	SGMR	6 S	1747	1800.7	63	109	32.7		2,CONT
	245	SGMR	7 C	1747	1823		56.8			2,CONT
	228	HARS	27 RF	1747.5	1823.2	120 U	70	10		SUNSET
	930	BORD	46 C	1748	1822	61	83	19		
	1420	KIEL	45 C	1748	1820	63	190	140		
	1420	BOUL	41 F	1748	1820 U	60 D	32	11		
	2695	BOUL	41 F	1748.5	1801	43.5	26	9		
	606	SGMR	45 C	1748.5	1800.3	60.2	102	30.6		2,CONT
	606	SGMR	45 C	1748.5	1823.7		109			2,CONT
	240	KIEL	45 C	1750	1801.5	50	60	15		
	405	KIEL	45 C	1750	1800.5	60	100	30		
	2695	SGMR	4 S/F	1754.7	1803.3	34.6	33.3	10		2,CONT
	602	KIEL	45 C	1757	1818	66	110	70		
	9400	HUAN	S	1818.2	1818.7	1.1	8	7.2		0
	606	SGMR	20 GRF	1856.5	1926	63.5	38.1	11.4		
	410	SGMR	6 S	1900.5	1922	66.7	63.2	19		
	606	MANI	8 S	2217.1	2217.5	.8	28.7	9.6		
	1415	MANI	8 S	2217.3	2217.5	.4	8.1	2.7		
	606	MANI	8 S	2230.5	2230.9	.8	31.7	10.6		
	1415	MANI	8 S	2230.6	2230.7	.6	8.1	2.7		
6	260	ONDR	44 NS	0524 E		585 D	12			
	127	TORN	44 NS	0640 E		510 D		4.5		V=0
	410	SGMR	44 NS	0917 E	1716.3	902 D	11.6			3G,CONT
	245	SGMR	44 NS	0917 E	2058.4	902 D	22.9			3G,CONT
	9100	ARCE	1 S	1111.3	1111.7	1				
	9400	HUAN	S	1205.6	1208.7	4.9	10	5.3		0
	2800	OTTA	21 GRF	1500	1600	150	4.2	2.1		
	9100	ARCE	21 GRF	1504.8		150				
	7000	SAOP	4 S/F	1509.2	1512	.8	23	13		
	7000	SAOP	41 F	1509.2						2
	1420	BOUL	45 C	1510	1512	3.5	10	3		
	8400	BERN	45 C	1510.2	1512.1	18	10	27		0
	8800	SGMR	3 S	1510.2	1511.8	4.3	19.1	5.7		5,SHF
	8900	BERN	45 C	1510.2	1512.1	18	10	27		0
	10400	BERN	45 C	1510.2	1512.1	18	10	30		
	8800	ATHN	3 S	1510.3	1511.8	4.8	26.9	16.2		
	4995	BOUL	45 C	1510.5	1511.5	3.5	14	5		
	1420	ARCE	40 F	1510.6	1511.9	4.2				
	4995	ATHN	3 S	1510.7	1511.8	4.1	17	10.3		
	2695	ATHN	3 S	1510.8	1511.8	4.9	12.4	7.4		
	4995	SGMR	3 S	1510.8	1511.9	4.2	20.6	6.2		5,SHF
	1415	SGMR	3 S	1510.9	1512.2	4.1	16.1	4.8		5,SHF
	2695	SGMR	3 S	1510.9	1512.2	4.1	13.4	4		5,SHF
	15400	SGMR	3 S	1510.9	1512	4.3	31.3	9.4		5,SHF
	9100	ARCE	4 S/F	1510.9	1512.3	6				
	930	BORD	41 F	1511	1511	2	21	3		
	2800	OTTA	4 S/F	1511	1512	4	13	3.7		
	2650	OWIN	45 C	1511	1512	4	15	10		
	18	MCMA	6 S	1511	1512	2			1	
	228	HARS	6 S	1511.5	1512	1.3	280 D	100		
	2695	BOUL	45 C	1511.5	1513	6.5	11	4		
	606	SGMR	3 S	1511.8	1511.9	.6	96.2	28.9		5,SHF
	237	TRST	41 F	1511.8	1512	.5	245			D
	245	SGMR	6 S	1512	1512.2	.9	206	61.8		5,SHF
	410	SGMR	6 S	1512	1512.2	.5	154	46.2		5,SHF
	2695	BOUL	3 S	1520 E	1520.5	4.5D	45	15		
	1420	BOUL	3 S	1527 E	1530 U	6.5D	27	9		
	1415	SGMR	3 S	1527.3	1530.1	7	36.5	11		4,SHF
	2695	SGMR	3 S	1527.4	1530	6.9	67.9	20.4		4,SHF
	2695	ATHN	4 S/F	1527.5	1529.5	5.8	61.8	18.5		
	1420	ARCE	3 S	1527.7	1529.9	8				
	930	BORD	3 S	1528	1530.8	9	27	7		
	2800	OTTA	3 S	1528	1530	7	51	15.2		
	1415	ATHN	3 S	1528.3	1529.8	4.4	39.8	11.9		
	7000	SAOP	4 S/F	1528.4	1529.7	1.6	15.5			
	4995	BOUL	4 SF	1528.5	1529	4	25	8		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	4995	ATHN	4 S/F	1529	1529.6	4	64.8	19.4		
	2650	DWIN	45 C	1529	1530	4	65	20		
	4995	SGMR	3 S	1529.1	1529.7	7.9	27.9	8.4		4,SHF
	237	TRST	47 GB	1529.2	1531.9	4.4	1450			8L
	9100	ARCE	20 GRF	1529.2	1558.3	87				
	245	SGMR	48 GB	1529.3	1530	7.7	1150	345		4,SHF
	410	SGMR	6 S	1529.3	1533.4	5.3	21.2	6.4		4,SHF
	606	SGMR	3 S	1529.4	1533.2	8.2	85.8	25.7		4,SHF
	228	HARS	48 C	1529.5	1531	5.5	800	400		
	18	MCMA	42 SER	2057	2059	15			1	
	9400	HUAN	S	2058.7	2059.2	1.7	8.2	2.7		R
7	200	HIRA	46 C	0524	0527	15	80	30		0
	260	ONDR	44 NS	0528 E		593 D	17			
	410	SGMR	44 NS	0917 E	1845.8	902 D	17.5			CONT
	245	SGMR	44 NS	0917 E	1156.6	902 D	21.3			CONT
	2695	ATHN	3 S	0530.6	0536.7	11.5	21.5	12.9		
	3100	CRIM	3 S	0531	0537	14	23	8		
	4995	ATHN	3 S	0531	0536.7	12.8	55.4	33.2		
	5730	IRKU		0531	0536.9		33	7		R
	5730	IRKU	45 C	0531	0533.3	12	10			L
	260	ONDR	46 C	0533	0534	10.5	61	14.3		
	202	IZMI	41 F	0533.8	0537.5	9.2	90			
	228	HARS	48 C	0534	0535.5	14	240	15		
	8400	BERN	4 S/F	0534.3	0536.6	16	13	36		0
	8900	BERN	4 S/F	0534.3	0536.6	16	12	33		0
	808	ONDR	45 C	0534.5	0540.2	9	39	11.7		
	8800	ATHN	3 S	0534.8	0536.8	7.4	41.7	25		
	4995	MANI	3 S	0535	0537.2	6.8	36.6	12.2		IG
	2695	MANI	4 S/F	0535	0537.1	4.5	25.1	8.4		
	536	ONDR	42 SER	0535	0540.2	38	9	1		
	1415	MANI	4 S/F	0535.1	0541	6.6	28.3	9.4		
	100	HIRA	46 C	0536.5	0537.7	6	1200 U	300		
	8400	BERN	46 C	0930.7	0935.2	11	43	116		0
	8900	BERN	46 C	0930.7	0935.2	11	41	112		0
	10400	BERN	46 C	0930.7	0935.2	11 U	10 D	30 D		
	3000	BERL	4 S/F	0931.5	0934.5	9	56			
	4995	ATHN	4 S/F	0931.7	0935.4	8.8	117.6	35.3		
	9500	BERL	4 S/F	0931.7	0935	8.3	68			
	3100	CRIM	30 PBI	0932	0940.1	36	2			
	3100	CRIM		0932	0939		24	8		
	3100	CRIM	7 C	0932	0934.6	8	60	20		
	200	HIRA	46 C	0932	0948 U	20 D	500 U	200 U		0
	2650	DWIN	45 C	0932	0935	8	60	30		
	2695	ATHN	4 S/F	0932	0934.8	8.7	57.4	17.2		
	808	ONDR	21 GRF	0932.5	0937.6	7	16	10.7		
	9100	ARCE	4 S/F	0932.8	0935.2	7.5				
	234	POTS	45 C	0933	0944	22	320	100		
	10715	DWIN	45 C	0933	0935	7	70	30		
	536	ONDR	46 C	0933	0939.2	14	55	15		
	930	BORD	3 S	0933	0935.5	7	10	5		
	1420	ARCE	46 C/F	0933.4	0934.6	8.5				
	1470	BERL	4 S/F	0933.5	0934.8	8.9	15			
	113	POTS	45 C	0933.6	0933.7	2	125	10		
	8800	ATHN	4 S/F	0933.7	0935.4	6.3	97.2	29.2		
	237	TRST	41 F	0933.7	0933.8	.2	185			0
	228	HARS	47 GB	0933.7	0943	24	350	60		
	202	IZMI	45 C	0933.7	0947.5	18.8	470	240		
	1415	ATHN	3 S	0934	0935.4	2.4	5.5	3.3		
	100	HIRA	46 C	0934	0934	2	500	250		
	410	SGMR	3 S	0937	0949	18.5	92.9	37		5,CONT
	408	TRST	49 GB	0937.1	0943.1	10.3	140			
	237	TRST	47 GB	0937.3	0942.8	12.8	625			5L
	260	ONDR	46 C	0938	0943	11	189	148		
	9100	ARCE	29 PBI	0940.3		31				
	245	SGMR	3 S	0942.5	0949.3	15.5	339	140		5,CONT
	1470	BERL	1	0946	0946.8	2.1	2.5			
	3000	BERL	4 S/F	0946	0946.8	2.7	8.7			
	3100	CRIM	1 S	0946	0947	2	5	2		
	127	TORN	45 C	0946.1	0947.1	6	65	25		
	2695	ATHN	3 S	0946.1	0946.8	1.1	7.2	2.2		
	2800	OTTA	240AR	1205	1223	18	2	1		
	10400	BERN	45 C	1208 U	1213.3	9 U	10 D	30 D		
	7000	SAOP	46 C	1209	1213.1		45.6	8		2 COMPONENTS
	2800	OTTA	4 S/F	1210	1213	12	14.2	5.6		
	3000	BERL	4 S/F	1210	1213.2	5.6	13			
	9400	HUAN	C	1210.4	1213.2	4.4	39.7	18.3		0
	2695	SGMR	3 S	1210.4	1213.4	5.2	16	6.4		CONT,SHF
	4995	ATHN	3 S	1210.5	1213.2	9	48.2	14.5		
	1420	ARCE	4 S/F	1210.5	1212.5	4.8				
	15400	SGMR	3 S	1210.5	1213.4	4.5	24.5	9.8		CONT,SHF
	4995	SGMR	3 S	1210.5	1213.1	5	32.3	12.9		CONT,SHF
	9500	BERL	4 S/F	1210.6	1213.1	4.3	29			
	9100	ARCE	45 C	1210.8	1213.3	3.6				RECORDDISTURBED
	1470	BERL	4 S/F	1210.8	1212.6	4.7	11			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	8800	SGMR	3 S	1211	1213.2	4	48.5	19.4		CONT,SWF
	8800	ATHN	3 S	1211	1213.2	5.3	38.6	11.6		
	930	BORD	3 S	1211	1212.6	3	12	6		
	1415	SGMR	3 S	1211.1	1212.8	3.4	12.6	5		CONT,SWF
	2695	ATHN	3 S	1211.2	1213.1	4.1	14	4.2		
	1415	ATHN	3 S	1211.5	1212.5	1.9	11	3.3		
	9100	ARCE	29 PBI	1214.4		25				
	9400	HUAN	PBI	1214.8	1214.8	34.6	6.6	2.1		0
	930	BORD	8 S	1301.2	1301.2	.1	19	1		
	234	POTS	1 S	1330.1	1331	1.4	210	70		
	2695	SGMR	3 S	1438.4	1441.2	6.8	15	4.5		CONT,SWF
	7	SAOP	4 S/F	1439	1441	1.5	19.7			
	4995	BOUL	4 SF	1439	1440.5	3.5	18	6		
	1420	BOUL	1 S	1439	1441.5	4.5D	3	1		
	2800	OTTA	21 GRF	1439	1530	76	2.4	1.4		
	9400	HUAN	S	1439.4	1441	3	18.2	7		0
	4995	SGMR	3 S	1439.5	1441.1	4.7	20.4	6.1		CONT,SWF
	2800	OTTA	3 S	1439.5	1441	4	11.8	8.4		
	9100	ARCE	1 S	1439.5	1441.1	14				
	8800	SGMR	3 S	1439.7	1441	4.2	16.4	4.9		CONT,SWF
	4995	ATHN	3 S	1439.7	1441.2	5.1	24.2	14.5		
	2695	ATHN	3 S	1439.8	1441.4	4.5	14	8.4		
	8900	BERN	20 GRF	1439.8	1440.8	3.2	5	12		0
	10400	BERN	20 GRF	1439.8	1440.8	3.2	3	8		
	8400	BERN	20 GRF	1439.8	1440.8	3.2	5	14		0
	8800	ATHN	3 S	1439.9	1441.2	4.3	14.5	8.7		
	2695	BOUL	4 SF	1440	1442.5	4.5	12	4		
	2650	DWIN	3 S	1440	1442	5	15	5		
	1420	ARCE	1 S	1440.5	1441.5	3.5				
	2695	SGMR	3 S	1641	1643.1	3.1	10.5	5.3		CONT,SWF
	4995	SGMR	3 S	1641.1	1642.9	3.4	11.4	5.7		CONT,SWF
	8800	SGMR	1 S	1641.3	1642.8	2.9	6	3.1		CONT,SWF
	8400	BERN	3 S	1642.2	1642.8	4	9	24		0
	7000	SAOP	4 S/F	1642.2	1642.9	.6	12			
	8900	BERN	3 S	1642.2	1642.8	4	9	24		0
	10400	BERN	3 S	1642.2	1642.8	4	4	12		
	9400	HUAN	S	1642.6	1642.9	1.4	14.9	9.2		0
	4995	BOUL	4 SF	1742.5	1743.5	2.5	13	4		
	1420	BOUL	2 SF	1746.5	1747	1	5	2		
	9400	HUAN	ABS	1755.6	1759	20.7	-6.6	-1.2		0
	2800	OTTA	240 R	1758	1800	2	1.2	.6		
	2800	OTTA	20 GRF	1810	1900	160	4.8	2.4		
	200	HIRA	46 C	1935 E	2110 U	165 D	100	30		WR
	100	HIRA	46 C	1954	1954.3	2	2000 U	500 U		
	245	SGMR	6 S	2105	2111	21	29.9	12		CONT
	245	SGMR	6 S	2353.5	2403	25.5D	59.5	23.8U		CONT
	410	SGMR	6 S	2356	2359.8	23 D	9.8	3.9U		CONT
8.	202	IZMI	43 NS	0600		310	20			
	260	ONDR	44 NS	0605 E		553 D	34	2		
	410	SGMR	44 NS	0918 E	1548.2	901 D	35			3G,5,CONT
	245	SGMR	44 NS	0918 E	1819.5	901 D	127.1			3G,5,CONT
	200	HIRA	43 NS	2026	2320	424	30	5		WL
	6100	KISV	3 S	0623.2	0624.1	3	4			
	3100	CRIM	1 S	0624	0624.5	1	2	1		
	15000	KISV	8 S	0647	0647.2	1	10			
	6100	KISV	3 S	0647.3	0648	2	11			
	113	POTS	1 S	0757.8	0758	.6	800	250		
	245	SGMR	6 S	1027	1027.4	1.2	192	76.8		
	2800	OTTA	1 S	1050	1051	5	6.8	2.4		
	3100	CRIM	1 S	1050	1051.1	3	5	2		
	6100	KISV	4 S/F	1050	1051.2	4	9			
	930	BORD	41 F	1107	1107.2	.5	12	2		
	808	ONDR	1 S	1107	1107	.2	25			
	808	ONDR	1 S	1240.8	1240.8	.2	22			
	234	POTS	1 S	1240.9	1241	1.1	350	120		
	2800	OTTA	8 S	1241	1241.1	.5	2	1		
	536	ONDR	8 S	1241	1241	.3	91			
	260	ONDR	8 S	1241.2	1241.2	.3	162			
	2800	OTTA	20 GRF	1500	1600	100	2.6	1.3		
	2800	OTTA	21 GRF	1705		530 D	16			
	9400	HUAN	S	1716.4	1717.5	2.9	9.9	4.7		R
	9400	HUAN	S	1809.1	1831.8	42.6	8.3	3		R
	9400	HUAN	PRE	1910.7	1946.1	35.4	9.9	4.5		R
	200	HIRA	46 C	1935 E	1955 U	51	350 U	50 U		WL
	2695	SGMR	45 C	1942.3	2000.5	61.7	105	152		3G,5,CONT,
	2695	SGMR	45 C	1942.3	2016.4		381			SWF
	2695	BOUL	45 C	1942.5E	2018	87 D	356	119		
	2800	OTTA		1943	1951	14.5	79			
	2800	OTTA	46F C	1943	2016.5	72	420	73		
	4995	SGMR	45 C	1944	2016.1		332			SWF
	4995	SGMR	45 C	1944	1955.3	60	166	133		3G,5,CONT,
	1415	SGMR	45 C	1946	2016.7		190			SWF
	1415	SGMR	45 C	1946	2000.4	58	66.2	76		3G,5,CONT,
	4995	BOUL	45 C	1946	2017.5U	48.5D	220	73		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	1420	BOUL	45	C	1946	2017 U	85 D	139	46		
	9400	HUAN		C	1946.1	1951	44.9	363.6	123.1		R
	9400	HUAN			1946.1	1953.8		256.1			
	8800	SGMR	45	C	1946.5	1950.9	53.2	298	119		3G,5,CONT,
	8800	SGMR	45	C	1946.5	2016.5		152			SWF
	606	SGMR	3	S	1947	1950.9	52.7	128	51.2		3G,5,CONT,
	15400	SGMR	45	C	1948	2016.2		98.2			SWF
	15400	SGMR	45	C	1948	1950.8	51.4	347	139		3G,5,CONT,
	410	SGMR	6	S	1949.5	2000.7	34.4	143	57.2		SWF
	500	HIRA	46	C	1950	1952.7	6	70	30		WR
	245	SGMR	6	S	1950.4	1958.5	29.6	164	65.6		3G,5,CONT,
	2800	OTTA			1957.5	2000.5	6.5	98			
	2800	OTTA			2004	2016.5	51	420			
	9400	HUAN		PBI	2031	2031	23	43	26.8		R
	2800	OTTA	30	PBI	2055	2055	65	5.2	2.4		
	2695	SGMR	1	S	2059.4	2101	1.4	8.4	3.4		CONT
	4995	SGMR	3	S	2100	2100.6	2	14.8	5.9		CONT
	2800	OTTA	45	C	2100	2100.2	9	4.4	1.8		
	9400	HUAN		S	2100.1	2100.6	1.2	9.9	5		R
	1415	SGMR	3	S	2100.5	2101.3	3.5	11	4.4		CONT
	9400	HUAN		S	2109	2112.8	9.8	11.6	5.5		R
	9400	HUAN		S	2220.1	2220.7	1.2	16.5	12.1		0
	1415	MANI	3	S	2332.2	2333.7	3	170.1	56.7		
	2695	PENT	1	S	2500	2501.5	4	5.8	2.2		
9	2695	BOUL	2	SF	0100.5	0102	4	5	2		
	4995	MANI	3	S	0100.7	0101.3	4.4	92.3	30.8		
	2695	MANI	1	S	0100.8	0101.6	1.9	5.8	1.9		
	6100	KISV	3	S	0443	0444	3	7			
	1415	MANI	4	S/F	0517	0517.9	2	17.4	5.8		I
	1415	MANI	4	S/F	0527.8	0529.5	8.7	44.4	14.8		
	8900	BERN	3	S	0550	0557.9	13	18	50		0
	10400	BERN	3	S	0550	0557.9	13	19	56		
	8400	BERN	3	S	0550	0557.9	13	18	49		0
	8800	ATHN	3	S	0552.3	0558.2	7.9	43.9	13.2		
	4995	ATHN	3	S	0552.8	0558.2	7.2	9.9	3		
	15000	KISV	8	S	0555	0558	5	43 D			
	6100	KISV	3	S	0557	0558	3	11			
	260	ONDR	44	NS	0602 E		553 D	125	18		
	127	TORN	44	NS	0640 E	1153.8	520 D	160	63		V=1
	410	SGMR	44	NS	0919 E	1318.1	899 D	69.9			CONT
	245	SGMR	44	NS	0919 E	1323.9	899 D	493			CONT
	228	HARS	43	NS	1141.5	1237.2	240 D	265	40		
	808	ONDR	8	S	0612.5	0612.5	.2	46			
	234	POTS	45	C	0635.5	0713	73	25	7		
	6100	KISV	8	S	0702	0703	2	92			
	127	TORN	46	C	0705.2	0712.7	8.5	670 U			
	808	ONDR	46	C	0705.8	0710.8	17	34	2.2		
	6100	KISV	8	S	0706	0707	4	44			
	536	ONDR	41	F	0706	0713.2	13	57	3		
	8400	BERN	3	S	0706.1	0707.1	13	30	80		+9
	8900	BERN	3	S	0706.1	0707.1	13	30	83		+10
	10400	BERN	3	S	0706.1	0707.1	13	26	74		
	8400	BERN	3	S	0706.1	0715.5	13	35	94		-5
	8900	BERN	3	S	0706.1	0715.5	13	40	106		-2.5
	10400	BERN	3	S	0706.1	0715.5	13	51	148		
	5730	IRKU	1	S	0706.4	0707.1	3	36	7		0
	9500	BERL	3	S	0706.5	0707.1	2.5	50			
	3000	BERL	3	S	0706.5	0707.1	3.2	11			
	3100	CRIM	1	S	0706.5	0707	2	8	3		
	1470	BERL	3	S	0706.5	0707.2	1.5	6.4			
	4995	ATHN	45	C	0706.7	0707.3	9	39.6	11.9		
	4995	ATHN	45	C	0706.7	0713.7		36.3	10.9		
	2695	ATHN	4	S/F	0706.8	0712.3	9.4	117	35.1		
	8800	ATHN	4	S/F	0706.8	0713.7	12.5	107.4	32.2		
	4995	MANI	4	S/F	0706.8	0707.4	9.4	31	10.3		I
	237	TRST	41	F	0706.9	0707.1	.4	960			13R
	15000	KISV	8	S	0707	0707.8	3	39			
	113	POTS	45	C	0707 E	0714.5	18 D	650			
	1415	ATHN	4	S/F	0707	0712.3	8.8	193.8	58.1		
	1415	MANI	4	S/F	0707	0712.4	8.7	139.2	46.4		
	930	BORD	46	C	0709	0712.2	11	156	6		
	1470	BERL	4		0710	0712.2	10	254			
	6100	KISV	8	S	0710	0713.3	5	53			
	202	IZMI	20	GRF	0710	0711.5	14	140	100		
	500	HIRA	42	SER	0710.3	0713.3	7	260			WL
	2695	MANI	4	S/F	0710.5	0712.4	5.3	106.2	35.4		
	3000	BERL	4	S/F	0710.5	0711.7	4.5	49			
	3100	CRIM	3	S	0710.5	0713.5	5	28	9		
	9500	BERL	4	S/F	0711	0713.5	4	95			
	1420	ARCE	40	F	0711.6	0712	4				INT AT 9100 MHZ
	5730	IRKU			0711	0713.8	5	36	12		0
	15000	KISV	8	S	0712	0714	4	44 D			
	237	TRST	41	F	0712.1	0712.7	.8	720			14R
	9100	ARCE	20	GRF	0736.6	0746.4	27.5				

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	3100	CRIM	25 R	0837	0855		8			
	10400	BERN	20 GRF	0848	0850.7	28	3 U	10 U		
	8400	BERN	20 GRF	0848	0850.7	28	4 U	10 U		D
	8900	BERN	20 GRF	0848	0850.7	28	4 U	10 U		
	6100	KISV	30 PBI	0849	0851.3	14	17			
	9100	ARCE	1 S	0850	0850.9	9.5				
	127	TORN	46 C	0915.4	0919.4	5.2	120			
	237	TRST	41 F	0915.8	0915.8	.2	300			2L
	1415	MANI	4 S/F	0925.2	0925.4	9.9	40	13.3		
	6100	KISV	21 GRF	0933	0943	23	16			
	113	POTS	45 C	0948.5	1017	67	70	10		
	237	TRST	41 F	0952.3	0952.4	.3	780			13R
	127	TORN	48 C	1000 U	1016.8	20	520			
	202	IZMI	2 S/F	1005	1008	3.5	130	85		
	6100	KISV	7 C	1007	1011.3	15	128			
	808	ONDR	20 GRF	1007	1010.5	6	8	4.2		
	4995	ATHN	4 S/F	1007.7	1012.1	36.3	95.7	28.7		
	1415	ATHN	3 S	1008.3	1010.6	30.5	17.1	5.1		
	113	POTS	48 C	1008.6	1009.8	11	700	35		
	8800	ATHN	4 S/F	1008.7	1012	36	266.4	79.9		
	2695	ATHN	3 S	1008.7	1010.5	31.9	29.3	8.7		
	15400	SGMR	3 S	1009	1011.8	4.5	196	51.8		3G,SWF
	15000	KISV	8 S	1009	1011.8	4	86			
	3000	BERL	4 S/F	1009	1010.2	4.2	21			
	536	ONDR	46 C	1009	1009.8	.5	56	4.2		
	930	BORD	3 S	1009	1010.7	4	20	4		
	8800	SGMR	3 S	1009.3	1012.7	5.2	203	60.9		3G,SWF
	9100	ARCE	45 C	1009.4	1011.9	3.3				
	4995	SGMR	3 S	1009.4	1011.8	5.2	83.5	25.1		3G,SWF
	10400	BERN	45 C	1009.4	1011.8	14	72	210		
	8400	BERN	45 C	1009.4	1011.8	14	80	210		+8
	8900	BERN	45 C	1009.4	1011.8	14	78	210		+10
	9100	ARCE		1009.4	1011	2				
	1420	ARCE	4 S/F	1009.4	1010.1	3.6				
	3100	CRIM	1 S	1009.5	1010.5	3.5	27	9		
	1470	BERL	4 S/F	1009.5	1010.3	4	16			
	9500	BERL	4 S/F	1009.5	1011.5	8	134			
	2695	SGMR	3 S	1009.6	1010.3	3.7	29.2	8.8		3G,SWF
	1415	SGMR	3 S	1009.7	1010.4	3.6	14.3	4.3		3G,SWF
	408	TRST	42 SER	1009.8	1010.3	1.2	230 D			
	237	TRST	5 S	1009.8	1009.8	.1	165	37		10L
	245	SGMR	6 S	1009.9	1010	3.4	125	37.5		3G,SWF
	410	SGMR	7 S	1010	1010.4	3.7	456	137		3G,SWF
	606	SGMR	47 GB	1010.6	1010.8	2.6	521	156		3G,SWF
	9100	ARCE		1011.4	1011.9	1.3				
	408	TRST	48 C	1012.7	1013.1	.8	210 D			
	9100	ARCE	29 PBI	1012.7		10				
	113	POTS	45 C	1112.5	1307	200 D	325			
	7000	SAOP	46 C	1113	1212.7		164.5			4 COMPONENTS
	9100	ARCE	21 GRF	1114.5	1147.8	180				
	237	TRST	41 F	1115.5	1115.5	.1	400			17R
	6100	KISV	28 PRE	1122	1146	38	69			
	9500	BERL	21 GRF	1125	1230	130	54			
	1470	BERL	21 GRF	1126	1225.5	109	14			
	3000	BERL	21 GRF	1128	1234	147	21			
	8800	ATHN	20 GRF	1129.9	1144.8	25.4	48.5	29.1		
	4995	ATHN	20 GRF	1130.1	1144.8	26.4	38.7	23.2		
	15400	SGMR	3 S	1131	1146.2	23	60.8	18.2		5,SWF
	2695	ATHN	20 GRF	1131.2	1144.7	24.1	16.5	9.9		
	1415	ATHN	20 GRF	1132.8	1144.7	22.1	11.8	7.1		
	8800	SGMR	3 S	1133.4	1153.2	22.6	178	53.4		5,SWF
	1420	ARCE	23 GRF	1133.7	1225.3	84.5				
	808	ONDR	21 GRF	1134	1251.2	106	20	9.9		
	8900	BERN	23 GRF	1134.2	1146.2	29	31	85		+21
	10400	BERN	23 GRF	1134.2	1146.2	29	31	91		
	8400	BERN	23 GRF	1134.2	1146.2	29	33	87		+20
	4995	SGMR	3 S	1134.7	1146.2	22.3	77.6	23.3		5,SWF
	2695	SGMR	3 S	1136.4	1146.4	20.9	118	35.4		5,SWF
	234	POTS	45 C	1136.5	1238	176 D	200			
	3000	BERL	3 S	1136.5	1139	4	23			
	1415	SGMR	3 S	1136.7	1146.2	20.1	52.7	15.8		5,SWF
	1420	ARCE	28 PRE	1136.8	1138.3	8.2				
	930	BORD	40 F	1137	1139.4	19	31	4		
	1470	BERL	4 S/F	1137	1138.5	3.5	19			
	536	ONDR	4 S/F	1138.5	1139.2	2	46	3		
	536	ONDR	21 GRF	1138.5	1254	190	53	39		
	606	SGMR	3 S	1138.5	1146.2	16.3	36.1	10.8		5,SWF
	245	SGMR	6 S	1140.6	1141.5	9.4	130	54		5,SWF
	410	SGMR	6 S	1140.6	1143.6	9.4	19.6	5.9		5,SWF
	237	TRST	41 F	1141.4	1141.5	.9	420			14R
	9400	HUAN	C	1143 E	1146 U	10.6	100.4	47.2		R
	202	IZMI	41 F	1143.5	1143.8	19.5	240	85		
	15000	KISV	8 S	1144	1146	4	41			
	1470	BERL	4 S/F	1145	1146.1	9	48			
	3000	BERL	4 S/F	1145	1146.2	9	96			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	1420	ARCE	4 S/F	1145	1146.1	5.3				
	1415	ATHN	3 S	1145.5	1146.3	8.7	41.3	12.4		
	113	POTS	45 C	1145.5	1145.8	1.1	1700	400		
	9500	BERL	4 S/F	1145.5	1146	3	76			
	127	TORN	47 GB	1145.7	1146	1	720	360		
	8800	ATHN	4 S/F	1145.7	1146.4	3.2	75.5	22.6		
	4995	ATHN	4 S/F	1145.8	1146.6	6.9	63.4	19		
	2695	ATHN	4 S/F	1145.8	1146.6	6.9	103	30.9		
	9100	ARCE	4 S/F	1145.8	1146.3	1.6				
	1420	ARCE	29 PBI	1150.3	1151	10				
	113	POTS	1 S	1202.1	1202.1	.1	210	60		
	234	POTS	45 C	1202.1	1202.1	.2	350	120		
	237	TRST	41 F	1202.2	1202.2	.2	575			0
	245	SGMR	7 S	1202.2	1307	67.4	474	190		2,SWF
	15400	SGMR	3 S	1202.8	1212.8	62.2	129	51.6		2,SWF
	410	SGMR	6 S	1204	1255.7	65	210	84		2,SWF
	606	SGMR	47 GB	1204.9	1239	64.1	521	208		2,SWF
	6100	KISV	45 C	1205	1213	60	212			
	2800	OTTA		1206	1221	39 D	74			
	9400	HUAN	C	1206.5	1213	20.9	169.6	83.7		R
	8800	SGMR	3 S	1207	1212.7	56.3	158	63.3		2,SWF
	2695	SGMR	3 S	1207	1221.1	47	64.3	25.7		2,SWF
	8400	BERN	46 C	1207	1237.6	165	38	100		+8
	8900	BERN	46 C	1207	1237.6	165	40	108		+7
	10400	BERN	46 C	1207	1237.6	165	34	99		
	4995	SGMR	3 S	1207	1212.9	55	161	64.4		2,SWF
	9100	ARCE	46 C/F	1207	1213	34.2				
	9100	ARCE		1207	1213	12.6				
	3000	BERL	46 C	1207	1221	23	75			
	9500	BERL	4 S/F	1207	1212.5	21	147			
	8400	BERN	46 C	1207	1212.7	165	65	173		
	8900	BERN	46 C	1207	1212.7	165	64	172		
	10400	BERN	46 C	1207	1212.7	165	50	144		
	8400	BERN	46 C	1207	1217.5	165	40	106		
	8900	BERN	46 C	1207	1217.5	165	40	107		
	10400	BERN	46 C	1207	1217.5	165	28	81		
	8400	BERN	46 C	1207	1220.9	165	48	127		
	8900	BERN	46 C	1207	1220.9	165	45	125		
	10400	BERN	46 C	1207	1220.9	165	34	100		
	15000	KISV	45 C	1207	1212.8	20	72			
	2695	ATHN	4 S/F	1207.1	1213.1	38.3	61.8	18.5		
	8800	ATHN	4 S/F	1207.2	1210	51.4	311.2	93.4		
	4995	ATHN	4 S/F	1207.2	1213.2	49.7	244.5	73.4		
	1415	SGMR	20 GRF	1207.2	1236.6	45.4	64.9	26		2,SWF
	1415	ATHN	3 S	1207.4	1236.7	35.8	47.2	14.2		
	408	TRST	42 SER	1210.1	1212.8	8.2	51			
	237	TRST		1213.2	1324.3		615			38L
	237	TRST	47 GB	1213.2	1238.1	203	335			18L
	202	IZMI	25 R	1215	1232	95	420	130		
	9100	ARCE		1219.6	1221	10.6				
	930	BORD	42 SER	1221	1222.7	7	92	2		
	9400	HUAN	PBI	1227.4	1227.4	52.9	47.7	29.2		R
	9100	ARCE		1230.2	1237.7	11				
	1420	ARCE	40 F	1231.8	1238.8	8.5				
	1470	BERL	4 S/F	1232	1239	8	53			
	930	BORD	40 F	1233	1237.2	32	51	10		
	15000	KISV	4 S/F	1233	1237.8	8	55			
	9500	BERL	4 S/F	1236.3	1237.5	3.7	97			
	9400	HUAN	C	1236.4	1237.6	3.9	59.2	26		R
	3000	BERL	3 S	1236.5	1238	3.5	38			
	536	ONDR	45 C	1238	1239.5	2	98	23		
	9100	ARCE	29 PBI	1241.2		40				
	2800	OTTA	29 PBI	1245	1245	75	13.4	4.4		
	9400	HUAN	S	1253	1253.5	1.6	8.2	5.8		R
	2800	OTTA	20 GRF	1415	1515	100	2.6	1.3		
	9400	HUAN	S	1423.1	1424	2.2	16.5	7.8		0
	15400	SGMR	3 S	1423.9	1424.3	2.7	49.8	14.9		
	9100	ARCE	1 S	1424.1	1424.5	.6				
	9100	ARCE	29 PBI	1424.7		26.7				
	9400	HUAN	S	1540.2	1543.6	12.8	8.2	3		0
	9400	HUAN	S	1601.2	1614.5	19.4	9.9	5.8		0
	2800	OTTA	21 GRF	1625		275	17.8			
	8400	BERN	3 S	1630	1648.1	29	17	45		0
	10400	BERN	3 S	1630	1648.1	29	26	77		
	8400	BERN	3 S	1630	1640	29	7 U	19 U		0
	8900	BERN	3 S	1630	1640	29	7 U	19 U		0
	10400	BERN	3 S	1630	1640	29	6 U	19 U		
	8900	BERN	3 S	1630	1648.1	29	15	45		0
	9400	HUAN	S	1639.2	1639.8	2.1	26.3	4.7		R
	7000	SAOP	1 S	1639.3	1639.9	.8	6.1			
	7000	SAOP	41 F	1639.3						3
	7000	SAOP	4 S/F	1643.5	1644.2	.4	118	12		
	2695	ATHN	4 S/F	1646.1	1648.4	5.8	136	40.8		
	228	HARS	48 C	1646.7	1648	3.3	360	90		
	930	BORD	46 C	1647	1648	4	170	10		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
	2695	BOUL	3 S	1647	1649	3.5	103	34		
	2800	OTTA	3 S	1647	1648.3	4	121	22		
	4995	BOUL	8 S	1647	1647.5	1.5	100	33		
	1420	BOUL	3 S	1647	1648.5	6.5	51	17		
	1415	ATHN	4 S/F	1647.5	1648.5	4	53.1	15.9		
	237	TRST	47 GB	1647.6	1648.3	1.5	390			O
	4995	ATHN	4 S/F	1647.6	1648.5	4.1	158.4	47.5		
	9100	ARCE	3 S	1647.8	1649.3	5.2				
	9400	HUAN	S	1647.8	1648	4.7	70.8	26.5		R
	606	SGMR	3 S	1647.8	1648.4	3.2	68.9	27.6		5,SWF
	8800	ATHN	4 S/F	1647.8	1648.4	3.8	97	29.1		
	245	SGMR	7 S	1647.9	1648.4	3.1	311	124		5,SWF
	410	SGMR	7 S	1647.9	1648.2	3.1	271	108		5,SWF
	1415	SGMR	3 S	1647.9	1648.5	3.1	59.2	23.7		5,SWF
	4995	SGMR	3 S	1648.8	1649.3	2.2	126	50.4		5,SWF
	2695	SGMR	3 S	1648.8	1649.2	2.2	140	56		5,SWF
	8800	SGMR	3 S	1648.9	1649.3	2.1	75	30		5,SWF
	15400	SGMR	3 S	1649	1649.1	2	44.7	17.9		5,SWF
	9400	HUAN	S	1659.5	1702.6	6.2	14.8	6.9		R
	7000	SAOP	46 C	1736	1830.2		1726	7		
	2800	OTTA	1 S	1737	1740	5	5.6	2.6		
	9400	HUAN	PRE	1737.2	1804	26.8	9.9	6.8		O
	237	TRST	41 F	1755.5	1756.1	.7	135			O
	2800	OTTA	4 S/F	1800.8	1801.2	1.2	12.8			
	2695	BOUL	8 S	1801	1801.5	1.5	14	5		
	15400	SGMR	47 GB	1803.5	1828.2	86.5	2020	810		4,SWF
	9400	HUAN	C	1804.1	1808.8	8.3	144.8	42.5		R
	8800	SGMR	47 GB	1805	1828.2	85	1660	660		4,SWF
	10400	BERN	3 S	1807.4	1809	9	37	108		
	4995	BOUL	4 SF	1807.5	1808.5	2.5	40	13		
	4995	SGMR	47 GB	1808.1	1828.2	81.9	560	220		4,SWF
	9100	ARCE	3 S	1808.5	1809.1	2.4				AT SUNSET
	930	BORD	46 C	1816	1822.8	36 D	816 D			SUNSET
	9400	HUAN		1816.5	1824.5		990.9			
	9400	HUAN		1816.5	1826		916.8			
	9400	HUAN		1816.5	1828.3		1723.4			
	9400	HUAN	C	1816.5	1822.1	35.1	900.3	432.1		R
	4995	BOUL	28 PRE	1817 E	1820 U	5.5	76	25		
	1420	BOUL	47 GB	1817.5	1820	74 D	515	172		
	2800	OTTA		1818	1819.8	6	130			
	2695	BOUL	45 C	1818	1829	69.5D	450	150		
	2800	OTTA	46F C	1818	1828.5	30	450	73		
	9100	ARCE	46 C/F	1818.3	1828.4	17.2				AT SUNSET
	9100	ARCE		1818.3	1819.2	2.6				ATMOSPHERIC SCI
	2695	SGMR	3 S	1819.4	1828.2	70.6	486	190		4,SWF
	1415	SGMR	47 GB	1820.1	1820.5	69.9	1210	480		4,SWF
	9100	ARCE		1820.9	1822.3	2.5				
	228	HARS	47 GB	1822	1834	90	480	50		
	4995	BOUL	47 GB	1822	1828.5	12 D	611	204		
	245	SGMR	49 GB	1822	1834	68	636	250		4,SWF
	410	SGMR	7 S	1822	1829	68	307	120		4,SWF
	606	SGMR	47 GB	1822.7	1828	67.3	745	300		4,SWF
	9100	ARCE		1823.4	1826.3	4.3				
	2800	OTTA		1824	1826	3.5	110			
	2800	OTTA		1827.5	1828.5	20.5	450			
	9100	ARCE		1827.7	1828.4	7.8				
	4995	BOUL	29 PBI	1834	1841 U	75 U	117	39		
	9100	ARCE	29 PBI	1835.5		15				
	9400	HUAN	PBI	1851.6	1851.6	33.4	49.4	21.1		O
	2800	OTTA	2 S/F	1852	1853.9	3	6.6	3.6		
	9400	HUAN	S	1912.1	1912.8	2.3	11.5	5.8		O
	9400	HUAN	S	1940.3	1951.2	17.5	6.6	2.8		O
	9400	HUAN	S	2010.3	2022.7	39.5	11.5	3.7		R
	9400	HUAN	S	2019.4	2020.5	2.8	34.6	13.2		R
	9400	HUAN	S	2107.4	2109	5.6	28	11.4		R
	9400	HUAN	S	2120.1	2122.3U	3.1	29.6	8.9		R
	1415	HANI	4 S/F	2243.2	2250.5	9.5	62.2	20.7		
10	4995	BOUL	4 SF	0059	0100.5	4	66	22		
	2695	PENT	1 S	0107	0108.3	5	6	3		
	35000	NAGO	21 GRF	0127	0152	150	44			
	35000	NAGO	5 S	0145	0145	1 E	50			
	1400	SYDN	1 S	0220.3	0221.4	2.3				
	15000	KISV	8 S	0455	0456.5	3	11			
	35000	NAGO	20 GRF	0517	0541	48	27			
	15000	KISV	3 S	0520	0523	5	68			
	2695	HANI	4 S/F	0520.9	0523.1	3.5	29.8	9.9		
	3100	CRIM	3 S	0521	0523.5	3	58	19		
	3100	CRIM	3 S	0521	0523.5	3	58	19		
	6100	KISV	7 C	0521	0522.3	4	91 D			
	2695	ATHN	3 S	0521.2	0523.3	3.1	35.9	10.8		
	8800	ATHN	4 S/F	0521.2	0523	3	106.4	31.9		
	8900	BERN	46 C	0521.3	0529.8	4	31	85		+9
	10400	BERN	46 C	0521.3	0529.8	4	28	83		
	8400	BERN	46 C	0521.3	0529.8	4	32	87		+13

