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Solar - Geophysical Data

NO. 418 JUNE 1979

Part II (Comprehensive Reports)

DATA FOR
DECEMBER 1978
NOVEMBER 1978

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

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To standardize referencing these reports in the open literature, the following format is recommended:

Solar-Geophysical Data, 390 Part I (or Part II), pages, February 1977, U.S. Department of Commerce, (Boulder, Colorado, U.S.A. 80303).

SOLAR-GEOPHYSICAL DATA

No. 418

Issued in two parts

Helen E. Coffey, Editor

J. Virginia Lincoln, Chief
Solar-Terrestrial Physics Division

CONTENTS

DETAILED COVERAGE FOR 1978 AND 1979 PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

		1978 Sep	Oct	Nov	Dec	1979 Jan	Feb	Mar	Apr	May
A.	SOLAR AND INTERPLANETARY PHENOMENA									
A.1	Sunspot Drawings	411A 46	412A 40	413A 48	414A 48	415A 52	416A 50	417A 44	418A 48	
A.2a	Zurich Provisional Relative Sunspot Numbers Rz	410A 11	411A 11	412A 9	413A 11	414A 11	415A 11	416A 11	417A 9	418A 11
A.2b	Zurich Final Sunspot Numbers Rz	415A 10	415A 10	415A 10	415A 10					
A.2c	American Relative Sunspot Numbers RA	410A 11	411A 11	412A 9	413A 11	414A 11	415A 11	416A 11	417A 9	418A 11
A.3a	Mt. Wilson Magnetograms	411A 46	412A 40	413A 48	414A 48	415A 52	416A 50	417A 44	418A 48	
A.3b	Mt. Wilson Magnetic Characteristics of Sunspots	411A106	412A102	413A108	414A110	418B 50	418B 60	417A106	418A108	
A.3c	Kitt Peak Magnetograms	411A 46	412A 40	413A 48	414A 48	415A 52	416A 50	417A 44	418A 48	
A.3d	Mean Solar Magnetic Field (Stanford)	410A 41	411A 40	412A 34	413A 42	414A 42	415A 44	416A 42	417A 36	418A 38
A.3e	Stanford Magnetograms					415A 52	416A 50	417A 44	418A 43	
A.4	H-alpha Filtergrams	411A 46	412A 40	413A 48	414A 48	415A 52	416A 50	417A 44	418A 48	
A.5	Calcium Plage Drawings - McMath (or Catania)	411A 46	412A 40	413A 48	414A 48	415A 52	416A 50	417A 44	418A 48	
A.5a	Calcium Plage (McMath) and Sunspot Regions	411A106	412A102	413A108	414A110	418B 50	418B 60	417A106	418A108	
A.5b	McMath Daily Calcium Plage Indices	411A116	412A114	413A116	414A121	415A125	416A116	417A118	418A118	
A.6	H-alpha Synoptic Charts	411A 44	412A 38	413A 46	414A 45	415A 48	416A 46	417A 40	418A 42	
A.6b	Synoptic Chart and Active Regions (Paris)	415B 4	416B 4	417B 4	418B 4					
A.6c	Stanford Solar Magnetic Field Synoptic Charts					415A 49	416A 47	417A 41	418A 43	
A.6d	Kitt Peak Solar Magnetic Field Synoptic Charts								418A 45	
A.7f	Helium D3 Chromosphere (Big Bear)	410A 37	411A 36	---	413A 38	---	416A 38	417A 33	418A 34	
A.7g	Helium Synoptic Maps (KPNO)	410A 38	411A 35	412A 30	413A 36	414A 34	415A 40	416A 36	417A 32	418A 33
A.7h	Coronal Line Emission (Sac Peak)	411A 46	412A 40	413A 48	414A 48	415A 52	416A 50	417A 44	418A 48	
A.8aa	2800 MHz - Daily Values of Solar Flux (ARO-Ottawa)	410A 11	411A 11	412A 9	413A 11	414A 11	415A 11	416A 11	417A 9	418A 11
A.8ac	2800 MHz - Daily Values of Adj. Solar Flux (ARO-Ottawa)	410A 11	411A 11	412A 9	413A 11	414A 11	415A 11	416A 11	417A 9	418A 11
A.8g	Daily Values of Adjusted Solar Flux (AFGL)	410A 11	411A 11	412A 9	413A 11	414A 11	415A 11	416A 11	417A 9	418A 11
A.9cb	8.6 mm Radio Maps of the Sun (NOSC - La Posta)	411A 46	---	---	---	---	---	---	---	
A.9d	2 cm Radio Maps of the Sun (NOSC - La Posta)	411A 46	---	---	---	---	---	---	---	
A.10a	169 MHz - Interferometric Observations (Nancay)	410A 23	411A 20	412A 18	413A 21	414A 24	415A 25	416A 25	417A 21	
A.10c	21 cm East-West Solar Scans (Fleurs)	412B 58	411A 23	412A 21	415B 68	414A 27	415A 28	416A 28	417A 24	418A 25
A.10d	43 cm East-West Solar Scans (Fleurs)	412B 59	411A 24	412A 22	415B 69	414A 28	415A 29	416A 29	417A 25	418A 26
A.10e	10.7 cm East-West Solar Scans (Ottawa-ARO)	410A 25	411A 22	412A 20	413A 23	414A 26	415A 27	416A 27	417A 23	418A 24
A.10f	3 cm East-West Solar Scans (Toyokawa)	410A 24	411A 21	412A 19	413A 22	414A 25	415A 26	416A 26	417A 22	418A 23
A.11k	Solar X-ray Radiation (SOLRAD 11)	411A120	412A118	413A119	414A126	415A129	416A120	417A119	418A122	
A.11g	Solar X-ray (SMS/GOES) (graphs)	416B 96	416B 52	417B 41	418B 31					
A.12ba	Cosmic Ray Protons (Pioneers 6 & 7)	----	---	---	---	414A 36	---	---	---	---
A.12bb	Cosmic Ray Protons (Pioneers 8 & 9)	---	---	412A 29	---	414A 37	---	---	---	---
A.12e	Energetic Solar Particles (IMP H & J)	416B 91	416B 46	417B 36	418B 26					
A.12f	Energetic Solar Particles (GMS/SEM)	---	---	---	---	---	---	---	---	---
A.13a	Solar Wind (Pioneers 6 & 7)	---	---	---	---	414A 36	---	---	---	---
A.13ab	Solar Wind (Pioneers 8 & 9)	---	---	412A 29	---	414A 37	---	---	---	---
A.13d	Solar Wind from IPS Measurements	410A 39	414B 50	414B 51	414B 52	414A 39	415A 45	416A 39	417A 37	418A 35
A.13e	Solar Plasma (IMP H & J)	415B 53	416B 45	417B 35	418B 25					
A.13f	Solar Wind (Pioneer 12 (Venus))					414A 38	415A 39	416A 35	417A 31	418A 32
A.17	Interplanetary Magnetic Field (Pioneer 8)	---	---	---	---	---	---	---	---	---
A.17	Interplanetary Magnetic Field (Pioneer 9)	---	---	412A 29	---	414A 37	---	---	---	---
A.17c	Inferred IP Magnetic Field	410A 40	411A 38	412A 32	413A 40	415A 42	415A 42	417A 34	417A 34	418A 36
A.18	Interplanetary Electric Field (Pioneer 8)	---	---	---	---	---	---	---	---	---
A.18	Interplanetary Electric Field (Pioneer 9)	---	---	412A 29	---	414A 37	---	---	---	---
B.	IONOSPHERIC (AND RADIO WAVE PROPAGATION) PHENOMENA									
B.52	Graphs of Transmission Frequency Range	411A158	412A162	413A160	414A172	415A162	416A166	417A166	418A165	
B.53	Quality Figures Based on Frequency Ranges	411A160	412A161	413A159	414A174	415A161	416A165	417A165	418A165	
C.	FLARE-ASSOCIATED EVENTS									
C.1a	Optical Observations Flares	410A 14	411A 14	412A 12	413A 14	414A 14	415A 14	416A 14	417A 12	418A 14
C.1ba	Optical Observations Flares (Standardized Data)	415B 6	416B 8	417B 6						
C.1d	Flare Patrol Observations	410A 22	411A 19	412A 17	413A 20	414A 23	415A 24	416A 24	417A 20	418A 23
C.1d	Flare Patrol Observations	415B 32	416B 30	417B 25						
C.1e	Flare Indices (by day)	415B 31	416B 29	417B 24						
C.1f	Flare Indices (by Region)	416B 70	417B 58							
C.3	Solar Radio Waves - Outstanding Occurrences	415B 33	416B 31	417B 26	418B 6					
	Solar Radio Waves - Frequencies - Selected	410A 26	411A 25	412A 23	413A 26	414A 29	415A 30	416A 30	417A 26	418A 28
C.3t	43.25, 80 and 160 MHz Selected Bursts (Culgoora)	411A144	412A148	413A147	414A159	415A147				
C.4a	Solar Radio Spectral Obs. (Fort Davis)	411A135	414B 53	414B 55	414A142	417B 60	417B 62	417A138		
C.4d	Solar Radio Spectral Obs. (Culgoora)	412B 60	412A134	413A134	414A142	415A129	416A134	417A138	418A137	
C.4e	Solar Radio Spectral Obs. (Weissenau)	411A135	412A134	413A134	414A142	415A129	416A134	417A138	418A137	
C.4f	Solar Radio Spectral Obs. (Sagamore Hill)	411A135	412A134	413A134	414A142	415A129	416A134	417A138	418A137	
C.4h	Solar Radio Spectral Obs. (Dwingeloo)	411A135		413A134	414A142	415A129	416A134	417A138	418A137	
C.4i	Solar Radio Spectral Obs. (Durnten)	411A135	412A134	413A134	415B 70	415A129	416A134	417A138	418A137	
C.4j	Solar Radio Spectral Obs. (Manila)	411A135	412A134	413A134	414A142	415A129	416A134	417A138	418A137	
C.5e	Solar X-ray (SMS/GOES) (graphs)	416B 96	416B 52	417B 41	418B 31					
C.6	Sudden Ionospheric Disturbances	411A117	412A115	413A117	414A122	415A126	416A117	417A119	418A119	
D.	GEOMAGNETIC AND MAGNETOSPHERIC PHENOMENA									
D.1a	Geomagnetic Indices Kp, Kn, Ks, Km, Ap, aa, Cp	411A151	413B 82	413A152	414A164	415A155	416A158	417A158	418A158	
D.1ba	27-day Chart of Kp Indices	411A153	412A157	413A154	414A166	415A157	416A160	417A160	418A160	
D.1c	27-day Chart of C9	414A167	414A167	414A167	414A167					
D.1d	Principal Magnetic Storms	411A156	412A160	413A157	414A170	415A158	416A163	417A163	418A163	
D.1e	Reduced Magnetograms									
D.1f	Sudden Commencement and Solar Flare Effects	411A157	412A161	413A158	414A171	415A160	416A164	418B 76		
D.1g	Equatorial Indices Dst	411A155	412A159	413A156	414A169	416B 90	416A162	417A162	418A162	
D.1h	Geomagnetic Substorm Log (Boulder)	410A 43	411A 41	412A 36	413A 43	414A 43	415A 46	416A 43	417A 38	418A 39
F.	COSMIC RAYS									
F.1a	Cosmic Ray Neutron Counts (Deep River)	411A150	412A154	414B 57	414A161	415A154	416A151	417A151	418A151	
F.1b	Cosmic Ray Neutron Counts (Climax)		415B 72	415B 72	415B 72	416B 88	416A151	417A151	418A151	
F.1e	Cosmic Ray Neutron Counts (Alert)	411A150	412A154	414B 57	414A161	415A154	416A151	417A151	418A151	
F.1f	Cosmic Ray Neutron Counts (Calgary)									
F.1h	Cosmic Ray Neutron Counts (Thule)									
F.1i	Cosmic Ray Neutron Counts (Kiel)	411A150	412A154	413A149	418B 74	415A154	416A151	417A151	418A151	
F.1j	Cosmic Ray Neutron Counts (Tokyo)	411A150	412A154	413A149	418B 74	415A154	416A151	417A151	418A151	
F.1k	Cosmic Ray Neutron Counts (Kula)									
F.1l	Cosmic Ray Neutron Counts (Huancayo)						417B 67	418B 72		
H.	MISCELLANEOUS									
H.60	IUWDS Alert Decisions	410A 5	411A 4	412A 4	413A 5	414A 4	415A 5	416A 4	417A 4	418A 5
H.62	Abbreviated Calendar Record	416B 62	417B 50	418B 40						

Notes:

"411A 46" listed under 1978 Sep means that the sunspot drawings for September 1978 were contained in *Solar-Geophysical Data* Number 411 - Part I, beginning on page 46.

A = Part I, B = Part II.

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

SGD 418 Part II (Comprehensive)

DECEMBER 1978 DATA

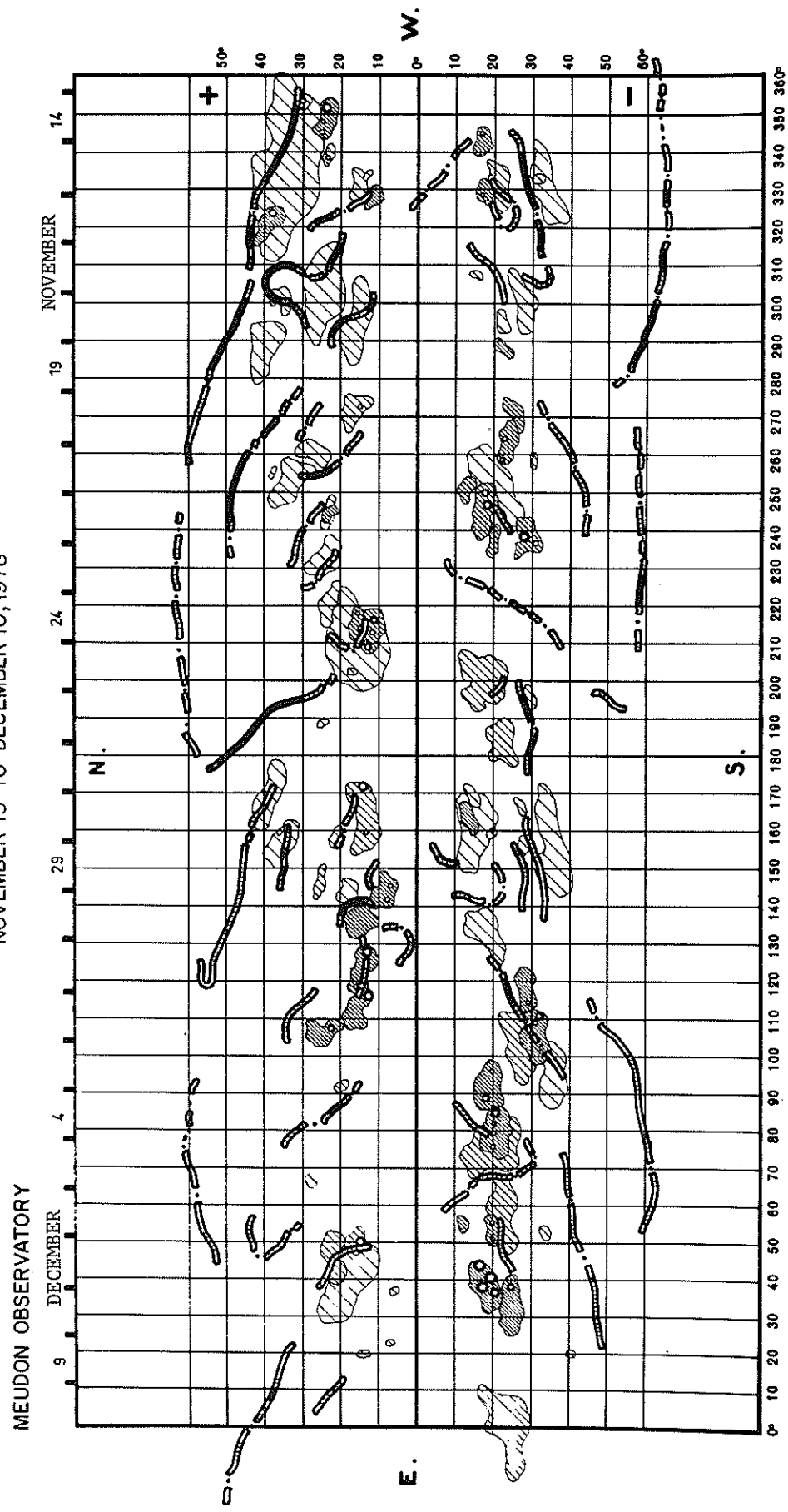
Contents

ACTIVE REGIONS

CARRINGTON ROTATION 1675

(November 13 to December 10, 1978)

Region No.	Coordinates Lat.	Long.	Age at CMP	IMP.	Spot-less Region	Region No. in Rotation 1675	Activity at West Limb
1	31°N	354°	>6	2			decreasing
2	24 N	349	+6	3			decreasing
3	17 S	344	-1	2			decreasing
4	24 N	340	-3	2			stable
5	16 N	332	>6	1	x		dispersed
6	20 S	331	>6	1	x	(6)	decreasing
7	17 S	330	-2	2			decreasing
8	12 N	328	+5	1	x		decreasing
9	40 N	321	+1	2			increasing
10	36 N	302	>6	1	x		dispersed
11	27 S	301	>6	1	x		dispersed
12	16 N	296	>6	1	x	(13)	dispersed
13	22 S	295	>6	1	x		dispersed
14	22 S	286	>2	1	x		stable
15	17 S	272	>6	2			decreasing
16	25 S	271	>6	1	x		disappeared
17	24 S	263	+5	2			decreasing
18	27 N	260	>6	1	x	(17)	dispersed
19	30 S	258	+3	1	x		dispersed
20	34 N	253	>6	1	x		dispersed
21	12 S	251	-1	1	x		decreasing
22	17 S	246	>6	5		(18)	decreasing
23	24 N	244	+1	1	x		dispersed
24	24 N	244	-6	1	x		(?)
25	28 S	238	>6	4			decreasing
26	19 S	237	>6	1	x		dispersed
27	24 N	220	>6	1	x		dispersed
28	17 N	215	>6	2			decreasing
29	13 N	213	-2	4			stable
30	16 S	200	>6	1	x	(27)	decreasing
31	29 S	196	>6	1	x	(26)	decreasing
32	21 S	184	>6	1	x	(29)	decreasing
33	14 S	169	>6	1	x		dispersed
34	27 S	166	+1	1	x		disappeared
35	14 N	164	>6	3			decreasing
36	13 S	163	+3	1	x		decreasing
37	22 N	157	>6	1	x		dispersed
38	27 S	155	-1	1	x		decreasing
39	27 N	146	>6	1	x		dispersed
40	9 N	144	>6	2			decreasing
41	16 N	135	>6	1	x		dispersed
42	17 S	133	>6	1	x	(40)	dispersed
43	16 N	122	>6	4			decreasing
44	28 S	118	>6	2		(42)	decreasing
45	17 N	112	>6	3			decreasing
46	25 N	106	>6	2			decreasing
47	30 S	105	0	3			stable
48	26 S	103	>6	1	x	(42)	decreasing
49	28 S	92	>6	5			decreasing
50	20 N	91	-2	1	x		dispersed
51	20 S	79	>6	4			decreasing
52	20 S	76	>6	1	x	(45)	dispersed
53	28 N	66	>6	1	x		dispersed
54	22 S	58	>6	1	x	(46)	dispersed
55	11 S	55	0	1	x		stable
56	19 S	53	0	2			decreasing
57	33 S	52	0	1	x		disappeared
58	17 N	50	>6	3		(51)	decreasing
59	23 N	46	>6	1	x	(49)	decreasing
60	17 S	38	+1	8			increasing
61	24 S	33	>6	2			stable
62	7 N	22	-4	1	x		(?)
63	14 N	19	+3	1	x		disappeared
64	24 S	0	>6	1	x	(57)	decreasing


SYNOPTIC SOLAR MAP
CARRINGTON ROTATION 1675
NOVEMBER 13 TO DECEMBER 10, 1978
MEUDON OBSERVATORY
DECEMBER
NOVEMBER
9
4
29
24
19
14
N.
S.
E.
W.
+
−
50°
40
30
20
10
0°
10
20
30
40
50
60°
0° 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360°

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22}Wm^{-2}Hz^{-1}$		INT	POLARIZATION OR REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
1	6100	KISV	3 S	0601	0602	3	4			
	6100	KISV	8 S	0653	0654	2	5			
	237	TRST	41 F	0759.4	0759.5	.2	125			0
	260	ONDR	44 NS	0810 E		135 D	50	4		
	237	TRST	41 F	1009.1	1009.4	.5	165			0
	930	BORD	45 C	1035	1035.6	1.2	43	2		
	245	SGMR	44 NS	1158 E	1928.4	548 D	77.5			
	410	SGMR	44 NS	1158 E	1918.4	548 D	60.6			
	1470	BERL	4 S/F	1212	1214.4	19	17			
	3000	BERL	4 S/F	1212	1214.5	23	31			
	9500	BERL	3 S	1212	1214.8					
	9400	HUAN	20 GRF	1212.6	1219.1	8.5	16	6		0
	410	SGMR	6 S	1212.8	1213	1.2	48.4	14.5		
	127	TORN		1212.9	1214.8		170			
	127	TORN	45 C	1212.9	1213.8	2.9	140	25		
	930	BORD	3 S	1212	1213.8	5	14	5		
	245	SGMR	7 S	1213	1213.7	2.8	377	112		
	8400	BERN	3	1213.2	1214.8	11	20			0
	10400	BERN	3	1213.2	1214.8	11	9			
	10400	BERN	3 S	1213.2	1214.8	11	3	9		
	8400	BERN	3 S	1213.2	1214.8	11	8	20		
	237	TRST	41 F	1213.3	1214.5	1.8	525			4R
	234	POTS	6 S	1213.3	1214.3	17	200	1 E		
	113	POTS	6 S	1213.4	1225.3	28	245	1 E		
	2650	OWIN	1 S	1213	1214	15	35	5		
	606	SGMR	3 S	1214	1214.8	1.8	15.7	4.7		
	9100	ARCE	3 S	1214	1215.1	4				
	10715	OWIN	1 S	1214	1215	6	8	4		
	9100	ARCE	29 PBI	1218		21.7				
	410	SGMR	6 S	1224.2	1227.5	8	90.7	27.2		
	606	SGMR	3 S	1224.6	1226.4	4.2	192	57.6		
	245	SGMR	7 S	1224.7	1227.4	7.5	268	80.4		
	237	TRST	45 C	1225.2	1227.2	2.7	295	95		0
	930	BORD	45 C	1225	1228.2	3	41	5		
	127	TORN	45 C	1234.8	1237.2	3.4	140	29		
	930	BORD	45 C	1424	1427.8	13	29	7		
	2800	OTTA	20 GRF	1440	1447	18	3	1.4		
	7000	SAOP	20 GRF	1444		4				0
	2800	OTTA	240 R	1512	1545	33	3	1.5		
	2800	OTTA	20 GRF	1650	1720	130	2.6	1.3		
	7000	SAOP	40 F	1836						
	4995	BOUL	3 S	1951.5	1953.5	12	30	10		
	2800	OTTA	1 S	1954	1955.5	3	9	4.5		
	2800	OTTA	29 PBI	1957	1957	15	3.4	1.7		
	1420	BOUL	45 C	2058 E	2100	3 D	16	5		
	1420	BOUL	41 F	2150.5E	2152	3 D	8	3		
	2695	BOUL	41 F	2152 E	2154	2.50	16	5		
2	5730	IRKU		0315	0335		29			
	5730	IRKU	20 GRF	0315	0319.7	30	27	18		
	5730	IRKU	20 GRF	0401.5	0402.1	10	16	16		
	5730	IRKU		0401.5	0407		29			
	5730	IRKU	23 GRF	0433	0433.9	17	8	27		
	5730	IRKU		0433	0436.1		69			
	5730	IRKU		0433	0434		19			
	5730	IRKU		0433	0438.5		53			
	5730	IRKU		0433	0436.4		82			
	6100	KISV	45 C	0545	0556	30	23			
	1415	MANI	3 S	0547	0549.8	6.3	10.6	3.5		
	2695	MANI	3 S	0548.4	0550.6	4.7	23.3	7.7		
	5730	IRKU		0548.5	0555.9		77			
	5730	IRKU	23 GRF	0548.5	0551.5	34	33	17		
	5730	IRKU		0548.5	0601.5		45			
	100	GORK	44 NS	0600 E		94		5		
	200	GORK	44 NS	0600 E		300		5		
	6100	KISV	4 S/F	0740	0741	8	6			
	6100	KISV	20 GRF	0800	0804	10	3			
	237	TRST	41 F	0907.7	0907.8	.2	120			0
	100	GORK	41 F	0930.2	0931.1	4.5	20			
	100	GORK		0930.2	0933.6		130			
	200	GORK	45 C	0932.1	0933.4	2.5	35 D			
	200	GORK		0932.1	0934		35			
	950	GORK	1 S	0933	0933.6	1.3	4	2		
	650	GORK	1 S	0933	0933.6	2	8.6	4.3		
	237	TRST	41 F	0933	0933.3	.8	375			3R
	234	POTS	45 C	0933	0933.1	.7	160	15		
	113	POTS	45 C	0933.1	0933.1	.2	265	20		
	202	IZMI	21 GRF	1133.3	1134.3	1.5	175	110		
	410	SGMR	44 NS	1159 E	2011.8	547 D	24			
	245	SGMR	44 NS	1159 E	1248.4	547 D	112			
	113	POTS	45 C	1229.4	1230	.4	140	15		
	237	TRST	41 F	1246.4	1246.7	.6	100			0
	237	TRST	41 F	1247.4	1247.9	.5	245			24R
	2800	OTTA	20 GRF	1455	1545	175	3.4	2.8		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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
	9400	HUAN	1	S	1850.7	1853.8	3.1	9.9	3		L
3	200	GORK	44	NS	0600 E		300		5		
	260	ONDR	44	NS	0815 E		354 D	30	2		
	127	TORN	43	NS	1108.9	1204.2	150 D	110	4.4		V2
	410	SGMR	44	NS	1200 E	1355.5	546 D	130			
	245	SGMR	44	NS	1200 E	1645.6	546 D	351			
	3100	CRIM	24	R	0845	1138		12			
	100	GORK	8	S	1028.9	1029.4U	1.6	140 D			
	113	POTS	45	C	1029.1	1029.1	.2	420	80		
	200	GORK	8	S	1032	1032.4	.8	38 D			
	3000	BERL	21	GRF	1100	1205	165	17			
	237	TRST	41	F	1101	1101.2	.3	280			O
	930	BORD	40	F	1105	1117.7	20	23	5		
	6100	KISV	4	S/F	1105	1109	6	13			
	1470	BERL	21	GRF	1105	1146	135	9			
	9500	BERL	3	S	1108.3	1109	.7				
	3000	BERL	3	S	1108.5	1109	1.5	11			
	10400	BERN	3		1108.6	1109	6	15			
	8400	BERN	3		1108.6	1109	6	19			O
	10400	BERN	3	S	1108.6	1109	6	5	15		
	8400	BERN	3	S	1108.6	1109	6	7	19		
	9100	GORK	1	S	1108.7	1109	1.4	16	8		
	536	ONDR	4	S/F	1108.7	1109	1.5	29	3.7		
	9100	ARCE	3	S	1108.7	1109.3	3				
	15000	KISV	4	S/F	1108	1109	3	9			
	9500	BERL	21	GRF	1108	1145	157				
	10715	DWIN	1	S	1109	1109	2	10	5		
	7000	SAOP	3	S	1110.4	1111	.7				O
	202	IZMI	24	R	1112	1116.2	15	45	10		
	1470	BERL	4	S/F	1116	1118.5	5	32			
	6100	KISV	2	S/F	1135.3	1136.5	2	4			
	237	TRST	41	F	1136.4	1136.6	.4	450			O
	202	IZMI	8	S	1136.5	1136.5	.6	460	200		
	3000	BERL	3	S	1136.5	1136.6	.5	26			
	1470	BERL	3	S	1138	1138.5	1	14			
	930	BORD	8	S	1138	1138.4	1	31	1		
	930	BORD	46	C	1159	1201.7	6	69	5		
	1470	BERL	4	S/F	1200	1202	4.5	67			
	536	ONDR	2	S/F	1200.8	1202	2	11	2.8		
	606	SGMR	3	S	1228.2	1238.5	14.8	365	110		
	536	ONDR	48	C	1230	1238	99	98	19		
	410	SGMR	6	S	1233.5	1238.8	11.3	70	21		
	808	ONDR	45	C	1234	1237	5.5	102	50		
	930	BORD	46	C	1234	1237.1	10	119	9		
	113	POTS	45	C	1253	1253.1	.7	280	30		
	930	BORD	45	C	1256	1256.9	1	18	2		
	930	BORD	45	C	1303	1303.3	.4	11	2		
	410	SGMR	6	S	1318.2	1324.2	12.6	55	17		
	930	BORD	45	C	1318	1319.3	3	36	3		
	606	SGMR	3	S	1321.2	1324.8	7.3	199	60		
	245	SGMR	6	S	1326	1326.5	4.8	17	5		
	606	SGMR	45	C	1330.8	1333.8		72.4			
	606	SGMR	45	C	1330.8	1332.2	12.1	54	21.7		
	410	SGMR	7	C	1332	1335.7		38.2			
	410	SGMR	7	C	1332	1333	13.4	35.6	11.5		
	245	SGMR	6	S	1335.5	1336.5	9.9	6.3	1.9		
	7000	SAOP	21	GRF	1426						
	7000	SAOP	1	S	1426	1437.6					O
	7000	SAOP	21	GRF	1426						
	7000	SAOP	1	S	1426						
	9400	HUAN	3	S	1643.6	1649.5	5.9	13.9	3.1		L
	7000	SAOP	3	S	1646.8	1647.4	.4				O
	2800	OTTA	1	S	1839	1840	2	3.4	1.7		
	7000	SAOP	3	S	1840.6	1842.1	.4				O
	2800	OTTA	8	S	1937.5	1937.8	.5	3.4	1.7		
	410	SGMR	6	S	2031.2	2033.3	7.8	208	62		
	245	SGMR	48	GB	2031.4	2032.1	7.2	2700	810		
	606	SGMR	3	S	2031.5	2032.3	4.1	60	18		
	1420	BOUL	3	S	2031.5E	2032	2.5D	26	9		
	2800	OTTA	4	S/F	2031	2032.2	3	78	26		
	2695	BOUL	4	SF	2032	2033.5	5.5	32	11		
	2800	OTTA	29	PBI	2034	2034	4	2.4	1.2		
	2695	BOUL	31	ABS	2037.5	2044.5	11 D	-5	-2		
4	5730	IRKU	47	GB	0542	0546.5	7	172			L
	8800	MANI	3	S	0545.2	0546.5	2	54.5	36.3		
	606	MANI	3	S	0545.3	0546.9	2.9	65.4	43.6		
	4995	MANI	3	S	0545.4	0546.8	3.6	26	17.3		
	2695	MANI	1	S	0545.5	0546.7	3	6.8	4.5		
	1415	MANI	1	S	0545.7	0546.7	2.6	6.7	4.5		
	113	POTS	6	S	0802.4	0803.5	5.7	280	2		
	9100	GORK	21	GRF	0802.9	0810.6	10.2	5.6	2.5		
	6100	KISV	4	S/F	0802	0803.5	3	6			
	100	GORK	8	S	0803.6	0803.9	.7	120 D			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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	GORK	1	S	0833.7	0803.9	.5	9.5	4.5		
	15000	KISV	2	S/F	0833	0803.7	2	7			
	6100	KISV	4	S/F	0836.5	0808.5	5	7			
	9100	GORK	1	S	0807.5	0808.9	1.1	9.5	4.5		
	260	ONDR	44	NS	0820 E		246 D	195	9		
	200	GORK	44	NS	0824 E		180		5		
	245	SGMR	44	NS	1201 E	1442	544 D	29.1			3
	410	SGMR	44	NS	1201 E	1749.5	544 D	219			3
	606	SGMR	44	NS	1201 E	1904	544 D	261			3
	6100	KISV	2	S/F	0841	0842	2	2			
	6100	KISV	32	ABS	0910	0926	27	-5			
	234	POTS	45	C	0922.2	0922.3	.4	120	25		
	8400	BERN	45		0934.1	0938.2	7	27			11R
	8400	BERN	45		0934.1	0941.1	7	30			30R
	10400	BERN	45		0934.1	0938.2	7	19			
	10400	BERN	45		0934.1	0941.1	7	23			
	10400	BERN	45	C	0934.1	0941.1	7	8	23		
	10400	BERN	45	C	0934.1	0938.2	7	6	19		
	8400	BERN	45	C	0934.1	0941.1	7	11	30		
	8400	BERN	45	C	0934.1	0938.2	7	10	27		
	29	UPIC	45	C	0936.9	0937.9	1.4				
	113	POTS	6	S	0937.2	0938.1	7.7	2800	50		
	234	POTS	6	S	0937.3	0938.1	3.8	120	1		
	33	UPIC	45	C	0937.3	0938.2	1.4				
	100	GORK			0937.4	0938.3		150 D			
	100	GORK	41	F	0937.4	0937.6	4.6	150 D			
	100	GORK			0937.4	0941.2		150 D			
	200	GORK	41	F	0937.5	0938 U	8.9	30 D			
	200	GORK			0937.5	0946.1		28			
	200	GORK			0937.5	0940 U		30 D			
	3100	CRIM	1	S	0937.5	0938	2	6	2		
	202	IZMI	41	F	0937.5	0938.5	5	200			
	3000	BERL	48	C	0937.5	0940.8	5.5	10			
	9500	BERL	48	C	0937.5	0941	5.5				
	6100	KISV			0937	0938.5					
	6100	KISV	42	SER	0937	0941.2	7	12			
	2950	GORK	23	GRF	0938	0942	6.5	4.7	2.4		
	950	GORK			0938	0941.1		13			
	950	GORK	45	C	0938	0938.9	4.2	4.7			
	9100	GORK	41	F	0938.1	0938.4	5.1	21			
	9100	GORK			0938.1	0941		30			
	237	TRST	41	F	0938.1	0938.2	.9	315			0
	408	TRST	7	C	0938.1	0938.4	1.7	98			
	10715	DWIN	45	C	0938	0941	5	20	10		
	2650	DWIN	45	C	0938	0941	5	10	5		
	15000	KISV			0938	0938.5		13			
	15000	KISV	42	SER	0938	0941	5	24			
	3100	CRIM	1	S	0940.3	0940.8	2.3	11	4		
	408	TRST	7	C	0940.3	0941.2	2.5	88			
	650	GORK	4	SF	0940.4	0941	2 U	74	16		
	930	BORC	3	S	0940	0941.2	3	18	3		
	408	TRST	7	C	0943	0943.3	.7	62			
	536	ONDR	41	F	1034 E	1102	70	58	19		
	408	TRST	41	F	1036.9	1038.2	2.8	40			
	9400	HUAN	4	S/F	1053.6	1057.8	4.8	47	15.1		R
	650	GORK	4	SF	1054	1055.6	4.8	37	9.5		
	3100	CRIM	3	S	1054	1055.2	5	24	8		
	29	UPIC	46	C	1054.1	1055.3	3.9				
	33	UPIC	46	C	1054.2	1055.1	3.9				
	10400	BERN	46		1054.3	1055.6	9	34			
	8400	BERN	46		1054.3	1055.6	9	42			0
	10400	BERN	46	C	1054.3	1055.6	9	11	34		
	8400	BERN	46	C	1054.3	1055.6	9	16	42		
	9500	BERL	4	S/F	1054.5	1055.4	3.5				
	3000	BERL	4	S/F	1054.5		3.5				
	2950	GORK	45	C	1054.6	1055.6	3.6	34			
	2950	GORK			1054.6	1056.8		11	8.8		
	9100	GORK	4	SF	1054.7	1055.6	3.4	41.5			
	930	BORC	45	C	1054.8	1055.4	3.2	32	4		
	9100	ARCE	45	C	1054.9	1055.8	5				
	9100	ARCE			1054.9	1055.8	1.8				
	10715	DWIN	45	C	1054	0955	5	30	10		
	2650	DWIN	45	C	1054	0955	5	30	10		
	6100	KISV	42	SER	1054	1057	12	15			
	6100	KISV			1054	1104.7		4			
	6100	KISV			1054	1102		5			
	202	IZMI	45	C	1055	1055	1.2	1000	500		
	237	TRST	41	F	1055	1055.6	.9	4470			0
	408	TRST	45	C	1055	1055.2	1.1	98			
	200	GORK			1055	1057.7		110			
	200	GORK	45	C	1055	1055 U	5	30 D			
	234	POTS	2	S/F	1055	1055.3	3.9	5600	100		
	113	POTS	6	S	1055.1	1102	7	800	14		
	100	GORK			1055.1	1102.4		130 D			
	100	GORK			1055.1	1057.3		1700			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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
	100	GORK	45	C	1055.1	1056	7.6	180			
	202	IZMI	23	GRF	1056.2	1057.5	2	200	100		
	7000	SAOP	46	C	1056.2	1057.6		11			11R
	7000	SAOP	41	F	1056.2						
	9100	ARCE			1056.7	1057	3.2				
	29	UPIC	4	S/F	1101.5	1102	.8				
	33	UPIC	4	S/F	1101.5	1101.5	1.2				
	408	TRST	42	SER	1101.5	1102.5	1.1	94			
	408	TRST	49	GB	1103.2	1111.5	110	120 D			
	408	TRST			1103.2	1158.8		1600			
	408	TRST			1103.2	1151.1		710			
	408	TRST			1103.2	1126.9		130			
	113	POTS	6	S	1135.3	1139.1	3.7	150	1		
	536	ONDR	48	C	1144	1159.2	44 D	208	188		
	930	BORD	3	S	1215	1215.2	.4	11	3		
	930	BORD	42	SER	1225	1228.8	5	40	4		
	113	POTS	2	S/F	1227.4	1227.5	.4	110	12		
	8400	BERN	3		1227.6	1229	3.5	35			0
	10400	BERN	3		1227.6	1229	3.5	23			
	10400	BERN	3	S	1227.6	1229	3.5	8	23		
	8400	BERN	3	S	1227.6	1229	3.5	13	35		
	9400	HUAN	3	S	1227.8	1230.3	2.5	21.8	8.8		0
	3000	BERL	3	S	1228	1228.8	3	13			
	9500	BERL	3	S	1228	1228.5	2				
	234	POTS	45	C	1228.1	1228.1	.5	210	20		
	237	TRST	41	F	1228.1	1228.2	.6	295			0
	9100	ARCE	3	S	1228.3	1228.9	1.1				
	10715	DWIN	1	S	1228	1229	2	20	10		
	2650	DWIN	1	S	1228	1229	3	15	5		
	7000	SAOP	3	S	1229.2	1330.6	.7				18L
	9100	ARCE	29	PBI	1229.4		3.8				
	930	BORD	41	F	1234	1234.5	2	18	3		
	10400	BERN	45	C	1249.1	1256.3	8	6	16		
	10400	BERN	45	C	1249.1	1250.1	8	5	13		
	10400	BERN	45		1249.1	1250.1	8	13			
	10400	BERN	45		1249.1	1256.3	8	16			
	8400	BERN	45		1249.3	1250.1	8	21			0
	8400	BERN	45		1249.3	1256.3	8	23			0
	8400	BERN	45	C	1249.3	1256.3	8	9	23		
	8400	BERN	45	C	1249.3	1250.1	8	8	21		
	930	BORD	45	C	1249.4	1252	5.1	64	5		
	3000	BERL	3	S	1249.5		3				
	9500	BERL		S	1249.5	1253.2	4.5				
	9100	ARCE	1	S	1249.8	1250.4	2				
	10715	DWIN	45	C	1249	1253	6	15	5		
	2650	DWIN	1	S	1249	1250	3	15	5		
	7000	SAOP	1	S	1251.7	1252.3					41L
	113	POTS	2	S/F	1252.1	1253	1.1				
	9100	ARCE	1	S	1252.1	1253.5	4				
	7000	SAOP	1	S	1254.6	1255.3					42R
	234	POTS	8	S	1306.1	1306.1	.1	500	175		
	113	POTS	6	S	1306.1	1311	4.8	170	2		
	237	TRST	5	S	1306.2	1306.2	.1	785	35		0
	606	SGMR		GB	1314.5	1354.5		308			5
	606	SGMR	47	GB	1314.5	1319.5	55.5	4236	1694		5
	1415	SGMR	3	S	1314.5	1319.6	10.5	264	106		5
	245	SGMR	49	GB	1314.5	1320.5	16.5	6363	2545		5
	404	SGMR	49	GB	1314.5	1321	16.5	1284	514		5
	7000	SAOP	3	S	1317.6	1322.3	.2				19L
	408	TRST	49	GB	1317.8	1320.3	4				
	10400	BERN	8	S	1318.4	1320.3	12	63	185		
	8400	BERN	8	S	1318.4	1320.3	12	78	208		
	8400	BERN	8		1318.4	1320.3	12	208			11L
	10400	BERN	8		1318.4	1320.3	12	185			
	2695	SGMR	3	S	1318.5	1319.5	1.5	139	55.6		5
	8800	SGMR	3	S	1318.5	1319.5	1.5	94	37.6		5
	4995	SGMR	3	S	1318.5	1319.5	1.5	82.1	32.8		5
	15400	SGMR	43	S	1318.5	1319.5	1.5	184	73.6		5
	234	POTS	45	C	1319	1320.1	4	15000	625		
	237	TRST			1319.1	1320.3		12920			0
	237	TRST	47	GB	1319.1	1319.3	3.4	1070			0
	237	TRST			1319.1	1322.2		1375			2R
	237	TRST			1319.1	1321.5		2050			0
	33	UPIC	4	S/F	1319.7	1319.8	1.5				
	29	UPIC	4	S/F	1319.8	1320	1.1				
	9400	HUAN	8	S	1320	1321	1	189.8	68.2		L
	3000	BERL	3	S	1320	1320	5	92			
	113	POTS	45	C	1320	1320.1	3.1	39000	2000		
	9500	BERL	3	S	1320	1320.1	3.5				
	9100	ARCE	3	S	1320.1	1320.4	1.4				
	2800	OTTA	3	S	1320	1320.3	2	105	30		
	10715	DWIN	1	S	1320	1320.5	2	140	30		
	2650	DWIN	1	S	1320	1320	5	115	30		
	2800	OTTA	8	S	1431.8	1432	.7	3.4	1.7		
	7000	SAOP	20	GRF	1453.5	1511					11L

