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Solar - Geophysical Data

NO. 409 SEPTEMBER 1978

Part II (Comprehensive Reports)

DATA FOR
MARCH 1978
FEBRUARY 1978
& MISCELLANEA

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

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SOLAR-GEOPHYSICAL DATA

No. 409

Issued in two parts

Helen E. Coffey, Editor

J. Virginia Lincoln, Chief
Solar-Terrestrial Physics Division

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A = Part I, B = Part II.

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

MARCH 1978 DATA

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ACTIVE REGIONS

CARRINGTON ROTATION 1665

(February 14 to March 13, 1978)

Region No.	Coordinates Lat.	Coordinates Long.	Age at CMP	IMP.	Spot-less Region	Region No. in Rotation 1654	Activity at West Limb
1	29°S	359°	+4	1	x		dispersed
2	25 N	358	-2	2			stable
3	24 S	352	>6	2		(3)	decreasing
4	26 S	349	>6	1	x	(2)	decreasing
5	23 S	334	-2	1	x		dispersed
6	31 S	332	>6	1	x		disappeared
7	21 S	330	>6	1	x		disappeared
8	26 N	314	-3	1	x		disappeared
9	22 N	301	>6	1	x		disappeared
10	17 N	300	+1	1	x		disappeared
11	31 N	282	>6	4			decreasing
12	19 N	261	>6	2			decreasing
13	24 N	261	>6	1	x		dispersed
14	21 N	250	>6	1	x	(6)	decreasing
15	22 S	240	>6	1	x		disappeared
16	20 N	229	-1	4			stable
17	23 N	220	>6	2			stable
18	39 N	191	>6	3			stable
19	18 S	185	>6	3			decreasing
20	19 N	178	>6	1	x		dispersed
21	17 S	168	>6	1	x	(12)	stable
22	17 N	167	>6	1	x		dispersed
23	23 S	158	>6	2			decreasing
24	29 S	155	>6	1	x	(15)	decreasing
25	29 N	145	>6	1	x		dispersed
26	23 S	139	>6	2			decreasing
27	24 N	140	>6	2		(17)	decreasing
28	40 S	136	>6	1	x		dispersed
29	23 S	94	+2	1	x		dispersed
30	15 N	79	>6	2			decreasing
31	22 N	78	>6	4		(22)	decreasing
32	38 S	78	>6	1	x		disappeared
33	28 N	64	>6	1	x	(28+25)	dispersed
34	29 N	61	>6	2			decreasing
35	18 N	34	>6	4		(27)	decreasing

ACTIVE REGIONS

CARRINGTON ROTATION 1666

(March 13 to April 9, 1978)

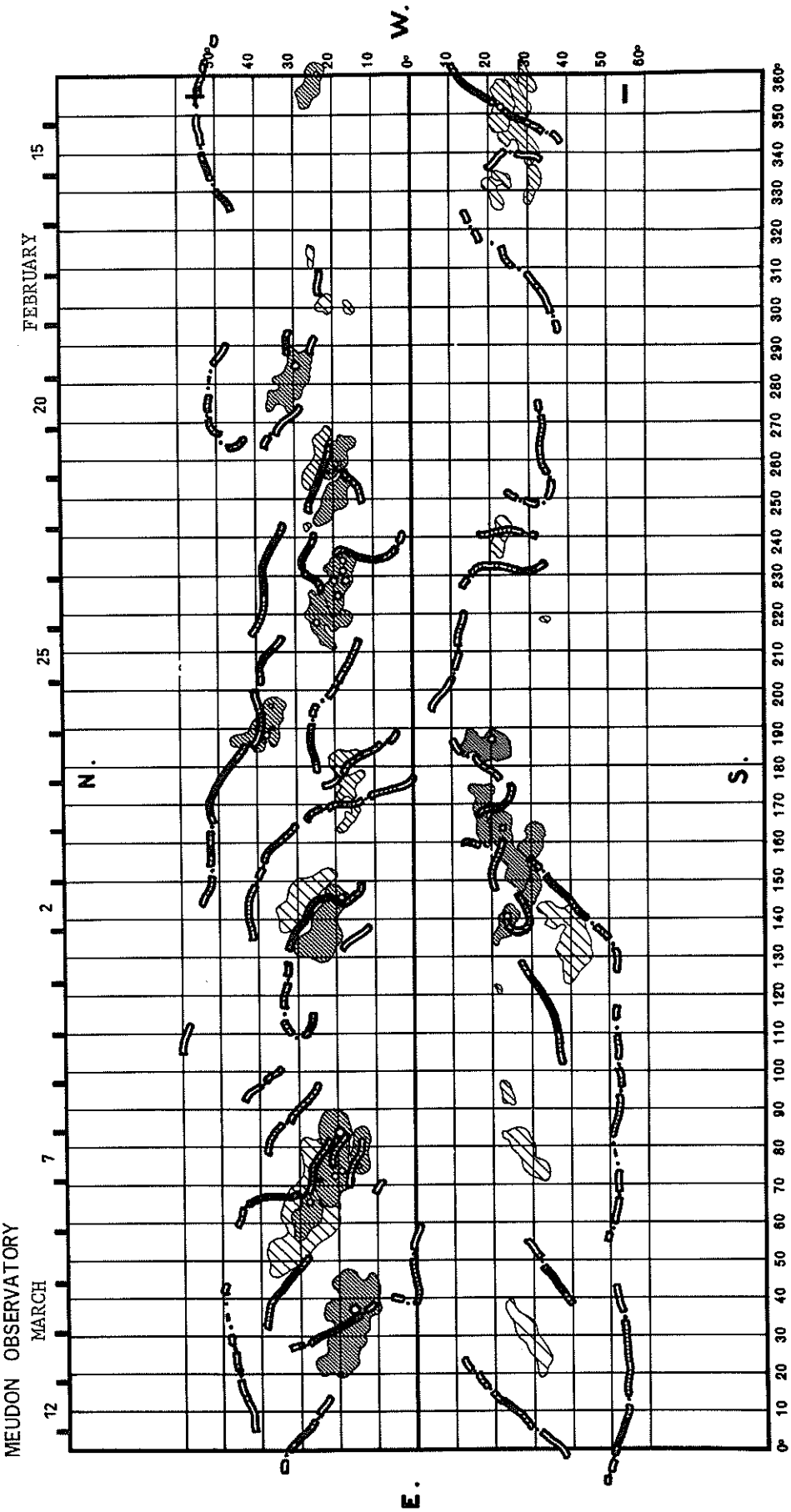
Region No.	Coordinates Lat.	Coordinates Long.	Age at CMP	IMP.	Spot-less Region	Region No. in Rotation 1665	Activity at West Limb
1	2°S	355°	>6	2			decreasing
2	26 N	351	>6	1	x	(2)	decreasing
3	16 N	350	>6	6			decreasing
4	27 S	346	>6	1	x	(4)	dispersed
5	30 N	341	>6	1	x		dispersed
6	24 S	324	-2	1	x		dispersed
7	31 S	316	>6	6			decreasing
8	18 N	286	+1	2			decreasing
9	39 S	278	-2	3			increasing
10	32 N	268	>6	3			decreasing
11	20 N	266	>6	3			decreasing
12	11 N	261	0	1	x		dispersed
13	26 N	258	+3	1	x		decreasing
14	38 N	255	>6	1	x		dispersed
15	32 S	254	+3	1	x		disappeared
16	25 N	246	>6	1	x	(14)	decreasing
17	32 N	246	>6	1	x	(13)	decreasing
18	22 N	231	>6	3		(16)	decreasing
19	31 S	225	+1	1	x		disappeared
20	25 N	220	>6	1	x	(16)	dispersed
21	34 N	218	+3	1	x		disappeared
22	26 N	211	>6	1	x	(17)	decreasing
23	29 S	204	>6	1	x		disappeared
24	15 S	194	>6	1	x		dispersed
25	30 S	193	0	3			stable
26	21 N	186	+5	1	x		dispersed
27	22 S	183	>6	2			decreasing
28	17 N	181	>6	2			decreasing
29	38 N	180	>6	1	x	(18)	dispersed
30	17 N	173	>6	2			decreasing
31	17 S	173	>6	1	x	(21)	dispersed
32	37 N	171	>6	2			decreasing
33	18 S	161	>6	1	x		decreasing
34	23 S	156	>6	1	x	(23)	dispersed
35	21 S	150	>6	1	x	(24)	decreasing
36	28 N	147	-3	1	x		stable
37	22 S	146	>6	1	x	(26)	decreasing
38	29 S	139	>6	1	x	(28)	decreasing
39	14 N	138	0	1	x		dispersed
40	29 N	137	>6	1	x		dispersed
41	21 N	136	>6	1	x		disappeared
42	38 N	134	>6	1	x		disappeared
43	11 N	130	-3	1	x		increasing
44	28 S	108	>6	1	x		disappeared
45	12 N	93	>6	1	x		decreasing
46	22 N	89	>6	1	x		decreasing
47	18 S	77	+5	2			decreasing
48	21 N	77	>6	1	x	(31)	stable
49	14 S	73	-2	1	x		dispersed
50	23 N	73	0	5			increasing
51	15 S	62	>6	2			decreasing
52	32 N	60	+6	2			decreasing
53	35 N	46	-2	1	x		stable
54	17 N	38	>6	4			decreasing
55	23 N	19	>6	4		(35)	decreasing
56	26 S	6	+5	2			decreasing
57	26 S	6	-2	2			decreasing
58	15 N	5	>6	2			decreasing
59	32 N	2	>6	1	x		dispersed

SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1665

FEBRUARY 14 TO MARCH 13, 1978

MEUDON OBSERVATORY

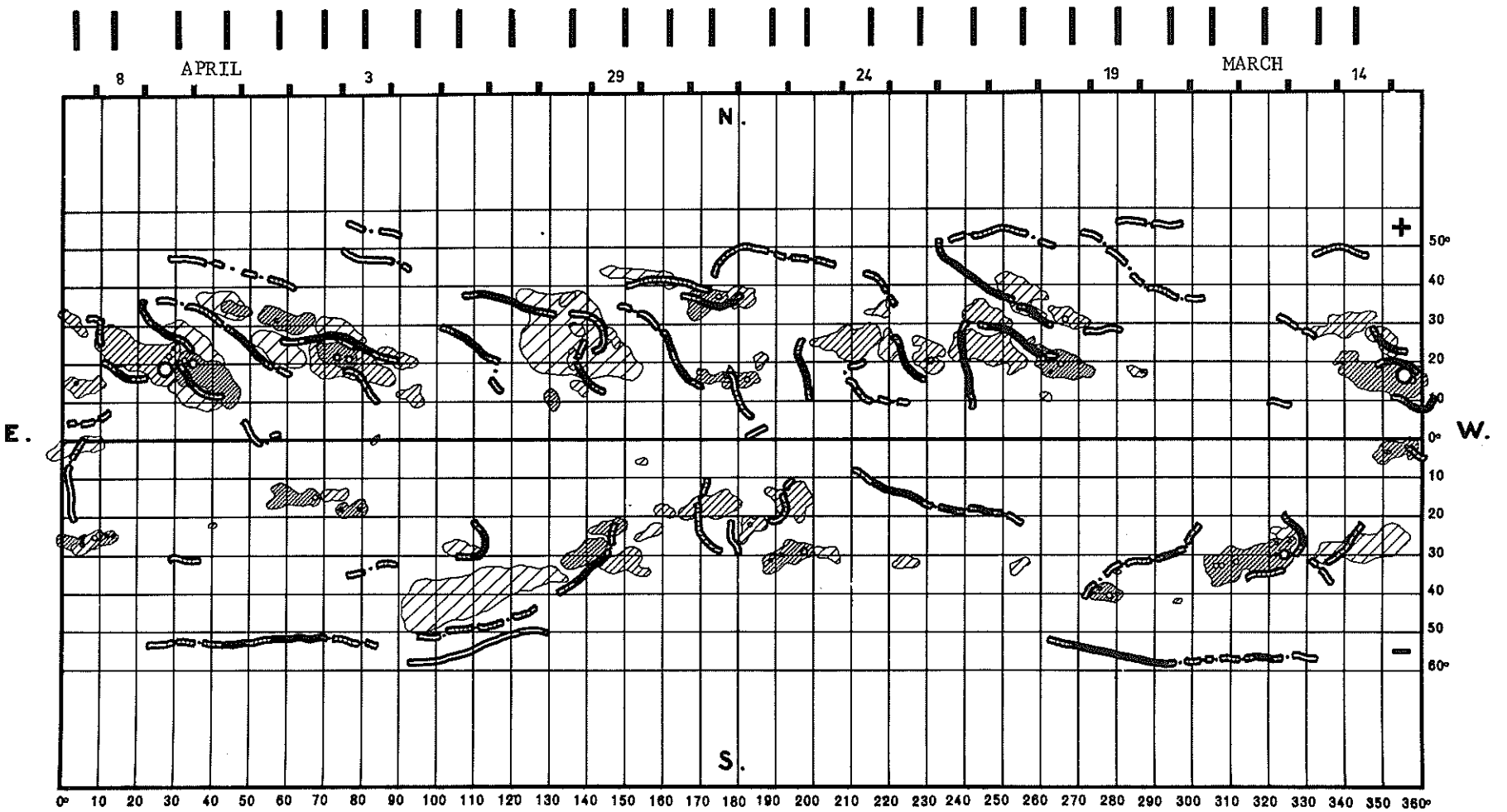


SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1666

MARCH 13 TO APRIL 9, 1978

MEUDON OBSERVATORY



7 Mar 78

Hα SOLAR FLARES

MARCH 1978

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	MAR																	
280 CULG	01	0350	0359U	0404D	N28	W85	1.000	15160	22.8	14D	-F		P	0359	40			Y5
281 ABST	01	1004	1008	1030	S19	W21	.400	15163	27.8	26	-N		P	1008	175	2.0	EU	Y5
	01	1051	1143	NO FLARE PATROL														
282 KANZ	01	1403E		1409	N19	E77	.985	15172	7.4	6D	-F							Y5
GRP66283	01	1424+2	1432+1	1455	N18	E81	.994	15172	7.7	31	-F						D	
KANZ	01	1424	1433	1449	N19	E77	.985	15172	7.4	25	-F							
MCMA	01	1426	1432	1501	N18	E85	.999	15172	8.0	35	-F		C	1432			D	
284 KANZ	01	1506	1532	1547D	N19	E76	.983	15172	7.3	41D	-F							Y5
GRP66285	01	1546+1	1548	1551	N36	W35	.812	15162	27.0	5	-N						D	
MCMA	01	1546	1548	1551	N37	W35	.819	15162	27.0	5	-N		C	1548	25	.5	D	
KANZ	01	1547		1547D	N36	W36	.818	15162	27.0		-F							
286 MCMA	01	1816	1817	1825	S22	E16	.364	15170	3.0	9	-N		C	1817	50	.5	EH	Y5
287 MCMA	01	1855	1907	1912D	N19	E82	.996	15172	7.9	17D	-F		C	1907			E	Y5
288 MCMA	01	1948	1951	1958	N19	E80	.993	15172	7.8	10	-N		C	1951			D	Y5
	01	2002	2056	NO FLARE PATROL														
	01	2147	2155	NO FLARE PATROL														
	01	2206	2222	NO FLARE PATROL														
289 CULG	01	2235	2308	2335	N35	W40	.835	15162	26.9	60	-N		C	2308	50	1.0	FK	Y5
290 CULG	01	2306	2309	2324	N19	E04	.446	15168	2.3	18	-F		C	2309	20	.2		Y5
291 CULG	01	2309	2322	2331	N16	W90	1.001	15161	23.2	22	-F		C	2322	20			Y5
292 CULG	01	2313	2325	2350	N39	W35	.834	15162	27.3	37	-F	*	C	2325	80	1.4	F	Y5
293 CULG	02	0206	0218	0300	S27	W07	.356	15166	1.6	54	-F		C	0218	90	1.0		Y5
294 CULG	02	0333	0333U	0341	S21	W35	.595	15163	27.5	8	-N		P	0333	30	.4		Y5
GRP66295	02	0358+3	0404+1	0420	N20	E73	.973	15172	7.6	22	1F				80		E	
CULG	02	0358	0405	0416D	N19	E71	.964	15172	7.5	18D	1F		P	0405	80			
MITK	02	0401	0404	0420	N22	E75	.985	15172	7.9	19	1N		C	0404	80		E	
296 ABST	02	0749	0753	0808D	N36	W45	.870	15162	27.0	19D	-F		P	0753	52	1.0	D	Y5
297 KANZ	02	0937	0941	0952	S20	W38	.629	15163	27.6	15	-F							Y5
298 LVOV	02	1127	1130	1150	N35	W49	.887	15162	26.8	23	-F		C	1130	100	2.0	EJ	Y5
299 KANZ	02	1228	1235	1239	N35	W44	.859	15162	27.2	11	-F							Y5
GRP66300	02	1320+3	1328+2	1355	N35	W49	.887	15162	26.9	35	1N				120	2.5	J	
KANZ	02	1320	1330	1351	N36	W49	.892	15162	26.9	31	-N							
MCMA	02	1322E	1329	1358D	N35	W48	.882	15162	27.0	36D	1N		C	1329	100	2.7	F	
LVOV	02	1323	1328	1355	N35	W51	.898	15162	26.7	32	1F		C	1328	150	3.6	EJ	
301 KANZ	02	1432		1509	N35	W48	.882	15162	27.0	37	-F							Y5
302 KANZ	02	1436	1446	1458	S19	W40	.650	15163	27.6	22	-F							Y5
	02	1524	1530	NO FLARE PATROL														
	02	1553	2055	NO FLARE PATROL														
GRP66303	02	2055+2	2058+3	2120	N35	W52	.904	15162	27.0	25	-N						F	
CULG	02	2055E	2058U	2120	N35	W55	.919	15162	26.7	25D	1N		P	2058	110	2.4	FT	
RAMY	02	2057	2101	2103D	N35	W50	.893	15162	27.1	6D	-N		C	2101		.3		
	02	2139	2148	NO FLARE PATROL														
304 CULG	02	2205	2216	2240	N37	W50	.901	15170	27.2	35	-N	*	C	2216	80	1.8	FTE	Y5
305 CULG	02	2233	2248	2315	S23	E01	.272	15170	3.0	42	-N		C	2248	60	.6	L	Y5
GRP66306	02	2237>9	2304 2313	2326	N37	W52	.911	15170	27.0	49	1F						FK	
PALE	02	2237	2304	2324	N39	W53	.923	15170	27.0	47	1F	*	C	2304		1.6		
CULG	02	2248	2313U	2327	N35	W51	.898	15170	27.1	39	1F	*	C	2313	140	3.1	FKT	