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	200	HIRA	46 C	0521.5	0523	3	100	50		ML
	100	HIRA	46 C	0521.5	0523.2	3	1700	300		ML
	202	IZMI	41 F	0521.5	0523	4.2	100			
	1400	SYDN	45 C	0521.6	0522.2	2.9				
	4995	ATHN	4 S/F	0521.6	0523.1	2.7	95.5	28.6		
	1415	MANI	4 S/F	0521.7	0522.1	2.7	12.6	4.2		
	1415	ATHN	3 S	0521.8	0522.3	2.1	11.8	3.5		
	4995	MANI	4 S/F	0521.8	0523	2.6	44.4	14.8		IG
	700	SYDN	2 S	0522.7	0523.5	1.8				
	500	HIRA	3 S	0522.8	0523.4	2	70	30		SL
	606	MANI	4 S/F	0522.8	0523.7	1.3	22.6	7.5		
	15000	KISV	3 S	0532	0533	3	25			
	234	POTS	45 C	0550	0646	143	700	230		
	260	ONDR	44 NS	0552 E		562 D	61	5		
	127	TORN	44 NS	0630 E	1147.2	530 D	450	130		V=3
	200	HIRA	43 NS	0810		110 D	20	20		ML
	202	IZMI	43 NS	0815		225	60			
	410	SGMR	44 NS	0919 E	1654	898 D	31.5			
	245	SGMR	44 NS	0919 E	1837.8	898 D	379			
	240	KIEL	44 NS	1728	1734.5	30	800	80		
	200	HIRA	44 NS	1935 E	2210	860 D	40	10		MR
	10400	BERN	47 GB	0555	0642.4	115	2967 U	3900 U		
	8400	BERN	47 GB	0555	0642.4	115	556 D	1500 D		
	8900	BERN	47 GB	0555	0642.4	115	577 D	1500 D		
	6100	KISV	47 GB	0602	0645.3	59	4067			
	3100	CRIM	47 GB	0603	0614.7	60	560			
	3100	CRIM		0603	0628		270			
	3100	CRIM		0603	0626		390			
	3100	CRIM		0603	0617		480			
	3100	CRIM		0603	0637		210			
	3100	CRIM		0603	0622		400			
	3100	CRIM		0603	0628		270			
	3100	CRIM		0603	0626		390			
	3100	CRIM		0603	0617		480			
	3100	CRIM	47 GB	0603	0614.7	60	560			
	3100	CRIM	30 PBI	0603	0703	118	74			
	3100	CRIM		0603	0642.5		600			
	3100	CRIM		0603	0637		210			
	3100	CRIM		0603	0622		400			
	4995	ATHN	47 GB	0603.2	0645.4	73.2	9364	2809		
	2695	ATHN	47 GB	0603.2	0642.7	74.4	1952	586		
	8800	ATHN	47 GB	0603.2	0645.1	69.4	12206	3662		
	5730	IRKU		0603.5	0617.3		685 U			L
	5730	IRKU		0603.5U	0615		685 U			L
	5730	IRKU	47 GB	0603.5	0612.5	16	340			L
	4995	MANI	47 GB	0603.6	0644.9	59.9	1800	577.3		
	35000	NAGO	28 PRE	0605	0611	6	30			
	1415	ATHN	47 GB	0605.9	0628.9	70.4	1006	302		
	1415	ATHN	47 GB	0605.9	0644.8		1006	302		
	930	BORD		0609	0628		900			
	930	BORD		0609	0630		900			
	930	BORD		0609	0648		863			
	930	BORD		0609	0653		788			
	930	BORD		0609	0705		900			
	930	BORD	29 PBI	0609	0713	59	131	25		
	930	BORD	47 GB	0609	0645.5	62	1125	300		
	930	BORD		0609	0614.5		698			
	930	BORD		0609	0622.5		450			
	930	BORD		0609	0625		713			
	2695	MANI	47 GB	0609.8	0614.8	52.7	835	264.8		
	200	HIRA	48 C	0610	0648	118	1000	200		ML WR
	606	MANI	4 S/F	0610.5	0617.3	79.5	365.4	121.8		
	808	ONDR	49 GB	0610.5	0653	80	616	350		
	1415	MANI	4 S/F	0610.9	0626.7	79.8	460	149.3		
	35000	NAGO	47 GB	0611	0615	8	3140 D			
	500	HIRA	48 C	0611	0630.9	138	580	150		ML WR
	536	ONDR	49 GB	0612	0631	78	254	160		
	202	IZMI	46 C	0612.5	0648.2	47.5	1450	700		
	260	ONDR	49 GB	0612.7		116	216 D	182		
	228	HARS	47 GB	0613.5	0648 U	120	1600 D	200		
	237	TRST	47 GB	0615 E	0647.9	120 D	2450			65R
	100	HIRA	48 C	0617	0642.2	220 D	1500	200		WL
	35000	NAGO	30 PBI	0619	0621	22	190			
	5730	IRKU		0620	0631		35			L
	5730	IRKU		0620	0628		276			L
	5730	IRKU		0620	0625.7		550			L
	5730	IRKU		0620	0625.3		263			R
	5730	IRKU		0620	0622.2		240			R
	5730	IRKU	48 C	0620	0621	13	75			R
	113	POTS	45 C	0621 E	0642	92 D	700			
	35000	NAGO	5 S	0625	0626	4	591			
	9500	BERL	47 GB	0635 E	0642.5	65 D	7000 D			
	3000	BERL	47 GB	0635 E	0642.5	56 D	1275			
	1470	BERL	47 GB	0635 E	0643	60 D	1100			
	5730	IRKU		0635	0638.3		83			L

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	5730	IRKU	45	C	0635	0637	5	180			L
	5730	IRKU			0640.5	0646.5		2620 U			L
	5730	IRKU			0640.5	0644		2370			L
	5730	IRKU	47	GB	0640.5	0642.8	12	2500			L
	35000	NAGO	47	BGB	0641	0642	19	4360 D			
	5730	IRKU	29	PBI	0652		12	575			R
	202	IZMI	29	PBI	0700	0721.8	70	300	100		
	35000	NAGO	29	PBI	0700	0700	80 D	67			SUNSET
	3100	CRIM	3	S	0712	0714	4	35	12		
	3100	CRIM	3	S	0725	0728	4	35	12		
	808	ONDR	29	PBI	0730	0803.5	40	30	12		
	536	ONDR	29	PBI	0730	0757.6	60	65	19		
	1420	ARCE	21	GRF	0756.7	0804.3	10.5				
	1420	ARCE	4	S/F	0800	0801	2.5				
	1470	BERL	4	S/F	0800	0801	7.5	18			
	9100	ARCE	21	GRF	0802.5	0810.4	18				
	9100	ARCE	1	S	0802.5	0802.7	.5				
	9100	ARCE	21	GRF	0909.1	0940.1	86				
	15000	KISV	3	S	0920	0924	13	52 D			
	8400	BERN	3	S	0922.8	0923.8	12	11	30		0
	8900	BERN	3	S	0922.8	0923.8	12	11	31		0
	10400	BERN	3	S	0922.8	0923.8	12	14	42		
	9100	ARCE	3	S	0922.9	0924.1	4.8				
	9500	BERL	3	S	0923	0923.8	5	34			
	536	ONDR	21	GRF	0923	0934.5	22	14	6.8		
	8800	ATHN	3	S	0923.2	0924.1	3.1	37.2	11.2		
	6100	KISV	3	S	0923.3	0924	2	8			
	9100	ARCE	20	GRF	1030.5	1046.6	70				
	234	POTS	45	C	1205.6	1205.7	.4	200	70		
	3000	BERL	20	GRF	1214	1331.3	130	8.1			
	1470	BERL	20	GRF	1215	1352	165 D	3.2			
	7000	SAOP	21	GRF	1231.4						
	7000	SAOP	4	S/F	1231.4	1317.6		21	18		
	7000	SAOP	4	S/F	1231.4						
	9500	BERL	21	GRF	1234	1333	117	20			
	9100	ARCE	21	GRF	1236.2	1349.6	132				
	2800	OTTA	20	GRF	1240	1335	140	4.4	2.6		
	9100	ARCE	4	S/F	1303.1	1303.7	1.4				
	10400	BERN	46	C	1313.6	1317.6	97	21	62		
	8400	BERN	46	C	1313.6	1317.6	97	15	41		0
	8900	BERN	46	C	1313.6	1317.6	97	19	52		0
	6100	KISV	3	S	1314	1318	6	17			
	9400	HUAN		C	1315.3	1316.6	4.3	59.5	22		L
	9100	ARCE	4	S/F	1316.3	1317.8	3				
	4995	ATHN	3	S	1316.4	1318.1	24.1	23.9	7.2		
	8800	ATHN	4	S/F	1316.5	1317.9	17.2	50.2	15.1		
	9500	BERL	4	S/F	1316.7	1318	2.3	57			
	8800	SGMR	3	S	1316.7	1318.7	6.3	36.4	10.9		SHF
	9100	ARCE	29	PBI	1319.3		20				
	9400	HUAN		PBI	1319.6	1319.6	38.6	9.9	5.8		0
	10715	DWIN	45	C	1327	1328	8	70	20		
	2800	OTTA	21	GRF	1510	1600	135	5.2	2.4		
	9100	ARCE	21	GRF	1543.6	1548.7	58				
	8400	BERN	3	S	1548	1551.2	8	11	30		0
	10400	BERN	3	S	1548	1551.2	8	17	50		
	9400	HUAN		S	1548.6	1551.2	6.6	46.3	11.7		0
	15400	SGMR	3	S	1549.3	1551.2	4	45.9	13.8		SHF
	8800	ATHN	4	S/F	1549.7	1551.6	8.9	65.3	19.6		
	8800	SGMR	3	S	1549.9	1551.1	3.4	31.9	9.6		SHF
	9100	ARCE	3	S	1550	1551.3	5.2				
	4995	ATHN	3	S	1550.2	1551.6	7	10.2	3.1		
	2800	OTTA	1	S	1550.5	1551	1	1	.5		
	2695	ATHN	20	GRF	1551.3	1556.9	11.5	7.3	4.4		
	1415	ATHN	3	S	1551.8	1552.2	6.9	5.7	1.7		
	2800	OTTA	1	S	1555	1556.5	3	2	1		
	10715	DWIN	3	S	1600	1601	3	50	20		
	245	SGMR	7	S	1653.6	1654	1.7	360	144		
	237	TRST	41	F	1653.7	1653.9	1.4	545			5R
	7000	SAOP	46	C	1705	1730		112	6		7 COMPONENTS
	8400	BERN	45	C	1706.2	1707	12	15	39		0
	10400	BERN	45	C	1706.2	1707	12	33	98		
	9100	ARCE	45	C	1706.5	1707.1	3.8				
	8800	SGMR	3	S	1706.5	1706.9	11.5	75.6	30.2		
	15400	SGMR	3	S	1706.5	1707.1	11.5	142	56.8		3S
	9100	ARCE			1706.5	1707.1	1.9				
	8800	ATHN	4	S/F	1707.1	1707.4	12.2	85.3	25.6		
	4995	ATHN	1	F	1707.3	1712.7	12	20.5	10.2		
	9400	HUAN		C	1707.5E	1709 U	8.7	59.5	21.4		0
	9100	ARCE			1708.4	1709.1	1.9				
	2695	ATHN	3	S	1710.2	1712.8	5.4	11	6.6		
	9100	ARCE	30	PBI	1710.3		50 D				AT SUNSET
	9400	HUAN			1720.1	1734.2		90.9			
	9400	HUAN		C	1720.1	1730.1	37.3	196.7	49.3		LOR
	237	TRST	47	GB	1725.5	1734.5	35 D	14500			0
	4995	SGMR	45	C	1725.5	1734.3		82.4			4,SHF

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	4995	SGMR	45	C	1725.5	1730.2	27	93	33		4,SWF
	8400	BERN	45	C	1726.2	1730.1	44	25	66		D
	8800	SGMR	3	S	1726.2	1730.1	26.5	170	52.8		4,SWF
	10400	BERN	45	C	1726.2	1730.1	44	54	157		
	1415	SGMR	3	S	1726.5	1732.3	15.8	28	2.6		4,SWF
	15400	SGMR	3	S	1726.5	1730.2	26.8	310	136		4,SWF
	606	SGMR	3	S	1726.5	1732.1	13.5	190	7.5		4,SWF
	18	MCMA	41	F	1727	1736	56			3	
	9100	ARCE	4	S/F	1727.3	1730.2	4.2				ATMOSPHERIC SCI
	2695	SGMR	3	S	1727.5	1732.2	13.2	34	12.3		4,SWF
	405	KIEL	45	C	1728	1734.5	18	400	30		
	2800	OTTA	46F	C	1728	1732	14	28.6	7.6		
	4995	BOUL	42	SER	1728	1733.5	72 D	90	30		
	245	SGMR	49	GB	1728.5	1734.4	25.5	11110	484		4,SWF
	410	SGMR	48	GB	1729.6	1735	9.4	620	329		4,SWF
	602	KIEL	45	C	1730	1734.5	9	300	70		
	800	KIEL	45	C	1731	1737.5	12	350	80		
	1420	KIEL	45	C	1731	1737	10	230	170		
	1420	BOUL	42	SER	1731	1737 U	105	17	6		
	9100	ARCE	29	PBI	1731.5		18				
	2800	OTTA	23	GRF	1750	1930	120	3.6			
	2695	SGMR	1	S	1819.9	1820.6	7.1	8.9	3.6		
	8800	SGMR	3	S	1820	1820.8	7	26.5	10.6		
	2800	OTTA	1	S	1820	1820.5	1	5.2	2.6		
	245	SGMR	48	GB	1820	1820.3	2	2480	992		
	4995	SGMR	3	S	1820	1820.6	7	40.3	16.1		
	1415	SGMR	3	S	1820	1825.7	10	27.4	11		
	9400	HUAN		S	1820.1	1820.8	1.7	49.6	15.5		R
	15400	SGMR	3	S	1820.2	1820.8	6.8	27	10.8		
	410	SGMR	6	S	1820.4	1820.7	1.1	28.1	11.2		
	8800	SGMR	21	GRF	1835	1836.3	515	18.9	7.6		
	1415	SGMR	20	GRF	1835	1840.5	515	13.5	5.4		
	606	SGMR	20	GRF	1835	1840.8	515	15.4	6.2		
	15400	SGMR	21	GRF	1835	1836.3	515	20.6	8.2		
	4995	SGMR	21	GRF	1835	1836.3	515	9	3.6		
	2695	SGMR	20	GRF	1835	1849.5	515	7.5	3		
	9400	HUAN		S	1835.5	1836.5	1.3	44.6	10.2		R
	9400	HUAN		S	1843.5	1921.6	74	36.3	23.1		0
	2800	OTTA	1	S	1848.5	1849	2	1.8	.9		
	9400	HUAN		S	1908.5	1908.8	2.1	64.4	21.5		0
	9400	HUAN		S	1915.6	1916.2	1	14.9	10.8		0
	2800	OTTA	1	S	1915.9	1916	1	3.2	1.4		
	2800	OTTA	23	GRF	2020	2225	250	4.6	2.2		
	9400	HUAN		S	2027.2	2052.1	55.1	29.7	17.7		0
	9400	HUAN		S	2029.3	2030.2	2.1	9.9	6.6		0
	9400	HUAN		S	2129.7	2146	28.4	11.6	6.4		0
	9400	HUAN		S	2134.2	2135.5	3.2	21.5	11.6		0
	35000	NAGO	21	GRF	2243	2249	40	15			
	8800	SGMR	3	S	2247.4	2248	2.6	91.4	36.6		
	15400	SGMR	3	S	2247.4	2248	2.6	213	85.2		
	4995	SGMR	3	S	2247.5	2248.1	2.5	21.6	8.6		
	4995	MANI	3	S	2247.9	2248	2	58.7	19.6		
	35000	NAGO	5	S	2248	2248	1 E	32			
	2695	PENT	1	S	2327.8	2328	2	9.2	2.8		
11	35000	NAGO	20	GRF	0039	0104	60	31			
	4995	BOUL	40	F	0122	0123	4.5D	17	6		
	1420	BOUL	4	SF	0122	0123	2.5D	18	6		
	200	HIRA	46	C	0122	0123	5	1700	200		0
	500	HIRA	46	C	0122.2	0123.5	6	220	40		HL
	700	SYDN	42	SER	0122.8	0123	4				
	1400	SYDN	4	S	0122.8	0123.4	1.6				
	2695	PENT	4	S/F	0122.9	0123	7	10	3.4		
	5730	IRKU			0301.3	0304.1		7			R
	5730	IRKU	45	C	0301.3	0302.4	4	15	5		R
	4995	MANI	41	F	0335.2	0337.4	28.3	81.4	27.1		IG
	500	HIRA	46	C	0335.3	0336.6	10.5	4000	200		HL
	606	MANI	4	S/F	0335.3	0336.9	3.6	175.7	58.6		
	700	SYDN	47	GB	0335.6	0337.5	4.4				
	5730	IRKU	2	S	0336.2	0337.4	3	63	13		L
	100	HIRA	46	C	0336.5	0337.5	3	8000	2000		0
	1400	SYDN	4	S	0336.6	0337.5	1.7				
	200	HIRA	46	C	0337	0338	3	1500	400		HL
	700	SYDN	45	C	0340.6	0340.8	1.6				
	700	SYDN	45	C	0344.7	0345	1.3				
	15000	KISV	45	C	0352	0400	8	283			
	8800	ATHN	4	S/F	0352.8	0353.4	3.4	76.4	22.9		
	4995	ATHN	3	S	0353	0353.7	2.4	39.6	11.9		
	6100	KISV	45	C	0357	0359.3	13	94			
	4995	ATHN	3	S	0358.8	0400.1	9.2.	49.5	14.9		
	8800	ATHN	4	S/F	0359.4	0400.1	5.3	132.3	39.7		
	4995	MANI	47	GB	0422.2	0427.2U	26.8D	2350 D	739		IG PHR OUT
	6100	KISV	3	S	0423	0428	32	1235			
	4995	ATHN	47	GB	0423.2	0427.8	70.2	11560	3468		
	2695	ATHN	47	GB	0423.8	0428.2	69.5	1338	401.4		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	15000	KISV	45 C	0425	0429	10	240			
	1420	KIEL	45 C	0426	0554	100	700	200		
	800	KIEL	45 C	0426	0540	99	400	110		
	35000	NAGO	5 S	0426	0428	6	70			
	1400	SYDN	4 S	0426.1	0427.9	10.4				
	1415	MANI	4 S/F	0426.3	0427.9U	21.1D	357.4D	115.9		R FAILURE
	8800	ATHN	47 GB	0426.5	0428.2	51.8	2250	675		
	700	SYDN	4 S	0426.6	0428.8	8.4				
	1415	ATHN	4 S/F	0426.7	0428.5	62.5	470	141		
	405	KIEL	45 C	0427	0504	142	90	60		
	602	KIEL	45 C	0427	0501.5	104	100	70		
	500	HIRA	46 C	0427.3	0429.6	10	50	20		0
	200	HIRA	46 C	0428	0428.8	20	1200	60		HL
	240	KIEL	45 C	0428	0429.5	94	2000	30		
	228	HARS	45 C	0428.7	0429	1.3	700 U	250		
	10400	BERN	45 C	0430 E	0430 E	6 D	16 D	50 D		
	35000	NAGO	29 PBI	0432	0432	54	21			
	100	HIRA	46 C	0433.7	0435.5	10	3500	500		HL
	1400	SYDN	4 S	0459.1	0502.3	10				
	700	SYDN	45 C	0459.3	0459.9	1.3				
	700	SYDN	45 C	0519.6	0520.9	4				
	10400	BERN	47 GB	0530	0543.1	85	285	828		
	8400	BERN	47 GB	0530	0543.1	85	247	656		+2
	260	ONDR	44 NS	0532 E		578 D	20			
	127	TORN	44 NS	0640 E		520 D		190		V=0
	410	SGMR	44 NS	0920 E	2006.6	897 D	313.3			
	245	SGMR	44 NS	0920 E	1906.4	897 D	301			
	100	HIRA	44 NS	1935 E	0020	860 D	130	50		ML
	200	HIRA	44 NS	1935 E	0520	860 D	40	20		SL
	808	ONDR	48 C	0532 E	0540.2	35	202	74		
	536	ONDR	41 F	0532 E	0539.5	46	25	8.9		
	15000	KISV	45 C	0535	0545	15	60 D			
	8800	ATHN	47 GB	0535.7	0543.8	37.6	960	288		
	6100	KISV	3 S	0538	0543	15	105			
	1415	ATHN	47 GB	0538.5	0555.3	41.5	2550	765		
	2695	ATHN	47 GB	0538.9	0554.4	24.5	1018	509		
	3100	CRIM	46 C	0539	0545.5	24	472	157		
	4995	MANI	3 S	0541	0543.3	5.7	59.7U	19.9U		AKING
	4995	ATHN	4 S/F	0542.3	0543.8	31	135.3	40.6		
	35000	NAGO	47 GB	0543	0543	3	890			
	35000	NAGO	29 PBI	0546	0550	120 D	30			SUNSET
	930	BORO	46 C	0602 E	0602 U	32 D	56 D			SUNRISE
	234	POTS	45 C	0634.8	0635.1	.4	200	70		
	237	TRST	41 F	0635	0635.1	.2	410			22L
	6100	KISV	20 GRF	0659	0705	29	16			
	10400	BERN	20 GRF	0700.1	0706.2	18	9	26		
	8400	BERN	20 GRF	0700.1	0706.2	18	9	24		0
	113	POTS	48 C	0701	0701.5	7.4	700	10		
	234	POTS	48 C	0702.5	0707.8	5.7	120	1		
	237	TRST	41 F	0707.8	0708	.3	320			15R
	113	POTS	45 C	0746.6	0746.8	.5	200	70		
	234	POTS	45 C	0746.6	0747	.8	260	85		
	8400	BERN	3 S	0820	0826.5	48	11	31		+12
	10400	BERN	3 S	0820	0826.5	48	12	35		
	8400	BERN	3 S	0820	0836.6	48	6 U	16 U		0
	10400	BERN	3 S	0820	0836.6	48	5 U	16 U		
	6100	KISV	8 S	0826	0827	2	44			
	3100	CRIM	1 S	0826	0827	2	11	4		
	15000	KISV	8 S	0826	0826.7	1	38			
	9100	ARCE	3 S	0826.4	0826.7	1				
	9500	BERL	3 S	0826.5	0826.7	.6	22			
	3000	BERL	3 S	0826.5	0826.9	1.5	8.1			
	6100	KISV	8 S	0836	0836.4	2	12			
	3100	CRIM	40 F	0902	1035	108	6	2		
	10400	BERN	45 C	0924.3	0935.7	29	58	169		
	8400	BERN	45 C	0924.3	0935.7	29	60	160		+12
	15000	KISV	3 S	0933	0936	5	90			
	6100	KISV	8 S	0934	0935.4	17	101			
	9500	BERL	4 S/F	0934	0936.2	19	146			
	8800	ATHN	4 S/F	0934.7	0935.8	4.7	198.5	59.6		
	4995	ATHN	3 S	0934.7	0935.7	4.2	49.5	14.9		
	9100	ARCE	4 S/F	0934.8	0935.9	9				RECORDDISTURBED
	3000	BERL	4 S/F	0935	0935.9	4	3.8			
	10715	DWIN	4 S	0935	0936	5	350	100		
	1420	ARCE	2 S/F	0935.4	0935.5	.5				
	8400	BERN	3 S	1004.8	1005.9	15	8	22		0
	10400	BERN	3 S	1004.8	1005.9	15	6	19		
	8400	BERN	47 GB	1028	1052.2	152	556 D	1500 D		
	10400	BERN	47 GB	1028	1052.2	152	2500 U	7500 U		
	2650	DWIN	4 S	1039	1043	5	100	20		
	15000	KISV	45 C	1043	1054	47	2090			
	15400	SGMR	47 GB	1043.4	1152.7		638			4,5,SHF
	15400	SGMR	47 GB	1043.4	1052.1	156.2	11500	3450		4,5,SHF
	15400	SGMR	47 GB	1043.4	1105.2		2760			4,5,SHF
	15400	SGMR	47 GB	1043.4	1121.3		1930			4,5,SHF