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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	22 GRF	1458	1508	40	4	1.9		
	930	BORD	41 F	1501.8	1501	.6	28	3		
	930	BORD	6 S	1508.8	1508.8	.1	67	1		
	7000	SAOP	46 C	1541	1550.5					20L
	4995	BOUL	4 SF	1546.5	1547.5	4	25	8		
	2695	SGMR	3 S	1547.1	1548	2.2	72.6	29		5+SHF
	2800	OTTA	4 S/F	1547.5	1548.3	3.5	48	18.6		
	606	SGMR	47 GB	1547.7	1548.8	2.2	570	228		5+SHF
	1420	BOUL	3 S	1547 D	1548	2 D	32	11		
	930	BORD	46 C	1547	1548.6	4	303	10		
	2800	OTTA	1 S	1719	1720	3	3	1.5		
	7000	SAOP	1 S	1743.4	1744.5					43R
	4995	BOUL	4 SF	1842.5	1843.5	6.5	60	20		
	1420	BCUL	3 S	1843.5D	1844.5	1.5D	55	18		
	2800	OTTA	4 S/F	1843.5	1844.5	6.5	74	12		
	606	SGMR	3 S	1843.8	1844.3	5.2	52.2	20.9		
	15400	SGMR	3 S	1844.1	1844.3	4.9	43.6	17.4		5
	245	SGMR	48 GB	1844.2	1844.4	4.8	267	107		
	410	SGMR	48 GB	1844.3	1844.4	4.7	631	252		
	4995	SGMR	3 S	1844.4	1844.8	4.6	31.5	12.6		
	2695	SGMR	3 S	1844.4	1844.8	4.6	10.7	42.8		
	8800	SGMR	3 S	1844.4	1844.8	4.6	68	27.2		
	1415	SGMR	3 S	1844.6	1844.5	4.4	99	40		
	7000	SAOP	41 SF	1845	1846.5	.5				18L
	1420	BCUL	29 PBI	1845	1845	3.5D	19	6		
	2695	BCUL	3 S	1845 D	1845.5	1 D	89	30		
	2695	BOUL	29 PBI	1846	1846	1.5D	11	4		
	700	SYDN	45 C	2359.8	0000.5	1.3				
5	1415	SYDN	2 S	0017.1	0017.9	1.3				
	700	SYDN	2 S	0017.2	0017.9	1.2				
	2950	GORK	21 GRF	0734.3	0739.8	44	15	7		
	6100	KISV		0734	0812.5		15			
	6100	KISV		0734	0750		13			
	6100	KISV	21 GRF	0734	0737.3	76	19			
	3100	CRIM	3 S	0735	0736.5	8	32	11		
	950	GORK		0735.4	0737.2		13			
	950	GORK	46 C	0735.4	0736.5	4.7	12			
	15000	KISV		0735	0739		7			
	15000	KISV	21 GRF	0735	0756	45	11			
	15000	KISV		0735	0816		5			
	200	GORK	43 NS	0736		144		5		
	260	ONDR	44 NS	0820 E		337 D	22			
	410	SGMR	44 NS	1202 E	1941.2	543 D	39.3			3G
	245	SGMR	44 NS	1202 E	1939.2	543 D	61.8			3G
	2950	GORK	3 S	0736.1	0736.9	4.1	21	10		
	200	GORK	45 C	0736.6	0737.8	2.3	40 D			
	9100	GORK	21 GRF	0736.6	0754.2	206	15	10		
	200	GORK		0736.6	0739.2		33			
	3100	CRIM	3 S	0745	0750	17	21	7		
	2950	GORK	1 S	0748.4	0750.2	4.7	6.8	3.4		
	234	POTS	45 C	0752.1	0752.4	1.2	350	15		
	200	GORK	8 S	0826.6	0826.9	.5	36			
	3100	CRIM	25 R	0911	1048		17			
	6100	KISV	4 S/F	0919	0919.5	6	5			
	950	GORK	3 S	0920.2	0920.3	.8	19	9		
	650	GORK	1 S	0920.2	0920.3	.8	11	5		
	9100	GORK	1 S	0920.3	0920.8	1.5	4	2		
	536	ONDR	2 S/F	0920.3	0920.3	1	12	4		
	808	ONDR	3 S	0920	0920	.3	25			
	930	BORD	45 C	0920	0920	.6	55	3		
	6100	KISV		0942	0947.5		6			
	6100	KISV		0942	0944.5		5			
	6100	KISV	40 F	0942	0945.3	1.3	12			
	15000	KISV	8 S	0943.3	0945.2	3	6			
	10400	BERN	21 GRF	0943.9	0945.2	8	6	16		
	10400	BERN	21	0943.9	0945.2	8	16			
	9100	ARCE	21 GRF	0944.3	0948.4	7				
	536	ONDR	45 C	0944.5	0945.2	3	36	4.2		
	930	BORD	45 C	0944.5	0945.2	4.5	38	6		
	9100	GORK	1 S	0944.5	0945.6	5.2	16	8		
	2950	GORK	21 GRF	0944.5	0951.9	17	3			
	1470	BERL	S	0944.7	0945.1	2.3	5.8			
	9500	BERL	4 S/F	0944.7	0945.1	5.3	15			
	3000	BERL	4 S/F	0944.8	0945.2	.7	9			
	2950	GORK	1 S	0944.8	0945.5	1.3	8	4		
	950	GORK	4 SF	0945	0947	3.8	21			
	650	GORK	40 F	0945	0946.5	4	95			
	3100	CRIM	1 S	0945	0945.5	1	8	3		
	9100	ARCE	1 S	0945.1	0945.3	.5				
	808	ONDR	46 C	0945	0946.2	3.5	48	8.6		
	2950	GORK	1 S	0946.5	0946.8	.9	2.8	1.4		
	6100	KISV	3 S	1110	1111	5	2			
	3100	CRIM	1 S	1137	1138	1.5	3	1		
	536	ONDR	2 S/F	1137.8	1138.7	1	14			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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
	3000	BERL	3	S	1204.5	1205.2	3.5	9.7			
	3100	CRIM	1	S	1204.5	1205	1	9	3		
	536	ONDR	4	S/F	1204.8	1206.3	4	36	1.8		
	1470	BERL	3	S	1205	1205.4	3	8.9			
	930	BORD	8	S	1205.6	1205.6	1	13	2		
	2650	DWIN	1	S	1205	1205.5	1	10	5		
	930	BORD	41	F	1230.5	1230.5	1.5	13	2		
	536	ONDR	41	F	1317.2	1317.6	4.5	28			
	2800	OTTA	1	S	1422.2	1422.5	1	9.2	4		
	2650	DWIN	1	S	1422	1422.5	1	10	5		
	2650	DWIN	1	S	1425	1426	2	15	7		
	2800	OTTA	4	S/F	1425	1425.7	1.5	16.4	8		
	930	BORD	45	C	1529.4	1529.5	.2	61	2		
	410	SGMR	6	S	1852.8	1853.2	1.9	14.5	4.4		
	245	SGMR	6	S	1854.8	1855.1	.7	6	1.8		
	606	SGMR	3	S	1855.2	1855.7	1.2	34.2	10.3		
	2800	OTTA	20	GRF	1935	1943	20	2.4	1.2		
	245	SGMR	6	S	2011.2	2012.4	1.6	2.8	0.8		
	606	SGMR	3	S	2011.4	2012.1	1.8	53.6	16.1		
	410	SGMR	6	S	2011.8	2012.4	1.7	39.8	11.9		
	606	SGMR	45	C	2040.1	2040.9	3.1	17.1	8.2		
	606	SGMR	45	C	2040.1	2042.1		27.4			
	410	SGMR	7	C	2040.2	2040.8	2.8	22.5	9.7		
	410	SGMR	7	C	2040.2	2042.5		32.4			
	606	SGMR	3	S	2103.4	2103.8	1.1	98.8	29.6		
	245	SGMR	6	S	2103.8	2104	.7	32.5	97.5		
	410	SGMR	6	S	2104.7	2104.9	.3	75.9	22.8		
	1415	SYDN	2	S	2330.2	2330.5	.7				
6	5730	IRKU	20	GRF	0319.5	0324.1	12	24	12		L
	5730	IRKU	20	GRF	0433.5	0439.5	16	26	9		L
	5730	IRKU	20	GRF	0605	0610	10	32	16		L
	2950	GORK	20	GRF	0736.8	0739.8	12.3	4	2		
	260	ONDR	44	NS	0820 E		340 D	25			
	245	SGMR	44	NS	1203 E	1512.8	542 D	32.9			
	930	BORD	41	F	0903	0903.5	.5	25	1		
	3000	BERL	20	GRF	1005	1018	55	7.1			
	650	GORK	1	S	1010.6	1012.9	6.2	2.5			
	9500	BERL	20	GRF	1010	1040	55	7.4			
	950	GORK	3	S	1011	1012.9	2.2	3			
	2950	GORK	20	GRF	1011.6	1015.7	10	7.4	3.8		
	9100	GORK	20	GRF	1012.3	1039.7	43.4	5.4	2		
	2800	OTTA	20	GRF	1505	1550	170	4.2	2.2		
	9400	HUAN	20	GRF	1540.7	1606.3	15.6	7.2	2.5		0
	2800	OTTA	20	GRF	1843.5	1856	40	4.4	2.2		
	410	SGMR	7	S	1843.8	1844.3	3.1	38.9	77.8		
	245	SGMR	6	S	1843.9	1844.6	1.2	18.2	36.4		
	606	SGMR	3	S	1843.9	1844.1	.5	22.4	4.5		
	2800	OTTA	1	S	1939	1940	2	3.4	1.7		
	2695	PENT	240	R	2018	2045	27	2.8	1.4		
	4995	BOUL	2	SF	2102.5	2104.5	6.5	10	3		
	2695	PENT	4	S/F	2103	2105	5	20	9.6		
7	6100	KISV	45	C	0721	0722.5	2	3			
	260	ONDR	44	NS	0810 E		345 D	219 D			
	200	GORK	43	NS	0830		180		5		
	245	SGMR	44	NS	1204 E	1708.2	541 D	555			
	410	SGMR	44	NS	1204 E	1708.2	541 D	268			
	234	POTS	45	C	0903.5	0904.5	.9	1400	25		
	237	TRST	41	F	0903.8	0904.1	1	2450			0
	408	TRST	42	SER	0904	0904.1	.7	190			
	3100	CRIM	25	R	0907	1011		5			
	9100	GORK	21	GRF	0913.3	1005.2	91	41	18		
	930	BORD	8	S	0919	0919	.1	33	1		
	234	POTS	45	C	0920.5	0942	25	560	160		
	6100	KISV	32	ABS	0948	0954	9	-1			
	536	ONDR	46	C	0955.5	0959	13	49	10.3		
	3000	BERL	4	S/F	0956.5	1001.5	34	43			
	3100	CRIM			0956.5	1001.5		33	11		
	3100	CRIM	41	F	0956.5	0959.5	11	26	9		
	3100	CRIM			0956.5	1005.1		21	7		
	3100	CRIM			0956.5	1004		21	7		
	950	GORK	46	C	0957	1000.8	8.8	33			
	950	GORK			0957	1002.2		85			
	1470	BERL	4	S/F	0957	1002	33	32			
	9500	BERL	4	S/F	0957	1001.3	41	57			
	2950	GORK	46	C	0957.2	1001.2	10.3	37			
	2950	GORK	29	PBI	0957.2	1007.5	12.6	7.5			
	2950	GORK			0957.2	1001.9		35			
	650	GORK			0957.3	1002.1		40			
	650	GORK	46	C	0957.3	1001	12.1	43	10.5		
	408	TRST	47	GB	0957.4	0958.8	9	99			
	2650	DWIN	45	C	0957	1002	11	35	15		
	930	BORD	45	C	0957	1002.3	8	75	18		
	6100	KISV			0957	1000.7		34			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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
	6100	KISV	48	C	0957	1001.5	33	54			
	6100	KISV			0957	1005.2		28			
	6100	KISV			0957	1003.5		20			
	15000	KISV	45	C	0957	1000.3	33	41			
	808	ONDR	45	C	0957	1001.7	13	55	18.3		
	127	TORN	42	SER	0958	1001.9	34	190			
	127	TORN			0958	1009.7		410			
	127	TORN			0958	1004.9		75			
	237	TRST	47	GB	0958	1000.9	4.5	1550			2L
	237	TRST			0958	1001.3		2770			0
	10400	BERN	45	C	0958.2	1001.6	34	18	52		
	10400	BERN	45		0958.2	/001.5	34	52			
	9100	GORK			0958.3	1001.6		59			
	9100	GORK	46	C	0958.3	1000.7	5.2	39			
	10715	DWIN	45	C	0958	1002	30	40	15		
	234	POTS	45	C	1000.1	1001.4	2.1	1400	175		
	200	GORK			1000.3	1008		120			
	200	GORK	45	C	1000.3	1001.1	2.4	36			
	202	IZMI	45	C	1000.4	1001.7	1.7	1500	700		
	113	POTS	2	S/F	1000.4	1001.5	11	1400	30		
	100	GORK			1001	1011		3500			
	100	GORK			1001	1009.6		3500			
	100	GORK	46	C	1001	1002 U	12	110 D			
	237	TRST	41	F	1026.6	1026.7	.4	145			0
	237	TRST	41	F	1149	1149.1	.4	1010			2L
	234	POTS	45	C	1149	1149	.2	210	55		
	237	TRST	41	F	1200.8	1200.8	.1	113			0
	234	POTS	2	S/F	1208.2	1209.1	1.3	420	12		
	237	TRST			1208.4	1209.2		1810			0
	237	TRST	42	SER	1208.4	1208.9	1.4	1215			0
	234	POTS	6	S	1229.4	1235.2	6	1100	15		
	237	TRST			1229.7	1235.5		1600			0
	237	TRST			1229.7	1234.5		265			0
	237	TRST			1229.7	1230.7		1255			0
	237	TRST	42	SER	1229.7	1229.7	6.3	375			0
	113	POTS	45	C	1235.2	1235.2	.3	750	200		
	127	TORN	40	F	1330 U	1408.6	50 D	20			
	237	TRST	41	F	1351.4	1351.4	.2	200			0
	237	TRST	41	F	1354	1354.2	.3	615			0
	2800	OTTA	20	GRF	1635	1720	145	5.4	2.7		
	9400	HUAN	4	S/F	1931.4	2039.3	67.9	59.5	25.2		L
	4995	BOUL			1935	1943.5		77	26		
	4995	BOUL	45	C	1935	1948.5	22	88	29		
	7000	SAOP	46	C	1939	1949					22L
	1420	BOUL	21	GRF	1940.5	1945	16 D	28	9		
	410	SGMR	6	S	1940.5	1942.5	22.5	70.5	21		
	2800	OTTA	4	S/F	1940	1944	18	97	35		
	245	SGMR	7	S	1941.2	1945.5	21.8	421	126		
	606	SGMR	3	S	1941.4	1942.8	16.1	108	32		
	2695	SGMR	20	GRF	1942	1945	16	5.5	2		
	2695	BOUL	21	GRF	1942 D	1945	10 D	104	35		
	2695	BOUL			1942 D	1950.5		68	23		
	2695	BOUL	29	PBI	1952	1952	5 D	34	11		
	2800	OTTA	30	PBI	1958	1958	110	10.8	5.4		
	2695	PENT	8	S	2033.9	2034.3	.7	1.6	.8		
	2695	PENT	8	S	2035	2035.2	.6	4	2		
	35000	NAGO	5	S	2342	2345	8	25			
	1415	SYDN	4	S	2343.1	2344.5	6.7				
	700	SYDN	45	C	2343.3	2345.6	6.5				
	35000	NAGO	20	GRF	2350	2353	20	19			
8	200	GORK	43	NS	0621		309		5		
	260	ONDR	44	NS	0830 E		327 D	24			
	127	TORN	43	NS	0910 U	1051.5	310 D	120	15		V2
	100	GORK	43	NS	0950		100 E		10		
	410	SGMR	44	NS	1205 E	1757.1	540	11.6			
	245	SGMR	44	NS	1205 E	1439.3	540	32.5			
	6100	KISV	21	GRF	0917	0938	108	14			
	3100	CRIM	21	GRF	0920	0942		10			
	2950	GORK			0927.6	0937.5		9.7			
	2950	GORK	46	C	0927.6	0936.1		10.3			
	2950	GORK	21	GRF	0927.6	0938.5	49.4	13			
	9100	GORK	20	GRF	0928.3	0940.8	41.3	12	5.5		
	234	POTS	45	C	0934	0935	.1	220	60		
	950	GORK			0934.7		6.1	3 D			
	3100	CRIM	3	S	0935	0937.5	6	23	8		
	1470	BERL	3	S	0935.5	0937.7	7	9.2			
	3000	BERL	4	S/F	0935.5	0937.6	4.5	14			
	2650	DWIN	45	C	0936	0938	4	15	10		
	536	ONDR	2	S/F	0943	0945.3	4.5	20	3.4		
	113	POTS	45	C	1000	1059	170	67	17		
	536	ONDR	2	S/F	1002.4	1002.4	2	17	2.1		
	7000	SAOP	20	GRF	1044						0
	7000	SAOP	20	GRF	1144.5						29L
	6100	KISV	20	GRF	1145	1149	10	5			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	FREQUENCY	STATION	TYPE		STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22} Wm^{-2} Hz^{-1}$		INT	POLARIZATION OR REMARKS
					UT	UT	MINUTES	PEAK	MEAN		
	536	ONDR	4	S/F	1251	1251.3	2.5	52	18		
	2800	OTTA	20	GRF	1455	1505	25	2.2	1.1		
	2800	OTTA	24	R	1530	1550	20	3.8	2.2		
	2800	OTTA	27A	RF	1530		230	3.8	3.4		
	930	BORD	45	C	1530	1530.4	.6	13	2		
	2800	OTTA	24P	R	1550		180	3.8			
	2800	OTTA	8	S	1608.8	1609	.5	8.8	4.4		
	2800	OTTA	8	S	1616.5	1616.8	.5	7.6			
	9400	HUAN	20	GRF	1818.8	1916.2	57.4	10.3	7.9		0
	2800	OTTA	26	FAL	1850	1920	30	-3.8	-1.9		
	2800	OTTA	32	ABS	1935	1950	30	-3	-1.8		
	2695	PENT	1	S	2019	2020	4	5.4	2.5		
	2695	PENT	20	GRF	2030	2033	25	3.2	1.6		
9	6100	KISV	21	GRF	0623	0627	37	4			
	200	GORK	43	NS	0730		240		5		
	260	ONDR	44	NS	0853	E	297	D	24		
	127	TORN	43	NS	1050	U	1217.9	150	U	56	1.3		V1
	410	SGMR	44	NS	1206	E	1453.3	539	D	15.8			
	245	SGMR	44	NS	1206	E	1453.3	539	D	84			
	200	GORK	41	F	0819.2	0821	12.8	50	D				
	200	GORK			0819.2	0828.5		50	D				
	200	GORK			0819.2	0824.4		29					
	113	POTS	2	S/F	0847	0848.3	1.7	1500	115		
	200	GORK	8	S	0847.8	0848.5	1.2	40			
	100	GORK	8	S	0848.4	0848.6	.9	130	D		
	200	GORK	8	S	1038.1	1038.5	.8	40			
	100	GORK	41	F	1040.3	1040.4	2.5	120			
	100	GORK			1040.3	1041.6		160			
	7000	SAOP	4	S/F	1058	1101	.7				30L
	8400	BERN	3		1058.1	1101	10	39			11L
	10400	BERN	3		1058.1	1101	10	27			
	10400	BERN	3	S	1058.2	1101	10	9	27		
	8400	BERN	3	S	1058.2	1101	10	15	39		
	9100	GORK	21	GRF	1059	1102.3	18.8	11	5		
	9500	BERL	3	S	1100	1101	1.5	23			
	3000	BERL	4	S/F	1100	1100.9	2	24			
	9100	GORK	1	S	1100.3	1101.1	1.7	26	13		
	1470	BERL	3	S	1100.5	1101.4	5.5	23			
	2800	OTTA	20	GRF	1420	1440	70	D	3		
	2800	OTTA	24	R	1535	1555	20	5	2.5		
	2800	OTTA	27	RF	1535		220	5	4.2		
	2800	OTTA	24P	R	1555		150	5			
	9400	HUAN	20	GRF	1819.5	1852.5	32	8.7	3.1		0
	2800	OTTA	26	FAL	1825	1915	50	5	2.5		
10	35000	NAGO	20	GRF	0212	0226	40	8			
	200	GORK	44	NS	0630		300	D	50		
	100	GORK	44	NS	0630	E	300	D	10		
	202	IZMI	43	NS	0700		300	80			
	127	TORN	44	NS	0700	E	1226.3	440	D	200	18		V2
	260	ONDR	44	NS	0853	E		297	D	148	10		
	606	SGMR	44	NS	1207	E	1316.5	538	D	24.8			5
	245	SGMR	44	NS	1207	E	2104	538	D	73	179.4		5
	410	SGMR	44	NS	1207	E	1749.2	538	D	2.6	25		5
	650	GORK	40	F	0639	0651.9	21	8			
	950	GORK	4	SF	0642.3	0642.7	10.5	5.7			
	2950	GORK	1	S	0821.7	0822.6	2.3	11	5		
	6100	KISV	45	C	0821	0828	9	7			
	6100	KISV			0821	0822.3					
	650	GORK	40	F	0824.9	0828	3.6	8			
	3000	BERL	4	S/F	0826.5	0828	2.5	24			
	9100	GORK	20	GRF	0826.9	0843.9	36	7.5	2.5		
	950	GORK	1	S	0827	0828	1.6	5	2.5		
	1470	BERL	3	S	0827	0827.9	2	16			
	2950	GORK	3	S	0827.3	0828	1.4	20	10		
	29	UPIC	4	S/F	0915.1	0915.3	.7				
	33	UPIC	4	S/F	0915.2	0915.4	.8				
	234	POTS	45	C	1045.1	1046	1.6	700	175		
	237	TRST	47	GB	1045.3	1046.1	1.4	1465			10L
	113	POTS	45	C	1045.4	1046.2	1.4	1250	90		
	650	GORK	1	S	1045.8	1046.5	1.1	2.5			
	950	GORK	1	S	1046	1046.4	1.2	3.6	1.8		
	29	UPIC	45	C	1046	1046.6	2				
	33	UPIC	45	C	1046	1046.6	1.6				
	408	TRST	42	SER	1059.2	1059.6	.7	150			
	200	GORK	8	S	1111.3	1111.7	.7	2100			
	200	GORK	8	S	1128.7	1129.1	1	2000			
	7000	SAOP	20	GRF	1239.6	1242.4					0
	237	TRST	47	GB	1418.1	1418.7	1.6	378			11R
	2800	OTTA	24	R	1505	1525	20	3.8	2		
	2800	OTTA	27AF	RF	1505		225	3.8	3.6		
	2800	OTTA	24P	R	1525		191	3.8			
	7000	SAOP	20	GRF	1540.6	1545					0
	9400	HUAN	20	GRF	1802	1842.5	40.5	17.2	9.5		0

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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	22	GRF	1805	1818.5	30	5.6	2.2		
	2800	OTTA	26	FAL	1836	1850	14	-3.8	-1.9		
	9400	HUAN	20	GRF	1901	1935.1	34.1	12	6.3		O
	2800	OTTA	23	GRF	1930	2004	35 D	8.4			
	9400	HUAN	20	GRF	1944.8	2041.5	56.7	18.9	13.3		O
	410	SGMR	6	S	1946.1	1946.5	2.1	85.6	25.7		
	2800	OTTA	40	F	1946.2	1947.2	2	80			
	1420	BOUL	4	SF	1946.5E	1947.5	1.50	53	18		
	606	SGMR	3	S	1946.6	1947.2	1.7	46.1	13.8		
	1415	SGMR	3	S	1946.6	1947.6	2.3	59	17.7		
	245	SGMR	48	GB	1946.7	1947.1	1.5	5110	1530		
	2695	SGMR	3	S	1946.8	1947.4	1.6	48	14.4		
	1420	BOUL	45	C	1947.5E	1948	1.50	71	24		
	2695	MANI	3	S	2330.2	2340.1	46.7	98	32.7		
	1415	SYDN			2330.8	2308 U					
	1415	SYDN	48	GB	2330.8	2334.5U	49.2				
	1413	MANI	47	GB	2331	2334	38.2	2380	1585		
	700	SYDN			2332.5	2348.5U					
	700	SYDN	48	GB	2332.5	2337.5U	46.9				
	606	MANI	4	S/F	2333.2	2338.1	36	217.8	72.6		
	4995	MANI	3	S	2333.8	2350.8	50.4	69.9	23.2		
	8800	MANI	3	S	2338.5	2346.6	45.7	28.7	9.6		
	35000	NAGO	20	GRF	2345	2427	60	30			
11	700	SYDN	27	RF	0038.8	0054.1	21.7				
	5730	IRKU	45	C	0336	0338.4	24	10	5		R
	5730	IRKU			0336	0345		9			R
	5730	IRKU			0336	0342.7		18			L
	5730	IRKU			0336	0354.2		8			R
	5730	IRKU	3	S	0403	0409.2	14	17	4		L
	5730	IRKU			0553	0559		10			R
	5730	IRKU	20	GRF	0553	0555.5	10	9	4		R
	100	GORK	44	NS	0642 E		288 D		50		
	200	GORK	44	NS	0645 E		285 D		130		
	127	TORN	44	NS	0650 E	1155.6	450 D	870	90		V3
	202	IZMI	44	NS	0700		300	60			
	260	ONDR	44	NS	0830 E		318 D	168	27		
	408	TRST	44	NS	0927 E	1101.6	180 D	110			
	245	SGMR	44	NS	1208 E	1526.3	537 D	698			
	410	SGMR	44	NS	1208 E	1448.8	537 D	91			
	606	SGMR	44	NS	1208 E	1640.6	537 D	31			
	200	GORK			0736	0737.9		3600			
	200	GORK	46	C	0736	0736.6	2.6	1800			
	100	GORK			0736.2	0738.5		4400			
	100	GORK	46	C	0736.2	0736.6	2.8	4400			
	100	GORK			0752.1	0753.7		3100			
	100	GORK	46	C	0752.1	0752.5	2.2	4400			
	200	GORK			0819.2	0821.2		4750 D			
	200	GORK	41	F	0819.2	0819.4	26	4750 D			
	200	GORK			0819.2	0841.1		4700			
	200	GORK			0819.2	0828.2		2100			
	200	GORK			0819.2	0824.9		4500			
	6100	KISV	32	ABS	0847	0857	14	-7			
	6100	KISV	20	GRF	0922	0928	7	4			
	950	GORK	1	S	0927.5	0928.1	1.8	10	5		
	650	GORK	1	S	0927.7	0928	1.2	13	3		
	2950	GORK	1	S	0927.8	0928	.6	6.8	3.4		
	536	ONDR	3	S	0927.8	0927.8	.3	17			
	6100	KISV	32	ABS	0929	0940	15	-5			
	200	GORK			0943.9	0949		5000			
	200	GORK	46	C	0943.9	0944.3	7.4	2350			
	3100	CRIM	1	S	0946	0946.2	1	21	7		
	10400	BERN	8	S	0946	0946.4	1	4	12		
	8400	BERN	8	S	0946	0946.4	1	6	15		
	1470	BERL	3	S	0946	0946.5	1	25			
	9500	BERL	3	S	0946	0946.5	1	14			
	8400	BERN	8		0946	0946.3	1	15			O
	10400	BERN	8		0946	0946.3	1	12			
	650	GORK	1	S	0946.1	0946.3	.5	13	6		
	9100	GORK	1	S	0946.2	0946.3	.4	13	6.5		
	2950	GORK	3	S	0946.2	0946.4	.5	26	13		
	950	GORK	5	S	0946.2	0946.3	.6	18	9		
	536	ONDR	3	S	0946.3	0946.3	.2	24			
	930	BORD	3	S	0946	0946.4	1	29	2		
	202	IZMI	47	GB	0947.5	0950	5	1500	600		
	6100	KISV	8	S	0950.3	0951.3	1	9			
	15000	KISV	8	S	0951.2	0951.7	2	11			
	6100	KISV	21	GRF	1000	1019.3	20	8			
	6100	KISV			1000	1044.3		6			
	6100	KISV			1000	1004.3		7			
	3100	CRIM	20	GRF	1003	1054	108	15	5		
	536	ONDR	2	S/F	1026.6	1027.5	2	14	2		
	9400	HUAN	3	S	1145.8	1147.4	1.6	12.3	5.3		R
	930	BORD	8	S	1359.2	1359.2	.1	13	1		
	9400	HUAN	20	GRF	1415.5	1444.8	29.3	7	2		O

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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	240 R	1553	1603	10	6	3		
	2800	OTTA	240 R	1720	1740	20	4.2	2.1		
	2800	OTTA	21 GRF	1750	1809	40	7.2	4.5		
	7000	SAOP	46 C	1751						25R
	2800	OTTA	1 S	1752	1754	4	5.8	2.9		
	9400	HUAN	47 CB	1855.5E	2049.5	114	1322	1017		R
	4995	BOUL	28 PRE	1909.5	1943.5	43	276	92		
	2695	BOUL	28 PRE	1909.5U	1944	43.5D	290	97		
	2800	OTTA	28 PRE	1910		22	19			
	8800	SGMR	47 GB	1918	2005.2		4150			SWF
	8800	SGMR	47 GB	1918	1946.1	107 D	280	1660		SWF
	2695	SGMR	47 GB	1918	2011.5		24600			SWF
	2695	SGMR	47 GB	1918	1946.1	107 D	333	9840		SWF
	35000	SGMR	47 GB	1918	2001	107 D	62.7	25.1		SWF
	1415	SGMR	47 GB	1918	2010.2		5930			SWF
	1415	SGMR	47 GB	1918	1956.5		3960			SWF
	1415	SGMR	47 GB	1918	1946	107 D	432	2370		SWF
	4995	SGMR	47 GB	1918	2007		2850			SWF
	4995	SGMR	47 GB	1918	1946.1	107 D	286	1140		SWF
	15400	SGMR	47 GB	1918	2007		2680			SWF
	15400	SGMR	47 GB	1918	1942.6	107 D	193	1070		SWF
	410	SGMR	49 GB	1922	2010.7		5160			SWF
	410	SGMR	49 GB	1922	1943	103 D	428	2060		SWF
	606	SGMR	47 GB	1923	2014.8		2060			SWF
	606	SGMR	47 GB	1923	1941.6	102 D	838	824		SWF
	245	SGMR	49 GB	1924	1943	101 D	240	1680		SWF
	245	SGMR	49 GB	1924	2012.2		4200			SWF
	2800	OTTA	47 GB	1934	2012	160	8320	1128		
	1420	BOUL	28 PRE	1940 E	1948.5	11 D	385	128		
	1420	BOUL		1951 E	1956.5		2744	915		
	1420	BOUL	47 GB	1951 E	2031.5	49 D	5121	1707		
	4995	BOUL	47 GB	1952.5	2006	39.5	2876	959		
	2695	BOUL	47 GB	1953 E	2013.5	43.5D	14332	4777		
	4995	BOUL	29 PBI	2032	2032	108 U	1524	508		
	2695	BOUL	29 PBI	2036.5	2036.5	118.5U	2149	716		
	1420	BOUL	29 PBI	2040	2040	114 D	1073	358		
	9400	HUAN	29 PBI	2049.5	2158.4	68.9	661.6	170.5		R
	1420	BOUL	47 GB	2057.5E	2101.5	14 D	1475	492		
	2695	PENT	29 PBI	2214	2214	40 D	20			
12	35000	NAGO	20 GRF	0138	0145	30	28			
	8800	MANI	3 S	0308.4	0309.2	6.4	80	26.6		
	4995	MANI	3 S	0308.7	0309.6	2.6	33.6	11.2		
	35000	NAGO	20 GRF	0308	0319	40	11			
	5730	IRKU	2 S	0308	0309.5	3	38	16		R
	700	SYDN	40 F	0341.8	0344.9	4.6				
	1415	SYDN	27 RF	0341.9	0349.9	9.9				
	5730	IRKU	2 S	0439	0439.3	1	46			R
	35000	NAGO	20 GRF	0522	0544	30	16			
	5730	IRKU		0544.8	0548.5		53			
	5730	IRKU	45 C	0544.8	0547.8	8	45	11		
	5730	IRKU		0544.8	0549.8		34			
	5730	IRKU		0544.8	0549.2		40			
	6100	KISV	4 S/F	0546	0548.2	13	11			
	6100	KISV	4 S/F	0639.3	0641	4	20			
	9100	GORK	30 PBI	0640.1	0641.6	18.5	9.6	3.5		
	9100	GORK	3 S	0640.1	0641.2	1	46	23		
	15000	KISV	8 S	0640.3	0641	3	24			
	8800	MANI	3 S	0640.4	0641	1	24	8		
	2695	MANI	3 S	0640.6	0640.8	1	10.2	3.4		
	4995	MANI	3 S	0640.6	0641.2	1.1	14	4.7		
	1415	MANI	8 S	0640.8	0641	.7	192.4	29.6		
	2950	GORK	1 S	0640.8U	0641.1	1	8.9	4		
	5730	IRKU	2 S	0640	0641.1	5	115	24		L
	5730	IRKU	1 S	0646.5	0649.2	5	24	8		L
	6100	KISV	1 S	0648.3	0649	5	3			
	9100	GORK	1 S	0648.3	0649.2	1.1	8	4		
	2950	GORK	1 S	0648.3	0649.1	1.7	8.9	4		
	202	IZMI	44 NS	0700		300	140			
	127	TORN	44 NS	0700 E	1334.1	440 D	1100	41		V2
	260	ONDR	44 NS	0823 E		334 D	135	40		
	408	TRST	44 NS	0857 E	1046.2	220 D	120			
	536	ONDR	43 NS	0910	1101	230	28			
	410	SGMR	44 NS	1209 E	1551	536 D	562			
	245	SGMR	44 NS	1209 E	1518.4	536 D	1550			
	9500	BERL	20 GRF	0826	0852	47	13			
	9100	GORK	20 GRF	0827.8	0849.1	45.2	13.5	6		
	6100	KISV	32 ABS	0910	0913.3	3	-4			
	6100	KISV	2 S/F	0913.3	0914.3	7	4			
	6100	KISV	1 S	0931	0932.1	2	2			
	10400	BERN	2 S/F	0939	1211.2	243	10	31		
	10400	BERN	2 S/F	0939	1039.3	243	22	66		
	8400	BERN	2 S/F	0939	1211.2	243	18	47		
	8400	BERN	2 S/F	0939	1031.5	243	25	67		
	8400	BERN	2	0939	1211.2	243	47			D

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	POLARIZATION OR REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
	8400	BERN	2	0939	1031.5	243	67			0
	10400	BERN	2	0939	1211.2	243	31			
	10400	BERN	2	0939	1039.3	243	66			
	6100	KISV		1000	1006.3		18			
	6100	KISV		1000	1039		21			
	6100	KISV		1000	1012.3		10			
	6100	KISV		1000	1002		13			
	6100	KISV	21 GRF	1000	1031.4	95	30			
	9100	GORK	21 GRF	1001.9	1039	89	60			
	9500	BERL	22 GRF	1001	1031.8	201	62			
	9100	GORK	1 S	1002.2	1002.6	1	22	11		
	1470	BERL	20 GRF	1005	1113	125	9.8			
	15000	KISV	20 GRF	1020	1040	55	29			
	3000	BERL	22 GRF	1025	1107.5	110	18			
	9100	GORK	2 SF	1030	1032.1	4.6	24	10		
	29	UPIC	29 SER	1043.3	1101.3	19.6				
	33	UPIC	42 SER	1043.3	1101	19.4				
	7000	SAOP	45 C	1157.5	1211.2					17R
	9400	HUAN	3 S	1209.6	1213.6	4	20.5	10.2		R
	9400	HUAN	29 PBI	1213.6	1249.5	35.9	10.2	6.1		R
	7000	SAOP	20 GRF	1308.4						17R
	9400	HUAN	21 GRF	1400.1	1427.6	27.5	8.5	3.6		0
	7000	SAOP	45 C	1410	1517					15R
	9400	HUAN	3 S	1410.6	1411.7	1.1	27.3	8.8		R
	9400	HUAN	3 S	1412.8	1415	2.2	13.6	6.6		R
	9400	HUAN	3 S	1418.7	1419.7	1	17.1	6.8		R
	2800	OTTA	23 GRF	1420	1625	285	46			
	9400	HUAN	28 PRE	1430.5	1511.3	40.8	25.6	10.8		R
	2800	OTTA	1 S	1432	1433	4	3.8	1.7		
	9400	HUAN	45 C	1511.3	1520.4	9.1	444.6	186.2		R
	8800	SGMR	45 C	1512	1517.2		474			
	8800	SGMR	45 C	1512	1513.3	29	263	190		
	2695	SGMR	45 C	1512	1517.2		277			
	2695	SGMR	45 C	1512	1513.3	29	29.5	111		
	15400	SGMR	45 C	1512	1513.3	35	121	139		
	4995	SGMR	45 C	1512	1517.2		265			
	4995	SGMR	45 C	1512	1513.3	29	119	106		
	15400	SGMR	45 C	1512	1517.2		347			
	2800	OTTA	4 S/F	1512	1517	15	185	27		
	4995	BOUL	28 PRE	1512 E	1513	4.50	111	37		
	1420	BOUL	4 SF	1515.5E	1516.5	9 D	133	44		
	930	BORD	46 C	1516.3	1516.8	1.1	190	5		
	4995	BOUL	3 S	1516.5E	1517	5.5D	262	87		
	2695	BOUL	3 S	1517.5E	1518.5	5 D	203	68		
	9400	HUAN	30 PBI	1520.4	1706.7	106.3	104.1	30.7		R
	9400	HUAN	4 S/F	1529.3	1533	3.7	13.6	6		L
	2800	OTTA	1 S	1652	1654.5	6	3	1.4		
	9400	HUAN	3 S	1659.4	1702.4	3	11.2	5.8		0
	2695	PENT	1 S	1850	1851	1.5	5.4	2		
	2800	OTTA	1 S	1856	1856.5	1	3	1.5		
	9400	HUAN	21 GRF	1923.7	2057.4	93.7	38.4	18.6		0
	2695	PENT	21 GRF	1945	2013.5	65	7.6	2.8		
	9400	HUAN	3 S	2006.2	2007.7	1.5	14.4	5.7		0
	9400	HUAN	1 S	2020	2021.2	1.2	9.6	5.5		0
	2695	PENT	1 S	2036	2037	6	6.2	3.1		
	9400	HUAN	3 S	2049.3	2050.5	1.2	19.2	9.4		R
	9400	HUAN	20 GRF	2105.3	2124.8	19.5	11.2	3.1		0
	9400	HUAN		2134.1	2137.8		48.1			
	9400	HUAN	45 C	2134.1	2137.8	3.7	48.9	22.2		R
	35000	NAGO	20 GRF	2318	2328	40	18			
13	35000	NAGO	20 GRF	0030	0050	60	27			
	1415	SYDN	40 F	0103.6	0121.2	21.1				
	700	SYDN	40 F	0103.7	0105.5	2.4				
	8800	MANI	3 S	0119.1	0121.2	4	11	3		IG
	4995	MANI	3 S	0119.1	0121.3	5.9	18.6	6.1		
	2695	MANI	3 S	0120.2	0121.2	3.5	13.4	4.5		
	1415	MANI	3 S	0120.3	0121.3	3.8	60.1	20		
	35000	NAGO	20 GRF	0210	0240	80	16			
	5730	IRKU	20 GRF	0229	0234	9	8	3		R
	5730	IRKU	45 C	0352	0357.6	23	33			R
	5730	IRKU		0352	0406.9		81			R
	35000	NAGO	20 GRF	0355	0416	60	54			
	8800	MANI	3 S	0406.2	0406.9	3.1	91	30		
	4995	MANI	3 S	0406.3	0407.1	4.8	37.1	12.3		
	5730	IRKU	29 PBI	0415	0420	14	15			R
	1415	SYDN	45 C	0429	0433.3	12.2				
	5730	IRKU		0429	0435.3		35			R
	5730	IRKU	23 GRF	0429	0433	16	37			R
	1415	MANI	4 S/F	0430	0433.5	10.6	128.8	42.9		
	2695	MANI	4 S/F	0430.1	0433.8	10.8	60.1	20.1		
	700	SYDN	45 C	0430.3	0433.8	7.4				
	606	MANI	4 S/F	0431.3	0433.7	5.5	71.8	23.9		
	6100	KISV	4 S/F	0515.3	0518.3	10	10			
	8800	MANI	3 S	0517.4	0518.6	2.6	236.6	78.9		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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	MANI	3	S	0517.6		0518.8	2.4	28.5		9.5			
	5730	IRKU	2	S	0517		0518.6	13	46		6			R
	35000	NAGO	20	GRF	0518		0523	40	9					
	5730	IRKU	21	GRF	0530		0536.7	38	10					R
	5730	IRKU			0530		0601.5		6					R
	5730	IRKU			0530		0552.8		15					R
	6100	KISV	3	S	0540		0553	21	7					
	6100	KISV	32	ABS	0603		0606.3	6	-3					
	6100	KISV			0610		0644		17					
	6100	KISV			0610		0613		3					
	6100	KISV			0610		0610.2		2					
	6100	KISV	21	GRF	0610		0619	60	28	D				
	5730	IRKU			0617		0618.8		51					R
	5730	IRKU	45	C	0617		0618.3	11	40					R
	5730	IRKU			0617		0619.5		48					R
	9100	GORK	21	GRF	0628	E	0631.2	115.2	52.5					
	5730	IRKU	29	PBI	0629		0648.5	32	8					R
	202	IZMI	44	NS	0700			300	100					
	127	TORN	44	NS	0720	E	0843.7	400	D	120		11		V2
	260	ONDR	44	NS	0812	E		343	D	128		20		
	408	TRST	44	NS	0854	E	1052.6	226	D	110				
	410	SGMR	44	NS	1209	E	1739.4	536	D					
	245	SGMR	44	NS	1209	E	1459.8	536	D					
	6100	KISV	32	ABS	0709		0717	9	-4					
	6100	KISV	45	C	0720		0721	7	5					
	15000	KISV	1	S	0720		0721	3	10					
	9100	GORK	1	S	0721.2		0721.6	2.3	19		9.5			
	9100	GORK	21	GRF	0827.9		1019	183	61		25			
	33	UPIC	45	C	0904.6		0906	3.7						
	202	IZMI	45	C	0905.3		0905.6	1.5	700		300			
	113	POTS	2	S/F	0905.3		0905.4	2	42000		300			
	234	POTS	45	C	0905.3		0905.4	.9	1400		90			
	1470	BERL	3	S	0905.5		0906	1	9.8					
	3000	BERL	3	S	0905.5		0906.2	1	8.8					
	3100	CRIM	1	S	0905.5		0906	1	8		3			
	930	BORO	45	C	0905.5		0906.1	1.5	25		4			
	950	GORK	3	S	0905.5U		0906.8	3.6	9					
	237	TRST	41	F	0905.6		0905.8	.8	1035					0
	29	UPIC	45	C	0905.6		0906.1	2.5						
	6100	KISV	4	S/F	0905		0906		10					
	536	ONDR	8	S	0906.2		0906.2	.5	39					
	2950	GORK	1	S	0906.4		0906.7	.8	5.5		2.7			
	6100	KISV	4	S/F	0951		0953.5		9					
	9100	GORK	1	S	0952.8		0954	2	9		4.5			
	10400	BERN	2	S/F	1005		1015.5	86	29		84			
	8400	BERN	2	S/F	1005		1015.5	86	34		90			
	8400	BERN	2		1005		1015.5	86	90					0
	10400	BERN	2		1005		1015.5	86	84					
	6100	KISV			1007.3		1011		4					
	6100	KISV	45	C	1007.3		1016		17					
	9500	BERL	3	S	1014		1016	54	94					
	10715	OWIN	45	C	1014		1015	40	100		40			
	9100	GORK	4	SF	1015.4		1016.6	3.3	84		42			
	950	GORK	1	S	1015.4		1015.5	.3	1.5					
	2950	GORK	20	GRF	1015.9		1020.2	9	10.5		5			
	15000	KISV	8	S	1015		1015.5	55	120					
	237	TRST	41	F	1049.7		1049.9	.3	205					0
	7000	SAOP	3	S	1232.7		1233.5	.4						3R
	10400	BERN	3		1233		1233.5	6	43					
	8400	BERN	3		1233		1233.5	6	64					0
	10400	BERN	3	S	1233		1233.5	6	15		43			
	8400	BERN	3	S	1233		1233.5	6	24		64			
	9400	HUAN	3	S	1233.3		1235.8	2.5	55.8		6.1			0
	10715	OWIN	1	S	1233		1233	2	30		10			
	9400	HUAN	20	GRF	1320.8		1408.8	48	10.4		6.2			0
	7000	SAOP	41	F	1321									
	7000	SAOP	20	GRF	1321									0
	2800	OTTA	1	S	1330		1333	6	4.6		2			
	2800	OTTA	21	GRF	1427		1440	35	3.6		1.8			
	9400	HUAN	1	S	1428.7		1430.4	1.7	8.7		5.2			R
	410	SGMR	7	S	1431.2		1431.8	.9	262		78.6			
	2695	SGMR	3	S	1431.6		1432.5	1.7	18		5.4			
	606	SGMR	3	S	1431.8		1431.9	.8	365		110			
	4995	SGMR	3	S	1431.9		1432.5	1.6	10.2		33.1			
	2800	OTTA	3	S	1431.9		1432.4	1	10.4		5.2			
	930	BORO	45	C	1432		1432.1	1	19		5			
	9400	HUAN	20	GRF	1434.8		1500.6	25.8	7		3.2			R
	7000	SAOP	20	GRF	1615									19R
	9400	HUAN	20	GRF	1620.6		1645.7	25.1	13.9		4.7			0
	7000	SAOP	21	GRF	1652.2									
	7000	SAOP	21	GRF	1652.2									0
	7000	SAOP	4	S/F	1652.2									
	7000	SAOP	4	S/F	1652.2		1659	.5						11R
	2800	OTTA			1652		1704	50	12					
	9400	HUAN	21	GRF	1655.4		1738.5	43.1	20.9		11.8			0