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	MAR																	
307 CULG	02	2316	2435U	0435	S35	E19	.542		4.4	319	1F		C	2435	200	2.4	S	Y5
GRP66308	02	2328+0	2330+1	2338	N34	W49	.883	15162	27.3	10	1B						JV	
MANI	02	2328	2330	2336	N34	W49	.883	15162	27.3	8	-N		V		50			
CULG	02	2328	2331	2341	N34	W48	.877	15162	27.4	13	1B		C	2331	100	2.2	VTJ	
PALE	02	2328	2331	2338	N39	W53	.923	15162	27.0	10	1B		C	2331		1.7		
309 CULG	03	0220	0225	0233	N33	W50	.885	15162	27.3	13	-N		C	0225	40	.9	T	Y5
310 CULG	03	0239	0241	0253	N22	W90	1.001	15161	24.4	14	1N		C	0241	50			Y5
GRP66311	03	0445+1	0449+0	0504	S23	W02	.274	15170	3.0	19	-N				80	.8		
CULG	03	0445	0449	0507	S23	W02	.274	15170	3.0	22	-N		C	0449	70	.7		
MITK	03	0446	0449	0500	S23	W03	.276	15170	3.0	14	-N		C	0449	90	1.0		
GRP66312	03	0458>9	0525 0543	0554	N36	W53	.913	15162	27.2	56	1F						FJZ	
CULG	03	0458	0525	0554	N35	W53	.909	15162	27.2	56	1F		C	0525	130	2.9	T	
ABST	03	0541	0543	0548	N39	W55	.932	15162	27.1	7	1F		C	0543	96		FJZ	
ABST	03	0546	0548	0554	N35	W52	.904	15162	27.3	8	-F		C	0548	87	2.0	DJ	
313 ABST	03	0618E	0624	0626D	N18	E56	.872	15172	7.5	8D	-F		P	0624	96	1.9	EJ	Y5
314 ABST	03	0700	0704	0713	N28	E69	.967	15172	8.5	13	1F		C	0704	87		DJ	Y5
GRP66315	03	0719+0	0723+3	0745	N18	E52	.840	15172	7.2	26	-N						EJ	
ABST	03	0719	0723	0748	N18	E52	.840	15172	7.2	29	1N		C	0723	183	3.4	EJ	
KANZ	03	0719	0726	0741	N18	E53	.849	15172	7.3	22	-F							
316 ABST	03 IMP.1 NO	0751	0754 KANZ2	0803 CATA2	S14	W58	.841	15163	27.0	12	?F		P	0754	192	3.6	EU	Y5
GRP66317	03	0800+3	0821+5	0838	S25	W15	.388	15166	2.2	38	-F						DG	
ABST	03	0800	0821	0835D	S25	W15	.388	15166	2.2	35D	-F		P	0821	79	.9	DG	
KANZ	03	0803	0826	0838	S25	W15	.388	15166	2.2	35	-F						D	
318 ABST	03	0929E	0931	0939D	N17	E58	.885	15172	7.7	10D	-F		C	0931	87	1.8	DJ	Y5
319 ABST	03	1054	1059	1101D	S14	W62	.876	15163	26.8	7D	-N		P	1059	87	1.8	D	Y5
GRP66320	03	1132+8	1140 1148	1231	S26	W04	.328	15170	3.2	59	-B							
MONT	03	1132	1148	1226	S25	W04	.312	15170	3.2	54	-N		C	1148	80			
CATA	03	1140	1140	1235	S27	W05	.347	15170	3.1	55	1B	2	C	1140	196	2.1		
	03	1355	1405	NO FLARE PATROL														
	03	1456	1505	NO FLARE PATROL														
	03	1625	1639	NO FLARE PATROL														
	03	1835	1948	NO FLARE PATROL														
321 MCMA	03	1925E		1959D	N18	E48	.806	15172	7.4	34D	-N		P	1925	80	1.4	E	Y5
	03	1959	2054	NO FLARE PATROL														
322 MCMA	03	2103E		2111D	N36	W63	.957	15162	27.2	8D	-N		P	2106	25	.9	D	Y5
323 CULG	03	2203	2206	2217	N39	W66	.972	15162	27.0	14	-N		C	2206	50			Y5
	03	2218	2222	NO FLARE PATROL														
324 CULG	04	0004	0014	0023	N35	W88	1.001		25.4	19	-N		C	0014	20			Y5
325 CULG	04	0012	0019	0026	S34	E52	.817	15173	7.9	14	-F		C	0019	20	.2		Y5
GRP66326	04	0020>9	0052+3	0114D	N17	E44	.764	15172	7.3	54	1N				180	2.7	F	
CULG	04	0020	0053	0220	N15	E45	.764	15172	7.4	120	1B		C	0053	150	2.3	F	
MITK	04	0046	0052	0114	N17	E43	.754	15172	7.3	28	1N		C	0052	220	3.4	E	
MANI	04	0053	0055	0100D	N18	E44	.769	15172	7.3	7D	1N		V		180	2.8	F	
327 CULG	04	0028	0034	0109	N16	E30	.612		6.3	41	-F		C	0034	40	.5		Y5
GRP66328	04	0232	0246	0400	N25	E51	.859	15172	7.9	88	1N						F	
CULG	04	0232	0246	0400	N25	E53	.873	15172	8.1	88	1N		C	0246	190	3.8		
MANI	04	0258E	0258U	0304D	N26	E49	.848	15172	7.8	6D	1N		P		200	3.6	F	
329 CULG	04	0550	0602	0614	S27	W13	.396	15170	3.3	24	-N		C	0602	70	.8		Y5

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE MAR	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
GRP66330	04	0720E	0725	0747	S16	W71	.939	15163	27.0	27	-F						FJK	
ABST	04	0720E	0725	0747	S16	W71	.939	15163	27.0	27D	1F		P	0725	87		FJK	
KANZ	04	0725E		0747	S16	W72	.944	15163	26.9	22D	-F							
331 ABST	04	0842	0844	0849	N18	E41	.740	15172	7.4	7	-F		C	0844	96	1.4	EJ	Y5
332 ABST	04	1027	1032	1042	N18	E40	.730	15172	7.4	15	-F		C	1032	79	1.1	DJ	Y5
GRP66333	04	1215>9	1225 1232	1347	N18	E39	.720	15172	7.4	92	1N						FIJ	
CATA	04	1215	1225	1230D	N18	E39	.720	15172	7.4	15D	1B	2	P	1225	224	3.3		
KANZ	04	1221		1340D	N18	E39	.720	15172	7.4	79D	-N							
LVOV	04	1227	1232	1320	N17	E39	.714	15172	7.4	53	1F		C	1232	150	2.3	EIJ	
WEND	04	1229E		1353	N17	E39	.714	15172	7.4	84D	1N		P		500	7.2	FT	
MCMA	04	1306E		1430D	N18	E39	.720	15172	7.5	84D	1N		C	1322	135	2.0	F	
334 LVOV	04	1246	1248	1300	N37	W67	.972	15162	27.5	14	1F		C	1248	100		DH	Y5
335 MCMA	04	1310	1317	1329	N38	W72	.986	15162	27.1	19	-N		C	1317			D	Y5
GRP66336	04	1320>9	1340+0	1418	S18	W75	.959	15163	26.9	58	-N				40		D	
MCMA	04	1320	1340	1430D	S18	W75	.959	15163	26.9	70D	-N		C	1340	30	1.2	D	
LVOV	04	1335	1340	1406	S18	W76	.964	15163	26.9	31	-F		C	1340	50		D	
KANZ	04	1340E		1340D	S15	W75	.960	15163	26.9		-N							
GRP66337	04	1540	1545	1555	N38	W70	.982	15162	27.4	15	-B						DH	
MCMA	04	1540	1545	1555	N38	W70	.982	15162	27.4	15	-B		C	1545			DH	
WEND	04	1546E		1553D	N37	W73	.988	15162	27.2	7D	1N		V		500	25.0	D	
CATA	04	1550E	1550	1550D	N38	W66	.971	15162	27.7		-B	1	P	1550	56			
338 MCMA	04	1618		1637	N38	W80	.998	15162	26.7	19	-F		C	1620			D	Y5
339 MCMA	04	1642E	1645	1648D	N38	W70	.982	15162	27.4	60	-N		C	1645			D	Y5
340 MCMA	04	1743	1755	1826D	N18	E36	.689	15172	7.4	43D	-N		C	1755	40	.5	E	Y5
	04	1826	1837	NO FLARE PATROL														
	04	2000	2045	NO FLARE PATROL														
341 CULG	04	2325	2345	0001	S25	W75	.958	15163	27.4	36	-F		C	2345	40			Y5
342 VORO	05	0031	0033	0043	N18	E30	.628	15172	7.3	12	-B		C	0033	27	.3	E	Y5
343 CULG	05	0433	0456	0517	N19	E40	.736	15172	8.2	44	-F		C	0456	100	1.4	F	Y5
GRP66344	05	0520>9	0534	0552	N17	E30	.620	15172	7.5	32	-N						FI	
CULG	05	0520	0552U	0605	N18	E33	.659	15172	7.7	45	1F		C	0552	150	2.0	FI	
MITK	05	0532	0534	0538	N17	E27	.589	15172	7.3	6	-N		C	0534	80	1.0		
	05	1001	1004	NO FLARE PATROL														
	05	1007	1122	NO FLARE PATROL														
345 MCMA	05	1248	1250	1252	N28	E33	.738	15172	8.0	4	-F		C	1250	25	.4	D	Y5
346 MCMA	05	1259	1300	1303	N24	E25	.638	15172	7.4	4	-N		C	1300	30	.5	D	Y5
347 MCMA	05	1430	1445	1520	N23	E28	.653	15172	7.7	50	-N		C	1445	25	.4	D	Y5
	05	1718	1805	NO FLARE PATROL														
	05	1935	1954	NO FLARE PATROL														
	05	2002	2043	NO FLARE PATROL														
348 CULG	05	2153	2159	2216	S27	W90	.998	15163	27.2	23	-F		C	2159	20			Y5
	05	2218	2224	NO FLARE PATROL														
GRP66349	06	0148+2	0156+3	0229	N13	E19	.465	15172	7.5	41	-N				150	1.7	J	
CULG	06	0148	0159	0251	N12	E19	.454	15172	7.5	63	-N		C	0159	80	.9	F	
MANI	06	0149	0156	0207	N13	E19	.465	15172	7.5	18	-F		P		150	1.7	F	
MITK	06	0150	0156	0227	N13	E18	.454	15172	7.4	37	1N		C	0156	180	2.1	E	
VORO	06	0218E		0230	N13	E22	.497	15172	7.7	12D	-B		C	0218	63	.7	CEJ	
350 CULG	06	0629	0633	0642	N18	W53	.849	15168	2.3	13	-N		C	0633	20	.2		Y5
351 CULG	06	0707	0709	0711	S24	W90	.999	15163	27.5	4	-N		C	0709	20			Y5

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY			COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	MAR									MIN.								
GRP66352	06	0742+2	0751 0758	0801	N13	E15	.425	15172	7.4	19	-F						E	
CULG	06	0742	0758	0802D	N13	E15	.425	15172	7.4	20D	-F		C	0758	60	.7		
HTPR	06	0744	0751	0800	N13	E15	.425	15172	7.4	16	-F		C	0751	60	.6	E	
353 CATA	06	0745	0745	0750	S20	W65	.899	15166	1.4	5	-N	2	C	0745	56	1.3		Y5
354 HTPR	06	0803	0813	0835	N13	E15	.425	15172	7.5	27	-F		C	0813	60	.6	E	Y5
355 HTPR	06	1107E		1113	N20	E14	.508	15172	7.5	6D	-F		C	1111	10	.1		Y5
GRP66356	06	1125+2	1159>9	1418D	N26	E20	.623	15172	8.0	173	2B				900	11.3	FIKLU	
HTPR	06	1125	1205	1418	N25	E20	.611	15172	8.0	173	2B		C	1205	800	10.4	EFIKLU	
MONT	06	1127	1159	1413D	N28	E22	.658	15172	8.1	166D	2B		C	1159	1000		F	
CATA	06	1135	1215	1230D	N25	E18	.598	15172	7.8	55D	3B	2	P	1215	1405	18.0		
MCMA	06	1343E	*	1630D	N26	E14	.587	15172	7.6	167D	1N		P	1415	350	4.4	BFU	
	06	1444	1510	NO FLARE PATROL														
357 HTPR	06	1511	1517	1538	N13	E12	.399	15172	7.5	27	-F		C	1517	60	.6	E	Y5
	06	2005	2102	NO FLARE PATROL														
	06	2106	2124	NO FLARE PATROL														
	06	2133	2256	NO FLARE PATROL														
358 VORO	07	0119	0124	0134	N13	E04	.352	15172	7.4	15	-B		C	0124	36	.4	DJ	Y5
359 VORO	07	0246	0247	0255	N18	W02	.428	15172	7.0	9	-N		C	0247	18	.2	D	Y5
GRP66360	07	0555	0558+4	0607	N16	E47	.788	15175	10.8	12	-N						FJ	
ABST	07	0555	0558	0607	N17	E47	.792	15175	10.8	12	1N		C	0558	175	2.9	FJ	
MANI	07	0601E	0602	0607D	N15	E47	.784	15175	10.8	6D	-F		V		30	.4		
361 ABST	07	0808	0811	0835	S25	W55	.822	15170	3.2	27	-F		C	0811	87	1.5	DG	Y5
GRP66362	07	0818+2	0822+1	0838	N18	E48	.806	15175	10.9	20	-F						DJ	
HTPR	07	0818	0822	0831	N18	E48	.806	15175	10.9	13	-F		C	0822	10	.1		
ABST	07	0820	0823	0845	N19	E49	.819	15175	11.0	25	-F		C	0823	87	1.5	DJ	
363 HTPR	07	1055	1058	1103	N15	E43	.744	15175	10.7	8	-F		C	1058	10	.1		Y5
364 HTPR	07	1204	1212	1218	N18	E46	.787	15175	11.0	14	-F		C	1212	10	.1		Y5
365 HTPR	07	1214	1217	1223	N16	E43	.749	15175	10.7	9	-F		C	1217	30	.4	E	Y5
	07	1703	1713	NO FLARE PATROL														
	07	1822	2054	NO FLARE PATROL														
	07	2112	2128	NO FLARE PATROL														
	07	2130	2139	NO FLARE PATROL														
	07	2210	2218	NO FLARE PATROL														
	07	2225	2235	NO FLARE PATROL														
GRP66366	08	0057+1	0102+2 0250	0252	N13	W09	.377	15172	7.4	115	-N						JK	
VORO	08	0057	0102	0110	N14	W08	.386	15172	7.4	13	-B		C	0102	108	1.2	EJK	
MANI	08	0058	0104	0331	N13	W09	.377	15172	7.4	153	1F		P		320	3.5	F	
CULG	08	0246	0250	0252	N12	W11	.377	15172	7.3	6	-F		P	0250	20	.2		
367 ABST	08	0704E	0706	0711	S23	W81	.981	15166	2.2	7D	?F		P	0706	79		D	Y5
	IMP.1 NO 3 CATA2																	
GRP66368	08	0747+6	0753+1	0758	N18	E31	.638	15175	10.6	11	-F						DJY	
KANZ	08	0747	0753	0757	N18	E30	.628	15175	10.6	10	-F						D	
ABST	08	0753	0754	0759	N18	E32	.649	15175	10.7	6	-F		C	0754	87	1.1	DJY	
369 KANZ	08	0856	0904	0907	N21	W17	.542	15172	7.1	11	-F						D	Y5
370 KANZ	08	0907	0918	0922	N16	E26	.569	15175	10.3	15	-F							Y5
371 ABST	08	1035E	1035	1041	S05	E78	.976	15177	14.3	6D	-F		P	1035	70		BD	Y5
372 HTPR	08	1101	1106	1125	N17	E26	.578	15175	10.4	24	-F		C	1106	20	.2	E	Y5
373 KANZ	08	1227	1231	1241	S32	E90	.998	15181	15.3	14	-N							Y5
374 MCMA	08	1330	1334	1338D	N28	W06	.584	15172	8.1	8D	-F		C	1334	25	.3	D	Y5

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE MAR	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
375 KANZ	08	1545	1551	1551	N11	E70	.951	15176	13.9	6	-F							Y5
376 MCMA	08	1621	1622	1626	S05	E71	.943	15177	14.0	5	-F		C	1622	20	.6	D	Y5
	08	1756	1841	NO FLARE PATROL														
377 MCMA	08	1917	1920	1926	N18	E20	.531	15175	10.3	9	-N		C	1920	25	.3	OH	Y5
378 MCMA	08	1942	1943	1948	N18	E20	.531	15175	10.3	6	-N		C	1943	35	.4	E	Y5
	08	2003	2052	NO FLARE PATROL														
	08	2201	2207	NO FLARE PATROL														
379 CULG	08	2207E	2207	2220	N18	E18	.513	15175	10.3	13D	-F		P	2207	20	.2		Y5
380 CULG	09	0007	0008	0029	N28	W04	.580	15172	8.7	22	-N		C	0008	10	.1		Y5
381 CULG	09	0055	0110	0137	S27	W36	.635	15174	6.3	42	-N		C	0110	40	.4		Y5
382 CULG	09	0240	0248	0303	S31	E90	.998	15178	15.9	23	-N		C	0248	20			Y5
383 CULG	09	0347	0352	0410	S34	W28	.604	15173	7.1	23	-N		C	0352	40	.5		Y5
384 CULG	09	0405	0408	0420	S29	E90	.998	15178	15.9	15	-N		C	0408	20			Y5
385 CULG	09	0634E	0637	0648	S33	E90	.998	15178	16.0	14D	-N		C	0637	20			Y5
386 CULG	09	0635	0646	0657	S35	W26	.596	15173	7.3	22	-F		C	0646	40	.5	S	Y5
GRP66387	09	0810E	0810+5 0821	0824	N18	E14	.481	15175	10.4	14	-N				60	.7	D	
CATA	09	0810E	0815	0820D	N18	E14	.481	15175	10.4	10D	-B	2	P	0815	56	.6		
MANI	09	0810E	0810U	0824	N18	E14	.481	15175	10.4	14D	-N		V		80	.9		
KANZ	09	0811E	0811	0822D	N19	E14	.495	15175	10.4	11D	-N							
HTPR	09	0812E		0824	N19	E14	.495	15175	10.4	12D	-N		C	0814	50	.5		
ABST	09	0817E	0821	0827	N18	E14	.481	15175	10.4	10D	-F		P	0821	87	1.0	D	
GRP66388	09	0818+1	0821	0833	S02	E60	.866	15177	13.8	15	-F						E	
KANZ	09	0818		0822D	S02	E60	.866	15177	13.8	4D	-F							
ABST	09	0819	0821	0833	S03	E61	.873	15177	13.9	14	1F		C	0821	105	2.1	E	
GRP66389	09	0823+3	0828+2 0839+8	0855	N29	W12	.616	15172	8.4	32	-N						K	
HTPR	09	0823	0828	0902	N29	W12	.616	15172	8.4	39	-N		C	0840	80	.9		
ABST	09	0824	0834	0836D	N29	W10	.609	15172	8.6	12D	-F		P	0834	96	1.2	FK	
ABST	09	0826	0828	0834	N35	W14	.698	15172	8.3	8	-F		C	0828	87	1.2	D	
ABST	09	0826	0829	0836D	N27	W11	.586	15172	8.5	10D	-F		P	0829	114	1.4	F	
KIEV	09	0827E	0846	0912D	N30	W10	.622	15172	8.6	45D	1N		C	0846	350	4.4	E	
ATHN	09	0827E	0839	0840D	N25	W14	.574	15172	8.3	13D	-F			0839	66	.8		
KANZ	09	0828E	0847	0854	N30	W12	.629	15172	8.5	26D	-N							
MANI	09	0828E	0830	0905D	N23	W13	.542	15172	8.4	37D	-N		V		150	1.8		
KANZ	09	0828E		0832	N36	W12	.703	15172	8.5	4D	-F							
CATA	09	0830E	0840	0900D	N30	W10	.622	15172	8.6	30D	2B	2	P	0840	393	5.1		
LOCA	09	0840E	0840	0905	N28	W10	.595	15172	8.6	25D	1N		S	0840	204	2.6		
KHAR	09	0844E	0844	0900D	N28	W12	.603	15172	8.5	16D	-F		P				E	
GRP66390	09	0948+2	0952+1	1010	N12	E53	.830	15176	13.4	22	-F						D	
HTPR	09	0948	0952	1011	N13	E52	.824	15176	13.3	23	-F		C	0952	20	.3		
KANZ	09	0949	0953	1008	N12	E53	.830	15176	13.4	19	-F						D	
CATA	09	0950	1000	1000D	N12	E53	.830	15176	13.4	10D	-B	2	P	1000	39	.7		
KHAR	09	0953E	0953	1010D	N12	E55	.848	15176	13.5	17D	-F		C				D	
GRP66391	09	0955>9	1015+2	1044	S37	E90	.997	15178	16.2	49	-N							
KHAR	09	0955E	1017	1050D	S37	E90	.997	15178	16.2	55D	1F		P					
KANZ	09	1008	1015	1037	S38	E90	.997	15178	16.2	29	-N							
392 KANZ	09	1200	1208	1220	S32	E90	.998	15178	16.3	20	-N							Y5
393 MCMA	09	1252	1254	1301	N19	E12	.481	15175	10.4	9	-N		C	1254	50	.6	D	Y5
394 MCMA	09	1840		1844D	S35	E90	.997	15178	16.5	4D	-F		C	1840			EH	Y5
395 MCMA	09	1913	1915	1935	S35	E90	.997	15178	16.6	22	-F		C	1915			H	Y5
396 MCMA	09	1928	1933	1938	N26	W26	.666	15172	7.9	10	-N		C	1933	15	.2	D	Y5
	09	2004	2046	NO FLARE PATROL														