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	2695	SGMR	47 GB	1043.5	1053	155.2	4790	1437		4,5,SHF
	2695	SGMR	47 GB	1043.5	1105.3		1790			4,5,SHF
	2695	SGMR	47 GB	1043.5	1121.5		1760			4,5,SHF
	2695	SGMR	47 GB	1043.5	1154.6		1160			4,5,SHF
	9500	BERL	47 GB	1045	1052.5	145 D	7650 D			
	3000	BERL	47 GB	1045	1052.7	172 D	2520 D			
	6100	KISV	45 C	1045	1052.3	27	5910			
	4995	SGMR	47 GB	1047.7	1105.4		2850			4,5,SHF
	4995	SGMR	47 GB	1047.7	1153.8		1300			4,5,SHF
	4995	SGMR	47 GB	1047.7	1052.5	146.7	7700	2310		4,5,SHF
	4995	SGMR	47 GB	1047.7	1121.5		1890			4,5,SHF
	8800	SGMR	47 GB	1048	1052.4	142.5	18900	5670		4,5,SHF
	8800	SGMR	47 GB	1048	1121.5		1970			4,5,SHF
	8800	SGMR	47 GB	1048	1153.2		1260			4,5,SHF
	8800	SGMR	47 GB	1048	1105.4		5410			4,5,SHF
	9100	ARCE		1049.6		14.1				PEN 1020-1100UT
	9100	ARCE	47 GB	1049.6	1105.2	45.7				
	8800	ATHN	47 GB	1049.8	1052.4	219.4	2618.7	785.6		
	4995	ATHN	47 GB	1049.9	1052.4	225.9	1521.9	456.6		
	2695	ATHN	47 GB	1050	1052.4	246.2	5229.9	1568.9		
	35000	SGMR	47 GB	1050	1122.2		1547			4,5,SHF
	35000	SGMR	47 GB	1050	1152.8		468			4,5,SHF
	35000	SGMR	47 GB	1050	1052.2	141.8	12500	3750		4,5,SHF
	35000	SGMR	47 GB	1050	1105.4		1638			4,5,SHF
	930	BORD	47 GB	1050	1107 U	65	3280 D	800		
	10715	DWIN	49 GB	1050		105	800 D			
	2650	DWIN	49 GB	1050		120	180 D			
	2800	OTTA	47 GB	1050	1052.5	95	2800	370		
	1420	KIEL	47 GB	1050	1054	119	6000	500		
	602	KIEL	47 GB	1050	1052.5	120	210000	500		
	930	BORD		1050	1152.5		720			
	930	BORD	29 PBI	1050	1155	54.	200	60		
	930	BORD		1050	1220.5		200			
	930	BORD		1050	1235		140			
	930	BORD		1050	1247		160			
	930	BORD		1050	1055		3280			
	930	BORD		1050	1113		1240			
	930	BORD		1050	1117		3280			
	930	BORD		1050	1144.5		1040			
	3100	CRIM	47 GB	1050	1105.5	140 D	850	283		
	3100	CRIM		1050	1121.5		635	212		
	3100	CRIM		1050	1107		582	194		
	1420	ARCE	47 GB	1050.4		40.8				
	1420	ARCE		1050.4		12.5				
	1415	SGMR	47 GB	1050.5	1119.4		1230			4,5,SHF
	1415	SGMR	47 GB	1050.5	1154.3		306			4,5,SHF
	1415	SGMR	47 GB	1050.5	1054	126	2500	750		4,5,SHF
	1415	SGMR	47 GB	1050.5	1105.3		1450			4,5,SHF
	1470	BERL	47 GB	1051	1054.4	119	2260 D			
	800	KIEL	47 GB	1051	1106.5	119	15000	400		
	808	ONDR	49 GB	1051		117	626 D	395		
	606	SGMR	47 GB	1051.5	1117.3		9280			4,5,SHF
	536	ONDR	49 GB	1051.5		116	429 D	285		
	606	SGMR	47 GB	1051.5	1144.8		2320			4,5,SHF
	606	SGMR	47 GB	1051.5	1053.1	127	48100 1	4430		4,5,SHF
	606	SGMR	47 GB	1051.5	1106.2		10300			4,5,SHF
	234	POTS	45 C	1051.5	1145	250 D	5300			
	1415	ATHN	47 GB	1051.6	1053.7	235.1	3492.9	1047.9		
	410	SGMR	49 GB	1051.8	1053.6	124.3	252000 7	5600		4,5,SHF
	410	SGMR	49 GB	1051.8	1106.7		6600			4,5,SHF
	410	SGMR	49 GB	1051.8	1123.8		3350			4,5,SHF
	410	SGMR	49 GB	1051.8	1145.1		1720			4,5,SHF
	408	TRST	48 C	1051.9	1052.2	.6	160			
	113	POTS	45 C	1052	1101.5	250 D	1400			
	240	KIEL	47 GB	1052	1054 U	120	10000 D			
	405	KIEL	47 GB	1052	1054	119	50000	200		
	245	SGMR	49 GB	1052.5	1122.1		4770			4,5,SHF
	260	ONDR	49 GB	1052.5		115	219 D	153		
	245	SGMR	49 GB	1052.5	1145.4		7360			4,5,SHF
	245	SGMR	49 GB	1052.5	1053.3	125.5	12400	3720		4,5,SHF
	245	SGMR	49 GB	1052.5	1105.4		2280			4,5,SHF
	408	TRST	49 GB	1052.5	1106.7	20.8	1600			
	228	HARS	47 GB	1052.7	1053 U	65	8000 D	1100		
	228	HARS		1052.7	1058		4300			
	228	HARS		1052.7	1105.5		2700			
	228	HARS		1052.7	1117		3900			
	228	HARS		1052.7	1122		4400			
	127	TORN	25 R	1052.8	1058 D	15 U	1300 D			INCOMPLETE
	237	TRST	47 GB	1052.9	1053.1	130 D	17500			20R
	237	TRST		1052.9	1057.4		10500			0
	237	TRST		1052.9	1103.9		5500			0
	237	TRST		1052.9	1122		5600			40L
	237	TRST		1052.9	1145.1		8000			86L
	202	IZMI	46 C	1053.5	1054	76.7	3000	500		
	202	IZMI	47 GB	1053.5	1054	1.5	3000	1200		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	202	IZMI	48 C	1055	1102	18	2200	1000		
	1420	ARCE		1102.9	1105.2	10.1				
	18	MCMA	42 SER	1103	1200	57			2	
	9100	ARCE		1103.7	1105.2	12.4				
	1420	ARCE		1113	1119.2	18.2				
	202	IZMI	48 C	1113	1121.5	31	2400	1400		
	408	TRST	49 GB	1113.3	1123.6	16.5	1600			
	6100	KISV	47 GB	1116	1122	14	1668			
	9100	ARCE		1116.1	1121.3	19.2				
	1420	ARCE	30 PBI	1131.2		80				
	1420	ARCE	46 C/F	1135	1154.5	44				
	1420	ARCE		1135	1141.7	9.3				
	408	TRST	49 GB	1135.2	1139.4	9.3	1000			
	9100	ARCE	30 PBI	1135.3		180				
	9400	HUAN	C	1142 E	1152.8U	35.1	886.8	391.6		R
	202	IZMI	47 GB	1144	1144.5	11	2300	1300		
	1420	ARCE		1144.3	1144.8	6.1				
	408	TRST	49 GB	1144.5	1145.7	13.4	1400 D			
	228	HARS		1144.8	1145.5		4600 D			
	9100	ARCE	4 S/F	1144.8	1153.8	36				
	6100	KISV	47 GB	1148	1154	37	1042			
	1420	ARCE		1150.4	1154.5	28.6				
	7000	SAOP	46 C	1153.4E	1153.4		16029	14		STAR BEFORE OBS
	408	TRST	49 GB	1216.9	1223	12	520			
	9400	HUAN	PBI	1217.1	1217.1	60.2	52.6	14.9		R
	202	IZMI	3 S	1220	1222.3	5	390	240		
	2800	OTTA	30 PBI	1225	1225	365	15.8	7.9		
	6100	KISV	3 S	1233	1247.5	22	32			
	408	TRST	48 C	1237.9	1239.6	1.9	1600			
	202	IZMI	41 F	1238	1247.5	10.2	700			
	2800	OTTA	1 S	1238.5	1239	3.5	3.2	1.6		
	2800	OTTA	3 S	1246	1247.1	3	12	3		
	1420	BOUL	8 S	1246	1246.5	1.5	7	2		
	9400	HUAN	S	1246.7	1247.1	1	11.5	5.7		0
	408	TRST	48 C	1246.8	1247.2	1.3	780			
	2800	OTTA	1 S	1312	1313	4	2.2	1.1		
	2800	OTTA	8 S	1351.9	1352	.7	5	1.7		
	2695	PENT	1 S	1416	1418	5	4.2	2		
	7000	SAOP	4 S/F	1452.3						END 1638.6
	606	SGMR	3 S	1609	1613.1	24	1218	487.2		4,5
	1420	BOUL	3 S	1610.5	1612.5	2.5D	23	8		
	1415	SGMR	3 S	1611	1612.7	9	37.8	15.1		4,5
	930	BORD	42 SER	1611	1626.3	19	232	6		
	4995	BOUL	4 SF	1611	1612.5U	3.5	207	69		
	2800	OTTA	4 S/F	1611	1612.5	3	110	38		
	2695	SGMR	3 S	1611	1612.7	3	129.9	52		4,5
	245	SGMR	49 GB	1611	1613	22.1	131.4	474.2		4,5
	245	SGMR	49 GB	1611	1623.8		1185.5			4,5
	410	SGMR	7 C	1611	1612.6	21	118.4	47.4		4,5
	410	SGMR	7 C	1611	1624		54.4			4,5
	2650	DWIN	3 S	1611	1612	2	110	30		
	10715	DWIN	3 S	1611	1612	2	250	50		
	1420	ARCE	4 S/F	1611.2	1612.5	2.4				
	10400	BERN	4 S/F	1611.2	1612.7	26	74	216		
	9400	HUAN	S	1611.3	1612.6	4.1	249.6	90		R
	1415	ATHN	3 S	1611.3	1612.8	2.8	18.4	5.5		
	4995	SGMR	3 S	1611.5	1612.5	2.5	236.4	94.6		4,5
	8800	SGMR	3 S	1611.7	1612.5	3.3	276.9	110.8		4,5
	2695	ATHN	4 S/F	1611.7	1612.7	2.3	105.3	31.6		
	4995	ATHN	4 S/F	1611.9	1612.8	18.5	291.9	87.6		
	15400	SGMR	3 S	1612	1612.7	4	168	67.2		4,5
	2695	BOUL	4 SF	1612	1613.5	2.5	108	36		
	9100	ARCE	3 S	1612	1612.8	3.2				
	8800	ATHN	4 S/F	1612.1	1612.8	20.9	413.7	124.1		
	237	TRST	47 GB	1612.2	1623.8	12.7	710			1L
	9400	HUAN	PBI	1615.4	1615.4	20.2	24.6	7.1		0
	2800	OTTA	2 S/F	1617	1618.5	2	7.2	3.4		
	7000	SAOP	4 S/F	1638.7	1648.9	3.2	33.5			
	10400	BERN	4 S/F	1647	1648.7	17	15	45		
	9400	HUAN	S	1647.4	1648.5	11.3	47.6	15		R
	9100	ARCE	3 S	1647.9	1648	8				
	245	SGMR	7 S	1658.5	1659.1	1.5	350	140		
	2800	OTTA	1 S	1658.5	1659	1	7.2	3.6		
	930	BORD	46 C	1658.6	1659.1	1	88	7		
	237	TRST	47 GB	1658.7	1659.1	11.5	920			5R
	606	SGMR	3 S	1658.8	1659.2	.8	485.1	194		
	1415	SGMR	1 S	1658.9	1659.2	1.1	4.2	1.7		
	410	SGMR	6 S	1659	1659.2	.8	99.9	40		
	930	BORD	41 F	1727.3	1727.3	.6	16	1		
	9400	HUAN	S	1730.3	1731.4	2	6.6	4.2		0
	930	BORD	41 F	1824	1824.2	.8	16	3		
	606	SGMR	3 S	1841	1841.4	1	221	88.4		
	930	BORD	41 F	1841	1841.2	.5	256	20		
	245	SGMR	6 S	1842	1842.8	1	215.8	86.3		
	1415	SGMR	3 S	1842.4	1842.8	.6	21.6	8.6		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	410	SGMR	6 S	1842.6	1842.8	.4	150	60		
	2800	OTTA	8 S	1842.9	1842.9	.1	9.4			
	9400	HUAN	S	2021	2022.5	6.5	16.4	10.4		O
	606	SGMR	3 S	2031	2031.9	4	156.2	62.5		
	9400	HUAN	S	2031.1	2033.1	6.4	21.3	8.2		O
	1415	SGMR	1 S	2031.5	2031.8	4.5	3.8	1.5		
	500	HIRA	46 C	2031.6	2032.4	3	90	20		SL
	700	SYDN	45 C	2205.2	2208.4	8.1				
	2695	PENT	23 GRF	2215	2231	210	8.2	4.1		
	4995	MANI	4 S/F	2220.4	2227.5	16.7	249.7	83.3		
	4995	SGMR	3 S	2225	2227.4	10	211.5	84.6		
	4995	BOUL	45 C	2225	2227.5U	13.5D	240	80		
	8800	SGMR	47 GB	2225	2230.7	12	831.6	332.6		
	9400	HUAN	S	2226	2226.8U	1.2	180.6	53.1		R
	2695	SGMR	3 S	2226	2227.6	4	29.6	11.8		
	1420	BOUL	4 SF	2226.5	2227.5	3.5D	57	19		
	2695	MANI	4 S/F	2226.6	2227.5	1.1	73.7	24.7		
	2800	OTTA	3 S	2226.7	2227.5	2	25.8	12.9		
	1415	MANI	4 S/F	2226.9	2227.3	1.1	39	13		
	15400	SGMR	47 GB	2227	2230.7	10	2595	1038		
	1415	SGMR	3 S	2227	2227.4	2	111.4	44.6		
	1400	SYDN	45 C	2227	2227.3	1.5				
	35000	SGMR	47 GB	2227.5	2230.6	7.5	2895	1158		
	35000	NAGO	47 GB	2228	2230	7	1470			
	2695	BOUL	3 S	2228	2229	2.5D	25	8		
	35000	NAGO	29 PBI	2235	2236	70	29			
	2695	PENT	8 S	2358	2358	.1	2.4			
	2695	PENT	8 S	2359	2359	.1	6			
	2695	PENT	3 S	2413	2413.1	2	44	11		
	2695	PENT	8 S	2420.1	2420.5	.5	4.2	2.1		
	2695	PENT	8 S	2448.8	2448.8	.1	5.4			
12	35000	NAGO	20 GRF	0001	0020	39	15			
	1415	MANI	22 GRF	0011.8	0013.2	11	48.8	16.3		
	2695	MANI	3 S	0012.9	0013.1	2.1	132.6	44.2		
	606	MANI	41 F	0012.9	0013	13.3	265.3	88.4		
	4995	MANI	41 F	0013	0013.1	9.3	46.6	15.5		
	700	SYDN	8 S	0020.2	0020.5	.5				
	100	HIRA	42 SER	0044	0048.5	5	15000			WL
	1400	SYDN	8 S	0046	0046.2	1				
	500	HIRA	46 C	0046.3	0047.3	2	240	60		WL
	700	SYDN	45 C	0046.3	0047.2	2.7				
	606	MANI	4 S/F	0047.1	0047.3	1.2	56.5	18.8		IG
	1400	SYDN	45 C	0052.3	0053.8	2.1				
	700	SYDN	1 S	0055.5	0055.8	.6				
	1400	SYDN	1 S	0055.6	0055.8	.4				
	1415	MANI	4 S/F	0055.8	0059.4	3.9	92.7	30.9		IG
	35000	NAGO	21 GRF	0220	0301	92 D	33			
	5730	IRKU	1 S	0242	0242.9	2	29	8		L
	4995	MANI	40 F	0248	0251	4.8	23.2	7.7		
	35000	NAGO	5 S	0255	0255	3	250			
	5730	IRKU	1 S	0255.3	0255.8	3	29	10		L
	700	SYDN	45 C	0303.8	0304.4	1.3				
	202	IZMI	44 NS	0500		420	60			
	260	ONDR	44 NS	0526 E		587 D	94			
	536	ONDR	43 NS	0556	0558.5	548	104			
	127	TORN	44 NS	0640 E	1208.2	520 D	1200	22		V=3
	410	SGMR	44 NS	0921 E	1000.3	895 D	44.5			3,5,CONT
	245	SGMR	44 NS	0921 E	1448.2	895 D	440			3,5,CONT
	100	HIRA	44 NS	2100 E	0230	480 D	150	65		
	808	ONDR	2 S/F	0558.3	0558.7	1	30	2		
	3100	CRIM	25 R	0715	1140		12			
	8900	BERN	20 GRF	0724.1	0726.7	5	5	14		O
	10400	BERN	20 GRF	0724.1	0726.7	5	7	21		
	113	POTS	48 C	0735.7	0736.2	13	500	1		
	6100	KISV	8 S	0806	0809.5	9	13			
	10400	BERN	20 GRF	0807.3	0809.4	2.5	4	13		
	8900	BERN	20 GRF	0807.3	0809.4	2.5	6	17		+15
	9100	ARCE	20 GRF	0809.1	0809.6	11.2				
	6100	KISV	42 SER	0855	0921.5	45	45			
	9100	ARCE	20 GRF	0900.1	0907.9	18				
	10400	BERN	20 GRF	0901.6	0907.6	50	8	23		
	8900	BERN	3 S	0901.6	0921.6	50	21	58		+11
	10400	BERN	3 S	0901.6	0921.6	50	21	61		
	8900	BERN	20 GRF	0901.6	0907.6	50	10	27		+3
	1420	ARCE	40 F	0902.8	0905.8	12				
	1470	BERL	40 F	0903	0906	12	13			
	9500	BERL	20 GRF	0903	0908	7	23			
	3000	BERL	40 F	0905	0906	10	8.5			
	3100	CRIM	1 S	0906	0909	3.5	10	3		
	3100	CRIM	1 S	0913.6	0913.7	.4	12	4		
	9500	BERL	4 S/F	0921	0921.6	5	47			
	8800	ATHN	4 S/F	0921	0921.7	4.9	50.9	15.3		
	4995	ATHN	3 S	0921.2	0924.7	3.8	17	5.1		
	9100	ARCE	3 S	0921.2	0921.8	1.2				

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	9100	ARCE	29 PBI	0922.4		6.8				
	113	POTS	48 C	0934.5	0959.5	46	2100	5		
	234	POTS	48 C	0936.3	1010.1	41	200	1		
	237	TRST	41 F	0936.6	0936.8	.4	370			4R
	930	BORD	41 F	0959.4	1000.3	1	38	2		
	237	TRST	42 SER	1005.6	1010.2	3.7	235			5L
	10400	BERN	45 C	1011.9	1019.3	27	8	25		
	8900	BERN	45 C	1011.9	1016.7	27	9	24		+3
	6100	KISV	21 GRF	1012	1014	26	26			
	9500	BERL	20 GRF	1012.5	1019.5	21	21			
	9100	ARCE	22 GRF	1012.7	1019.5	30				
	1420	ARCE	1 S	1019.7	1019.8	.4				
	237	TRST	5 S	1031.7	1031.8	.1	300	97		0
	2800	OTTA	1 S	1050	1050.9	2	3	1.4		
	408	TRST	42 SER	1054.3	1058.1	3.8	20			
	7000	SAOP	22 GRF	1116.5	1327.8		34	18		2 COMPONENTS
	6100	KISV	42 SER	1140	1211	50	15			
	8900	BERN	20 GRF	1144	1206.6	40	.7	18		0
	10400	BERN	20 GRF	1144	1206.6	40	7	20		
	1420	ARCE	1 S	1145	1145.3	.8				
	2800	OTTA	1 S	1145.5	1146	1	1.6	1		
	9100	ARCE	2 S/F	1145.8	1146.1	1				
	808	ONDR	45 C	1157.7	1157.7	1.5	40			
	237	TRST	42 SER	1207.9	1210.3	4.9	5200			0
	260	ONDR	46 C	1208.2	1209.2	5	216 D	25		
	113	POTS	45 C	1208.3	1210.3	3.7	800	70		
	234	POTS	2 S/F	1208.5	1210.5	5.5	3400	250		
	245	SGMR	48 GB	1208.5	1210.4	5.4	3800	1140		5
	9100	ARCE	40 F	1208.7	1210.6	5.6				
	1420	ARCE	40 F	1208.8	1210.7	3.4				
	408	TRST	42 SER	1209.2	1209.2	1.6	19			
	2800	OTTA	1 S	1210	1210.8	3.5	1.6	.7		
	9400	HUAN	S	1210.1	1210.5	1.5	17.4	8.9		0
	234	POTS	45 C	1238	1238.2	.7	140	30		
	113	POTS	45 C	1238	1238.2	.7	100	25		
	237	TRST	41 F	1238.1	1238.4	.5	610			25R
	113	POTS	48 C	1301	1301.5	6.6	1800	10		
	2800	OTTA	1 S	1301.5	1302.7	3.5	3.4	1.2		
	234	POTS	48 C	1302.6	1307.1	4.9	140 E	1		
	808	ONDR	8 S	1302.6	1302.6	.3	65			
	237	TRST	41 F	1306.9	1307.2	.6	770			9R
	6100	KISV	42 SER	1308	1326	58	26			
	9500	BERL	20 GRF	1310	1331	50	23			
	3000	BERL	21 GRF	1310	1336	50	10			
	2800	OTTA	21 GRF	1310	1334	125	7.2	3		
	237	TRST	41 F	1317.2	1319.3	2.8	340			7R
	1470	BERL	21 GRF	1318	1336	42	3.2			
	113	POTS	45 C	1319.3	1319.5	.7	400	40		
	2800	OTTA	1 S	1320.5	1321	2	2.8	1.4		
	9400	HUAN	S	1320.5	1330.5	45.7	25.3	10.3		R
	10400	BERN	20 GRF	1324	1325	24	3 U	10 U		
	4995	ATHN	20 GRF	1324	1329.2	19.1	10.4	6.2		
	8900	BERN	20 GRF	1324	1325	24	4	13		0
	8800	ATHN	20 GRF	1324.2	1326.5	16.7	15.7	9.4		
	2800	OTTA	8 S	1335.7	1336	.7	1.8	1		
	237	TRST	41 F	1337	1337.2	.3	1100			5R
	808	ONDR	41 F	1349.5	1349.5	7	28	2		
	4995	BOUL	4 SF	1351.5	1353	3.5	17	6		
	2800	OTTA	4 S/F	1352	1353.6	6	10.2	4		
	1420	ARCE	4 S/F	1352.1	1353.5	6				REC DIS 9100MHZ
	4995	SGMR	3 S	1352.2	1354.2	4.8	11.7	4.7		
	1415	SGMR	3 S	1352.3	1353.6	3.7	11	4.4		
	2695	SGMR	3 S	1352.4	1354.6	6.1	22	8.8		
	3000	BERL	4 S/F	1353	1353.5	3.5	13			
	1470	BERL	4 S/F	1353	1353.6	4	9			
	1420	BOUL	2 SF	1353	1353.5	2	6	2		
	606	SGMR	3 S	1353.4	1353.5	1.6	13.9	5.6		
	9100	ARCE	22 GRF	1434.3	1449	35				
	234	POTS	48 C	1449.3	1457	8.9	350	10		
	113	POTS	48 C	1451.2	1455.6	7	1400	15		
	237	TRST	41 F	1456.5	1458	2	600 D			7L
	1420	ARCE	2 S/F	1457.7	1457.9	.8				
	2650	DWIN	45 C	1500	1506	10	115	20		
	10715	DWIN	45 C	1500	1506	10	700	100		
	7000	SAOP	46 C	1521	1605.6		886	23		2 COMPONENTS
	1420	ARCE	40 F	1541.1	1542	2				
	2800	OTTA	23 GRF	1550	1840	310	10.4	5.5		
	4995	BOUL	45 C	1558.5	1601	4	74	25		
	1420	ARCE	40 F	1558.8	1559.1	3.5				REC DIS 9100MHZ
	9400	HUAN	S	1559	1605.7	8.6	248.6	58.5		R
	1420	BOUL	45 C	1559	1600	3	90	30		
	2800	OTTA	4 S/F	1559.5	1600.7	5	15.2	7.4		
	1415	SGMR	45 C	1559.5	1600.3	10.5	156	47.9		3G,SWF
	1415	SGMR	45 C	1559.5	1605.8		52.9			3G,SWF
	2695	SGMR	3 S	1559.7	1605.8	10.3	149	47		3G,SWF

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
	4995	SGMR	3	S	1559.7	1605.8	10.3	435	131		3G,SWF
	2695	ATHN	4	S/F	1559.9	1605.7	13.8	126	37.8		
	410	SGMR	48	GB	1600	1605.4		658			3G,SWF
	1415	ATHN	4	S/F	1600	1600.2	9.1	79.6	23.9		
	35000	SGMR	47	GB	1600	1606.7	9	975	293		3G,SWF
	15400	SGMR	47	GB	1600	1606.7	10	632	190		3G,SWF
	410	SGMR	48	GB	1600	1600.3	7.5	195	197		3G,SWF
	8800	SGMR	47	GB	1600	1605.8	10	761	228		3G,SWF
	8800	ATHN	4	S/F	1600	1605.8	23.9	1368.4	410.5		
	4995	ATHN	4	S/F	1600	1605.8	16.8	607.4	182.2		
	10400	BERN	47	GB	1600.1	1605.7	45	250	736		
	10400	BERN	20	GRF	1600.1	1601.9	45	20	60		
	2695	BOUL	45	C	1600.5	1603	4	16	5		
	245	SGMR	48	GB	1600.5	1600.8	9.5	3760 D	1128 D		3G,SWF
	245	SGMR	48	GB	1600.5	1605.7		158			3G,SWF
	237	TRST	41	F	1601.5	1601.8	.8	46000			0
	606	SGMR	3	S	1601.5	1603.7	7.5	109	32.7		3G,SWF
	4995	BOUL	4	SF	1604	1606	4 D	371	124		
	1420	ARCE	4	S/F	1604.2	1605	2.4				
	1420	BOUL	3	S	1604.5	1606	5.5	43	14		
	2800	OTTA	3	S	1605	1605.9	5	118	28.2		
	9100	ARCE	4	S/F	1605.1	1605.8	3.7				RECORDDISTURBED
	2695	BOUL	3	S	1606	1606.5	5 D	117	39		
	1420	ARCE	29	PBI	1606.6		30				
	9400	HUAN		PBI	1607.6	1607.6	32	42.8	23.2		R
	9100	ARCE	29	PBI	1608.8		54				
	2800	OTTA	8	S	1658	1658.2	.5	6.4			
	7000	SAOP	4	S/F	1733.5	1800	.2	195.3	2		
	9400	HUAN		S	1751.8	1759.7	19.9	224.8	61.9		0
	4995	BOUL	4	SF	1758.5	1759	2	50	17		
	10400	BERN	46	C	1759	1800	16 D	98	284		
	1420	BOUL	8	S	1759	1759.5	1.5	11	4		
	245	SGMR	48	GB	1759.2	1800.3	3.8	5970	2388		3G
	237	TRST	41	F	1759.2	1800.1	1	8500			0
	15400	SGMR	3	S	1759.5	1800	2.5	368	147		3G
	606	SGMR	3	S	1759.5	1759.7	2	55.9	22.4		3G
	8800	SGMR	3	S	1759.5	1800	2.5	284	113		3G
	35000	SGMR	3	S	1759.5	1800	1.5	339	135		3G
	4995	SGMR	3	S	1759.6	1800	2.4	53.5	21.4		3G
	1415	SGMR	3	S	1759.7	1800.1	1.8	19.1	7.6		3G
	2695	SGMR	1	S	1759.7	1800	1.3	4.2	1.7		3G
	9100	ARCE	3	S	1759.7	1800.1	2				AT SUNSET
	410	SGMR	7	S	1759.7	1800.3	2.3	482	193		3G
	2800	OTTA	1	S	1759.9	1800	1	6.4			
	9400	HUAN		S	1825.8	1836.7	30.2	19	8.5		0
	100	HIRA	46	C	1935 E	2020	85 D	300	150		
	4995	BOUL	45	C	2048	2050.5	4	44	15		
	1420	BOUL	45	C	2048	2051	3.5	7	2		
	4995	SGMR	3	S	2048.3	2055	11.7	59.1	23.6		CONT,SWF
	200	HIRA	41	F	2048.5	2049.5	8	250			WL
	1415	SGMR	20	GRF	2048.5	2051.2	11.5	6.1	2.4		CONT,SWF
	2800	OTTA	46F	C	2049	2051	4	25.2	11.4		
	9400	HUAN		C	2049	2054.7	19.7	274.4	37.8		R
	8800	SGMR	3	S	2049	2055	11	347	139		CONT,SWF
	15400	SGMR	3	S	2049	2054.9	11	473	189		CONT,SWF
	2695	BOUL	2	SF	2050	2050.5U	1 D	16	5		
	2695	SGMR	3	S	2050.1	2051.1	9.9	22	8.8		CONT,SWF
	2695	BOUL	45	C	2051.5	2052	3.5D	16	5		
	4995	BOUL	8	S	2053	2054.5	1.5	50	17		
	1420	BOUL	1	S	2053	2053.5	1	2	1		
	1420	BOUL	45	C	2116.5	2117.5	2.5	6	2		
	4995	BOUL	4	SF	2116.5	2117	2	60	20		
	2800	OTTA	3	S	2117.1	2117.5	2	18	9		
	9400	HUAN		S	2117.1	2117.3	6.2	51.6	11		R
	2695	BOUL	4	SF	2118	2118.5U	2 D	16	5		
	9400	HUAN		S	2143.4	2149.3	12.8	16.6	6.5		R
	700	SYDN	8	S	2225.7	2225.8	.3				
	1400	SYDN	45	C	2226.5	2226.6	1.2				
13	4995	BOUL	4	SF	0012	0012.5	2	43	14		
	1420	BOUL	4	SF	0012.5	0013	2	14	5		
	100	HIRA	7	C	0019	0019.8	1.5	30000	9999.9		ML
	200	HIRA	7	C	0019	0019.8	1.5	120	100		WR
	1415	MANI	1	S	0019.2	0019.4	.5	3	1.2		
	2695	MANI	3	S	0019.2	0019.4	1	19.7	6.5		
	4995	MANI	3	S	0019.2	0019.6	2.4	10.5	3.5		I
	606	MANI	3	S	0019.3	0019.5	1	12.1	4		
	2695	PENT	8	S	0019.7	0019.7	.2	7.6			
	1420	BOUL	40	F	0046.5	0053.5	12 D	11	4		
	1420	BOUL	1	S	0100.5	0101	1.5	7	2		
	1400	SYDN	2	S	0101.5	0101.6	.5				
	8900	BERN	1	S	0538.5	0540.9	15	8	23		0
	10400	BERN	1	S	0538.5	0540.9	15	9	28		
	260	ONDR	44	NS	0600 E		550 D	162			
	410	SGMR	44	NS	0922 E	1627.8	894 D	31.5			3