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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
	9400	HUAN	4	S/F	1658.7	1700.3	1.6	26.2	9.8		R
	15400	SGMR	3	S	1822.4	1825.1	8.6	36.5	11		SWF
	9400	HUAN	3	S	1822.6	1827.5	4.9	34.9	19.7		0
	7000	SAOP	4	S/F	1822.6	1825.2					6R
	9400	HUAN	29	PBI	1827.5	1931	3.5	19.2	8.2		0
	2800	OTTA	240	R	1833	1925	52	11.4	5.7		
	7000	SAOP	20	GRF	1914						13R
	7000	SAOP	3	S	1948	2009.3	2				11R
	9400	HUAN	21	GRF	1950	2031.3	41.3	22.7	12		R
	9400	HUAN	3	S	2007.9	2012.5	4.6	50.6	21.1		R
	2695	PENT	21	GRF	2020	2044	60	9.2	4.4		
	2695	PENT	2	S/F	2027	2028	2.5	4.2	2.1		
	9400	HUAN	21	GRF	2035.2	2116.2	41	26.2	9.7		0
	9400	HUAN	3	S	2036.2	2037.3	1.1	36.6	20.9		R
	9400	HUAN	3	S	2043.3	2047.7	4.4	27.9	14		0
	2800	OTTA	8	S	2045.2	2045.5	.8	2.6	1.3		
	245	SGMR	6	S	2045.3	2045.8	.8	171	51.3		
	606	SGMR	3	S	2045.4	2045.6	.4	10.5	3.2		
	410	SGMR	48	GB	2045.5	2045.9	.6	526	158		
	9400	HUAN	20	GRF	2138.1	2147	8.9	14	9.4		0
	9400	HUAN	3	S	2215.2	2217.5	2.3	34.9	17.4		0
	8800	MANI	47	GB	2352.7	2354.3	6.3	1575	509.8		
	2695	MANI	3	S	2352.8	2354.5	7	18.4	6.1		
	4995	MANI	3	S	2352.8	2354.3	7.2	409.3	136.3		
	35000	NAGO	47	GB	2353	2354	5	1570			
	35000	NAGO	29	PBI	2358	2408	40	110			
14	5730	IRKU			0351	0353.6		60			R
	5730	IRKU	45	C	0351	0352.9	8	38	21		R
	5730	IRKU			0351	0355.6		27			R
	5730	IRKU			0351	0354.3		48			R
	5730	IRKU	20	GRF	0359	0406.7	16	15			R
	2695	MANI	4	S/F	0431.1	0433	7.1	38.7	12.9		
	4995	MANI	3	S	0431.3	0433.3	4.5	27.9	9.4		
	700	SYDN	42	SER	0432	0437.2	13.1				
	1415	SYDN	42	SER	0432	0432.9	14				
	1415	MANI	4	S/F	0432.1	0432.9	4.1	160.1	53.4		
	606	MANI	4	S/F	0432.5	0437.2	7.3	71.8	23.9		
	9100	GORK	1	SF	0648.3	0648.8	2.5	19	8		
	6100	KISV	32	ABS	0658	0713	22	-4			
	5730	IRKU	2	S	0718	0723	8	114 U			R
	950	GORK	4	SF	0719.4	0722	3.5	5			
	127	TORN	44	NS	0720 E	1157.9	400 D	64	7		V1
	260	ONDR	44	NS	0810 E		346 D	135	11		
	245	SGMR	44	NS	1210 E	1647.4			147		
	245	SGMR	44	NS	1210 E	1401	535 D				
	410	SGMR	44	NS	1210 E	1418	535 D	122			
	9100	GORK	29	PBI	0720.1	0727.4	32.6	62	27		
	9100	GORK	49	GB	0720.1	0723.2	7	600			
	113	POTS	45	C	0720.3	0720.4	.2	200	30		
	6100	KISV	47	GB	0720	0722.5	30	761			
	15000	KISV	47	GB	0721	0722.5	39	922			
	3100	CRIM	3	S	0722	0723	1.5	65	22		
	2950	GORK	4	SF	0722.2	0723.2	5.2	109	54		
	8800	MANI	47	GB	0722.5	0723.1	6.1	966.9	322.3		
	4995	MANI	47	GB	0722.7	0723.1	6.5	602.1	200.8		
	2695	MANI	3	S	0722.8	0723.3	5	52.4	17.4		
	6100	KISV	1	S	0826	0827	5	2			
	113	POTS	1	S	0859.1	0859.1	.1	100	35		
	8400	BERN	8		0903.1	0903.5	1	15			
	10400	BERN	8		0903.1	0903.4	1	17			
	10400	BERN	8	S	0903.1	0903.4	1	6	17		
	8400	BERN	8	S	0903.1	0903.6	1	6	15		
	9100	ARCE	4	S/F	0903.3	0903.6	1.6				RECORD DISTURBED
	6100	KISV	1	S	0903	0903.5	1	2			
	234	POTS	6	S	0938	0949	21	350	1		
	6100	KISV	4	S/F	1000	1009.8	15	4			
	6100	KISV	1	S	1132	1133	2	2			
	15000	KISV	1	S	1133	1133.3	3	5			
	7000	SAOP	3	S	1154	1121.2	.8				0
	7000	SAOP	21	GRF	1154						0
	7000	SAOP	3	S	1154						
	7000	SAOP	21	GRF	1154						
	9100	ARCE	1	S	1154.4	1154.6	1				
	10400	BERN	3		1240.8	1241.9	10	41			OPR
	10400	BERN	3	S	1240.8	1241.9	10	14	41		
	9500	BERL	4	S/F	1241	1242.5	6	43			
	7000	SAOP	4	S/F	1241	1242.4					33R
	9100	ARCE	3	S	1241.4	1242.4	1.9				
	10715	DWIN	1	S	1241	1242	5	45	15		
	9100	ARCE	29	PBI	1243.3		8.9				
	7000	SAOP	20	GRF	1309.4		12				0
	9400	HUAN	20	GRF	1310.2	1323.2	13	9.9	4.8		R
	7000	SAOP	1	S	1337						
	7000	SAOP	21	GRF	1337						

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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
	7000	SAOP	1	S	1337	1411.7	.3				57L
	7000	SAOP	21	GRF	1337						
	9400	HUAN	3	S	1341.7	1346.3	4.6	13.2	7.4		R
	9400	HUAN	20	GRF	1359.7	1440	40.3	26.4	9.6		0
	2800	OTTA	24	R	1428	1432	4	4.6	2.3		
	2800	OTTA	27	RF	1428		140	4.6	4.2		
	2800	OTTA	24P	R	1432		118	4.6			
	7000	SAOP	3	S	1617						
	7000	SAOP	21	GRF	1617						
	7000	SAOP	3	S	1617	1625.5	.2				0
	7000	SAOP	21	GRF	1617						
	9400	HUAN	20	GRF	1621.2	1639	17.8	23.1	10		R
	2800	OTTA	26	FAL	1630	1648	18	4.6	2.3		
	9400	HUAN	20	GRF	1642.7	1653.5	10.8	6.6	2.7		R
	9400	HUAN	1	S	1700	1701	1	9.9	4.5		R
	2800	OTTA	20	GRF	1840	1851	90	6	2.8		
	9400	HUAN	3	S	2012.2	2015.8	3.6	28	13.4		R
	15400	SGMR	3	S	2013	2013.6	1.6	39	6		
	2800	OTTA	20	GRF	2015	2037	50	10.6	3.6		
	9400	HUAN	22	GRF	2025	2134.5	69.5	46.1	12.3		0
	2695	PENT	26	FAL	2115	2145	30	-6.4			
	2695	PENT	3	S	2212.5	2213.7	2	11.2	3.8		
	1415	SYDN	1	S	2213.2	2213.7	2.5				
	2930	VORO	3	S	2350	2355	10	53			
15	6100	KISV	4	S/F	0555	0556.5	10	5			
	9100	GORK	23	GRF	0655.4	0718.6	36.6	12	6		
	9100	GORK	1	S	0705.5	0705.8	1	20	10		
	3100	CRIM	1	S	0705.5	0706	2	9	3		
	6100	KISV	8	S	0705	0705.7	1	5			
	127	TORN	44	NS	0720 E	0934.2	400 D	180	3		V1
	260	ONDR	44	NS	0840 E		313 D	28	2		
	245	SGMR		NS	1211 E	2038.8	535 D	203			3
	410	SGMR		NS	1211 E	1932.1	535 D	174			3
	237	TRST	41	F	1216.6	1216.7	.2	115			0
	237	TRST	41	F	1325.7	1325.8	.2	275			0
	9400	HUAN	20	GRF	1342.4	1424.8	42.4	9.9	3.5		0
	7000	SAOP	3	S	1343	1346.5	2.8				31R
	2800	OTTA	20	GRF	1450	1520	70	4	2		
	2800	OTTA	1	S	1800	1807	8	2.8	1.4		
	2800	OTTA	21	GRF	1820	1850	60	3	1.5		
	2800	OTTA	1	S	1822	1823	2	3.6	1.8		
	7000	SAOP	20	GRF	1830						0
	7000	SAOP	3	S	1946	1957	1.8				17R
	9400	HUAN	20	GRF	1951.1	2014.3	23.2	16.6	5.1		R
	2695	PENT	26	FAL	2005	2020	15	-3.6	-1.8		
	4995	BOUL	3	S	2240.5	2243 U	4	55	18		
	8800	MANI	4	S/F	2241	2242.9	3.2	115.4	38.5		
	4995	MANI	3	S	2241.7	2243.3	7.5	59.9	19.9		
	2695	BOUL	4	SF	2243 E	2244 U	2.5U	17	6		
	4995	BOUL	29	PBI	2244.5	2244.5	20	37	18		
	2695	BOUL	29	PBI	2245.5U	2245.5U	2.5U	11	4		
16	2695	MANI	4	S/F	0135.6	0136	3.5	51.7	17.2		
	1415	MANI	3	S	0135.8	0136	1.5	22.1	7.4		
	4995	MANI	3	S	0135.8	0136.8	1.7	20	6.7		
	2930	VORO	3	S	0135	0137	5	36			
	2930	VORO	3	S	0350	0353	5	31			
	1415	MANI	1	S	0351	0352.1	2	5.3	2		
	2695	MANI	3	S	0351	0351.9	2	32.8	10.9		
	4995	MANI	3	S	0351.5	0352.1	2.3	18.6	6.2		
	5730	IRKU	2	S	0351	0351.9	2	36			R
	5730	IRKU	29	PBI	0353		7	13			
	5730	IRKU	20	GRF	0400	0406.1	22	16			R
	5730	IRKU	2	S	0617	0618.6	3	27			R
	5730	IRKU	29	PBI	0620		10	8			
	200	GORK	44	NS	0630 E		300		5		
	260	ONDR	44	NS	0900 E		300 D	57	8		
	245	SGMR	44	NS	1212 E	1435	534 D	150			
	410	SGMR	44	NS	1212 E	1309.3	534 D	37.8			
	9100	GORK	1	S	0826.1	0828.2	2.5	9	4		
	9100	GORK	20	GRF	0912.3	0920.6	24.3	11	5		
	237	TRST	41	F	1202.5	1202.9	.8	130			5L
	113	POTS	45	C	1238.1	1238.1	.1	200	40		
	237	TRST	41	F	1238.2	1238.2	.6	165			0
	7000	SAOP	3	S	1308.2	1309.2	.6				27R
	7000	SAOP	20	GRF	1332						0
	7000	SAOP	41	F	1946						
	2695	PENT	240	R	1955	2005	10	3	1.5		
	2695	PENT	20	GRF	2025	2030	45	3.8	1.8		
17	2695	MANI	4	S/F	0348	0349.3	4.2	21.2	7.1		
	1415	MANI	4	S/F	0348.2	0349.4	3.9	21.3	7.1		
	200	GORK	44	NS	0630 E		300		5		
	260	ONDR	44	NS	0840 E		330 D	39			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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
	245	SGMR	44	NS	1212 E	1928.5	534 D	31.9			3G
	410	SGMR	44	NS	1212 E	1629.8	534 D	18.5			3G
	200	GORK	45	C	0727.5	0732.7	19.5	25			
	200	GORK			0727.5	0740.6		40			
	200	GORK			0727.5	0739.8		25 D			
	6100	KISV	48	C	0730	0735	65	74			
	3100	CRIM	47	GB	0731	0739	11	243			
	3100	CRIM	30	PBI	0731	0742	42	42			
	3100	CRIM			0731	0740.1		158			
	2950	GORK			0731.5	0740.1		333			
	2950	GORK	46	C	0731.5	0733.8	65	286			
	950	GORK			0731.6	0739.5		47			
	950	GORK	45	C	0731.6	0736.7	17.4	62			
	9100	GORK			0731.7	0738.6		200			
	9100	GORK			0731.7	0737.5		207			
	9100	GORK	45	C	0731.7	0736.5	9.7	126			
	9100	GORK	30	PBI	0731.7	0741.4	40.4	107	36		
	9100	GORK			0731.7	0739.9		190			
	650	GORK	45	C	0732.5	0736.2	19.5	37	16		
	650	GORK			0732.5	0745.4		17			
	650	GORK			0732.5	0739.5		33			
	2695	MANI	4	S/F	0732.7	0735.3	25.3	244.5	81.5		
	4995	MANI	4	S/F	0732.8	0741	22.9	286.6	95.5		
	1415	MANI	4	S/F	0732.8	0735.5	14.7	122.4	40.8		
	100	GORK			0738.7	0744.1		30			
	100	GORK	46	C	0738.7	0743.2	10.5	90			
	100	GORK			0738.7	0749		90			
	127	TORN	45	C	0738	0742	8.5	55			
	3100	CRIM	3	S	0744.2	0745.5	7.5	79			
	9100	GORK	1	S	0744.3	0746	3.5	24	12		
	202	IZMI	6	S	0745	0746.5	2.5	28	10		
	950	GORK	29	PBI	0749.2		51	12			
	7000	SAOP	3	S	1042	1134.7	.2				44L
	7000	SAOP	21	GRF	1042						
	7000	SAOP	3	S	1042						
	7000	SAOP	21	GRF	1042						
	100	GORK	8	S	1042	1042.4	1	110 D			
	202	IZMI	8	S	1042	1042	.7	430	200		
	237	TRST	41	F	1042.1	1042.3	.4	1275			4R
	260	ONDR	8	S	1042.4	1042.4	.3	209 D			
	15000	KISV	46	C	1133	1141		138			
	8400	BERN	8	S	1134.2	1134.7	1.5	8	22		
	10400	BERN	8	S	1134.2	1134.7	1.5	6	17		
	10400	BERN	8		1134.2	1134.7	1.5	17			
	8400	BERN	8		1134.2	1134.7	1.5	22			16L
	15000	KISV	4	S/F	1134.4	1134.8	1	6			
	6100	KISV	8	S	1134	1134.3	62	9 D			
	237	TRST	41	F	1233.6	1233.7	.4	190			0
	2800	OTTA	21	GRF	1420	1500	120	7.4	3.8		
	930	BORD	8	S	1427	1427.1	.2	67	1		
	9400	HUAN	3	S	1547.8	1550.3	2.5	25.2	8.6		0
	7000	SAOP	3	S	1616	1617	.2				27R
	2800	OTTA	8	S	1616.8	1616.8	.5	4			
	9400	HUAN	21	GRF	1726.5	1944.5	138	23.5	10.3		R
	4995	BOUL	28	PRE	1755	1800	11	13	4		
	7000	SAOP	3	S	1756	1808.2	.6				20R
	4995	BOUL	3	S	1806.5	1808.5	4.5	101	34		
	9400	HUAN	4	S/F	1807.2	1812	4.8	84	29.6		R
	15400	SGMR	3	S	1807.5	1808.2	2.7	55.3	16.6		SHF
	2695	SGMR	3	S	1807.8	1808.4	1.4	66.3	19.9		SHF
	8800	SGMR	3	S	1807.9	1808.4	1.3	93.8	28.1		SHF
	4995	SGMR	3	S	1807.9	1808.4	1.3	51.7	15.5		SHF
	2800	OTTA	3	S	1807	1808.2	5	58	20		
	1420	BOUL	1	S	1808.5E	1809.5	2.5D	9	3		
	2695	BOUL	3	S	1808 E	1809	2 D	62	21		
	2695	BOUL	29	PBI	1810	1810	25.5	16	5		
	4995	BOUL	29	PBI	1810	1810	40	32	11		
	2800	OTTA	30	PBI	1812	1812	28	8.4	4.2		
	2800	OTTA	8	S	1815	1815.3	.6	3.4	1.7		
	2800	OTTA	8	S	1907.1	1907.1	.1E	4.2			
	2800	OTTA	26	FAL	1910	1945	35	-7.4	-3.7		
	2800	OTTA	8	S	1956.3	1956.3	.1E	2.8			
	9400	HUAN	4	S/F	1956.8	2003.7	6.9	67.2	22.5		0
	7000	SAOP	3	S	2000	2002	.4				0
	9400	HUAN	29	PBI	2003.7	2018.8	15.1	10.1	8		0
	2800	OTTA	1	S	2023	2023.3	1	1.4	.7		
18	200	GORK	44	NS	0633		300		5		
	127	TORN	44	NS	0720 E	0910	400 D	69	6		V2
	260	ONDR	44	NS	0820 E		340 D	20			
	100	GORK	43	NS	0906		144		5		
	245	SGMR	44	NS	1213	1819.1	534 D	86			
	410	SGMR	44	NS	1213	1725.9	534 D	9.9			
	245	SGMR	4	NS	1635.3	1636.1	1.5	263	78.9		3G
	9100	GORK	20	GRF	0701.1	0702.3	9.1	8	4		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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
	100	GORK			0853.7	0856.5		2800			
	100	GORK	46	C	0853.7	0855	7	110 D			
	930	BORD	8	S	0944.4	0944.4	.3	21	1		
	2800	OTTA	4	S/F	1635.5	1636	3	10.6	2.6		
	2800	OTTA	26	FAL	1710	1755	45	-3.2	-1.6		
	2695	PENT	1	S	2017.9	2018.2	1	2.6	1.3		
	9400	HUAN	4	S/F	2042.7	2044.4	1.7	17.2	8.8		0
	2695	PENT	8	S	2153.9	2154	.2	2.8	1.4		
	1415	SYDN	45	C	2347.4	2348.3	8.7				
	700	SYDN	45	C	2347.4	2348.2	2.8				
	8800	MANI	4	S/F	2347.6	2349	1.4	421.2	269.7		I
	2695	MANI	4	S/F	2347.6	2348.1	3.7	23.8	17.5		
	4995	MANI	4	S/F	2347.6	2348.1	4.2	255.5	196.6		
	1415	MANI	4	S/F	2347.7	2348.7	3.4	162.8	80.8		
	35000	NAGO	5	S	2348	2348	6	63			
19	200	GORK	44	NS	0630 E		290		5		
	127	TORN	44	NS	0720 E	1033.6	400 D	51	5		V1
	202	IZMI	43	NS	0800		120	30			
	260	ONDR	44	NS	0923 E		274 D	30			
	410	SGMR	44	NS	1214 E	1911.8	533 D	37	157		
	245	SGMR	44	NS	1214 E	2051.2	533 D				
	9100	GORK	20	GRF	0830.8	0837	14.5	6.4	3.2		
	260	ONDR	8	S	1010	1010	.2	192			
	237	TRST	41	F	1147	1147.1	.3	80			8L
	9100	ARCE	3	S	1422.3	1422.6	1.2				
	2800	OTTA	240	R	1430	1500	30	3.6	1.8		
	2800	OTTA	26	FAL	1720	1840	80	-6.2	-4		
	9400	HUAN	20	GRF	1832	1849.8	17.8	4.9	2.9		0
	4995	BOUL	3	S	1934	1937	3.5	17	6		
	2930	VORO	45	C	2345	2348	10	133			
20	200	GORK	44	NS	0736 E		243		5		
	260	ONDR	44	NS	0820 E		340 D	22			
	245	SGMR	44	NS	1214 E	2001	533 D	275			
	410	SGMR	44	NS	1214 E	2002.6	533 D	189			
	606	SGMR	43	NS	1740 E	2002.5	207 E	144			
	536	ONDR	45	C	1046.3	1046.3	2	62	20		
	930	BORD	42	SER	1046.4	1048.6	2.6	17	2		
	1470	BERL		S	1248	1248.9	1.5	2.4			
	3000	BERL	3	S	1248	1248.8	1.5	10			
	113	POTS	45	C	1248	1248.2	1	1950	95		
	234	POTS	45	C	1248	1248.2	1.1	2700	450		
	237	TRST	41	F	1248	1248.4	1	4735			0
	2650	DWIN	1	S	1248	1248	1	15	5		
	536	ONDR	46	C	1248	1248.8	4	27	2.8		
	260	ONDR	46	C	1258.5	1258.5	3.5	212 D	49		
	606	SGMR	45	C	1641	1729.5		82.5			
	606	SGMR	45	C	1641	1649.9	59	161	64.4		
	245	SGMR	7	C	1642	1728.9		215			
	245	SGMR	7	C	1642	1650	58	222	88.8		
	410	SGMR	7	C	1642.5	1729.5		61.1			
	410	SGMR	7	C	1642.5	1646.7	57.5	120	48		
	9400	HUAN	20	GRF	1758.1	1812	13.9	10.3	5.6		0
21	200	GORK	44	NS	0630 E		300 E		10		
	202	IZMI	43	NS	0700		300	110			
	127	TORN	44	NS	0730 E	0817	390 D	35	1		V1
	260	ONDR	44	NS	0804 E		366 D	47	8.4		
	245	SGMR	44	NS	1215 E	1238.1	533 D	112			
	410	SGMR	44	NS	1215 E	1348.3	533 D	23			
	6100	KISV	4	S/F	0732	0747	23	4			
	536	ONDR	46	C	1045.6	1046.8	2.5	46	2		
	234	POTS	45	C	1046.1	1046.2	2.1	1225	10		
	408	TRST	41	F	1046.1	1046.3	2	91 D			
	237	TRST	41	F	1046.2	1046.3	1.3	1845			0
	113	POTS	2	S/F	1046.2	1046.2	2	105	1		
	260	ONDR	8	S	1046	1046	.3	165			
	113	POTS	45	C	1119.4	1119.4	.1	100	8		
	2650	DWIN	45	C	1410	1411	2	20	5		
	2800	OTTA	21	GRF	1520	1655	180	6.4	3.2		
	9400	HUAN	20	GRF	1627.1	1739.2	72.1	10	5		R
	7000	SAOP	45	C	1646						
	7000	SAOP	45	C	1646	1648					39L
	7000	SAOP	45	C	1646	1646.7					25L
	2800	OTTA	2	S/F	1646.5	1648	2.5	5.2	2.6		
	1420	BOUL	28	PRE	1721.5E	1733 U	9.50	7	2		
	2800	OTTA	2	S/F	1731.8	1733.5	2.2	9.2			
	1415	SGMR	3	S	1732.4	1733.3	1.6	98	19		
	1420	BOUL	4	SF	1732 E	1733.5	2.50	120	40		
	2695	BOUL	3	S	1734.5E	1735	1 D	20	7		
	1420	BOUL	29	PBI	1734	1734	15 U	7	2		
	2800	OTTA	21	GRF	1855	1910	65	1.8			
	2800	OTTA	40	F	1957	1957.7	2	11.4			
22	127	TORN	44	NS	0730 E	1008	390 D	80	14		V1

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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
	200	GORK 44 NS		0824 E		186 E		5		
	100	GORK 44 NS		0824 E		186		5		
	260	ONDR 44 NS		0922 E		282 D	24	2		
	410	SGMR 44 NS		1215 E	1848.5	533 D	13			
	245	SGMR 44 NS		1215 E	1509.8	533 D	70.6			
	234	POTS 6 S		0945	0949	11	280	1		
	9100	ARCE 1 S		1050	1050.2	.7				
	9100	ARCE 1 S		1052.8	1052.9	.5				
	9400	HUAN 20 GRF		1355.7	1529.7	94	6.9	3.3		D
	930	BORD 46 C		1427.5	1427.7	.5	102	7		
	9100	ARCE 1 S		1453.2	1453.3	.5				
	2800	OTTA 23 GRF		1832	1837	28	6.6	2.2		
	7000	SAOP 3 S		1840.6	1841.2	.2				D
	2800	OTTA 1 S		1841	1841.2	1	8.6	4.3		
23	200	GORK 44 NS		0630 E		296 E		5		
	100	GORK 44 NS		0636 E		24		30		
	127	TORN 44 NS		0730 E	1006.4	210 D	59	14		V1
	100	GORK 44 NS		0800 E		213 E		5		
	260	ONDR 44 NS		0906 E		286 D	21			
	245	SGMR 44 NS		1216 E	1307.4	533 D	50			
	237	TRST 41 F		0822.7	0822.8	.5	120			2L
	202	IZMI 41 F		0822.7	0823.7	1.1	110			
	237	TRST 41 F		0916.5	0916.6	.5	118			D
	6100	KISV 1 S		0916	0917.5	4	1			
	6100	KISV 1 S		0929	0930.5	4	2			
	6100	KISV 1 S		0948	0950	5	2			
	237	TRST 5 S		1033.2	1033.2	.1	132	40		D
	930	BORD 41 F		1054	1055	1.4	28	2		
	6100	KISV 1 S		1121.5	1125	8	2			
	237	TRST 41 F		1211	1211.1	.4	155			D
	237	TRST 41 F		1307.2	1307.6	.6	425			D
	113	POTS 45 C		1324.5	1325	1.2	600	25		
	237	TRST 41 F		1347.6	1347.6	.2	575			D
	237	TRST 41 F		1359.8	1400.2	.7	555			D
	245	SGMR 7 S		1359.8	1400.3	1.2	420	84		
	410	SGMR 6 S		1359.8	1400.5	.8	8	2		
	9400	HUAN 4 S/F		1451.8	1453.3	1.5	25.6	9.2		L
	245	SGMR 6 S		1601.2	1604.8	5.1	71.9	21.6		
	7000	SAOP 46 C		1603	1604.7					G
	410	SGMR 6 S		1603.1	1604.9	3.2	78.2	23.5		
	606	SGMR 3 S		1603.7	1604.9	2.5	79.8	23.9		
	9400	HUAN 3 S		1725.7	1728	2.1	15.3	5.1		L
	606	SGMR 3 S		1730.9	1731.6	1.2	87	26		3G
	245	SGMR 48 GB		1731	1731.7	1.2	891	267		3G
	410	SGMR 6 S		1731	1731.8	2	109	32		3G
	7000	SAOP 1 S		1731	1731.5	.3				D
	2800	OTTA 1 S		1731	1731.4	2.5	7.4	3		
	245	SGMR 6 S		2028.1	2030.2	1.1	89	18		
	410	SGMR 6 S		2028.2	2028.5	2.8	109	22		
	606	SGMR 3 S		2028.2	2028.7	.9	67	13		
	2800	OTTA 1 S		2028	2029	2	3	1.3		
	2695	PENT 1 S		2052	2054.5	4.5	2.6			
	9400	HUAN 4 S/F		2222.6	2228.4	5.8	44.3	16		L
	4995	BOUL 45 C		2224.5	2226	11	29	10		
	1420	BOUL 3 S		2226 E	2226.5	1 D	30	10		
	2695	PENT 40 F		2226	2226.5	9	13			
	2695	BOUL 22 GRF		2227.5E	2234.5	10 D	15	5		
24	127	TORN 44 NS		0730 E	0847.4	240 U	29	1		V0
	260	ONDR 44 NS		0830 E		340 D	57	3		
	410	SGMR 44 NS		1216 E	1334.8	534 D	17.3			
	245	SGMR 44 NS		1216 E	1944.2	534 D	233			
	930	BORD 41 F		0816.5	0816.8	1.5	29	3		
	237	TRST 41 F		0840.5	0840.6	.3	115			2R
	930	BORD 8 S		0841	0841.2	.3	17	2		
	930	BORD 41 F		0846.4	0847.7	1.6	26	2		
	6100	KISV 27 RF		0846	0930	194	10			
	6100	KISV 1 S		0846	0847	2	2			
	3100	CRIM 20 RF		0856	0932	113	8	3		
	6100	KISV 1 S		0906	0907	2	3			
	29	UPIC 2 S/F		1203.9	1204.1	.6				
	33	UPIC 2 S/F		1204	1204.3	.8				
	33	UPIC 2 S/F		1206.2	1206.8	1.3				
	29	UPIC 2 S/F		1206	1206.6	1.7				
	2800	OTTA 20 GRF		1455	1650	225	4	2		
25	2695	MANI 1 S		0003.1	0006.4	4.9	7.9	2.6		
	1415	MANI 2 S/F		0004.8	0005.7	2.6	9.2	3.1		
	202	IZMI 5 S		0744.5	0744.5	.6	80	40		
	3100	CRIM 1 S		0747.2	0747.6	.8	4	1		
	260	ONDR 44 NS		0836 E		334 D	54	5		
	202	IZMI 43 NS		0930		150	75			
	410	SGMR 44 NS		1217 E	1439.8	533 D	26.9			
	245	SGMR 44 NS		1217 E	1659.7	533 D	10.4			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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	41	F	0936.3	0937	1.3	260			
	202	IZMI	41	F	1004.5	1005.3	1.5	360			
	234	POTS	45	C	1140	1140.1	.2	175	35		
	2800	OTTA	20	GRF	1510	1525	50	2.2	1.1		
	9400	HUAN	3	S	2020.6	2023.3	2.7	13.7	6.8		L
26	5730	IRKU	45	C	0320	0321.8	6	9			
	5730	IRKU			0320	0328.8		20			
	5730	IRKU			0320	0323.5		23			
	5730	IRKU	29	PBI	0327		15	8			
	260	ONDR	44	NS	0830 E		301 D	27			
	245	SGMR	44	NS	1217 E	1954.4	534 D	100			
	6100	KISV	3	S	0900	0902.3	5	3			
	6100	KISV	2	S/F	1026	1027.5	4	3			
	9400	HUAN	3	S	1408.7	1410	1.3	11.3	5.6		0
	2800	OTTA	20	GRF	1950	1955	15	1.4	.7		
27	127	TORN	44	NS	0730 E	0739.5	170 U	22	1		V0
	3100	CRIM	21	GRF	0855	1115	189	9	3		
	113	POTS	45	C	0956	0956.4	.9	140	20		
	3100	CRIM	1	S	1037.2	1037.6	1	7	2		
	260	ONDR	41	F	1056	1059.8	4	20			
	9100	ARCE	1	S	1225.7	1225.8	.6				
	9400	HUAN	20	GRF	1336.2	1349	12.8	6.6	2.3		0
	2800	OTTA	240	R	1505	1515	10	2.6	1.3		
	2695	SGMR	47	GB	1627.8	1638.1	39.2	540	162		2,SWF
	2800	OTTA	4	S/F	1627	1637.5	31	380	117		
	4995	BOUL	47	GB	1627	1637.5	18	760	253		
	35000	SGMR	3	S	1628	1636.5	39	148	44.4		2,SWF
	15400	SGMR	3	S	1628.2	1637	38.8	394	118		2,SWF
	4995	SGMR	47	GB	1628.8	1637.4	37.2	747	224		2,SWF
	2695	BOUL	45	C	1628 E	1639	17 D	420	140		
	1420	BOUL	45	C	1628 E	1640	15.5	126	42		
	1415	SGMR	3	S	1629 U	1640.5	38 U	209	69.6U		2,SWF
	245	SGMR	6	S	1629	1640.5	43.3	218	65.4		2,SWF
	410	SGMR	48	GB	1629	1640.3	43.3	567	170		2,SWF
	606	SGMR	3	S	1629 U	1637.5	38 U	144	47.7U		2,SWF
	8800	SGMR	3	S	1629	1637.3	36	428	128		2,SWF
	4995	BOUL			1629.5E	1630.5		538	179		
	4995	BOUL			1633.5E	1634.5		269	90		
	1420	BOUL	29	PBI	1643.5	1643.5	13	23	8		
	4995	BOUL	29	PBI	1645	1645	95.5U	77	26		
	2695	BOUL	29	PBI	1645	1645	17	44	15		
	2800	OTTA	29	PBI	1658	1658	80	13.8	7.2		
28	100	GORK	43	NS	0730		71		5		
	260	ONDR	44	NS	0810 E		351 D	81	6		
	410	SGMR	44	NS	1218 E	1241.4	534 D	68			
	245	SGMR	44	NS	1218 E	1235.4	534 D	102			
	2650	DWIN	45	C	1105	1107	3	90	20		
	7000	SAOP	3	S	1150	1151.2	.2				36L
	6100	KISV	8	S	1150.5	1151	3	13			
	237	TRST	41	F	1227.3	1228	1.1	90			6L
	2800	OTTA	240	R	1455	1540	45	5.4	2.5		
	2800	OTTA	20	GRF	1755	1810	30	2.6	1.3		
	2800	OTTA	20	GRF	1900	1912	60	4.8			
	9400	HUAN	20	GRF	1913.9	1947.5	33.6	13.7	5.2		0
	2695	PENT	1	S	2106	2108	5	1.4	.7		
29	260	ONDR	44	NS	0820 E		355 D	26			
	410	SGMR	44	NS	1218 E	1617.4	535 D	6.6			
	245	SGMR	44	NS	1218 E	1249.8	535 D	22.8			
	100	GORK	46	C	1026.3	1026.9	3	90			
	100	GORK			1026.3	1028.3		170			
	7000	SAOP	2	S/F	1510.5	1511.2					47L
	9400	HUAN	3	S	1632	1634.8	2.8	26.5	8.2		L
	2800	OTTA	20	GRF	1810	1912	80	2.8	1.4		
	2695	PENT	20	GRF	2010	2055	90	2	1.2		
30	5730	IRKU	45	C	0537	0546.5	25	28			
	5730	IRKU			0537	0548.5		29			
	5730	IRKU			0537	0547.1		29			
	5730	IRKU			0537	0557		38			
	5730	IRKU			0537	0551.3		28			
	35000	NAGO	20	GRF	0546	0600	37	17			SUNSET
	2695	MANI	3	S	0600 E	0605	11 D	29	9.7		
	5730	IRKU	29	PBI	0603		32	18			
	606	MANI	4	S/F	0609.5	0614.8	20	57.1	19		
	260	ONDR	44	NS	0847 E		298 D	44			
	245	SGMR	44	NS	1218 E	1258.6	536 D	84.8			
	3000	BERL	4	S/F	0852	0852.8	3	53			
	606	MANI	4	S/F	0852.3	0853.9	1.7	122.3	40.7		
	1415	MANI	4	S/F	0852.5	0853.9	2	51.5	17.2		
	2695	MANI	4	S/F	0852.5	0852.9	2	24.6	8.2		I
	1470	BERL	4	S/F	0852.5	0853.8	2	24			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

DECEMBER 1978

DAY OF MONTH	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
	113	POTS 45 C		0852.5	0853.7	2.6	90000	350		
	808	ONDR 41 F		0852.5	0852.5	1.5	252			
	536	ONDR 41 F		0852.6	0853.5	2	70			
	950	GORK 45 C		0852.7	0852.9	4.4	77 D			
	650	GORK		0852.7	0854.2U		80 D			
	650	GORK 46 C		0852.7	0852.9U	2	80 D	28		
	950	GORK		0852.7	0854.2		77			
	100	GORK 45 C		0852.9	0853	1.8	130 D			
	100	GORK		0852.9	0854		200000 D			
	2650	DWIN 45 C		0852	0853	2	45	10		
	2950	GORK 46 C		0853	0853.1	2	58			
	202	IZMI 45 C		0853.2	0854	1.3	300	100		
	29	UPIC 4 S/F		0853.4	0854	1.8				
	33	UPIC 45 C		0853.4	0853.8	1.8				
	234	POTS 45 C		0853.5	0853.7	.5	190	60		
	237	TRST 41 F		0853.7	0853.9	.3	330			2R
	3100	CRIM 25 R		0935	1100		3			
	3100	CRIM 1 S		1031.5	1032	1	3	1		
	930	BORD 45 C		1048.5	1049.7	1.3	22	2		
	3100	CRIM 1 S		1049.5	1050	1	3	1		
	2800	OTTA 21 GRF		1530	1620	110	3.8	1.9		
	2800	OTTA 1 S		1608.5	1610	10	6	2.4		
	2800	OTTA 22 GRF		1735		45	2.2			
	2695	PENT 20 GRF		1835	1900	45	2	1.1		
	2695	PENT 240 R		2030	2056	26	2.8			
	9400	HUAN 21 GRF		2109.5	2141.5	32	10.4	4.8		0
	9400	HUAN 1 S		2113.7	2116.3	2.6	8.7	3.5		R
31	6100	KISV 1 S		0806	0807	4	4			
	237	TRST 41 F		0822.7	0823	.5	115			G
	3100	CRIM 25 R		0840	1030		16			
	3100	CRIM 1 S		0905	0907.5	8	10	3		
	3000	BERL 4 S/F		0905	0907.5	6.5	12			
	1470	BERL S		0906.5	0907.5	2.5	2.6			
	6100	KISV 4 S/F		0906	0908.5	4	7			
	2950	GORK 3 S		0907.3	0908	5.6	16	7		
	9100	GORK 1 S		0907.4	0907.7	2.2	4	2		
	260	ONDR 44 NS		1010 E		220 D	10			
	245	SGMR 44 NS		1218 E	1636.7	537 D	174.8			3G
	410	SGMR 44 NS		1218 E	1318.2	316.8D	152.9			3G
	2800	OTTA 20 GRF		1550	1612	70	14	4.6		
	9400	HUAN 20 GRF		1608.8	1643.5	34.7	16.4	5.6		G
	2800	OTTA 20 GRF		1724	1727	20	2	1		
	7000	SAOP 20 GRF		1751						0
	9400	HUAN 4 S/F		1757	1800.2	3.2	44.2	12.8		R
	2800	OTTA 40 F		1805	1806.8	3	5			
	410	SGMR 6 S		1901.3	1901.5	1	122.3	36.9		3
	606	SGMR 47 GB		1905.1	1906.2	2.1	713	214		
	410	SGMR 6 S		1905.3	1906	2.9	103	30.9		
	1415	SGMR 3 S		1905.8	1906.4	1.4	22.2	6.7		
	2800	OTTA 3A S		1905.8	1906.5	2	45	12		
	245	SGMR 7 S		1905.9	1906.1	1.6	291	87		
	2800	OTTA 8 S		1906.5	1906.5	.1E	57			
	1420	BOUL 3 S		1906.5E	1907.5	2 D	31	10		
	2695	BOUL 8 S		1907 E	1907.5	1 D	90	30		
	1420	BOUL 3 S		2110.2E	2113	1.5D	18	6		
	2695	PENT 3 S		2112	2112.8	2	12.4	4.2		
	2695	BOUL 3 S		2113 E	2114	1.5D	13	4		

Reports received from the following observatories:

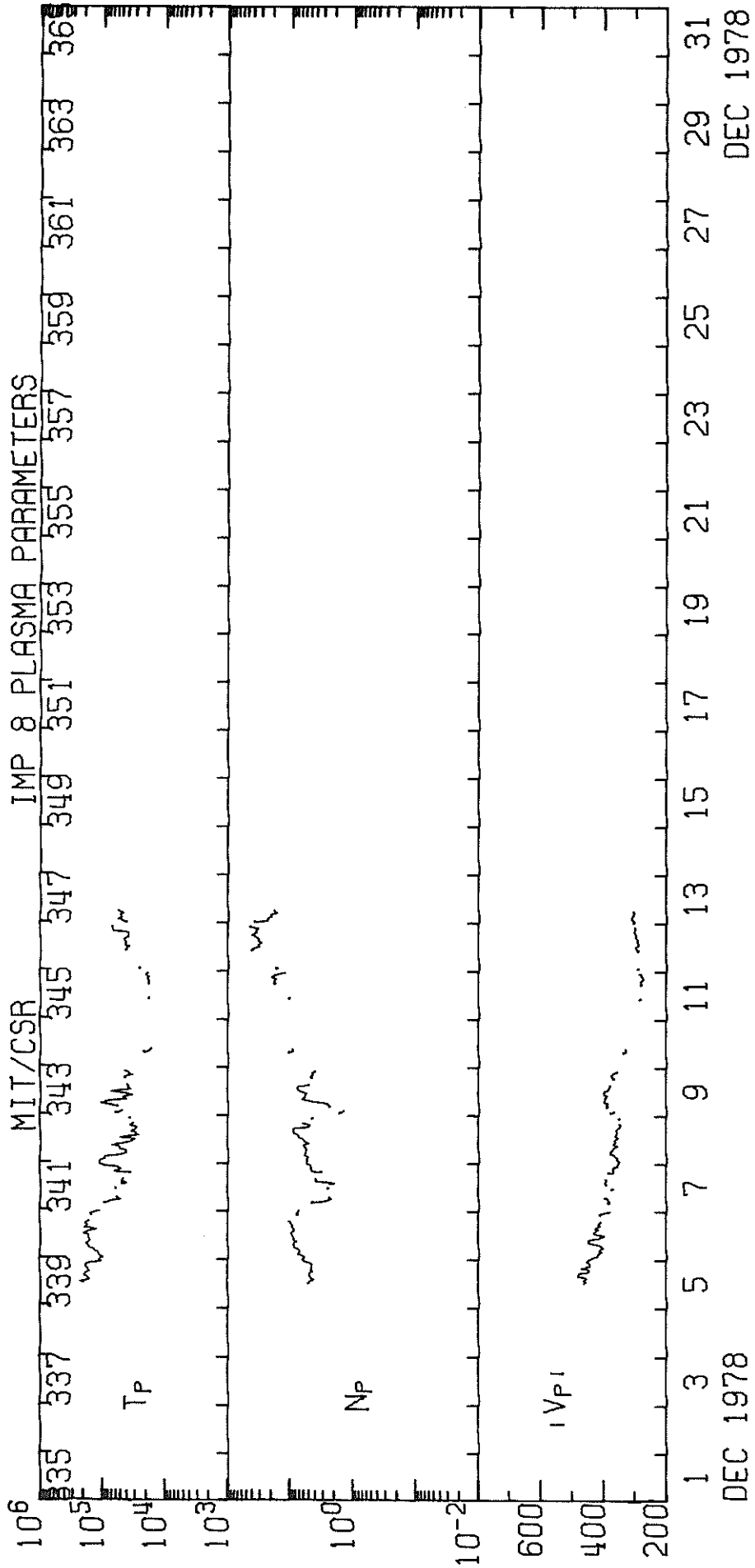
ARCE = Arcetri
BERL = Berlin-Adlershof
BERN = Berne
BORD = Bordeaux
BOUL = Boulder
CRIM = Simferopol
DWIN = Dwingeloo
GORK = Gorky
HARS = Harestua
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk
KIEV = Kiev
MANI = Manila
MCMA = McMath-Hulbert
NAGO = Nagoya
ONDR = Ondrejov
OTTA = Ottawa
PENT = Penticton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

Explanation of Type Code:

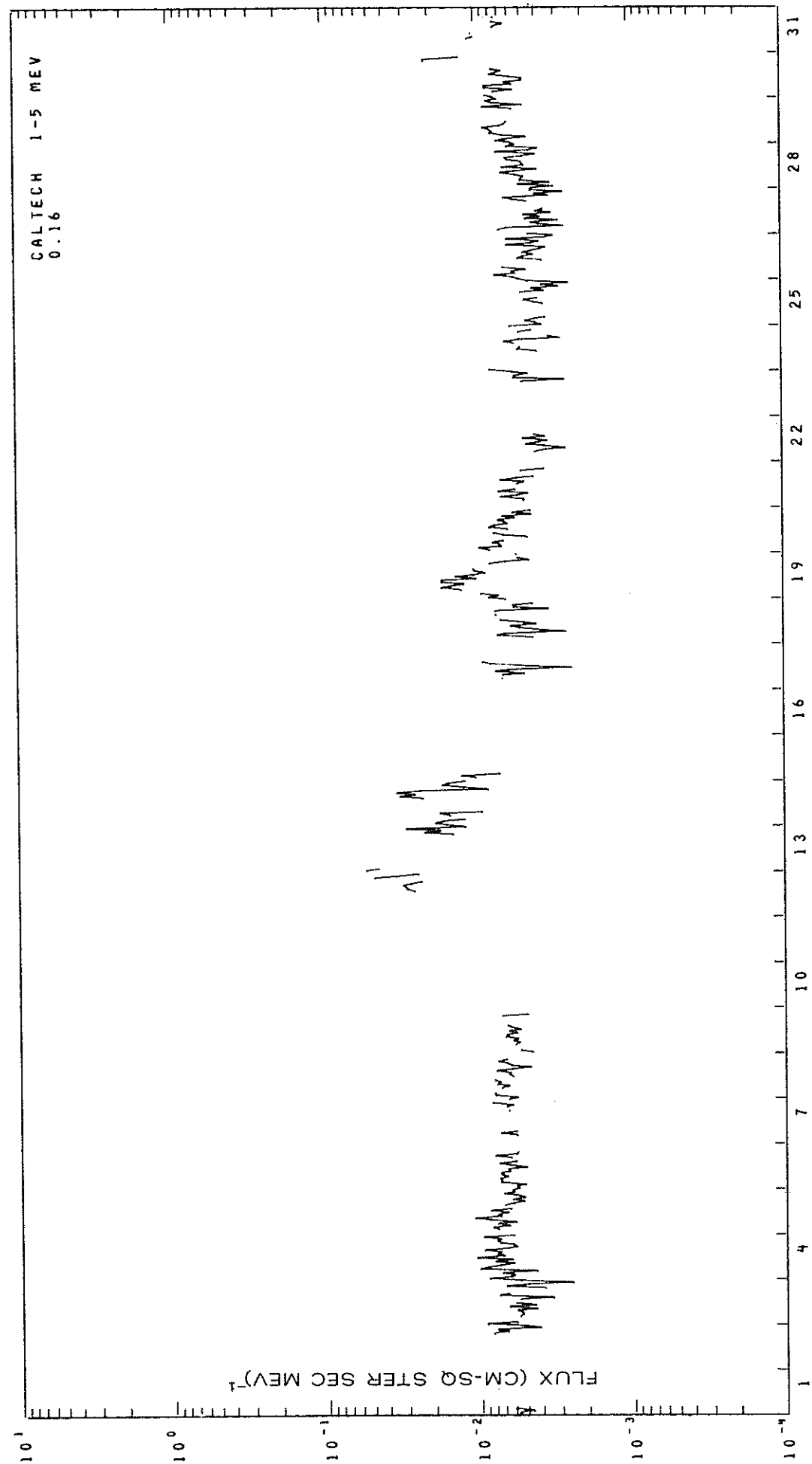
1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
32 Absorption
40 Fluctuation
41 Group of 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 8 SOLAR WIND PLASMA