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	MAR																	
GRP66397	09	2103+3	2107+1	2120	N16	E05	.403	15175	10.3	17	-B				50	.5	E	
MCMA	09	2103	2108	2120	N17	E05	.418	15175	10.3	17	-B		C	2108	50	.6	E	
CULG	09	2106	2107	21150	N16	E05	.403	15175	10.3	90	-B		C	2107	50	.5		
	09	2159	2218	NO FLARE PATROL														
	09	2232	2240	NO FLARE PATROL														
398 CULG	10	0049	0050	0103	N14	E54	.845	15176	14.1	14	-F		C	0050	60	1.0	F	Y5
GRP66399	10	0104+1	0107 0115	0145	N13	E45	.756	15176	13.4	41	-N						FV	
CULG	10	0104	0115	0145	N13	E44	.745	15176	13.3	41	1N		C	0115	220	3.3	V	
MANI	10	0105	0107	01340	N13	E46	.766	15176	13.5	290	-N		P		130	2.0	F	
	10	0135	0136	NO FLARE PATROL														
400 CULG	10	0530E	0530E	0553	N15	E00	.378	15175	10.2	230	-N		P	0530	30	.3		Y5
401 CULG	10	0542	0551	0553	N27	W26	.676	15172	8.3	11	-F		C	0551	40	.5		Y5
402 CULG	10	0628	0655U	07070	N27	W25	.668	15172	8.4	390	-N		P	0655	120	1.6	F	Y5
403 CULG	10	0657	0702	0707D	N18	E01	.427	15175	10.4	100	-B		P	0702	90	1.0		Y5
GRP66404	10	0750+5	0756+1	0804	S32	E79	.974	15178	16.3	14	-N						E	
KANZ	10	0750	0757	0804	S31	E80	.977	15178	16.3	14	-N							
MONT	10	0753	0756	0807	S33	E82	.983	15178	16.5	14	-N		C	0756	60		E	
HTPR	10	0755	0756	0800	S32	E76	.963	15178	16.0	5	-F		C	0756	20			
GRP66405	10	0830+5	0833+3	0844	N16	W02	.396	15175	10.2	14	-N				120	1.3	D	
KANZ	10	0830	0834	0838	N16	W02	.396	15175	10.2	8	-N							
HTPR	10	0830	0836	0843	N17	W02	.412	15175	10.2	13	-N		C	0836	70	.7		
MONT	10	0830	0833	0845	N16	W01	.395	15175	10.3	15	-N		C	0833	150		D	
CATA	10	0835	0835	0845	N16	W02	.396	15175	10.2	10	-B	2	C	0835	140	1.5		
GRP66406	10	0852+2	0856+1	0912	S33	E85	.990	15178	16.7	20	-F						D	
KANZ	10	0852	0856	0922	S33	E86	.992	15178	16.8	30	-F							
MONT	10	0854	0857	0902	S34	E85	.990	15178	16.7	8	-F		C	0857	20		D	
GRP66407	10	0925		0942	N14	E47	.780	15176	13.9	17	-N							
CATA	10	0925	0930	09300	N13	E47	.776	15176	13.9	50	-B	2	P	0930	56	.9		
HTPR	10	0928E		0942	N15	E48	.794	15176	14.0	140	-F		C	0931	20	.3		
GRP66408	10	1052+1	1053+3	1110	S34	E79	.974	15178	16.4	18	-N						ELP	
KANZ	10	1037	1056	1118	S37	E80	.977	15178	16.4	41	-N						EPL	
HTPR	10	1052	1053	1101	S32	E74	.954	15178	16.0	9	-F		C	1053	20			
MONT	10	1053	1055	10570	S34	E83	.985	15178	16.7	40	-N		C	1055	60			
409 MONT	10	1150	1152	1158	S30	E85	.990	15178	16.9	8	-F		C	1152	40		E	Y5
GRP66410	10	1155+6	1200+3	1215	N17	W02	.412	15175	10.3	20	-N				40	.4		
KANZ	10	1155	1200	1217	N19	E00	.442	15175	10.5	22	-F							
HTPR	10	1159	1203	1221	N17	W04	.416	15175	10.2	22	-N		C	1203	60	.6		
MONT	10	1200	1202	1213	N16	W03	.398	15175	10.3	13	-F		C	1202	40		D	
RAMY	10	1201	1202	1213	N17	W01	.411	15175	10.4	12	-B	3	C		29		F	
411 RAMY	10	1216	1218	1234	N26	W24	.651	15172	8.7	18	-B	3	C		18		F	Y5
412 RAMY	10	1239	1242	1246	N26	W24	.651	15172	8.7	7	-N	3	C		31		F	Y5
413 KANZ	10	1311	1348	1407	S28	W90	.998	15170	3.8	56	-N							Y5
GRP66414	10	1358+2	1404+3	1432	N12	E38	.674	15176	13.4	34	-F				25	.3	D	
MCMA	10	1358	1407	1417D	N12	E39	.686	15176	13.5	190	-N		C	1407	25	.3	D	
HTPR	10	1400	1404	1432	N13	E38	.680	15176	13.4	32	-F		C	1404	20	.2		
415 HTPR	10	1451	1453	1454	N16	W06	.407	15175	10.2	3	-F		C	1453	20	.2		Y5
416 RAMY	10	1505	1505	1517	S26	E78	.971	15178	16.5	12	-N	3	C		14			Y5
417 RAMY	10	1519	1522	1528	S31	E78	.970	15178	16.5	9	-N	3	C		45			Y5
GRP66418	10	1637+4	1643 1715+4	1749	S32	E77	.967	15178	16.5	72	-B				30		E	
RAMY	10	1637	1719	1749	S31	E77	.967	15178	16.5	72	-B	2	C		33			
MCMA	10	1641	1643	1655	S33	E77	.967	15178	16.5	14	-B		C	1643	40	1.8	E	
MCMA	10	1705	1715	17170	S33	E77	.967	15178	16.5	120	-N		C	1715	25	1.0	E	

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	MAR																	
GRP66419	10	1658+0	1700	1717D	N27	E61	.929	15179	15.3	19	-F		C		20		E	
HTPR	10	1658		1706D	N28	E62	.936	15179	15.4	8D	-F		C	1703	20	.4		
MCMA	10	1658	1700	1717D	N27	E60	.923	15179	15.2	19D	-F		C	1700	20	.7	E	
	10	1717	1727	NO FLARE PATROL														
	10	1814	1825	NO FLARE PATROL														
420 MCMA	10	1915	1917	1920	S33	E76	.963	15178	16.5	5	-N		C	1917	30	1.2	E	Y5
GRP66421	10	1915E	1926+0	1954	N14	W04	.368	15175	10.5	39	-N				35	.4	L	
MCMA	10	1915E	1926	1950	N13	W05	.356	15175	10.4	35D	-N		C	1926	30	.3	EL	
PALE	10	1923E	1926U	1958D	N15	W04	.384	15175	10.5	35D	-N	3	C		40		F	
	10	2004	2103	NO FLARE PATROL														
422 CULG	10	2210	2217	2255	S34	E77	.967	15178	16.7	45	2N		C	2217	280		FI	Y5
GRP66423	10	2256>9	2330+1	2349	N26	W34	.730	15172	8.4	53	-F				110	1.6		
CULG	10	2256	2331	0000	N27	W34	.737	15172	8.4	64	-N		C	2331	110	1.7		
MITK	10	2329	2330	2337	N26	W35	.738	15172	8.4	8	-F		C	2330	110	1.7		
424 CULG	10	2359	2403	0015	S34	E73	.950	15178	16.5	16	-F		C	2403	50			Y5
425 CULG	11	0144	0149	0155	S04	E36	.587	15177	13.8	11	-F		C	0149	50	.6		Y5
426 CULG	11	0231U	0257U	0500U	N12	E33	.616	15176	13.6	149D	-F		C	0257	60	.7	IS	Y5
427 CULG	11	0323	0327	0336	N12	W08	.355	15175	10.5	13	-F		C	0327	30	.3		Y5
GRP66428	11	0404+5	0413+2	0450	N24	W38	.749	15172	8.3	46	1N				150	2.2	EJ	
CULG	11	0404	0415	0508	N24	W37	.740	15172	8.4	64	-N		C	0415	110	1.7	F	
VORO	11	0405	0413	0442	N28	W38	.776	15172	8.3	37	1N		C	0413	134	2.2	EJ	
MITK	11	0409	0414	0450	N24	W38	.749	15172	8.3	41	1B		C	0414	220	3.4	E	
429 CULG	11	0446	0450	0500	N18	W09	.450	15175	10.5	14	-F		C	0450	40	.4		Y5
430 CULG	11	0504	0506	0511	N18	W10	.455	15175	10.5	7	-F		C	0506	30	.3	F	Y5
431 CULG	11	0659	0705	0723	N28	E50	.864	15179	15.0	24	-F		C	0705	40	.8		Y5
GRP66432	11	0733+2	0736+4	0754	S34	E67	.920	15178	16.3	21	-N				70		E	
CULG	11	0733	0739	0741D	S34	E70	.936	15178	16.6	8D	-N		P	0739	70			
MITK	11	0733	0737	0754	S33	E67	.919	15178	16.3	21	-F		C	0737	70		E	
HTPR	11	0733	0736	0743	S34	E64	.902	15178	16.1	10	-N		C	0736	50	1.0	E	
CATA	11	0735	0740	0755	S34	E68	.926	15178	16.4	20	1B	2	C	0740	140			
433 HTPR	11	0800	0803	0810	N14	E36	.663	15176	14.0	10	-F		C	0803	20	.2	E	Y5
434 HTPR	11	0915	0916	0924	N25	W43	.797	15172	8.2	9	-F		C	0916	20	.3	E	Y5
435 HTPR	11	0950	1015	1054	N12	E26	.533	15176	13.4	64	-F		C	1015	30	.3		Y5
436 HTPR	11	1136	1138	1145	S29	E68	.922	15178	16.6	9	-F		C	1138	20	.3		Y5
437 RAMY	11	1153	1155	1237	S31	E67	.918	15178	16.5	44	-N	3	C		22			Y5
GRP66438	11	1226+2	1227+2	1239	N16	W15	.463	15175	10.4	13	-N				60	.7	E	
HTPR	11	1226	1227	1240	N18	W16	.496	15175	10.3	14	-N		C	1227	60	.6	E	
RAMY	11	1228	1229	1238	N15	W14	.442	15175	10.5	10	-B	3	C		71			
GRP66439	11	1300+1	1304+2	1316	N25	W43	.797	15172	8.3	16	-N				60	1.0	E	
HTPR	11	1300	1304	1312	N25	W42	.789	15172	8.4	12	-N		C	1304	50	.6	E	
RAMY	11	1301	1306	1320	N26	W44	.810	15172	8.2	19	-B	3	C		67			
GRP66440	11	1326+2	1331+1	1338	S32	E64	.900	15178	16.4	12	-N				40			
HTPR	11	1326	1331	1336	S33	E63	.895	15178	16.3	10	-F		C	1331	40	.8		
RAMY	11	1328	1332	1339	S31	E66	.912	15178	16.5	11	-B	3	C		41			
441 RAMY	11	1356	1403	1410	S31	E66	.912	15178	16.5	14	-N	3	C		50			Y5
GRP66442	11	1402+1	1404+0	1412	N21	W54	.866	15172	7.5	10	-N				35	.7	E	
HTPR	11	1402	1404	1408	N22	W54	.870	15172	7.5	6	-F		C	1404	20	.3	E	
RAMY	11	1403	1404	1416	N20	W55	.871	15172	7.5	13	-B	3	C		52			
443 HTPR	11	1524	1528	1546	N13	E25	.530	15176	13.5	22	-F		C	1528	10	.1		Y5

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	MAR																	
GRP66444	11	1625+3	1629+0	1637	N26	W45	.818	15172	8.3	12	-N				20	.3		
HTPR	11	1625	1629	1638	N27	W45	.823	15172	8.3	13	-F		C	1629	10	.1		
RAMY	11	1628	1629	1636	N26	W46	.826	15172	8.2	8	-B	3	C		30			
	11	1656	2105	NO FLARE PATROL														
445 RAMY	11	1713	1715	1722	N14	E27	.562	15176	13.7	9	-B	3	C		33		FDE	Y5
446 CULG	11	2106	2130	2200	N11	E21	.465	15176	13.5	54	-F		C	2130	60	.7	FK	Y5
GRP66447	11	2130	2134 2142	2218	S33	E59	.868	15178	16.3	48	1F						F	
CULG	11	2130	2134	2218	S35	E60	.878	15178	16.4	48	1F		C	2134	110	2.2		
PALE	11	2136E	2142U	2151D	S31	E59	.864	15178	16.3	150	-N	3	C		42		F	
GRP66448	11	2305+1	2307+0	2314	N14	E24	.529	15176	13.8	9	-F				35	.4		
CULG	11	2305	2307	2311D	N12	E28	.557	15176	14.1	60	-F		C	2307	30	.4	F	
VORO	11	2306	2307	2314	N16	E20	.508	15176	13.5	8	-N		C	2307	36	.4	E	
GRP66449	11	2325+0	2330+0	2336D	S33	E59	.868	15178	16.4	11	-N				60	1.3	K	
CULG	11	2325	2330	0005	S34	E59	.869	15178	16.4	40	-F		C	2330	60	1.2	FK	
VORO	11	2325	2330	2336	S33	E60	.875	15178	16.5	11	-B		C	2330	63	1.3	D	
GRP66450	11	2346+4	2352+1 2358	0002	S32	E65	.906	15178	16.9	16	-N				40			
PALE	11	2346E	2353	0002	S35	E70	.937	15178	17.2	160	-N	3	C		44		F	
VORO	11	2350	2352	2359	S33	E64	.901	15178	16.8	9	-B		C	2352	27	.6	E	
VORO	11	2357	2358	0000D	S27	E58	.851	15178	16.3	30	-B		C	2358	36	.7	D	
GRP66451	11	2359+4	0005+2	0012	N20	W68	.952	15172	6.9	13	-N				35		E	
VORO	12	0003	0005	0011	N20	W68	.952	15172	6.9	8	-B		C	0005	45		E	
CULG	11	2359	2407	0012	N21	W69	.958	15172	6.8	13	-F		C	2407	20			
452 PALE	12	0151	0153	0207	S35	E69	.932	15178	17.3	16	-N	3	C		39		F	Y5
453 VORO	12	0213	0214	0216	N20	W69	.957	15172	6.9	3	-B		C	0214	72		D	Y5
454 VORO	12	0309	0309	0311	N27	E40	.785	15179	15.1	2	-B		C	0303	36	.6	EGJ	Y5
455 VORO	12	0316	0323	0333D	N27	E40	.785	15179	15.1	170	-B		C	0323	54	.7	EGJK	Y5
456 PALE	12	0353	0355	0403	S35	E68	.926	15178	17.3	10	-N	3	C		72			Y5
457 RAMY	12	1235	1235	1237	N14	E17	.456	15176	13.8	2	-N	3	C		24			Y5
GRP66458	12	1242+2	1243+2	1254	S31	E60	.872	15178	17.0	12	-N				40	.9	E	
HTPR	12	1242	1243	1250	S30	E60	.870	15178	17.0	8	-F		C	1243	30	.4	E	
RAMY	12	1244	1245	1258	S33	E61	.882	15178	17.1	14	-B	3	C		52			
GRP66459	12	1419+2	1423+0	1431D	S34	E58	.862	15178	16.9	12	-N							
KANZ	12	1419	1423	1431	S35	E56	.850	15178	16.8	12	-F							
RAMY	12	1421	1423	1527	S33	E61	.882	15178	17.2	66	-B	3	C		63			
RAMY	12	1421	1510	1527	S33	E61	.882	15178	17.2	66	-F	3	C		14			
	12	1508	1517	NO FLARE PATROL														
460 RAMY	12	1519	1522	1525	N19	W76	.983	15172	6.9	6	-N	3	C		16			Y5
461 PALE	12	1813	1814	1815	S32	E57	.851	15178	17.0	2	-N	3	C		22			Y5
462 PALE	12	1815	1835	1838	S32	E57	.851	15178	17.0	23	-N	3	C		19			Y5
GRP66463	12	1817+1	1819+0	1920	N17	E15	.476	15176	13.9	63	-N				30	.3	E	
RAMY	12	1817E	1819	1821D	N14	E13	.420	15176	13.7	4D	-N	3	C		31			
MCMA	12	1818	1819	1920	N20	E18	.537	15176	14.1	62	-N		C	1819	30	.4	E	
464 RAMY	12	1931	1948	2013	N20	W81	.995	15172	6.7	42	-N	3	C		21		FDE	Y5
	12	1943	2255	NO FLARE PATROL														
465 RAMY	12	2103	2108	2114	S33	E57	.853	15178	17.2	11	-B	3	C		23			Y5
466 RAMY	12	2114	2115	2119	N15	W33	.637	15175	10.4	5	-B	3	C		29			Y5
	13	0217	0223	NO FLARE PATROL														