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	245	SGMR	44	NS	0922 E	2024.3	894 D	25.3			3
	10400	BERN	46	C	0624.7	0625.3	6	6	19		
	8900	BERN	46	C	0624.7	0625.3	6	7	20		0
	234	POTS	1	S	0733.9	0734	1	175	60		
	113	POTS	1	S	0733.9	0734	.2	210	70		
	237	TRST	41	F	0734	0734	.2	285			0
	127	TORN	2	S/F	0738	0742	10	9.6	4.8		
	6100	KISV	21	GRF	0739	0744	17	15			
	10400	BERN	20	GRF	0741.5	0743.9	17	4	13		
	8900	BERN	20	GRF	0741.5	0743.9	17	6	16		0
	9100	ARCE	2	S/F	0743	0744.3	7				
	113	POTS	1	S	0811	0811.1	.6	120	40		
	234	POTS	1	S	0811	0811.1	1.1	1000	300		
	202	IZMI	8	S	0811	0811.2	.5	1200	550		
	8900	BERN	46	C	0811.2	0811.5	3.5	5	15		0
	237	TRST	41	F	0811.2E	0811.2	.2D	1400			3L
	10400	BERN	46	C	0811.2	0811.5	3.5	5	15		
	9100	ARCE	1	S	0811.3	0812.2	3.8				
	8900	BERN	22	GRF	0832.2	0833	4.5	5	15		0
	10400	BERN	22	GRF	0832.2	0833	4.5	4	13		
	9100	ARCE	1	S	0832.8	0834.2	5				
	1420	ARCE	4	S/F	0836.7	0836.9	.9				
	808	ONDR	3	S	0837	0837	.3	50			
	9100	ARCE	40	F	0901.5	0902.1	3				
	6100	KISV	8	S	0912	0913.5	3	9			
	6100	KISV	42	SER	0945	1017	58	10			
	1420	ARCE	40	F	0955.9	0956.2	4.8				
	1470	BERL	42	SER	0955.9	0956.3	12	11			
	930	BORD	41	F	0956	0956.4	4.3	30	3		
	113	POTS	45	C	0959.4	1000	1	250	7		
	8400	BERN	1	S	1013.2	1016.6	10	7	20		0
	8900	BERN	1	S	1013.2	1016.6	10	7	19		0
	10400	BERN	1	S	1013.2	1016.6	10	6	17		
	9500	BERL	4	S/F	1014	1016.6	8	14			
	9100	ARCE	1	S	1016.4	1016.7	1.2				
	2800	OTTA	20	GRF	1100	1115	105	4.6	2.3		
	9100	ARCE	1	S	1148.8	1149	.6				
	1420	ARCE	1	S	1151.3	1151.6	.6				
	1470	BERL	3	S	1151.4	1151.7	.7	6.9			
	930	BORD	41	F	1254.7	1254.8	.4	16	2		
	2800	OTTA	23	GRF	1340	1450	180	6	3		
	536	ONDR	3	S	1348.7	1348.7	.3	14			
	7000	SAOP	22	GRF	1422						
	7000	SAOP	20	GRF	1422						
	7000	SAOP	1	S	1422	1627		10.5	38		
	2800	OTTA	8	S	1456.5	1456.5	.2	5			
	1420	ARCE	4	S/F	1510.5	1510.9	.8				
	930	BORD	41	F	1510.7	1511	.7	274	3		
	4995	BOUL	45	C	1625	1626	3	15	5		
	2800	OTTA	1A	S	1626	1626.9	1.5	3	1.5		
	9400	HUAN		S	1626.1	1626.9	1.4	10.1	6.2		R
	2800	OTTA	8	S	1626.9	1626.9	.1	9.4			
	2695	PENT	1	S	2001.8	2003	2.5	3.4	1.5		
	1420	BOUL	45	C	2002	2006	11	132	44		
	4995	BOUL	45	C	2004	2005.5	3.5	18	6		
	2695	SGMR	3	S	2005	2006.1	3	18.9	7.6		
	4995	SGMR	3	S	2005	2006	3	24.8	9.9		
	1415	SGMR	3	S	2005	2006	4	208	83.1		
	2695	PENT	4	S/F	2005.2	2006	3.5	17.6	7.8		
	1420	BOUL	40	F	2021.5	2023.5	5	14	5		
	2800	OTTA	2	S/F	2022	2022.8	6	5.4	2.6		
	1420	BOUL	2	SF	2152.5	2153.5	1.5	7	2		
14	1420	BOUL	2	SF	0008.5	0009	1.5	6	2		
	4995	BOUL	8	S	0018	0018.5	1.5	20	7		
	10400	BERN	3	S	0525.6	0527.4	5.5	8	24		
	8400	BERN	3	S	0525.6	0527.4	5.5	17	46		0
	4995	ATHN	3	S	0526.5	0527.2	6.7	27.2	8.2		
	8800	ATHN	3	S	0526.8	0527.3	4.4	21	6.3		
	2695	ATHN	3	S	0527.3	0527.7	.6	3.5	1.1		
	260	ONDR	44	NS	0547 E		564 D	142			
	410	SGMR	44	NS	0922 E	1928.3	893 D	53.6			
	245	SGMR	44	NS	0922 E	2001.9	893 D	29.5			
	9100	ARCE	1	S	0738.4	0738.5	1.7				
	1470	BERL	1	S	0819.6	0820.8	1.9	1.8			
	930	BORD	41	F	0820	0820.8	1	33	6		
	1470	BERL	2	S/F	0932.8	0933.2	1.5	1.9			
	237	TRST	41	F	0953.9	0955.4	1.8	185			0
	4995	ATHN	3	S	1059.9	1102.8	15.1	20.1	6		
	8800	ATHN	3	S	1059.9	1102.8	14.3	20.6	6.2		
	9100	ARCE	22	GRF	1100.6	1103.1	22				
	1470	BERL	42	SER	1113.5	1120.4	7.3	13			
	1420	ARCE	8	S	1119.9	1120.1	.5				
	9100	ARCE	1	S	1158.7	1201.7	3.8				
	3000	BERL	2	S/F	1200.1	1202.4	3.6	4.2			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	1420	ARCE	4 S/F	1200.3	1200.5	1.6				
	1470	BERL	4 S/F	1200.4	1200.6	1.6	7.7			
	113	POTS	45 C	1205.1	1205.8	1.3	600	20		
	234	POTS	45 C	1331.2	1331.7	1.2	1800	400		
	237	TRST	41 F	1331.4	1331.7	.5	2450			
	2800	OTTA	1 S	1331.5	1331.8	1	2.8	1.2		0
	237	TRST	41 F	1513.7	1513.9	.2	175			
	2800	OTTA	1 S	1535	1535.5	3	2.2	.8		0
	237	TRST	41 F	1535.3	1535.3	.6	375			6L
	7000	SAOP	41 F	1556.5						3
	7000	SAOP	4 S/F	1556.5	1559.2	.3	55.5			
	4995	BOUL	8 S	1558	1558.5	1.5	37	12		
	8400	BERN	3 S	1558	1559.1	6	15	41		0
	10400	BERN	3 S	1558	1559.1	6	16	47		
	9100	ARCE	3 S	1558.3	1559.3	2.8				
	9400	HUAN	S	1558.5	1559	3.2	43.1	11.8		0
	8800	ATHN	3 S	1559	1559.2	1.2	41.3	12.4		
	237	TRST	41 F	1559	1559	.4	665			4L
	4995	ATHN	3 S	1559	1559.2	1.3	43.6	13.1		
	2800	OTTA	2 S/F	1559	1559.1	1	9.8	2.5		
	2800	OTTA	20 GRF	1613	1631	40	7.4	2.5		
	7000	SAOP	4 S/F	1623.5	1630.3	2.8	37.6			
	18	MCMA	6 S	1624	1626	7			1	
	9400	HUAN	S	1624.2	1632.4	27.6	18.2	6.8		R
	9100	ARCE	20 GRF	1625.7	1630.6	20				
	8400	BERN	20 GRF	1628	1630.3	70 U	16	31		0
	10400	BERN	20 GRF	1628	1630.3	70 U	17	50		
	4995	ATHN	3 S	1629.7	1630.3	5.6	16.8	5		
	9400	HUAN	S	1629.7	1630.3	1.6	13.2	9.1		R
	8800	ATHN	3 S	1629.8	1630.3	4.1	15.5	4.6		
	9400	HUAN	S	1726.5	1727.5	1.7	11.6	5.8		0
	1420	BOUL	4 SF	1730.5	1732.5	5	13	4		
	18	MCMA	6 S	1731	1736	7			2	
	245	SGMR	48 GB	1731.3	1734.5		1150			2,5
	245	SGMR	48 GB	1731.3	1733	4.4	1210	484		2,5
	410	SGMR	6 S	1731.4	1734.2	4.6	31.5	12.6		2,5
	606	SGMR	3 S	1731.4	1734.2	5.7	120	48		2,5
	1415	SGMR	3 S	1731.5	1733.1	8.3	37.2	15		2,5
	4995	BOUL	45 C	1731.5	1732	2	15	5		
	4995	SGMR	3 S	1731.5	1734.1	8.6	16	6.4		2,5
	2695	SGMR	3 S	1731.5	1732.8	8.2	13.5	5.4		2,5
	228	HARS	45 C	1731.7	1733	3.5	1900 U	200		
	7000	SAOP	46 C	1732	1732.8	.2	19	16		2 COMPONENTS
	930	BORD	46 C	1732	1733.2	4	161	7		
	237	TRST	42 SER	1732.1	1732.9	2.3	3450			0
	237	TRST		1732.1	1734.2		3700			4L
	2800	OTTA	3 S	1732.5	1732.9	3	11.6	5.8		
	9400	HUAN	S	1812.7	1827.6	26.8	14.9	3.6		R
	2800	OTTA	20 GRF	2133	2140	30	3.4	1.7		
	2800	OTTA	21 GRF	2216	2230	45	3.4	2		
	2800	OTTA	1 S	2223	2223.5	1.5	1.6	.8		
15	4995	MANI	3 S	0052.3	0054.5	7.7	149.5	49.8		
	2695	PENT	3 S	0053.5	0054.7	2.5	31.8	8		
	1415	MANI	47 GB	0053.9	0054.5	2.5	635	204.8		
	2695	MANI	1 S	0054	0054.5	.6	9.2	3.1		
	200	HIRA	46 C	0054	0054.5	3	1500	300		0
	100	HIRA	46 C	0054	0055	1.5	450	250		0
	500	HIRA	46 C	0054	0054.5	4	950	100		NR
	35000	NAGO	20 GRF	0054	0057	84	23			
	606	MANI	3 S	0054.2	0054.5	1.8	475	158		
	2695	PENT	29 PBI	0056	0056	20	4.8	2.4		
	2695	PENT	21 GRF	0124	0140	30 D	5.8			
	2695	PENT	4 S/F	0130	0134	9	26.4	11		
	4995	BOUL	4 SF	0130 U	0133.5	4 U	51	17		
	1420	BOUL	4 SF	0132	0133.5	2	23	8		
	2695	BOUL	4 SF	0132.5E	0135.5U	4 D	22	7		
	4995	MANI	3 S	0404	0404.7	1.7	42.2	14.1		I
	5730	IRKU	1 S	0404	0404.7	13	50	10		L
	4995	ATHN	4 S/F	0404.1	0404.6	1.1	61.8	18.5		
	2695	ATHN	3 S	0404.2	0404.7	1	32.9	9.9		
	1415	MANI	3 S	0404.2	0404.7	2.3	76.5	25.5		
	2695	MANI	3 S	0404.2	0404.7	1.3	26.3	8.8		
	606	MANI	4 S/F	0404.2	0404.4	1.2	73.2	24.4		
	1415	ATHN	4 S/F	0404.3	0404.7	.9	74.1	22.2		
	8800	ATHN	4 S/F	0404.3	0404.6	.9	73.4	22		
	1415	MANI	1 S	0426.7	0427	1.3	7.5	2.5		
	260	ONDR	44 NS	0651 E		519 D	71			
	245	SGMR	44 NS	0923 E	1949.3	892 D	142			
	410	SGMR	44 NS	0923 E	1949.5	892 D	34			
	127	TORN	43 NS	1053 U	1103.2	180 U	95	1 U		V=1
	10400	BERN	3 S	0744.5	0746.8	10	26	76		
	8400	BERN	3 S	0744.5	0746.8	10	25	67		+20
	8900	BERN	3 S	0744.5	0746.8	10	27	73		+20
	9500	BERL	3 S	0745	0746.7	9	64			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	9100	ARCE	3 S	0745.6	0746.9	7				
	8800	ATHN	4 S/F	0745.9	0746.7	3.8	78.6	23.6		
	4995	ATHN	3 S	0746	0746.6	3.2	16.3	4.9		
	6100	KISV	8 S	0746	0747	4	35			
	15000	KISV	8 S	0746	0747	4	215			
	8800	ATHN	3 S	0759.5	0802.1	9.8	31.4	9.4		
	8900	BERN	3 S	0800.2	0802.2	7	8	21		0
	10400	BERN	3 S	0800.2	0802.2	7	9	25		
	8400	BERN	3 S	0800.2	0802.2	7	7	19		0
	4995	ATHN	3 S	0800.3	0802.1	3.9	9.8	2.9		
	15000	KISV	3 S	0801	0802	2	47			
	6100	KISV	3 S	0801	0802	2	13			
	9500	BERL	3 S	0801.6	0802.2	11	21			
	9100	ARCE	1 S	0801.8	0802.5	4.5				
	10715	DWIN	3 S	0806	0808	5	100	30		
	536	ONDR	2 S/F	0902.6	0903.3	1.5	18	3.7		
	536	ONDR	27 RF	1050	1223.6	110	72	18		
	1470	BERL	20 GRF	1059	1113	29	16			
	808	ONDR	27 RF	1100	1221	97	70	31		
	930	BORD	40 F	1100	1113	48	22	5		
	2800	OTTA	20 GRF	1100	1113	90	13.6	4.6		
	1420	ARCE	20 GRF	1100	1112.8	36				
	3000	BERL	20 GRF	1104	1113	26	9			
	930	BORD	42 SER	1155	1211	28	123	11		
	234	POTS	45 C	1303.1	1306	5.6	650	80.		
	7000	SAOP	3 S	1304	1306	.5	27.3	55		
	1420	BOUL	1 S	1304.5U	1305.5U	2.5U	3 U	1		
	808	ONDR	4 S/F	1304.8	1305.6	2	72	14		
	8400	BERN	4 S/F	1305	1306	5	8	22		+29
	8900	BERN	4 S/F	1305	1306	5	9	24		+18
	10400	BERN	4 S/F	1305	1306	5	6	19		
	3000	BERL	4 S/F	1305	1306	5	8.2			
	4995	BOUL	8 S	1305	1305.5	1	20	7		
	536	ONDR	4 S/F	1305	1305.4	1	94	3		
	6100	KISV	8 S	1305	1306	5	26			
	1470	BERL	4 S/F	1305.1	1306	2.9	6.2			
	9500	BERL	4 S/F	1305.2	1306	3.8	15			
	2800	OTTA	1 S	1305.2	1306	1.8	6.6	3.3		
	1420	ARCE	2 S/F	1305.2	1305.8	1.6				
	930	BORD	41 F	1305.3	1305.9	1.7	28	4		
	8800	ATHN	3 S	1305.4	1305.8	2	21.6	6.5		
	4995	SGMR	3 S	1305.4	1305.9	2.2	24.4	7.3		
	1415	SGMR	1 S	1305.5	1306	1.5	9	2.7		
	237	TRST	41 F	1305.5	1305.9	.8	750			0
	2695	SGMR	1 S	1305.5	1305.9	1.5	8.7	2.6		
	8800	SGMR	3 S	1305.5	1305.8	1.6	19.7	5.9		
	4995	ATHN	3 S	1305.5	1305.9	1.9	22.1	6.6		
	410	SGMR	6 S	1305.6	1306	.9	88.4	26.5		
	245	SGMR	7 S	1305.6	1306	.9	493	148		
	2695	ATHN	3 S	1305.6	1305.8	1	7.3	2.2		
	606	SGMR	3 S	1305.7	1306.1	.8	493	148		
	1415	ATHN	3 S	1305.7	1305.8	.8	6.1	1.8		
	15400	SGMR	1 S	1305.7	1305.9	.9	7.9	2.4		
	9100	ARCE	1 S	1305.8	1306.1	.6				
	9100	ARCE	29 PBI	1306.4		4.7				
	6100	KISV	3 S	1343	1344	4	7			
	234	POTS	2 S/F	1343.4	1343.6	2.3	250	20		
	237	TRST	41 F	1343.9	1344.3	.5	435			2L
	7000	SAOP	4 SC	1415	1950		112.2	35		3 COMPONENTS
	4995	BOUL	47 GB	1422.5	1425.5	6.5	1072	357		
	930	BORD	46 C	1423	1425	21	208	15		
	3000	BERL	47 GB	1423	1425.3	42	298			
	1420	BOUL	3 S	1423	1425.5	4.5	150	50		
	9500	BERL	47 GB	1423.3	1425.1	42	1130			
	4995	ATHN	47 GB	1423.3	1425.2	33.1	1956	586.8		
	8800	SGMR	47 GB	1423.5	1425.2	11.5	1830	549		5,SHF
	9400	HUAN	S	1423.5	1425	5.3	281.7	91.5		R
	1470	BERL	47 GB	1423.5	1425.6	42	159			
	8800	ATHN	47 GB	1423.7	1425.2	49.5	2698	809.4		
	536	ONDR	45 C	1423.7	1424.3	6.5	136	67		
	15400	SGMR	47 GB	1423.7	1425.2	10.6	1170	351		5,SHF
	10400	BERN	47 GB	1423.8	1425.2	25	420 D	1218 D		
	8400	BERN	47 GB	1423.8	1425.2	25	505	1346		+13
	2800	OTTA	3 S	1423.8	1425	16.2	450	48		
	2695	ATHN	47 GB	1423.8	1425.3	25.7	615	184.5		
	4995	SGMR	47 GB	1423.8	1425.3	12.3	1360	408		5,SHF
	1415	SGMR	3 S	1423.8	1425.5	14.9	202	60.6		5,SHF
	8900	BERN	47 GB	1423.8	1425.2	25	500	1353		+14
	2695	SGMR	47 GB	1423.9	1425.4	13.5	600	180		5,SHF
	9100	ARCE	3 S	1423.9	1425.4	7.3				
	1415	ATHN	4 S/F	1423.9	1425.4	27.4	177.5	53.2		
	1420	ARCE	3 S	1423.9	1425.4	6.2				
	606	SGMR	47 GB	1424	1424.8	14.7	1190	357		5,SHF
	808	ONDR	45 C	1424	1426.2	6	111	31		
	260	ONDR	3 S	1424		6	216 D	75		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	245	SGMR	49 GB	1424.2	1425.1	13.2	7670	2300		5,SWF
	234	POTS	45 C	1424.3	1424.7	7.8	12000	2500		
	410	SGMR	49 GB	1424.3	1425.3	14.5	596	179		5,SWF
	228	HARS	45 C	1424.4	1425 U	1.2	2300 D	800		
	113	POTS	45 C	1424.5	1425.4	7.1	35000	9000		
	2695	BOUL	47 GB	1424.5	1426	15 D	537	179		
	237	TRST	47 GB	1424.5	1424.9	1	9500			8R
	127	TORN	47 GB	1424.6	1424.7D	4.5U	1300 D	300 D		INCOMPLETE
	35000	SGMR	3 S	1424.6	1425.1	2.1	349	105		5,SWF
	1420	BOUL	30 PBI	1427.5	1427.5	3.5	23	8		
	4995	BOUL	30 PBI	1429.5	1429.5	5.5	64	21		
	1420	ARCE	29 PBI	1430.1		33				
	9400	HUAN	PBI	1430.8	1430.8	36.3	14.9	10.3		0
	9100	ARCE	29 PBI	1431.2		37				
	2800	OTTA	29 PBI	1440	1440	50	6.8	3.4		
	10715	DWIN	45 C	1443		15	800 D			
	2650	DWIN	45 C	1443		25	180 D			
	536	ONDR	2 S/F	1445	1446	1	21			
	9100	ARCE	20 GRF	1516.3	1518.8	67.5				
	9400	HUAN	S	1517.6	1518.7	5	13.2	4.3		0
	9400	HUAN	S	1738.8	1751.6	30.2	11.6	5.1		0
	4995	BOUL	45 C	1946 E	1949.5	10.5D	50	17		
	1420	BOUL	45 C	1947.5	1950 U	7	11	4		
	2800	OTTA	4 S/F	1948.5	1950	3.5	32	15		
	9400	HUAN	C	1948.8	1950.1	6.2	66.3	18.6		R
	2695	BOUL	4 SF	1949.5	1951	8.5D	28	9		
	2800	OTTA	30 PBI	1952	1952	15	4.4	2		
	2800	OTTA	1 S	1954	1954.4	1.5	7.6	3.8		
	2695	PENT	20 GRF	2310	2440	160	2.8	1.4		
16	4995	BOUL	4 SF	0052	0053.5	5.5U	117	39		
	1420	BOUL	8 S	0053.5	0054	1.				
	2695	BOUL	3 S	0055	0055.5	4 U	22	7		
	200	HIRA	7 C	0431	0431.2	1	300	80		0
	100	HIRA	46 C	0431	0431.3	1.5	830	350		
	6100	KISV	4 S/F	0647	0648	6	9			
	6100	KISV	2 S/F	0822	0824	4	3			
	410	SGMR	44 NS	0924 E	1332.4	890 D	29.6			3
	245	SGMR	44 NS	0924 E	1559.1	890 D	29.9			3
	7000	SAOP	3 S	1223.4	1225.8	.8	21.6	26		
	7000	SAOP	41 F	1223.4						2
	9400	HUAN	S	1225.1	1225.7	2	14	7		R
	9100	ARCE	1 S	1225.3	1225.8	2				
	6100	KISV	29 PBI	1233	1235	12	14			
	4995	ATHN	3 S	1245.7	1248.8	5.6	13.4	8		
	15000	KISV	8 S	1247	1249	5	97 D			
	8800	ATHN	4 S/F	1247.3	1248.8	5.4	87.8	26.4		
	8900	BERN	3 S	1248	1248.9	21	24	65		+10
	10400	BERN	3 S	1248	1248.9	21	33	97		
	8400	BERN	3 S	1248	1248.9	21	21	57		+5
	9500	BERL	4 S/F	1248	1248.8	13	63			
	9400	HUAN	S	1248.2	1248.6	4.6	84.3	21.1		R
	7000	SAOP	3 S	1248.2	1248.8	.7	34.6	12		
	9100	ARCE	3 S	1248.5	1248.9	5				
	6100	KISV	8 S	1249	1250	4	16			
	8800	SGMR	3 S	1249.4	1249.8	3.1	65.7	13.1		
	15400	SGMR	3 S	1249.4	1249.8	2.2	220	44		
	35000	SGMR	3 S	1249.4	1249.8	2.1	100.5	20.1		
	10715	DWIN	3 S	1308	1309	2	110	40		
	7000	SAOP	3 S	1546.5	1611.6	1.2	20.7	26		
	2800	OTTA	1 S	1555.8	1556	1.2	3.6			
	2800	OTTA	29 PBI	1557	1557	10	1.8	.9		
	9400	HUAN	S	1610.7	1611.5	1.7	7	3.8		R
	2800	OTTA	1A S	1610.8	1611.5	1.5	3.6	1.8		
	2800	OTTA	8 S	1611.5E	1611.5	.1	3.6			
	2800	OTTA	29 PBI	1612.3	1612.3	18	1.8	.9		
	2800	OTTA	1 S	1822	1823	2	1.8	.9		
	9400	HUAN	S	1946.8	1947.7	6	26.3	11.8		0
	1420	BOUL	45 C	2348.5	2350.5	2.5	4	1		
	700	SYDN	45 C	2351	2351.1	.6				
	1400	SYDN	2 S	2351.1	2351.3	.6				
17	700	SYDN	42 SER	0012	0017.5	10.8				
	606	MANI	4 S/F	0012.4	0017.8	12.5	344	114.7		
	2695	PENT	20 GRF	0020	0030	50	3	1.5		
	6100	KISV	3 S	0856.7	0857.5	2	4			
	410	SGMR	44 NS	0925 E	1428.1	888 D	221			3
	245	SGMR	44 NS	0925 E	1737.4	888 D	61.4			3
	9500	BERL	21 GRF	1022	1032	23	7.8			
	10400	BERN	3 S	1030.4	1031.4	10	4	11		
	8400	BERN	3 S	1030.4	1031.4	10	5	13		0
	8900	BERN	3 S	1030.4	1031.4	10	5	13		0
	3000	BERL	1 S	1031	1031.4	1	2.6			
	9500	BERL	3 S	1031.1	1031.5	1.8	9.1			
	7000	SAOP	3 S	1122.5	1124.6	2.6	10.3	19		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	6100	KISV	30 PBI	1130	1131.5	6	27			
	260	ONDR	42 SER	1232	1316.2	53	26			
	9500	BERL	40 F	1337	1341.4	73	32			
	7000	SAOP	3 S	1339.3	1341.3	.6	33	16		
	7000	SAOP	41 F	1339.3						3
	10400	BERN	3 S	1339.4	1340.5	6	11	33		
	2800	OTTA	21 GRF	1340		80	3.2			
	6100	KISV	4 S/F	1340	1341.3	5	37			
	8800	ATHN	3 S	1340.2	1340.7	2.8	37.7	22.6		
	4995	ATHN	3 S	1340.2	1340.7	2.2	14.3	8.6		
	9400	HUAN	S	1340.7	1341.5	5.1	39.1	12.9		0
	2800	OTTA	40 F	1341	1352	21	3.6			
	9100	ARCE	3 S	1341	1341.5	2.5				
	7000	SAOP	20 GRF	1351.6	1405.5		18.5	18		
	3000	BERL	2 S/F	1351.7	1356.5	6.3	7.4			
	9400	HUAN	S	1351.8	1405.8	26.4	26	10.4		0
	10400	BERN	22 GRF	1352	1404.8	90	9	27		
	8400	BERN	22 GRF	1352	1404.8	90	9	24		0
	8900	BERN	22 GRF	1352	1404.8	90	.10	26		0
	9100	ARCE	20 GRF	1354.5	1405.7	57				
	1470	BERL	1 S	1354.6	1355.2	2.4	1.3			
	3000	BERL	4 S/F	1423.5	1428.5	10	9.9			
	4995	ATHN	40 F	1423.6	1426.3	7.2	25.1	12.5		
	8800	ATHN	40 F	1423.6	1426	7.4	21.6	10.8		
	2800	OTTA	21 GRF	1424	1427	12	6	2.6		
	7000	SAOP	3 S	1424.5	1426.7	1.8	18.5	18		
	4995	BOUL	4 SF	1424.5U	1425.5	2 U	20	7		
	9400	HUAN	S	1425	1427.1	6.2	14.6	7.2		0
	1420	BOUL	45 C	1425.5U	1426.5	3	2	1		
	1470	BERL	2 S/F	1426	1427.4	2.8	2.6			
	2800	OTTA	8 S	1428.6	1428.6	.1E	12			
	2800	OTTA	21 GRF	1620	1626	30	4.4	1.6		
	2800	OTTA	1 S	1624	1624.5	1	2.6	1.3		
	2800	OTTA	20 GRF	1730	1800	80	3.2	1.6		
	2800	OTTA	20 GRF	2113	2120	16	3	1.4		
	15400	SGMR	47 GB	2131.5	2134	5.5	826	330		3G,SWF
	9400	HUAN	S	2131.7	2134.1	18.1	302.4	85.4		L
	4995	BOUL	45 C	2132.5	2133.5	5.5	32	11		
	8800	SGMR	3 S	2133	2134	5	323	129		3G,SWF
	4995	SGMR	3 S	2133.2	2134	2.8	28.6	11.4		3G,SWF
	35000	SGMR	47 GB	2133.5	2134.2	2.5	932	372		3G,SWF
	2800	OTTA	20 GRF	2135	2139	20	5	2.4		
	35000	NAGO	5 S	2135	2135	1 E	44			
	35000	NAGO	29 PBI	2136	2139	16	16			
18	700	SYDN	40 F	0006.2	0008.5	3.9				
	4995	MANI	3 S	0016.4	0018.5	8.7	119.6	39.8		
	2695	PENT	47 GB	0017	0018.6	3	1000	85		
	2695	MANI	47 GB	0017.7	0018.2	1.9	895	296.6		IKES
	1400	SYDN	40 F	0017.8	0019.5	2.2				
	35000	NAGO	20 GRF	0018	0019	9	17			
	1415	MANI	4 S/F	0018.9	0019.4	1.1	61.1	20.4		
	2695	PENT	29 PBI	0020	0020	40	6	3		
	35000	NAGO	20 GRF	0026	0032	12	11			
	9100	ARCE	21 GRF	0748.4	0916.5	213				
	3000	BERL	22 GRF	0758.3	0803	7.5	4.2			
	1420	ARCE	40 F	0759.3	0802.7	7				
	1470	BERL	45 C	0759.5	0802.4	8.5	4.3			
	536	ONDR	41 F	0800	0802.5	4	11			
	808	ONDR	2 S/F	0800	0801	4	58	6		
	10400	BERN	20 GRF	0848.2	0857.7	50	18	53		
	8400	BERN	20 GRF	0848.2	0857.7	50	20	53		0
	8900	BERN	20 GRF	0848.2	0857.7	50	20	54		0
	8400	BERN	1 S	0848.2	0849.4	50	5	12		0
	8900	BERN	1 S	0848.2	0849.4	50	5	12		0
	10400	BERN	1 S	0848.2	0849.4	50	4	12		
	8800	ATHN	20 GRF	0854.4	0857.7	15.8	64.4	38.6		
	9100	ARCE	22 GRF	0854.6	0858	18				
	9500	BERL	4 S/F	0855	0857	58	45			
	4995	ATHN	20 GRF	0855.2	0857.8	11.4	23.5	14.1		
	260	ONDR	43 NS	0856		378 D	23			
	410	SGMR	44 NS	0925 E	2132.3	860 D	135			
	245	SGMR	44 NS	0925 E	2113.7	860 D	73.2			
	200	HIRA	44 NS	1940 E	2020	855 D	45	5		WLHR
	100	HIRA	44 NS	1940 E	2130	150 D	60	30		
	228	HARS	43 NS	1957.3	2010.2U		220			SUNSET
	1470	BERL	1 S	1218.9	1219.8	1.9	2			
	3000	BERL	3 S	1218.9	1219.7	1.6	13			
	2800	OTTA	3 S	1219	1219.5	1	20.6	9		
	9400	HUAN	S	1259	1308.3	27.1	26.2	9.8		0
	2800	OTTA	20 GRF	1305	1315	35	1.8	1		
	9500	BERL	40 F	1305.2	1308.4	30	27			
	8400	BERN	20 GRF	1305.2	1308.3	22	10	27		0
	8900	BERN	20 GRF	1305.2	1308.3	22	10	27		0
	10400	BERN	20 GRF	1305.2	1308.3	22	8	27		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	8800	ATHN	20 GRF	1305.3	1308	12.8	46.4	27.9		
	7000	SAOP	20 GRF	1305.5	1308.4	6.4	26.5			
	4995	ATHN	20 GRF	1305.5	1308.1	13	17.3	10.4		
	9100	ARCE	20 GRF	1305.9	1308.4	27				
	6100	KISV	20 GRF	1310	1313	35	14			
	2800	OTTA	23 GRF	1410	2135	585	10.6	6		
	1420	BOUL	2 SF	1459	1500	2	5	2		
	2800	OTTA	20 GRF	1500	1538	65	6	2.4		
	930	BORD	41 F	1501.6	1502.6	2.7	10	2		
	7000	SAOP	20 GRF	1522	1537.4	10.7	22.4	13		
	8400	BERN	20 GRF	1526.2	1537.4	32	6	14		0
	8400	BERN	20 GRF	1526.2	1537.4	32	5	13		0
	10400	BERN	20 GRF	1526.2	1537.4	32	6	17		
	9100	ARCE	20 GRF	1528.4	1537.6	32				
	9400	HUAN	S	1530.7	1537.7	34.3	13.1	6.5		0
	7000	SAOP	24 R	1631						
	9400	HUAN	S	1631.4	1642.6	20.9	14.7	6.7		0
	7000	SAOP	4 S/F	1719	1724.8	2.7	57	16		
	9400	HUAN	C	1719	1724.1	9.8	109.6	54.2		L
	4995	SGMR	45 C	1719.1	1723.7	22.3	16.8	6.7		SWF
	4995	SGMR	45 C	1719.1	1724.6		21.5			SWF
	8800	SGMR	45 C	1719.2	1724.4		88.4			SWF
	8800	SGMR	45 C	1719.2	1723.7	20.4	83.8	33.5		SWF
	15400	SGMR	45 C	1719.4	1723.8	20.6	151	60.2		SWF
	15400	SGMR	45 C	1719.4	1724.4		159			SWF
	35000	SGMR	3 S	1720.5	1724	5.5	110	44		SWF
	10400	BERN	46 C	1721.9	1723.8	30	35	101		
	8400	BERN	46 C	1721.9	1723.8	30	22	58		0
	8900	BERN	46 C	1721.9	1723.8	30	24	64		0
	9100	ARCE	4 S/F	1723.5	1724	3.2				
	9100	ARCE	29 PBI	1726.7		24.5				
	7000	SAOP	45 C	1806	1958.2		173.4	14		
	2800	OTTA	20 GRF	1815	1820	30	3	1.5		
	2800	OTTA	23 GRF	1935	2005	90	19	6.6		
	9400	HUAN	F	1938.3	1958.4	49	176.7	95.5		0
	9400	HUAN		1938.3	2021.8		265			R
	8800	SGMR	45 C	1941.4	1958	67.6	165	77.4		SWF
	8800	SGMR	45 C	1941.4	2021.7		258			SWF
	15400	SGMR	45 C	1943.3	1958.1	65.1	140	68.4		SWF
	15400	SGMR	45 C	1943.3	2022.7		228			SWF
	1420	BOUL	40 F	1944.5E	1955.5	43.5D	72	24		
	606	SGMR	47 GB	1945	1955.2	54.3	21.4	743		SWF
	606	SGMR	47 GB	1945	2021.7		2480			SWF
	1415	SGMR	45 C	1945	1956	45.9	95.9	38.4		SWF
	1415	SGMR	45 C	1945	2019.6		41.3			SWF
	2695	BOUL	40 F	1945.5	1959	44.5D	51	17		
	4995	SGMR	45 C	1946.5	2021.8		121			SWF
	4995	SGMR	45 C	1946.5	1958	62	132	52.9		SWF
	245	SGMR	7 C	1947.5	2010.5	52.7	82.9	43.3		SWF
	2695	SGMR	45 C	1947.5	2019.6		37.7			SWF
	245	SGMR	7 C	1947.5	2018.7		144			SWF
	2695	SGMR	45 C	1947.5	1958.1	58.5	52.7	21.1		SWF
	4995	BOUL	45 C	1949.5	1958.5	39 D	117	39		
	410	SGMR	7 C	1950.2	2000	48.8	122	86.5		SWF
	410	SGMR	7 C	1950.2	2023.4		288			SWF
	2800	OTTA	4 S/F	1951	1958	13	47.6	23.4		
	2800	OTTA	4 S/F	2017	2022	9	33.8	17.2		
	9400	HUAN	PBI	2027.3	2027.3	37.2	40.9	19.9		0
	2695	PENT	26 FAL	2355	2418	23	-3	-1.5		
19	4995	BOUL	45 C	0015.5	0017.5	10.5U	115	38		
	1420	BOUL	45 C	0017	0019	2 U	43	14		
	2695	BOUL	4 SF	0017.5	0019.5	3.5D				
	260	ONDR	44 NS	0604 E		562 D	54	4		
	202	IZMI	43 NS	0730		250	65			
	245	SGMR	44 NS	0927 E	1034.4	885 D	127.4			
	410	SGMR	44 NS	0927 E	1001.3	885 D	64.3			
	536	ONDR	42 SER	0829	0915.8	91	292			
	3000	BERL	2 S/F	1319.7	1321.4	4.3	6.1			
	2800	OTTA	1 S	1320	1321.2	6.5	5.8	2		
	9400	HUAN	S	1321	1339.6	32.2	7	3.2		0
	930	BORD	41 F	1453	1453.3	.6	43	3		
	2800	OTTA	8 S	1647	1647	.5	5			
	2800	OTTA	20 GRF	2050	2155	125	3	1.5		
20	35000	NAGO	21 GRF	0002	0006	35	9			
	35000	NAGO	5 S	0005	0005	1 E	18			
	4995	MANI	20 GRF	0007	0014	16.4	46.8	15.6		
	2695	PENT	21 GRF	0009	0020	100 D	8.4			
	2695	PENT	1 S	0011.5	0013	5	6.6	3.3		
	500	HIRA	46 C	0014	0016.8	4	9	5		WL
	200	HIRA	46 C	0231	0231.2	9	65	35		WR
	100	HIRA	46 C	0231	0234	6	500	150		0
	500	HIRA	46 C	0314.3	0315.6	4	10	4		SR
	100	HIRA	46 C	0317	0317	9	100	50		0

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
	260	ONDR	44	NS	0535 E		583 D	13			
	245	SGMR	44	NS	0928 E	2126.8	883 D	71.4			3G
	410	SGMR	44	NS	0928 E	2127.2	883 D	64.4			3G
	10400	BERN	3	S	0551.1	0552.6	6.5	7	20		
	6100	KISV	4	S/F	0552	0553	3	21			
	4995	ATHN	3	S	0552.3	0552.5	6.6	16	9.6		
	8800	ATHN	3	S	0552.3	0552.5	7.9	26.2	15.7		
	1470	BERL	1	S	0739.2	0739.4	.4	5.6			
	9100	ARCE	24	S	0805.5		89.5				
	9100	ARCE	21	GRF	0945.8	1133.1	232				
	8400	BERN	2	S/F	1129	1129.6	11	4	10		0
	8900	BERN	2	S/F	1129	1129.6	11	4	12		0
	10400	BERN	2	S/F	1129	1129.6	11	4	13		
	9100	ARCE	1	S	1129.1	1129.7	1.4				
	3000	BERL	2	S/F	1306.8	1307.3	1.4	2.9			
	1470	BERL	1	S	1306.8	1307.3	1.4	1.9			
	2800	OTTA	1	S	1306.9	1307.1	1	2.8	1.4		
	2800	OTTA	24	R	1500	1520	20	2.8	1.4		
	2800	OTTA	27	RF	1500		170	2.8	2.4		
	9500	BERL	3	S	1509.5	1514.4	14	63			
	3000	BERL	1	S	1513.3	1514.4	3.7	2.9			
	2800	OTTA	24P	R	1520		120	2.8			
	2800	OTTA	26	FAL	1720	1750	30	-2.8	-1.4		
	2695	PENT	240	R	1955	2023	28	2.6	1.3		
	9400	HUAN		S	2126.2	2127	2.3	11.6	5.2		0
	1420	BOUL	8	S	2142.5	2143	1.5	12	4		
	2695	PENT	1	S	2142.9	2143.5	2	3	1.8		
	2695	BOUL	2	SF	2143 E	2144	2 D	4	1		
21	4995	BOUL	45	C	0010	0014	5 D	39	13		
	410	SGMR	44	NS	0928 E	1426.3	882 D	87.8			
	245	SGMR	44	NS	0928 E	1524.2	882 D	58.7			
	6100	KISV	4	S/F	1115	1119.6	25	14			
	8400	BERN	22	GRF	1117	1119.3	12	7	19		-9
	3900	BERN	22	GRF	1117	1119.3	12	6	16		-7
	10400	BERN	22	GRF	1117	1119.3	12	8	22		
	8800	ATHN	3	S	1118.3	1119.7	7.4	28.2	8.5		
	4995	ATHN	3	S	1118.7	1119.5	7.7	6.9	2.1		
	1415	ATHN	20	GRF	1532.5	1540.1	21.8	12.2	7.3		
	4995	ATHN	20	GRF	1533.5	1540.3	27.7	48.4	29.1		
	2800	OTTA	21	GRF	1535	1543	155	11.4	2.8		
	7000	SAOP	4	S/F	1536.5	1540.2	1.2	61	7		
	9400	HUAN		S	1536.8	1540.3	5.8	52.6	21.5		L
	8900	BERN	3	S	1537.4	1540.2	38	16	43		-7
	10400	BERN	3	S	1537.4	1540.2	38	15	44		
	8400	BERN	3	S	1537.4	1540.2	38	17	46		-9
	8800	ATHN	20	GRF	1537.6	1540.3	12.2	50.8	30.5		
	4995	SGMR	3	S	1537.7	1540.2	7.8	38.9	11.7		SHF
	8800	SGMR	3	S	1538	1540	4	47.5	14.3		SHF
	15400	SGMR	3	S	1538	1540.2	3	39.9	12		SHF
	2650	DWIN	45	C	1538		12	180 D			
	10715	DWIN	3	S	1538	1540	12	40	20		
	1420	BOUL	45	C	1538	1539.5	7	7	2		
	4995	BOUL	45	C	1538	1539	7 D	25	8		
	2800	OTTA	4	S/F	1538	1540	4	430			
	2695	SGMR	3	S	1538.1	1539.9	7.3	102	30.6		SHF
	2695	ATHN	40	F	1538.3	1539.3	12.4	373	186.5		
	2695	BOUL	45	C	1538.5	1540.5	9.5U	332 U	111		
	930	BORD	41	F	1539	1540.6	2	65	4		
	1415	SGMR	3	S	1539.1	1544.6	6.3	21.1	6.3		SHF
	9100	ARCE	3	S	1539.3	1540.3	2.4				
	9100	ARCE	29	PBI	1541.7		53				
	9400	HUAN		PBI	1542.6	1542.6	22	16.4	7.5		L
	2800	OTTA	8	S	1643.6	1643.6	.1E	22			
	9400	HUAN		S	1826.1	1828	3.6	27.9	6.9		0
	2800	OTTA	2	S/F	1827	1827.1	1.2	2.2	1.1		
	2800	OTTA	21	GRF	1835	2000	385	13.6	8.2		
	9400	HUAN		PRE	1838.8	1854.6	15.8	19.7	5.3		0
	2800	OTTA	3	S	1843.9	1843.9	1.2	15.8	2.6		
	7000	SAOP	45	C	1850	1856.5	2.4	172	6		
	2800	OTTA	3	S	1852.5	1857	10	126	43		
	2695	SGMR	3	S	1853.2	1856	16.8	140	56.1		SHF
	4995	BOUL	4	SF	1853.5	1855.5	17 D	111	37		
	4995	SGMR	3	S	1854	1856	16	142	56.9		SHF
	1420	BOUL	45	C	1854	1856.5	20.5D	54	18		
	1415	SGMR	3	S	1854.2	1856.6	15.8	68.8	27.5		SHF
	15400	SGMR	3	S	1854.5	1856	15.5	102	40.9		SHF
	8800	SGMR	3	S	1854.5	1856.8	15.5	140	55		SHF
	2695	BOUL	3	S	1854.5	1857.5	16.5D	103	34		
	9400	HUAN		F	1854.6	1856.7	6.9	118.2	51.6		L
	9400	HUAN		PBI	1901.5	1901.5	75.2	8.2	7.1		0
	2800	OTTA	29	PBI	1902.5	1902.5	14	8.6	3.8		
22	260	ONDR	44	NS	0554 E		539 D	30			
	410	SGMR	44	NS	0929 E	1227.6	880 D	21.6			3G,5

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1978

JUL 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	245	SGMR	44	NS	0929 E	1443.1	880 D	23.5			3G,5
	113	POTS	2	S/F	1016.6	1017.9	2	700	7		
	237	TRST	5	S	1017.8	1017.8	.1	185	60		12R
	113	POTS	2	SF	1226.5	1228.5	2.6	100	1		
	2650	OWIN	45	C	1235	1247	10	40	10		
	3000	BERL	3	S	1250	1257.1	9	12			
	2800	OTTA	2	S/F	1250	1251	3	9.6	4.8		
	2695	SGMR	3	S	1250.6	1257	7.4	35.9	10.8		
	2800	OTTA	4	S/F	1255.8	1257	3.2	14.6	4.8		
	2800	OTTA	29	PBI	1259	1259	9	2.4	1.2		
	2695	ATHN	3	S	1301	1302	3.3	32.3	9.7		
	2800	OTTA	24	R	1310	1330	20	3	1.6		
	2800	OTTA	27A	RF	1310		150	3	2.5		
	1470	BERL	2	S/F	1317.6	1318.7	1.5	9.7			
	2800	OTTA	1	S	1318	1319	1.2	1.2	.8		
	2800	OTTA	24P	R	1330		100	3			
	8800	ATHN	20	GRF	1350.6	1353.6	13.1	11.3	6.8		
	2800	OTTA	26	FAL	1510	1540	30	-3	-1.5		
23	260	ONDR	44	NS	0607 E		323	13			
	245	SGMR	44	NS	0930 E	1027.8	878 D	7.8			3,5
	113	POTS	45	C	1425	1426	2.4	100	5		
	2800	OTTA	20	GRF	1447	1510	50	2.2	1.1		
	2800	OTTA	4	S/F	1654	1700	9	11.4	5.7		
	2800	OTTA	30	PBI	1703	1703	27	4.2	2.1		
	930	BORD	8	S	1704	1704	.2	14	1		
	245	SGMR	6	S	1718.4	1722.7	11.8	25.8	7.7		3
	930	BORD	3	S	1720	1724.3	10	14	6		
	1415	SGMR	3	S	1720.7	1724	7.1	12.3	3.7		3
	2800	OTTA	2	S/F	1721	1724	6	4.6	.8		
	2695	SGMR	1	S	1721.2	1724.2	5.2	6.4	1.9		3
	606	SGMR	1	S	1723.5	1724.4	3.2	7.4	2.2		3
	410	SGMR	6	S	1727.2	1725.6	4.8	15.6	4.7		3
	2800	OTTA	20	GRF	1745	1752	22	2.8	1.4		
	2800	OTTA	27	RF	1835		205	2.8	2.3		
	2800	OTTA	24	R	1835	1910	35	2.8	1.4		
	2800	OTTA	24P	R	1910		140	2.8			
	2800	OTTA	26	FAL	2130	2200	30	-2.8	-1.4		
24	1420	BOUL	4	SF	0052.5	0053.5	7.50	12	4		
25	202	IZMI	41	F	1058	1100	3	140			
	2800	OTTA	240	R	2140	2200	20	2.2	1.1		
28	9100	ARCE	1	S	1128.3	1128.8	1.4				
	536	ONDR	8	S	1237	1237	.2	31			
	536	ONDR	41	F	1353.6	1353.6	1.5	10			
	260	ONDR	41	F	1405	1410	7	17			
	606	SGMR	3	S	1425.4	1425.8	.7	54.9	22		
	245	SGMR	6	S	1425.4	1426.8	2	26.6	10.6		
	1415	SGMR	3	S	1425.5	1425.8	.7	21.7	8.7		
	2695	SGMR	3	S	1425.5	1425.7	.5	20.4	8.2		
	930	BORD	8	S	1447.6	1447.6	.1	33	1		
	536	ONDR	3	S	1456.3	1456.3	.3	18			
29	2800	OTTA	20	GRF	1050	1115	260 D	7.4			
	2800	OTTA	20	GRF	1830	1850	50	2.2	1.2		
30	536	ONDR	8	S	1400	1400	.2	49			
	2800	OTTA	20	GRF	1827	1900	205	3	1.5		
	9400	HUAN		S	2158.3	2202.7	6.7	10.2	3.2		0
31	260	ONDR	4	S/F	0750.7	0750.7	2	18			
	9100	ARCE	20	GRF	1132	1307.5	230				

Reports received from the following observatories:

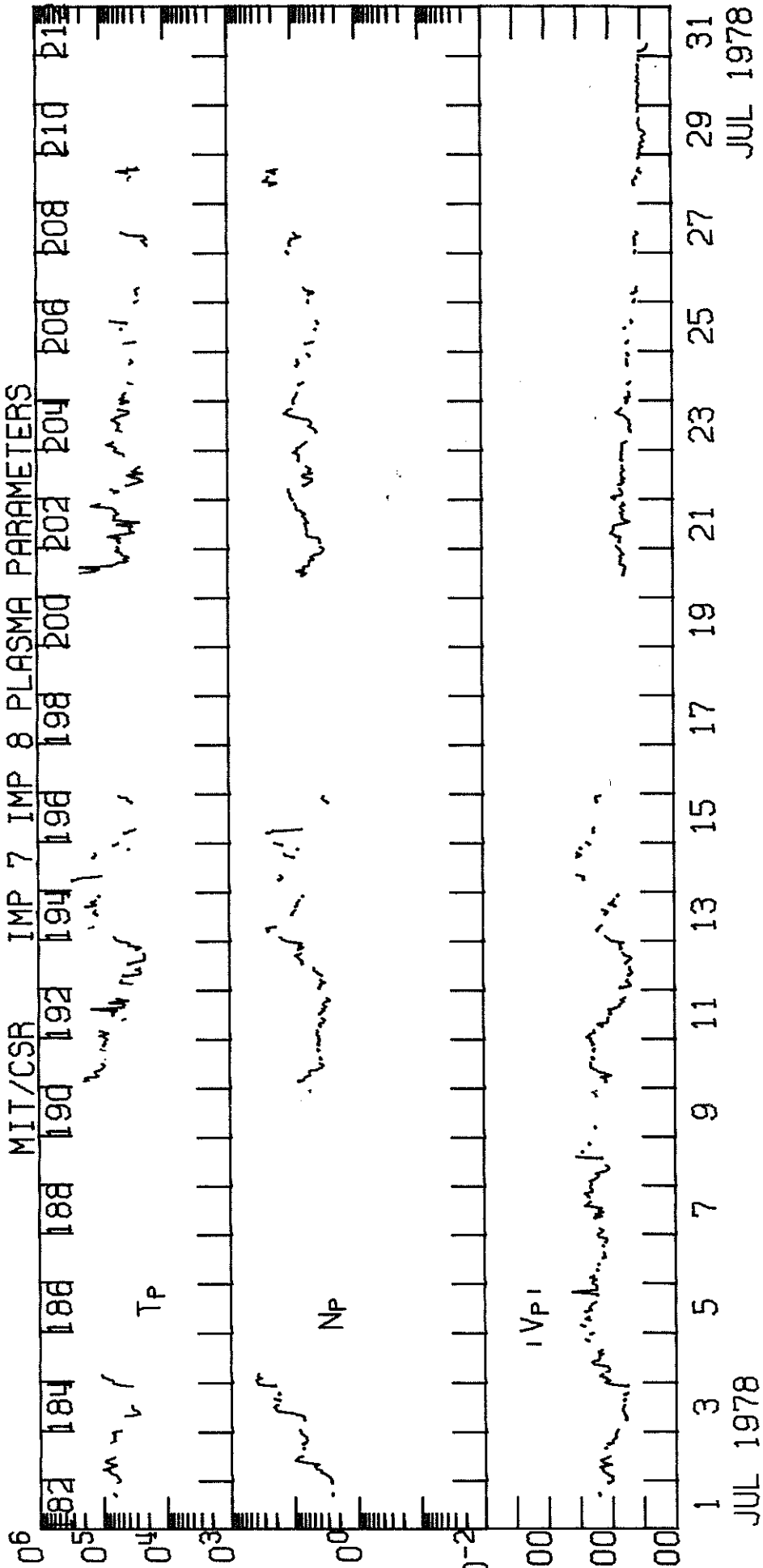
ARCE = Arcetri
BERL = Berlin-Adlershof
BORD = Bordeaux
BOUL = Boulder
CRIM = Simferopol
DWIN = Dwingeloo
GORK = Gorky
HARS = Harestua
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk
KIEV = Kiev
MANI = Manila
MCMA = McMath-Hulbert
NAGO = Nagoya
ONDR = Ondrejov
OTTA = Ottawa
PENT = Penticton
POTS = Potsdam
SAOP = Sao Paulo
SGMR = Sagamore Hill
SYDN = Sydney
TORN = Torun
TYKW = Toyokawa
TRST = Trieste
VORO = Voroshilov (Ussurisk)

Explanation of Type Code:

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

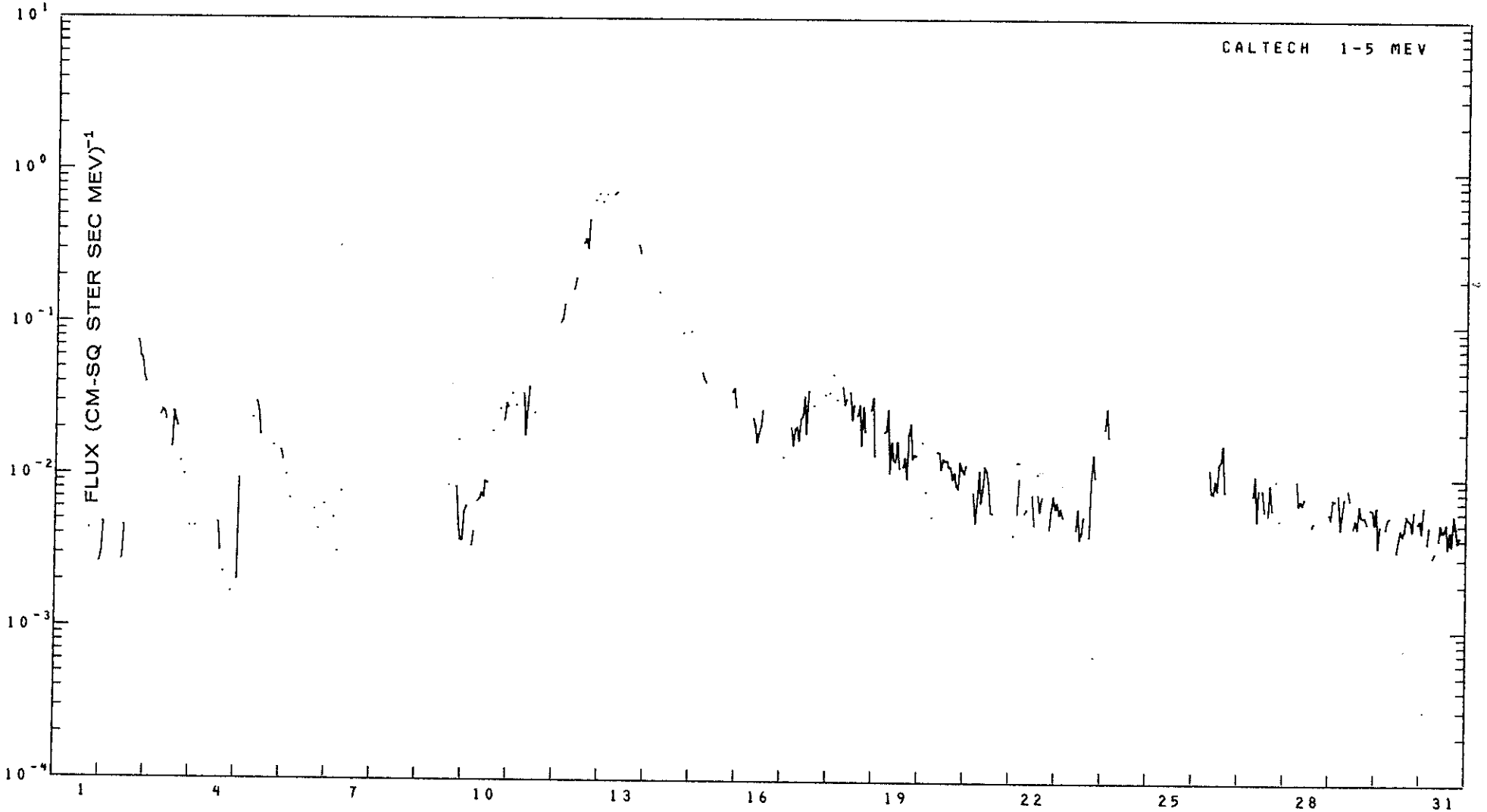
IMP 7 AND 8 SOLAR WIND PLASMA

JULY 1978



IMP 7 AND 8 ELECTRONS

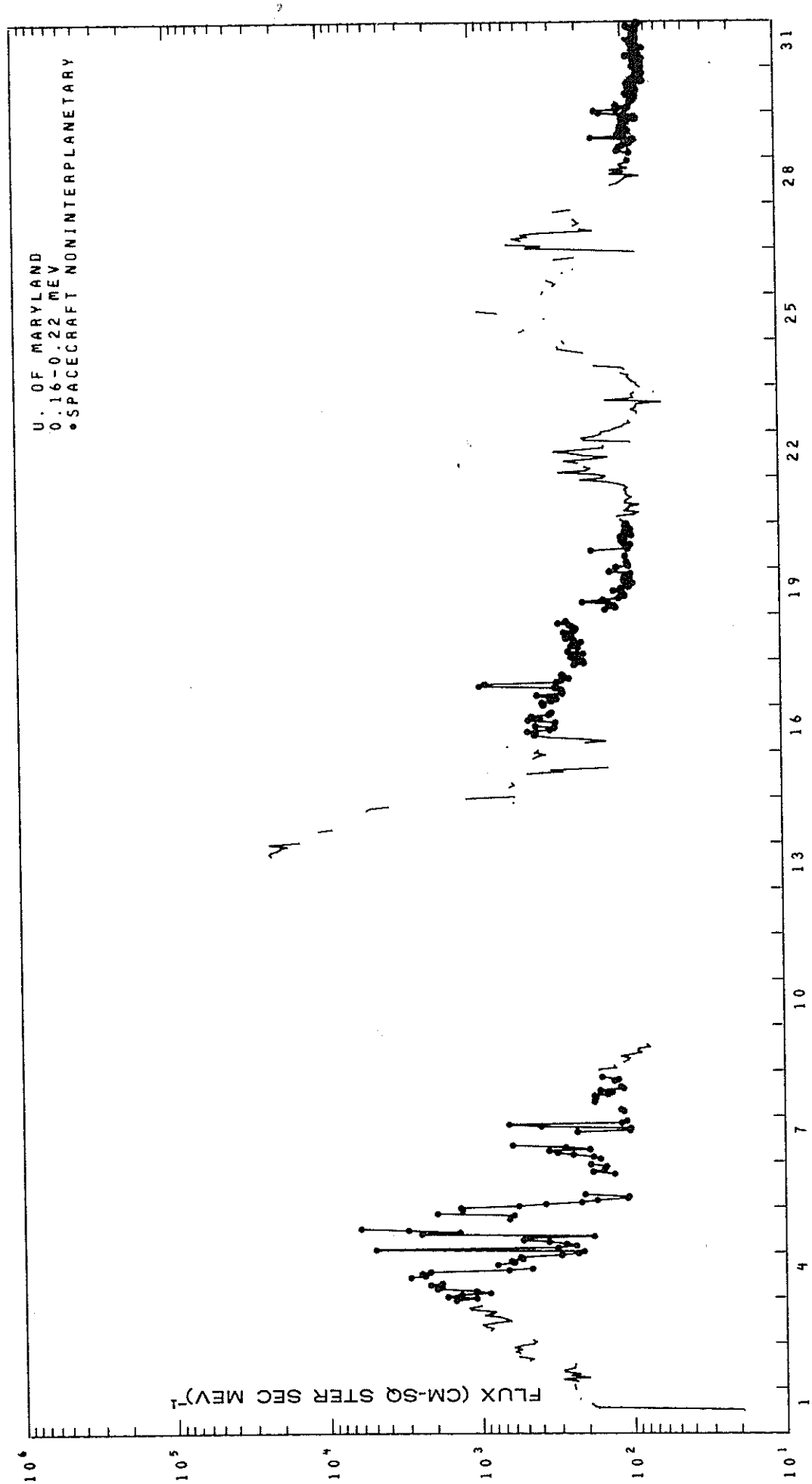
JULY 1978



63
Jul 78

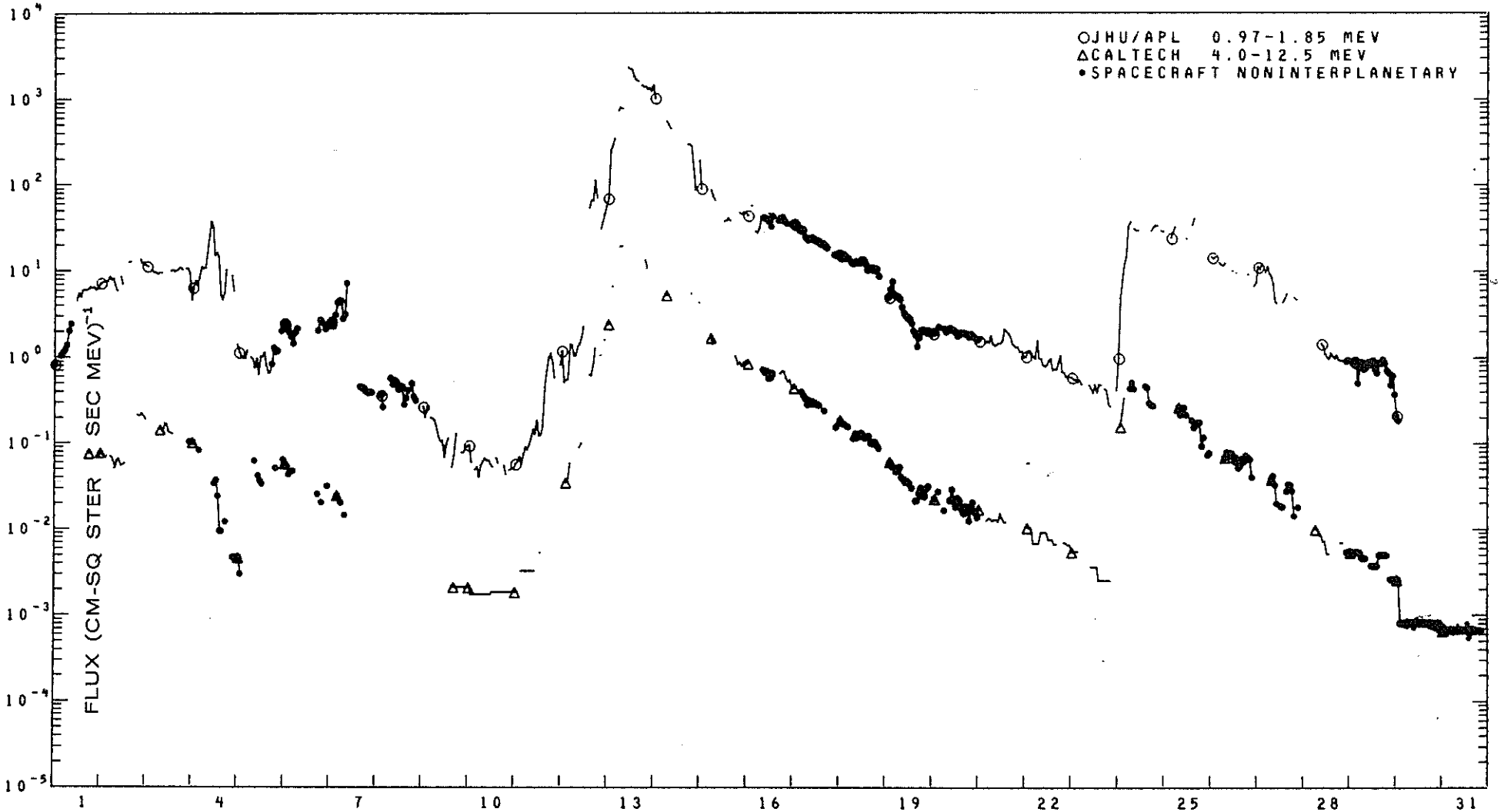
IMP 7 AND 8 LOW ENERGY PROTONS

JULY 1978



IMP 7 AND 8 INTERMEDIATE ENERGY PROTONS

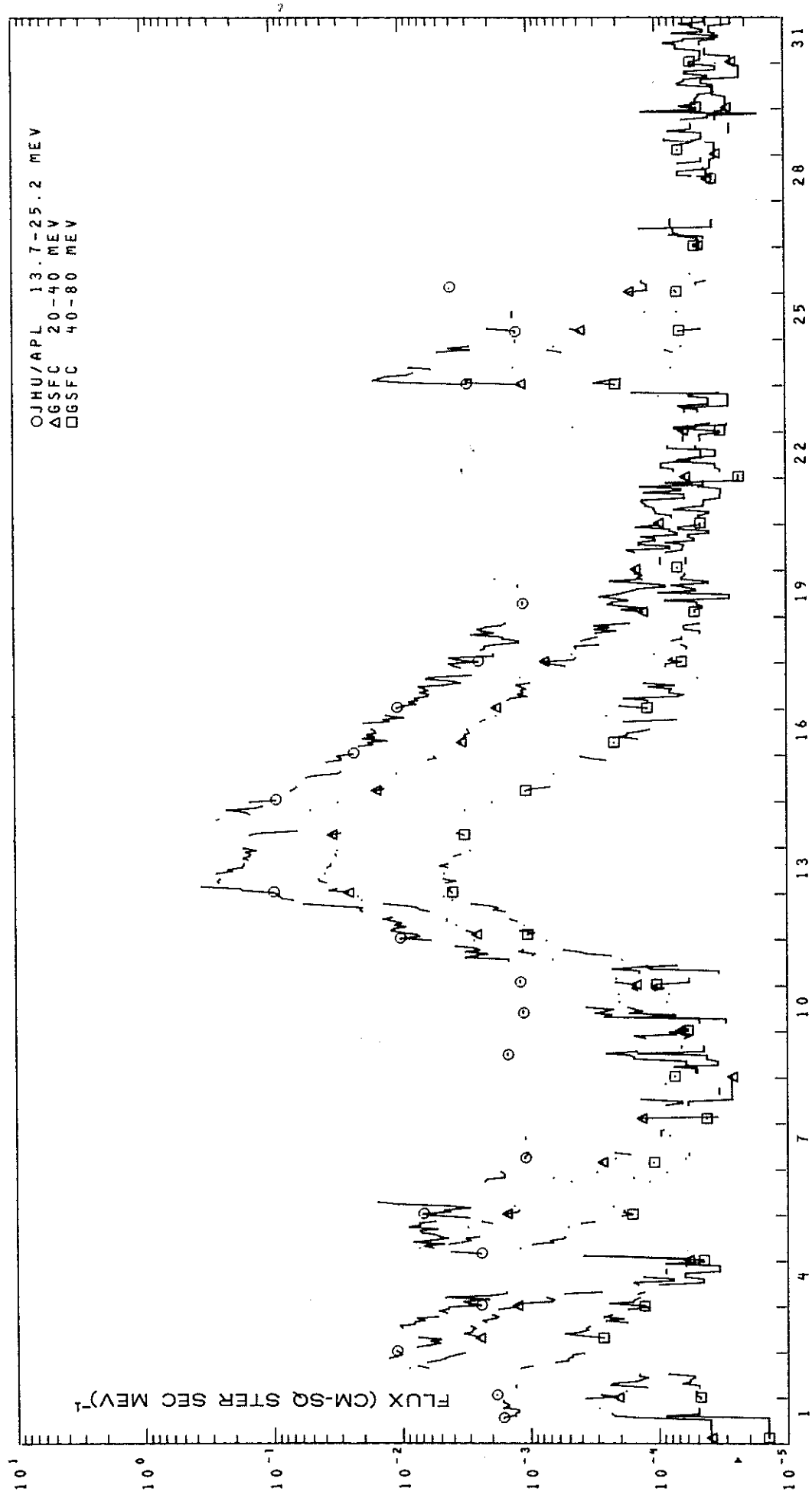
JULY 1978



65
Jul 78

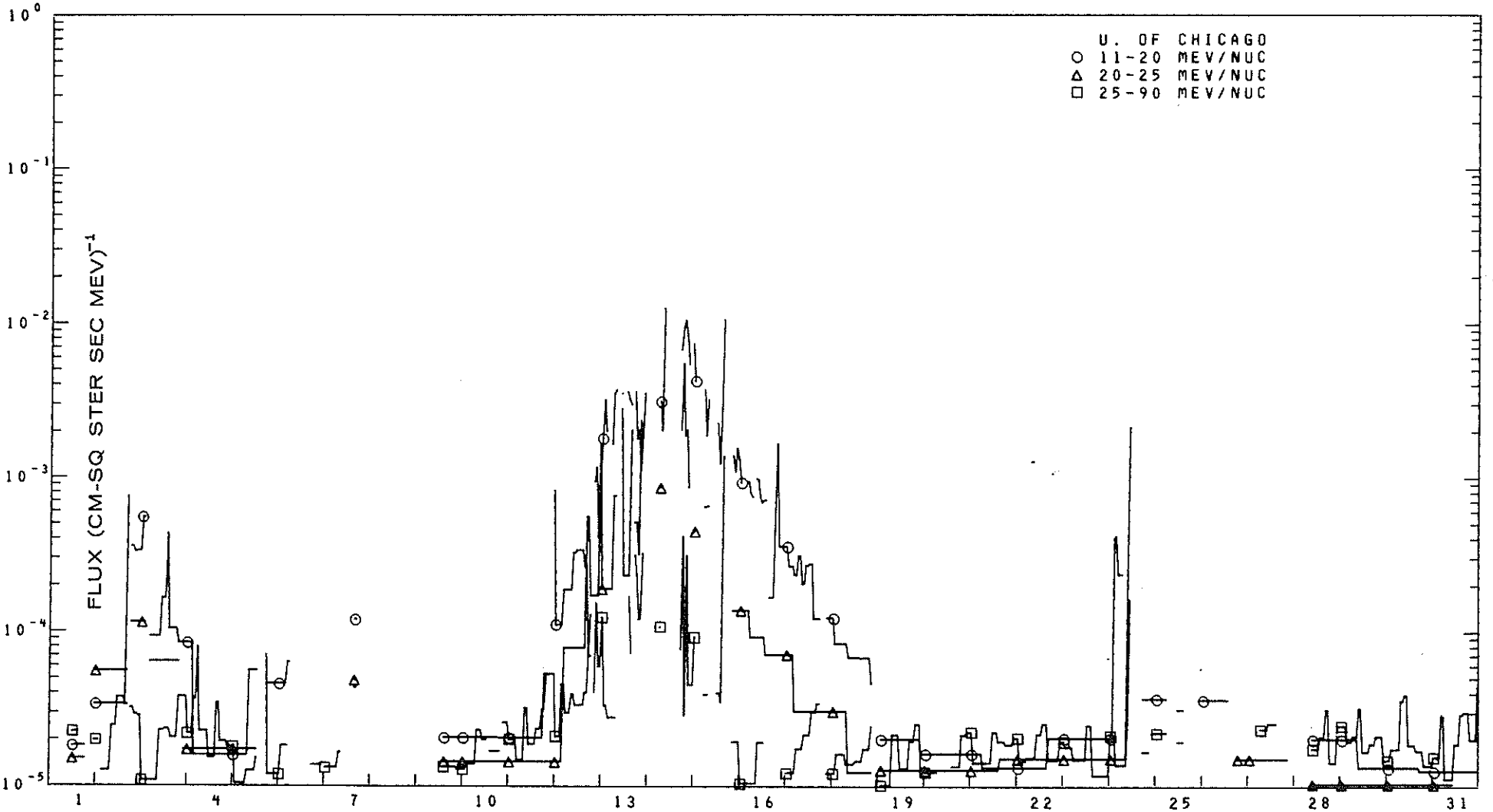
IMP 7 AND 8 HIGH ENERGY PROTONS

JULY 1978



IMP 7 AND 8 ALPHA PARTICLES

JULY 1978



67 Jul 78

JUNE 1978 DATA

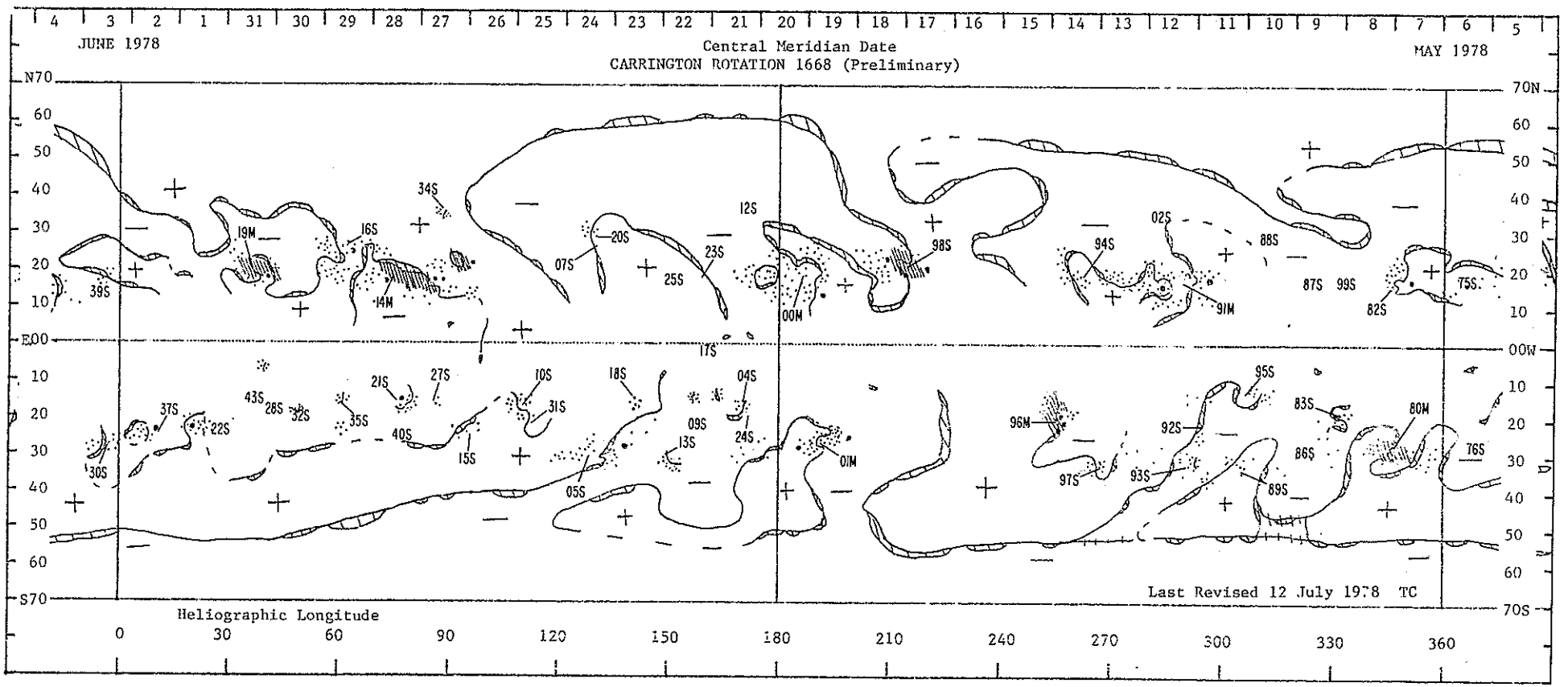
Contents

	Page
Hα Synoptic Chart	70-71
Abbreviated Calendar Record	72-79
Regional Flare Index	80