DECEMBER 1978

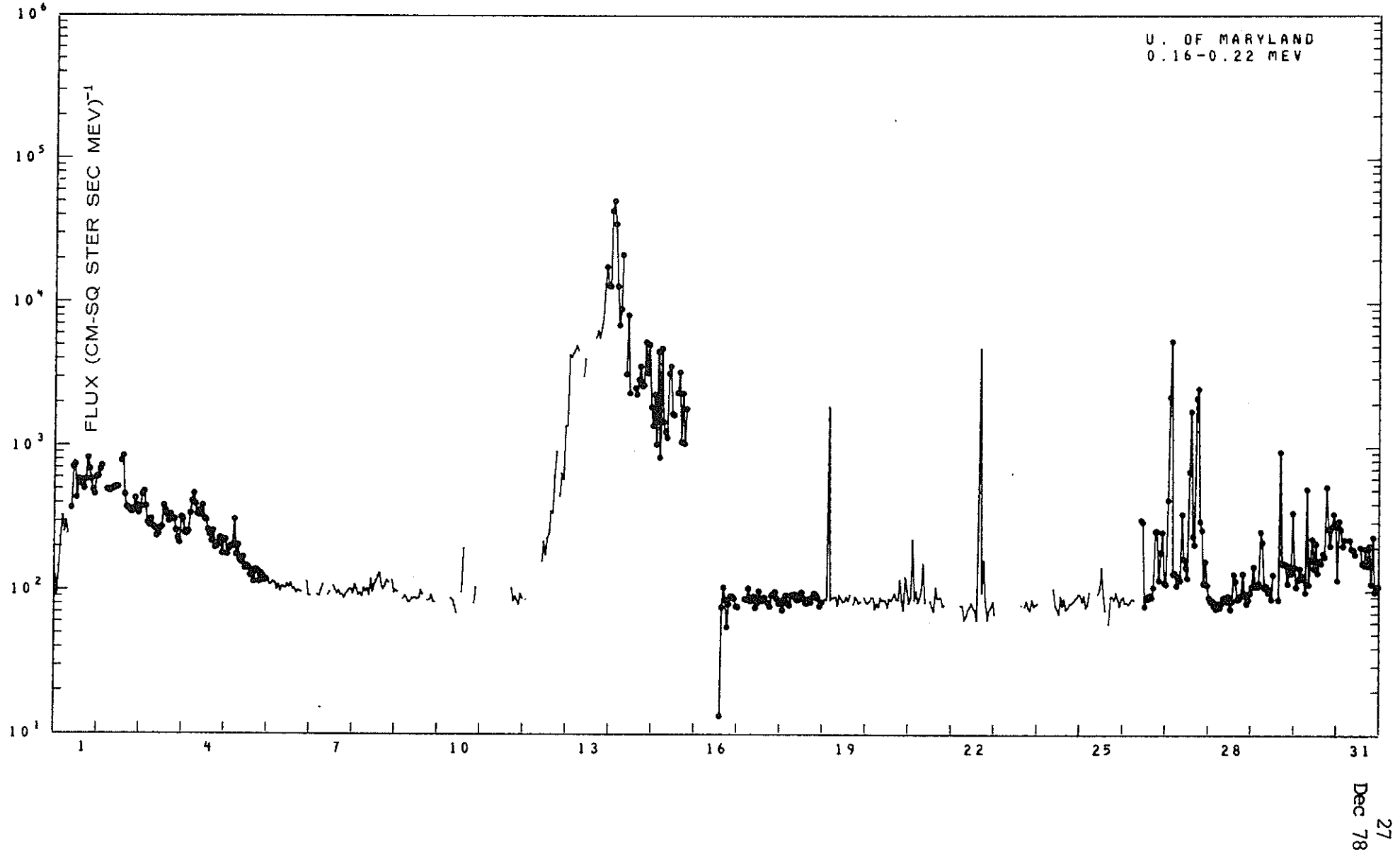


26
Dec 78

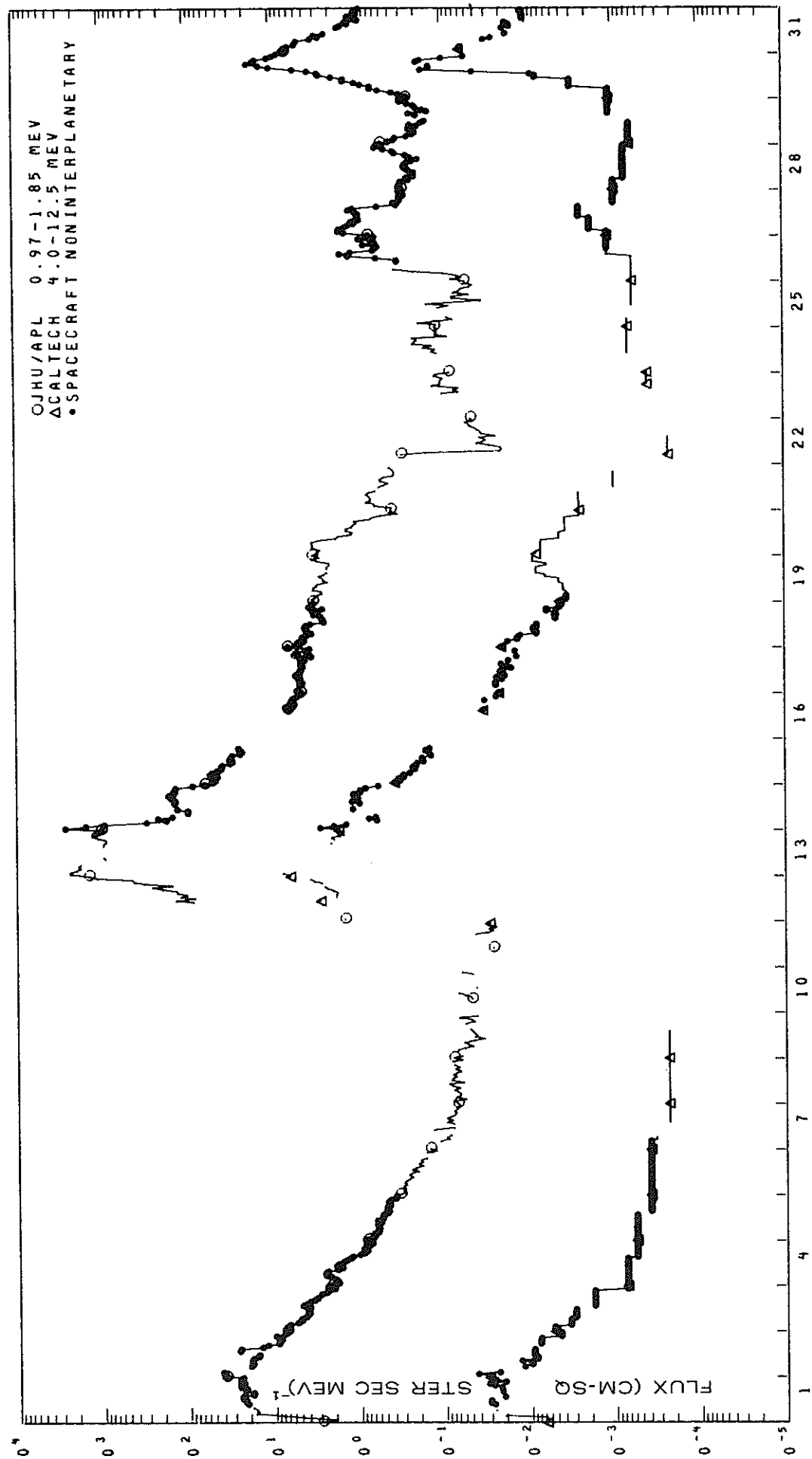

IMP 8 ELECTRONS
DECEMBER 1978
CALTECH 1-5 MEV
0.16
FLUX (CM-SQ STER SEC MEV)$^{-1}$
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
1
4
7
10
13
16
19
22
25
28
31

IMP 8 LOW ENERGY PROTONS

DECEMBER 1978

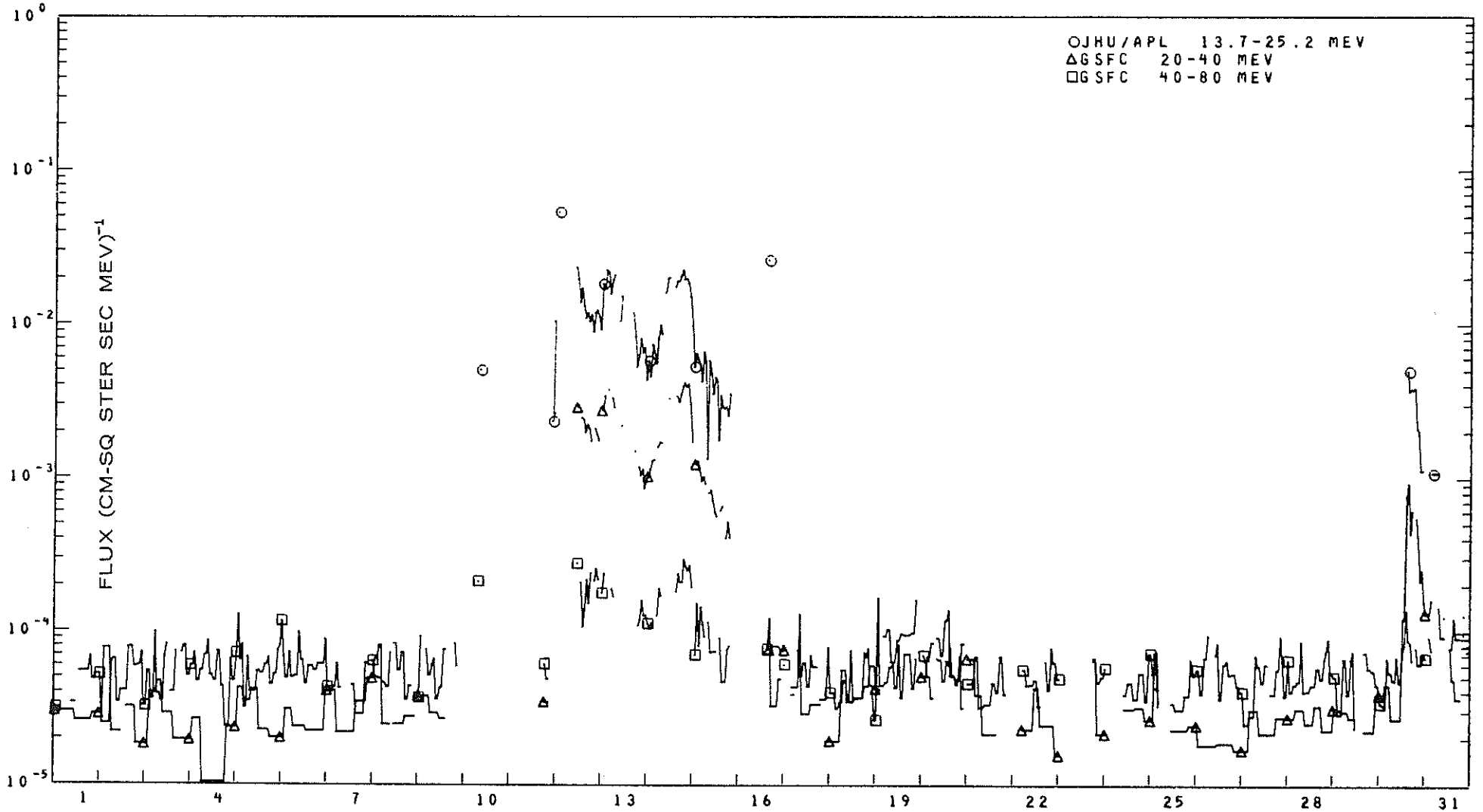


28
Dec 78


IMP 8 INTERMEDIATE ENERGY PROTONS
DECEMBER 1978
OJHU/APL 0.97-1.85 MEV
ΔCALTECH 4.0-12.5 MEV
•SPACECRAFT NONINTERPLANETARY
FLUX (CM-SQ STER SEC MEV)⁻¹
10⁴
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10⁻³
10⁻⁴
10⁻⁵
1
4
7
10
13
16
19
22
25
28
31

IMP 8 HIGH ENERGY PROTONS

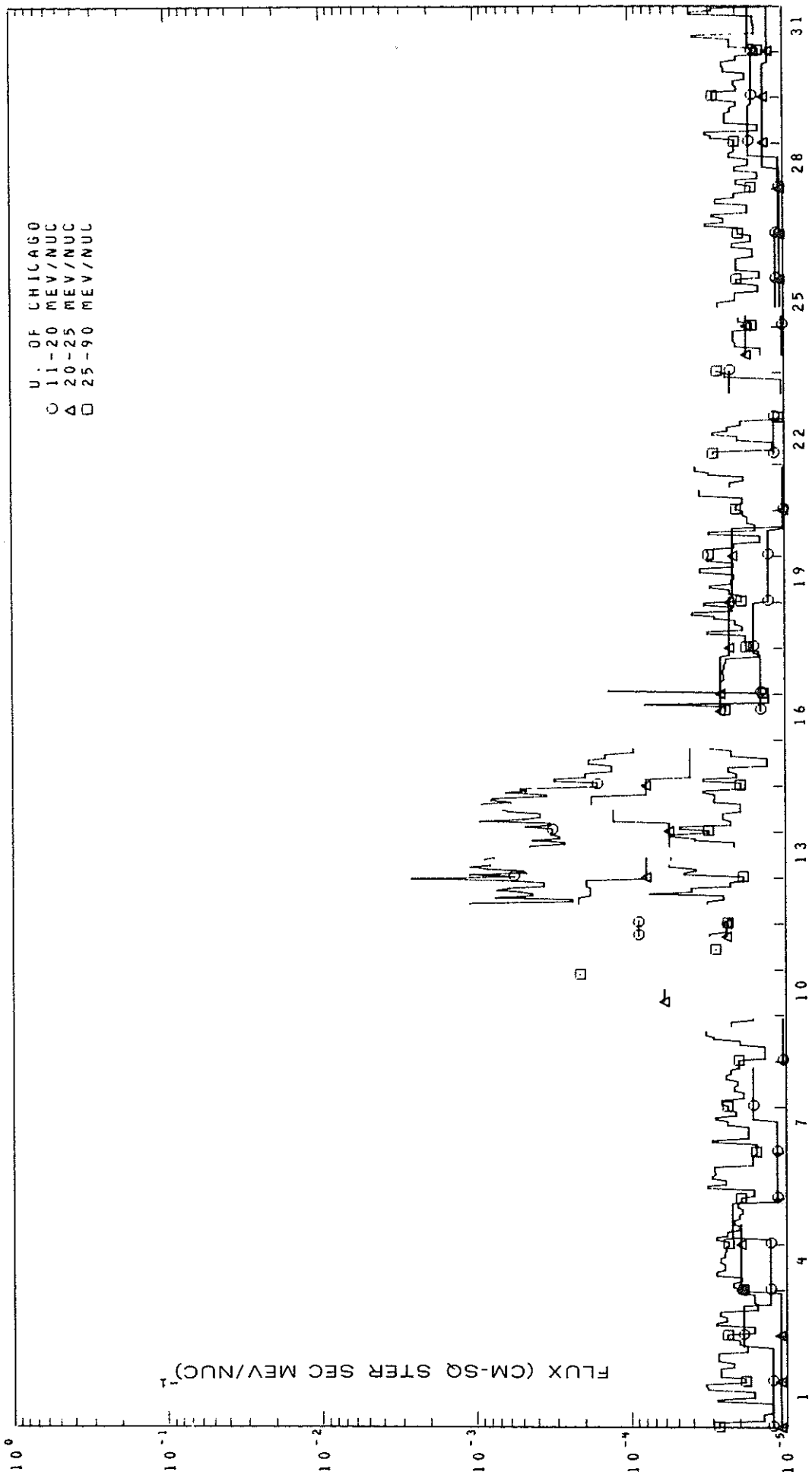
DECEMBER 1978



29 Dec 78

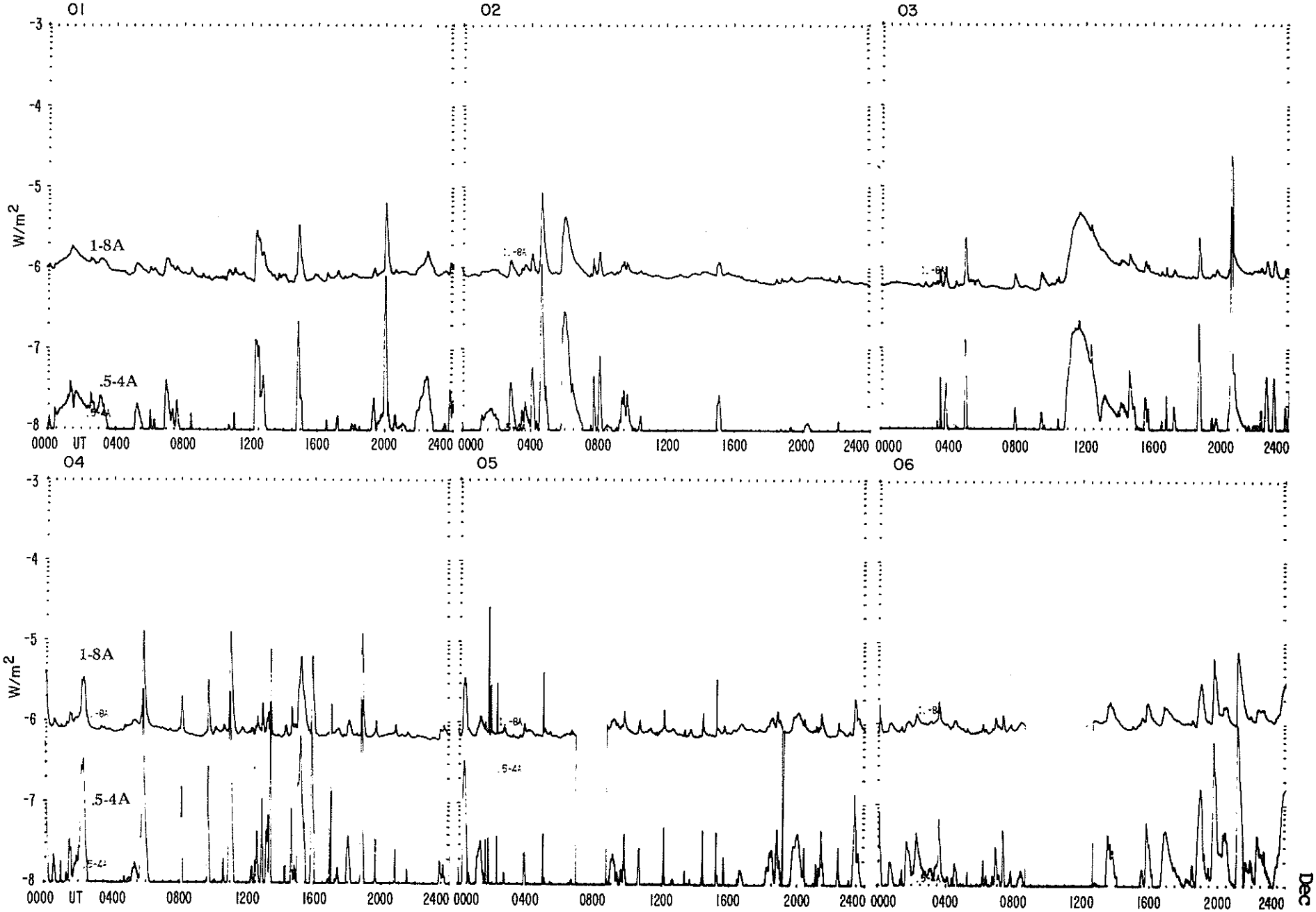
IMP 8 ALPHA PARTICLES

DECEMBER 1978

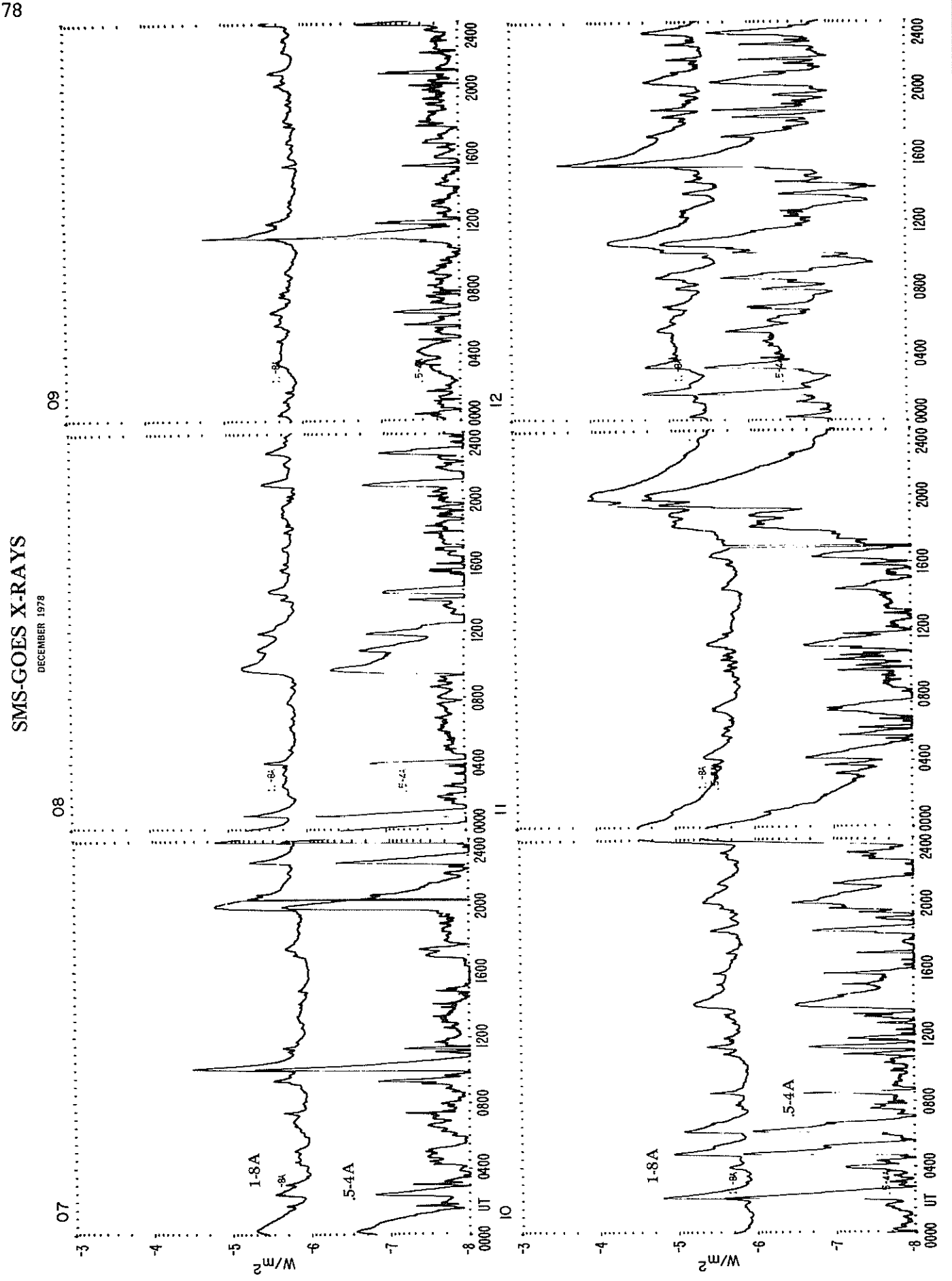


SMS-GOES X-RAYS

DECEMBER 1978

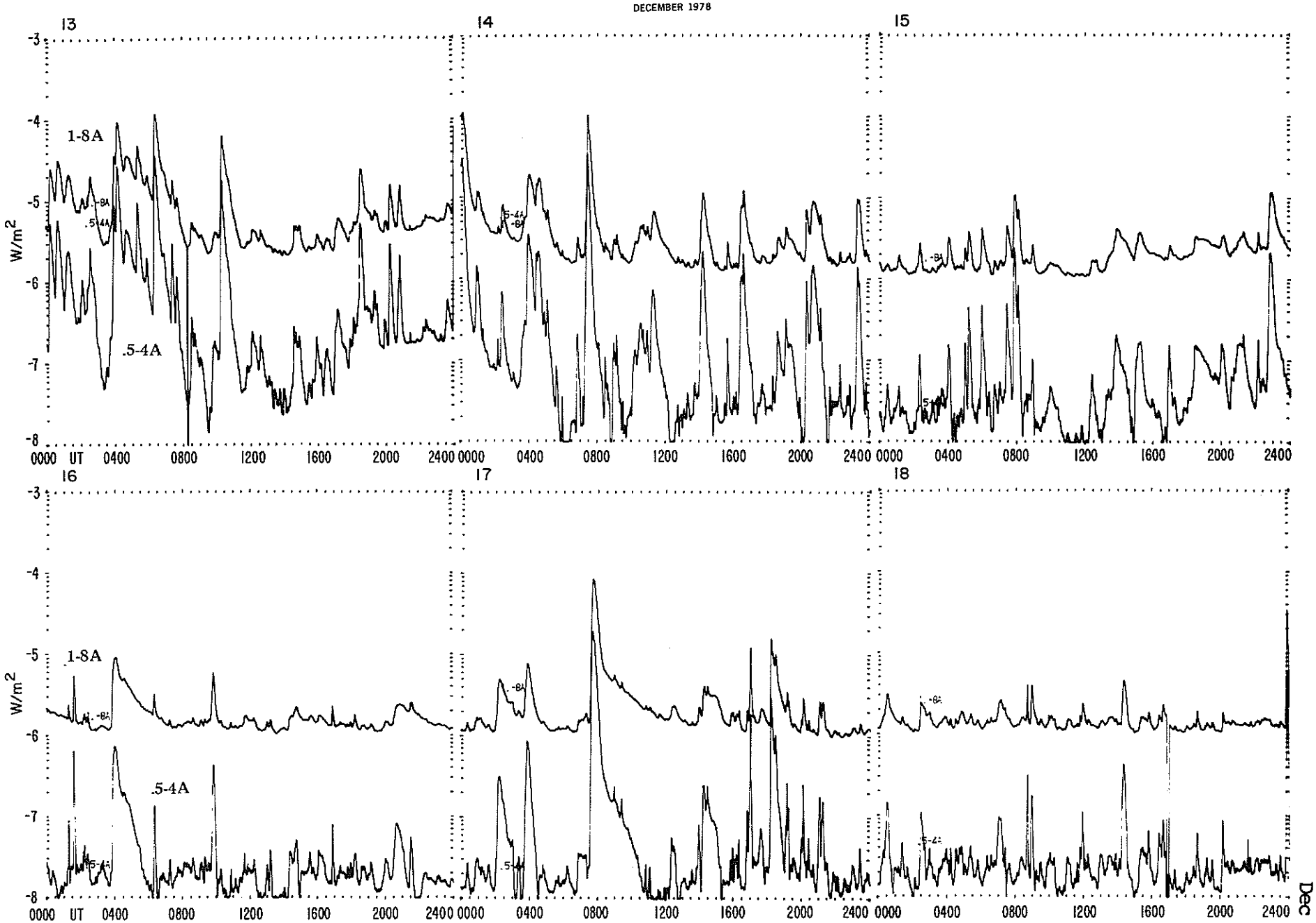


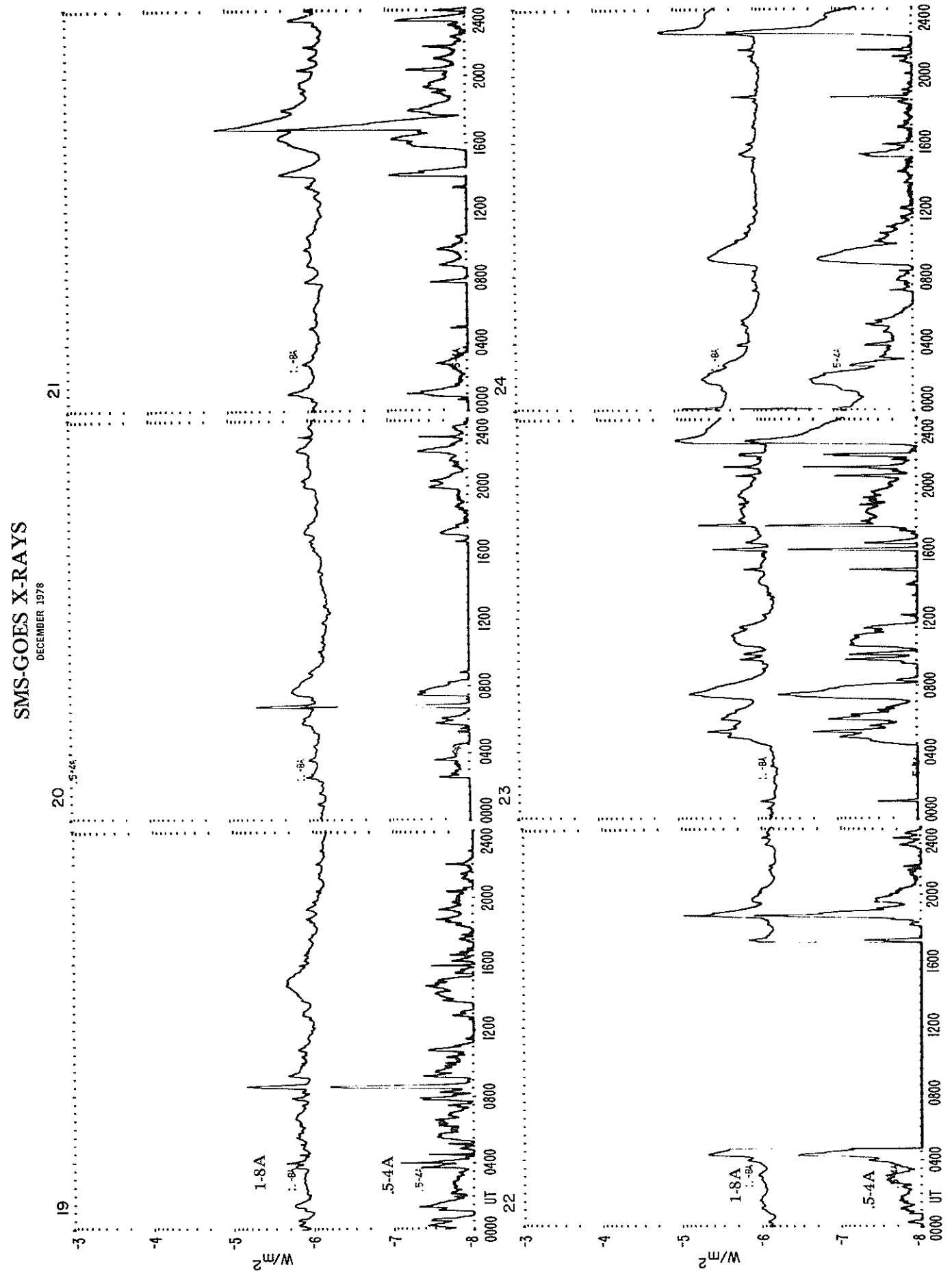
31 Dec 78


SMS-GOES X-RAYS
DECEMBER 1978
07
08
09
10
11
12
1-8A
.5-4A
W/m²
-3
-4
-5
-6
-7
-8
0000 UT 0400 0800 1200 1600 2000 2400 0000

SMS-GOES X-RAYS

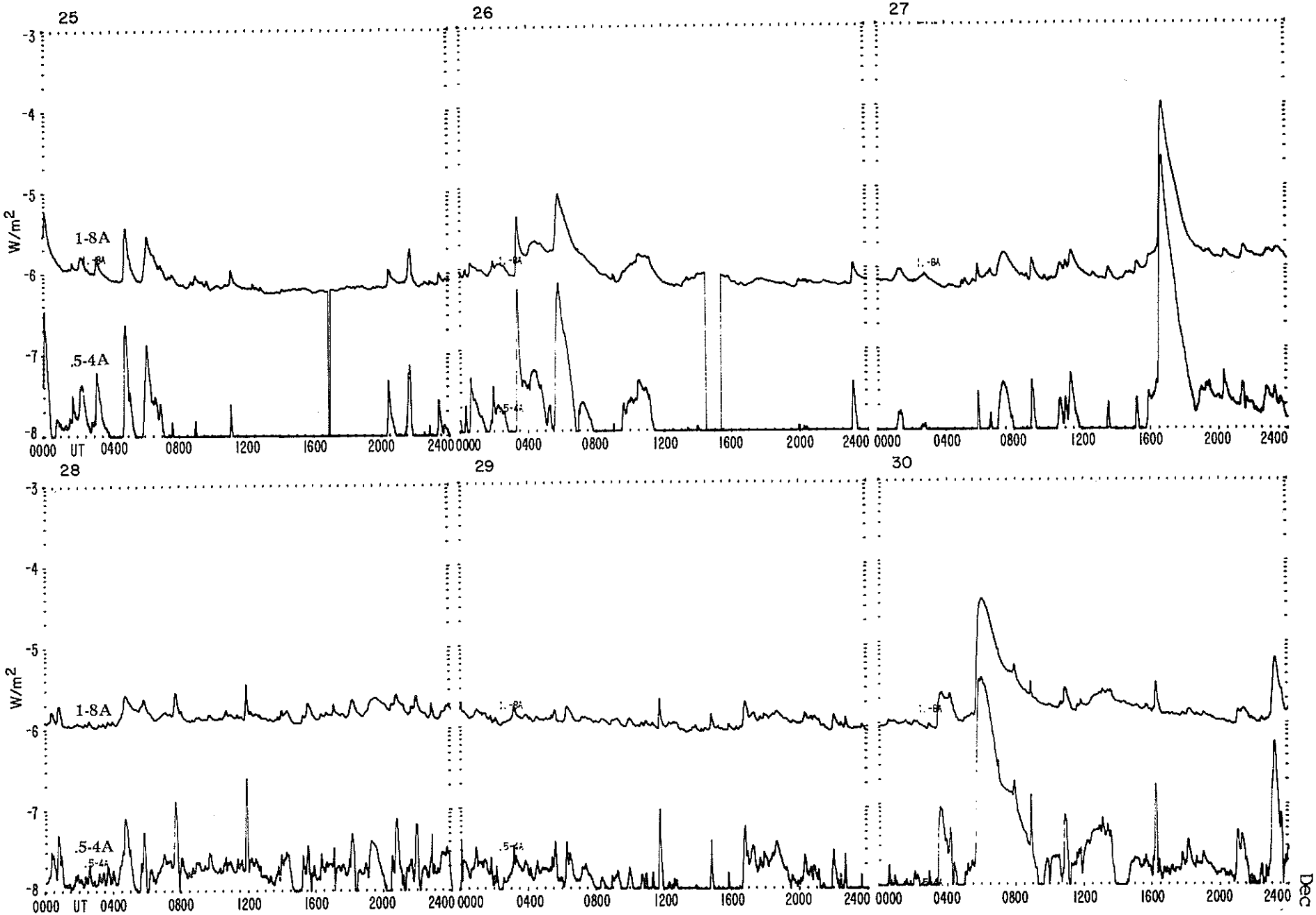
DECEMBER 1978

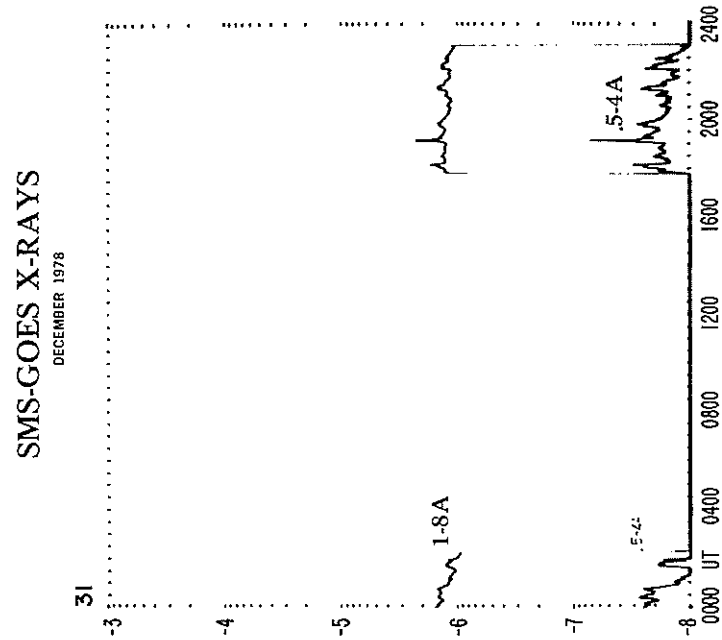



SMS-GOES X-RAYS
DECEMBER 1978
19
20
21
22
23
24
1-8A
.5-4A
W/m²
-3
-4
-5
-6
-7
-8
0000 UT 0400 0800 1200 1600 2000 2400

SMS-GOES X-RAYS

DECEMBER 1978




SMS-GOES X-RAYS
DECEMBER 1978
31
-3
-4
-5
-6
-7
-8
W/m²
1-8A
.5-4A
0000 UT
0400
0800
1200
1600
2000
2400

SGD 418 Part II (Comprehensive)

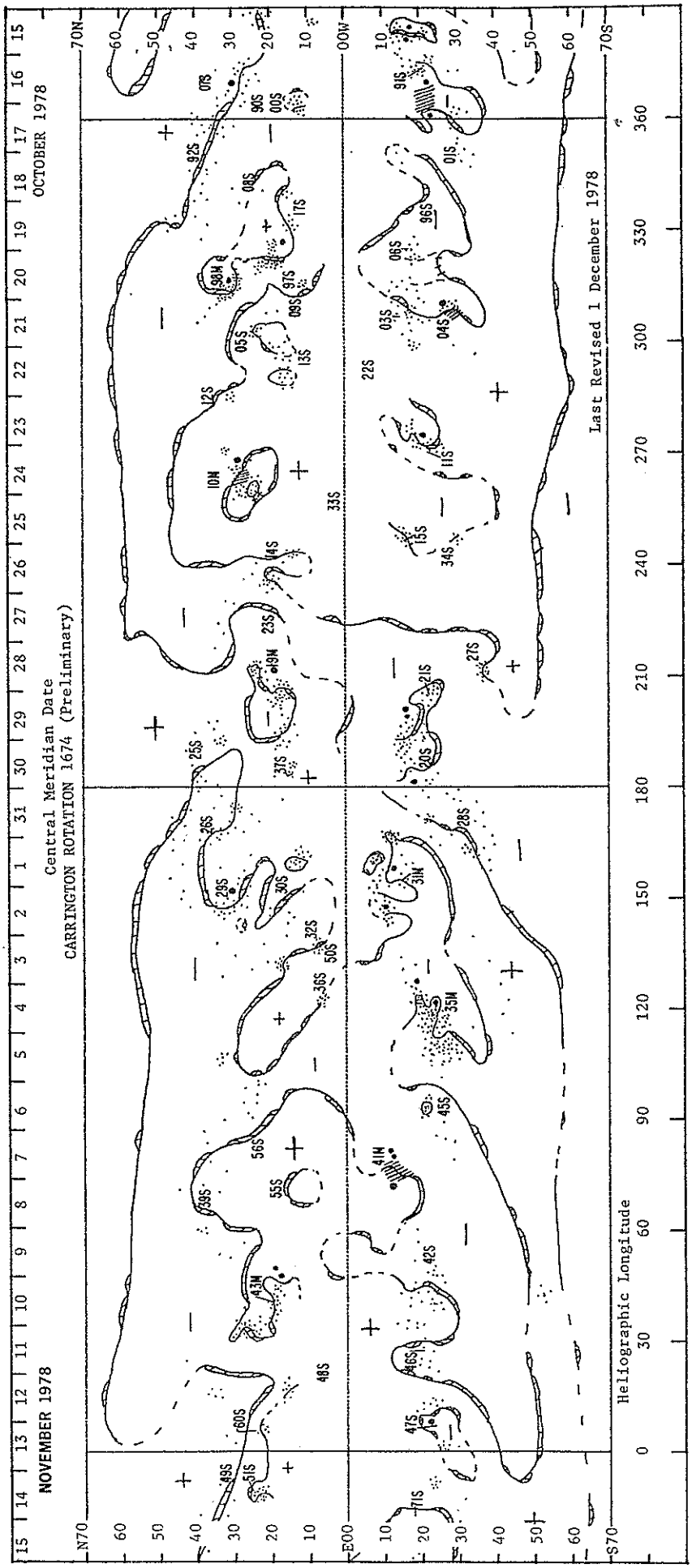
NOVEMBER 1978 DATA

Contents

ABBREVIATED CALENDAR RECORD

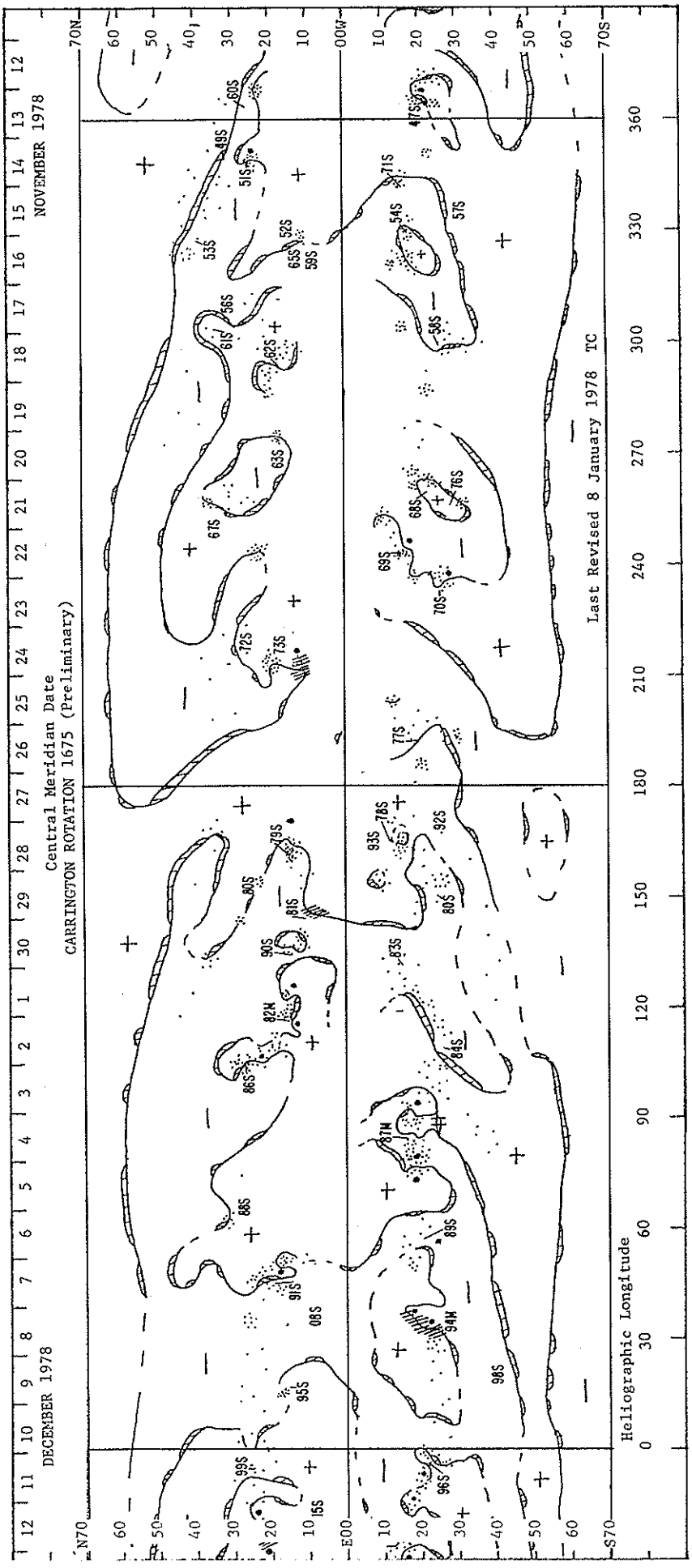
Hα SYNOPTIC CHART

OCTOBER - NOVEMBER 1978



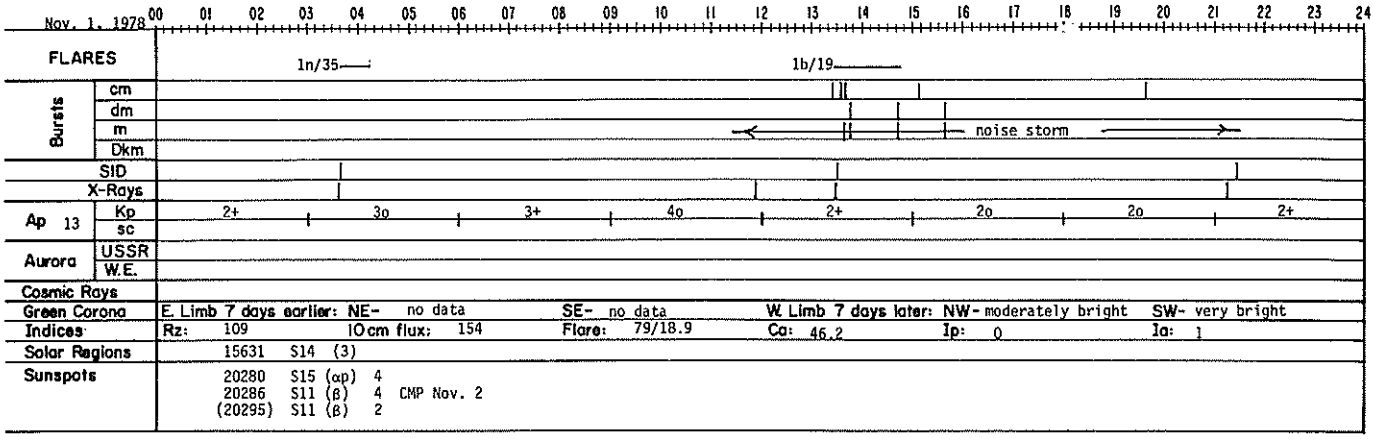
ABBREVIATED CALENDAR RECORD

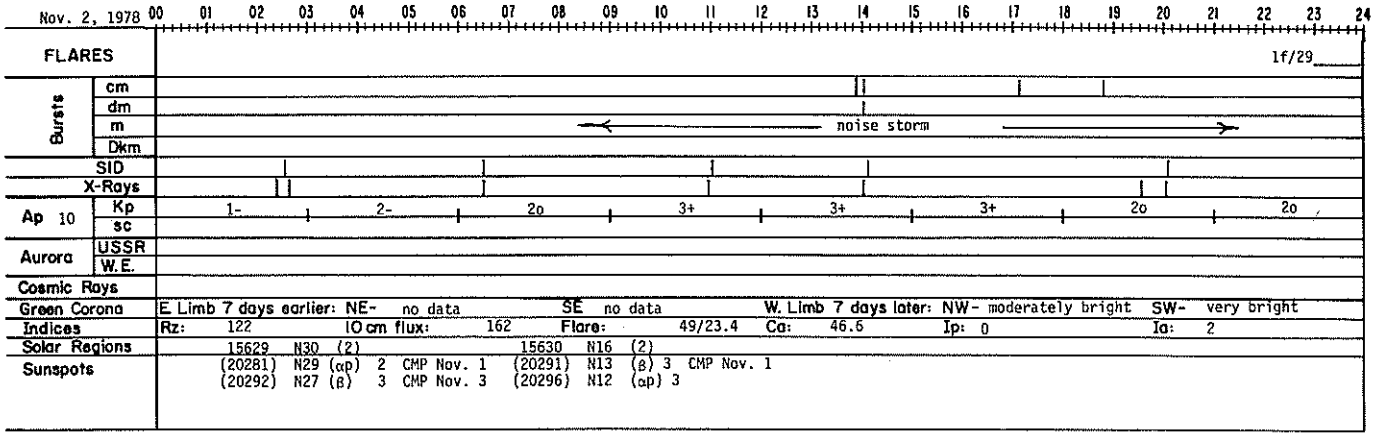
Hα SYNOPTIC CHART
NOVEMBER - DECEMBER 1978