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	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	MAR																	
GRP66467	13	0223+1	0225+0	0232	N24	W74	.980	15172	7.5	9	-N		C		40		F	
CULG	13	0223E	0225	0235	N24	W73	.977	15172	7.6	12D	-N		C	0225	40			
PALE	13	0224	0225	0229	N25	W76	.986	15172	7.4	5	-N	3	C		39		F	
	13	0400	0410	NO FLARE PATROL														
468 CULG	13	0530	0532	0545	S03	E07	.142	15177	13.8	15	-F		C	0532	20	.2		Y5
	13	0747	0755	NO FLARE PATROL														
469 KHAR	13	0954E	1014	1038D	N26	W90	1.002	15172	6.7	44D	?N		P	1014	165	4.8	H	Y5
	IMP, 1 NO MONT2																	
	13	1042	1050	NO FLARE PATROL														
470 RAMY	13	1356	1402	1452	N25	W76	.986	15172	7.9	56	?B	3	C				FDE	Y5
	IMP, 1 NO LVOV1																	
	13	1410	1449	NO FLARE PATROL														
	13	1450	1457	NO FLARE PATROL														
	13	1537	1618	NO FLARE PATROL														
	13	1625	1630	NO FLARE PATROL														
471 RAMY	13	1659	1702	1720	N23	W84	.999	15172	7.4	21	-B	3	C				F	Y5
	13	1710	1752	NO FLARE PATROL														
	13	1754	1807	NO FLARE PATROL														
GRP66472	13	1906+6	1908+8	1924	N12	W07	.349	15176	13.3	18	-N				50	.5	FHL	
RAMY	13	1906	1908	1920D	N13	W07	.364	15176	13.3	14D	-B	3	C		64		F H	
MCMA	13	1907	1913	1923	N12	W06	.344	15176	13.3	16	-F		C	1913	50	.5	EL	
PALE	13	1912	1916	1924	N11	W08	.340	15176	13.2	12	-N	3	C		34		F	
473 RAMY	13	1915	1918	1925D	N22	W87	1.000	15172	7.3	10D	-B	3	C					Y5
	13	2004	2022	NO FLARE PATROL														
474 PALE	13	2006E	2008U	2015D	N27	W81	.997	15172	7.8	9D	-N	3	C				F	Y5
	13	2110	2157	NO FLARE PATROL														
	13	2209	2250	NO FLARE PATROL														
475 CULG	13	2328E	2328	2332	N15	W90	1.001	15172	7.2	4D	-F		P	2328	20			Y5
GRP66476	13	2328+2	2330+3	2344	N21	W41	.756	15175	10.9	16	1N				180	2.7	FJLUV	
PALE	13	2328	2330	2340	N19	W48	.810	15175	10.4	12	-N	*	C		25		F	
CULG	13	2329	2332	2353	N21	W40	.747	15175	11.0	24	1N	*	C	2332	200	3.0	JVLU	
MITK	13	2330	2333	2345	N20	W41	.751	15175	10.9	15	1F	*	C	2333	170	2.6		
VORO	13	2337E		2343	N23	W40	.759	15175	11.0	6D	1F	*	C	2338	323	4.9	BF	
GRP66477	13	2358+3	0003+1	0015	N25	W88	1.000	15172	7.4	17	1N						HK	
PALE	14	0001	0003	0007	N25	W83	.998	15172	7.8	6	-N	3	C				F	
VORO	14	0001	0004	0015	N23	W90	1.001	15172	7.3	14	1N		C	0004	179		DHK	
CULG	13	2358	2404	0017	N26	W90	1.002	15172	7.2	19	1B		C	2404	80			
GRP66478	14	0339	0340+2	0357	S27	E28	.547	15178	16.3	18	-B				120	1.4	J	
VORO	14	0339	0342	0356	S26	E29	.551	15178	16.3	17	1B		C	0342	314	3.8	EJ	
MANI	14	0340E	0340U	0343D	S27	E27	.536	15178	16.2	3D	-B		V		120	1.4	F	
CULG	14	0345E	0345U	0357	S28	E29	.565	15178	16.3	12D	-B		P	0345	90	1.1	CJ	
479 CULG	14	0402	0449	0518	N28	W90	1.002	15172	7.4	76	-F		C	0449	20			Y5
480 CULG	14	0506	0511	0523	N12	W11	.376	15176	13.4	17	-F		C	0511	10	.1		Y5
481 CULG	14	0646	0714	0725D	N26	W90	1.002	15172	7.5	39D	1N		P	0714	120			Y5
482 HTPR	14	0803	0806	0808	S36	E35	.682	15178	17.0	5	-F		C	0806	20	.2		Y5
483 CATA	14	0835	0835	0845	S38	E36	.705	15178	17.1	10	-B	2	C	0835	112	1.6		Y5
484 CATA	14	0850	0850	0905	N25	W90	1.001	15172	7.6	15	1F	2	C	0850	56			Y5
	14	1405	1555	NO FLARE PATROL														
485 RAMY	14	1422	1423	1428	N18	E79	.990	15184	20.5	6	-F	3	C					Y5
486 RAMY	14	1516	1517	1520D	N18	E78	.988	15184	20.5	4D	-N	3	C		21			Y5

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	MAR																	
487 MCMA	14	1555E		1557D	N18	E81	.994	15184	20.7	2D	-N		P	1557			D	Y5
	14	1557	2106	NO FLARE PATROL														
488 RAMY	14	1655	1658	1703	N13	W17	.443	15176	13.4	8	-N	3	C		18			Y5
489 RAMY	14	1702	1704	1707	S30	E21	.502	15178	16.3	5	-N	3	C		19		F	Y5
490 RAMY	14	1729	1729	1736	N18	E77	.985	15184	20.5	7	-F	3	C		8			Y5
GRP66491	14	1744	1746 1752	1804	N18	E77	.985	15184	20.5	20	-F							
RAMY	14	1744	1746	1804	N18	E77	.985	15184	20.5	20	-F	3	C		13			
RAMY	14	1744	1752	1804	N18	E77	.985	15184	20.5	20	-F	3	C		11			
GRP66492	14	1834+2	1837+1	1848	N18	E74	.975	15184	20.3	14	-F				45			
RAMY	14	1834	1837	1854	N19	E75	.979	15184	20.4	20	-N	3	C		54		FDE	
PALE	14	1836	1838	1841	N17	E73	.971	15184	20.3	5	-F	3	C		41		DE	
493 RAMY	14	1934	1936	1940	N19	E74	.976	15184	20.4	6	-N	3	C		51		F	Y5
494 CULG	14	2213	2221U	2259	S36	E23	.583	15178	16.7	46	-F		C	2221	100	1.3	L	Y5
495 MANI	15	0012E	0013	0022	N17	E76	.981	15184	20.7	10D	-F		P		40	1.0		Y5
496 CULG	15	0030	0043U	0043D	N33	E66	.963	15183	20.0	13D	-F		P	0043	40			Y5
497 VORO	15	0055	0057	0101	N34	E72	.983	15183	20.4	6	-B		C	0057	27		OJ	Y5
GRP66498	15	0131+7	0139+1	0144D	N34	E68	.971	15183	20.2	13	-N				50		DJ	
CULG	15	0131	0139	0215	N33	E67	.966	15183	20.1	44	-N		C	0139	50			
VORO	15	0138	0140	0144	N35	E70	.978	15183	20.3	6	-B		C	0140	63		DJ	
GRP66499	15	0225+9	0235+0	0251	S27	E12	.389	15178	16.0	26	-N				60	.7	DHL	
CULG	15	0225	0235	0302	S27	E12	.389	15178	16.0	37	-N		C	0235	80	.9		
VORO	15	0234	0235	0240	S27	E13	.396	15178	16.1	6	-B		C	0235	54	.5	DHL	
GRP66500	15	0242+1	0244+0	0304	N34	E68	.971	15183	20.2	22	-N				45		DH	
CULG	15	0242	0244	0318	N33	E66	.963	15183	20.1	36	-F		C	0244	40			
VORO	15	0243	0244	0249	N35	E70	.978	15183	20.4	6	-B		C	0244	54		DH	
501 VORO	15	0334E	0336	0338D	N19	W18	.524	15176	13.8	4D	-B		C	0336	63	.8	DH	Y5
GRP66502	15	0343+3	0346+3	0357	N22	E72	.971	15184	20.6	14	-N						D	
CULG	15	0343E	0346	0357	N25	E69	.963	15184	20.3	14D	-F		P	0346		.2		
VORO	15	0346	0349	0357	N19	E75	.979	15184	20.8	11	1B		C	0349	81		D	
GRP66503	15	0347+4	0353+2	0358	N34	E68	.971	15183	20.3	11	1F				100		D	
CULG	15	0347	0355	0359	N35	E67	.969	15183	20.2	12	1F		C	0355	100			
VORO	15	0351	0353	0357	N34	E70	.977	15183	20.4	6	1N		C	0353	99		D	
504 MANI	15	0440	0442	0447	N16	E70	.956	15184	20.4	7	-F		P		30	.7	F	Y5
505 CULG	15	0510	0520U	0532	N18	E70	.959	15184	20.5	22	-F		C	0520	20			Y5
506 CULG	15	0545	0550	0603	N18	E70	.959	15184	20.5	18	-F		C	0550	20			Y5
507 HTPR	15	1030	1039	1048	N18	E70	.959	15184	20.7	18	-F		C	1039	20	.5	E	Y5
	15	1104	1205	NO FLARE PATROL														
GRP66508	15	1235E	1246+0	1315	N18	E67	.944	15184	20.5	40	1B						HU	
RAMY	15	1235E	1246	1315	N19	E65	.935	15184	20.4	40D	1B	2	C		168		U F	
KIEV	15	1240E	1246	1315D	N18	E70	.959	15184	20.8	35D	2N		C	1246	400		EH	
	15	1404	1815	NO FLARE PATROL														
509 RAMY	15	1703	1705	1714	S27	E06	.352	15178	16.2	11	-B	3	C		74			Y5
	15	1855	1908	NO FLARE PATROL														
	15	1909	2058	NO FLARE PATROL														
	15	2205	2210	NO FLARE PATROL														
GRP66510	15	2329+5	2340+2	0045	S29	E02	.373	15178	16.1	76	-N						FG	
VORO	15	2329	2342	0045	S27	E00	.339	15178	16.0	76	1N		C	2342	206	2.2	FG	
PALE	15	2334	2340U	0030D	S31	E04	.409	15178	16.3	56D	-N	3	C		83		F	

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONO	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	MAR																	
511 VORO	16	0035	0036	0039	N19	W68	.950	15175	10.9	4	-N		C	0036	18		D	Y5
512 VORO	16	0216	0219	0222	N18	E61	.908	15184	20.7	6	-N		C	0219	27	.6	D	Y5
GRP66513	16	0216	0219	0222	N18	E61	.908	15178	20.7	6	-N						D	
CULG	16	0211	0232	0300	S26	E07	.342	15178	16.6	49	-F	*	C	0232	35	.4	F	
VORO	16	0229	0232	0235	S26	E10	.360	15178	16.9	6	-B	*	C	0232	63	.6	EHJ	
514 VORO	16	0326	0327	0333	S34	E09	.471	15178	16.8	7	-B		C	0327	27	.3	D	Y5
515 CULG	16	0507	0521	0545	N29	E51	.874	15183	20.0	38	-F		C	0521	50	1.0		Y5
GRP66516	16	0752+3	0805+0	0915D	N17	W30	.619	15176	14.1	83	-F				80	1.0	DJ	
ABST	16	0752E	0805	0902D	N13	W31	.599	15176	14.0	70D	-F		P	0805	87	1.1	DJ	
CATA	16	0755	0805	0915D	N21	W29	.643	15176	14.2	80D	-N	2	P	0805	84	1.1		
	16	1405	1649	NO FLARE PATROL														
	16	1652	1730	NO FLARE PATROL														
	16	1731	1745	NO FLARE PATROL														
	16	1749	1911	NO FLARE PATROL														
517 RAMY	16	1834	1835	1850	S33	W01	.436	15178	16.7	16	-N	3	C		32			Y5
	16	1912	1954	NO FLARE PATROL														
	16	2005	2022	NO FLARE PATROL														
	16	2033	2158	NO FLARE PATROL														
GRP66518	16	2251	2255+1	2313	S25	W07	.327	15178	16.4	22	-N				50	.5	EL	
VORO	16	2251	2255	2313	S26	W08	.347	15178	16.4	22	-B		C	2255	45	.5	EL	
CULG	16	2253E	2256	2306D	S25	W06	.321	15178	16.5	13D	-F		P	2256	50	.5	C	
	17	0538	0546	NO FLARE PATROL														
	17	0555	0603	NO FLARE PATROL														
519 RAMY	17	1150	1154	1230	N18	E42	.749	15184	20.6	40	-N	2	C		98			Y5
520 KANZ	17	1402	1419	1430	N28	W31	.721	15179	15.3	28	-F						G	Y5
	17	1445	1448	NO FLARE PATROL														
	17	1533	1540	NO FLARE PATROL														
GRP66521	17	1533	1550+0 1603	1636	N18	E39	.719	15184	20.6	63	-B				130	1.8	E	
RAMY	17	1533	1550	1636	N18	E40	.729	15184	20.6	63	-B	2	C		137		DE	
RAMY	17	1533	1603	1636	N18	E40	.729	15184	20.6	63	-N	2	C		98		DE	
CATA	17	1540E	1550	1600D	N18	E38	.709	15184	20.5	20D	1B	2	P	1550	168	2.4		
HTPR	17	1549E		1612D	N18	E39	.719	15184	20.6	23D	-N		C	1552	80	1.0	E	
	17	1612	1623	NO FLARE PATROL														
	17	1625	1654	NO FLARE PATROL														
	17	1705	2245	NO FLARE PATROL														
	17	2310	2314	NO FLARE PATROL														
522 VORO	18	0024	0026	0031	S27	W30	.570	15178	15.8	7	-B		C	0026	45	.6	DHL	Y5
523 VORO	18	0304	0305	0314D	S34	W16	.510	15178	16.9	10D	-B		C	0305	45	.5	E	Y5
524 PALE	18	0329	0330	0331D	N16	E32	.632	15184	20.5	2D	-N	3	C		35		F	Y5
GRP66525	18	0337+3	0342+1	0355	N18	E30	.627	15184	20.4	18	-N							
MITK	18	0337	0343	0349	N18	E31	.637	15184	20.5	12	-N		C	0343	90	1.2	E	
MANI	18	0340	0342	0401	N18	E30	.627	15184	20.4	21	1N		P		200	2.5	F	
	18	0600	0625	NO FLARE PATROL														
526 HTPR	18	0800	0802	0813	N19	E30	.635	15184	20.6	13	-N		C	0802	50	.6	E	Y5
527 HTPR	18	0837	0842	0847	N19	E30	.635	15184	20.6	10	-N		C	0842	50	.6	E	Y5
528 HTPR	18	0910	0912	0920	N19	E29	.625	15184	20.6	10	-F		C	0912	30	.3	E	Y5
529 ATHN	18	0958	1000	1029	N28	E26	.684	15183	20.4	31	-B			1000	82	1.1		Y5
GRP66530	18	1043		1130	N30	E23	.684	15183	20.2	47	-N						E	
HTPR	18	1043		1105D	N30	E24	.691	15183	20.2	22D	-N		C	1101	80	.8	E	
LOCA	18	1046E		1114D	N30	E22	.678	15183	20.1	28D	1N		S		163	2.3		
HTPR	18	1108E		1130	N30	E24	.691	15183	20.3	22D	-N		C	1108	70	.8	E	

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	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	MAR																	
531 RAMY	18	1419	1421	1425	N18	E27	.596	15184	20.6	6	-N	3	C		25			Y5
GRP66532	18	1420+2	1423+0	1428	S32	W28	.588	15178	16.5	8	-N				35	.4	OH	
MCMA	18	1420	1423	1428	S32	W28	.588	15178	16.5	8	-N		C	1423	30	.4	OH	
HTPR	18	1422	1423	1427	S32	W28	.588	15178	16.5	5	-N		C	1423	40	.4		
GRP66533	18	1434+0	1436+0	1449	N13	W62	.905	15176	14.0	15	-F				15	.3		
HTPR	18	1434	1436	1446	N13	W60	.890	15176	14.1	12	-F		C	1436	10	.2		
RAMY	18	1434	1436	1452	N14	W64	.920	15176	13.8	18	-N	3	C		22			
GRP66534	18	1440+0	1442+1	1452	N19	E26	.596	15184	20.6	12	-N				60	.7	E	
RAMY	18	1440	1443	1454	N18	E27	.596	15184	20.6	14	-B	3	C		70			
HTPR	18	1440	1443	1451	N19	E25	.586	15184	20.5	11	-N		C	1443	60	.6	E	
MCMA	18	1440	1442	1452	N20	E25	.596	15184	20.5	12	-N		C	1442	40	.5	E	
GRP66535	18	1628+0	1629+1	1637	N19	E25	.586	15184	20.6	9	-N				50	.6		
RAMY	18	1628	1629	1636	N18	E26	.586	15184	20.6	8	-B	3	C		62		FDE	
MCMA	18	1628	1630	1638	N20	E24	.587	15184	20.5	10	-F		C	1630	50	.6	E	
	18	1736	2117	NO FLARE PATROL														
536 RAMY	18	1801	1802	1808	N18	E25	.577	15184	20.6	7	-N	3	C		46		DE	Y5
	18	2119	2200	NO FLARE PATROL														
537 VORO	18	2241	2242	2244	N20	E25	.596	15184	20.8	3	-N		C	2242	63	.8	D	Y5
538 VORO	18	2300	2301	2303	N20	E25	.596	15184	20.8	3	-B		C	2301	45	.6	D	Y5
GRP66539	19	0437	0440+4	0459	N30	E13	.631	15183	20.2	22	1N				190	2.4	FU	
MANI	19	0437	0440	0459	N30	E12	.627	15183	20.1	22	1N		P		200	2.7	F	
TEHR	19	0443E	0444U	0459	N31	E14	.648	15183	20.2	160	-B	1	C		190		U F	
540 MANI	19	0456	0506	0527D	S29	W44	.729	15178	15.9	310	-F		P		110	1.6	F	Y5
	19	0645	0703	NO FLARE PATROL														
	19	0725	0730	NO FLARE PATROL														
	19	0737	0750	NO FLARE PATROL														
	19	0950	1015	NO FLARE PATROL														
	19	1030	1100	NO FLARE PATROL														
	19	1105	1144	NO FLARE PATROL														
541 RAMY	19	1328	1329	1346	S33	W33	.644	15178	17.1	18	-N	2	C		19			Y5
542 RAMY	19	1527	1531	1547	N14	W79	.988	15176	13.7	20	-N	3	C					Y5
GRP66543	19	1714+0	1717	1724	N17	E43	.753	15187	22.9	10	-F				30	.4	HS	
MCMA	19	1714	1717	1724	N17	E44	.763	15187	23.0	10	-F		C	1717	40	.6	EH	
RAMY	19	1714	1715	1715D	N17	E43	.753	15187	22.9	10	-N	3	C		20		F S	
	19	2000	2200	NO FLARE PATROL														
GRP66544	20	0653	0703	0736	N22	E59	.904	15188	24.7	43	1B						F	
MANI	20	0653	0703	0736	N23	E59	.906	15188	24.7	43	1N		P		250	5.0	F	
CATA	20	0710E	0710	0715D	N22	E59	.904	15188	24.7	50	2B	2	P	0710	281	6.7		
	20	0950	1050	NO FLARE PATROL														
	20	1110	1124	NO FLARE PATROL														
545 MCMA	20	1630	1634	1645	N15	E90	1.001	15198	27.4	15	-F		C	1634				Y5
	20	1857	2155	NO FLARE PATROL														
GRP66546	20	2316	2321+6	2347	N18	W04	.428	15184	20.7	31	-N				60	.7	JK	
VORO	20	2316	2321	2336	N19	W03	.442	15184	20.7	20	-B		C	2321	63	.7	EJK	
CULG	20	2321E	2327U	2357	N18	W05	.431	15184	20.6	36D	-F		P	2327	70	.8	CF	
GRP66547	21	0020+3	0024+1	0027	N15	E85	.999	15198	27.4	7	-N						H	
VORO	21	0020	0024	0030	N15	E90	1.001	15198	27.8	10	-B		C	0024	108		H	
MANI	21	0021	0025	0027	N15	E85	.999	15198	27.4	6	-F		P		40	1.2		
PALE	21	0023	0025	0027	N14	E77	.982	15198	26.8	4	-F	3	C					
548 HTPR	21	0832		0846D	N22	W08	.501	15184	20.8	14D	-F		C	0837	30	.3	E	Y5
549 KANZ	21	0952	0955	1003	N22	W07	.497	15184	20.9	11	-F							Y5
	21	1011	1015	NO FLARE PATROL														