ABBREVIATED CALENDAR RECORD

Hα SYNOPTIC CHART

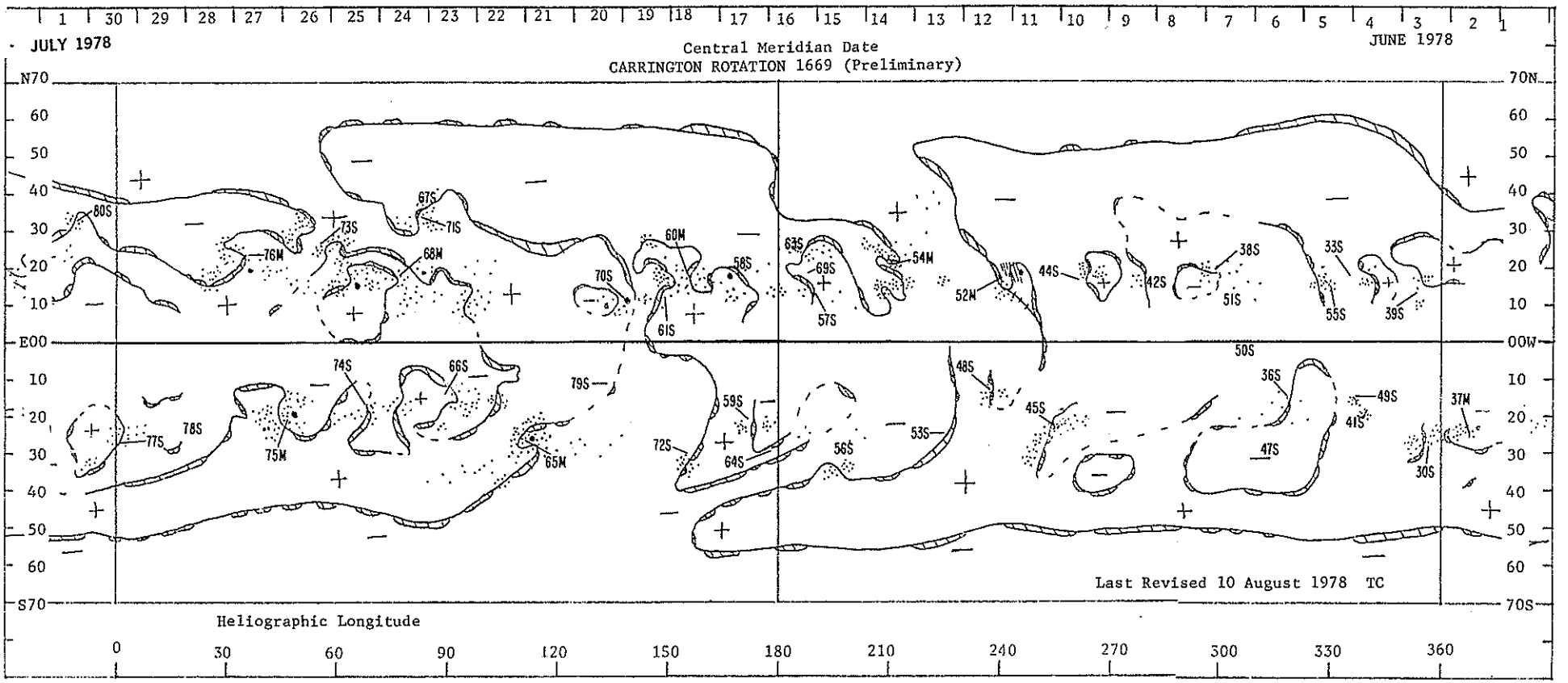
MAY - JUNE 1978



ABBREVIATED CALENDAR RECORD

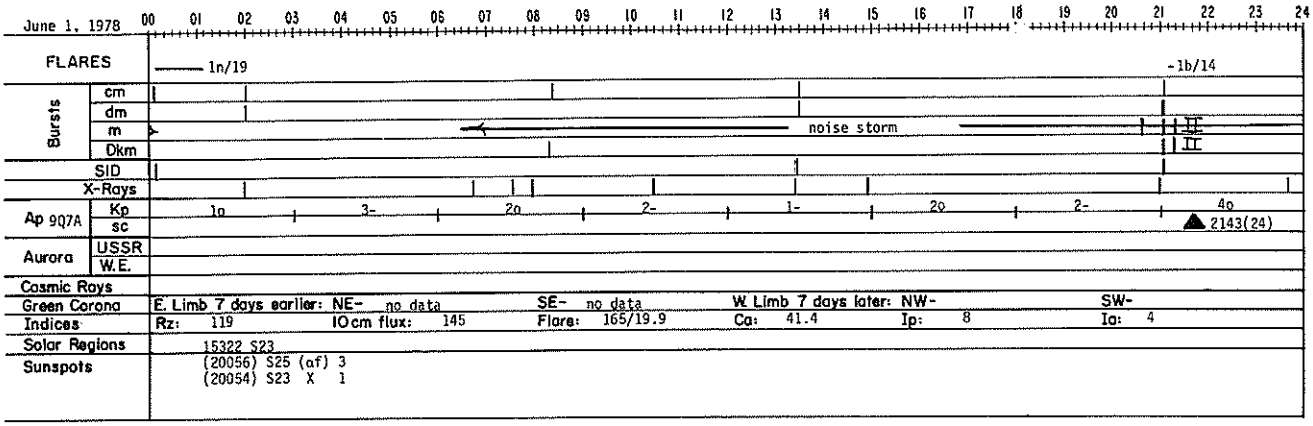
Hα SYNOPTIC CHART

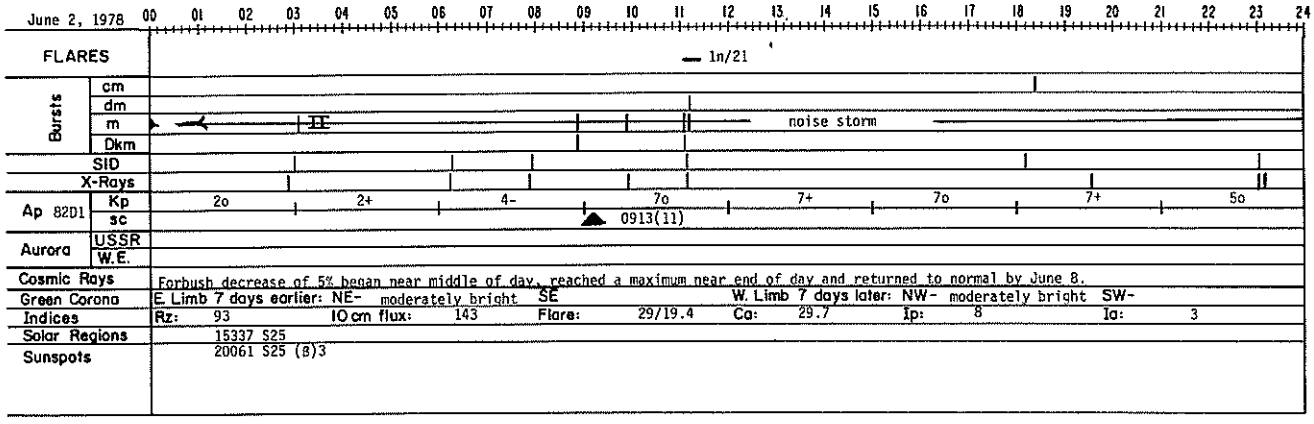
JUNE - JULY 1978

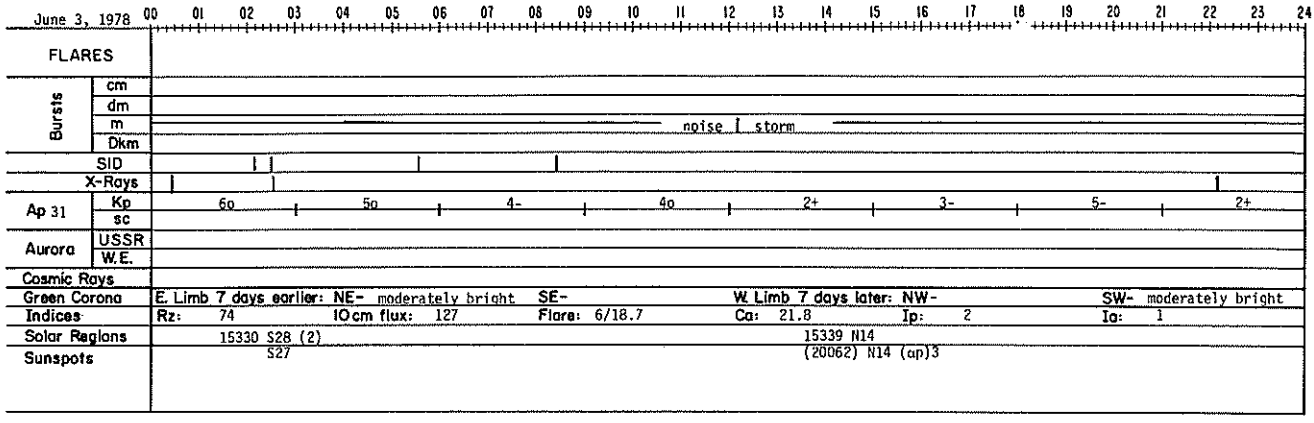


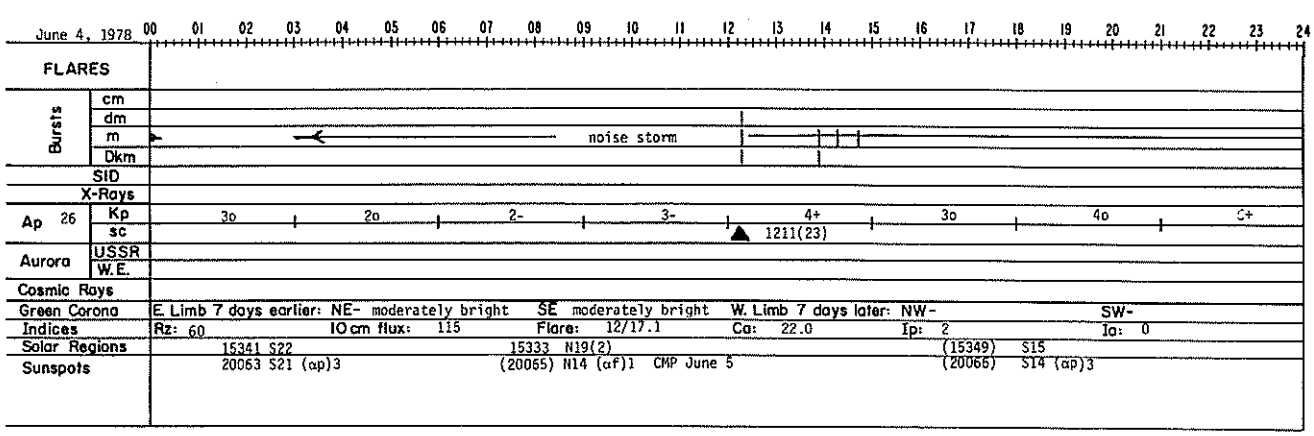
ABBREVIATED CALENDAR RECORD

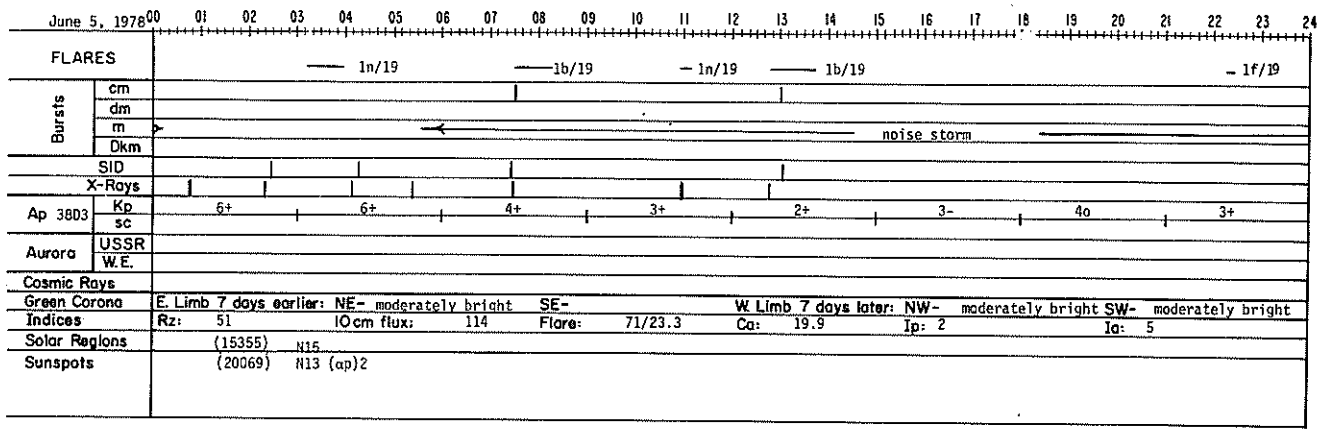
JUNE 1978










June 5, 1978
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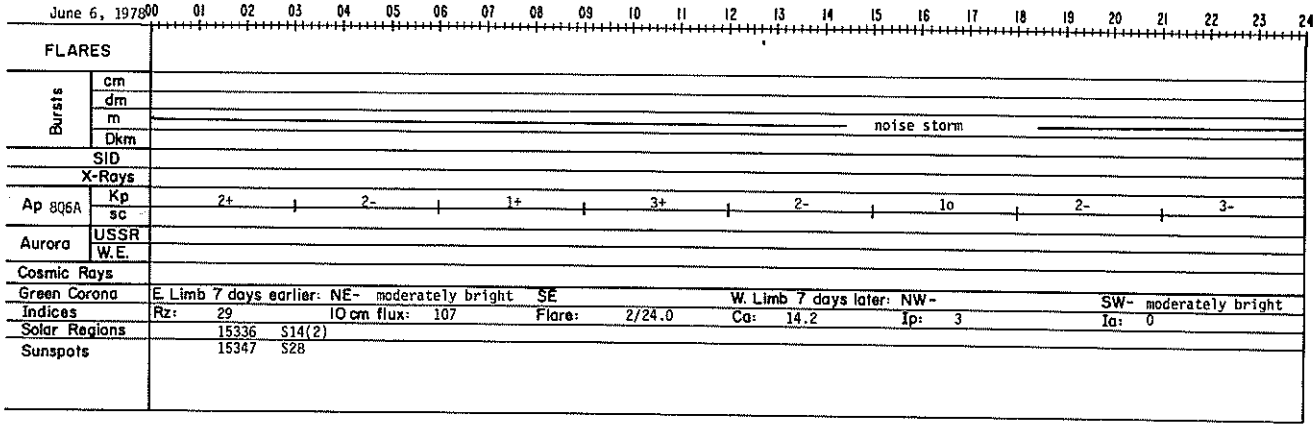
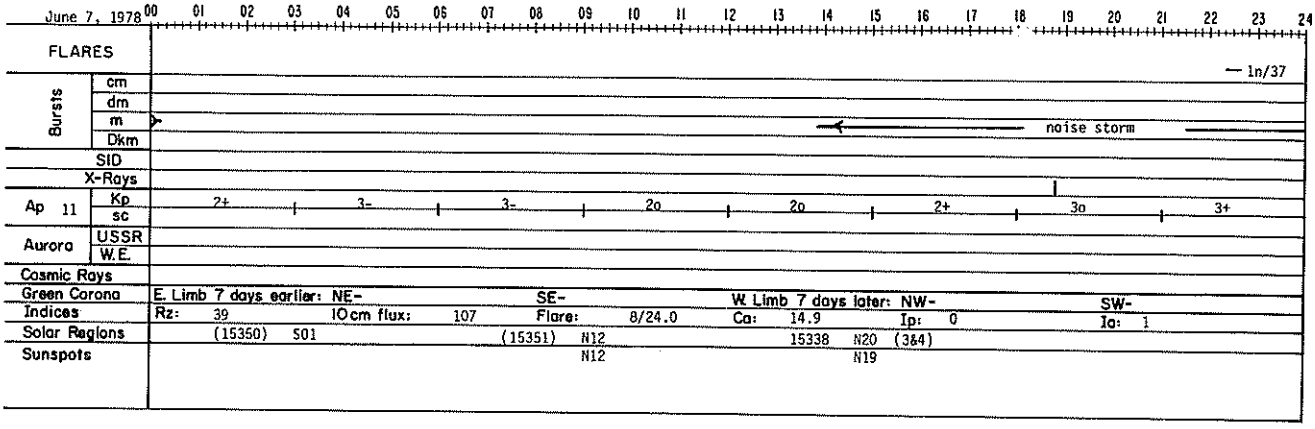
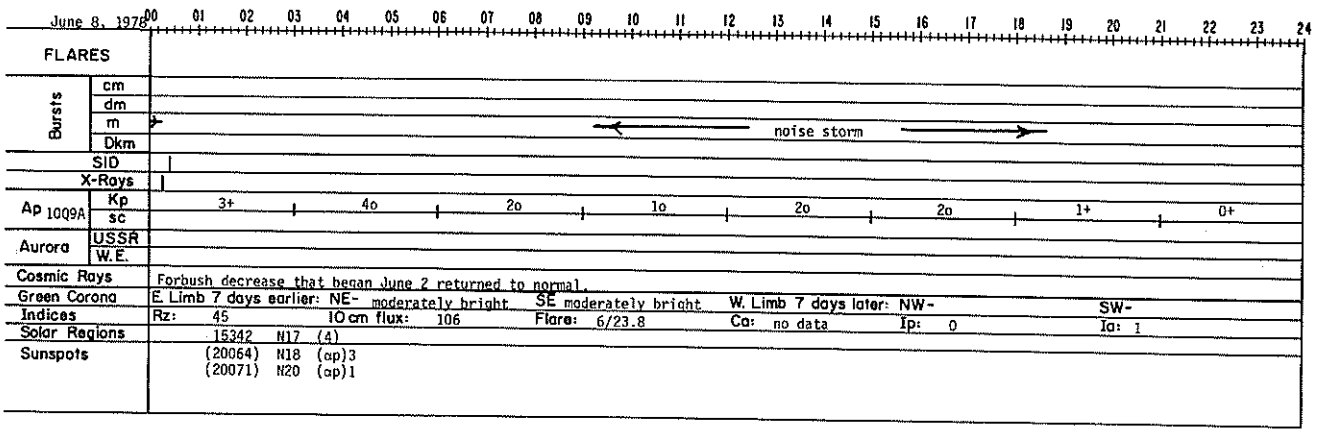
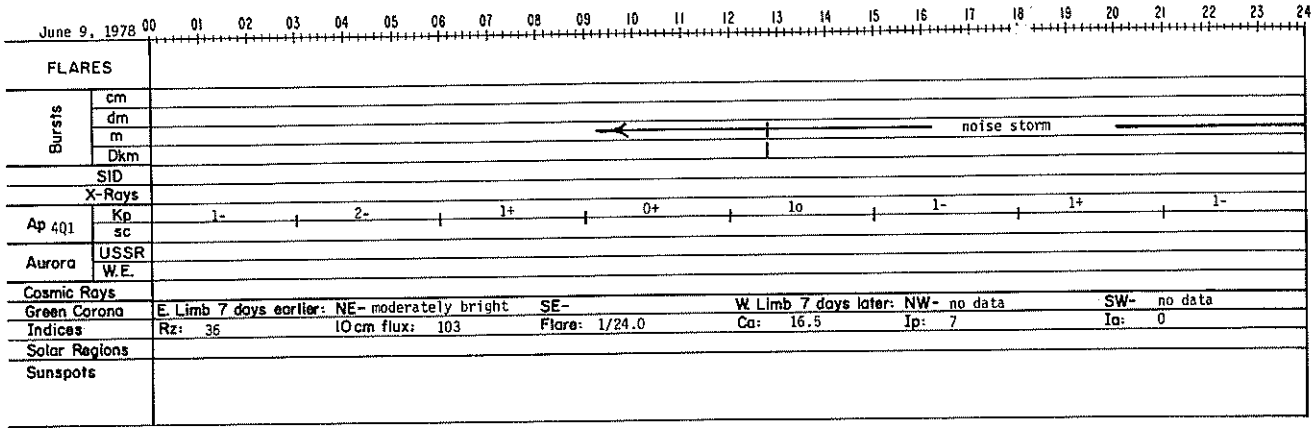
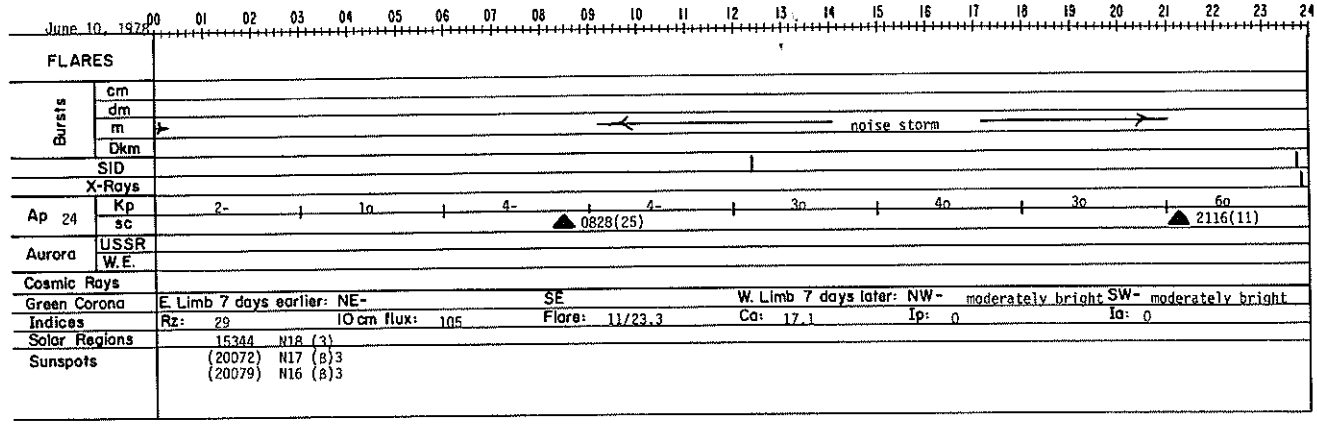
FLARES
1n/19
1b/19
1n/19
1b/19
1f/19
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 38D3
Kp
sc
6+ 6+ 4+ 3+ 2+ 3- 4o 3+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE-
W. Limb 7 days later: NW- moderately bright SW- moderately bright
Indices
Rz: 51 10cm flux: 114 Flare: 71/23.3 Ca: 19.9 Ip: 2 Ia: 5
Solar Regions
(15355) N15
Sunspots
(20069) N13 (ap)2

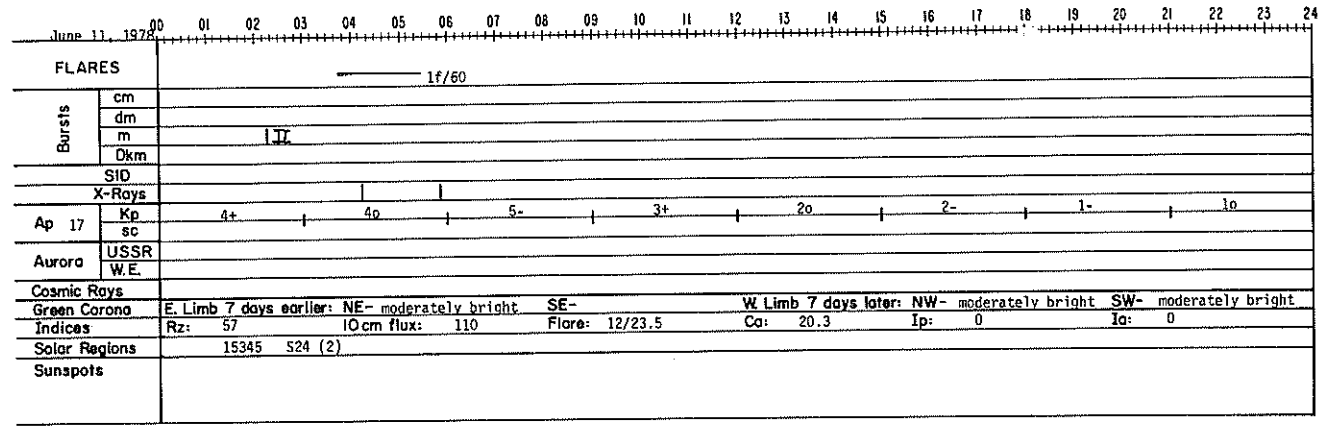

June 6, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 8Q6A
Kp
sc
2+ 2- 1+ 3+ 2- 1o 2- 3-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE
W. Limb 7 days later: NW- SW- moderately bright
Indices
Rz: 29 10cm flux: 107 Flare: 2/24.0 Ca: 14.2 Ip: 3 Ia: 0
Solar Regions
15336 S14(2)
Sunspots
15347 S28

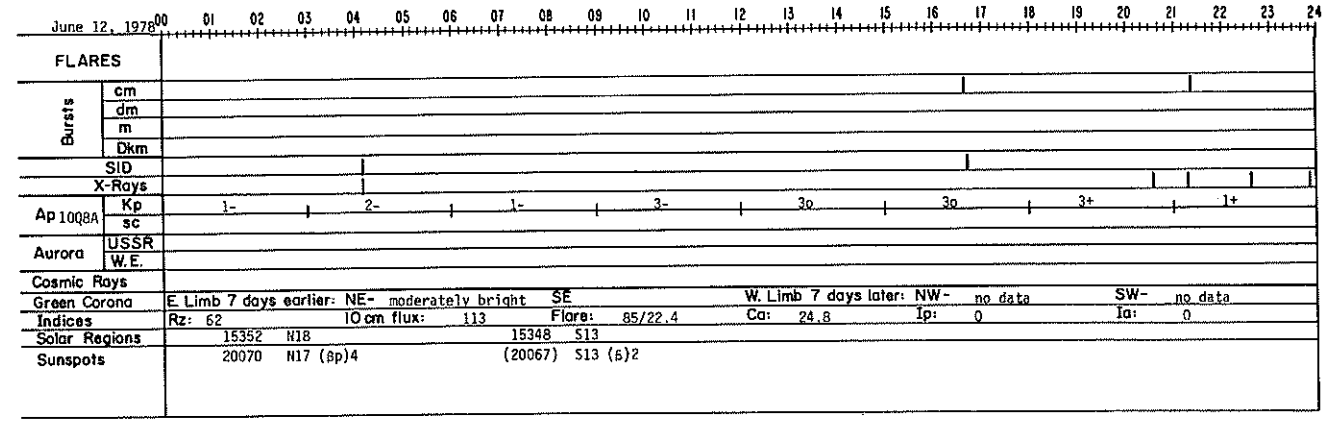

June 7, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/37
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 11
Kp
sc
2+ 3- 3- 2o 2o 2+ 3o 3+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE-
W. Limb 7 days later: NW- SW-
Indices
Rz: 39 10cm flux: 107 Flare: 8/24.0 Ca: 14.9 Ip: 0 Ia: 1
Solar Regions
(15350) S01 (15351) N12 15338 N20 (3&4)
Sunspots
N12 N19

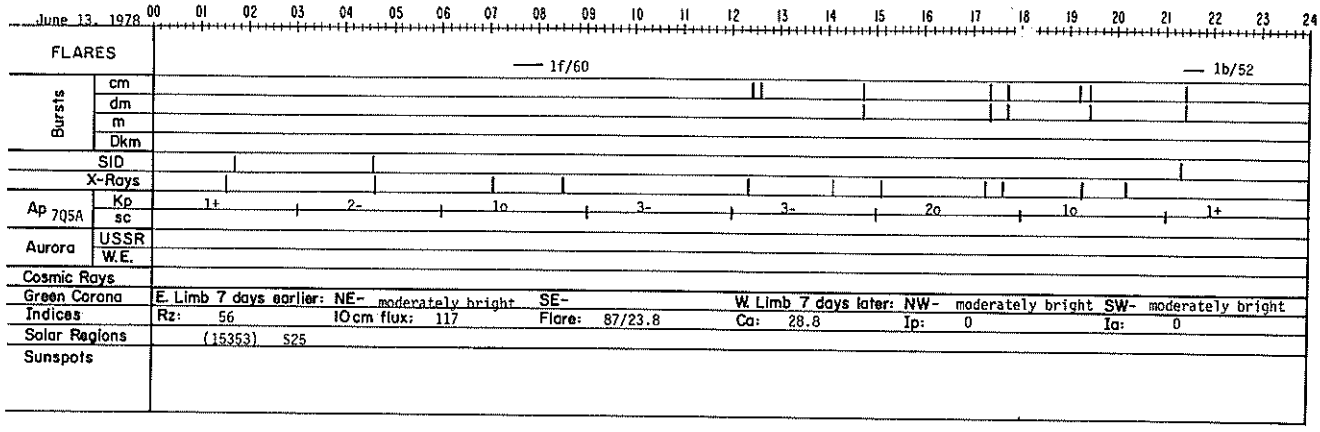

June 8, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 10Q9A
Kp
sc
3+ 4o 2o 1o 2o 2o 1+ 0+
Aurora
USSR
W.E.
Cosmic Rays
Forbush decrease that began June 2 returned to normal.
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE moderately bright
W. Limb 7 days later: NW- SW-
Indices
Rz: 45 10cm flux: 106 Flare: 6/23.8 Ca: no data Ip: 0 Ia: 1
Solar Regions
15342 N17 (4)
Sunspots
(20064) N18 (ap)3
(20071) N20 (ap)1

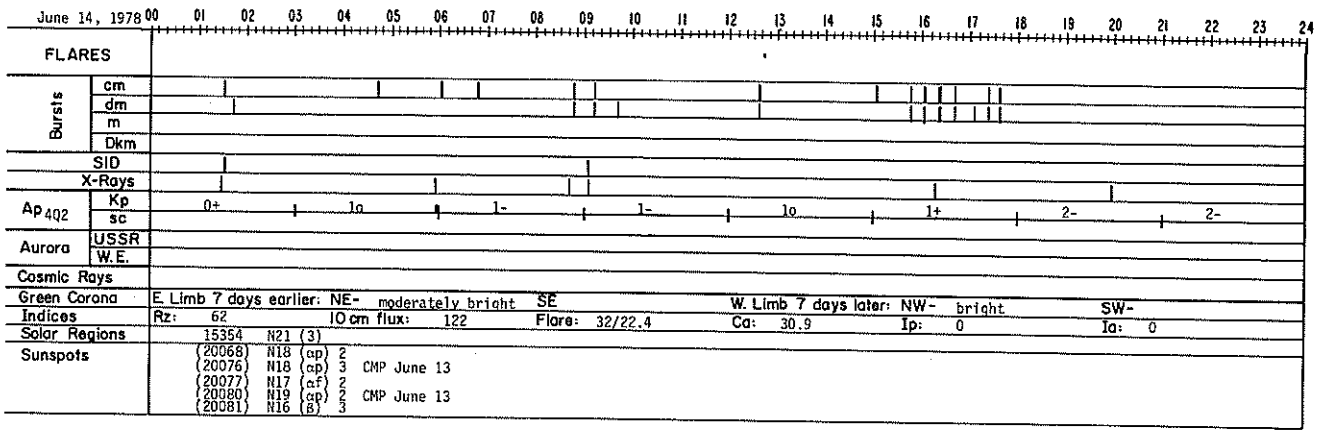

June 9, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 401
Kp
sc
1- 2- 1+ 0+ 1o 1- 1+ 1-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE-
W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 36 10cm flux: 103 Flare: 1/24.0 Ca: 16.5 Ip: 7 Ia: 0
Solar Regions
Sunspots

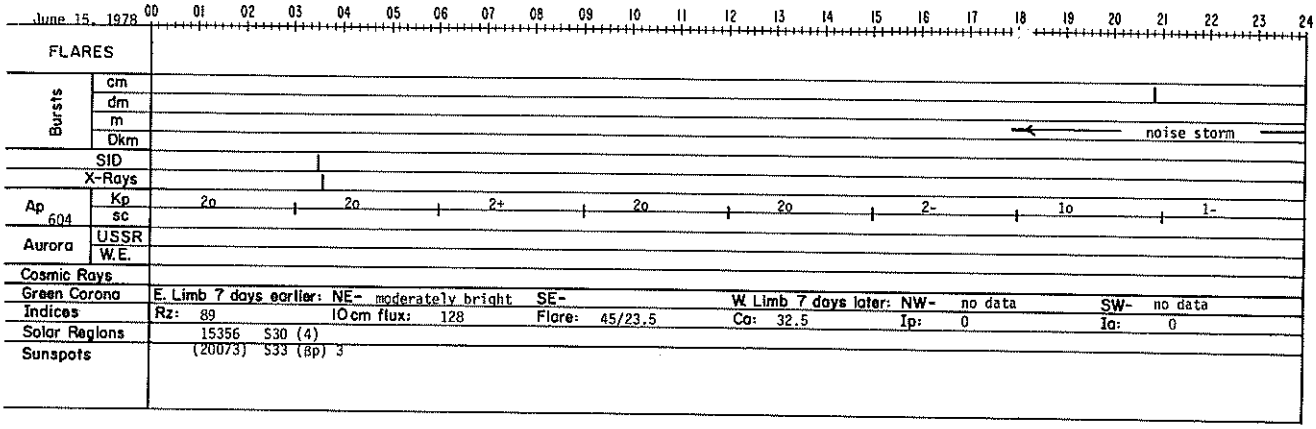

June 10, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 24
Kp
sc
2- 1o 4- 4- 3o 4o 3o 6o
0828(25)
2116(11)
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE
W. Limb 7 days later: NW- moderately bright SW- moderately bright
Indices
Rz: 29 10cm flux: 105 Flare: 11/23.3 Ca: 17.1 Ip: 0 Ia: 0
Solar Regions
15344 N18 (3)
Sunspots
(20072) N17 (β)3
(20079) N16 (β)3

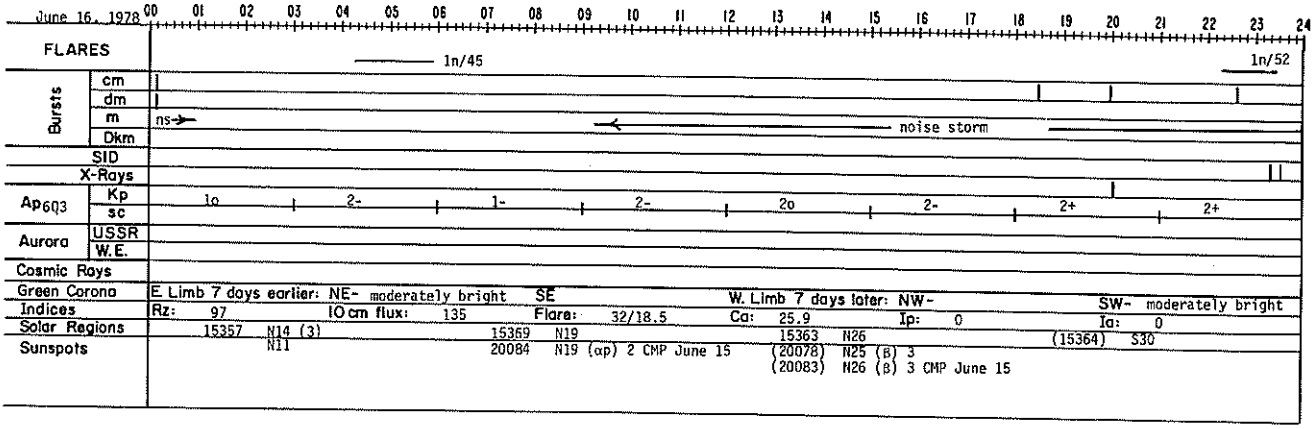

June 11, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1f/60
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 17
Kp
sc
4+ 4o 5- 3+ 2o 2- 1- 1o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE-
W. Limb 7 days later: NW- moderately bright SW- moderately bright
Indices
Rz: 57 10cm flux: 110 Flare: 12/23.5 Ca: 20.3 Ip: 0 Ia: 0
Solar Regions
15345 S24 (2)
Sunspots

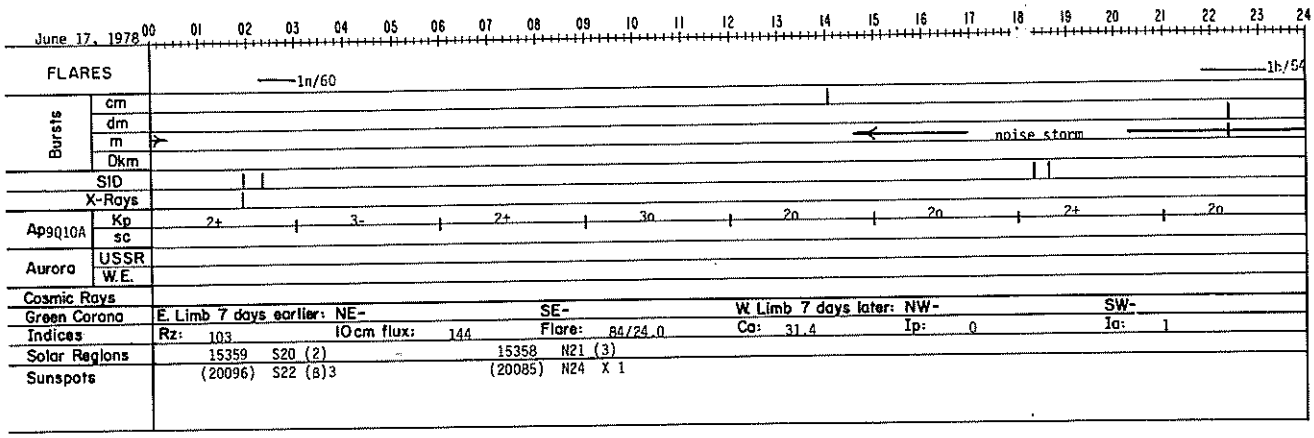

June 12, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 1008A
Kp
sc
1- 2- 1- 3- 3o 3o 3+ 1+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE
W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 62 10cm flux: 113 Flare: 85/22.4 Ca: 24.8 Ip: 0 Ia: 0
Solar Regions
15352 N18 15348 S13
Sunspots
20070 N17 (βp)4 (20067) S13 (β)2

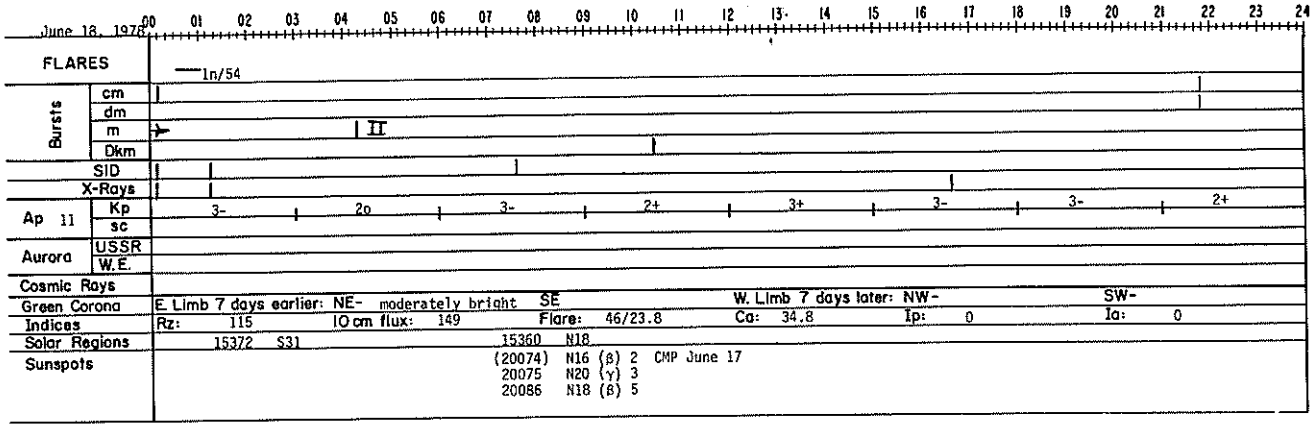

June 13, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1f/60
1b/52
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 705A
Kp
sc
1+ 2- 1o 3- 3- 2o 1o 1+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE-
W. Limb 7 days later: NW- moderately bright SW- moderately bright
Indices
Rz: 56 10cm flux: 117 Flare: 87/23.8 Ca: 28.8 Ip: 0 Ia: 0
Solar Regions
(15353) S25
Sunspots

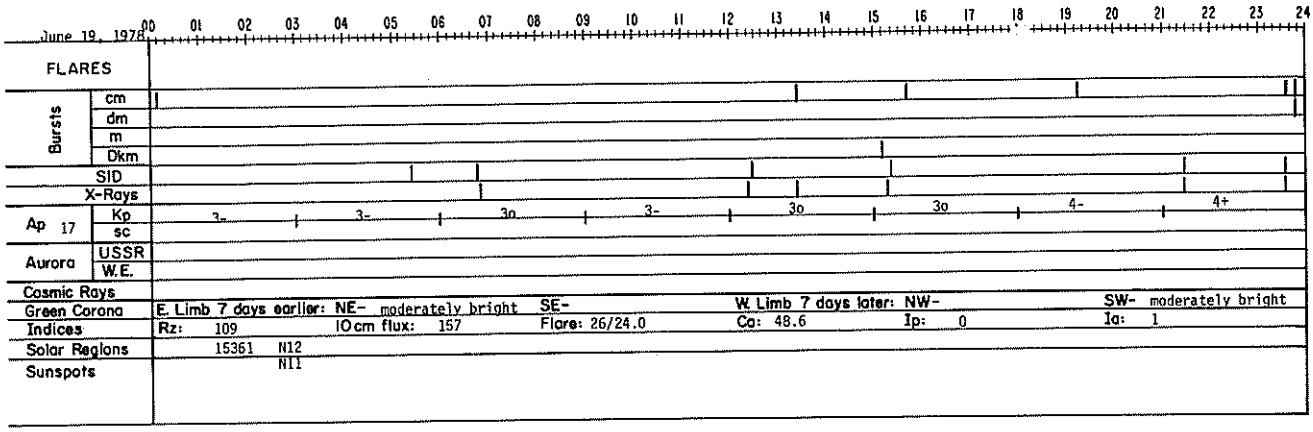

June 14, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 402
Kp
sc
0+ 1o 1- 1- 1o 1+ 2- 2-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE
W. Limb 7 days later: NW- bright SW-
Indices
Rz: 62 10cm flux: 122 Flare: 32/22.4 Ca: 30.9 Ip: 0 Ia: 0
Solar Regions
15354 N21 (3)
Sunspots
(20068) N18 (αp) 2
(20076) N18 (αp) 3 CMP June 13
(20077) N17 (αf) 2
(20080) N19 (αp) 2 CMP June 13
(20081) N16 (β) 3

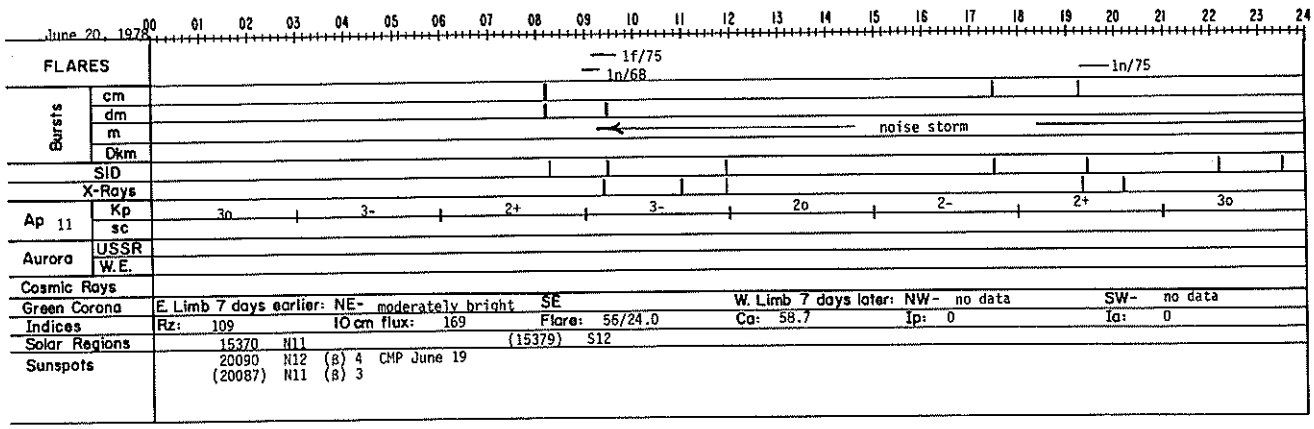

June 15, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 604
Kp
sc
2o 2o 2+ 2o 2o 2- 1o 1-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE-
W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 89 10cm flux: 128 Flare: 45/23.5 Ca: 32.5 Ip: 0 Ia: 0
Solar Regions
15356 S30 (4)
Sunspots
(20073) S33 (βp) 3