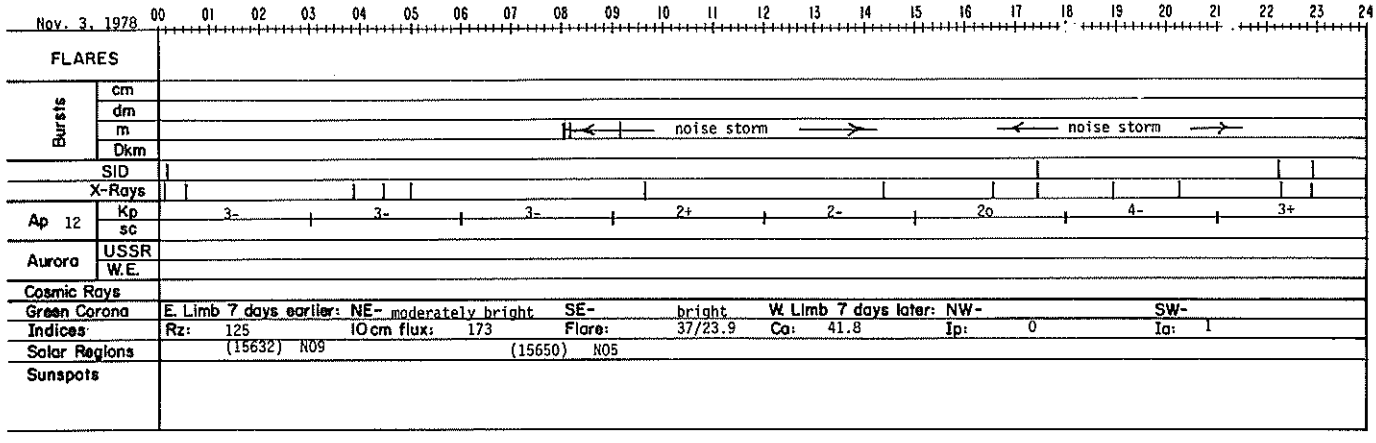


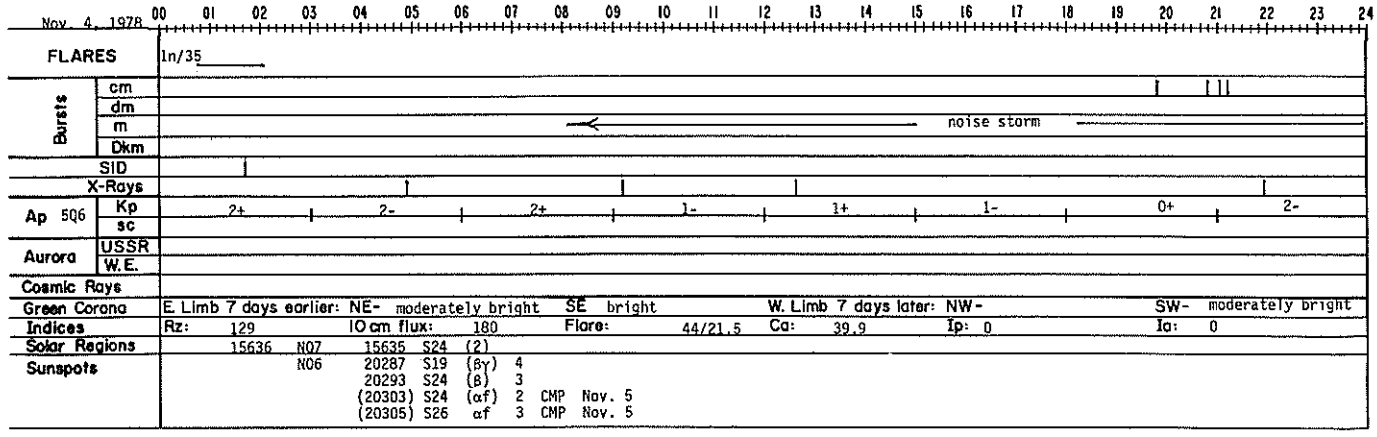
ABBREVIATED CALENDAR RECORD

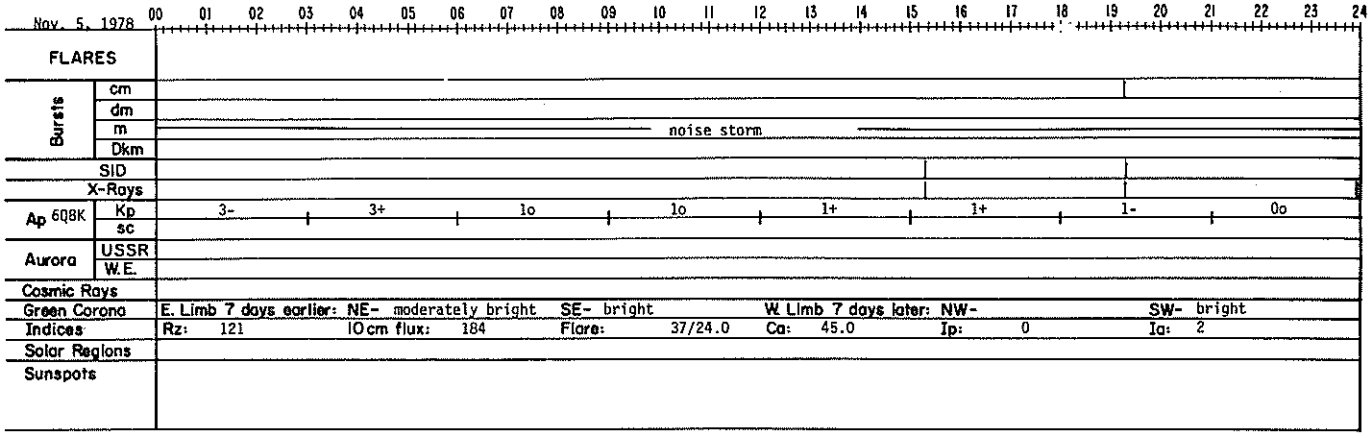
NOVEMBER 1978

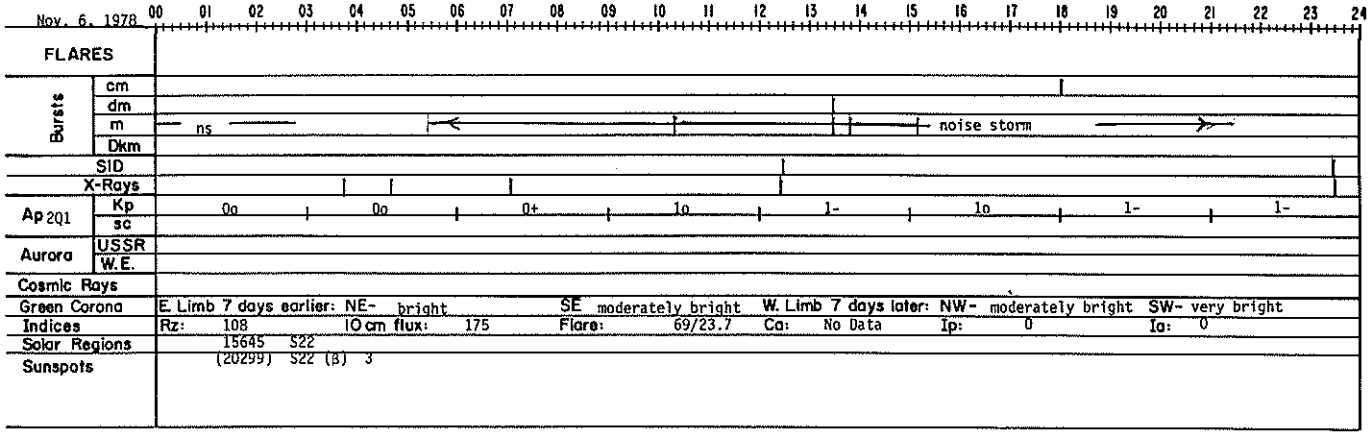


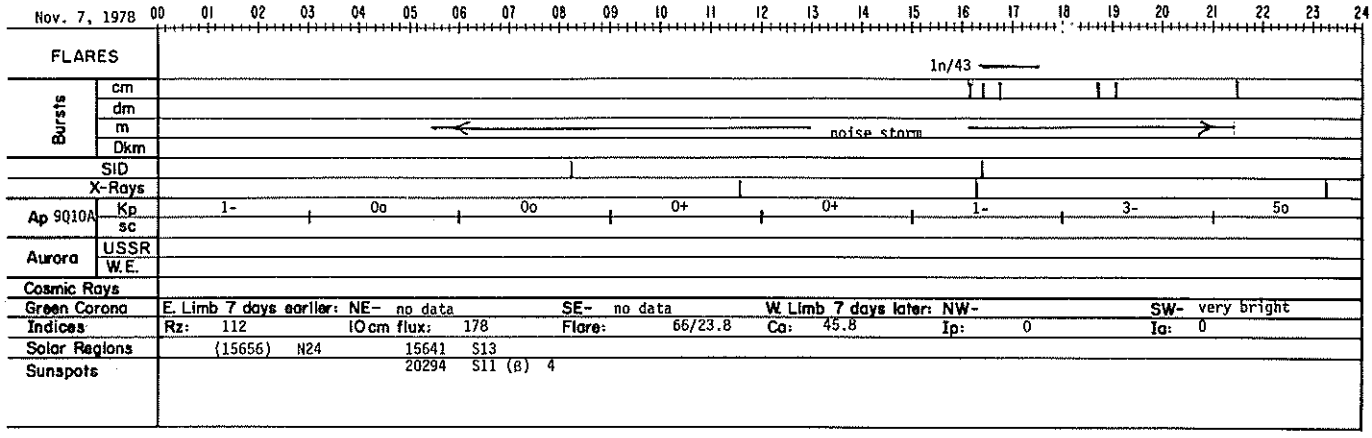


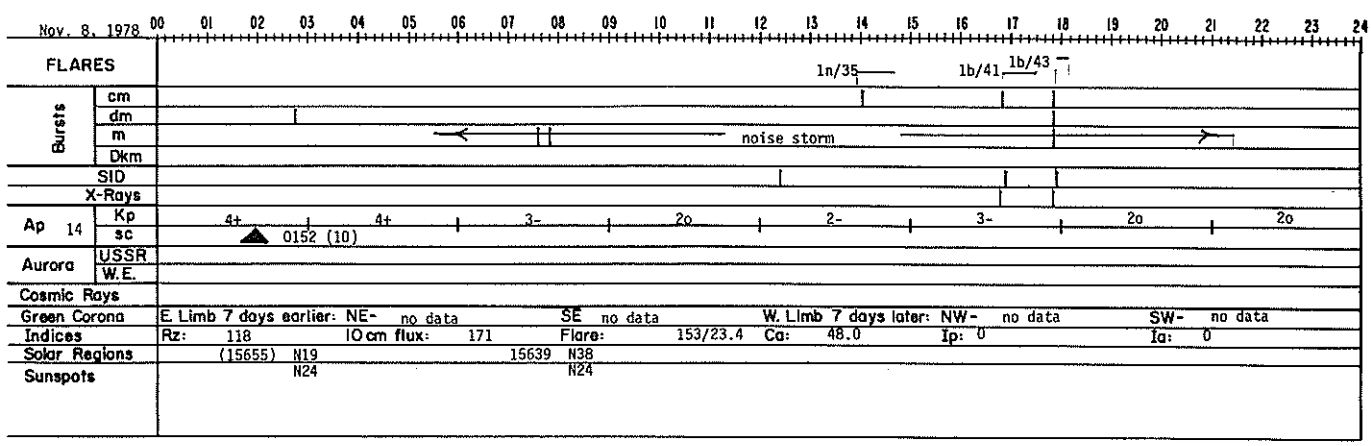


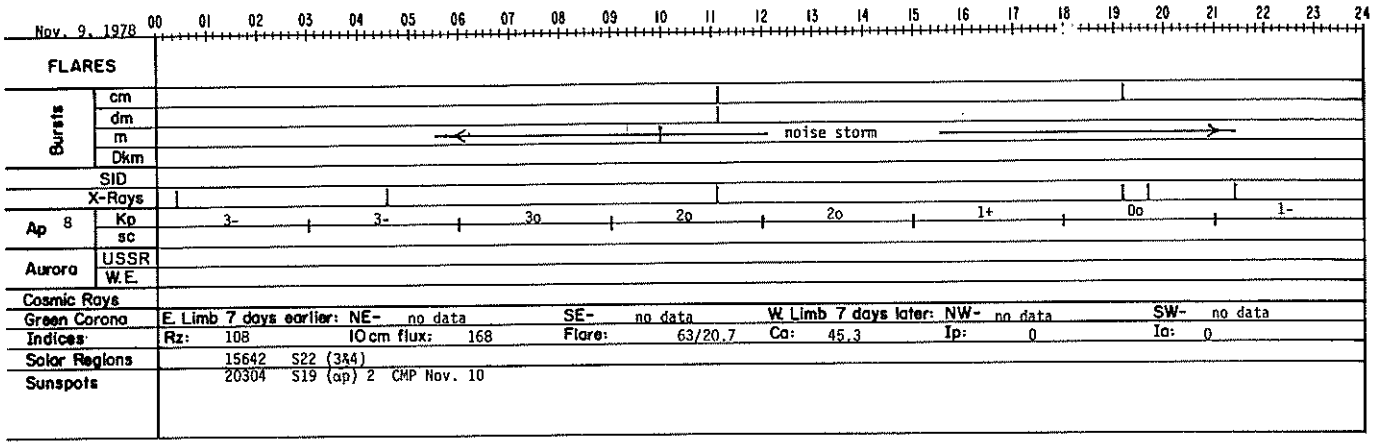


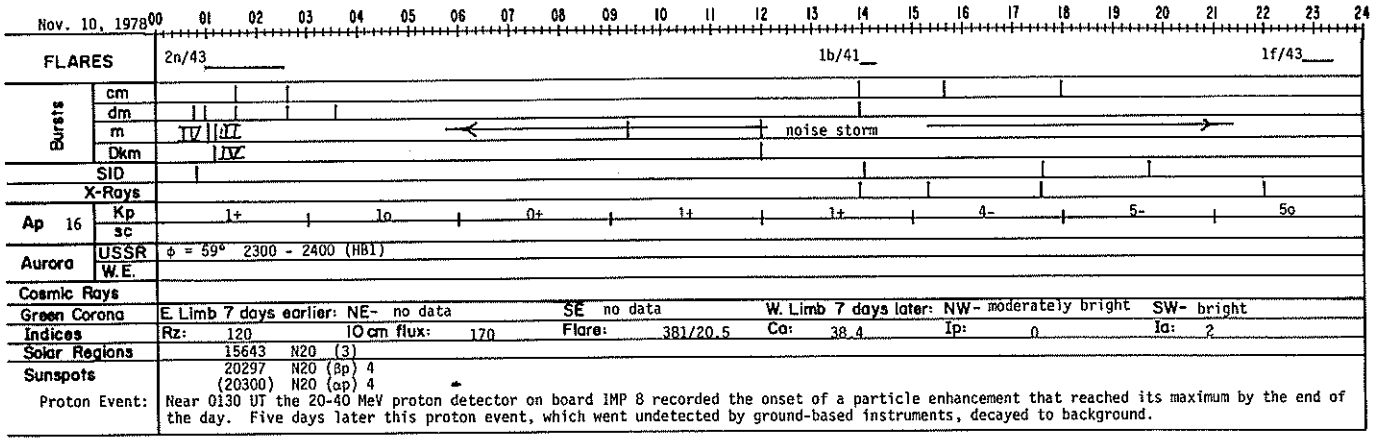

Nov. 5, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 6Q8K
Kp
sc
3- 3+ 1o 1o 1+ 1+ 1- 0o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE- bright W. Limb 7 days later: NW- SW- bright
Indices
Rz: 121 10cm flux: 184 Flare: 37/24.0 Ca: 45.0 Ip: 0 Ia: 2
Solar Regions
Sunspots

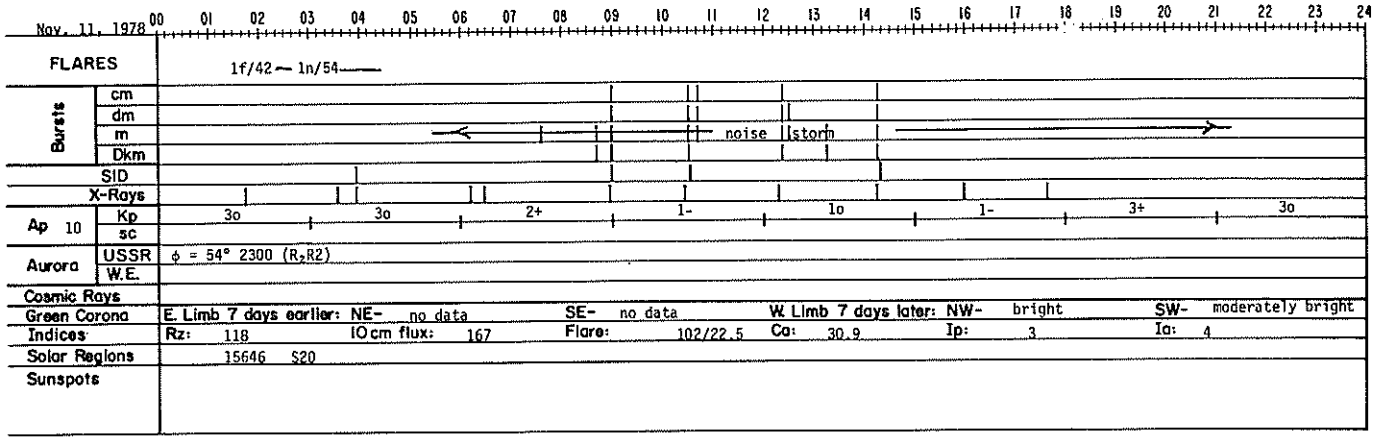

Nov. 6, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
ns
noise storm
SID
X-Rays
Ap 2Q1
Kp
sc
0o 0o 0+ 1o 1- 1o 1- 1-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- bright SE moderately bright W. Limb 7 days later: NW- moderately bright SW- very bright
Indices
Rz: 108 10cm flux: 175 Flare: 69/23.7 Ca: No Data Ip: 0 Ia: 0
Solar Regions
15645 S22
Sunspots
(20299) S22 (8) 3

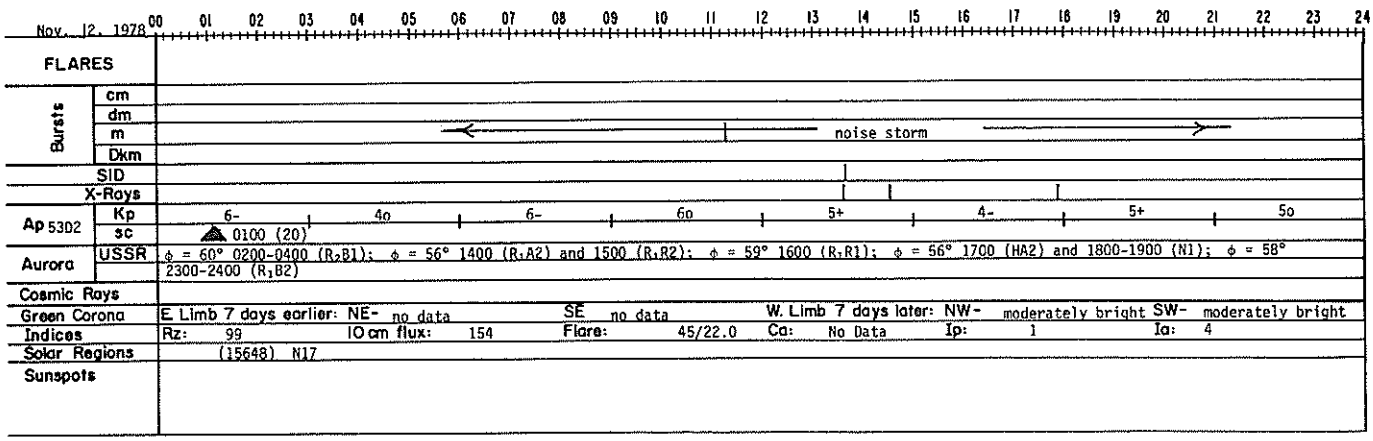

Nov. 7, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/43
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 9Q10A
Kp
sc
1- 0o 0o 0+ 0+ 1- 3- 5o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- SW- very bright
Indices
Rz: 112 10cm flux: 178 Flare: 66/23.8 Ca: 45.8 Ip: 0 Ia: 0
Solar Regions
(15656) N24 15641 S13
Sunspots
20294 S11 (8) 4

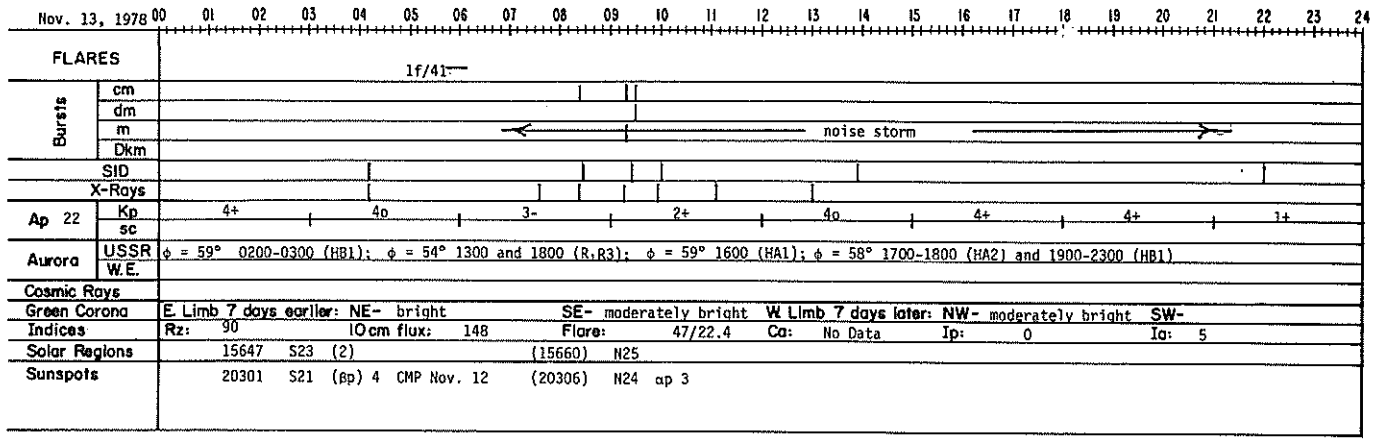

Nov. 8, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/35
1b/41
1b/43
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 14
Kp
sc
4+ 4+ 3- 2o 2- 3- 2o 2o
0152 (10)
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 118 10cm flux: 171 Flare: 153/23.4 Ca: 48.0 Ip: 0 Ia: 0
Solar Regions
(15655) N19 15639 N38
Sunspots
N24 N24

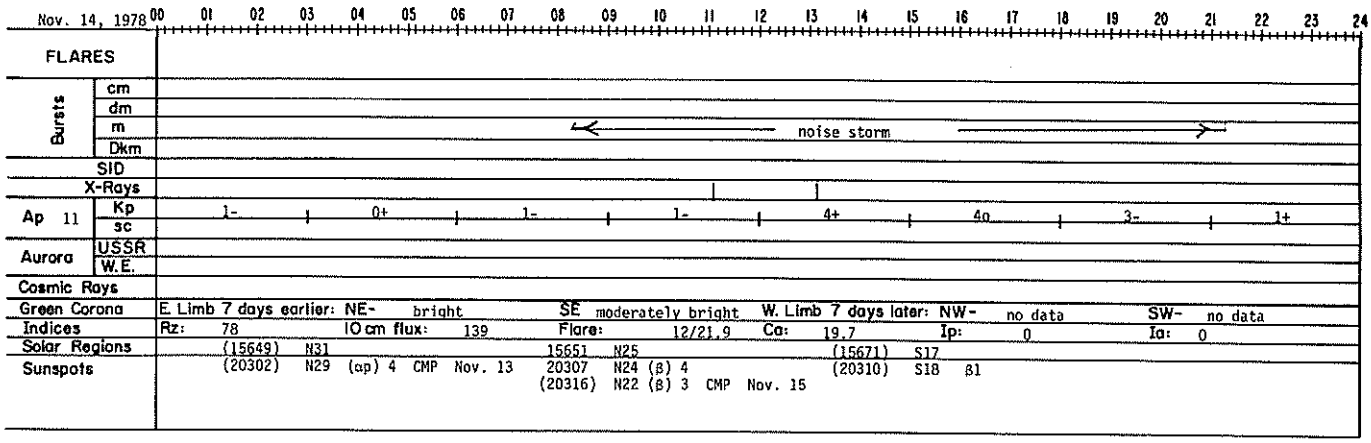

Nov. 9, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 8
Kp
sc
3- 3- 3o 2o 2o 1+ 0o 1-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 108 10cm flux: 168 Flare: 63/20.7 Ca: 45.3 Ip: 0 Ia: 0
Solar Regions
15642 S22 (3&4)
Sunspots
20304 S19 (αp) 2 CMP Nov. 10

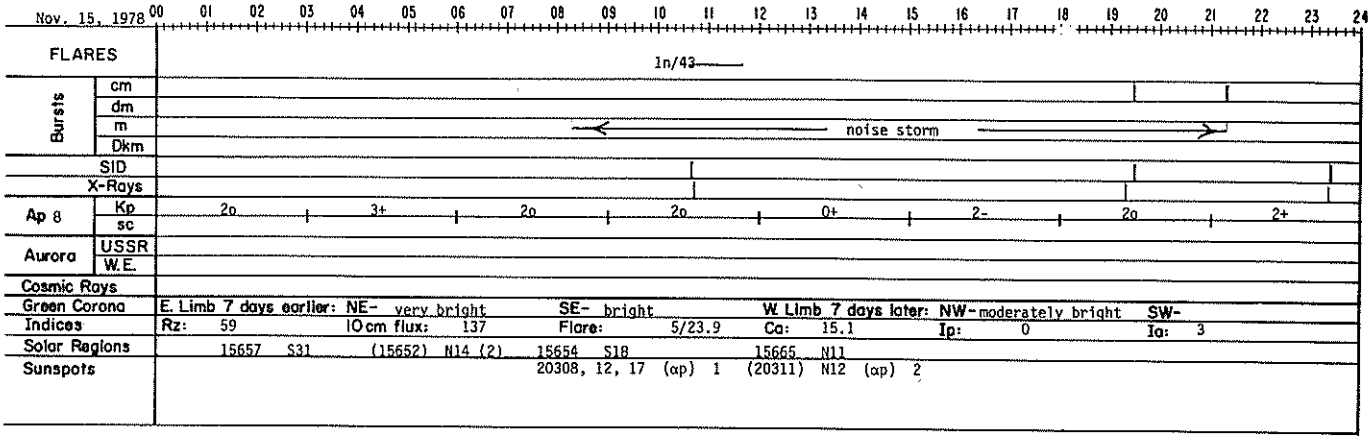

Nov. 10, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
2n/43
1b/41
1f/43
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 16
Kp
sc
1+ 1o 0+ 1+ 1+ 4- 5- 5o
Aurora
USSR
φ = 59° 2300 - 2400 (HB1)
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- moderately bright SW- bright
Indices
Rz: 120 10cm flux: 170 Flare: 381/20.5 Ca: 38.4 Ip: 0 Ia: 2
Solar Regions
15643 N20 (3)
Sunspots
20297 N20 (βp) 4
(20300) N20 (αp) 4
Proton Event:
Near 0130 UT the 20-40 MeV proton detector on board IMP 8 recorded the onset of a particle enhancement that reached its maximum by the end of the day. Five days later this proton event, which went undetected by ground-based instruments, decayed to background.

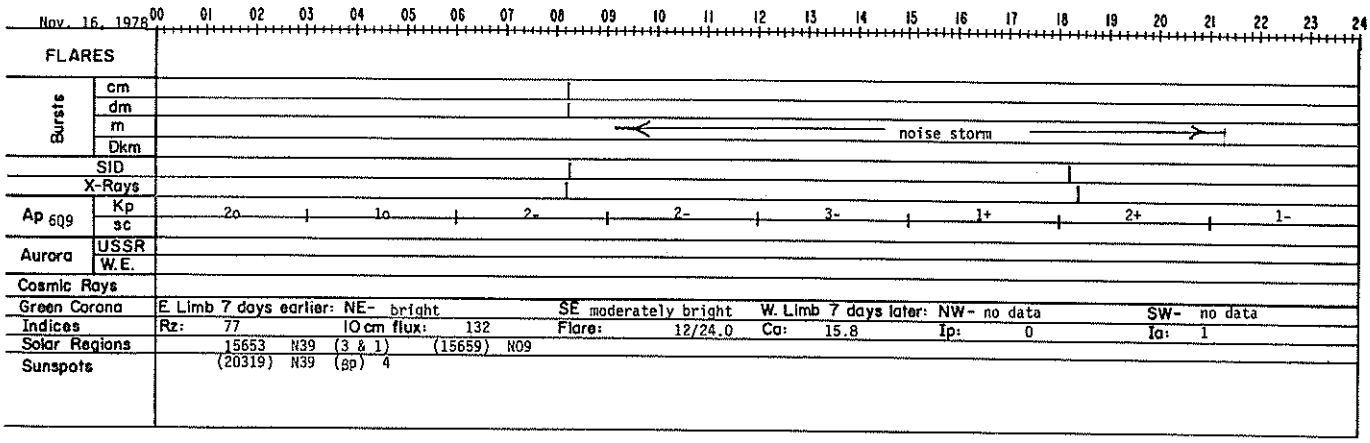

Nov. 11, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1f/42 1n/54
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 10
Kp
sc
3o 3o 2+ 1- 1o 1- 3+ 3o
Aurora
USSR
φ = 54° 2300 (R2R2)
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- bright SW- moderately bright
Indices
Rz: 118 10cm flux: 167 Flare: 102/22.5 Ca: 30.9 Ip: 3 Ia: 4
Solar Regions
15646 S20
Sunspots

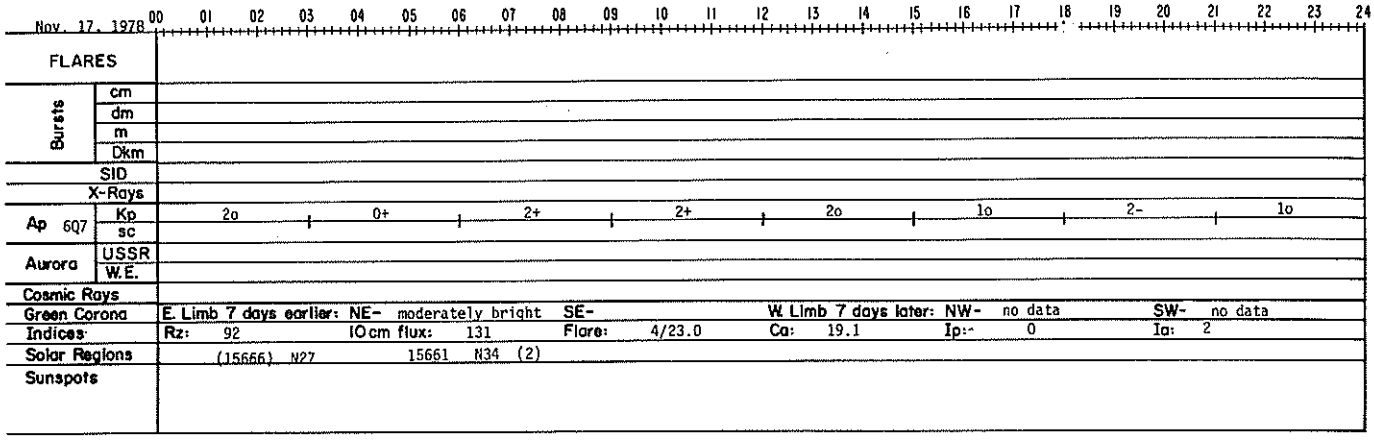

Nov. 12, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 53D2
Kp
sc
6- 4o 6- 6o 5+ 4- 5+ 5o
0100 (20)
Aurora
USSR
φ = 60° 0200-0400 (R2B1); φ = 56° 1400 (R1A2) and 1500 (R1R2); φ = 59° 1600 (R1R1); φ = 56° 1700 (HA2) and 1800-1900 (N1); φ = 58°
2300-2400 (R1B2)
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: 99 10cm flux: 154 Flare: 45/22.0 Ca: No Data Ip: 1 Ia: 4
Solar Regions
(15648) N17
Sunspots

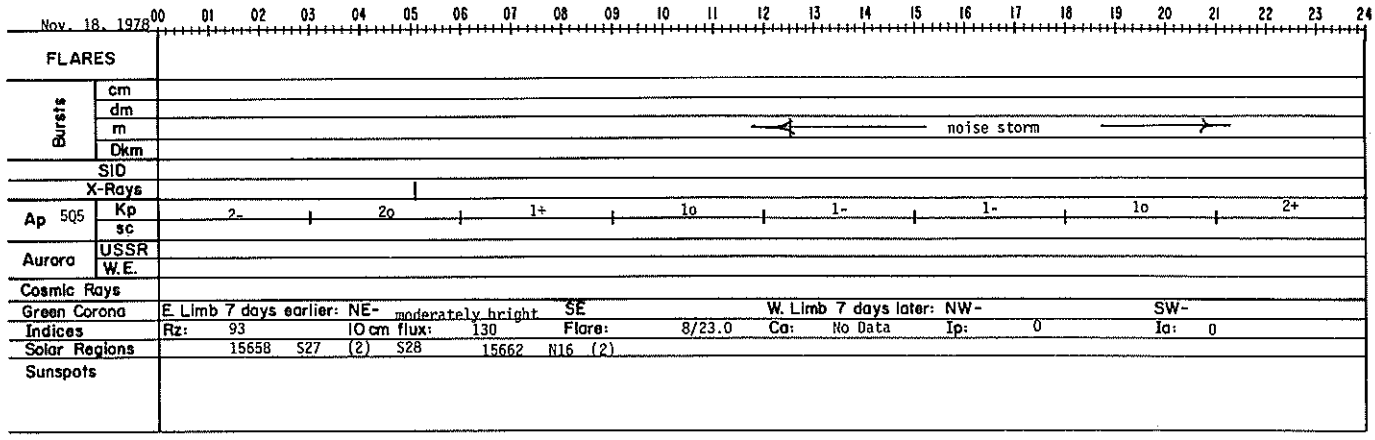

Nov. 13, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1f/41
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 22
Kp
sc
4+ 4o 3- 2+ 4o 4+ 4+ 1+
Aurora
USSR
W.E.
φ = 59° 0200-0300 (HB1); φ = 54° 1300 and 1800 (R,R3); φ = 59° 1600 (HA1); φ = 58° 1700-1800 (HA2) and 1900-2300 (HB1)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- bright SE- moderately bright W. Limb 7 days later: NW- moderately bright SW-
Indices
Rz: 90 10 cm flux: 148 Flare: 47/22.4 Ca: No Data Ip: 0 Ia: 5
Solar Regions
15647 S23 (2) (15660) N25
Sunspots
20301 S21 (βp) 4 CMP Nov. 12 (20306) N24 αp 3

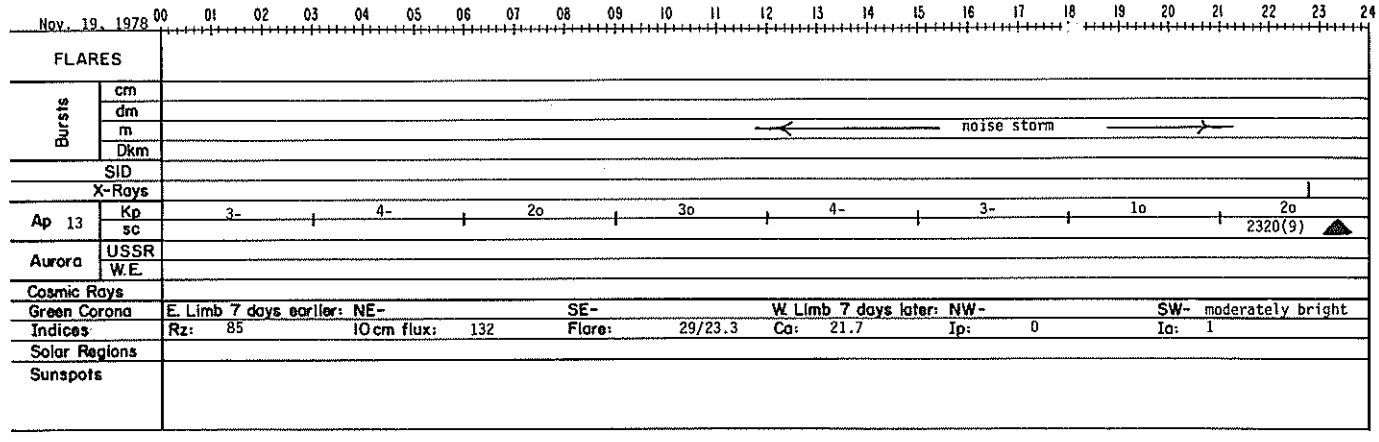

Nov. 14, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 11
Kp
sc
1- 0+ 1- 1- 4+ 4o 3- 1+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- bright SE moderately bright W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 78 10 cm flux: 139 Flare: 12/21.9 Ca: 19.7 Ip: 0 Ia: 0
Solar Regions
(15649) N31 15651 N25 (15671) S17
Sunspots
(20302) N29 (αp) 4 CMP Nov. 13 20307 N24 (β) 4 (20310) S18 β1
(20316) N22 (β) 3 CMP Nov. 15

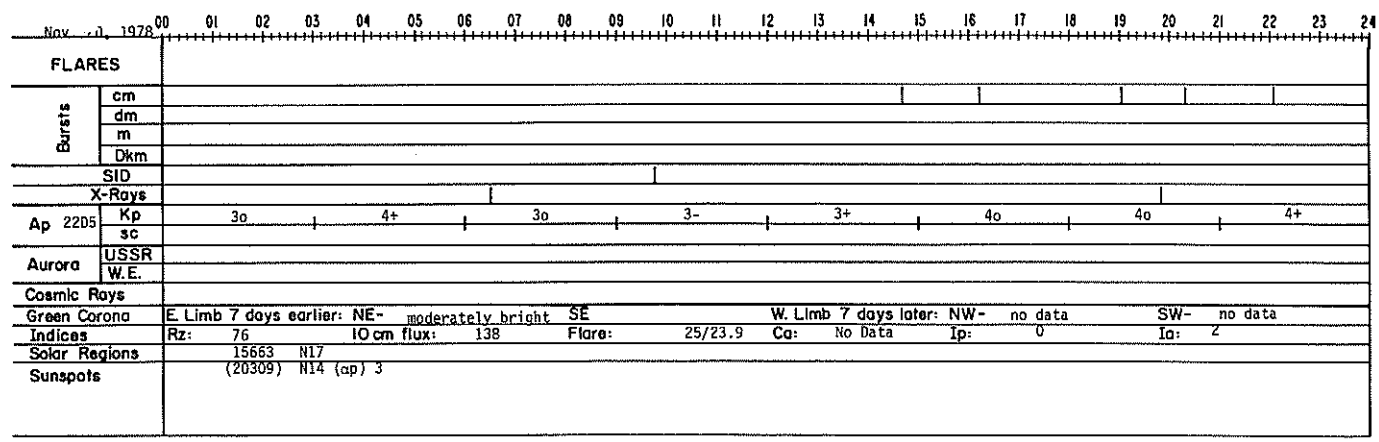

Nov. 15, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/43
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 8
Kp
sc
2o 3+ 2o 2o 0+ 2- 2o 2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- very bright SE- bright W. Limb 7 days later: NW- moderately bright SW-
Indices
Rz: 59 10 cm flux: 137 Flare: 5/23.9 Ca: 15.1 Ip: 0 Ia: 3
Solar Regions
15657 S31 (15652) N14 (2) 15654 S18 15665 N11
Sunspots
20308, 12, 17 (αp) 1 (20311) N12 (αp) 2

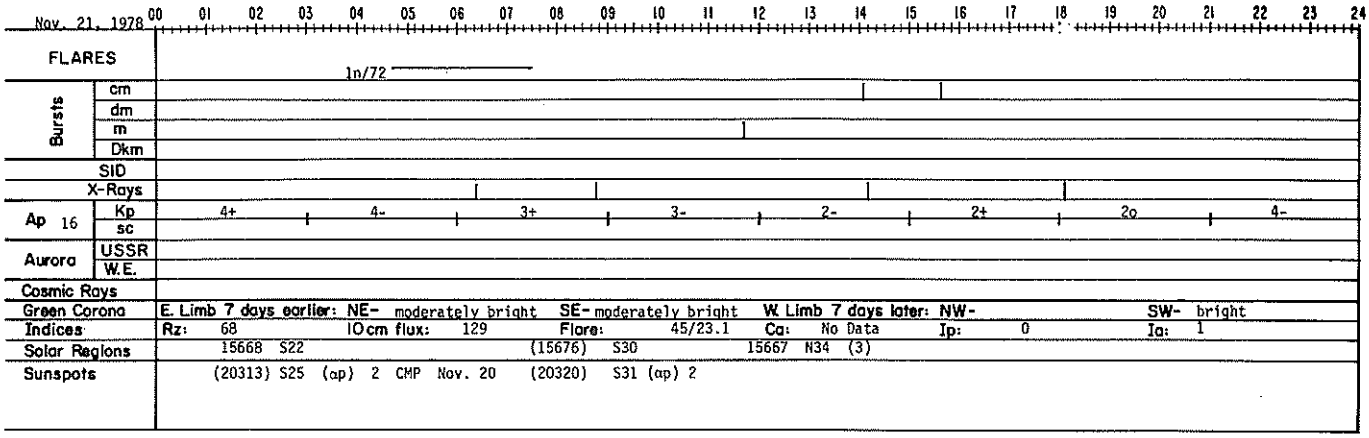

Nov. 16, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 609
Kp
sc
2o 1o 2- 2- 3- 1+ 2+ 1-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- bright SE moderately bright W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 77 10 cm flux: 132 Flare: 12/24.0 Ca: 15.8 Ip: 0 Ia: 1
Solar Regions
15653 N39 (3 & 1) (15659) N09
Sunspots
(20319) N39 (βp) 4

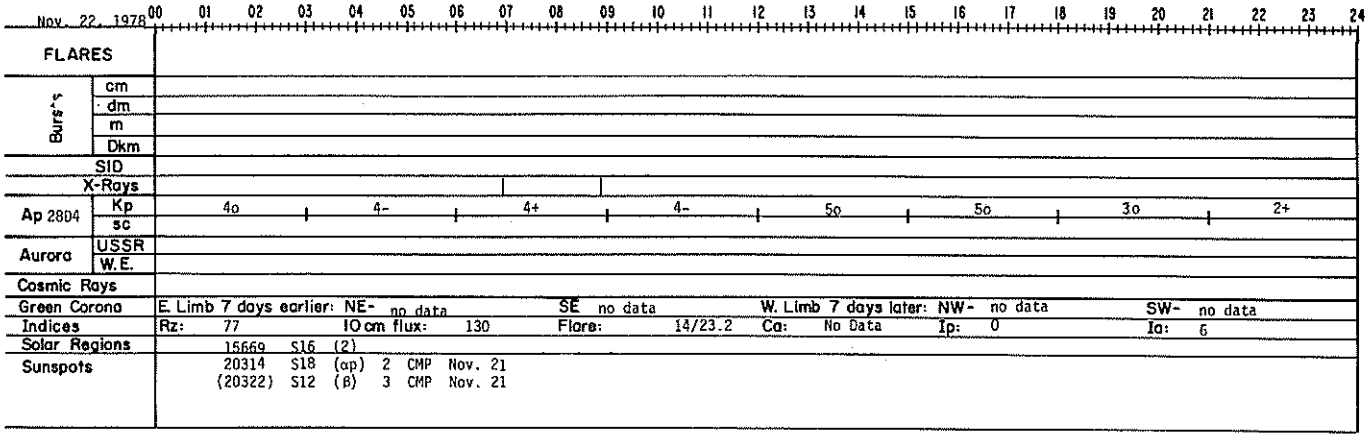

Nov. 17, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 607
Kp
sc
2o 0+ 2+ 2+ 2o 1o 2- 1o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE-
W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 92 10cm flux: 131 Flare: 4/23.0 Ca: 19.1 Ip:- 0 Ia: 2
Solar Regions
(15666) N27 15661 N34 (2)
Sunspots