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	DATE MAR	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	21	1040	1244	NO FLARE PATROL														
	21	1249	2220	NO FLARE PATROL														
550 RAMY	21	1413	1414	1419	N14	E71	.959	15198	26.9	6	-F	4	C				F	Y5
551 RAMY	21	1420	1421	1429	N19	E39	.724	15188	24.5	9	-F	4	C		23		U F	Y5
552 RAMY	21	1528	1529	1545	N22	E42	.770	15188	24.8	17	-N	3	C		20		U F	Y5
553 PALE	21	2009E	2019U	2026D	N14	E70	.954	15198	27.1	17D	-N	3	C		17		DE	Y5
554 PALE	21	2204E	2204U	2206D	N17	W16	.481	15184	20.7	2D	-B	3	C		135		F	Y5
555 VORO	22	0044	0046	0051	S41	W31	.692	15201	19.7	7	-N		C	0046	90	1.3	DJ	Y5
556 VORO	22	0145	0147	0156	N16	E70	.956	15198	27.3	11	-B		C	0147	72		D	Y5
557 VORO	22	0201	0204	0210	N16	E70	.956	15198	27.3	9	-B		C	0204	36		D	Y5
558 PALE	22	0203	0205	0213	N17	W18	.498	15184	20.7	10	-N	3	C		61		F	Y5
GRP66559	22	0435+0	0435+0	0441	S35	W61	.886	15178	17.6	6	1N				90		D	
MANI	22	0435E	0435U	0441	S35	W61	.886	15178	17.6	6D	-F		V		50	1.0		
TACH	22	0435	0435	0444	S33	W60	.876	15178	17.7	9	1N		V	0435	133	3.3	D	
CULG	22	0435		0437	S37	W68	.929	15178	17.1	2	1N		P	0435	90	2.3		
GRP66560	22	0828	0837+0	0907	N23	E34	.704	15188	24.9	39	-F				100	1.4		
HTPR	22	0828	0837	0907	N23	E33	.695	15188	24.8	39	-F		C	0837	100	1.1	E	
MANI	22	0833E	0837	0904D	N23	E36	.722	15188	25.1	31D	-F		V		100	1.5	F	
561 KANZ	22	0945	0952	1001	S31	E18	.490	15202	23.8	16	-F							Y5
GRP66562	22	0949	0952	0958	S40	W36	.721	15201	19.7	9	-F							
KANZ	22	0949	0952	0956	S40	W37	.728	15201	19.6	7	-N							
HTPR	22	0950E		1000	S40	W36	.721	15201	19.7	10D	-F		C	0951	40	.5		
563 KANZ	22	1008	1010	1022	S31	E16	.474	15202	23.6	14	-F							Y5
GRP66564	22	1143+3	1154+4	1206	N36	E66	.967	15203	27.4	23	1N				120		D	
KANZ	22	1143	1158	1158D	N36	E66	.967	15203	27.4	15D	-B							
HTPR	22	1146	1154	1200	N36	E66	.967	15203	27.4	14	-N		C	1154	140	2.8		
LVOV	22	1150E	1155	1211	N37	E60	.946	15203	27.0	21D	1F		P	1155	100		DC	
565 RAMY	22	1246	1250	1259	S42	W40	.763	15201	19.5	13	-F	2	C		30		F	Y5
GRP66566	22	1300>9	1315+0 1320	1404	N20	W23	.577	15184	20.8	64	-N				160	1.9	U	
HTPR	22	1300	1315	1404	N19	W23	.566	15184	20.8	64	-N		C	1315	200	2.1	EF	
RAMY	22	1310	1315	1349	N20	W25	.595	15184	20.7	39	-B	3	C		118		U F	
RAMY	22	1310	1320	1349	N20	W25	.595	15184	20.7	39	-N	3	C		94		U F	
MCMA	22	1357E		1410	N22	W22	.590	15184	20.9	13D	-N		C	1358	30	.4	BD	
567 RAMY	22	1312	1320	1325	S42	W40	.763	15201	19.6	13	-F	3	C		19		F	Y5
568 HTPR	22	1343	1344	1346	N36	E65	.963	15203	27.4	3	-F		C	1344	10	.2		Y5
GRP66569	22	1357>9	1438	1443D	S41	W40	.757	15201	19.6	46	-F						E	
MCMA	22	1357E		1436D	S42	W41	.770	15201	19.5	39D	-N		C	1409	40	.6	E	
KANZ	22	1431	1438	1443D	S40	W40	.751	15201	19.6	12D	-F							
	22	1555	1556	NO FLARE PATROL														
	22	1645	2219	NO FLARE PATROL														
	22	2223	2228	NO FLARE PATROL														
	23	0855	0905	NO FLARE PATROL														
	23	0920	0930	NO FLARE PATROL														
	23	0935	1010	NO FLARE PATROL														
	23	1035	1045	NO FLARE PATROL														
	23	1100	1114	NO FLARE PATROL														
	23	1436	1440	NO FLARE PATROL														
570 MCMA	23	1454	1520	1610D	S42	W54	.857	15201	19.6	76D	-N		C	1520	40	.8	EK	Y5
GRP66571	23	1605+1	1607+1	1611	S32	W86	.992	15178	17.2	6	-F						D	
MCMA	23	1605	1608	1612	S32	W87	.994	15178	17.1	7	-N		C	1608			D	
HTPR	23	1606	1607	1610	S32	W86	.992	15178	17.2	4	-F		C	1607	10			
572 MCMA	23	1624	1629	1635	S33	W85	.990	15178	17.3	11	-F		C	1629			D	Y5

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	MAR																	
573 MCMA	23	1719	1723	1728	S25	E81	.981	15205	29.8	9	-N		C	1723			E	Y5
574 MCMA	23	2012	2014	2025D	S32	W87	.994	15178	17.3	13D	-F		C	2014			D	Y5
	24	1232	1257	NO FLARE PATROL														
	24	1500	1549	NO FLARE PATROL														
	24	1703	2140	NO FLARE PATROL														
575 VORO	24	2159	2200	2202	S40	W69	.937	15201	19.7	3	-B		C	2200	63		D	Y5
576 VORO	24	2214	2218	2221	N19	W58	.889	15184	20.6	7	-B		C	2218	81	1.7	D	Y5
577 VORO	24	2229	2232	2239	S40	W69	.937	15201	19.8	10	-B		C	2232	81		D	Y5
578 VORO	24	2233	2234	2237	N20	W60	.905	15184	20.4	4	-B		C	2234	72	1.7	D	Y5
579 VORO	24	2308	2309	2313	N21	W60	.907	15184	20.5	5	-B		C	2309	45	1.2	D	Y5
GRP66580	24	2314+5	2322+5	2341	N18	W59	.894	15184	20.5	27	1N				190	4.1	HJU	
MANI	24	2314E	2327	2344	N18	W59	.894	15184	20.5	30D	1N		P		190	3.8	FU	
VORO	24	2319	2322	2338	N19	W60	.903	15184	20.5	19	1N		C	2322	197	4.6	EHJ	
	25	0207	0218	NO FLARE PATROL														
	25	0231	0239	NO FLARE PATROL														
	25	0242	0243	NO FLARE PATROL														
	25	0244	0253	NO FLARE PATROL														
	25	0602	0627	NO FLARE PATROL														
	25	0633	0647	NO FLARE PATROL														
	25	0700	0707	NO FLARE PATROL														
	25	0714	071E	NO FLARE PATROL														
581 HTPR	25	1321	1323	1334	N38	E26	.777	15203	27.5	13	-F		C	1323	40	.5	E	Y5
582 HTPR	25	1538	1538	1543	N38	E25	.772	15203	27.5	5	-F		C	1538	10	.1		Y5
	25	1613	2147	NO FLARE PATROL														
	25	2148	2155	NO FLARE PATROL														
GRP66583	25	2302+3	2307+0	2317	N20	W77	.986	15184	20.2	15	-N						D	
CULG	25	2302	2307	2322	N20	W76	.983	15184	20.3	20	-F		C	2307	10			
VORO	25	2305	2307	2312	N21	W78	.989	15184	20.1	7	-B		C	2307	45		D	
GRP66584	25	2358>9	0010+4	0025	N22	W79	.991	15184	20.1	27	1F				90		H	
VORO	26	0012	0014	0019	N23	W85	.999	15184	19.6	7	1N		C	0014	108		H	
CULG	25	2358	2410U	0030	N21	W74	.977	15184	20.4	32	1F		C	2410	80			
585 CULG	26	0046	0058	0115	N20	W75	.980	15184	20.4	29	-N		C	0058	50			Y5
586 CULG	26	0601	0605	0611D	S32	W02	.426	15211	26.1	10D	-F		P	0605	50	.6	F	Y5
GRP66587	26	0820E	0822	0906D	N23	W48	.825	15187	22.7	46	-B							
MANI	26	0820E	0822	0906D	N25	W46	.818	15187	22.9	46D	-N		P		120	2.0	FE	
CATA	26	0835E	0835	0840D	N22	W50	.837	15187	22.6	5D	1B	2	P	0835	168	3.1		
	26	2107	2220	NO FLARE PATROL														
588 KANZ	27	0722	0725	0733	S29	W16	.452	15211	26.1	11	-N							Y5
589 KANZ	27	0850	0855	0913	S32	W14	.475	15211	26.3	23	-F							Y5
590 KHAR	27	1058E		1105D	S28	W19	.466	15211	26.0	7D	-F		P				HO	Y5
591 KANZ	27	1152	1159	1211	S29	W20	.487	15211	26.0	19	-F							Y5
GRP66592	27	1202+1	1204+3	1219	S25	E19	.434	15206	28.9	17	-F							
HTPR	27	1202	1204	1215	S26	E19	.445	15206	28.9	13	-F		C	1204	20	.2		
KANZ	27	1203	1207	1223	S25	E19	.434	15206	28.9	20	-F							
593 HTPR	27	1327	1329	1339	S30	W23	.526	15211	25.8	12	-F		C	1329	20	.2		Y5
GRP66594	27	1329	1332	1347	N15	W09	.400	15198	26.9	18	-N							
HTPR	27	1329	1332	1344	N15	W10	.406	15198	26.8	15	-N		C	1332	120	1.2		
KANZ	27	1333E	1333	1349	N16	W08	.409	15198	27.0	16D	-N							
	27	1556	2110	NO FLARE PATROL														
595 VORO	27	2337	2338	2340	S31	W28	.583	15211	25.9	3	-N		C	2338	116	1.4		Y5

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	MAR																	
GRP66596	28	0030+7	0035+6	0052	N15	W15	.444	15198	26.9	22	-B				120	1.3	FU	
CULG	28	0030	0035	0053	N15	W15	.444	15198	26.9	23	-B		C	0035	100	1.1		
MANI	28	0037	0041	0050	N15	W16	.453	15198	26.8	13	-N		P		150	1.7		
PALE	28	0039E	0039U	0039D	N14	W10	.391	15198	27.3		-B	3	C		104		U F	
597 CULG	28	0250E	0254	0316D	S27	E11	.387	15205	28.9	26D	-B		C	0254	50	.6	C	Y5
598 CULG	28	0537	0552	0623	N35	W09	.677	15203	27.6	46	-N		C	0552	10	.1		Y5
GRP66599	28	0709+1	0713+1	0735	S27	E09	.374	15205	29.0	26	-N				40	.4	K	
HTPR	28	0709	0713	0734	S26	E08	.354	15205	28.9	25	-N		C	0713	40	.4	K	
MANI	28	0710	0714	0735	S28	E10	.395	15205	29.0	25	-F		P		40	.4		
CULG	28	0713E	0713E	0724D	S27	E08	.369	15205	28.9	11D	-N		P	0713	35	.4		
600 KANZ	28	0801E	0801	0807	S29	W32	.608	15211	25.9	6D	-F							Y5
601 HTPR	28	1352	1356	1358	S28	W35	.634	15211	26.0	6	-F		C	1356	10	.1		Y5
602 HTPR	28	1355	1357	1413	S26	E02	.331	15205	28.7	18	-F		C	1357	20	.2		Y5
	28	1708	1842	NO FLARE PATROL														
	28	1851	2109	NO FLARE PATROL														
603 RAMY	28	1950	1951	1958	S30	W35	.646	15211	26.2	8	-N	3	C		19			Y5
GRP66604	29	0828	0835+1	0903	S32	W44	.744	15211	26.1	35	-N						E	
KANZ	29	0828	0836	0906	S32	W44	.744	15211	26.1	38	-N						E	
CATA	29	0835E	0835	0900	S33	W45	.758	15211	26.0	25D	-N	2	P	0835	112	1.7		
605 KANZ	29	1114	1118	1129	S17	E74	.955	15216	4.0	15	-F							Y5
	29	1634	2220	NO FLARE PATROL														
	30	0056	0100	NO FLARE PATROL														
606 MCMA	30	1428E		1433D	N32	E80	.996	15220	5.6	5D	-N		P	1428			D	Y5
607 KANZ	30	1511	1521	1523	N31	E71	.976	15220	5.0	12	-F							Y5
608 KANZ	30	1539E		1557	S17	E56	.825	15216	3.9	18D	-F							Y5
	30	1804	2200	NO FLARE PATROL														
609 RAMY	30	2048	2051	2102	S26	W27	.533	15205	28.8	14	-B	3	C		184			Y5
610 VORO	30	2207	2208	2212	N37	W40	.843	15203	27.9	5	-B		C	2208	54	1.0	D	Y5
611 VORO	30	2308	2317	2325	N31	E72	.979	15220	5.4	17	-B		C	2317	45		EK	Y5
612 VORO	30	2321	2322	2327	N19	E59	.895	15214	4.4	6	-N		C	2322	54	1.0	D	Y5
613 VORO	30	2332	2334	2344	S29	W28	.568	15205	28.9	12	-N		C	2336	63	.8	DH	Y5
614 KANZ	31	1103	1106	1120	N39	W46	.886	15203	28.0	17	-F						G	Y5
	31	1323	1325	NO FLARE PATROL														
615 KANZ	31	1334	1348	1416	N38	W55	.926	15203	27.4	42	-F						G	Y5
	31	1648	1807	NO FLARE PATROL														
	31	2007	2030	NO FLARE PATROL														
	31	2045	2109	NO FLARE PATROL														
	31	2121	2200	NO FLARE PATROL														
616 VORO	31	2237	2238	2241	S18	E40	.651	15216	3.9	4	-N		C	2238	27	.4	D	Y5
617 VORO	31	2238	2239	2240	N39	W55	.929	15203	27.8	2	-N		C	2239	45	1.2	DG	Y5

"Remarks":

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

MARCH 1978

DAILY FLARE INDICES
Includes all Flares

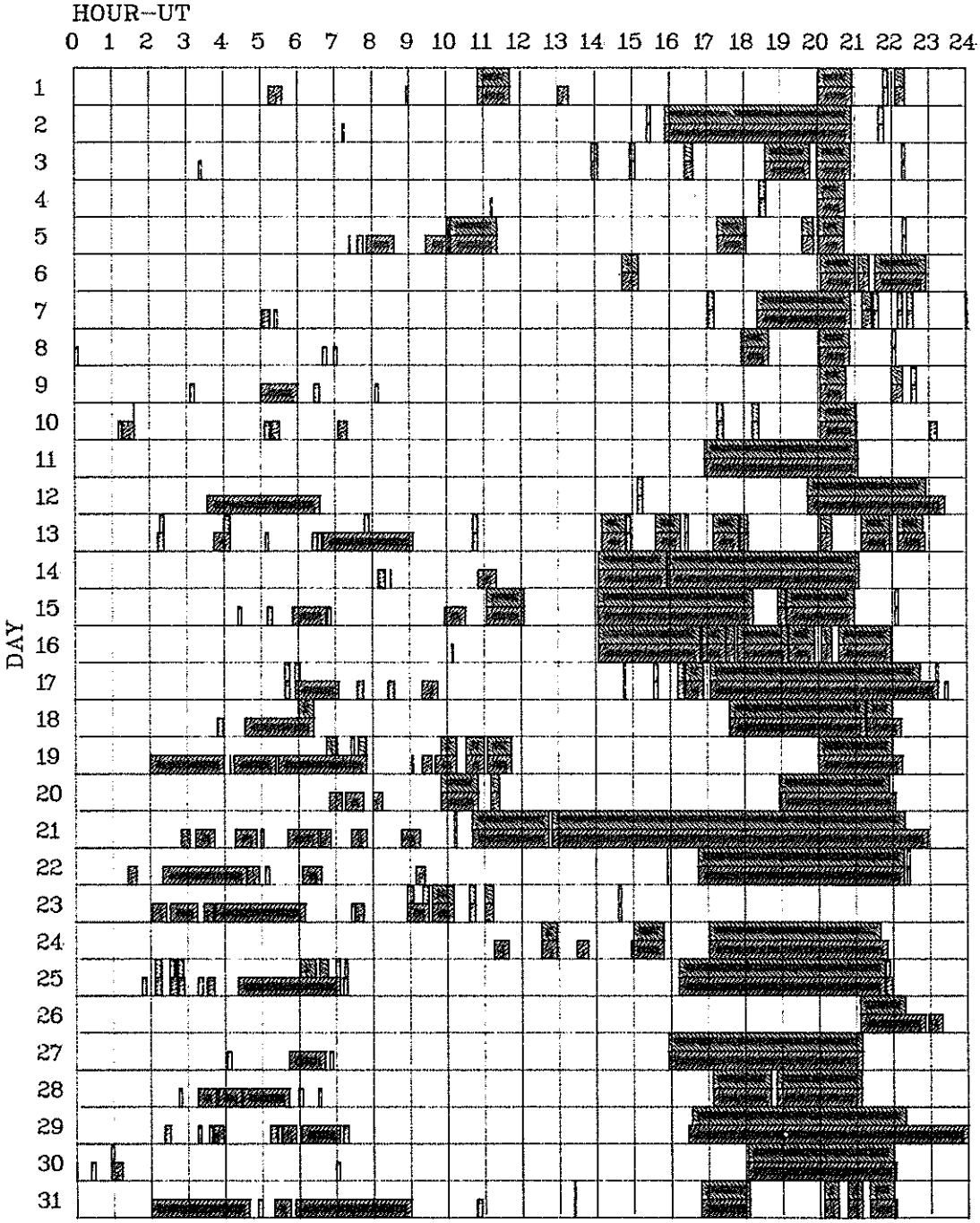
Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.
780301	28.51	21.8	780311	77.83	19.9	780321	30.68	12.4
780302	63.33	18.7	780312	22.56	20.7	780322	65.02	18.3
780303	34.17	21.3	780313	34.46	19.3	780323	4.22	22.6
780304	57.21	23.1	780314	57.83	17.0	780324	28.70	18.2
780305	18.39	20.8	780315	47.86	16.7	780325	11.34	17.0
780306	462.18	20.9	780316	22.36	16.6	780326	8.39	22.8
780307	24.28	20.6	780317	15.75	17.2	780327	38.83	18.8
780308	35.68	22.3	780318	55.12	19.2	780328	35.69	20.1
780309	34.52	22.9	780319	28.11	19.8	780329	3.50	18.2
780310	122.82	22.7	780320	11.57	19.8	780330	16.47	20.0
						780331	4.95	21.2

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

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

MARCH 1978



Observatories included in total patrol:

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

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

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

MARCH 1978

MAR 1978	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	221	ABST	44 NS	0500	0825.2	240	16			
	930	BORD	8 S	0824	0824	.1	46	1		
	260	ONDR	46 C	1008	1036.8	42	13	3.7		
	260	ONDR		1008	1015.7		12			
	930	BORD	41 F	1143	1143.1	.5	18	2		
	2650	DWIN	45 C	1416	1423	8	60	15		
	930	BORD	41 F	1535	1537.4	2.7	35	2		
	2800	OTTA	1 S	1555.2	1555.5	2	1.4	.7		
	2800	OTTA	23 GRF	1800	1930	240	4.6	2.3		
	2695	BOUL	23 GRF	1816.5	1819	13	5	2		
	1420	BOUL	8 S	1816.5	1817.5	3	12	4		
	606	SGMR	1 S	1816.8	1817.4	2.2	6.5	2.6		
	1415	SGMR	3 S	1816.8	1817.5	1.5	14	5.6		
	2695	SGMR	1 S	1817	1818.9	3.7	3.6	1.4		
	4995	SGMR	3 S	1817.2	1818.5	4.5	14.3	5.7		
	4995	BOUL	1 S	1817.5	1818	2	8	3		
	2800	OTTA	2 S/F	1817	1819	4	2.8	1.4		
	245	SGMR	6 S	1818.5	1818.6	1.5	11.6	4.6		
	410	SGMR	6 S	1818.7	1818.8	.5	22	8.8		
	4995	BOUL	1 S	1840.5	1841.5	2	8	3		
2	221	ABST	44 NS	0500	0731	240	31			
	260	ONDR	41 F	0835.6		117	8	2		
	260	ONDR	3 S	1228.7	1228.7	.2	18			
	536	ONDR	2 S/F	1228	1228.6	1.5	24			
	260	ONDR	1 S	1230.5	1230.5	.2	5			
	2800	OTTA	20 GRF	1625	1645	30	2.8	1.3		
	2800	OTTA	27 RF	1715		68	2.8	2		
	2800	OTTA	24 R	1715	1737	22	2.8	1.4		
	2800	OTTA	24P R	1737		31	2.8			
	606	SGMR	3 S	1805.9	1807.3	1.6	13.7	5.5		3,5
	245	SGMR	6 S	1807.6	1815.7	8.4	197	39.4		3,5
	1415	SGMR	1 S	1807.7	1808	.4	3.2	1.3		3,5
	410	SGMR	6 S	1807.8	1808.2	9.2	94.5	18.9		3,5
	2800	OTTA	26 FAL	1808	1823	15	-5	-3		
	9400	HUAN	21 GRF	1823.7	1856.3	36.3	11	6.7		0
	2800	OTTA	27A RF	1825		325	7.4	6.7		
	2800	OTTA	24 R	1825	1905	40	7.4	3.7		
	15400	SGMR	3 S	1826.4	1831	11	22.8	9.1		
	4995	SGMR	3 S	1828	1830.8	6.9	44.2	17.6		
	8800	SGMR	3 S	1828.2	1830.9	5.8	41.4	16.5		
	2695	SGMR	3 S	1828.3	1830.6	7.7	18.2	7.3		
	9400	HUAN	3 S	1828.8	1830.8	4.2	42.6	17.8		R
	2800	OTTA	3 S	1828	1830.5	7	14.8	7		
	4995	BOUL	3 S	1828	1830.5	6	38	13		
	2695	BOUL	3 S	1829.5	1831	5.5	13	4		
	2800	OTTA	24P R	1905		267	7.4			
	2800	OTTA	20 GRF	1907	1913	13	2.2	1.1		
	2800	OTTA	21 GRF	1938	1940	25	2.4			
	1420	BOUL	45 C	1944.5	1944.5	3	11	4		
	1415	SGMR	3 S	1944.5	1944.8	3.6	19.7	59.3		3G
	606	SGMR	3 S	1944.8	1947.4	4.4	90.1	18		3G
	2800	OTTA	8 S	1944.8	1945	.8	4.2			
	410	SGMR	6 S	1944.9	1945.2	4.7	146.5	29.3		3G
	245	SGMR	7 C	1944.9	1945.2	7.8	498.9	100		3G
	245	SGMR	6 S	1959.9	2015.4	18.9	185.6	37.1		
	410	SGMR	6 S	2000.7	2011.8	17.7	71.4	14.3		
	606	SGMR	3 S	2004.5	2015.4	11.1	44.5	8.9		
	2800	OTTA		2020		60	2.4			
	9400	HUAN	20 GRF	2053.5	2119.8	43.2	15.8	3.3		R
	500	HIRA	42 SER	2204	2204.3	4	500			0
	200	HIRA	42 SER	2204	2205	4	2500			0
	100	HIRA	42 SER	2204	2205.5	4	1500			0
	410	SGMR	6 S	2204	2204.5	4	126	25.2		
	245	SGMR	48 GB	2204	2204.5	4	2371	474.2		
	606	SGMR	3 S	2204.3	2204.4	3.8	150.5	30.1		
	2695	PENT	40 F	2204	2211	15	1.8			
	208	VORO	42 SER	2204	2204	24	450			
	208	VORO		2204	2216		460			
	208	VORO		2204	2224		53			
	208	VORO		2204	2227		360			
	100	HIRA	41 F	2215	2227.5	60	8000			0
	200	HIRA	41 F	2215.5	2215.8	60	3000			0
	245	SGMR	48 GB	2215.6	2215.9	14.40	2080	416		
	410	SGMR	6 S	2215.8	2216	14.20	38.5	7.7		
	606	SGMR	3 S	2227.6	2227.8	.4	162.5	32.5		
	208	VORO	42 SER	2301	2306	39	250			
	208	VORO		2301	2314		280			
	208	VORO		2301	2329		540			
	208	VORO		2301	2332		280			
	100	HIRA	46 C	2327.5	2328.5	5	15000	2000		0
	200	HIRA	46 C	2328	2329	5	6000	1500		0
	700	SYDN	4 S	2328	2329.3	3				
	500	HIRA	46 C	2328.3	2329.1	2	500	150		0

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

MARCH 1978

MAR 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
	1400	SYDN	4	S	2328.5	2329.1	1.5				
	2695	MANI	3	S	2328.5	2329.3	1.8	41.7	27.8		I
	1415	MANI	3	S	2328.8	2329.2	1.5	50.8	33.9		
	2695	PENT	3	S	2328.9	2329.2	2	36	9		
	1420	BOUL	8	S	2328	2329.5	4	42	14		
	606	MANI	3	S	2329	2329.2	1	110.4	73.6		
	2695	BOUL	8	S	2329.5	2330.5	1.5	34	11		
	2695	PENT	26	FAL	2332	2350	18	-7.4	-2		
3	500	HIRA	46	C	0220.9	0221.6	2	100	30		O
	200	HIRA	46	C	0221	0221.5	5	20000	1000		O
	100	HIRA	46	C	0221	0223	5	6000	3000		O
	2695	MANI	3	S	0236.7	0237.3	1.9	10.8	7.2		
	606	MANI	3	S	0236.7	0238.9	8.1	55.2	36.8		
	1415	MANI	3	S	0236.9	0237	.9	47	3.1		
	221	ABST	44	NS	0500	0930	240	21			
	3100	CRIM	1	S	0719	0720	3	2	1		
	29	UPIC	46	C	1136.5	1143.1	8.2				
	33	UPIC	46	C	1136.5	1138.5	8.2				
	9400	HUAN	20	GRF	1207.3	1258.6	82.7	17.2	6.3		R
	2695	SGMR	20	GRF	1228.5	1243	53	6.5	3.3		SHF
	4995	SGMR	20	GRF	1234.6	1305.2	46.4	11.2	5.6		SHF
	8800	SGMR	20	GRF	1238.3	1250.4	35.1	10.5	5.3		SHF
	2800	OTTA	1	S	1450	1452	4	2.8	1.2		
	2800	OTTA	21	GRF	1837	1940	170	7.6	3.8		
	2800	OTTA	20	GRF	1842	1846	30	4.8	2.4		
	4995	BOUL	8	S	2203	2203.5	1.5	10	3		
	2695	BOUL	8	S	2204	2204.5	1.5	6	2		
	2800	OTTA	1	S	2204	2204.1	2	6.4	2.2		
	2930	VORO	3	S	2325	2328	5	24			
4	221	ABST	44	NS	0500	1015	240	22			
	3100	CRIM	24	R	1032	1048		4			
	127	TORN	40	F	1157.4	1205.7	10.5	10			
	3000	BERL	20		1205	1259	111	7.9			
	1470	BERL	20		1210	1307.5	104	3.9			
	9500	BERL	20		1214	1307	121	21			
	9400	HUAN	20	GRF	1219	1326.8	115.8	20.6	11.1		R
	2800	OTTA	20	GRF	1230	1303	140 D	15.6			
	260	ONDR	8	S	1444	1444	.3	155			
	9400	HUAN	20	GRF	1634.8	1644.6	26.2	8.6	2		L
	2800	OTTA	20	GRF	1705	1717	30	2.2	1.1		
	2800	OTTA	21	GRF	1740	1752.5	93	6.4	3.2		
	1420	BOUL	3	S	1741	1746.5	14.5	6	2		
	4995	SGMR	1	S	1743.5	1747.6	9.7	7.3	2.2		
	2695	SGMR	1	S	1743.5	1745.6	10	8.4	2.5		
	2800	OTTA	1	S	1743	1747.5	7	5.6	2.8		
	1415	SGMR	1	S	1744.8	1747.7	8.2	5	1.5		
	2800	OTTA	21	GRF	1937	2000	73	2.8	1.4		
	2800	OTTA	1	S	2025	2030	10	1.4	.7		
5	221	ABST	44	NS	0500	1032	240	12			
	113	POTS	45	C	0645.5	0646.1	.4	100	20		
	260	ONDR	43	NS	0908		352 D	17			
	245	SGMR	43	NS	1430	1710.5	483 D	48.1			
	208	VORO	44	NS	2200 E	0111	360 D	19	8		
	2800	OTTA	20	GRF	1620	1710	120	2.8	1.4		
	2800	OTTA	20	GRF	1825	1831	35	4.2	2.1		
6	100	GORK	44	NS	0430 E		540		5		
	200	GORK	44	NS	0430 E		489		7		
	221	ABST	44	NS	0500	0616.8	240	21			
	202	IZMI	44	NS	0600		360	30			
	260	ONDR	44	NS	0745 E		388 D	40	7		
	127	TORN	43	NS	0900 U	1110.5	400 D	360			V=2
	245	SGMR	44	NS	1115 E	1343.6	680 D	244			2,3G,CONT
	410	SGMR	44	NS	1115 E	1239.3	680 D	356			2,3G,CONT
	606	SGMR	43	NS	1657.5	1926	337.5D	20			CONT
	100	HIRA	44	NS	2100 E	2125	705 D	690	110		SL
	200	HIRA	44	NS	2100 E	2250	705 D	140	30		ML
	208	VORO	44	NS	2200 E	0150	360 D	60	28		
	202	IZMI	41	F	0855.7	0933.3	47	310			
	234	POTS	2		0906.4	0909	2.6	120	1		
	228	HARS	45	C	0911.5	0913	3.5	200	50		
	3000	BERL	1	S	0944	0945.2	3	3.3			
	1470	BERL	1	S	0945.5	0946.5	2	2.3			
	33	UPIC	8	S	1051.1	1051.2	.4				
	29	UPIC	8	S	1051	1051.3	.5				
	33	UPIC	4	S/F	1103	1103.1	.4				
	29	UPIC	8	S	1103	1103.4	.9				
	3100	CRIM	47	GB	1119	1145.5	131 D	87			
	6100	KISV	21	GRF	1120	1216	121	42			
	808	ONDR	28	PRE	1124.5	1150	33	48	39		
	930	BORD	40	F	1124	1233.5	167	70	16		
	2650	DWIN	47	GB	1125	1204	120	100	50		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

MARCH 1978

MAR 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	1470	BERL	45		1125	1204.5	215	73			
	3000	BERL	45		1126	1204	209	48			
	10400	BERN	20	GRF	1127	1155.3	120	13	37		
	2950	GORK	23	GRF	1127.5	1141.5	110	55			
	950	GORK	23	GRF	1128		70	18			
	9500	BERL	20		1128	1216	210	39			
	9100	GORK	20	GRF	1129.2	1155.7	126	61.3	35.3		
	536	ONDR	28	PRE	1130	1215.5	51	36	20		
	2695	SGHR	20	GRF	1135	1204.5	82	79	47.4		2,CONT
	650	GORK	23	GRF	1136		90				
	4995	SGHR	20	GRF	1137	1155.5	43	27.3	16.4		2,CONT
	29	UPIC	28	PRE	1137.2	1142.1U	19				
	33	UPIC	28	PRE	1138.9	1148.3	17.5				
	1415	SGHR	20	GRF	1142.5	1204.5	63.5	39.7	23.8		2,CONT
	2950	GORK	3	SF	1150.4	1151	1.8	52			
	2950	GORK	4	SF	1153	1155	5.6	93			
	234	POTS	45	C	1153.5	1308 D	207 D	35			
	100	GORK	46	C	1155.8	1157.6U	6.3	120			
	100	GORK			1155.8	1207		24000			
	29	UPIC	49	GB	1156.2	1200.6	33.6				
	33	UPIC	49	GB	1156.4	1200.7	34.1				
	113	POTS	45	C	1156.5	1513 D	204 D	420			
	808	ONDR	49	GB	1159.5	1230.5	79	55	42		
	228	HARS	27	RF	1200	1212	15	50	25		
	260	ONDR	49	GB	1200	1311	132	57	16		
	2950	GORK	4	SF	1201.6	1204.2	6	80			
	606	SGHR	20	S	1201.8	1204.2	7.3	16.4	9.9		2,CONT
	950	GORK	3	S	1202.4	1206.6	6.3	22			
	2800	OTTA			1210	1232	280 D	45			
	9400	HUAN	26	FAL	1216.3	1216.8	48.2	50.7	33		R
	536	ONDR	49	GB	1221	1237.5	57	110	56		
	650	GORK	45	C	1224	1225.8	7.1	46	18		
	650	GORK			1224	1230.4		61			
	950	GORK	3	S	1225.4	1225.8	.7	13			
	950	GORK	3	S	1229	1230.5	2.4	11			
	606	SGHR	4	S/F	1301	1309.1	16	115	46		3G,CONT
	410	SGHR	6	S	1301.9	1307.3	16.2	89.7	35.9		3G,CONT
	1415	SGHR	3	S	1303	1317	18	50.8	20.3		3G,CONT
	650	GORK	45	C	1303	1304.1	15	19.5	16		
	650	GORK			1303	1309.2		43			
	808	ONDR	29	PBI	1318		42	30	13		
	536	ONDR	29	PBI	1318		42	20	9		
	2800	OTTA	22	GRF	2028	2043	40	5.6	1.4		
7	606	MANI	3	S	0246	0246.6	1.1	31.5	17.5		I
	200	GORK	44	NS	0439 E		309		12		
	100	GORK	44	NS	0439 E		309		5		
	202	IZMI	44	NS	0600		360	47			
	221	ABST	43	NS	0620	0713.2	60	10			
	260	ONDR	44	NS	0732 E		451 D	71	6		
	127	TORN	44	NS	0740 E	1309.6	480 D	100			V=0
	410	SGHR	44	NS	1114 E	1409.4	586 D	42.4			3G
	245	SGHR	44	NS	1114 E	1401.3	586 D	424			3G
	100	HIRA	44	NS	2100 E	0030	705 D	85	45		SL
	200	HIRA	44	NS	2100 E	0700	705 D	40	15		WL
	208	VORO	44	NS	2200 E		360 D		20		
	113	POTS	45	C	0621.5	0622.2	1.7	2800	450		
	234	POTS	45	C	0621.8	0622.3	.5	125	30		
	113	POTS	2		0717.7	0717.8	5.3	100	1		
	234	POTS	2		0718	0720.4	3	260	6		
	228	HARS	45	C	0720	0720.5	2	140	30		
	536	ONDR	4	S/F	0748.6	0750	2	37	2		
	234	POTS	48		1115.9	1117.3	8.5	200	2		
	234	POTS	48		1400.5	1404.4	9	160	1		
	113	POTS	48		1401.5	1408.1	8.5	175	2		
	127	TORN	45	C	1406.6	1408.3	4	140	45		
	2800	OTTA	240	R	1500	1507	7	3	1.5		
	930	BORD	8	S	1518.6	1518.6	.1	24	1		
	930	BORD	41	F	1613.3	1613.3	.4	103	2		
	4995	BGUL	3	S	1848	1849	2	10	3		
	2800	OTTA	20	GRF	2112	2116	30	2.2	1.1		
	2695	PENT	21	GRF	2318	2330	40	6.2	3.1		
	2695	PENT	1	S	2321	2324	8	7.6	2.8		
8	200	GORK	44	NS	0442 E		388		25		
	100	GORK	44	NS	0442 E		414		5		
	221	ABST	44	NS	0500	0712.5	240	28			
	202	IZMI	44	NS	0600		360	44			
	127	TORN	44	NS	0730 E	1132.5	490 D	95			V=1
	260	ONDR	44	NS	0742 E		440 D	57	5		
	410	SGHR	44	NS	1440 E	2204.9	477 D	30.8			
	245	SGHR	44	NS	1440 E	1513.3	477 D	94.2			
	100	HIRA	44	NS	2100 E	0118	705 D	60	20		WL
	200	HIRA	44	NS	2100 E	0630	705 D	40	10		WL
	208	VORO	44	NS	2200 E		360 D		12		