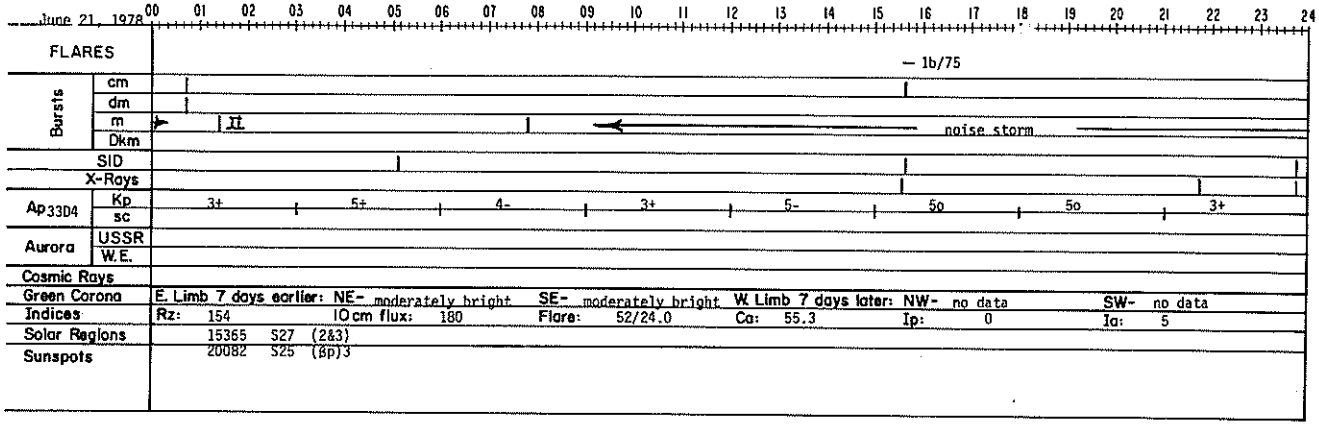

June 16, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/45
1n/52
Bursts
cm
dm
m
ns
noise storm
Dkm
SID
X-Rays
Ap 603
Kp
sc
1o 2- 1- 2- 2o 2- 2+ 2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE
W. Limb 7 days later: NW- SW- moderately bright
Indices
Rz: 97 10cm flux: 135 Flare: 32/18.5 Ca: 25.9 Ip: 0 Ia: 0
Solar Regions
15357 N14 (3)
N11
15369 N19
20084 N19 (αp) 2 CMP June 15
15363 N26
(20078) N25 (β) 3
(20083) N26 (β) 3 CMP June 15
(15364) S30
Sunspots

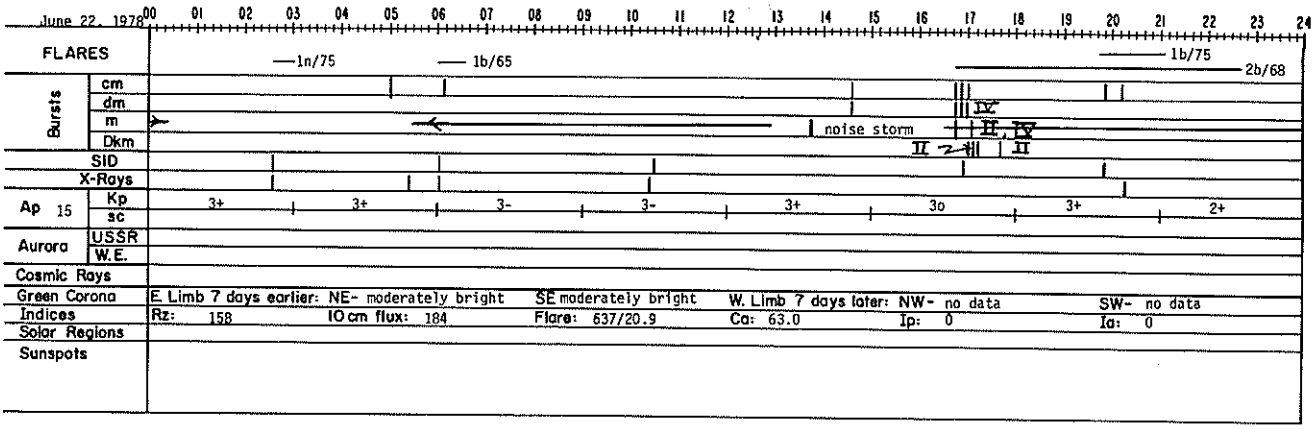

June 17, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/60
1b/54
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 9Q10A
Kp
2+ 3- 2+ 3o 2o 2o 2+ 2o
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- SW-
Indices
Rz: 103 10cm flux: 144 Flare: 84/24.0 Ca: 31.4 Ip: 0 Ia: 1
Solar Regions
15359 S20 (2) 15358 N21 (3)
Sunspots
(20096) S22 (β)3 (20085) N24 X 1

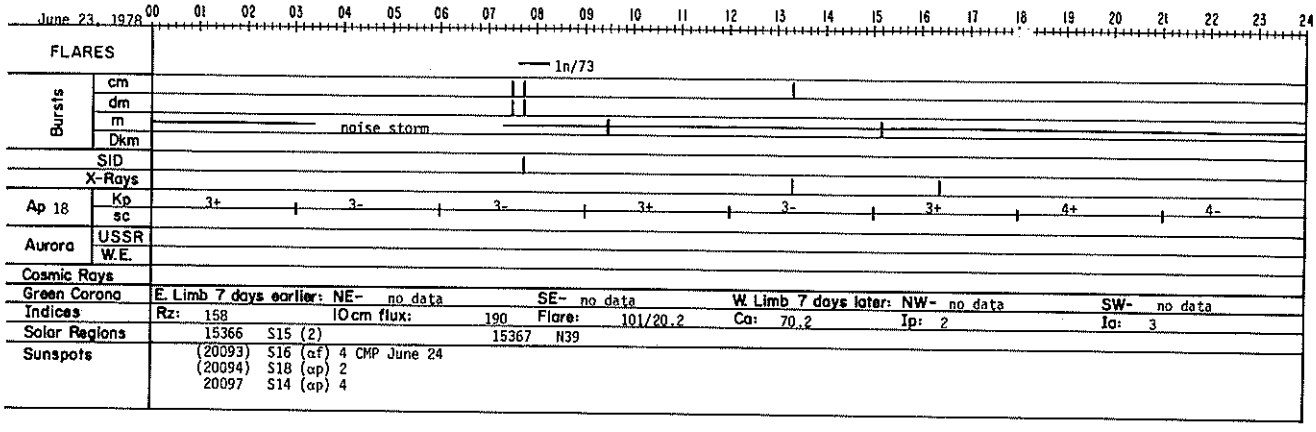

June 18, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/54
Bursts
cm
dm
m
II
Dkm
SID
X-Rays
Ap 11
Kp
3- 2o 3- 2+ 3+ 3- 3- 2+
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE W. Limb 7 days later: NW- SW-
Indices
Rz: 115 10cm flux: 149 Flare: 46/23.8 Ca: 34.8 Ip: 0 Ia: 0
Solar Regions
15372 S31 15360 N18
Sunspots
(20074) N16 (β) 2 CMP June 17
20075 N20 (γ) 3
20086 N18 (β) 5

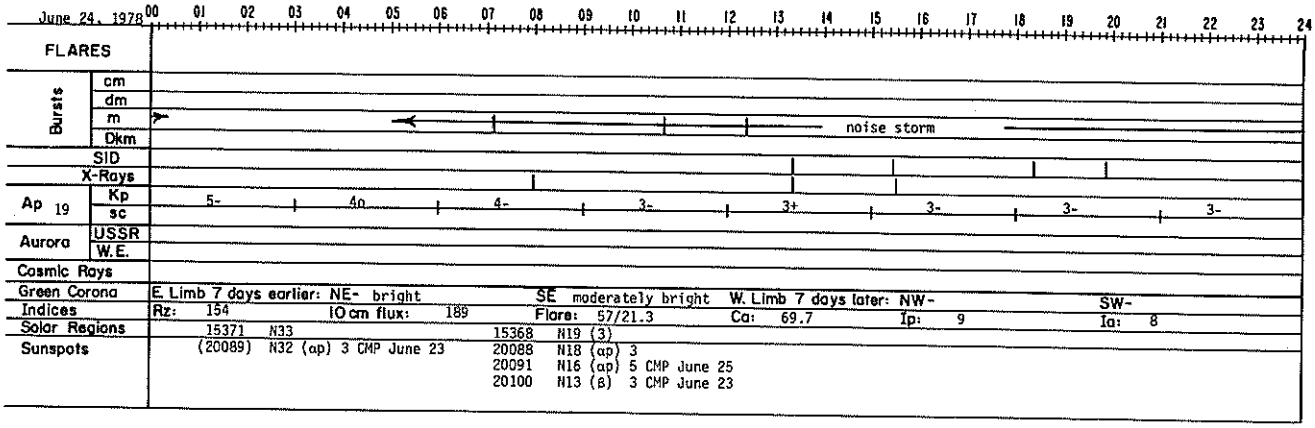

June 19, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 17
Kp
3- 3- 3o 3- 3o 3o 4- 4+
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE- W. Limb 7 days later: NW- SW- moderately bright
Indices
Rz: 109 10cm flux: 157 Flare: 26/24.0 Ca: 48.6 Ip: 0 Ia: 1
Solar Regions
15361 N12
Sunspots
N11

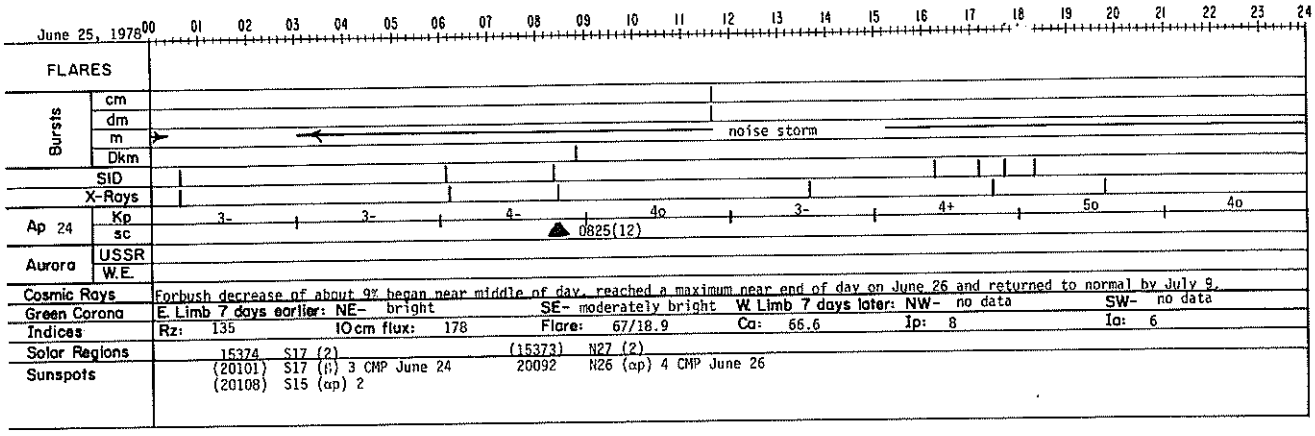

June 20, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1f/75
1n/68
1n/75
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 11
Kp
3o 3- 2+ 3- 2o 2- 2+ 3o
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 109 10cm flux: 169 Flare: 56/24.0 Ca: 58.7 Ip: 0 Ia: 0
Solar Regions
15370 N11 (15379) S12
Sunspots
20090 N12 (β) 4 CMP June 19
(20087) N11 (β) 3

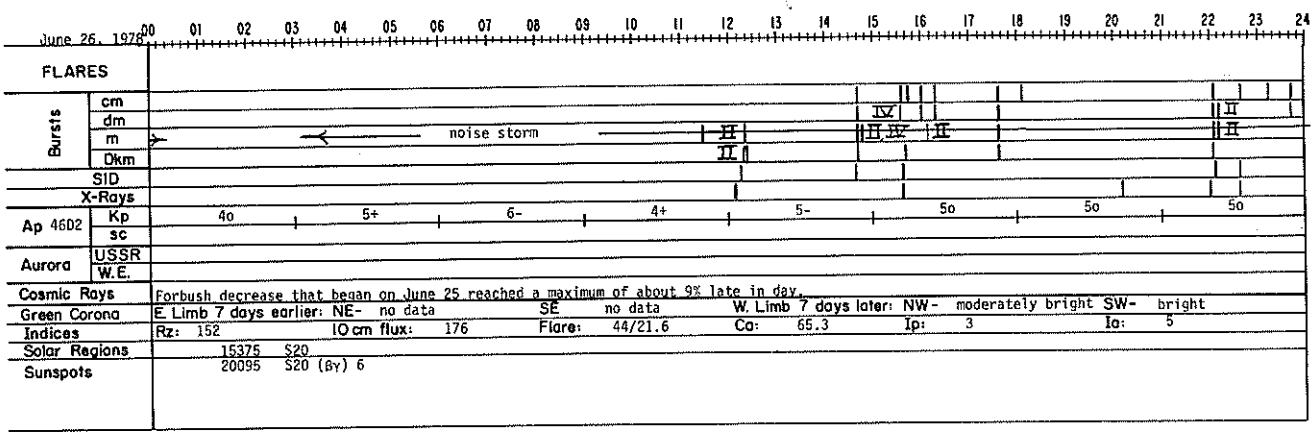

June 21, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
— 1b/75
Bursts
cm
dm
m
Dkm
II
noise storm
SID
X-Rays
Ap 33D4
Kp
sc
3+ 5+ 4- 3+ 5- 5o 5o 3+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE- moderately bright W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 154 10 cm flux: 180 Flare: 52/24.0 Ca: 55.3 Ip: 0 Ia: 5
Solar Regions
15365 S27 (2&3)
Sunspots
20082 S25 (βp)3

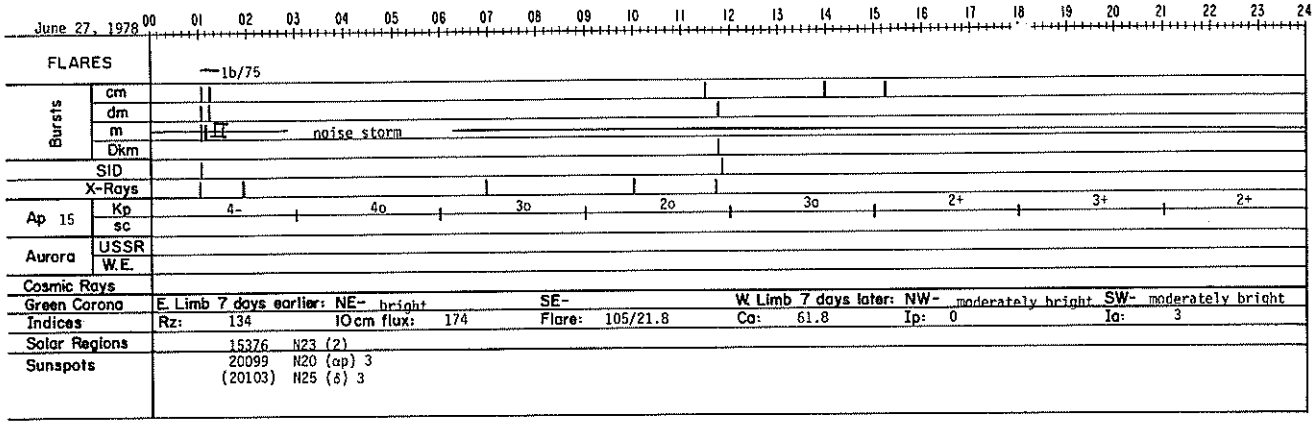

June 22, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
—1n/75
— 1b/65
— 1b/75
2b/68
Bursts
cm
dm
m
Dkm
noise storm
IV
II, IV
II II III II
SID
X-Rays
Ap 15
Kp
sc
3+ 3+ 3- 3- 3+ 3o 3+ 2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE moderately bright W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 158 10 cm flux: 184 Flare: 637/20.9 Ca: 63.0 Ip: 0 Ia: 0
Solar Regions
Sunspots

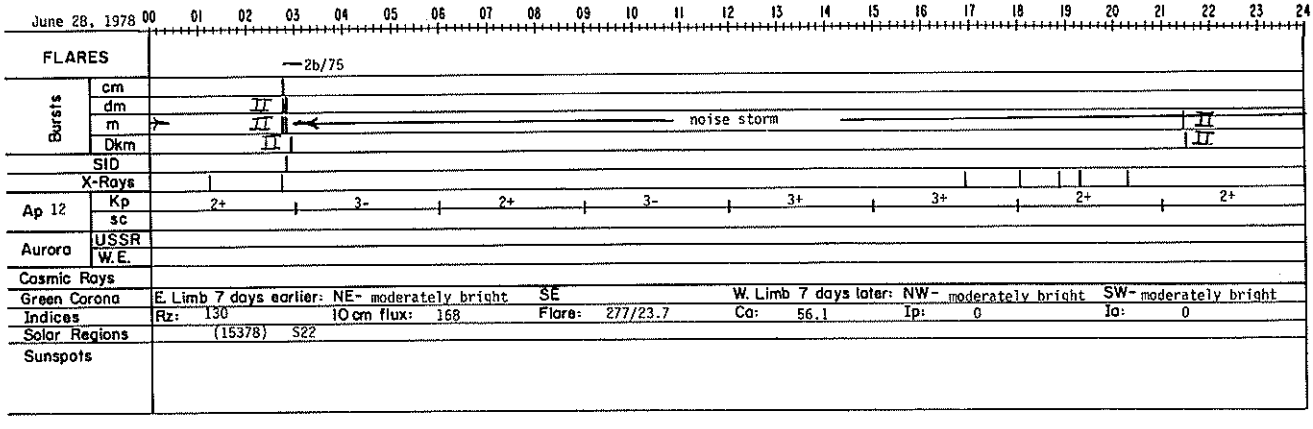

June 23, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
— 1n/73
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 18
Kp
sc
3+ 3- 3- 3+ 3- 3+ 4+ 4-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 158 10 cm flux: 190 Flare: 101/20.2 Ca: 70.2 Ip: 2 Ia: 3
Solar Regions
15366 S15 (2) 15367 N39
Sunspots
(20093) S16 (αf) 4 CMP June 24
(20094) S18 (αp) 2
20097 S14 (αp) 4

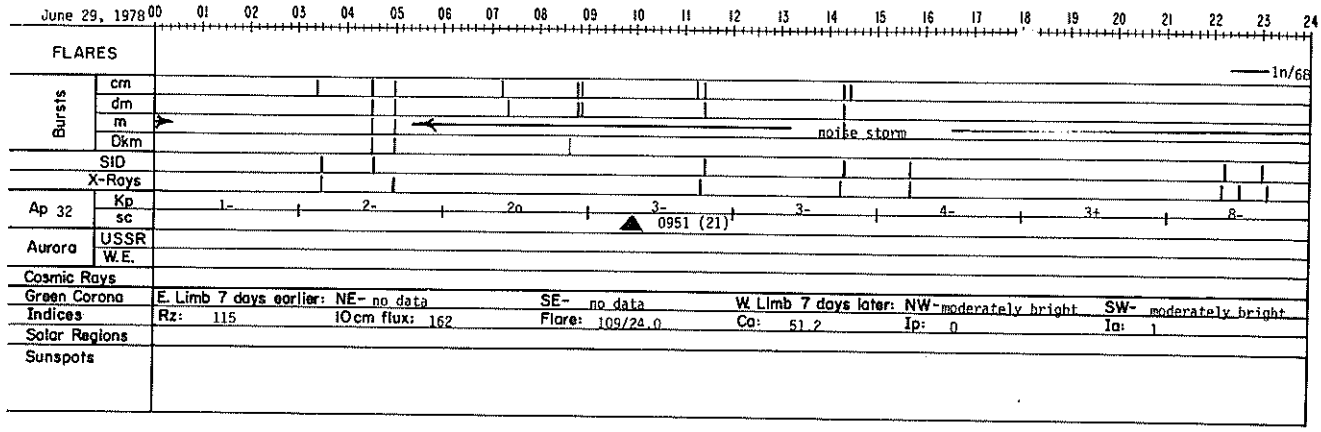

June 24, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 19
Kp
sc
5- 4o 4- 3- 3+ 3- 3- 3-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- bright SE moderately bright W. Limb 7 days later: NW- SW-
Indices
Rz: 154 10 cm flux: 189 Flare: 57/21.3 Ca: 69.7 Ip: 9 Ia: 8
Solar Regions
15371 N33 15368 N19 (β)
Sunspots
(20089) N32 (αp) 3 CMP June 23 20088 N18 (αp) 3
20091 N16 (αp) 5 CMP June 25
20100 N13 (β) 3 CMP June 23

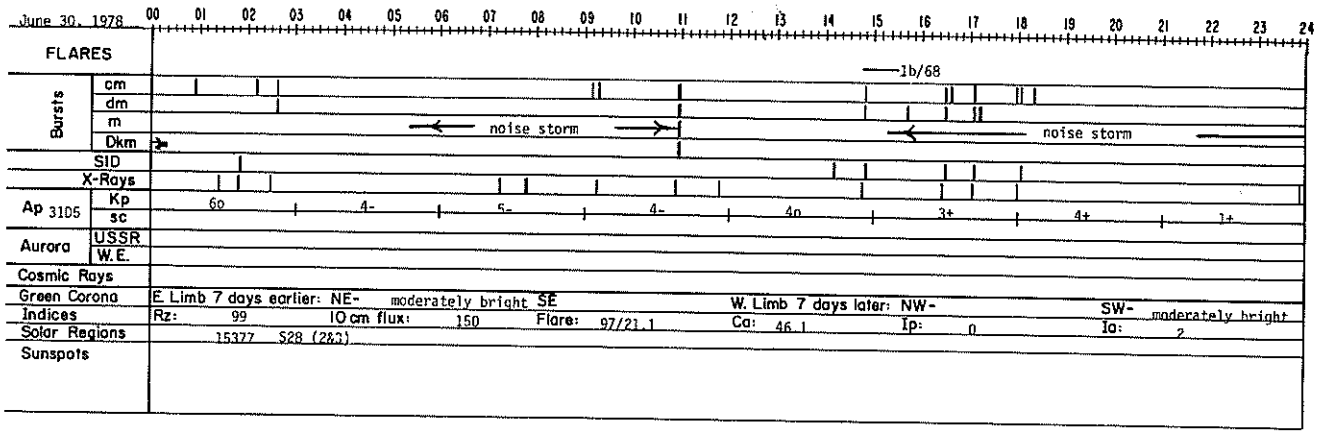

June 25, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 24
Kp
sc
3- 3- 4- 4o 3- 4+ 5o 4o
0825(12)
Aurora
USSR
W.E.
Cosmic Rays
Forbush decrease of about 9% began near middle of day, reached a maximum near end of day on June 26 and returned to normal by July 9.
Green Corona
E. Limb 7 days earlier: NE- bright SE- moderately bright W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 135 10cm flux: 178 Flare: 67/18.9 Ca: 66.6 Ip: 8 Ia: 6
Solar Regions
15374 S17 (2) (15373) N27 (2)
Sunspots
(20101) S17 (β) 3 CMP June 24 20092 N26 (αp) 4 CMP June 26
(20108) S15 (αp) 2


June 26, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 46D2
Kp
sc
4o 5+ 6- 4+ 5- 5o 5o 5o
Aurora
USSR
W.E.
Cosmic Rays
Forbush decrease that began on June 25 reached a maximum of about 9% late in day.
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- moderately bright SW- bright
Indices
Rz: 152 10cm flux: 176 Flare: 44/21.6 Ca: 65.3 Ip: 3 Ia: 5
Solar Regions
15375 S20
Sunspots
20095 S20 (βγ) 6


June 27, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1b/75
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 15
Kp
sc
4- 4o 3o 2o 3o 2+ 3+ 2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- bright SE- W. Limb 7 days later: NW- moderately bright SW- moderately bright
Indices
Rz: 134 10cm flux: 174 Flare: 105/21.8 Ca: 61.8 Ip: 0 Ia: 3
Solar Regions
15376 N23 (2)
Sunspots
20099 N20 (αp) 3
(20103) N25 (δ) 3


June 28, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
2b/75
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 12
Kp
sc
2+ 3- 2+ 3- 3+ 3+ 2+ 2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE W. Limb 7 days later: NW- moderately bright SW- moderately bright
Indices
Rz: 130 10cm flux: 168 Flare: 277/23.7 Ca: 56.1 Ip: 0 Ia: 0
Solar Regions
(15378) S22
Sunspots


June 29, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/6B
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 32
Kp
sc
1- 2- 2o 3- 0951 (21) 3- 4- 3+ 8-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- moderately bright SW- moderately bright
Indices
Rz: 115 10cm flux: 162 Flare: 109/24.0 Ca: 51.2 Ip: 0 Ia: 1
Solar Regions
Sunspots


June 30, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1b/68
Bursts
cm
dm
m
Dkm
noise storm
noise storm
SID
X-Rays
Ap 3105
Kp
sc
6o 4- 5- 4- 4o 3+ 4+ 1+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE
W. Limb 7 days later: NW- SW- moderately bright
Indices
Rz: 99 10cm flux: 150 Flare: 97/21.1 Ca: 46.1 Ip: 0 Ia: 2
Solar Regions
15377 S28 (283)
Sunspots

REGIONAL FLARE INDEX

INCLUDES ALL FLARES

JUNE 1978

MC MATH PLAGE NO.	LAT	CMP DATE	DATE FIRST FLARE	DATE LAST FLARE	FLARE-INDEX SUM	FLARE-INDEX MEAN	TOTAL NO. OF FLARES
15337	S25	78/06/02.5	78/06/04	78/06/09	12.81	2.13	7
15330	S28	78/06/03.4	78/05/30	78/05/30	17.79	17.79	1
15339	N14	78/06/03.6	78/06/04	78/06/04	7.10	7.10	1
15341	S22	78/06/04.8	78/06/02	78/06/02	3.96	3.96	1
15333	N16	78/06/05.0	78/05/31	78/06/10	10.65	.97	4
15355	N15	78/06/05.4	78/06/12	78/06/12	0.00	0.00	1
15351	N12	78/06/07.3	78/06/11	78/06/11	1.92	1.92	1
15342	N18	78/06/09.0	78/06/06	78/06/06	.21	.21	1
15344	N18	78/06/10.5	78/06/07	78/06/14	5.80	.73	3
15345	S24	78/06/11.0	78/06/08	78/06/16	7.07	.79	2
15352	N18	78/06/12.0	78/06/10	78/06/18	212.84	23.65	55
15348	S13	78/06/12.2	78/06/10	78/06/10	5.31	5.31	1
15354	N21	78/06/14.3	78/06/08	78/06/21	68.52	4.89	15
15356	S30	78/06/15.5	78/06/11	78/06/19	3.64	.40	3
15369	N19	78/06/16.1	78/06/17	78/06/18	6.76	3.38	2
15363	N26	78/06/16.2	78/06/15	78/06/19	25.18	5.04	7
15359	S20	78/06/17.2	78/06/21	78/06/21	1.90	1.90	1
15358	N23	78/06/17.4	78/06/20	78/06/20	0.00	0.00	1
15360	N18	78/06/18.7	78/06/11	78/06/24	134.74	9.62	35
15361	N12	78/06/19.0	78/06/15	78/06/15	.84	.84	1
15370	N12	78/06/20.3	78/06/20	78/06/26	43.21	6.17	12
15379	S12	78/06/20.4	78/06/25	78/06/25	2.09	2.09	2
15365	S29	78/06/22.0	78/06/16	78/06/25	59.83	5.98	11
15366	S15	78/06/23.6	78/06/16	78/06/22	24.68	3.53	13
15371	N33	78/06/24.2	78/06/17	78/06/22	4.67	.78	2
15368	N18	78/06/24.5	78/06/19	78/07/02	692.07	49.43	50
15374	S17	78/06/25.2	78/06/19	78/06/28	9.58	.96	4
15373	N27	78/06/26.1	78/06/20	78/07/02	74.16	5.70	19
15375	S20	78/06/26.7	78/06/19	78/07/02	435.01	31.07	59
15376	N23	78/06/27.6	78/06/22	78/07/01	184.24	18.42	53
15377	S27	78/06/30.5	78/06/28	78/06/28	3.38	3.38	1

Miscellaneous Data

Contents

	Page
Geomagnetic Indices	
Table of Indices Kp, Kn, Ks, Km, Cp, Ap, aa for October 1978	82
Energetic Solar Particles	
May 1978 data	83-87
June 1978 data	88-92

GEOMAGNETIC ACTIVITY INDICES

OCTOBER 1978

Day		Three-Hourly Indices Kp									Three-Hourly Indices Km								Ap	aa *					Cp
		1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8		N	S	M			
1		3-	2+	2+	3-	3	3-	3+	3+	22+	3-	2+	2+	2+	3-	2+	3-	4-	13	23	25	20	29		0.8
2		2-	3-	2-	3	3+	3	3-	3	21	2-	2+	1	2+	3	3	3-	2+	12	22	18	14	27		0.7
3		3-	2+	3	2-	2-	1	1+	2-	15+	3-	1+	2-	2+	2	2-	1+	2-	8	15	14	17	12		0.4
4		4	4-	4-	3	3+	2	3-	3	25+	4-	3+	3+	3-	3	2-	3	3-	17	29	20	29	21		0.9
5		4-	2+	1	2	1+	2	1+	1	15-	3-	1+	0+	1+	1	2	2-	1+	8	15	9	13	12	KK	0.4
6	Q1	1	1	1	0	1-	2	1-	2-	8	1	1+	2-	1-	1	2-	1	2-	4	8	7	6	10	CC	0.1
7	Q3	2-	2-	1+	1	1+	0+	1	1-	9	1	1+	1+	1-	1+	1-	1-	1	4	8	8	10	7	CC	0.2
8	Q8	0	2	1+	2	1+	1	1	2+	11	0+	2	1	2-	1+	2-	1+	3-	5	10	12	10	12	CK	0.2
9		1+	3-	2-	3	2	2	3-	4-	19	1-	3	2+	3-	2+	3-	3	4-	11	21	25	19	27		0.6
10		4+	4-	2+	3+	3	0+	2	3-	22-	3	3-	2	3+	3-	1-	3-	3-	15	29	21	34	16		0.8
11	Q9	2	2+	2	2-	1-	1-	0+	1+	11	2-	2-	2+	1+	1	1-	1-	1+	5	11	8	13	7	CK	0.2
12		1+	1+	1-	3+	4	4	3	3-	20+	2-	2-	1	4-	5-	4	2+	3	14	21	33	17	37		0.8
13		3	2+	2+	1+	2-	1-	2+	2+	16	3	2+	3	2-	2-	1-	2+	3-	8	15	17	21	11		0.4
14	Q5	1-	1	1	1-	0+	2	2+	2-	10-	1+	1	1	1-	1-	2	3-	2-	5	9	9	5	13	CC	0.2
15	Q4	1+	0+	1	1+	2+	1	1	2-	10	2-	0+	1+	2-	3-	1+	1	2	5	9	11	7	14	CC	0.2
16	Q2	2	2	1-	1-	1+	0+	0+	1-	8	2	2-	1-	1	1+	0+	0+	1	4	8	7	9	6	CC	0.1
17	Q6	0+	1+	1	1	1-	1-	2+	3-	10	1-	2-	1	1-	0+	1	2	3+	5	11	11	7	16	K	0.2
18	D1	4+	5+	5	4-	3+	3+	4+	4	33+	5-	4+	5-	3+	3	3+	3+	4-	32	52	43	53	41		1.3
19	D4	4	4-	4+	4-	4	2+	4-	3	29-	3-	3+	4	3	3+	3	3+	3-	22	40	33	39	34		1.1
20		3-	3-	2+	3-	3-	2	2	1	18	2+	2-	1+	3	3-	3	2+	2	9	13	20	16	18		0.5
21		1	3	2+	3+	3+	2	3	3	21	1+	2+	2+	3-	3	2	3	3	13	22	20	15	28		0.7
22		2-	3+	3-	2+	2	3-	2+	1-	18-	2-	2+	2+	2+	2	3	3-	2-	10	19	20	19	21		0.5
23	Q0	0+	3-	2+	2-	1+	1	1-	1+	11+	1	2+	2-	2	1+	1+	1-	2-	6	11	11	12	10	CK	0.3
24	Q7	2	2+	1	0+	0	1	2+	1+	10+	2	1+	0+	1-	0+	1-	3-	2-	5	11	8	8	12	CC	0.2
25		1	1	1-	2+	3	3-	2-	1-	13	1	1	1-	3-	3	3-	2+	1+	7	10	15	10	16	KK	0.4
26		2-	2	2	2-	3	3+	5-	5	23+	2-	2	2	2-	3+	4	5-	4+	18	34	29	13	50		1.0
27	D3	4	4+	5+	4+	3	2	1+	3-	27	3+	3	4+	4+	3+	3-	1+	3-	23	35	40	54	21		1.1
28		3-	4-	4+	3	2	2+	1	3-	22-	2+	3-	3+	2	2+	3	2-	3-	14	28	20	24	25		0.8
29		3-	2+	2	3	4	4+	3+	3-	24+	2+	2	1+	3-	4	5	4-	3	16	31	30	17	45		0.9
30	D2	2-	3+	4-	5-	4-	5-	4+	4-	30-	1+	3-	3-	4	4+	5	4	3+	25	40	49	28	62		1.2
31	D5	4-	4-	3-	2+	4	4	4-	3+	27+	2	2	2+	3-	4	5-	4-	3+	20	41	34	22	53		1.0
																			12	21.0	20.2	20.9			0.59

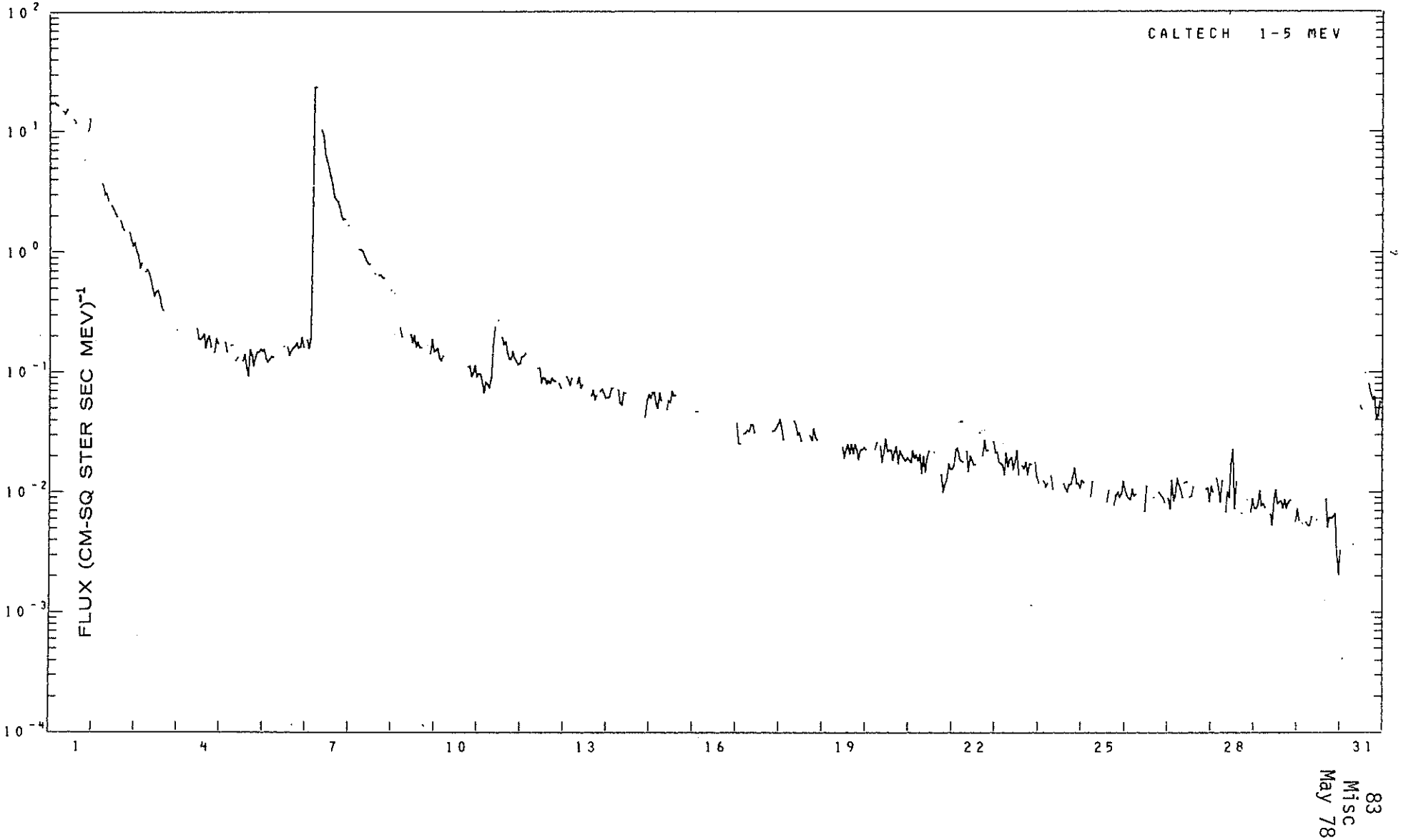
Day	Three-Hourly Indices Kn								Three-Hourly Indices Ks							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1	3-	2	2+	3-	3	2+	3-	3+	2+	2-	2+	3	3+	2	3-	3
2	2-	2	1	3-	3+	3	3-	2+	1+	2	1	3-	4-	3+	3-	3-
3	2+	1+	2+	2+	2+	1+	1+	2-	2+	1+	3-	2+	2+	1+	1	1+
4	3+	3+	3	3-	3+	2-	3	3	3+	3	3	3	3+	2-	3	3
5	3-	1+	0+	2-	1+	2+	2-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

Quiet days (Q) and disturbed days (D), geomagnetic planetary three-hour-range indices (Kp) (integers alone are equivalent to those normally given with a small zero), magnetic character figures (Cp), and average amplitude (Ap) (unit 2γ) prepared by Geophysikalisches Institut at the University of Göttingen, F.R. of Germany for the International Service of Geomagnetic Indices. Ten most quiet days [Q1-Q0(10)] and five most disturbed days [D1-D5] are ordered from most quiet or disturbed, respectively. A or K means "not really quiet" (A = "Ap>6", K = "Ap ≤6 but one Kp ≥3o or two Kp values ≥3-"). An * means "not really disturbed" (Ap<20).