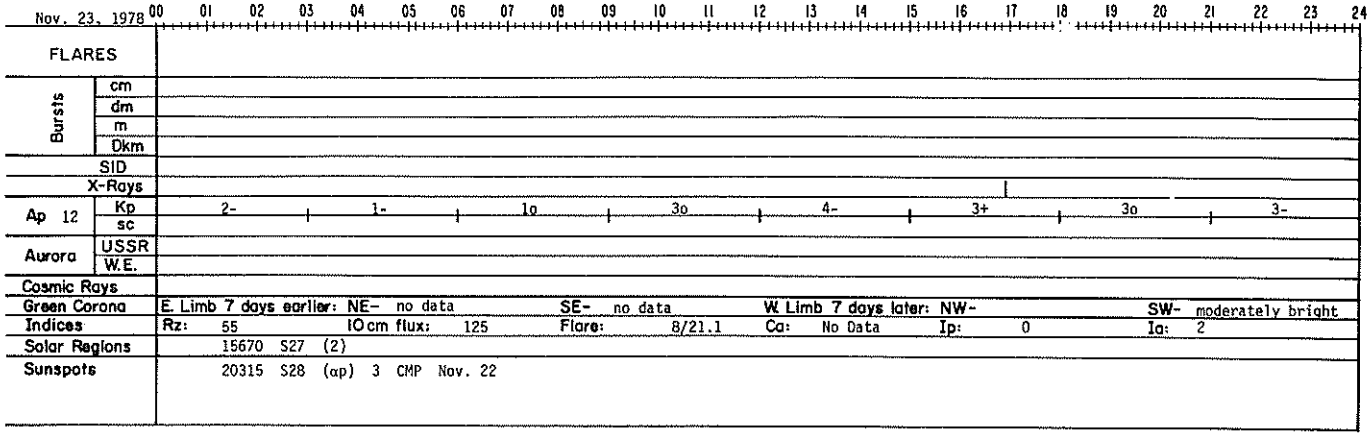

Nov. 18, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 505
Kp
sc
2- 2o 1+ 1o 1- 1- 1o 2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE
W. Limb 7 days later: NW- SW-
Indices
Rz: 93 10cm flux: 130 Flare: 8/23.0 Ca: No Data Ip: 0 Ia: 0
Solar Regions
15658 S27 (2) S28 15662 N16 (2)
Sunspots

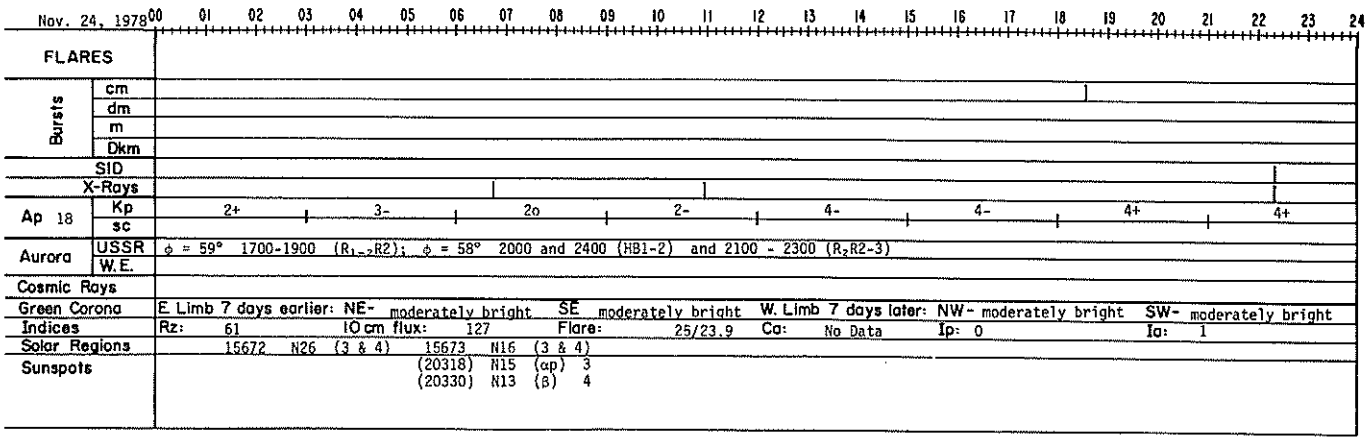

Nov. 19, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 13
Kp
sc
3- 4- 2o 3o 4- 3- 1o 2o
2320(9)
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE-
W. Limb 7 days later: NW- SW- moderately bright
Indices
Rz: 85 10cm flux: 132 Flare: 29/23.3 Ca: 21.7 Ip: 0 Ia: 1
Solar Regions
Sunspots

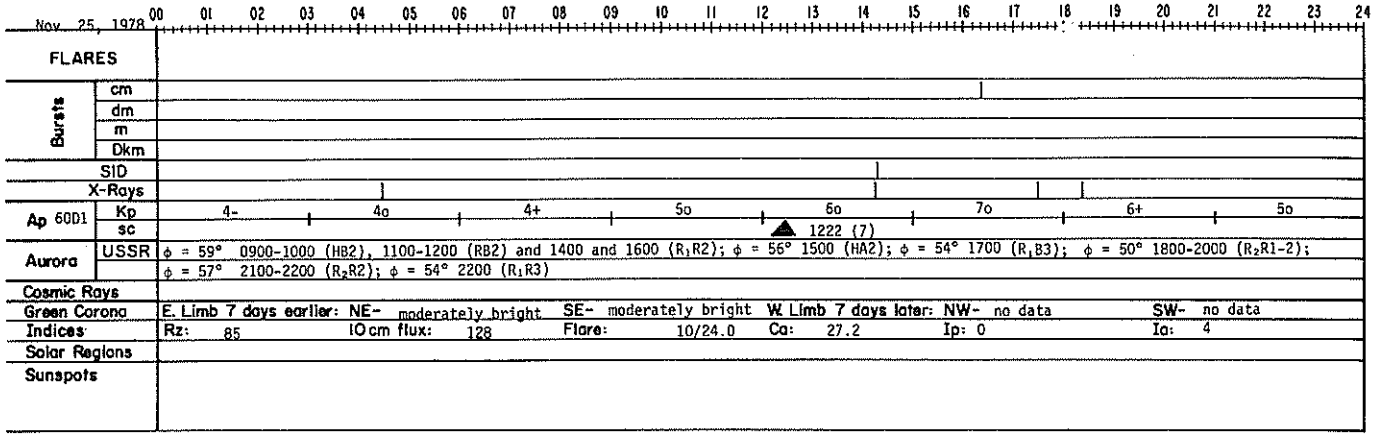

Nov. 20, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 2205
Kp
sc
3o 4+ 3o 3- 3+ 4o 4o 4+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE
W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 76 10cm flux: 138 Flare: 25/23.9 Ca: No Data Ip: 0 Ia: 2
Solar Regions
15663 N17
Sunspots
(20309) N14 (ap) 3

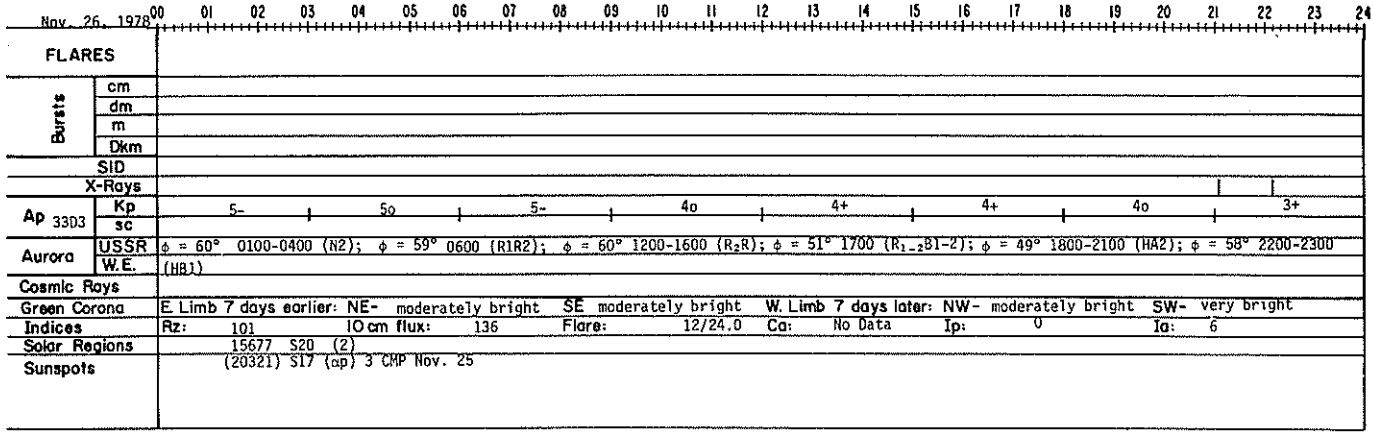

Nov. 21, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/72
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 16
Kp
4+ 4- 3+ 3- 2- 2+ 2o 4-
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE- moderately bright W. Limb 7 days later: NW- SW- bright
Indices
Rz: 68 10cm flux: 129 Flare: 45/23.1 Ca: No Data Ip: 0 Ia: 1
Solar Regions
15668 S22 (15676) S30 15667 N34 (3)
Sunspots
(20313) S25 (αp) 2 CMP Nov. 20 (20320) S31 (αp) 2

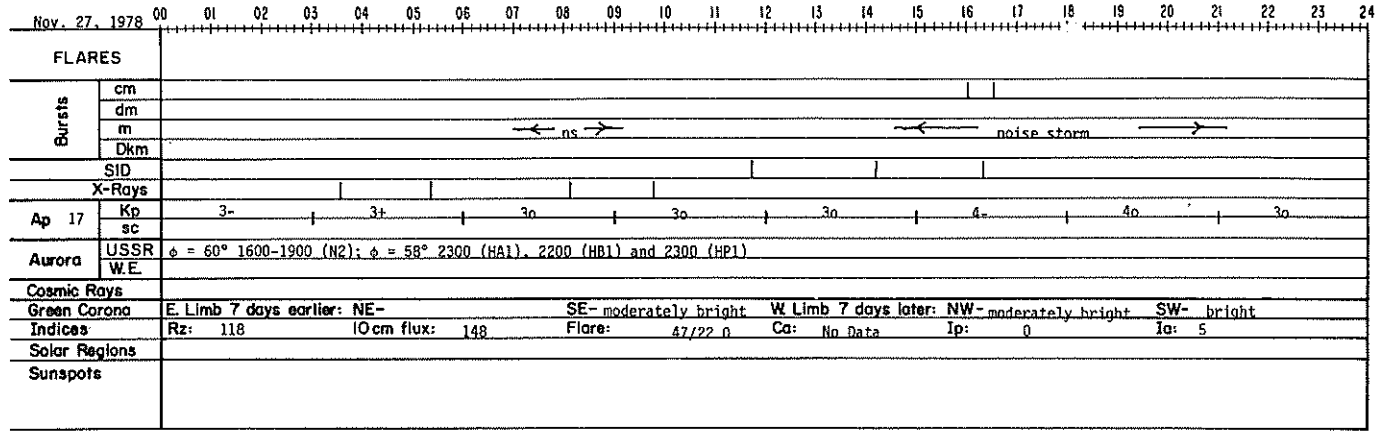

Nov. 22, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 2804
Kp
4o 4- 4+ 4- 5o 5o 3o 2+
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 77 10cm flux: 130 Flare: 14/23.2 Ca: No Data Ip: 0 Ia: 6
Solar Regions
15669 S16 (2)
Sunspots
20314 S18 (αp) 2 CMP Nov. 21
(20322) S12 (β) 3 CMP Nov. 21

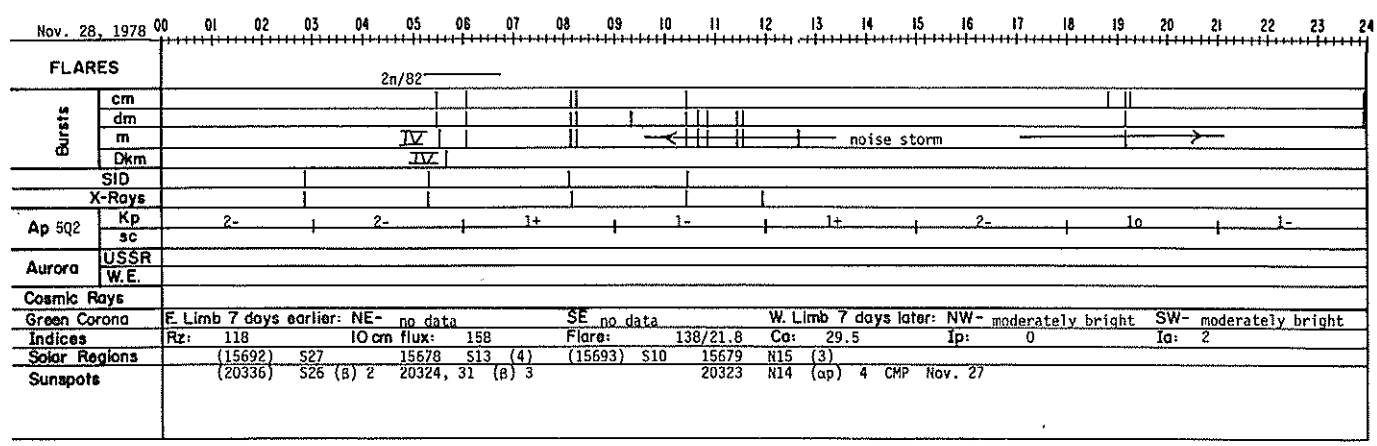

Nov. 23, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 12
Kp
2- 1- 1o 3o 4- 3+ 3o 3-
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- SW- moderately bright
Indices
Rz: 55 10cm flux: 125 Flare: 8/21.1 Ca: No Data Ip: 0 Ia: 2
Solar Regions
15670 S27 (2)
Sunspots
20315 S28 (αp) 3 CMP Nov. 22

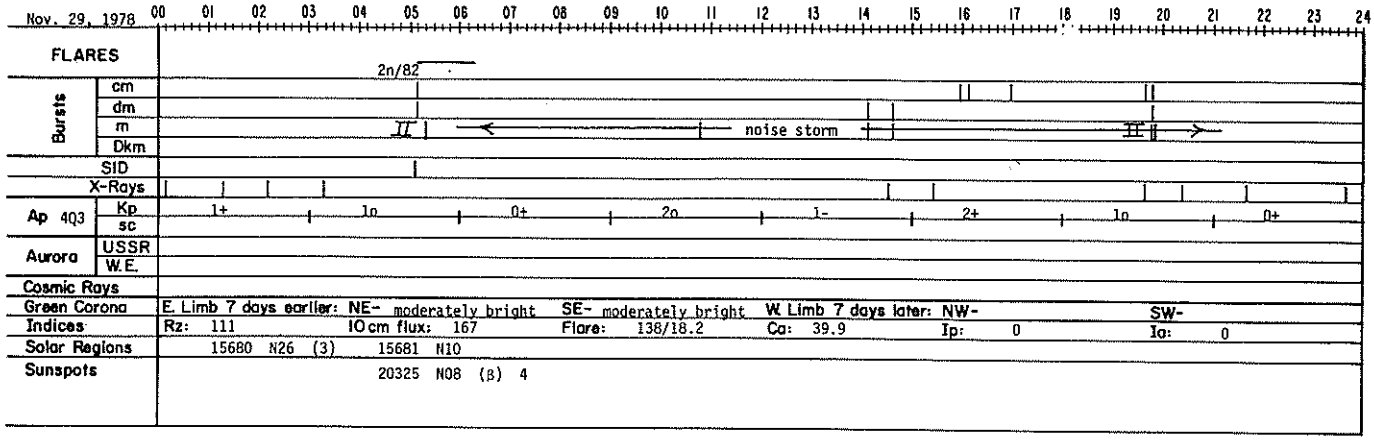

Nov. 24, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 18
Kp
2+ 3- 2o 2- 4- 4- 4+ 4+
sc
Aurora
USSR
φ = 59° 1700-1900 (R1-2R2); φ = 58° 2000 and 2400 (HB1-2) and 2100 - 2300 (R2R2-3)
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE moderately bright W. Limb 7 days later: NW- moderately bright SW- moderately bright
Indices
Rz: 61 10cm flux: 127 Flare: 25/23.9 Ca: No Data Ip: 0 Ia: 1
Solar Regions
15672 N26 (3 & 4) 15673 N16 (3 & 4)
Sunspots
(20318) N15 (αp) 3
(20330) N13 (β) 4

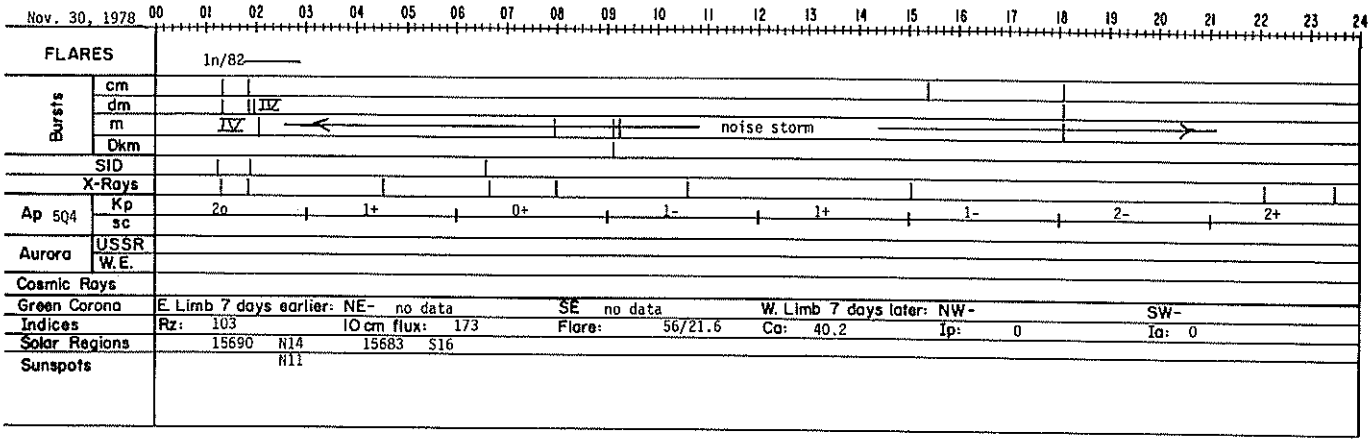

Nov. 25, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 6001
Kp
sc
4- 4o 4+ 5o 6o 7o 6+ 5o
1222 (7)
Aurora
USSR
φ = 59° 0900-1000 (HB2), 1100-1200 (RB2) and 1400 and 1600 (R1R2); φ = 56° 1500 (HA2); φ = 54° 1700 (R1B3); φ = 50° 1800-2000 (R2R1-2);
φ = 57° 2100-2200 (R2R2); φ = 54° 2200 (R1R3)
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: 85 10cm flux: 128 Flare: 10/24.0 Ca: 27.2 Ip: 0 Ia: 4
Solar Regions
Sunspots


Nov. 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
SID
X-Rays
Ap 3303
Kp
sc
5- 5o 5- 4o 4+ 4+ 4o 3+
Aurora
USSR
W.E.
φ = 60° 0100-0400 (N2); φ = 59° 0600 (R1R2); φ = 60° 1200-1600 (R2R); φ = 51° 1700 (R1-2B1-2); φ = 49° 1800-2100 (HA2); φ = 58° 2200-2300
(HB1)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE moderately bright W. Limb 7 days later: NW- moderately bright SW- very bright
Indices
Rz: 101 10cm flux: 136 Flare: 12/24.0 Ca: No Data Ip: 0 Ia: 6
Solar Regions
15677 S20 (2)
Sunspots
(20321) S17 (αp) 3 CMP Nov. 25


Nov. 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
Bursts
cm
dm
m
Dkm
ns
noise storm
SID
X-Rays
Ap 17
Kp
sc
3- 3+ 3o 3o 3o 4- 4o 3o
Aurora
USSR
W.E.
φ = 60° 1600-1900 (N2); φ = 58° 2300 (HA1), 2200 (HB1) and 2300 (HP1)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE-
SE- moderately bright W. Limb 7 days later: NW- moderately bright SW- bright
Indices
Rz: 118 10cm flux: 148 Flare: 47/22 0 Ca: No Data Ip: 0 Ia: 5
Solar Regions
Sunspots


Nov. 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
2n/82
Bursts
cm
dm
m
IV
Dkm
IV
noise storm
SID
X-Rays
Ap 502
Kp
sc
2- 2- 1+ 1- 1+ 2- 1o 1-
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: 118 10cm flux: 158 Flare: 138/21.8 Ca: 29.5 Ip: 0 Ia: 2
Solar Regions
(15692) S27 15678 S13 (4) (15693) S10 15679 N15 (3)
Sunspots
(20336) S26 (β) 2 20324, 31 (β) 3 20323 N14 (αp) 4 CMP Nov. 27


Nov. 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
2n/82
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 403
Kp
sc
1+ 1o 0+ 2o 1- 2+ 1o 0+
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- SW-
Indices
Rz: 111 10 cm flux: 167 Flare: 138/18.2 Ca: 39.9 Ip: 0 Ia: 0
Solar Regions
15680 N26 (3) 15681 N10
Sunspots
20325 N08 (β) 4


Nov. 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
1n/82
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 504
Kp
sc
2o 1+ 0+ 1- 1+ 1- 2- 2+
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- SW-
Indices
Rz: 103 10 cm flux: 173 Flare: 56/21.6 Ca: 40.2 Ip: 0 Ia: 0
Solar Regions
15690 N14 N11 15683 S16
Sunspots

SGD 418 Part II (Comprehensive)

Miscellaneous Data

Contents

ERRATA: The Regions of Solar Activity for January 1979 and February 1979 are being republished in this issue because a computer error omitted sunspot data from all stations reporting except Mt. Wilson. The error occurred for the January data after January 18 and for the February data after February 11..

REGIONS OF SOLAR ACTIVITY

JANUARY 1979

MCMATH REGION 15739 CMP DATE 1.6

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
78	12	27	15739	S33 E66	72	400	2.5									
78	12	28	15739	S33 E53	73	1000	3.5		S31 E49				B	70	2	CAO
78	12	29	15739					20377	S33 E38	74	(B)	3	M	100	9	DSO
78	12	30	15739					20377	S33 E25	75	(BY)	4	B	210	11	DAI
78	12	31	15739					20377	S32 E12	75	(B)	3	R	180	15	DAO
79	1	1	15739					20377	S32 W03		(BP)	3				
79	1	2	15739	S33 W14	74	1800	2.5	20377	S32 W16	75	BP	4	M	240	14	EKO
79	1	3	15739	S33 W28	75	2000	2.5		S33 W40				M	70	1	HSX
79	1	4	15739	S33 W40	75	2000	2.5	20377	S32 W47	80	(AP)	4				
79	1	5	15739	S33 W51	72	1600	2.5									
79	1	6	15739	S33 W60	68	1800	2.5	20377	S32 W72	80	(AP)	3	R	60	1	HSX
79	1	8	15739	S33 W85	67	300	1.0									

MCMATH REGION 15752 CMP DATE 1.9

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	3	15752	N25 W23	70	200	2.0		N26 W27				M	10	1	AXX
79	1	4	15752	N25 W36	71	200	2.0		N26 W39				M	10	1	AXX

MCMATH REGION 15742 CMP DATE 2.4 (PROBABLY NEW)

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	1	15742					20385	S20 E11		(AP)	3				
79	1	2	15742	S20 W03	63	800	2.5	20385	S20 W03	62	B	3	M	30	6	DRO
79	1	3	15742	S20 W15	62	1000	2.5		S20 W18				M	40	5	DRO
79	1	4	15742	S20 W28	63	800	2.5	20385	S19 W30	63	(BP)	3	M	40	4	DRO
79	1	5	15742	S20 W41	62	700	1.5		S18 W43				B	20	2	CSO
79	1	6	15742	S20 W54	62	700	2.0	20385	S20 W60	68	(AP)	3	R	20	4	BXO
79	1	8	15742	S20 W81	63	500	1.5									

MCMATH REGION 15755 CMP DATE 3.1

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	6	15755	N26 W47	55	300	2.5	20389	N26 W49	57	(AP)	2	R	20	3	BXO
79	1	8	15755	N26 W77	59	1000	2.5	20389	N26 W69	51	B	3				

MCMATH REGION 15743 CMP DATE 3.7 POSSIBLE RETURN OF REGION 15688 ROTATION 2

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	2	15743	N29 E13	47	500	1.0									
79	1	3	15743	N29 E01	46	500	1.5									

MCMATH REGION 15741 CMP DATE 3.8

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
78	12	28	15741	S12 E85	41	500	3.0									
78	12	29	15741					20381	S18 E75	37	(AP)	2	M	90	1	HSX
78	12		15741					20380	S11 E70	42	AP	2	M	40	1	HSX
78	12	30	15741					20381	S18 E61	39	(AP)	3	B	60	1	HSX
78	12		15741					20380	S12 E59	41	(AF)	3	B	80	6	DSI
78	12	31	15741					20381	S19 E48	39	(AP)	3				
78	12		15741					20380	S12 E44	43	(B)	4	R	90	12	DSO
79	1	1	15741					20381	S19 E34		(AP)	4				
79	1		15741					20380	S12 E29		(B)	4				
79	1	2	15741	S13 E16	44	2300	3.0	20380	S12 E15	44	B	4	M	200	26	DKI
79	1	3	15741	S13 E03	44	2800	3.0		S12 E00				M	320	32	EKI
79	1	4	15741	S13 W08	43	3000	2.5	20380	S12 W11	44	(BF)	4	M	280	27	EKI
79	1	5	15741	S13 W21	42	2500	2.5		S12 W24				B	200	16	EAO
79	1	6	15741	S13 W33	41	2800	3.0	20380	S13 W37	45	(B)	3	R	120	18	EAO
79	1	8	15741	S13 W63	45	2800	2.5	20380	S13 W61	43	B	3				
79	1	9	15741	S13 W76	43	2800	2.5									
79	1	10	15741	S13 W89	44	700	2.0									

REGIONS OF SOLAR ACTIVITY

JANUARY 1979

MCMATH REGION 15744 CMP DATE 4.0 RETURN OF PART OF REGION 15691 ROTATION 5

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	1	15744					20379	N17 E29		AP	2				
79	1	2	15744	N19 E20	40	900	2.0	20379	N17 E16	43	AP	2	M	20	1	HRX
79	1	3	15744	N20 E05	42	1200	2.0									
79	1	4	15744	N19 W10	45	1100	2.0									
79	1	5	15744	N19 W21	42	1200	2.0		N17 W32				B	30	3	CSO
79	1	6	15744	N18 W38	46	1200	3.0	20388	N16 W43	51	(BF)	4	R	60	11	DRO
79	1	8	15744	N18 W68	50	1200	3.0	20388	N16 W70	52	AP	2	H	40	3	CRO
79	1	9	15744	N18 W81	48	800	1.0									

MCMATH REGION 15740 CMP DATE 4.4

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
78	12	29	15740					20382	S35 E71	41	(BY)	3	H	450	7	EKO
78	12	30	15740					20382	S35 E60	40	(B)	3	B	530	8	EKI
78	12	31	15740					20382	S35 E47	40	(B)	4	R	400	24	EKO
79	1	1	15740					20382	S35 E34		(B)	4				
79	1	2	15740	S35 E22	38	2800	2.5	20382	S35 E21	38	B	4	H	360	10	EKI
79	1	3	15740	S35 E10	37	3400	3.0		S35 E05				H	380	27	EKI
79	1	4	15740	S35 W03	38	3400	3.0	20382	S35 W03	36	(B)	4	H	380	21	EKI
79	1	5	15740	S35 W14	35	2600	3.0		S33 W18				B	330	17	EKO
79	1	6	15740	S35 W26	34	3000	3.0	20382	S35 W30	38	BP	4	R	290	20	CKO
79	1	8	15740	S33 W52	34	2600	2.5	20382	S34 W56	38	AP	4	H	160	5	EAO
79	1	9	15740	S34 W65	32	3000	3.0	20382	S35 W75	40	B	4	B	80	4	DAO
79	1	10	15740	S35 W77	32	2700	3.0	20382	S35 W82	38	B	3	B	20	1	HRX
79	1	11	15740	S35 W88	32	800	1.5									

MCMATH REGION 15746 CMP DATE 4.9 RETURN OF REGION 15694 ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	2	15746	S22 E30	30	1800	3.0									
79	1	3	15746	S21 E17	30	2100	2.5									
79	1	4	15746	S21 E04	31	2400	2.5									
79	1	5	15746	S21 W08	29	2000	2.0									
79	1	6	15746	S20 W21	29	2200	2.5									
79	1	8	15746	S20 W51	33	2400	2.0		S19 W47				H	60	1	HSX
79	1	9	15746	S20 W65	32	2100	2.0		S20 W70				B	60	1	HSX
79	1	10	15746	S20 W78	33	1000	2.5									

MCMATH REGION 15745 CMP DATE 5.1

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
78	12	30	15745					20383	N14 E70	30	(AP)	3	B	100	1	HHX
78	12	31	15745					20383	N13 E60	27	(AP)	3	R	100	9	CSO
79	1	1	15745					20383	N13 E44		BP	4				
79	1	2	15745	N14 E32	28	1900	3.0	20383	N13 E31	28	BP	4	H	140	9	DSO
79	1	3	15745	N15 E20	27	1800	3.0		N13 E14				H	150	6	CSO
79	1	4	15745	N14 E06	29	2200	2.5	20383	N13 E03	30	(AP)	4	H	180	7	CSO
79	1	5	15745	N14 W05	26	2200	2.5		N12 W10				B	170	3	CHO
79	1	6	15745	N14 W18	26	2000	2.5	20383	N13 W23	31	(AP)	5	R	110	1	HSX
79	1	8	15745	N15 W46	28	1800	2.5	20383	N12 W49	31	(AP)	4	H	180	1	HSX
79	1	9	15745	N15 W60	27	1500	2.5	20383	N13 W67	32	(AP)	3	B	120	1	HSX
79	1	10	15745	N15 W73	28	1100	1.5	20383	N13 W75	31	AP	4	B	60	1	AHX
79	1	11	15745	N16 W75	19	200	1.0									

MCMATH REGION 15758 CMP DATE 7.1

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	8	15758	N07 W21	3	200	2.0									
79	1	9	15758	N07 W36	3	100	1.0									

REGIONS OF SOLAR ACTIVITY

JANUARY 1979

MCMATH REGION 15766 CMP DATE 7.4

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	10	15766	N23 W44	359	100	1.0									
79	1	11	15766	N23 W58	2	600	3.0	20401	N23 W54	357	(BP)	2	B	40	3	CRO
79	1	12	15766	N24 W70	359	600	2.0									

MCMATH REGION 15747 CMP DATE 7.7 RETURN OF REGION 15696 ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	2	15747	S25 E63	358	1200	1.5									
79	1	3	15747	S25 E58	350	1500	2.0									
79	1	4	15747	S24 E44	352	1400	2.0									
79	1	5	15747	S24 E33	349	1200	1.5									
79	1	6	15747	S25 E16	353	1200	1.5									
79	1	8	15747	S25 W13	355	1200	1.0									
79	1	9	15747	S25 W23	350	800	1.0									
79	1	10	15747	S25 W36	351	800	1.0									
79	1	11	15747	S25 W50	354	700	1.0									
79	1	12	15747	S25 W61	350	600	1.0									

MCMATH REGION 15749 CMP DATE 8.3 RETURN OF REGION 15715 ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	2	15749	N13 E77	344	700	2.0									
79	1	3	15749	N12 E62	346	800	3.0									
79	1	4	15749	N12 E48	348	800	3.0									
79	1	5	15749	N12 E35	347	800	3.0		N09 E35				B	20	3	CSO
79	1	6	15749	N11 E22	347	1000	3.0	20390	N08 E23	346	B	3	R	50	10	CRO
79	1	8	15749	N11 W05	347	1900	3.0	20390	N10 W04	346	(B)	4	H	230	30	DAI
79	1	9	15749	N10 W20	347	2200	3.0	20390	N10 W23	348	(B)	5				
79	1	10	15749	N10 W32	347	3400	3.0	20390	N10 W32	348	(B)	4	B	850	9	EKI
79	1	11	15749	N10 W46	350	3600	3.0	20390	N10 W46	349	(B)	4	B	750	17	EKI
79	1	12	15749	N10 W58	347	3500	3.0	20390	N10 W60	347	(B)	4	B	430	7	FSO
79	1	13	15749					20390	N10 W70	346	(B)	4	B	160	4	CSI
79	1	14	15749	N10 W83	347	2700	2.5		N10 W78				H	930	4	EKI

MCMATH REGION 15748 CMP DATE 8.9 RETURN OF REGION 15697 ROTATION 3

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	2	15748	S17 E80	341	1100	1.5									
79	1	3	15748	S17 E73	335	4200	3.0		S16 E72				H	240	6	DAO
79	1	4	15748	S16 E59	337	4800	3.0	20387	S17 E63	331	BF	4	H	270	12	DSO
79	1	5	15748	S16 E46	336	4200	3.0		S17 E49				B	340	7	DAI
79	1	6	15748	S16 E33	336	4200	3.5	20387	S17 E38	331	BF	5	R	290	16	DHO
79	1	8	15748	S17 E03	339	4400	3.0	20387	S17 E13	329	BF	5				
79	1	9	15748	S17 W10	337	4200	3.0	20387	S18 W05	330	(BF)	5	B	250	8	DHO
79	1	10	15748	S17 W22	337	4200	2.5	20387	S18 W14	330	(Y)	5	B	260	7	DHI
79	1	11	15748	S17 W34	338	4500	3.0	20387	S17 W28	331	Y	5	B	310	11	DKI
79	1	12	15748	S17 W46	335	4200	3.0	20387	S18 W43	330	(Y)	4	B	310	12	DKI
79	1	13	15748					20387	S17 W52	328	(Y)	4	B	290	12	DSI
79	1	14	15748	S17 W70	334	4100	3.0		S17 W59				M	680	12	EKC
79	1	15	15748	S17 W82	332	3000	3.0		S17 W79				B	560	8	EAI
79	1	16	15748	S16 W90	327	800	2.0									

MCMATH REGION 15750 CMP DATE 8.9 RETURN OF REGION 15700 ROTATION 3

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	2	15750	N25 E82	339	1000	3.0		N23 E80				M	280	6	DAO
79	1	3	15750	N25 E77	331	4000	2.5		N23 E68				M	210	7	DAO
79	1	4	15750	N24 E55	341	1000	2.5	20386	N25 E52	342	B	4	M	170	10	DAO
79	1	5	15750	N24 E44	338	3600	2.5		N23 E37				B	140	3	DAI
79	1	6	15750	N24 E31	338	3300	2.5	20386	N25 E26	343	B	3	R	120	12	DRO
79	1	8	15750	N24 E03	339	3200	2.5	20386	N25 W01	343	B	3	H	100	13	DSO
79	1	9	15750	N24 W10	337	3600	2.5	20386	N25 W19	344	(AP)	3	B	10	2	BXO
79	1	10	15750	N24 W22	337	3600	2.0	20386	N25 W27	343	(B)	2				
79	1	11	15750	N24 W35	339	3600	2.5		N24 W43				B	30	1	HSX
79	1	12	15750	N24 W47	336	3200	2.5									
79	1	14	15750	N24 W68	332	2500	2.0									

CONTD

REGIONS OF SOLAR ACTIVITY

JANUARY 1979

MCMATH REGION 15750 (CONT) CMP DATE 8.9 RETURN OF REGION 15700 ROTATION 3

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	15	15750	N24 W78	328	600	1.0									

MCMATH REGION 15753 CMP DATE 10.6

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	4	15753	N17 E78	318	300	2.0		N17 E87				M	280	1	HSX
79	1	5	15753	N18 E67	315	500	2.0		N17 E77				B	140	2	CSO
79	1	6	15753	N18 E50	319	400	2.0									
79	1	8	15753	N18 E25	317	700	2.0									
79	1	9	15753	N18 E10	317	700	2.5									
79	1	10	15753	N18 W02	317	400	2.0									
79	1	11	15753	N18 W16	320	400	2.0									
79	1	12	15753	N18 W28	317	300	1.5									
79	1	14	15753	N18 W54	318	300	2.5									
79	1	15	15753	N18 W66	316	300	1.5		N16 W54				B	100	4	CSO

MCMATH REGION 15764 CMP DATE 10.6

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	10	15764	S27 W01	316	200	1.5	20399	S27 W01	317	B	2				
79	1	11	15764	S26 W13	317	200	1.5									
79	1	12	15764	S26 W26	315	100	1.0									

MCMATH REGION 15754 CMP DATE 12.2 RETURN OF REGIONS 15704 AND 15717 ROTATION 2

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	5	15754	N19 E86	296	1200	3.0									
79	1	6	15754	N18 E70	299	3100	3.0	20391	N17 E68	301	AP	4	R	290	9	EHO
79	1	8	15754	N19 E44	298	5000	3.0	20391	N17 E36	306	(AP)	5	H	210	26	ESO
79	1		15754					20393	N18 E51	291	B	4	H	260	13	ESO
79	1	9	15754	N19 E32	295	4700	3.0	20391	N17 E23	302	(BP)	5	B	220	14	ESI
79	1		15754					20393	N17 E40	285	(B)	4	B	120	9	DSO
79	1	10	15754	N19 E20	295	4900	3.5	20391	N17 E14	302	(BP)	4	B	100	10	ESI
79	1		15754					20393	N16 E27	289	(B)	3	B	160	4	EAO
79	1	11	15754	N19 E08	296	5500	3.5	20391	N18 W01	304	(BP)	4	B	170	14	ESO
79	1		15754					20393	N17 E14	289	(B)	3	B	260	24	EKI
79	1		15754					20402	N17 E18	285	(D)	3				
79	1	12	15754	N19 W05	294	5500	3.0	20391	N17 W20	307	(AP)	3	B	100	1	HSX
79	1		15754					20393	N15 W05	292	BP	3				
79	1		15754					20402	N16 E03	284	(AP)	3	B	340	20	EKO
79	1	13	15754					20391	N17 W31	307	(AP)	4	B	130	1	HSX
79	1		15754					20393	N14 W17	293	(AP)	4				
79	1		15754					20402	N16 W09	285	(Y)	4	B	240	23	EAC
79	1	14	15754	N18 W30	294	5500	3.5		N17 W33				M	90	5	CSO
79	1	15	15754	N18 W42	292	5300	3.5		N15 W37				B	420	22	EKI
79	1	16	15754	N18 W55	292	5500	3.5		N14 W49				B	350	9	EKI
79	1	17	15754	N18 W69	290	5000	3.0		N15 W65				B	340	10	EAI
79	1	18	15754	N18 W80	290	3800	3.5	20402	N16 W75	285	B	3				

MCMATH REGION 15756 CMP DATE 13.0

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	6	15756	S09 E87	282	900	2.0		S10 E84				R	10	1	AXX
79	1	8	15756	S11 E58	284	1000	3.0	20392	S08 E53	289	AP	3	H	10	2	AXX
79	1	9	15756	S10 E42	285	900	3.0									
79	1	10	15756	S10 E30	285	1300	3.0									
79	1	11	15756	S10 E16	288	1300	3.0		S12 E19				B	10	3	BXO
79	1	12	15756	S10 E04	285	1300	2.5									
79	1	14	15756	S10 W22	286	1500	2.0									
79	1	15	15756	S10 W35	285	1200	2.0									
79	1	16	15756	S10 W48	285	1200	2.0									
79	1	17	15756	S10 W62	283	1200	2.0									
79	1	18	15756	S11 W74	284	1200	1.5									

REGIONS OF SOLAR ACTIVITY

JANUARY 1979

MCMATH REGION 15773 CMP DATE 13.5

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	15	15773	N12 W28	278	200	2.5		N10 W27				B	30	3	CSO
79	1	16	15773	N12 W41	278	500	2.5		N10 W40				B	20	3	CRO
79	1	17	15773	N12 W56	277	500	2.5		N10 W54				B	20	3	CRO
79	1	18	15773	N12 W68	278	500	2.0									

MCMATH REGION 15757 CMP DATE 13.6 RETURN OF REGION 15707 ROTATION 2

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	6	15757	S21 E85	284	300	1.0									
79	1	8	15757	S25 E70	272	2000	3.5									
79	1	9	15757	S26 E52	275	2000	3.0	20395	S23 E42	283	B	2				
79	1	10	15757	S25 E38	277	1700	3.0	20395	S23 E34	282	(AP)	2	B	10	2	BXC
79	1	11	15757	S25 E25	279	2100	3.0	20395	S24 E26	277	B	3	B	30	3	CSO
79	1	12	15757	S23 E12	277	2100	2.5	20395	S27 E12	275	B	3				
79	1	13	15757					20395	S27 W01	277	(Y)	3	B	50	9	CRI
79	1	14	15757	S24 W12	276	2700	2.5		S23 W08				M	60	13	DSO
79	1	15	15757	S24 W25	275	2500	2.5		S24 W28				B	260	16	DAI
79	1	16	15757	S26 W39	276	2700	3.0		S26 W41				B	110	9	EAO
79	1	17	15757	S26 W52	273	2500	2.5		S26 W55				B	220	7	EKO
79	1	18	15757	S26 W63	273	2700	2.5	20395	S22 W78	288	AP	4	B	10	1	AXX
79	1		15757					20405	S25 W64	274	AP	3	B	10	2	BXO

MCMATH REGION 15769 CMP DATE 14.1

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	14	15769	N16 W06	270	400	2.5		N15 E01				M	30	3	CRO
79	1	15	15769	N15 W20	270	500	2.0		N14 W19				B	40	3	DSO
79	1	16	15769	N15 W34	271	400	1.0		N13 W36				B	0	1	AXX
79	1	17	15769	N15 W49	270	200	1.0		N13 W50				B	10	1	AXX
79	1	18	15769	N14 W60	270	100	1.0		N15 W65				M	30	2	BXO

MCMATH REGION 15759 CMP DATE 14.6

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	8	15759	N28 E80	262	500	2.5									
79	1	9	15759	N28 E63	264	800	3.0	20396	N28 E60	265	(B)	3	B	10	3	BXO
79	1	10	15759	N28 E50	265	1000	3.0	20396	N27 E51	265	(B)	3	B	30	3	BXI
79	1	11	15759	N28 E36	268	1300	3.0	20396	N27 E37	266	(B)	2	B	60	2	DSO
79	1	12	15759	N28 E24	265	900	2.0	20396	N27 E22	265	B	2	B	10	2	BXO
79	1	13	15759					20396	N27 E09	267	(AP)	2	B	10	1	AXX
79	1	14	15759	N28 E00	264	800	2.5		N27 E04				M	10	2	BXO
79	1	15	15759	N28 W13	263	600	2.0									
79	1	16	15759	N28 W27	264	500	2.5									
79	1	17	15759	N28 W42	263	400	2.0									
79	1	18	15759	N28 W54	264	400	1.5									

MCMATH REGION 15760 CMP DATE 14.8

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	8	15760	N21 E85	257	300	1.0		N18 E70				M	160	6	CRO
79	1	9	15760	N21 E67	260	200	1.5									
79	1	10	15760	N21 E54	261	100	1.5									
79	1	11	15760	N21 E40	264	300	2.5									
79	1	12	15760	N21 E28	261	100	1.0									

MCMATH REGION 15763 CMP DATE 15.0 RETURN OF PART OF REGION 15709 ROTATION 4

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	8	15763	S25 E80	262	1000	1.5	20394	S27 E80	262	AP	4				
79	1	9	15763	S26 E66	261	800	2.0	20394	S27 E65	260	(AP)	3	B	50	1	HSX
79	1	10	15763	S26 E55	260	900	2.0	20394	S27 E55	261	(AP)	3	B	80	1	HAX
79	1	11	15763	S25 E41	263	1000	2.0	20394	S27 E41	262	AP	3	B	50	2	DSO

CONTD

REGIONS OF SOLAR ACTIVITY

JANUARY 1979

MCMATH REGION 15763 (CONT) CMP DATE 15.0 RETURN OF PART OF REGION 15709 ROTATION 4

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	12	15763	S25 E29	260	1000	1.5	20394	S27 E28	259	AP	2	B	10	2	AXX
79	1	13	15763					20394	S27 E17	259	(AP)	2	B	10	1	AXX
79	1	14	15763	S25 E05	259	700	1.5		S26 W03				M	20	3	BXO
79	1	15	15763	S27 W07	257	600	1.5									
79	1	16	15763	S27 W21	258	400	1.5									
79	1	17	15763	S27 W35	256	500	1.5									