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	536	ONDR	42 SER	0742.3	0743.8	65	15	.9		
	221	ABST	45 C	0852.5	0857.8	5	41			
	536	ONDR	3 S	1020	1020	.3	32			
	536	ONDR	1 S	1023.2	1023.2	.2	15			
	127	TORN	45 C	1325	1325.5	1.4	830	280		UNCERTN
	2800	OTTA	22 GRF	1410	1416	70	2.8	1.6		
	2800	OTTA	240 R	1715	1835	80	4.2	2.1		
	4995	BOUL	8 S	1849	1850	1.5	13	4		
	2800	OTTA	1 S	1853	1854	3	1.4	.7		
	2800	OTTA	1 S	2103.5	2104.5	2	1.4	.7		
	2800	OTTA	20 GRF	2134	2136	14	2.8	1.8		
	606	SGHR	3 S	2135.3	2135.4	.3	35	14		
	2800	OTTA	8 S	2204.7	2204.8	.2	2.8			
	2695	PENT	21 GRF	2300	2325	105	6	3		
	2930	VORO	3 S	2320	2325	10	19			
	2695	PENT	1 S	2331.5	2332.1	2	4.6	2		
	2695	PENT	1 S	2358.5	2359	1	1.4	.7		
9	100	HIRA	7 C	0456.5	0456.8	1	12000	4000		WL
	200	GORK	44 NS	0500 E		465		5		
	100	GORK	44 NS	0500 E		300		10		
	221	ABST	44 NS	0500	0714	240	27			
	202	IZMI	44 NS	0600		210	47			
	127	TORN	44 NS	0650 E	1145 U	530 D	16 U			V=1
	260	ONDR	44 NS	0730 E		452 D	81	5		
	245	SGHR	44 NS	1110 E	1231.3	688 D	107			3,5
	410	SGHR	44 NS	1110 E	2028.1	688 D	64			3,5
	208	VORO	44 NS	2200 E		360 D		13		
	650	GORK	40 F	0618.4	0621.3	3	6.3			
	6100	KISV	2 S/F	0619	0621	3	78			
	4995	MANI	3 S	0619.8	0620.6	2.2	13.5	10.1		
	1415	MANI	3 S	0619.8	0620.5	2.3	17.3	10.6		
	3100	CRIM	1 S	0620	0621.5	4	10	3		
	606	MANI	1 S	0620.2	0620.5	.6	3.3	1.6		
	950	GORK	2 SF	0620.7	0621.4	3.9	10.8			
	9100	GORK	2 SF	0620.8	0621.4	2.4	28.3	14		
	5730	IRKU	2 S	0620	0620.9	4	20	6		
	2950	GORK	1 S	0621.2	0621.5	1.6	12			
	33	UPIC	45 C	0808.5	0810.7	4.8				
	29	UPIC	45 C	0808.8	0811.4	5				
	650	GORK	1 S	0809	0810.8	3	4.5	2		
	950	GORK	1 S	0810.4	0810.8	1	11	5.5		
	100	GORK	8 S	0810.5	0810.9U	1.2	100			
	930	BORO	46 C	0810.5	0810.9	1.5	33	2		
	3000	BERL	1 S	0810.5	0810.7	.5	1.9			
	1470	BERL	1 S	0810.5	0810.6	1	5.2			
	202	IZMI	5 S	0810.5	0810.5	.7	670	270		
	113	POTS	48	0810.6	0831.8	22	2000	1		
	2950	GORK	1 S	0810.6	0810.7	.7	8			
	234	POTS	48	0810.7	0810.7	21	230	1		
	3100	CRIM	29 PBI	0824	0834	36	5			
	3100	CRIM	1 S	0824	0831	10	12	4		
	260	ONDR	46 C	0824.4	0827.7	7.5	128	44		
	2950	GORK	20 GRF	0824.7	0828.6	9.8	9.6			
	202	IZMI	41 F	0825	0827	7.5	220			
	950	GORK	21 GRF	0825.5	0827.4	9.5	63			
	100	GORK	41 F	0825.5	0827.1	7.4	100			
	100	GORK		0825.5	0831.9		100			
	930	BORO	40 F	0825	0827.4	10	36	6		
	228	HARS	41 C	0826 D	0827	7 U	220	40 U		
	29	UPIC	46 C	0827.1	0830.9	7.9				
	33	UPIC	46 C	0827	0830.5	8.2				
	650	GORK	2 SF	0829.5	0831	5	9	3		
	808	ONDR	2 S/F	0830	0831.7	5.5	30	8.6		
	950	GORK	1 S	0831.3	0831.9	1.1	17.3			
	650	GORK	2 SF	0843	0845	2.7	5	2.5		
	33	UPIC	45 C	0905.7	0906.8	2.4				
	29	UPIC	45 C	0906.7	0907.2	2				
	3100	CRIM	20 GRF	0911	0952	77	5	2		
	33	UPIC	3 S	0926.1	0926.2	.3				
	29	UPIC	3 S	0926.2	0926.3	.3				
	9100	GORK	1 S	0952.6	0953.1	1.1	6	3		
	33	UPIC	3 S	0958.5	0958.6	.3				
	29	UPIC	3 S	0958.5	0958.6	.3				
	33	UPIC	42 SER	1005.6	1007.6	4.4				
	29	UPIC	42 SER	1005.7	1007.9	4.6				
	930	BORO	42 SER	1019.2	1023	3.8	42	2		
	33	UPIC	45 C	1133.7	1133.9	2.1				
	29	UPIC	45 C	1133	1134.4	3.4				
	930	BORO	41 F	1539	1540	1	33	2		
	4995	BOUL	47 GB	1838	1841	21	416	139		
	8800	SGHR	47 GB	1839.6	1840.7	31.2	800	240		SWF
	2695	SGHR	3 S	1839.6	1841.2	40.1	468	140		SWF
	9400	HUAN	3 S	1839.6	1840.8	2	626.4	230.1		L
	4995	SGHR	47 GB	1839.7	1840.6	34.8	662	199		SWF

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	2695	PENT	3	S	1839.8	1841	10.2	440	108		
	606	SGMR	3	S	1839.9	1840.6	29.3	452	136		SHF
	1415	SGMR	47	GB	1840.1	1840.8	31.2	1050	315		SHF
	35000	SGMR	47	GB	1840.1	1840.6	.9	800	240		SHF
	15400	SGMR	47	GB	1840.3	1840.8	15.9	580	174		SHF
	245	SGMR	7	S	1840.3	1841.1	21.2	449	135		SHF
	1420	BOUL	49	GB	1840	1840.5	18.5	625	208		
	9400	HUAN	29	PBI	1841.6	1841.6	15.1	87	47.3		L
	2695	BOUL	49	GB	1841	1842	11	473	164		
	2800	OTTA	29	PBI	1900	1900	55	22	4		
	2695	PENT	22	GRF	2005	2025	42	5.4	2.4		
	2800	OTTA	21	GRF	2053	2120	57	4.8	2.4		
	2800	OTTA	1	S	2113	2114.2	3	4.6	2.3		
10	700	SYDN	4	S	0048.5	0050	2.5				
	606	MANI	3	S	0048.7	0050.1	3.1	91.6	61.1		
	2695	MANI	3	S	0103.9	0105.4	3.6	21.7	14.5		
	2930	VORO	45	C	0103	0105	7	38			
	1400	SYDN	4	S	0104	0105.2	3				
	4995	MANI	3	S	0104.5	0105.2	3.2	91.8	54.6		I
	1415	MANI	3	S	0104.5	0105	2.7	33.6	22.4		
	2695	PENT	4	S/F	0104.7	0105.5	2	18.2			
	700	SYDN	4	S	0105	0106.7	5				
	208	VORO	48	C	0105	0106.5	4	350 D			
	100	HIRA	7	C	0106	0106.5	1.5	4000	1000		0
	200	HIRA	7	C	0106	0106.6	2	4000	1000		HL
	606	MANI	3	S	0217.7	0218.9	3.1	92	55.2		
	200	GORK	44	NS	0430 E		510		5		
	100	GORK	44	NS	0436 E		500		10		
	127	TORN	44	NS	0650 E	1405.8	530 D	430			V=1
	536	ONDR	44	NS	0740 E		447 D	145	11		
	245	SGMR	44	NS	1108 E	1619	691 D	77.7			3G
	410	SGMR	44	NS	1108 E	1329.1	691 D	42.8			3G
	208	VORO	44	NS	2200 E	0305	360 D	27	15		
	536	ONDR	45	C	0708.5	0708.5	1.5	45	4		
	3100	CRIM	1	S	0747	0749	4	3	1		
	113	POTS	45	C	0828.5	0829.6	2	600	150		
	228	HARS	40	F	0828.5	0829	1.5	90	25		
	234	POTS	45	C	0829	0829.3	1.1	175	60		
	202	IZMI	5	S	0829	0829	1	680	250		
	228	HARS	40	F	0831.5	0832	1	85	20		
	228	HARS	40	F	1025	1025.5	1.5	90	20		
	200	GORK	27	RF	1039	1123	86	25			
	3100	CRIM	1	S	1053	1056	11	7	2		
	9100	GORK	1	S	1054	1055	47	78	3.5		
	536	ONDR	45	C	1056.8	1056.8	3.5	124	12		
	202	IZMI	41	F	1109.7	1110.7	3.8	90			
	113	POTS	2		1207.7	1208.6	1.2	600	100		
	228	HARS		S	1348.5	1349	1.5	250	70		
	2800	OTTA	1	S	1440	1441	3.5	3	2.2		
	2800	OTTA	8	S	1501	1501.2	.5	1.2	.6		
	2695	PENT	20	GRF	1910	1925	25	2.4	1.2		
	4995	BOUL	45	C	1938.5	1940	15	26	9		
11	200	HIRA	27	RF	0200	0320	180	25	10		0
	100	HIRA	27	RF	0210	0310	180	45	20		0
	100	GORK	44	NS	0436 E		414		5		
	200	GORK	44	NS	0439 E		435		10		
	127	TORN	44	NS	0650 E	1020.2	530 D	43			V=0
	260	ONDR	44	NS	0725 E		467 D	54	5		
	245	SGMR	44	NS	1107 E	1637.1	694 D	50.7			3,CONT
	410	SGMR	44	NS	1107 E	1520.4	694 D	37.4			3,CONT
	208	VORO	44	NS	2200 E	0155	360 D	30	16		
	536	ONDR	8	S	1025.2	1025.2	.3	30			
	113	POTS	45	C	1206.8	1206.8	.1	100	30		
	536	ONDR	3	S	1212	1212	.3	20			
	536	ONDR	3	S	1341.8	1341.8	.3	20			
	2800	OTTA	20	GRF	1803	1810	40	2.4	1.2		
	2800	OTTA	22	GRF	1902	1916	45	5	2.2		
	2800	OTTA	20	GRF	2100	2135	60	2.4	1.2		
	2695	PENT	1	S	2352	2356	8	5.2	3		
12	200	HIRA	27	RF	0125	0153	80	30	5		MR
	100	HIRA	27	RF	0143	0153	35	50	15		SR
	200	GORK	44	NS	0415 E		435		10		
	100	GORK	43	NS	0425		420		5		
	127	TORN	44	NS	0650 E	1051.2	530 D	29			V=0
	260	ONDR	44	NS	0710 E		470 D	34			
	245	SGMR	44	NS	1105 E	1530.6	697 D	135.8			3G,5
	410	SGMR	44	NS	1105 E	1954.5	697 D	112			3G,5
	208	VORO	44	NS	2200 E		360 D		10		
	8800	SGMR	3	S	1415.5	1422.1	8	14.6	5.8		
	4995	SGMR	3	S	1417.6	1422.2	6.2	14.8	5.9		
	2695	SGMR	3	S	1417.9	1422.3	6.1	10.5	4.2		
	10400	BERN	3	S	1421.6	1422.1	.6	6	17		

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	2800	OTTA	1	S	1422.2	1422.5	1	5.8	2.9		
	2800	OTTA	29	PBI	1423.2	1423.2	8.8	1.8	1.6		
	4995	BOUL	3	S	1806	1808.5	5	13	4		
	9400	HUAN	21	GRF	1815.3	1821.3	16.3	9.3	6.1		R
	9400	HUAN	3	S	1817.4	1818.7	3.6	20.5	8.9		R
	2800	OTTA	1A	S	1817	1819	6	3.6	1.6		
	2800	OTTA	8	S	1818.5	1818.5	.1E	33			
	2800	OTTA	20	GRF	2107	2109.5	20	3.8	1.6		
13	200	HIRA	27	RF	0400	0530	285 D	70	30		MR
	100	HIRA	27	RF	0450	0550	160	400	120		SR
	200	GORK	44	NS	0500 E		480		10		
	100	GORK	44	NS	0500 E		270		300		
	127	TORN	44	NS	0640 E	1116.6	540 D	100			V=1
	260	ONDR	44	NS	0730 E		454 D	54	4		
	100	GORK	43	NS	1010.7		170		5		
	410	SGMR	44	NS	1103 E	1900.2	700 D	30.8			3G
	245	SGMR	44	NS	1103 E	2220.2	700 D	105.3			3G
	200	HIRA	44	NS	2050 E	2240	720 D	40	10		SR
	208	VORO	44	NS	2200 E	2232	360 D	35	14		
	606	MANI	3	S	0601.9	0602.4	.9	76.3	49.8		
	1415	MANI	1	S	0602.2	0602.4	.5	3	2		
	9100	GORK	20	GRF	0621	0629	19.2	14.7	7		
	9500	BERL	1	S	1017	1017.5	2	4.2			
	1470	BERL	1	S	1017	1017.5	1	3.2			
	3000	BERL	1	S	1017	1017.5	1	1.1			
	100	GORK	3	S	1036.6	1037 U	1.1	140			
	202	IZMI	41	F	1036.7	1040.7	4.3	200			
	113	POTS	45	C	1037	1037.3	.3	6000	1000		
	3100	CRIM	20	GRF	1045	1048.5	32	4	1		
	100	GORK	46	C	1051.7	1052.5	1.3	140			
	100	GORK	46	C	1149.7	1150.6	2.4	140			
	100	GORK	46	C	1210.5	1211	1.1	140			
	113	POTS	2		1247.6	1247.6	.8	200	4		
	9400	HUAN	20	GRF	1350.8	1428.8	61.7	9.9	2.3		D
	2800	OTTA			1355	1402	95	7.4			
	1470	BERL	20		1401	1405.2	14	2.6			
	3000	BERL	22		1401	1405.6	14	11			
	2800	OTTA	20	GRF	1723	1726	17	4.6	2.2		
	2800	OTTA	1A	S	1905.5	1911	10	2.6	1.3		
	2800	OTTA	1	S	1906.5	1907	1.5	3	1.5		
	2800	OTTA	32A	ABS	1920	1955	70	-3.8	-1.9		
	2800	OTTA	1	S	1955.5	1957	4	3	1.5		
	2695	PENT	21	GRF	2325	2335	30	6	3		
	700	SYDN		GRF	2328	2331.8	5.8				
	1400	SYDN	4	S	2328.5	2330.8	6				
	2695	PENT	40	F	2330	2333	3	26			
14	2930	VORO	32	ABS	0005	0012	15	18 E			
	2930	VORO	45	C	0325	0345	15	15			
	100	HIRA	46	C	0338.5	0340	4	400	150		0
	208	VORO	48	C	0338	0342	7	190			
	200	HIRA	46	C	0339	0340	4	400	200		0
	5730	IRKU	45	C	0339.2	0341.2	17	14	4		
	5730	IRKU			0339.2	0344.6		9			
	2695	MANI	3	S	0339.8	0341.3	3.7	17.4	10.4		
	1415	MANI	3	S	0339.8	0341.5	5.2	7.2	4.8		I
	4995	MANI	3	S	0339.8	0344.6	6.2	15.4	9.2		
	200	GORK	44	NS	0427 E		513		10		
	100	GORK	44	NS	0500 E		420		20		
	127	TORN	44	NS	0640 E	0931.9	500 D	45			V=1
	260	ONDR	44	NS	0714 E		472 D	30	2		
	410	SGMR	44	NS	1102 E	1508.2	702 D	21.5			3,5
	245	SGMR	44	NS	1102 E	1851.8	702 D	144.9			3,5
	200	HIRA	44	NS	2050 E	0450	550 D	40	10		SR
	208	VORO	44	NS	2200 E		360 D		13		
	606	MANI	3	S	0627.7	0628.4	1	54.7	33		
	113	POTS	48		0813	0813.8	10	200	1		
	3100	CRIM	21	GRF	0828	0933	262	8			
	4995	SGMR	20	GRF	1207.8	1212.4	13.6	14.3	4.3		
	2695	SGMR	20	GRF	1207.9	1211.6	13	7.9	2.4		
	1415	SGMR	20	GRF	1208.1	1213.1	10.2	7.7	2.3		
	8800	SGMR	20	GRF	1208.7	1212.8	13.1	20.9	6.3		
	15400	SGMR	20	GRF	1208.9	1213.9	12	18	6		
	9400	HUAN	21	GRF	1210	1217	70	9.9	4.1		R
	9500	BERL	4		1211.4	1211.7	3.6	14			
	3000	BERL	1	S	1211.5	1212.5	3.5	5.2			
	3100	CRIM	1	S	1211.5	1213	2	8	3		
	8900	BERN	4	S/F	1211.6	1212.6	10	9	25		
	8400	BERN	4	S/F	1211.6	1212.6	10	7	20		
	10400	BERN	4	S/F	1211.6	1212.6	10	5	14		
	9400	HUAN	3	S	1211.7	1212.3	2.8	16.5	7.4		R
	9100	GORK	1	S	1211.9	1212.3	4.1	18	9		
	1470	BERL	1	S	1212	1212.5	5	5.4			
15	1400	SYDN	1	S	0003.5	0004	1				

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MAR 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
	208	VORO	48	C	0145.5	0148	3.5	200			
	2930	VORO	3	S	0225	0230	8	22			
	208	VORO	48	C	0232	0234	3.5	200			
	700	SYDN	4	S	0331.5	0332.5	2				
	1400	SYDN	1	S	0437	0438.5	2.5				
	700	SYDN	2	S	0439.5	0440.5	1.5				
	221	ABST	44	NS	0520	0815.2	200	21			
	260	ONDR	44	NS	0722 E		465 D	168	17		
	127	TORN	43	NS	0900 U	1336.8	360 D	170			V=1
	245	SGMR	44	NS	1100 E	1117.8	705 D	453.7			SWF
	410	SGMR	44	NS	1100 E	1703.7	705 D	27.2			5,CONT,
	234	POTS	1	S	0914.6	0914.7	.1	120	40		
	234	POTS	45	C	0935.8	0935.8	.5	315	60		
	3000	BERL			1005	1015.5					
	3100	CRIM	20	GRF	1005	1016	16	12	4		
	1470	BERL	20		1005	1016	19	3.9			
	9500	BERL	20		1005	1016	15	7.1			
	9100	GORK	20	GRF	1010.2	1015.9	23.1	12.3	4.3		
	808	ONDR	3	S	1014.4	1014.4	.2	45			
	202	IZMI	25	R	1025	1123.3	95 D	550	150		
	127	TORN	27	RF	1035 U	1240 U	240 U	170			
	113	POTS	45	C	1040	1243	260 D	150			
	234	POTS	45	C	1050	1235	250 D	60			
	33	UPIC	3	S	1120.1	1120.2	.3				
	29	UPIC	3	S	1120	1120.2	.4				
	29	UPIC	41	F	1132.3	1242.1	77.7				
	33	UPIC	41	F	1132.6	1210.7	78.3				
	3000	BERL	20		1240	1242.5	8				
	1470	BERL	20		1240	1241.5	4	2.2			
	2800	OTTA	22	GRF	1240	1255	45	3	2		
	9400	HUAN	20	GRF	1241.3	1259.7	42.5	8	2.7		0
	2800	OTTA	20	GRF	1520	1525	25	2.2	1.1		
	1415	SGMR	3	S	1701.9	1702.3	2.8	10.2	4.1		5
	606	SGMR	3	S	1702	1702.5	2.3	12.9	5.2		5
	245	SGMR	6	S	1702.6	1703	1.9	36.3	14.5		5
	4995	SGMR	1	S	1702.7	1703.3	2.1	3.7	1.5		5
	410	SGMR	6	S	1702.8	1703.2	1.1	26	10.4		5
	2695	SGMR	3	S	1702.8	1703.3	1.9	15.1	6		5
	2800	OTTA	3	S	1702.9	1703.2	2	14	4		
	2695	PENT	20	GRF	2325	2355	80 D	4.6			
	500	HIRA	24	R	2328	0335	560 D	60	30		SR
	100	HIRA	27	RF	2330	0245	360	500	120		SR
	200	HIRA	43	NS	2330	0330	600 D	200	50		SR
	208	VORO	43	NS	2336	0358	264 D	153	50		
	700	SYDN	40	F	2347.5	2355.5	12.5				
16	2930	VORO	23	GRF	0125	0143	35	18			
	2930	VORO	3	S	0305	0317	15	28			
	200	GORK	44	NS	0418 E		462		30		
	221	ABST	44	NS	0500	1030.2	240	20			
	100	GORK	43	NS	0543		378		10		
	202	IZMI	44	NS	0600		360	80			
	127	TORN	44	NS	0640 E	1020.1	500 D	110			V=2
	260	ONDR	44	NS	0726 E		459 D	116			
	410	SGMR	44	NS	1058 E	1409.5	709 D	60.2			3G
	245	SGMR	44	NS	1058 E	1413.6	709 D	180			3G
	200	HIRA	44	NS	2050 E	0350	280 D	50	10		SR
	208	VORO	44	NS	2200 E		240 D		12		
	113	POTS	45	C	0700.4	0701.3	2.2	200	20		
	234	POTS	45	C	1005.3	1005.8	.6	350	20		
	9400	HUAN	20	GRF	1530.2	1540.5	59.3	4.7	.5		R
	2800	OTTA	22	GRF	1820	1835	60	5.4	2.5		
	2930	VORO	21	GRF	2300	2328	33	15			
17	200	GORK	44	NS	0418 E		522		10		
	221	ABST	44	NS	0530	0858.2	240	15			
	202	IZMI	44	NS	0600		85	60			
	127	TORN	44	NS	0640 E	1218.3	500 D	28			V=0
	260	ONDR	44	NS	0710 E		477 D	49	4		
	410	SGMR	44	NS	1140 E	1758.6	668 D	17.6			3,SWF
	245	SGMR	44	NS	1140 E	1218.5	668 D	79.6			3,SWF
	208	VORO	44	NS	2200 E		240 D		20		
	234	POTS	45	C	0629	0629.3	.8	125	6		
	3100	CRIM	24	R	0854	0900		6			
	1470	BERL	1	S	0926.5	0927.3	2.1	2.1			
	33	UPIC	45	C	1054.7	1054.8	1.5				
	29	UPIC	45	C	1055.5	1055.6	1				
	2800	OTTA	22	GRF	1545	1600	35	2.4	1.2		
	100	HIRA	27	RF	2345	0120	345	800	200		SR
18	200	HIRA	27	RF	0000	0118	330	300	40		MR
	208	VORO	24	R	0017	0111	103 D	100	45		
	100	GORK	44	NS	0409 E		411		10		
	200	GORK	44	NS	0409 E		411		5		
	127	TORN	44	NS	0630 E	1049.2	510 D	350			V=1