Geomagnetic three-hourly indices (Kn), (Ks) and (Km) as in IAGA-Bulletin No. 32 and indices (aa), "antipodal", as in IAGA-Bulletin No. 33 prepared by P. N. Mayaud of the Institut de Physique du Globe, Paris, France. Really quiet (C) and quiet but slightly disturbed three-hourly intervals (K) are given for 24-hour and 48-hour intervals centered on 12 UT.

IMP 7 AND 8 ELECTRONS

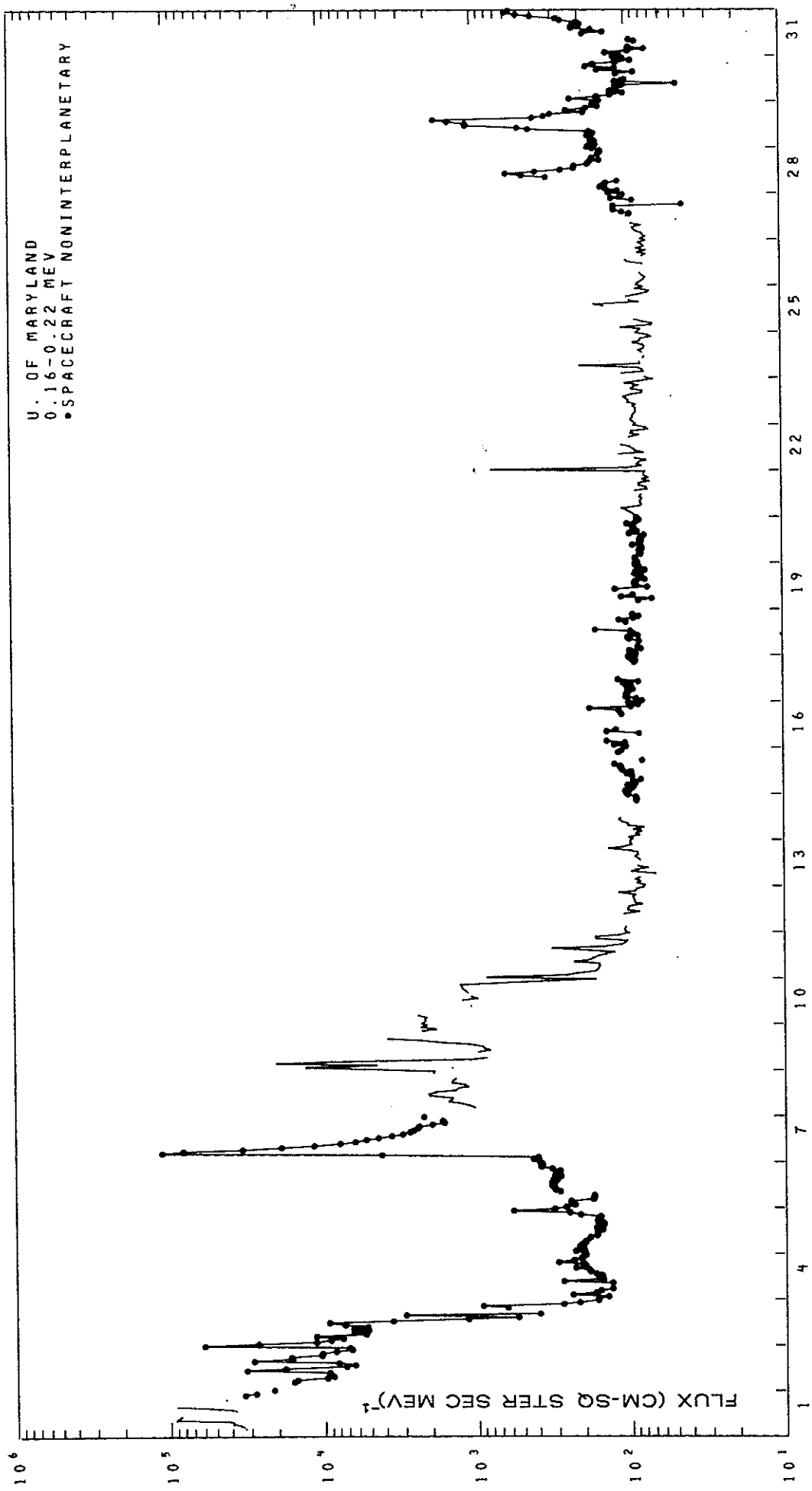
MAY 1978



83
Misc
May 78

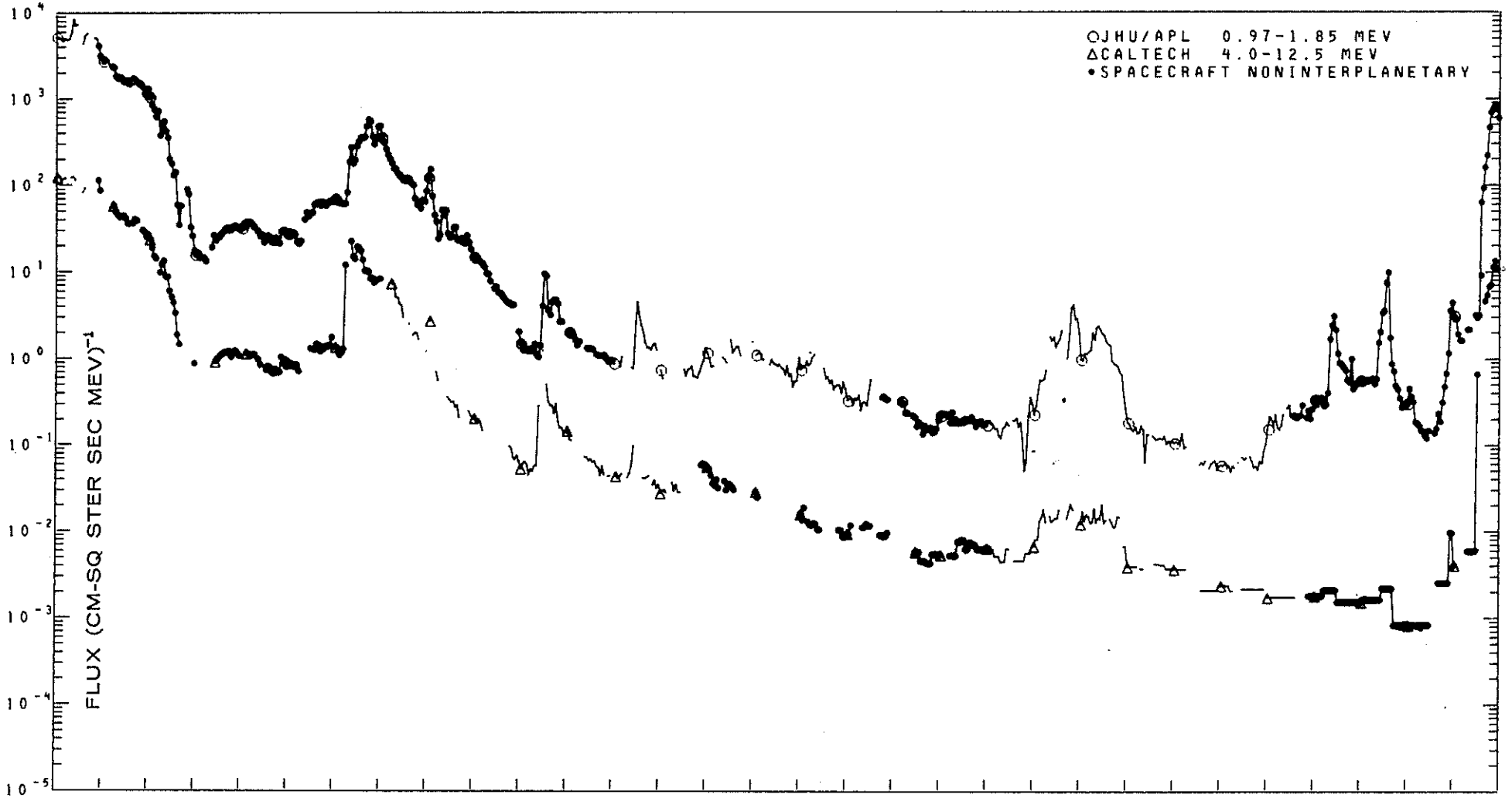
IMP 7 AND 8 LOW ENERGY PROTONS

MAY 1978



IMP 7 AND 8 INTERMEDIATE ENERGY PROTONS

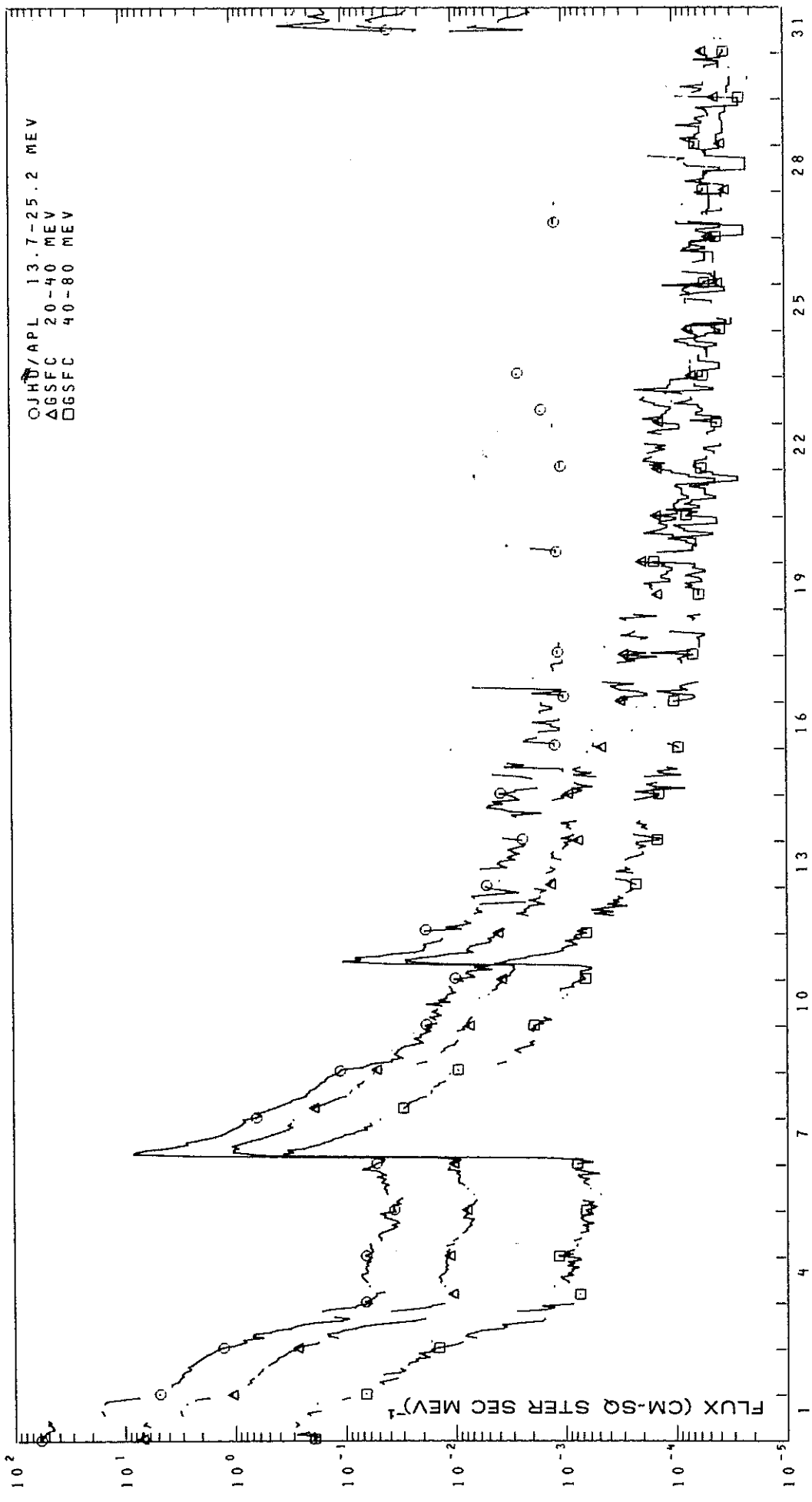
MAY 1978



85 Misc May 78

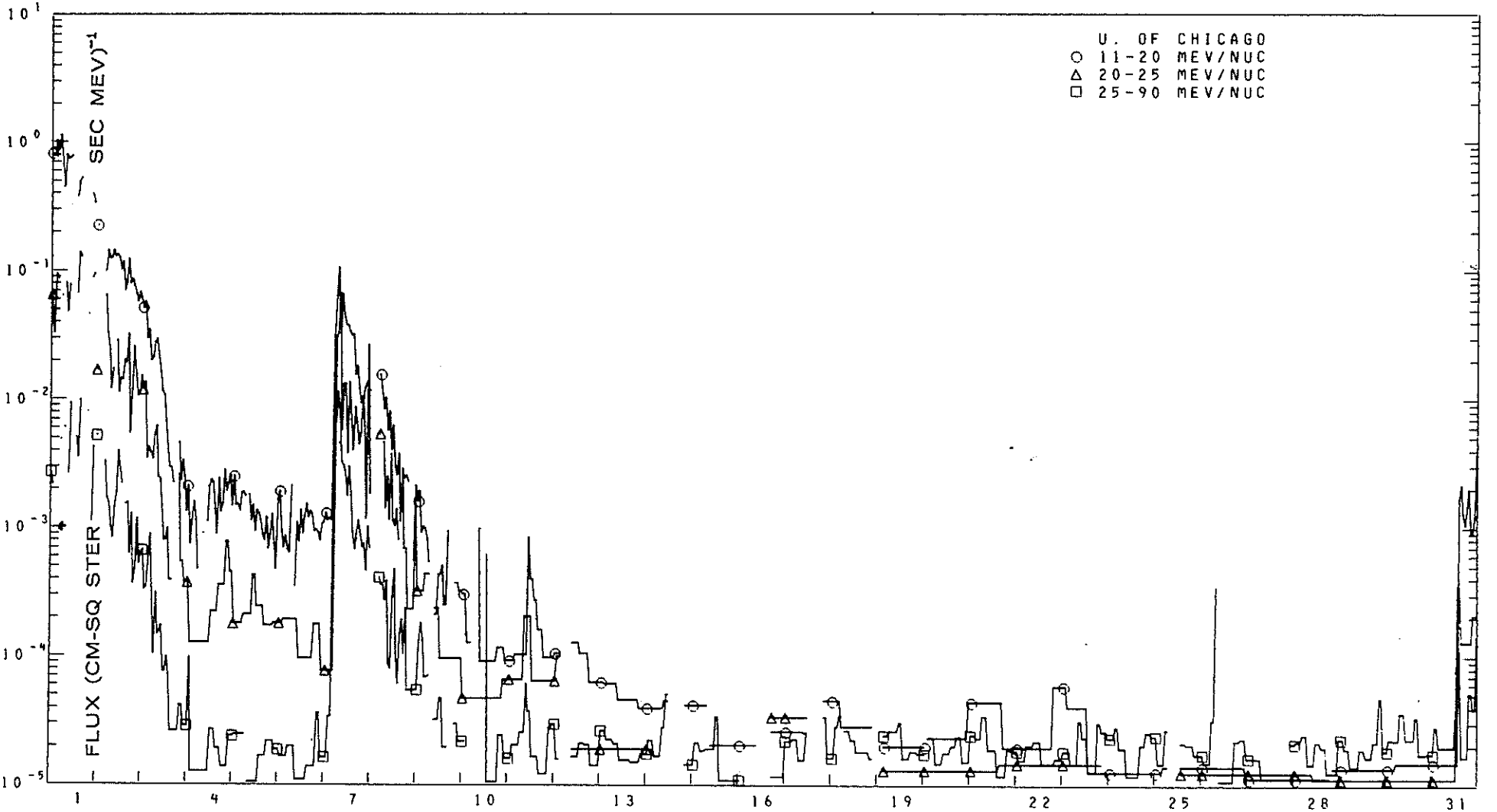
IMP 7 AND 8 HIGH ENERGY PROTONS

MAY 1978

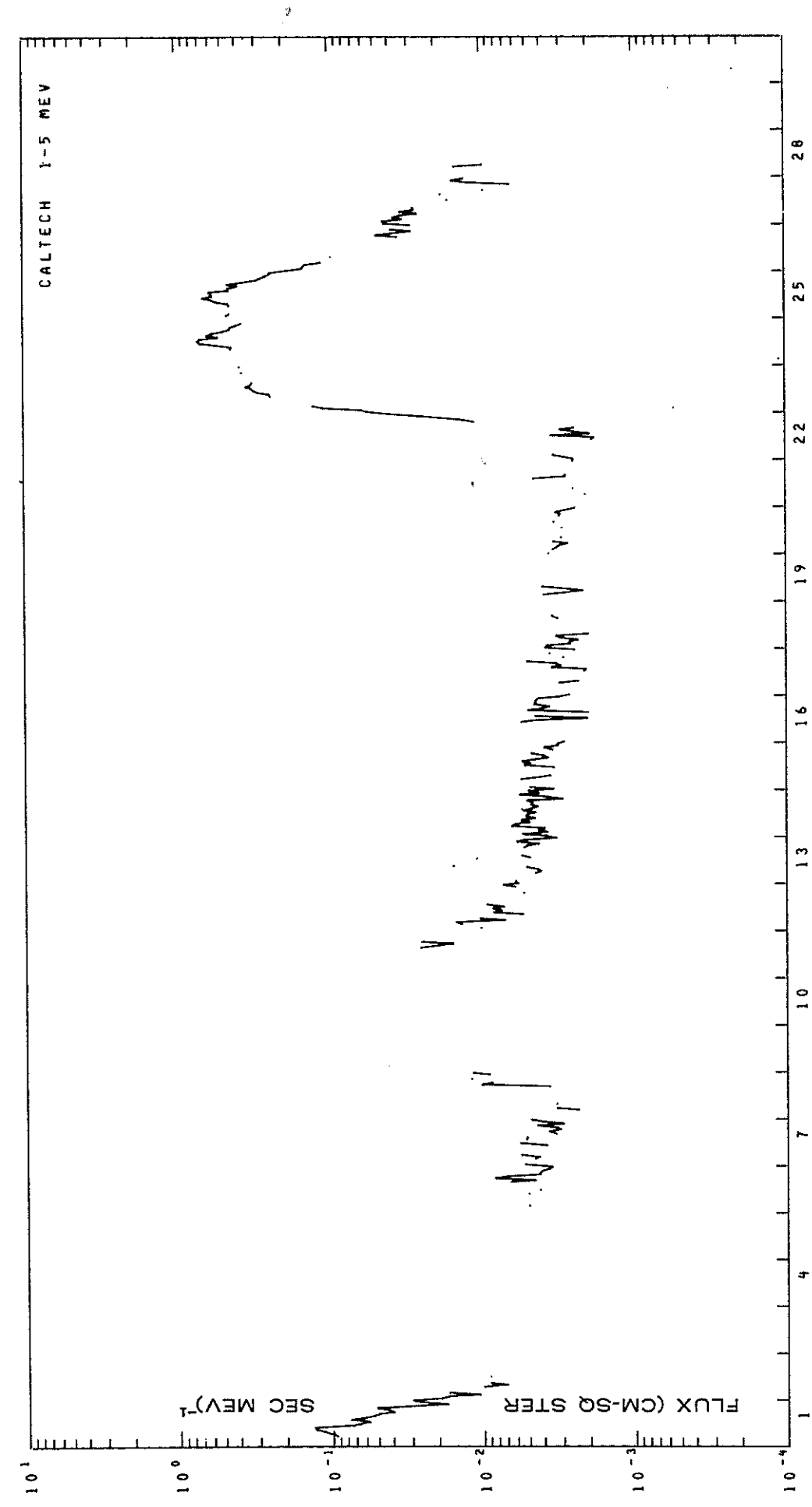


IMP 7 AND 8 ALPHA PARTICLES

MAY 1978

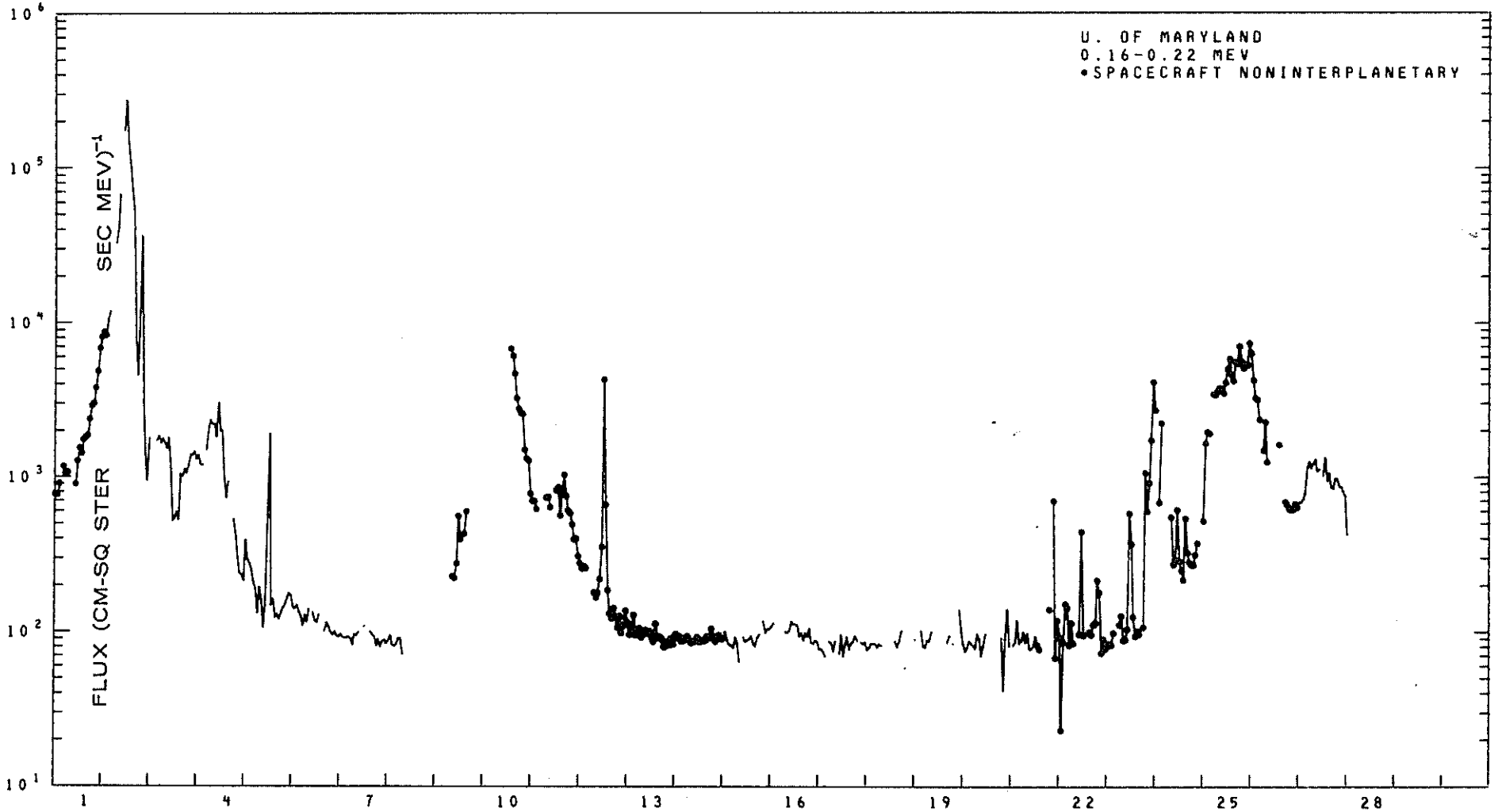


87
Misc
May 78


IMP 7 AND 8 ELECTRONS
JUNE 1978
CALTECH 1-5 MEV
FLUX (CM-SQ STER SEC MEV)$^{-1}$
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
1
4
7
10
13
16
19
22
25
28

IMP 7 AND 8 LOW ENERGY PROTONS

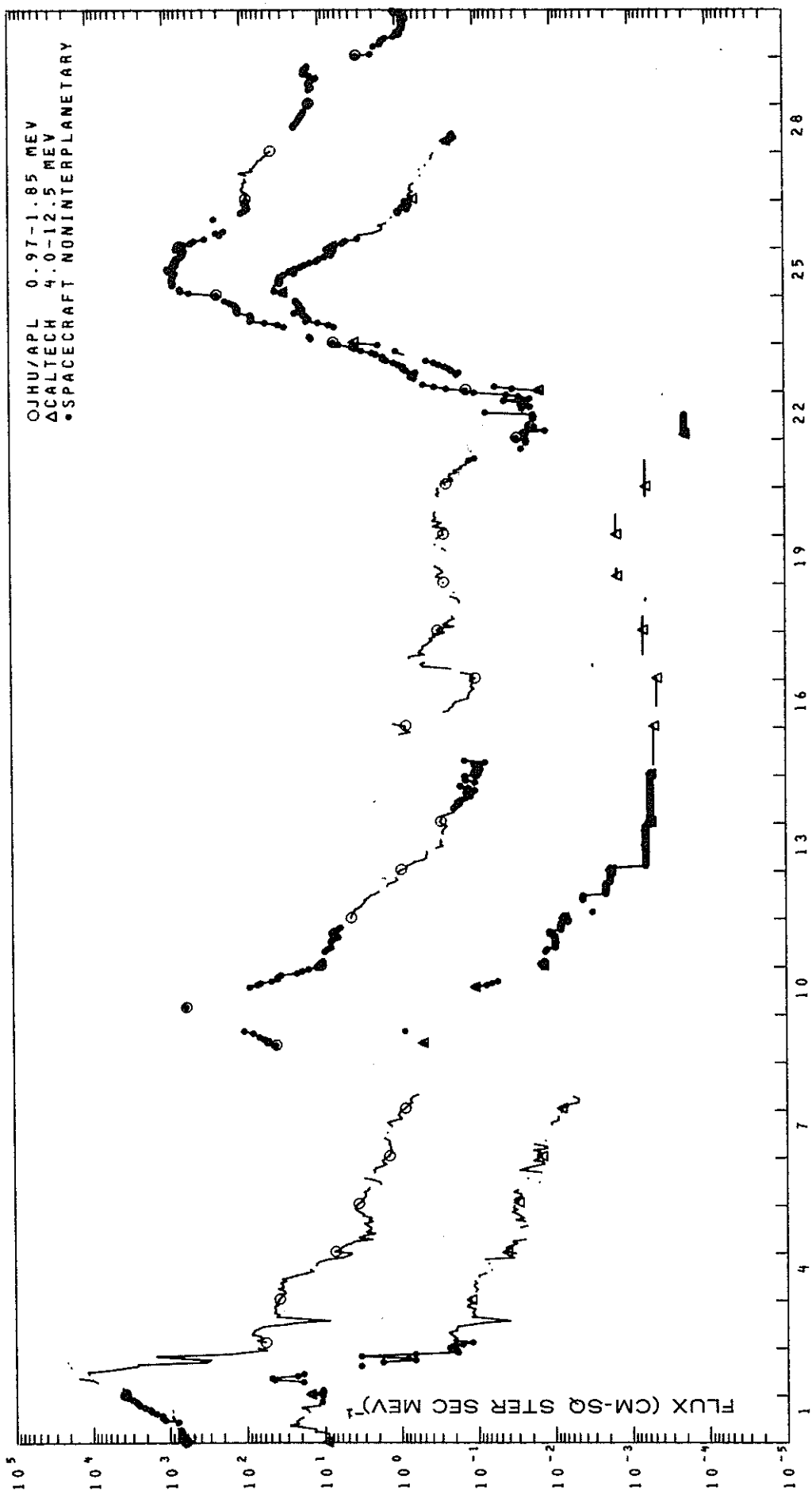
JUNE 1978



89
Misc
Jun 78

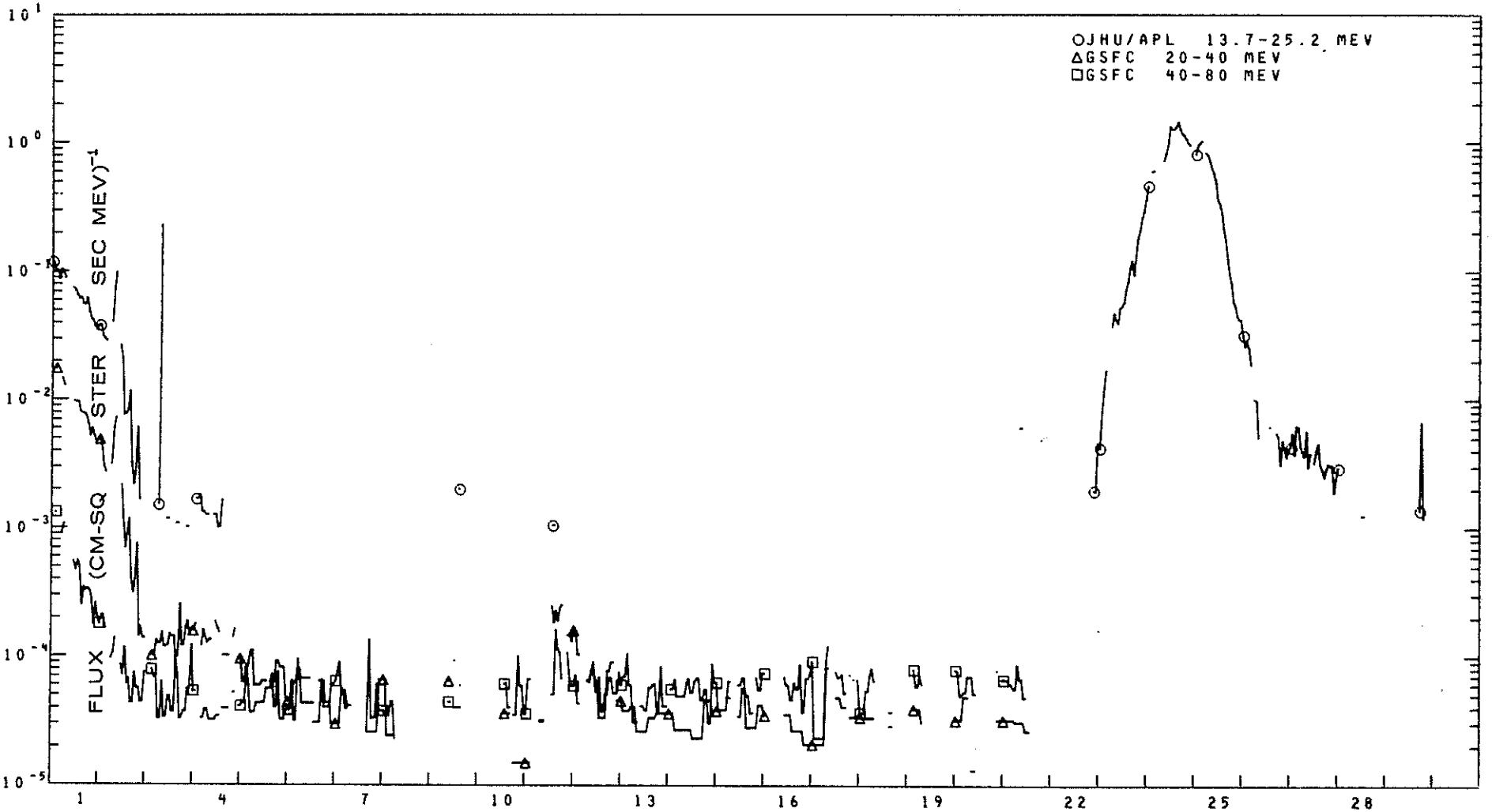
IMP 7 AND 8 INTERMEDIATE ENERGY PROTONS

JUNE 1978



IMP 7 AND 8 HIGH ENERGY PROTONS

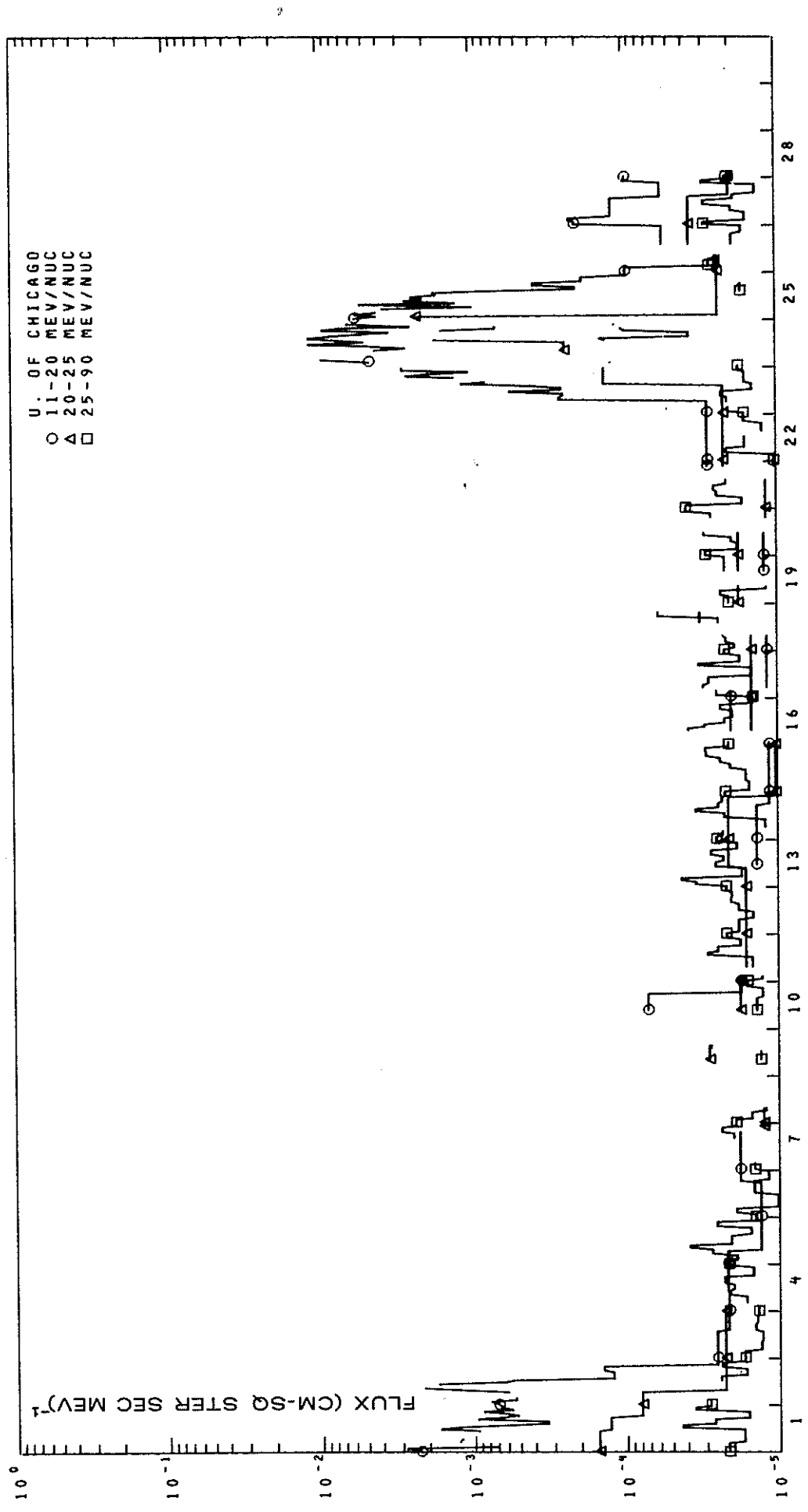
JUNE 1978



91
Misc
Jun 78

IMP 7 AND 8 ALPHA PARTICLES

JUNE 1978



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