MCMATH REGION 15761 CMP DATE 15.4

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	8	15761	S16 E85	257	600	1.0									
79	1	9	15761	S15 E76	251	1400	2.0	20397	S12 E75	250	AP	2				
79	1	10	15761	S15 E63	252	1100	2.5	20397	S13 E67	249	AP	2				
79	1	11	15761	S15 E50	254	1200	2.5									
79	1	12	15761	S15 E36	253	1400	2.5									
79	1	14	15761	S14 E18	254	1000	2.5									
79	1	15	15761	S16 W04	254	700	2.0		S13 W09				B	20	3	CSO
79	1	16	15761	S15 W20	257	600	2.0									
79	1	17	15761	S15 W36	257	400	2.0									
79	1	18	15761	S15 W47	257	400	2.0									

MCMATH REGION 15762 CMP DATE 16.2 RETURN OF REGION 15714 AND PART OF REGION 15709 ROTATIONS 2 AND 3

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	9	15762	S24 E82	245	1700	2.0	20398	S23 E80	245	AP	3				
79	1	10	15762	S24 E73	242	3000	3.0	20398	S20 E61	255	AP	2				
79	1		15762					20400	S23 E69	247	AP	3	B	0	2	BXI
79	1	11	15762	S23 E59	245	3500	3.0	20400	S24 E55	248	B	2	B	70	3	DSO
79	1	12	15762	S24 E47	242	3700	3.0	20400	S22 E35	252	(B)	3	B	70	4	CRI
79	1	13	15762					20400	S22 E24	252	(B)	3	B	100	14	BXC
79	1	14	15762	S24 E20	244	3700	3.0		S24 E22				M	110	20	DSI
79	1	15	15762	S24 E07	243	3500	2.5									
79	1	16	15762	S24 W08	245	3600	3.0		S23 W16				B	470	20	EKI
79	1	17	15762	S23 W24	245	3200	3.0		S24 W29				B	410	18	EKI
79	1	18	15762	S23 W35	245	3600	3.0	20400	S22 W43	253	BP	4				
79	1	19	15762					20400	S22 W56	253	B	4				
79	1	20	15762					20400	S22 W70	254	BP	4				
79	1	22	15762	S23 W87	244	1400	1.0									

MCMATH REGION 15765 CMP DATE 16.8

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	10	15765	N17 E80	235	200	1.5									
79	1	11	15765	N17 E66	238	500	1.0	20403	N16 E61	242	(AP)	2				
79	1	12	15765	N17 E55	234	200	1.0									

MCMATH REGION 15780 CMP DATE 16.9

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	22	15780	N13 W75	232	300	2.0									

MCMATH REGION 15776 CMP DATE 17.4

				CALCIUM PLAGE DATA				SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	16	15776	N21 E10	227	300	2.5		N19 E08				B	30	2	CSO
79	1	17	15776	N20 W06	227	400	1.5		N20 W03				B	20	2	BXX
79	1	18	15776	N20 W17	227	400	1.5	20406	N20 W19	229	B	2	M	20	2	CRO
79	1	22	15776	N20 W69	226	400	2.0									

REGIONS OF SOLAR ACTIVITY

JANUARY 1979

MCMATH REGION 15768 CMP DATE 18.3 RETURN OF REGION 15712 ROTATION 5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	12	15768	N10 E78	211	700	1.5
79	1	13	15768				
79	1	14	15768	N10 E50	214	1000	3.0
79	1	15	15768	N12 E36	214	1100	2.5
79	1	16	15768	N12 E22	215	1200	2.0
79	1	17	15768	N12 E07	214	1200	2.0
79	1	18	15768	N11 W05	215	1200	2.5
79	1	19	15768				
79	1	20	15768				
79	1	22	15768	N10 W58	215	800	2.5
79	1	23	15768	N11 W72	216	800	1.5

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20404	N10 E73	214	(AP)	3				
20404	N10 E61	215	(AP)	4	B	90	1	HSX
	N10 E58				H	140	3	CSO
	N09 E35				B	120	4	DSO
	N09 E20				B	150	3	CSO
	N10 E08				B	170	3	DHO
20404	N10 W07	217	BF	4	B	100	5	DSO
20404	N10 W19	216	(B)	3	B	90	4	DSO
20404	N10 W33	217	(BF)	4				
20404	N10 W56	213	(AP)	4	B	90	1	HSX
20404	N11 W70	214	(AP)	3	B	80	1	HSX

MCMATH REGION 15767 CMP DATE 18.5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	12	15767	S25 E77	212	1500	1.5
79	1	14	15767	S25 E53	211	1900	1.5
79	1	15	15767	S25 E40	210	1200	2.0
79	1	16	15767	S25 E26	211	1500	2.0
79	1	17	15767	S25 E10	211	1300	1.5
79	1	18	15767	S25 W01	211	1400	2.5
79	1	19	15767				
79	1	20	15767				
79	1	22	15767	S24 W53	210	2100	3.0
79	1	23	15767	S24 W65	209	2100	3.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20407	S22 W01	211	B	3	B	100	6	DSO
20407	S23 W14	211	(B)	3	B	90	12	DAI
20407	S23 W27	211	(BF)	4				
20407	S23 W54	211	(B)	4	B	170	6	DSO
20407	S23 W66	210	(B)	3	B	40	2	CSO

MCMATH REGION 15771 CMP DATE 18.7

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	14	15771	N22 E54	210	400	1.5
79	1	15	15771	N22 E41	209	300	1.5
79	1	16	15771	N22 E27	210	300	1.5
79	1	17	15771	N22 E12	209	300	1.5
79	1	18	15771	N22 E00	210	200	1.5
79	1	22	15771	N22 W51	208	100	1.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

MCMATH REGION 15789 A CMP DATE 19.9

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	23	15789	N30 W49	193	100	1.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

MCMATH REGION 15770 CMP DATE 20.0 RETURN OF REGION 15721 ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	14	15770	S16 E70	194	400	2.0
79	1	15	15770	S16 E58	192	500	2.0
79	1	16	15770	S16 E45	192	500	1.5
79	1	17	15770	S16 E29	192	300	1.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	S17 E55				B	20	2	BXO

MCMATH REGION 15783 CMP DATE 21.2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	20	15783				
79	1	22	15783	S33 W19	176	800	2.0
79	1	23	15783	S33 W31	175	800	2.5
79	1	25	15783				
79	1	26	15783	S33 W70	174	800	3.0
79	1	27	15783	S33 W80	171	800	2.5

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20414	S36 E06	178	(B)	2				
20414	S34 W20	177	(B)	3	B	30	3	CSO
20414	S34 W34	178	(BF)	3	B	30	5	DSO
20414	S34 W55	172	(AP)	2	P	70	8	DSO
	S34 W63				M	60	4	CRO

REGIONS OF SOLAR ACTIVITY

JANUARY 1979

MCMATH REGION 15772 CMP DATE 21.3 RETURN OF REGIONS 15722 AND 15723 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	14	15772	N18	E84	180	700	1.5
79	1	15	15772	N20	E72	178	2000	3.0
79	1	16	15772	N20	E60	177	2900	3.0
79	1	17	15772	N20	E45	176	3100	3.0
79	1	18	15772	N20	E35	175	3100	3.0
79	1	19	15772					
79	1	20	15772					
79	1		15772					
79	1	22	15772	N19	W18	175	4000	3.5
79	1		15772					
79	1	23	15772	N19	W31	175	4000	3.0
79	1		15772					
79	1	25	15772					
79	1		15772					
79	1	26	15772	N19	W70	174	3200	3.0
79	1		15772					
79	1	27	15772	N19	W83	174	2500	2.5

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N19	E75				B	70	4	DSI
	N19	E64				B	210	3	CKO
	N19	E50				B	300	6	CAO
20408	N19	E36	174	BP	4	B	240	9	DSO
20408	N19	E25	172	(Y)	3	B	280	20	ESI
20408	N19	E16	168	(B)	4				
20413	N18	E08	176	(Y)	4				
20408	N19	W09	166	(D)	4	B	440	14	EKI
20413	N18	W18	175	(Y)	4				
20408	N20	W23	167	(BF)	4				
20413	N18	W31	175	(Y)	4	B	410	14	ESI
20408	N22	W49	166	(AF)	3				
20413	N18	W60	177	(AP)	3	P	340	13	EAO
20408	N22	W61	166	(AF)	3	M	300	7	EAO
20413	N19	W75	180	(AP)	2				
20408	N21	W75	166	AF	3	B	0	1	HSX

MCMATH REGION 15781 CMP DATE 21.6

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	22	15781	N09	W13	170	100	1.5
79	1	23	15781	N09	W26	170	100	1.5
79	1	25	15781					
79	1	26	15781	N09	W67	171	600	2.5
79	1	27	15781	N08	W81	172	400	1.5

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20419	N08	W14	171	(AP)	2	B	10	1	AXX
20419	N08	W25	169	(AF)	2	B	10	1	AXX
20419	N07	W50	167	(B)	2	P	50	5	DAO
20419	N08	W61	166	(AF)	2				

MCMATH REGION 15774 CMP DATE 21.9 RETURN OF REGION 15737 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	15	15774	S13	E82	168	900	2.0
79	1	16	15774	S14	E68	169	1400	3.0
79	1	17	15774	S15	E53	168	1100	3.0
79	1	18	15774	S14	E41	169	1500	3.5
79	1	19	15774					
79	1	20	15774					
79	1	22	15774	S15	W10	167	1600	3.0
79	1	23	15774	S15	W23	167	1500	3.0
79	1	25	15774					
79	1	26	15774	S15	W65	169	1200	2.0
79	1	27	15774	S16	W79	170	700	2.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	S14	E79				B	60	2	CSO
	S14	E66				B	90	2	CSO
	S13	E53				B	170	6	CHO
20409	S15	E40	170	BP	5	B	180	12	DSI
20409	S14	E29	168	(B)	3	B	290	17	DKO
20409	S14	E15	169	(BP)	4	B	200	10	DAO
20409	S15	W13	170	(BP)	3	B	120	5	DSO
20409	S14	W27	171	(AP)	4	B	70	5	CSO
20409	S14	W54	171	(AP)	2	P	70	1	HAX
20409	S14	W68	173	(AP)	3	M	70	1	HSX
20409	S14	W80	171	(AP)	2	B	10	1	HSX

MCMATH REGION 15775 CMP DATE 22.8

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	16	15775	S18	E85	152	500	1.0
79	1	17	15775	S18	E68	153	500	2.5
79	1	18	15775	S18	E56	154	500	2.5
79	1	19	15775					
79	1	20	15775					
79	1	22	15775	S18	E03	154	400	2.0
79	1	23	15775	S18	W11	155	400	2.0
79	1	26	15775	S18	W53	157	400	1.5

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20411	S18	E53	157	AP	2	B	250	1	HSX
20411	S18	E38	159	AP	2	B	20	1	HRX
20411	S17	E24	160	(AP)	2				

MCMATH REGION 15782 CMP DATE 22.8

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT
79	1	22	15782	N07	E03	154	300	2.5
79	1	23	15782	N08	W10	154	200	1.5
79	1	26	15782	N09	W52	156	400	2.0
79	1	27	15782	N08	W66	157	400	2.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20420	N06	E02	155	(AP)	2	B	10	1	AXX
20420	N07	W13	157	(AP)	2	B	10	2	AXX
	N07	W54				M	50	4	DRO

REGIONS OF SOLAR ACTIVITY

JANUARY 1979

MCMATH REGION 15784 CMP DATE 23.2

CALCIUM PLAGE DATA								SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	22	15784	S29 E07	150	100	1.0									
79	1	23	15784	S29 W05	149	100	1.0									
79	1	25	15784					20425	S28 W33	150	(B)	2	P	100	8	DSO
79	1	26	15784	S29 W47	151	300	3.5	20425	S28 W49	144	(AP)	2	M	60	4	DRO
79	1	27	15784	S30 W60	151	300	2.0	20425	S28 W62	153	(AP)	2				

MCMATH REGION 15778 CMP DATE 23.7

CALCIUM PLAGE DATA								SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	17	15778	S11 E80	141	1200	3.0		S09 E80				B	140	1	HSX
79	1	18	15778	S11 E68	142	2700	2.5	20410	S11 E63	147	AP	5				
79	1	19	15778					20410	S11 E49	148	(AP)	4	B	150	5	CSO
79	1	20	15778					20410	S12 E37	147	(BP)	4				
79	1		15778					20416	S13 E48	136	(AF)	2				
79	1	22	15778	S12 E15	142	2400	3.0	20410	S12 E12	145	(Y)	4	B	100	8	DSO
79	1	23	15778	S12 E01	143	2100	3.0	20410	S11 E00	144	(B)	4	B	110	10	DAI
79	1	25	15778					20410	S12 W27	144	(B)	3	P	100	14	DSO
79	1	26	15778	S12 W38	142	1800	3.0	20410	S12 W40	145	(B)	3	M	110	5	DSO
79	1	27	15778	S13 W52	143	2100	3.0	20410	S12 W58	149	(AP)	4	B	10	2	HSX
79	1	28	15778					20410	S12 W72	150	AP	2	B	390	20	DKI

MCMATH REGION 15779 CMP DATE 23.9

CALCIUM PLAGE DATA								SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	18	15779	S25 E70	140	300	2.0		S28 E63				B	0	1	AXX
79	1	20	15779					20415	S27 E41	143	(B)	3	B	40	3	CSO
79	1	22	15779	S25 E17	140	700	2.5	20415	S26 E14	143	(B)	3	B	110	6	CAO
79	1	23	15779	S25 E04	140	800	3.0	20415	S26 E02	142	(B)	3	B	110	8	DAO
79	1	25	15779					20415	S25 W25	142	(B)	3				
79	1	26	15779	S25 W35	139	1000	3.5	20415	S25 W37	142	(Y)	3	M	90	4	DRO
79	1	27	15779	S26 W49	140	1800	3.0	20415	S26 W47	138	(D)	3	B	560	8	DKI
79	1	28	15779					20415	S27 W62	140	Y	4				
79	1	29	15779					20415	S26 W72	137	(D)	2	R	320	6	DKI
79	1	30	15779	S26 W89	141	1800	3.0		S25 W86				B	40	1	HSX

MCMATH REGION 15777 CMP DATE 24.5 RETURN OF REGION 15726 ROTATION 3

CALCIUM PLAGE DATA								SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	17	15777	N13 E85	136	800	2.0									
79	1	18	15777	N14 E77	133	3000	3.5		N08 E79				B	0	1	AXX
79	1	19	15777					20412	N12 E62	135	AP	2	B	100	2	DSO
79	1	20	15777					20412	N13 E50	134	(B)	4				
79	1		15777					20417	N09 E53	131	(BP)	3				
79	1	22	15777	N14 E24	133	5100	3.5	20412	N13 E23	134	(BP)	4	B	260	15	EHI
79	1		15777					20417	N09 E25	132	(B)	2	B	50	9	CRO
79	1		15777					20421	N18 E23	134	(AP)	3				
79	1	23	15777	N15 E11	133	5400	3.0	20412	N12 E08	136	(BP)	4	B	400	16	EHI
79	1		15777					20417	N10 E11	133	(B)	3	B	20	6	BXO
79	1		15777					20421	N18 E08	136	AP	2				
79	1	25	15777					20412	N14 W19	136	(BP)	4	P	350	39	EKI
79	1	26	15777	N15 W30	134	5200	3.0	20412	N14 W33	138	(BP)	4				
79	1		15777					20427	N09 W29	134	(B)	2	M	330	14	EKI
79	1	27	15777	N15 W44	135	5300	3.0	20412	N15 W45	136	(Y)	4	B	760	9	EHO
79	1		15777					20427	N09 W43	134	(B)	3	B	150	5	DSI
79	1		15777					20428	N17 W42	133	(B)	3				
79	1	28	15777					20412	N15 W60	138	Y	4	B	390	4	CHO
79	1		15777					20427	N09 W58	136	B	3	B	760	17	DKI
79	1		15777					20428	N18 W55	133	B	2	B	250	10	DAI
79	1	29	15777					20412	N13 W78	143	(AP)	3				
79	1		15777					20427	N09 W72	137	(BP)	2	R	80	7	DRO
79	1		15777					20428	N17 W70	135	(B)	2	R	280	4	EKO
79	1	30	15777	N14 W84	136	4000	2.5									

REGIONS OF SOLAR ACTIVITY

JANUARY 1979

MCMATH REGION 15787 CMP DATE 26.1 RETURN OF REGION 15751 ROTATION 2

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	20	15787					20418	N19 E70	114	(AP)	3				
79	1	22	15787	N20 E45	112	3700	3.5	20418	N19 E41	116	(BP)	4	B	130	8	EAO
79	1	23	15787	N22 E32	112	3400	3.0	20418	N19 E30	114	(BP)	4	B	220	9	CHO
79	1	25	15787					20418	N20 E04	113	(BP)	4	P	180	19	DSO
79	1		15787					20426	N25 E35	82	(AP)	2	P	20	4	CRO
79	1	26	15787	N20 W08	112	3200	3.5	20418	N21 W08	113	(B)	3	M	190	17	DAO
79	1	27	15787	N20 W21	112	3000	3.5	20418	N20 W19	110	(B)	3	B	120	8	DAI
79	1	28	15787					20418	N20 W36	114	B	3	B	130	15	DAI
79	1	29	15787					20418	N20 W47	112	(B)	3	R	90	11	DAO
79	1	30	15787	N20 W60	112	3700	3.5		N21 W62				B	140	3	CAO
79	1	31	15787	N20 W74	112	3400	3.0									
79	2	01	15787	N21 W87		1300	2.5									

MCMATH REGION 15785 CMP DATE 26.7 POSSIBLY RETURN OF PART OF REGION 15733 OR NEW ROTATIONS 1 OR 4

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	22	15785	S14 E56	101	2800	3.5	20422	S14 E55	102	(AP)	2	B	30	4	BXO
79	1	23	15785	S14 E43	101	3000	3.0	20422	S14 E36	108	(Y)	3	B	30	5	CSO
79	1	25	15785					20422	S13 E09	108	(Y)	4	P	220	33	DAI
79	1	26	15785	S14 W01	105	3200	3.0	20422	S13 W03	108	(B)	3	M	180	21	DAI
79	1	27	15785	S14 W13	104	3000	3.0	20422	S14 W15	106	(BP)	4	B	160	12	DAI
79	1	28	15785					20422	S14 W29	107	BP	3	B	140	22	DAI
79	1	29	15785					20422	S14 W42	107	(BP)	2	R	100	30	DSO
79	1	30	15785	S15 W52	104	3000	3.5		S14 W55				B	110	8	DSO
79	1	31	15785	S15 W65	103	2700	3.0		S12 W70				R	50	3	CAO
79	2	01	15785	S15 W77		2300	2.5									

MCMATH REGION 15786 CMP DATE 27.7 (PROBABLY NEW)

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	22	15786	S25 E68	89	3200	3.5	20423	S25 E61	96	(BP)	4	B	220	2	CHO
79	1	23	15786	S25 E54	90	3800	3.5	20423	S25 E47	97	(AP)	4	B	280	4	CHO
79	1	25	15786					20423	S25 E24	93	(AP)	5	P	330	34	EKO
79	1	26	15786	S25 E12	92	4100	3.5	20423	S25 E11	94	(AP)	4	M	330	23	EHI
79	1	27	15786	S27 E00	91	3800	3.0	20423	S26 E03	88	(BP)	4				
79	1	28	15786					20423	S26 W13	91	BP	4	B	130	12	EHO
79	1	29	15786					20423	S26 W25	90	(BP)	3	R	220	14	EHO
79	1	30	15786	S26 W38	90	3700	3.5		S26 W37				B	280	8	EHI
79	1	31	15786	S26 W50	88	3500	3.0		S25 W50				R	200	10	ESO
79	2	01	15786	S26 W63		2700	3.0		S27 W62				B	138	2	C
79	2	02	15786	S27 W76		2800	2.0		S25 W81				B	80	1	H

MCMATH REGION 15789 B CMP DATE 28.2

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	26	15789	N25 E22	82	300	2.0		N23 E32				M	10	1	AXX
79	1	27	15789	N25 E10	81	200	2.0		N26 E00				B	210	7	EKO

MCMATH REGION 15809 CMP DATE 28.5

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	02	15809	N14 W68		100	1.0									

MCMATH REGION 15788 CMP DATE 29.0 RETURN OF PART OF REGION 15733 ROTATION 4

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	22	15788	S21 E68	69	2800	2.0	20424	S22 E78	79	(AP)	3	B	60	1	HSX
79	1	23	15788	S23 E73	71	2900	2.0	20424	S22 E64	80	(AP)	3	B	190	1	HAX
79	1	25	15788					20424	S23 E38	79	(AP)	4	P	210	5	DSO
79	1	26	15788	S23 E30	74	2700	2.5	20424	S23 E25	80	(AP)	4	M	140	3	CSO
79	1	27	15788	S23 E18	73	2800	2.0	20424	S23 E12	79	(AP)	4	B	120	1	HSX
79	1	28	15788					20424	S23 E03	75	BP	4	B	140	4	CHO

CONTD

REGIONS OF SOLAR ACTIVITY

JANUARY 1979

MCMATH REGION 15788 (CONT) CMP DATE 29.0 RETURN OF PART OF REGION 15733 ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	29	15788				
79	1	30	15788	S23 W22	74	2800	2.5
79	1	31	15788	S23 W35	73	2600	2.5
79	2	01	15788	S23 W47		2600	2.5
79	2	02	15788	S23 W61		2200	2.0
79	2	04	15788	S23 W90		500	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20424	S24 W13	78	(BP)	4	R	180	2	CSO
	S23 W26				B	160	1	HHX
	S23 W24				R	10	1	AXX
	S24 W51				B	163	1	H
	S23 W66				B	130	1	H

MCMATH REGION 15791 CMP DATE 30.3 RETURN OF REGION 15755 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	26	15791	N26 E49	55	400	1.5
79	1	27	15791	N25 E35	56	400	1.5
79	1	30	15791	N26 W04	56	400	1.0
79	1	31	15791	N25 W19	57	300	1.0
79	2	01	15791	N25 W32		300	1.0
79	2	02	15791	N25 W45		400	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N18 W09				R	20	3	BXO

MCMATH REGION 15790 CMP DATE 30.4 RETURN OF REGION 15739 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	26	15790	S35 E45	59	400	2.0
79	1	27	15790	S34 E35	56	600	1.5
79	1	30	15790	S34 W03	55	500	1.5
79	1	31	15790	S34 W16	54	300	1.5
79	2	01	15790	S34 W27		400	1.0
79	2	02	15790	S34 W41		300	1.0
79	2	04	15790	S34 W66		300	1.0
79	2	05	15790	S34 W79		300	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	S30 E45				H	0	1	AXX
	S29 E07				B	10	1	AXX

MCMATH REGION 15792 CMP DATE 31.1 RETURN OF REGION 15741 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	26	15792	S15 E60	44	1500	2.5
79	1	27	15792	S15 E46	45	1200	2.5
79	1	28	15792				
79	1	30	15792	S15 E06	46	800	2.0
79	1	31	15792	S15 W08	46	800	2.0
79	2	01	15792	S15 W19		900	1.5
79	2	02	15792	S15 W32		700	1.0
79	2	04	15792	S15 W58		600	1.0
79	2	05	15792	S15 W71		500	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20429	S18 E42	36	AP	3	B	120	2	AXX

MCMATH REGION 15797 CMP DATE 31.9

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	1	30	15797	N10 E19	33	100	1.0
79	1	31	15797	N10 E03	35	100	1.0
79	2	01	15797	N09 W09		100	1.0
79	2	02	15797	N09 W22		100	1.0
79	2	04	15797	N09 W49		200	1.0
79	2	05	15797	N10 W62		200	1.5

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

Note: No calcium spectroheliograms were secured at the McMath-Hulbert Observatory on Jan. 1, 7, 13, 19, 20, 21, 24, 25, 28 and 29, 1979.
No sunspot observations were made at Mt. Wilson on Jan. 3, 5, 7, 14, 15, 16, 17, 21, 24, 30 and 31, 1979.

ERRATA: The Regions of Solar Activity for January 1979 and February 1979 are being republished in this issue because a computer error omitted sunspot data from all stations reporting except Mt. Wilson. The error occurred for the January data after January 18 and for the February data after February 11.

REGIONS OF SOLAR ACTIVITY

FEBRUARY 1979

MCMATH REGION 15794 CMP DATE 1.0 RETURN OF PART OF REGION 15740 ROTATION 2

			CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	26	15794	S33 E78	26	700	1.5									
79	1	27	15794	S32 E67	24	900	2.0									
79	1	30	15794	S32 E20	32	500	1.5									
79	1	31	15794	S32 E05	33	400	1.0									
79	2	1	15794	S32 W08	34	400	1.5									
79	2	2	15794	S32 W23	34	400	1.5									
79	2	4	15794	S32 W49	36	400	1.0									
79	2	5	15794	S31 W61	35	400	1.5									

MCMATH REGION 15793 CMP DATE 1.8 RETURN OF REGION 15745 ROTATION 2

			CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	26	15793	N18 E78	26	900	1.0									
79	1	27	15793	N19 E64	27	900	1.5									
79	1	30	15793	N20 E27	25	600	1.0									
79	1	31	15793	N20 E14	24	400	1.0									
79	2	1	15793	N20 E02	24	500	1.0									
79	2	2	15793	N20 W11	22	500	1.0									
79	2	4	15793	N21 W37	24	500	1.0									
79	2	5	15793	N22 W50	24	500	1.0									

MCMATH REGION 15814 CMP DATE 3.0

			CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	6	15814	S17 W50	9	100	1.0									
79	2	7	15814	S18 W64	11	100	1.0									
79	2	8	15814	S18 W76	11	300	2.0									

MCMATH REGION 15798 CMP DATE 3.1 RETURN OF PART OF REGION 15740 ROTATION 2

			CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	30	15798	S35 E42	10	800	1.5									
79	1	31	15798	S35 E30	8	700	2.0									
79	2	1	15798	S35 E18	8	500	2.0									
79	2	2	15798	S35 E05	6	500	1.0									
79	2	4	15798	S35 W27	14	500	1.0									
79	2	5	15798	S35 W40	14	500	1.0									

MCMATH REGION 15796 CMP DATE 3.5 RETURN OF REGION 15766 ROTATION 2

			CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	27	15796	N18 E87	4	500	1.0									
79	1	28	15796					20430	N19 E72	6	B	3				
79	1		15796					20431	N15 E70	8	AP	3				
79	1	29	15796					20430	N22 E65	0	(BP)	2				
79	1		15796					20431	N15 E56	9	(AP)	2				
79	1	30	15796	N20 E50	2	2400	3.5									
79	1	31	15796	N20 E40	359	2200	3.0									
79	2	1	15796	N20 E25	1	2600	3.5		N19 E27				B	90	5	DAO
79	2	2	15796	N20 E11	0	2400	3.0		N20 E09				B	70	3	DSO
79	2	3	15796						N20 W04				B	10	2	BXO
79	2	4	15796	N20 W15	2	2400	3.0		N20 W16				B	10	2	BXO
79	2	5	15796	N20 W29	3	2500	2.5	20433	N18 W32	6	(B)	3	B	20	3	BXO
79	2	6	15796	N20 W45	4	2200	2.5	20433	N17 W47	8	(B)	2	B	30	2	CRO
79	2	7	15796	N20 W57	4	2300	2.0		N15 W56				B	20	2	BXO
79	2	8	15796	N20 W68	3	1800	2.0		N15 W69				B	10	2	BXO

MCMATH REGION 15802 CMP DATE 3.9 RETURN OF REGION 15749 ROTATION 3

			CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	28	15802					20432	N08 E80	359	Y	4				
79	1	29	15802					20432	N08 E67	359	(Y)	3				

CONTD

REGIONS OF SOLAR ACTIVITY

FEBRUARY 1979

MCMATH REGION 15802 (CONT) CMP DATE 3.9 RETURN OF REGION 15749 ROTATION 3

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	30	15802	N13 E59	354	6300	3.5									
79	1	31	15802	N13 E43	356	6500	3.0									
79	2	1	15802	N12 E30	357	7000	3.5		N14 E33				B	10	1	AXX
79	2	2	15802	N12 E16	356	6600	3.5		N13 E14				B	10	3	BXO
79	2	3	15802						N07 W02				B	200	7	DSO
79	2	4	15802	N12 W10	357	6700	3.5		N08 W15				B	130	11	DAI
79	2	5	15802	N12 W24	358	6500	3.0	20432	N07 W28	2	(B)	3	B	160	3	DAO
79	2	6	15802	N12 W40	359	6200	3.0	20432	N07 W41	2	(B)	4	B	210	6	EAO
79	2		15802					20438	N12 W32	353	(B)	3	B	60	5	DAO
79	2	7	15802	N12 W50	357	6500	3.0	20432	N07 W55	2	B	4	B	180	5	EAO
79	2	8	15802	N12 W62	357	6500	3.0	20432	N07 W63	2	(B)	4	B	40	2	ESO
79	2		15802					20444	N13 W65	359	(AP)	2				
79	2	9	15802	N12 W77	358	3000	2.5	20432	N07 W78	359	AP	3				
79	2		15802					20444	N12 W85	6	AP	3	B	30	1	HSX

MCMATH REGION 15804 CMP DATE 5.1 RETURN OF PART OF REGION 15748 ROTATION 4

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	30	15804	S14 E70	343	3000	3.0									
79	1	31	15804	S14 E60	339	3000	3.0									
79	2	1	15804	S14 E44	343	3500	3.5		S13 E47				B	340	11	DAI
79	2	2	15804	S14 E32	340	3300	3.5		S13 E33				B	480	27	OKI
79	2	3	15804						S14 E20				B	440	8	DHO
79	2	4	15804	S14 E05	342	4000	3.5		S13 E05				B	560	29	EKI
79	2	5	15804	S14 W07	341	4300	3.5	20434	S13 W07	341	(B)	4	B	590	24	EKI
79	2	6	15804	S14 W23	342	4000	3.0	20434	S13 W21	342	(BP)	4	B	530	36	EKI
79	2	7	15804	S14 W34	341	4300	3.5	20434	S13 W35	342	BP	4	B	370	28	EAI
79	2	8	15804	S14 W46	341	4500	3.5	20434	S13 W48	342	(BP)	3	B	110	13	ESI
79	2	9	15804	S14 W60	341	3800	3.5	20434	S14 W65	346	(AP)	3	B	60	5	DSO
79	2	10	15804	S14 W72	341	3400	3.0	20434	S14 W80	346	AP	3	B	10	1	HSX
79	2	11	15804	S15 W85	340	2100	2.0									

MCMATH REGION 15803 CMP DATE 5.5 RETURN OF REGION 15750 ROTATION 4

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	30	15803	N25 E80	333	300	1.0									
79	1	31	15803	N25 E63	336	200	1.0									
79	2	1	15803	N25 E50	337	200	1.0									
79	2	2	15803	N25 E36	336	200	1.0									
79	2	4	15803	N26 E11	336	200	1.5									
79	2	5	15803	N26 W02	336	300	1.5									
79	2	6	15803	N26 W17	336	200	1.0									

MCMATH REGION 15799 CMP DATE 5.5

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	30	15799	S34 E74	339	300	1.0									
79	1	31	15799	S34 E63	336	300	1.0									

MCMATH REGION 15800 CMP DATE 6.3 RETURN OF PART OF REGION 15748 ROTATION 4

				CALCIUM PLAGE DATA				SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	1	30	15800	S20 E85	328	2500	3.0									
79	1	31	15800	S22 E70	329	3500	3.0									
79	2	1	15800	S19 E59	328	3500	3.0		S18 E63				B	40	2	HSX
79	2	2	15800	S19 E45	327	3500	3.0		S18 E48				B	30	1	HSX
79	2	3	15800						S18 E32				B	0	1	AXX
79	2	4	15800	S19 E21	326	3100	3.0		S21 E21				B	10	5	BXO
79	2	5	15800	S20 E09	325	2900	3.0									
79	2	6	15800	S20 W07	326	2800	2.5	20439	S22 W04	325	B	1	B	0	1	AXX
79	2	7	15800	S20 W18	325	2800	2.5									
79	2	8	15800	S21 W29	324	2500	2.5									
79	2	9	15800	S21 W43	324	2500	2.5									
79	2	10	15800	S21 W56	325	2500	2.5									
79	2	11	15800	S21 W68	323	2100	2.5									
79	2	12	15800	S20 W83	321	2500	2.0									

REGIONS OF SOLAR ACTIVITY

FEBRUARY 1979

MCMATH REGION 15805 CMP DATE 6.8 RETURN OF REGION 15753 ROTATION 2

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT CLASS
79	2	1	15805	N18 E70	317	300	1.0								
79	2	2	15805	N17 E57	315	300	1.0								
79	2	4	15805	N17 E30	317	400	2.0								
79	2	5	15805	N18 E17	317	300	2.0								
79	2	6	15805	N17 E00	319	400	1.5								
79	2	7	15805	N18 W10	317	300	1.5								
79	2	8	15805	N18 W22	317	200	1.5								
79	2	9	15805	N18 W36	317	200	1.5								
79	2	10	15805	N17 W50	319	200	1.5								
79	2	11	15805	N17 W63	318	300	1.0								

MCMATH REGION 15811 CMP DATE 8.3 RETURN OF REGION 15756 ROTATION 2

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT CLASS
79	2	4	15811	S09 E50	297	200	1.0								
79	2	5	15811	S09 E34	300	200	1.5								
79	2	6	15811	S09 E19	300	300	1.0								
79	2	7	15811	S09 E09	298	200	1.0								
79	2	8	15811	S09 W01	296	200	1.5								
79	2	9	15811	S09 W18	299	100	1.0								
79	2	11	15811	S10 W43	298	100	1.0								
79	2	10	15811	S09 W31	300	100	1.0								
79	2	12	15811	S09 W61	177	100	1.0								

MCMATH REGION 15806 CMP DATE 8.6

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT CLASS
79	2	2	15806	N37 E77	295	800	2.5		N37 E81				B	50	1 HSX
79	2	4	15806	N37 E52	295	1100	2.5		N36 E41				B	50	1 HSX
79	2	5	15806	N37 E39	295	1200	3.5	20435	N34 E32	302	(AP)	3	B	40	1 HRX
79	2	6	15806	N37 E22	297	1200	3.0	20435	N34 E20	301	(AP)	3	B	40	1 HSX
79	2	7	15806	N37 E12	295	1200	3.0								
79	2	8	15806	N36 E00	295	1000	2.5								
79	2	9	15806	N36 W13	294	900	2.0								
79	2	10	15806	N35 W26	295	700	2.0								
79	2	11	15806	N35 W38	293	700	1.5								
79	2	12	15806	N36 W53	291	400	1.5								
79	2	13	15806	N36 W66	292	400	1.5								

MCMATH REGION 15807 CMP DATE 9.1 RETURN OF REGIONS 15754 AND 15773 ROTATIONS 3 AND 2

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT CLASS
79	2	2	15807	N16 E80	292	1500	2.0		N14 E80				B	20	1 HSX
79	2	4	15807	N16 E60	287	6000	3.0		N15 E61				B	170	2 HSX
79	2	5	15807	N16 E45	289	6500	3.5	20436	N13 E45	289	(BP)	3	B	140	2 DSO
79	2	6	15807	N17 E27	292	6800	3.5	20436	N13 E32	289	(BP)	4	B	280	11 DHI
79	2		15807					20440	N23 E17	304	(AP)	1			
79	2	7	15807	N17 E18	289	6500	3.0	20436	N14 E20	293	(BP)	4			
79	2		15807					20443	N15 E10	297	AP	4	B	180	12 OKI
79	2	8	15807	N16 E07	288	6500	3.5	20436	N14 E05	289	(BP)	4	B	170	7 EAO
79	2		15807					20443	N15 W05	299	(AP)	3	B	20	4 CAO
79	2		15807					20446	N20 E15	279	(AP)	2			
79	2	9	15807	N16 W08	289	6900	3.5	20436	N15 W08	289	(BF)	4	B	220	30 EAI
79	2	10	15807	N16 W21	290	7200	3.5	20436	N15 W25	291	(Y)	4	B	460	17 DAI
79	2	11	15807	N16 W34	289	7000	3.5	20436	N15 W36	291	(D)	4	M	1090	11 EXX
79	2	12	15807	N16 W49	287	7000	3.5	20436	N15 W50	291	(D)	4	R	560	38 EKC
79	2	13	15807	N16 W64	290	7000	3.5	20436	N15 W64	292	(Y)	4	M	560	30 EAI
79	2	15	15807	N20 W90	290	1200	1.5								

MCMATH REGION 15808 CMP DATE 9.2 RETURN OF PART OF REGION 15757 ROTATION 3

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT CLASS
79	2	2	15808	S21 E83	289	1200	2.5		S21 E85				B	160	5 DSO
79	2	4	15808	S20 E62	285	2200	3.0		S21 E60				B	150	4 DSI
79	2	5	15808	S19 E49	285	2500	3.0	20437	S21 E45	289	(Y)	3	B	310	8 DSC
79	2	6	15808	S20 E31	288	2500	3.5	20437	S20 E32	289	(D)	4	B	310	19 DKI

CONTD

REGIONS OF SOLAR ACTIVITY

FEBRUARY 1979

MCMATH REGION 15808 (CONT) CMP DATE 9.2 RETURN OF PART OF REGION 15757 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	7	15808	S20 E20	287	2500	3.5
79	2	8	15808	S20 E08	287	2800	3.0
79	2		15808				
79	2	9	15808	S21 W07	288	2500	3.0
79	2		15808				
79	2	10	15808	S21 W20	289	2500	3.0
79	2		15808				
79	2	11	15808	S20 W33	288	2800	3.0
79	2		15808				
79	2	12	15808	S20 W48	286	2500	3.0
79	2		15808				
79	2	13	15808	S20 W63	289	2500	3.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20437	S20 E20	287	Y	4	B	300	24	DKI
20437	S20 E05	289	(Y)	4	B	260	20	DAI
20445	S17 E07	287	(E)	2				
20437	S21 W07	288	(Y)	4	B	90	10	DRI
20445	S17 W05	286	(AP)	3	B	140	11	DSI
20437	S22 W22	288	(B)	3	B	60	10	CSI
20445	S17 W23	289	(AP)	2				
20437	S23 W32	287	(AP)	2	M	150	15	DSI
20445	S17 W36	291	(Y)	3	M	10	3	BXO
20437	S23 W46	287	(AP)	2	R	20	11	BXO
20445	S17 W53	294	(AP)	4				

MCMATH REGION 15812 CMP DATE 10.1

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	5	15812	S20 E56	278	300	2.0
79	2	6	15812	S19 E43	276	800	3.0
79	2	7	15812	S19 E33	274	800	3.5
79	2	8	15812	S20 E21	274	800	3.0
79	2	9	15812	S20 E06	275	1300	3.0
79	2	10	15812	S20 W07	276	1500	3.0
79	2	11	15812	S20 W19	274	1500	3.0
79	2	12	15812	S20 W34	272	1700	3.0
79	2	13	15812	S20 W47	273	1800	3.0
79	2	15	15812	S20 W73	273	2200	2.5
79	2	16	15812	S20 W85	274	1500	2.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20441	S20 E44	277	(B)	3	B	100	6	DSI
20441	S19 E30	277	BP	4	B	230	13	DKI
20441	S19 E18	276	(BP)	5	B	230	8	DSO
20441	S19 E04	277	(BP)	5				
20441	S19 W10	276	(BP)	4	B	180	10	CSI
20441	S20 W21	276	(BP)	4	M	150	16	DSI
20441	S20 W34	275	(AP)	4	R	170	14	DSO
20441	S18 W51	279	(AP)	4				
20441	S18 W79	281	AP	4	R	90	2	HAX
	S19 W82				M	100	1	HSX

MCMATH REGION 15810 CMP DATE 11.3 RETURN OF PART OF REGION 15757 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	4	15810	S30 E80	267	600	1.5
79	2	5	15810	S30 E70	264	1000	2.0
79	2	6	15810	S30 E60	259	1000	1.5
79	2	7	15810	S29 E50	257	900	1.5
79	2	8	15810	S30 E37	258	900	1.5
79	2	9	15810	S30 E22	259	900	1.5
79	2	10	15810	S31 E09	260	1200	1.5
79	2	11	15810	S31 W03	258	1300	1.5
79	2	12	15810	S31 W18	256	1000	1.5
79	2	13	15810	S31 W31	257	600	1.5
79	2	15	15810	S32 W56	256	400	1.5
79	2	16	15810	S32 W68	257	300	1.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

MCMATH REGION 15817 CMP DATE 11.8 RETURN OF REGION 15759 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	6	15817	N30 E75	244	200	1.0
79	2	7	15817	N30 E58	249	300	1.0
79	2	8	15817	N29 E45	250	300	1.0
79	2	9	15817	N28 E30	251	300	1.0
79	2	10	15817	N28 E17	252	200	1.0
79	2	11	15817	N28 E02	253	100	1.0
79	2	12	15817	N28 W16	254	200	2.0
79	2	13	15817	N28 W28	254	200	1.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N27 W13				R	20	3	BXO

MCMATH REGION 15815 CMP DATE 12.2 RETURN OF REGION 15761 AND PART OF REGION 15762 ROTATIONS 2 AND 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	5	15815	S25 E78	256	2000	1.5
79	2	6	15815	S28 E65	254	2000	2.0
79	2	7	15815	S25 E64	243	2300	2.0
79	2	8	15815	S24 E48	247	2300	2.5
79	2	9	15815	S25 E34	247	2000	2.0
79	2	10	15815	S25 E20	249	2300	2.5
79	2	11	15815	S26 E08	247	2300	2.5
79	2	12	15815	S25 W10	248	2300	2.0

SUNSPOT DATA

NW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20452	S25 E03	252	(AP)	2				

CONTD

REGIONS OF SOLAR ACTIVITY

FEBRUARY 1979

MCMATH REGION 15815 (CONT) CMP DATE 12.2 RETURN OF REGION 15761 AND PART OF REGION 15762 ROTATIONS 2 AND 3

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MH NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	13	15815	S26 W21	247	1800	2.0									
79	2	15	15815	S26 W47	247	1700	2.5									
79	2	16	15815	S26 W58	247	1200	2.5									
79	2	17	15815	S26 W65	240	1300	2.0									
79	2	18	15815	S28 W75	237	1200	1.0									
79	2	19	15815	S29 W87	237	500	1.0									

MCMATH REGION 15813 CMP DATE 13.2

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MH NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	6	15813	S18 E86	233	1200	2.5	20442	S17 E80	241	B	4	B	50	2	HSX
79	2	7	15813	S17 E75	232	2000	3.0	20442	S17 E70	237	Y	4	B	130	4	DSO
79	2	8	15813	S16 E63	232	3000	3.0	20442	S17 E56	238	(Y)	4	B	160	8	DSO
79	2	9	15813	S18 E48	233	2700	2.5	20442	S18 E42	239	(Y)	4	B	100	6	DSO
79	2	10	15813	S18 E33	236	3000	3.0	20442	S18 E28	238	(B)	4	B	200	6	EHO
79	2		15813					20449	S14 E24	242	(AP)	3				
79	2	11	15813	S19 E21	234	2800	3.0	20442	S18 E17	238	(Y)	4	M	160	25	EHO
79	2		15813					20449	S14 E13	242	(B)	3	M	150	18	EHO
79	2	12	15813	S19 E05	233	2000	2.5	20442	S16 E02	239	BF	4	R	170	34	ESI
79	2		15813					20449	S14 E00	241	(B)	3				
79	2	13	15813	S17 W11	237	2000	2.5	20442	S16 W12	240	(AF)	4				
79	2		15813					20449	S14 W13	241	(B)	3				
79	2	15	15813	S17 W37	237	1900	3.0	20442	S18 W37	239	(AF)	3	R	70	3	CAO
79	2		15813						S18 W33				R	10	2	BXO
79	2	16	15813	S17 W49	238	1900	3.0		S17 W43				M	80	4	CSO
79	2	17	15813	S17 W62	237	1900	3.0	20442	S17 W65	240	(AF)	3	B	80	1	HSX
79	2	18	15813	S17 W74	236	2100	3.0	20442	S16 W78	240	AP	3	B	80	2	HAX
79	2	19	15813	S17 W86	236	2100	1.5									

MCMATH REGION 15835 CMP DATE 13.4

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MH NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	15	15835	N13 W31	231	100	1.0									
79	2	16	15835	N13 W44	233	100	2.0									

MCMATH REGION 15816 CMP DATE 14.0

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MH NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	7	15816	S34 E88	219	300	2.0									
79	2	8	15816	S34 E77	218	600	2.0	20447	S35 E68	226	(AP)	3	B	10	2	BXO
79	2	9	15816	S35 E63	218	600	3.0	20447	S36 E54	227	(AP)	3	B	20	1	HRX
79	2	10	15816	S34 E45	224	1200	3.0	20447	S37 E40	226	(BP)	4	B	130	3	CHO
79	2		15816					20450	S22 E44	222	(B)	2				
79	2	11	15816	S34 E32	223	1200	2.5	20447	S37 E29	226	(BP)	4	B	140	7	DSO
79	2		15816					20450	S23 E34	221	(B)	1				
79	2	12	15816	S35 E16	222	1200	3.0	20447	S37 E17	224	(BP)	4	R	180	12	ESO
79	2	13	15816	S35 E03	223	1200	2.5	20447	S37 E04	224	(BP)	4	M	170	10	DSO
79	2	15	15816	S36 W21	221	1200	2.5	20447	S37 W20	222	(BP)	4	R	100	2	HAX
79	2	16	15816	S36 W33	222	1100	2.5		S38 W31				M	60	1	HSX
79	2	17	15816	S36 W45	220	1100	2.5	20447	S39 W49	224	(AP)	4	B	60	1	HSX
79	2	18	15816	S36 W55	217	1100	2.5	20447	S39 W62	224	(AP)	3	B	70	1	HSX
79	2	19	15816	S36 W67	217	1300	2.5		S38 W76				B	40	1	HSX
79	2	20	15816	S36 W80	217	1300	2.0		S37 W88				B	40	1	HSX

MCMATH REGION 15822 CMP DATE 14.3

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MH NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	11	15822	S09 E37	218	200	2.0	20453	S10 E37	218	(B)	2				
79	2	12	15822	S10 E21	217	200	2.0	20453	S10 E22	219	B	2	R	20	5	BXO
79	2	13	15822	S10 E07	219	400	2.5	20453	S12 E11	217	AP	1				
79	2	15	15822	S10 W19	219	300	2.5									
79	2	16	15822	S10 W31	220	200	2.0									
79	2	17	15822	S10 W44	219	400	1.5									
79	2	18	15822	S10 W57	219	400	1.5									
79	2	19	15822	S11 W69	219	300	1.5									

REGIONS OF SOLAR ACTIVITY

FEBRUARY 1979

MCMATH REGION 15820 CMP DATE 14.5 RETURN OF REGION 15768 ROTATION 6

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	8	15820				
79	2	9	15820	N13 E68	213	300	1.5
79	2	10	15820	N12 E52	217	400	1.0
79	2	11	15820	N13 E35	220	300	1.0
79	2	12	15820	N12 E20	218	400	1.0
79	2	13	15820	N12 E10	216	400	1.0
79	2	15	15820	N13 W15	215	400	1.0
79	2	16	15820	N13 W27	216	200	1.0
79	2	17	15820				
79	2	18	15820				

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20448	N11 E80	214	X	3	B	10	1	HRX
20448	N11 E67	214	AP	4	B	30	1	HSX
20448	N11 E53	213	(AP)	4	B	50	1	HSX
20448	N11 E42	213	(AP)	3				
20448	N11 E29	212	(AP)	4	R	30	1	HSX
20448	N10 E15	213	(AP)	4	H	30	1	HSX
20448	N11 W11	213	(AP)	4	R	20	3	HAX
20448	N11 W36	211	(AP)	3	B	30	1	HSX
20448	N11 W49	211	(AP)	3	B	30	1	HRX

MCMATH REGION 15818 CMP DATE 15.0 RETURN OF REGION 15767 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	8	15818	S24 E87	208	900	1.0
79	2	9	15818	S24 E73	208	1000	2.0
79	2	10	15818	S24 E56	213	1500	2.5
79	2	11	15818	S24 E43	212	1600	2.5
79	2	12	15818	S24 E28	210	1400	2.0
79	2	13	15818	S24 E15	211	1400	2.0
79	2	15	15818	S24 W10	210	1200	2.5
79	2	16	15818	S24 W22	211	1200	2.5
79	2	17	15818	S24 W35	210	1400	2.0
79	2	18	15818	S24 W47	209	1500	2.0
79	2	19	15818	S25 W59	209	1200	2.0
79	2	20	15818	S25 W72	209	1200	2.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	S24 E48				B	40	2	BXO
20456	S27 E29	212	(B)	2	R	10	4	BXO
	S23 E19				M	0	1	AXX
20462	S22 W27	202	(B)	3	B	20	3	CRO
20462	S21 W42	204	(AP)	2	B	50	1	HSX

MCMATH REGION 15825 CMP DATE 15.2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	12	15825	N22 E32	206	200	2.5
79	2	13	15825	N22 E18	208	400	3.0
79	2	15	15825	N22 W07	207	1400	3.0
79	2	16	15825	N23 W19	208	1500	3.5
79	2	17	15825	N23 W32	207	1600	3.0
79	2	18	15825	N23 W45	207	1800	3.0
79	2	19	15825	N23 W57	207	1800	3.0
79	2	20	15825	N24 W70	207	1400	3.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20455	N21 E32	209	(B)	2	R	20	5	BXO
20455	N22 E19	209	(B)	4	M	90	17	DAO
20455	N21 W06	208	(B)	4	R	240	22	DAO
20455	N21 W32	207	(B)	4	B	190	9	DAO
20455	N21 W46	208	(BP)	4	B	130	2	CSO
	N22 W62				B	40	1	HSX
	N23 W85				B	40	1	HSX

MCMATH REGION 15819 CMP DATE 16.1

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	9	15819	N16 E88	193	500	2.0
79	2	10	15819	N17 E70	199	600	2.0
79	2	11	15819	N18 E58	197	600	2.0
79	2	12	15819	N18 E43	195	700	1.5
79	2	13	15819	N18 E26	200	800	2.0
79	2	15	15819	N18 E04	196	600	2.0
79	2	16	15819	N18 W09	198	500	2.0
79	2	17	15819	N18 W20	195	300	1.5

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20451	N17 E65	201	AP	2	B	10	1	AXX
20451	N17 E53	202	(AP)	2	B	10	1	AXX
	N22 E27				M	30	5	DRO

MCMATH REGION 15836 CMP DATE 17.3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	16	15836	N09 E09	180	200	2.5
79	2	17	15836	N08 W04	179	700	2.5
79	2	18	15836	N08 W17	179	800	2.0
79	2	19	15836	N08 W29	179	1000	3.0
79	2	20	15836	N08 W43	180	1000	3.5
79	2	22	15836	N08 W70	180	1500	3.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20465	N08 W04	179	(B)	4	B	100	5	DSO
20465	N08 W17	179	(B)	4	B	320	11	DKI
	N08 W31				B	430	16	DKI
	N09 W45				B	220	20	DAI
	N18 W70				B	240	4	DSI

REGIONS OF SOLAR ACTIVITY

FEBRUARY 1979

MCMATH REGION 15823 CMP DATE 17.8 RETURN OF REGION 15772 ROTATION 3

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	11	15823	N20 E83	172	2200	2.0	20454	N20 E80	175	(X)	4	B	20	1	HSX
79	2	12	15823	N20 E68	170	3800	3.0	20454	N19 E70	171	(B)	4	R	310	7	DKO
79	2	13	15823	N19 E53	173	4100	3.0	20454	N19 E58	170	(B)	4	H	320	7	EHO
79	2	15	15823	N20 E27	173	4500	3.0	20454	N19 E30	172	(BP)	4	R	2340	30	EKO
79	2	16	15823	N19 E17	172	5300	3.0									
79	2	17	15823	N19 E03	172	5800	3.0	20454	N18 E02	173	(D)	4	B	690	32	EKI
79	2	18	15823	N19 W11	173	5800	3.0	20454	N18 W14	176	(D)	4	B	600	21	DKC
79	2	19	15823	N19 W23	173	5200	3.0		N18 W27				B	550	16	DKC
79	2	20	15823	N19 W36	173	5300	3.5		N18 W41				B	520	17	DKI
79	2	22	15823	N20 W61	171	4700	3.5									
79	2	24	15823	N24 W90	173	1000	1.5									

MCMATH REGION 15827 CMP DATE 17.8

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	12	15827	S16 E67	171	400	2.5									
79	2	13	15827	S16 E53	173	800	2.5	20459	S17 E54	174	(B)	3				
79	2	15	15827	S15 E27	173	1100	3.0	20459	S15 E28	174	(B)	3	R	50	11	DRO
79	2	16	15827	S15 E14	175	1100	2.5		S16 E23				H	50	10	DSO
79	2	17	15827	S15 E02	173	1200	3.0	20459	S16 E01	174	(BP)	4	B	80	10	DAI
79	2	18	15827	S15 W11	173	900	2.5	20459	S16 W13	175	(BP)	3	B	90	4	DAO
79	2	19	15827	S15 W24	174	900	3.0		S14 W27				B	70	4	DAO
79	2	20	15827	S15 W37	174	1000	3.0		S13 W41				B	30	2	AXX
79	2	22	15827	S15 W63	173	1200	3.0		S18 W59				B	10	2	BXO
79	2	24	15827	S15 W90	173	400	1.5									

MCMATH REGION 15828 CMP DATE 18.4

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	12	15828	N04 E77	161	1100	3.5	20457	N02 E75	166	X	3	R	160	3	HAX
79	2	13	15828	N04 E63	163	1300	3.5	20457	N02 E61	167	(BP)	2	H	100	8	CAO
79	2	15	15828	N04 E37	163	1400	3.0	20457	N02 E35	167	(BP)	4	R	60	10	CSO
79	2	16	15828	N04 E25	164	1700	3.0		N02 E32				H	90	9	CAO
79	2	17	15828	N04 E11	164	1400	3.0	20457	N02 E09	166	(BP)	4	B	40	6	CSI
79	2	18	15828	N03 W03	165	1200	2.5	20457	N02 W06	168	(AP)	3	B	40	4	CAO
79	2	19	15828	N03 W16	166	1300	2.5		N02 W18				B	20	3	CSO
79	2	20	15828	N03 W29	166	1300	2.5		N03 W33				B	10	2	AXX
79	2	22	15828	N03 W56	166	900	2.0									
79	2	24	15828	N04 W83	166	600	1.0									

MCMATH REGION 15839 CMP DATE 18.4

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	19	15839	S21 W16	166	100	2.0		S21 W18				B	50	4	DAO
79	2	20	15839	S21 W29	166	300	2.0									
79	2	22	15839	S22 W56	166	300	2.5		S23 W59				B	10	2	BXO
79	2	24	15839	S21 W82	165	400	1.5									

MCMATH REGION 15826 CMP DATE 19.1 RETURN OF REGION 15783 ROTATION 2

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	12	15826	S34 E75	163	500	1.5									
79	2	13	15826	S35 E62	164	500	1.0									
79	2	15	15826	S35 E42	158	700	1.0									
79	2	16	15826	S35 E30	159	600	1.5									
79	2	17	15826	S34 E18	157	400	1.0									
79	2	18	15826	S34 E06	156	300	1.0									
79	2	19	15826	S34 W06	156	300	1.0									
79	2	20	15826	S34 W18	155	300	1.5									
79	2	22	15826	S34 W44	154	300	1.0									
79	2	24	15826	S34 W70	153	200	1.0									

REGIONS OF SOLAR ACTIVITY

FEBRUARY 1979

MCMATH REGION 15833 CMP DATE 19.6 RETURN OF REGION 15778 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	13	15833	S14 E72	154	400	1.3
79	2	15	15833	S15 E48	152	400	1.0
79	2	16	15833	S15 E36	153	500	1.3
79	2	17	15833	S14 E24	151	600	1.0
79	2	18	15833	S13 E12	150	500	1.0
79	2	19	15833	S13 E00	150	500	1.0
79	2	20	15833	S14 W13	150	600	1.0
79	2	22	15833	S15 W39	149	600	1.0
79	2	24	15833	S15 W65	148	600	1.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS

MCMATH REGION 15830 CMP DATE 20.1 RETURN OF REGION 15777 ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	13	15830	N15 E85	141	4000	2.5
79	2	15	15830	N14 E58	142	7200	3.5
79	2	16	15830	N14 E45	144	8000	3.5
79	2	17	15830	N15 E33	142	7600	3.0
79	2	18	15830	N15 E19	143	8000	3.0
79	2	19	15830	N15 E07	143	8000	3.5
79	2	20	15830	N15 W07	144	8500	3.5
79	2	22	15830	N15 W33	143	7800	3.5
79	2	24	15830	N15 W59	142	7800	3.5
79	2	25	15830				
79	2	26	15830	N15 W85	142	2500	2.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20460	N17 E80	148	(X)	3	M	330	5	ESO
20460	N15 E55	147	(Y)	4	R	330	10	DSO
	N16 E48				M	120	13	DSI
20460	N15 E28	147	(Y)	5	B	700	43	FHI
20460	N17 E15	147	(Y)	5	B	870	48	FKI
	N16 E02				B	970	84	FKI
	N16 W13				B	1160	64	FKI
	N17 W40				B	1210	15	FKI
20460	N17 W68	150	(BF)	3	B	710	16	FKI
20460	N17 W76	146	(AP)	3	R	470	7	FKO

MCMATH REGION 15832 CMP DATE 21.0 RETURN OF REGION 15779 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	13	15832	S25 E88	138	400	1.0
79	2	15	15832	S26 E68	132	1600	3.0
79	2	16	15832	S26 E57	132	2300	3.5
79	2	17	15832	S26 E43	132	2300	3.0
79	2	18	15832	S26 E30	132	2300	3.0
79	2	19	15832	S26 E18	132	2300	3.0
79	2	20	15832	S26 E05	132	2300	3.0
79	2	22	15832	S26 W20	130	2300	2.5
79	2	24	15832	S26 W45	128	2300	2.5
79	2	25	15832				
79	2	26	15832	S26 W70	127	1500	2.0
79	2	27	15832	S26 W82	126	900	1.5

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
20461	S27 E69	133	(BP)	3	R	240	7	CSO
	S27 E64				M	90	4	CSO
20461	S27 E43	132	(AP)	4	B	170	2	CHO
20461	S27 E29	133	(AP)	4	B	190	6	CHI
	S27 E16				B	110	6	CHI
	S27 E03				B	120	4	HSX
	S27 W22				B	110	1	CSO
20461	S28 W49	131	(BP)	3	B	120	2	HSX
20461	S28 W60	130	(AP)	3	R	90	5	CRO
	S25 W75				B	20	1	HSX
	S27 W78				M	50	1	HSX

MCMATH REGION 15834 CMP DATE 22.5 RETURN OF REGION 15785 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
79	2	15	15834	S13 E90	110	500	1.0
79	2	16	15834	S14 E79	110	1300	2.0
79	2	17	15834	S13 E64	111	1700	2.5
79	2	18	15834	S13 E51	111	1500	2.5
79	2	19	15834	S14 E39	111	1800	3.0
79	2	20	15834	S14 E26	111	1800	2.5
79	2	22	15834	S14 W01	111	1800	2.0
79	2	24	15834	S14 W27	110	1400	2.0
79	2	26	15834	S14 W55	112	1200	2.5
79	2	27	15834	S13 W68	112	1200	2.5
79	2	28	15834	S14 W80	111	800	2.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	S16 E41				B	50	2	DSO
	S13 W54				B	0	1	AXX

REGIONS OF SOLAR ACTIVITY

FEBRUARY 1979

MCMATH REGION 15837 CMP DATE 22.8 RETURN OF REGION 15787 ROTATION 3

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	16	15837	N23 E80	109	3000	2.5									
79	2	17	15837	N23 E66	109	3000	3.0	20463	N21 E65	110	AP	1	B	10	1	AXX
79	2	18	15837	N23 E53	109	3000	3.0	20463	N21 E50	112	B	1	B	10	2	BXO
79	2		15837					20466	N26 E64	98	X	1				
79	2	19	15837	N23 E41	109	2700	3.0		N22 E37				B	20	3	BXO
79	2	20	15837	N24 E29	108	2500	3.0		N22 E25				B	20	7	BXX
79	2	22	15837	N24 E03	107	1900	3.0									
79	2	24	15837	N24 W23	106	1400	3.0									
79	2	26	15837	N24 W50	107	1200	3.0									
79	2	27	15837	N24 W62	106	1200	2.0									
79	2	28	15837	N24 W74	105	1000	1.5									

MCMATH REGION 15844 CMP DATE 23.9

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	22	15844	S20 E16	94	100	2.0									
79	2	24	15844	S19 W10	93	400	2.0									
79	2	26	15844	S19 W38	95	800	2.5		S19 W36				B	0	1	AXX
79	2	27	15844	S19 W50	94	700	2.5		S20 W43				M	10	1	AXX
79	2	28	15844	S19 W63	94	400	2.0									

MCMATH REGION 15838 CMP DATE 25.1 RETURN OF REGIONS 15786 AND 15788 ROTATIONS 2 AND 5

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	17	15838	S26 E85	90	1000	1.0	20464	S25 E90	85	X	3				
79	2	18	15838	S24 E80	82	1400	1.5	20464	S25 E77	85	(AP)	4	B	90	1	HSX
79	2	19	15838	S25 E69	81	1400	1.5		S25 E61				B	80	1	HSX
79	2	20	15838	S25 E57	80	1400	2.5		S25 E63				B	70	1	HSX
79	2	22	15838	S25 E32	78	1600	2.0		S25 E37				B	40	1	HSX
79	2	24	15838	S25 E06	77	1200	1.5	20464	S26 W03	85	(AP)	3				
79	2		15838					20471	S26 E12	70	(AP)	3				
79	2	25	15838					20464	S25 W15	85	(AP)	3				
79	2		15838					20471	S25 E00	70	(AP)	3	R	130	1	HSX
79	2	26	15838	S25 W20	77	1400	1.5		S24 W12				B	40	1	HSX
79	2		15838						S24 W27				B	80	1	HAX
79	2	27	15838	S25 W31	75	1200	1.5	20464	S25 W40	83	(AP)	4	M	90	1	HSX
79	2		15838					20471	S26 W25	68	(AP)	3	M	60	1	HSX
79	2	28	15838	S24 W42	73	1200	1.5	20464	S25 W53	83	(AP)	3	R	120	3	HAX
79	2		15838					20471	S26 W38	68	(AP)	3	R	80	1	HSX
79	3	01	15838						S26 W54				B	50	1	H
79	3	02	15838					20464	S25 W79		(AP)	3	B	40	1	H
79	3		15838					20471	S26 W65		(AP)	3				
79	3	03	15838	S24 W83		500	1.0	20471	S27 W77		(AP)	3	B	40	1	H

MCMATH REGION 15851 CMP DATE 25.3

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	25	15851					20473	S33 W05	75	(BP)	2	R	40	6	ORO
79	2	26	15851	S31 W18	75	800	2.0		S32 W18				B	50	9	DAI
79	2	27	15851	S32 W30	74	1100	2.5	20473	S33 W31	74	(B)	3	M	120	15	DAI
79	2	28	15851	S32 W43	74	1100	3.0	20473	S33 W44	74	(B)	3	R	150	6	DAO
79	3	01	15851						S32 W61				B	90	10	D
79	3	02	15851					20473	S32 W70		(B)	3	B	70	5	C
79	3	03	15851	S32 W82		900	2.5	20473	S32 W85		(AP)	3	B	30	1	H

MCMATH REGION 15845 CMP DATE 25.4

			CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	22	15845	N12 E38	72	100	1.0									
79	2	24	15845	N11 E10	73	100	1.5	20469	N12 E08	74	(B)	2	B	10	1	AXX
79	2	26	15845	N12 W17	74	100	1.0									

REGIONS OF SOLAR ACTIVITY

FEBRUARY 1979

MCMATH REGION 15840 CMP DATE 26.6

CALCIUM PLAGE DATA							SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	19	15840	N38 E90	60	300	1.0									
79	2	20	15840	N37 E78	59	1000	2.0		N36 E70				B	140	1	HSX
79	2	22	15840	N37 E53	60	1700	2.5		N36 E43				B	190	2	CSO
79	2	24	15840	N38 E24	59	1400	2.5	20470	N36 E17	65	(AP)	3	B	130	1	HHX
79	2	25	15840					20470	N36 E06	64	(AP)	3	R	150	5	CAO
79	2	26	15840	N39 W01	58	1500	2.5		N40 W03				B	0	1	AXX
79	2	27	15840	N39 W12	56	1700	2.5	20470	N36 W19	62	(AP)	4	M	90	3	CAO
79	2	28	15840	N39 W25	56	2000	2.0	20470	N36 W31	61	(AP)	3	R	70	3	CSO
79	3	01	15840						N36 W47				B	30	2	H
79	3	02	15840					20470	N37 W57		(AP)	2	B	30	1	H
79	3	03	15840	N39 W61		1600	1.5	20470	N37 W69		(AP)	2	B	10	2	B
79	3	04	15840	N40 W76		600	1.0									

MCMATH REGION 15841 CMP DATE 26.6 RETURN OF REGION 15792 ROTATION 3

CALCIUM PLAGE DATA							SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	20	15841	S14 E80	57	300	1.0									
79	2	22	15841	S14 E53	57	300	1.5									
79	2	24	15841	S14 E27	56	200	1.0									
79	2	26	15841	S14 W01	58	300	1.0									
79	2	27	15841	S13 W15	59	100	1.0									
79	2	28	15841	S13 W28	59	300	1.0									
79	3	03	15841	S13 W79		200	1.0									

MCMATH REGION 15846 CMP DATE 26.9 RETURN OF REGION 15791 ROTATION 3

CALCIUM PLAGE DATA							SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	22	15846	N25 E56	54	300	1.0									
79	2	24	15846	N24 E30	53	200	1.0									
79	2	26	15846	N24 E03	54	200	1.5									
79	2	27	15846	N25 W08	52	200	1.0									
79	2	28	15846	N25 W21	52	400	1.0									
79	3	03	15846	N26 W61		400	1.0									

MCMATH REGION 15852 CMP DATE 27.2

CALCIUM PLAGE DATA							SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	26	15852	S19 E08	49	300	2.0		S18 E09				B	30	6	DSI
79	2	27	15852	S19 W04	48	600	2.0	20475	S18 W06	49	(B)	3	H	50	12	DRO
79	2	28	15852	S18 W17	48	900	2.5	20475	S19 W17	47	(B)	3	R	70	15	DAO
79	3	01	15852						S18 W36				B	30	7	C
79	3	02	15852						S19 W51				B	20	5	B
79	3	03	15852	S19 W57		1200	3.0	20483	S19 W60		(AP)	3	B	130	6	D
79	3	04	15852	S20 W72		1300	3.0	20483	S18 W74		(B)	2	B	20	4	B

MCMATH REGION 15842 CMP DATE 27.5 RETURN OF REGION 15797 ROTATION 2

CALCIUM PLAGE DATA							SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	22	15842	N10 E65	45	100	1.5									
79	2	24	15842	N10 E40	43	200	1.5									
79	2	26	15842	N10 E12	45	200	1.5									
79	2	27	15842	N10 W01	45	200	1.5									
79	2	28	15842	N10 W16	47	300	1.5									
79	3	03	15842	N12 W56		300	1.0									

MCMATH REGION 15857 CMP DATE 27.5

CALCIUM PLAGE DATA							SUNSPOT DATA							
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	28	15857	S33 W14	45	100	1.0									
79	3	01	15857						S33 W33				B	70	12	D
79	3	02	15857					20479	S34 W42		(B)	3	B	60	13	D
79	3	03	15857	S33 W54		900	3.0	20479	S34 W54		(B)	3	B	90	7	D

CONTD

REGIONS OF SOLAR ACTIVITY

FEBRUARY 1979

MCMATH REGION 15857 (CONT) CMP DATE 27.5

			CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	3	04	15857	S34	W67		800	3.0	20479	S33	W67		(B)	2	B	30	4	B
79	3	06	15857	S34	W90		400	2.0										

MCMATH REGION 15843 CMP DATE 28.6

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	MC NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
79	2	22	15843	N24	E85	25	400	2.0										
79	2	24	15843	N24	E54	29	800	2.0										
79	2	26	15843	N24	E26	31	800	2.5										
79	2	27	15843	N24	E14	30	900	2.5										
79	2	28	15843	N24	E00	31	1000	2.5										
79	3	01	15743							N24	W13				B	10	2	B
79	3	02	15843							N23	W28				B	10	2	B
79	3	03	15843	N25	W39		1100	2.0	20484	N23	W38		(B)	2	B	10	2	B
79	3	04	15843	N24	W54		1100	2.0										
79	3	06	15843	N27	W80		600	1.0										

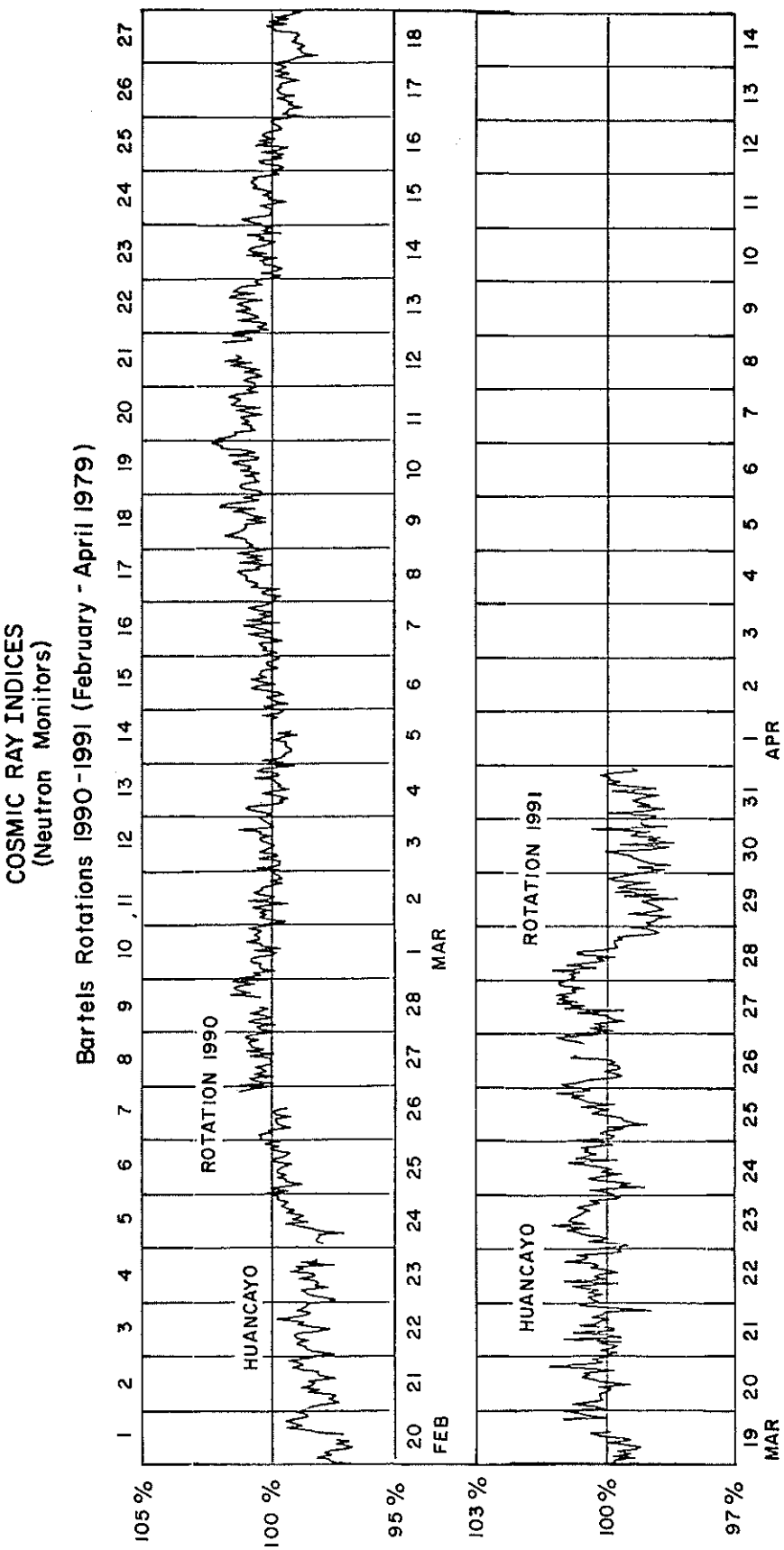
NOTE: NO CALCIUM SPECTROHELIOGRAMS WERE SECURED AT THE MCMATH-HULBERT OBSERVATORY ON FEB. 3, 14, 21, 23, AND 25, 1979.
NO SUNSPOT OBSERVATIONS WERE MADE AT MT. WILSON ON FEB. 1, 2, 3, 4, 14, 16, 19, 20, 21, 22, 23, AND 26, 1979.

COSMIC RAY INDICES
(Neutron Monitors)

MARCH 1979

March 1979	HUANCAYO Average cts/hr
1	1736.4
2	1731.3
3	1731.8
4	1728.8
5	1721.2
6	1730.5
7	1734.5
8	1738.7
9	1747.7
10	1748.8
11	1749.7
12	1747.9
13	1744.8
14	1733.2
15	1734.4
16	1727.8
17	1718.6
18	1714.9
19	1719.9
20	1725.7
21	1722.8
22	1726.8
23	1729.1
24	1723.7
25	1723.7
26	1727.8
27	1732.0
28	1723.3
29	1704.0
30	1704.4
31	1709.0
MEAN	1728.8

Scaling factor at Huancayo is 100.

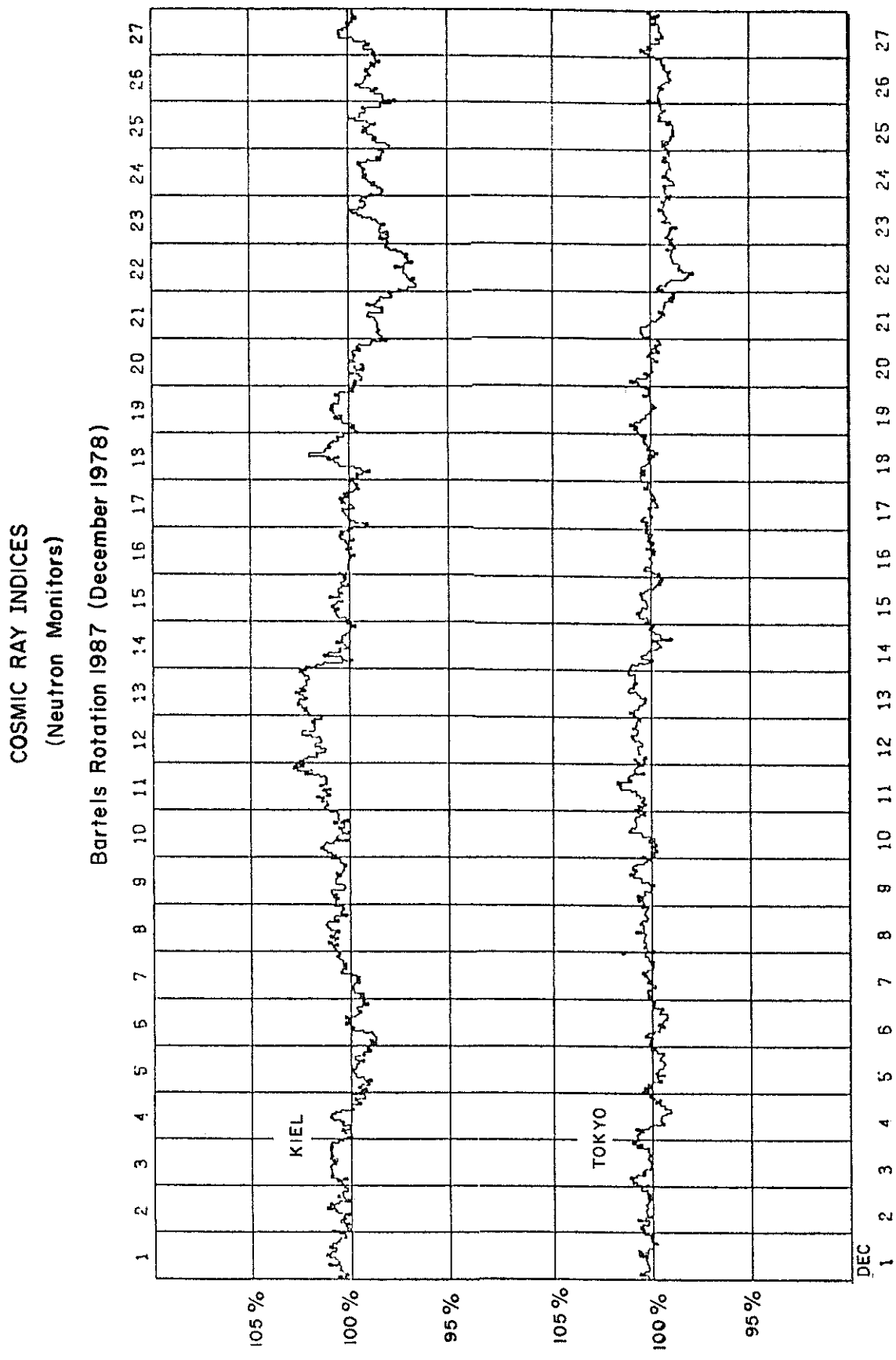

COSMIC RAY INDICES
(Neutron Monitors)
Bartels Rotations 1990-1991 (February - April 1979)
HUANCAYO
ROTATION 1990
HUANCAYO
ROTATION 1991
105 %
100 %
95 %
103 %
100 %
97 %
FEB
MAR
MAR
APR

COSMIC RAY INDICES
(Neutron Monitors)

DECEMBER 1978

Dec. 1978	KIEL Average cts/hr	TOKYO Average cts/hr
1	6250.8	3645.4
2	6235.8	3648.6
3	6258.4	3652.5
4	6216.4	3632.0
5	6173.8	3627.6
6	6173.8	3627.0
7	6208.3	3641.3
8	6253.2	3648.9
9	6241.9	3653.6
10	6249.7	3650.0
11	6304.1	3667.5
12	6316.6	3660.6
13	6350.8	3664.5
14	6236.4	3638.4
15	6235.9	3642.8
16	6212.7	3636.0
17	6201.9	3638.0
18	6236.1	3645.0
19	6226.0	3646.5
20	6173.8	3637.1
21	6111.5	3622.8
22	6031.7	3593.0
23	6132.3	3605.3
24	6132.4	3604.5
25	6134.0	3607.2
26	6130.2	3613.7
27	6186.0	3628.7
28	6177.4	3632.2
29	6145.3	3622.3
30	6051.1	3600.7
31	5984.0	3579.8
MEAN	6192.6	3632.7

Scaling Factors: 100 for Kiel and 256 for Tokyo.


COSMIC RAY INDICES
(Neutron Monitors)
Bartels Rotation 1987 (December 1978)
KIEL
TOKYO
105 %
100 %
95 %
105 %
100 %
95 %
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
DEC

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

MARCH 1979

PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS

The meaning of the station symbols is given in the IAGA-News nr. 16.
Times of ssc are mean values.

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

04	0445	A:	SOD	DOB	DOU?	HRB?	COI	TOL	KGL			
		B:	WNG	WIT	VIC	FUR	MMB	KAK	HAZ	LMM	CZT	DRV
		C:	NGK	HAD	EBR	ALM	KNY					
06	0818	A:	DOB	ESK	LMM							
		B:	SOD	WNG	FUR	HRB	TOL	KAK	KGL			
		C:	WIT	NGK	HAD	VIC	MMB	HAZ	KNY	CZT	DRV	
09	0808	A:	SOD	ESK	HRB	FRD	LMM					
		B:	DOB	WNG	VIC	FUR	OTT	TOL	KAK	KGL		
		C:	WIT	NGK	HAD	MMB	EBR	ALM	HAZ	KNY	CZT	DRV
15	0556	B:	FUR	HRB	DRV							
		C:	WNG	NGK	HAD	VIC	EBR	TOL	ALM	CZT	KGL	
17	0231	A:	VIC	OTT	COI	LMM						
		B:	WIT	DOU	FUR	ALM	CZT	KGL	DRV			
		C:	NGK	HAD	MMB	TOL	HAZ	KNY	(si:	A:	WNG	HRB)
22	0826	A:	SOD	DOB	NUR	ESK	WNG	DOU	VIC	FUR	OTT	MMB	EBR	COI
			FRD	KSA	HAZ	LMM	CZT	KGL						
		B:	WIT	NGK	HRB	ALM	KAK	KNY	DRV					
		C:	HAD	TOL	(pil:	A:	MMB	KNY)						
28	0827	A:	SOD	ESK	LMM									
		B:	WNG	WIT	HAD	DOU?	VIC	FUR	HRB	MMB	TOL	KAK	KSA	CZT
			KGL	DRV										
		C:	NGK	EBR	HAZ	KNY	(si: | A: | DOB)					

Solar-flare effects (sfe)

Effects confirmed by ionospheric or solar observations are underlined.

01	1012 - 1050	WNG	WIT	EBR	(bp:	B:	LMM)	22	0323 - 0420	MMB	KAK	HAZ	KNY
02	0335 - 0400	KAK	HAZ	KNY				23	0647 - 0700	KNY			
19	0050 - 0109	HAZ						25	0040 - 0100	KAK	HAZ	KNY	
20	2310 - 2320	HAZ						27	0545 - 0645	KNY			
21	1345 - 1405	HRB						31	2319 - 2333	HAZ			

Very unusual events

none

☆GPO 1979—677-073/2

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UAG-23A "U.R.S.I. Handbook of Ionogram Interpretation and Reduction, Second Edition, November 1972", Revision of Chapters 1-4, edited by W. R. Piggott and K. Rawer, NGSDC/EDS/NOAA, July 1978, 135 pages, price $2.14.

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UAG-39 "Auroral Electrojet Magnetic Activity Indices AE (11) for 1971", by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Environmental Data Service, February 1975, 144 pages, price $2.05.

UAG-40 "H-Alpha Synoptic Charts of Solar Activity For the Period of Skylab Observations, May, 1973-March, 1974", by Patrick S. McIntosh, NOAA Environmental Research Laboratories, February 1975, 32 pages, price 56 cents.

UAG-41 "H-Alpha Synoptic Charts of Solar Activity During the First Year of Solar Cycle 20, October, 1964 - August, 1965", by Patrick S. McIntosh, NOAA Environmental Research Laboratories, and Jerome T. Nolte, American Science and Engineering, Cambridge, Massachusetts, March 1975, 25 pages, price 48 cents.

UAG-42 "Observations of Jupiter's Sporadic Radio Emission in the Range 7.6-80 MHz 10 December 1971 through 21 March 1975", by James W. Warwick, George A. Dulk, and Anthony C. Riddle, Department of Astro-Geophysics, University of Colorado, Boulder, Colorado 80302, April 1975, 49 pages, price $1.15.

UAG-43 "Catalog of Observation Times of Ground-Based Skylab-Coordinated Solar Observing Programs", compiled by Helen E. Coffey, World Data Center A for Solar-Terrestrial Physics, May 1975, 159 pages, price $3.00.

UAG-44 "Synoptic Maps of Solar 9.1 cm Microwave Emission from June 1962 to August 1973", by Werner Graf and Ronald N. Bracewell, Radio Astronomy Institute, Stanford University, Stanford, California 94305, May 1975, 183 pages, price $2.55.

UAG-45 "Auroral Electrojet Magnetic Activity Indices AE (11) for 1972", by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Environmental Data Service, May 1975, 144 pages, price $2.10.

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UAG-48A "Synoptic Observations of the Solar Corona during Carrington Rotations 1580-1596 (11 October 1971 - 15 January 1973)", [Reissue with quality images] by R. A. Howard, M. J. Koomen, D. J. Michels, R. Tousey, C. R. Detwiler, D. E. Roberts, R. T. Seal and J. D. Whitney, E. O. Hulbert Center for Space Research, NRL, Washington, D. C. 20375 and R. T. and S. F. Hansen, C. J. Garcia and E. Yasukawa, High Altitude Observatory, NCAR, Boulder, Colorado 80303, February 1976, 200 pages, price $4.27.

UAG-49 "Catalog of Standard Geomagnetic Variation Data", prepared by Environmental Data Service, NOAA, Boulder, Colorado, August 1975, 125 pages, price $1.85.

UAG-50 "High-Latitude Supplement to the URSI Handbook on Ionogram Interpretation and Reduction", by W. R. Piggott, British Antarctic Survey, c/o SRC, Appleton Laboratory, Ditton Park, Slough, England, October 1975, 292 pages, price $4.00.

UAG-51 "Synoptic Maps of Solar Coronal Hole Boundaries Derived from He II 304Å Spectroheliograms from the Manned Skylab Missions", by J. D. Bohlin and D. M. Rubenstein, E. O. Hulbert Center for Space Research, Naval Research Laboratory, Washington, D. C. 20375 U.S.A., November 1975, 30 pages, price 54 cents.

UAG-52 "Experimental Comprehensive Solar Flare Indices for Certain Flares, 1970-1974", compiled by Helen W. Dodson and E. Ruth Hedeman, McMath-Hulbert Observatory, The University of Michigan, 895 Lake Angelus Road North, Pontiac, Michigan 48055 U.S.A., November 1975, 27 pages, price 60 cents.

UAG-53 "Description and Catalog of Ionospheric F-Region Data, Jicamarca Radar Observatory (November 1966 - April 1969)", by W. L. Clark and T. E. Van Zandt, Aeronomy Laboratory, NOAA, Boulder, Colorado 80302 and J. P. McClure, University of Texas at Dallas, Dallas, Texas 75230, April 1976, 10 pages, price 33 cents.

UAG-54 "Catalog of Ionosphere Vertical Soundings Data", prepared by Environmental Data Service, NOAA, Boulder, Colorado 80302, April 1976, 130 pages, price $2.10.

UAG-55 "Equivalent Ionospheric Current Representations by a New Method, Illustrated for 8-9 November 1969 Magnetic Disturbances", by Y. Kamide, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado 80302 and Geophysical Institute, University of Alaska, Fairbanks, Alaska 99701, H. W. Kroehl, Data Studies Division, NOAA/EDS/NGSDC, Boulder, Colorado 80302, M. Kanamitsu, Advanced Study Program, National Center for Atmospheric Research, Boulder, Colorado 80303, J. H. Allen, Data Studies Division, NOAA/EDS/NGSDC, Boulder, Colorado 80302, and S.-I. Akasofu, Geophysical Institute, University of Alaska, Fairbanks, Alaska 99701, April 1976, 91 pages, price $1.60.

UAG-56 "Iso-intensity Contours of Ground Magnetic H Perturbations for the December 16-18, 1971 Geomagnetic Storm", by Y. Kamide, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado 80302 and Geophysical Institute, University of Alaska, Fairbanks, Alaska 99701 (currently Guest worker at Data Studies Division, NOAA/EDS/NGSDC, Boulder, Colorado 80302), April 1976, 37 pages, price $1.39.

UAG-57 "Manual on Ionospheric Absorption Measurements", edited by K. Rawer, Institut für Physikalische Weltraumforschung, Freiburg, G.F.R., June 1976, 202 pages, price $4.27.

UAG-58 "ATS6 Radio Beacon Electron Content Measurements at Boulder, July 1974 - May 1975", by R. B. Fritz, Space Environment Laboratory (currently with Wave Propagation Laboratory), NOAA, Boulder, Colorado 80302 USA, September 1976, 61 pages, price $1.04.

UAG-59 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1974", by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Environmental Data Service, December 1976, 144 pages, price $2.16.

UAG-60 "Geomagnetic Data for January 1976 (AE(7) Indices and Stacked Magnetograms)" by J. H. Allen, C. C. Abston and L. D. Morris, NGSDC/EDS/NOAA, July 1977, 57 pages, price $1.07.

UAG-61 "Collected Data Reports for STIP Interval II 20 March - 5 May 1976", edited by Helen E. Coffey and John A. McKinnon, National Geophysical and Solar-Terrestrial Data Center, Environmental Data Service, August 1977, 313 pages, price $2.95.

UAG-62 "Geomagnetic Data For February 1976 (AE(7) Indices and Stacked Magnetograms)" by J. H. Allen, C. C. Abston and L. D. Morris, NGSDC/EDS/NOAA, September 1977, 55 pages, price $1.11.

UAG-63 "Geomagnetic Data for March 1976 (AE(7) Indices and Stacked Magnetograms)" by J. H. Allen, C. C. Abston and L. D. Morris, NGSDC/EDS/NOAA, September 1977, 57 pages, price $1.11.

UAG-64 "Geomagnetic Data for April 1976 (AE(8) Indices and Stacked Magnetograms)" by J. H. Allen, C. C. Abston and L. D. Morris, NGSDC/EDS/NOAA, February 1978, 55 pages, price $1.00.

UAG-65 "The Information Explosion and Its Consequences for Data Acquisition, Documentation, and Processing" by G. K. Hartmann, Max-Planck-Institut für Aeronomie, D-3411 Katlenburg-Lindau 3, GFR, May 1978, 36 pages, price 75 cents.

UAG-66 "Synoptic Radio Maps of the Sun at 3.3mm 1970-1973" by Earle B. Mayfield, Space Science Lab., and Fred I. Shimabukuro Electronics Res. Lab., The Ivan A. Getting Laboratories, The Aerospace Corp., El Segundo, California 90245, May 1978, 30 pages, price 75 cents.

UAG-67 "Ionospheric D-Region Profile Data Base, A Collection of Computer-Accessible Experimental Profiles of the D and Lower E Regions", by L. F. McNamara, Ionospheric Prediction Service, Sydney, Australia, August 1978, 30 pages, price 88 cents.

UAG-68 "A Comparative Study of Methods of Electron Density Profile Analysis", by L. F. McNamara, Ionospheric Prediction Service, Sydney, Australia, September 1978, 56 pages, price $1.41.

UAG-69 "Selected Disturbed D-Region Electron Density Profiles. Their relation to the undisturbed D region", by L. F. McNamara, Ionospheric Prediction Service, Sydney, Australia, October 1978, 50 pages, price $1.29.

UAG-70 "Annotated Atlas of Hα Synoptic Charts for Solar Cycle 20 (1964-1974) Carrington Solar Rotations 1487-1616", by Patrick S. McIntosh, Space Environment Laboratory, ERL/NOAA, February 1979, 327 pages, price $3.50.

UAG-71 "Magnetic Potential Plots Over the Northern Hemisphere for 26-28 March 1976", by A.D. Richmond, SEL/ERL/NOAA, H.W. Kroehl, NGSDC/EDIS/NOAA, M.A. Henning, Lockheed Missiles and Space Co., Aurora, CO, and Y. Kamide, Kyoto Sangyo Univ., Kyoto, Japan, April 1979, 115 pages, price $1.50.

WORLD DATA CENTER A
FOR
SOLAR-TERRESTRIAL PHYSICS

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

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