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	221	ABST	44 NS	0700	0809.8	120	10			
	260	ONDR	44 NS	0802 E		358 D	71	8		
	245	SGMR	44 NS	1055 E	1838	714 D	191			3G
	410	SGMR	44 NS	1055 E	1753.4	714 D	64.7			3G
	208	VORO	44 NS	2200 E		50 D		13		
	234	POTS	2	0657.6	0658.8	2.8	100	2		
	33	UPIC	42 SER	0754.3	0757.9	9.7				
	29	UPIC	42 SER	0754.3	0758	10				
	113	POTS	2	0756.2	0758.2	2.4	385	7		
	33	UPIC	45 C	0903.9	0904.3	1				
	29	UPIC	45 C	0904	0904.9	1.5				
	33	UPIC	45 C	0921.6	0921.7	1.6				
	29	UPIC	45 C	0921.6	0921.9	1.8				
	33	UPIC	46 C	1057	1059	6.1				
	29	UPIC	46 C	1058.2	1059.2	5.2				
	2800	OTTA	22 GRF	1425	1436	30	3.8	1.9		
	4995	BOUL	1 S	1815	1816.5	2	11	4		
	2695	BOUL	1 S	1816	1818	1.5	3	1		
19	200	GORK	44 NS	0409 E		410		5		
	100	GORK	43 NS	0433		96		10		
	221	ABST	43 NS	0700	0725.8	65	14			
	260	ONDR	44 NS	0744 E		387 D	94	6		
	410	SGMR	44 NS	1053 E	1304.1	717 D	62.3			
	245	SGMR	44 NS	1053 E	1431.2	717 D	325.6			
	127	TORN	40 F	0952.5	1017.7	35	6.5			
	2800	OTTA	20 GRF	1500	1505	25	1.6	.8		
	2800	OTTA	1 S	1953	1955	4	1	.5		
	2800	OTTA	20 GRF	2100	2105	30	1.6	.8		
20	2930	VORO	45 C	0005	0010	10	102			
	100	HIRA	41 F	0658	0710	17	280			0
	200	HIRA	41 F	0658	0710	13	150			0
	202	IZMI	41 F	0702 U	0710	9	125			
	260	ONDR	44 NS	0705 E		481 D	67	4.5		
	410	SGMR	44 NS	1051 E	1310.1	720 D	33.9			3
	245	SGMR	44 NS	1051 E	2147.3	720 D	52.4			3
	234	POTS	2	0709.6	0709.8	1.4	200	3		
	33	UPIC	45 C	0710.2	0710.6	1.6				
	29	UPIC	45 C	0710.4	0710.6	.9				
	2695	BOUL	3 S	2320.5	2321.5	2.5	3	1		
	2695	PENT	1 S	2320.5	2320.6	2	1.8	.9		
	1420	BOUL	8 S	2320	2320	2	3	1		
21	260	ONDR	44 NS	0718 E		469 D	27	3.5		
	410	SGMR	44 NS	1049 E	1706	723 D	8.4			3G
	245	SGMR	44 NS	1049 E	1513.3	723 D	49			3G
	33	UPIC	4 S/F	0800	0800.2	1.7				
	29	UPIC	2 S/F	0800	0800.2	1				
	3100	GRIM	1 S	0951	0951.5	1.5	5	2		
	3000	BERL	4	0951.5	0952.9	2.1	4.8			
	6100	KISV	3 S	0952	0952.6	2	3			
	1470	BERL	1 S	0952.3	0952.9	1.7	1			
	536	ONDR	8 S	0952.7	0952.7	.3	23			
	2800	OTTA	1 S	1834.5	1836.6	3.5	2.2	1.1		
	2800	OTTA	20 GRF	2158	2201	20	2.4	1.2		
22	2695	MANI	1 S	0420.6	0421	.9	7.4	3.7		
	1415	MANI	1 S	0420.6	0421	.8	1.6	.8		
	260	ONDR	44 NS	0711 E		476 D	23			
	221	ABST	44 NS	0945	1028	80	12			
	245	SGMR	44 NS	1048 E	2029	726 D	70.8			3G
	536	ONDR	2 S/F	0830.8	0832	3.5	8	2.4		
	260	ONDR	4 S/F	0830	0832	3	39	7.8		
	33	UPIC	45 C	0831	0833.3	3.7				
	808	ONDR	2 S/F	0832.4	0833.4	2	12	3		
	29	UPIC	45 C	0832.5	0833.1	2.1				
	6100	KISV	2 S/F	1145	1142	4	4			
	6100	KISV	45 C	1153	1154.5	11	11			
	9500	BERL	20	1300	1320.5	35	5.7			
	2800	OTTA	24 R	1300	1313	13	1.6	.6		
	2800	OTTA	27F RF	1300		55	1.6	1.2		
	1470	BERL	20	1308.5	1337	52	2.5			
	3000	BERL	20	1309.5	1338.5	51	4.5			
	2800	OTTA	24P R	1313		34	1.6			
	2800	OTTA	26 FAL	1347	1355	8	-1.6	-0.7		
	2800	OTTA	20 GRF	1422		70 D	2			
	2800	OTTA	20 GRF	1810	1915	80	1.6	.8		
	2695	PENT	24 R	2235	2250	15	2	1		
	2695	PENT	27 RF	2235		105	2	1.6		
	2695	PENT	24P R	2250		64	2			
	2695	PENT	26 FAL	2354	2420	26	-2	-1		
23	2930	VORO	42 SER	0110	0155	65	86			
	221	ABST	44 NS	0500	0525.8	240	9			

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	260	ONDR	44	NS	0704 E		476 D	13			
	127	TORN	44	NS	0930 E	1146.1	330 D	11			V=0
	245	SGMR	44	NS	1046 E	1828.4	729 D	20.9			
24	606	MANI	3	S	0605.8	0606	.5	65.7	32.8		
	1415	MANI	1	S	0605.8	0606	.4	2.8	2		
	3100	CRIM	5	S	0657	0701	16	3	1		
	260	ONDR	44	NS	0722 E		465 D	11			
	127	TORN	44	NS	0800 E	1243.4	380 D	34			V=1
	245	SGMR	44	NS	1044 E	1628.6	732 D	20.4			
	930	BORC	41	F	0723	0723.4	1	31	2		
	930	BORD	8	S	0727.7	0727.7	.1	14	1		
	1415	MANI	1	S	0823.9	0824.1	1	1.4	.7		
	2695	MANI	1	S	0824.2	0824.8	1.4	5.5	2.7		
	930	BORD	8	S	1049.2	1049.2	.1	10	1		
	245	SGMR	6	S	1134.2	1135.5	3.3	57.4	23		
	9500	BERL	4		1211	1211.8	1.6	13			
	3000	BERL	2		1212.6	1213.3	1.1	1.7			
	2800	OTTA	20	GRF	1330		60	2.4	1.2		
	2800	OTTA	240	AR	1500	1520	20	2.4	1.2		
	2800	OTTA	1	S	1518.2	1518.9	1	2.2	1.1		
	2800	OTTA	24	R	1710	1730	20	2	1		
	2800	OTTA	27	RF	1710		105	2	1.6		
	2800	OTTA	24P	R	1730		66	2			
	2800	OTTA	26	FAL	1836	1855	19	-2	-1		
	35000	NAGO	22	GRF	2307	2315	15	4			
	2695	PENT	20	GRF	2310	2320	90	4.6	2.8		
	2930	VORO	42	SER	2320	2330	52	278			
25	260	ONDR	44	NS	0710 E	.	470 D	9			
	127	TORN	44	NS	0800 E	1033.6	380 D	13			V=0
	410	SGMR	44	NS	1042 E	1320.5	735 D	13.8			
	245	SGMR	44	NS	1042 E	1457.6	735 D	25.5			
26	1415	MANI	3	S	0004.5	0005.8	6.3	82.3	54.8		
	221	ABST	44	NS	0500	0541.2	240	8			
	260	ONDR	44	NS	0705 E		473 D	5			
	245	SGMR	44	NS	1041 E	1525.8	737 D	8.8			
27	200	HIRA	43	NS	0340	0430	315 D	130	40		SR
	100	GORK	44	NS	0351 E		432		10		
	100	HIRA	43	NS	0352	0425	300 D	200	50		SR
	200	GORK	43	NS	0400 E		420		30		
	221	ABST	43	NS	0545	0628	80	6			
	202	IZMI	44	NS	0600		360	40			
	260	ONDR	44	NS	0702 E		486 D	71	22		
	127	TORN	44	NS	0720 E	0927.2	500 D	79			V=1
	245	SGMR	44	NS	1039 E	1618	740 D	63.8			3
	410	SGMR	44	NS	1039 E	1334.5	740 D	36.9			3
	200	HIRA	44	NS	2030 E	0030	300 D	40	5		SR
	6100	KISV	1	S	1026.3	1027	2	2			
	2800	OTTA	20	GRF	1420	1426	17 D	1.4			
	2800	OTTA	240	R	1515	1605	50	2	1		
28	2930	VORO	31	ABS	0200	0205	13	12 E			
	260	ONDR	44	NS	0652 E		494 D	47	5		
	245	SGMR	44	NS	1037 E	1230.6	743 D	30.5			2,3
	930	BORD	8	S	1106.4	1106.4	.1	13	1		
	202	IZMI	5	S	1129	1129	.4	144	64		
	930	BORD	8	S	1223	1223.1	.1	19	1		
	930	BORD	46	C	1639	1639.1	.4	72	3		
	2800	OTTA	1	S	1949	1950.2	3	3.2	1.4		
	2695	BCUL	1	S	1950	1951	2	4	1		
29	33	UPIC	45	C	0648.7	0648.7	1.9				
	202	IZMI	41	F	0649	0649	1.5	123			
	29	UPIC	45	C	0649.1	0649.3	.9				
	260	ONDR	8	S	0911.7	0911.7	.2	29			
	245	SGMR	44	NS	1035 E	1709.9	747 D	14			3G
	260	ONDR	2	S/F	1140.7	1141.5	2	6	1.8		
	808	ONDR	3	S	1141.2	1141.7	1	20	7		
	536	ONDR	2	S/F	1141.3	1141.8	2.5	8	2.2		
30	260	ONDR	44	NS	0650 E		497 D	27	3.5		
	245	SGMR	44	NS	1034 E	2010.7	749 D	16.4			
	2800	OTTA	27	RF	1605		59	1	.9		
	2800	OTTA	24	R	1605	1612	7	1			
	2800	OTTA	24P	R	1612		43	1			
	2800	OTTA	26	FAL	1655	1704	9	-1	-0.5		
	2800	OTTA	20	GRF	2040	2052	30	.8	.4		
	2695	PENT	240	R	2305	2335	30	3.4	1.7		
31	3100	CRIM	24	R	0944	1135		5			
	245	SGMR	44	NS	1032 E	1318.8	752 D	19.3			
	29	UPIC	42	SER	1201.6	1210.8U	34.6				

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31	33 UPIC	42 SER	1201	1210.5U	35				
	260 ONDR	42 SER	1207	1241.3	72	14			
	2800 OTTA	27 RF	1320		340	2.2	1.5		
	2800 OTTA	24 R	1320	1350	30	2.2	1.1		
	280Q OTTA	24P R	1350		120	2.2			
	2800 OTTA	26 FAL	1550	1900	190	-2.2	-1.1		

Reports received from the following observatories:

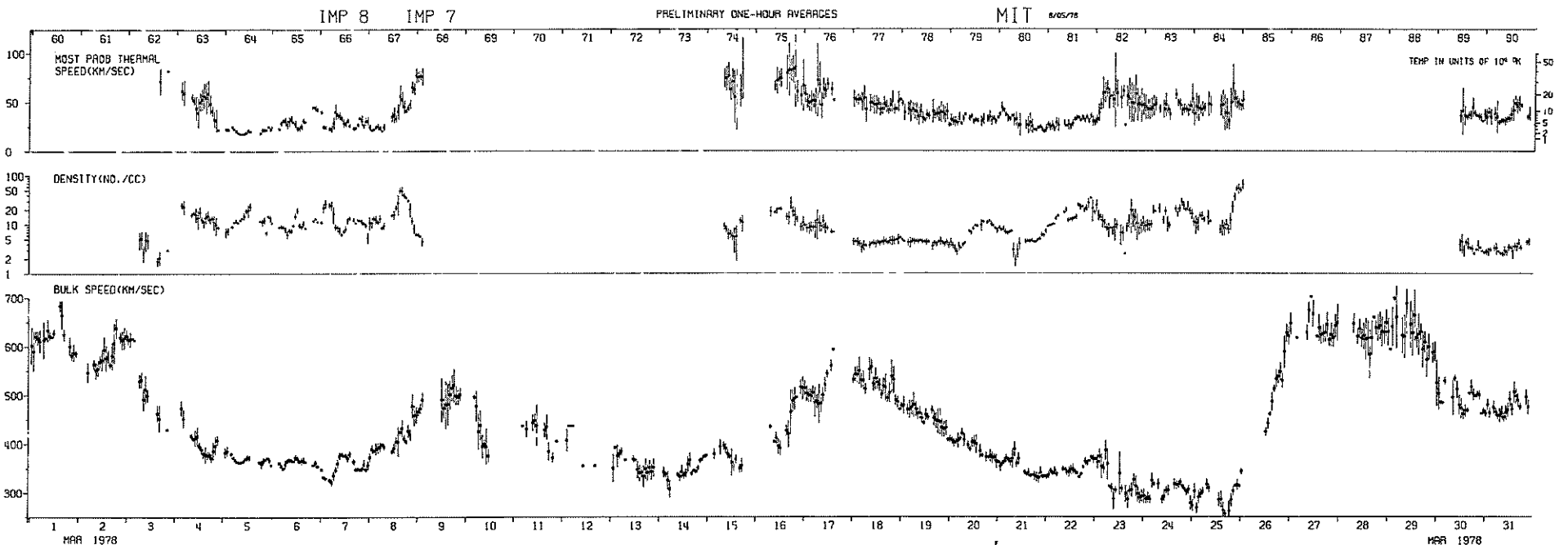
ARCE = Arcetri
BERL = Berlin-Adlershof
BORD = Bordeaux
BOUL = Boulder
CRIM = Simferopol
DWIN = Dwingeloo
GORK = Gorky
HARS = Harestua
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk
KIEV = Kiev
MANI = Manila
MCMA = McMath-Hulbert
NAGO = Nagoya
ONDR = Ondrejov
OTTA = Ottawa
PENT = Penticton
POTS = Potsdam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

Explanation of Type Code:

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

IMP 7 AND 8 SOLAR WIND PLASMA

MARCH 1978



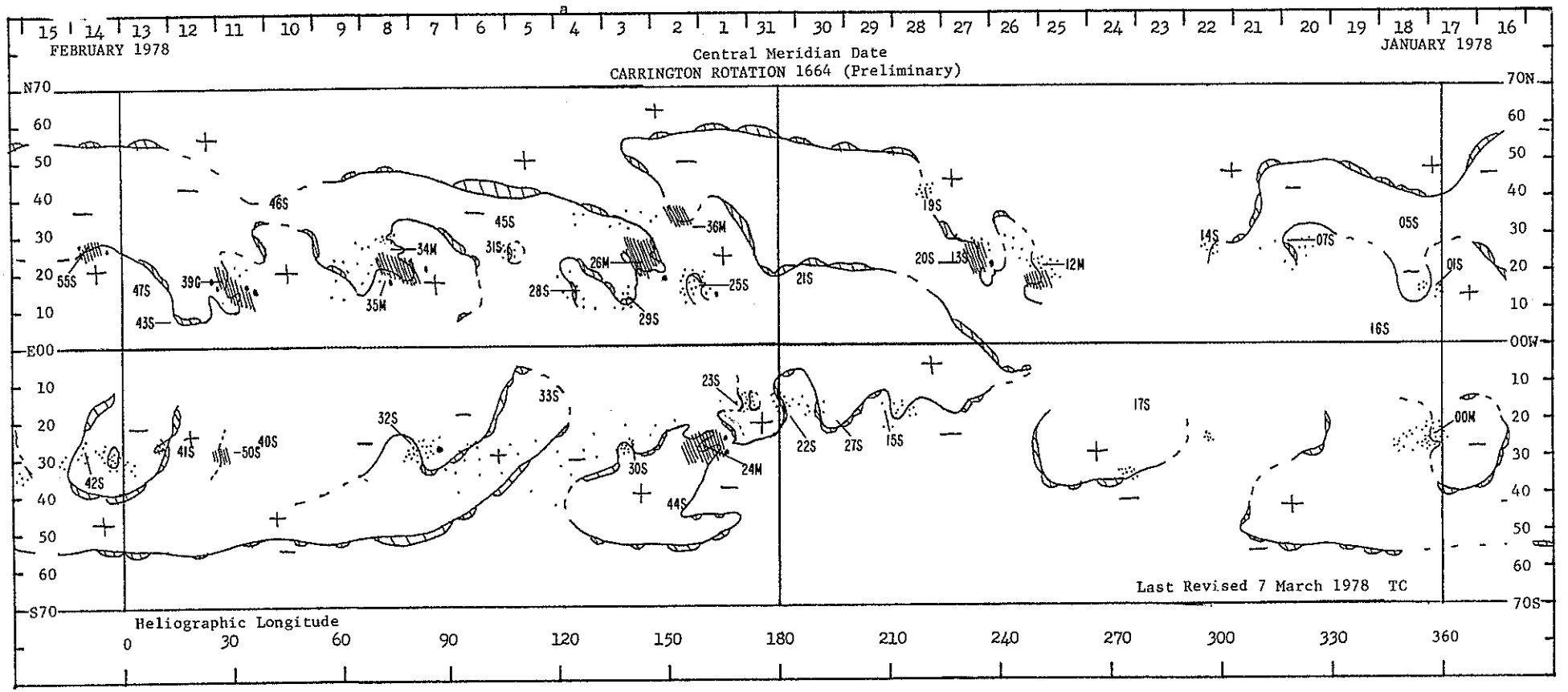
FEBRUARY 1978 DATA

Contents

ABBREVIATED CALENDAR RECORD

Hα SYNOPTIC CHART

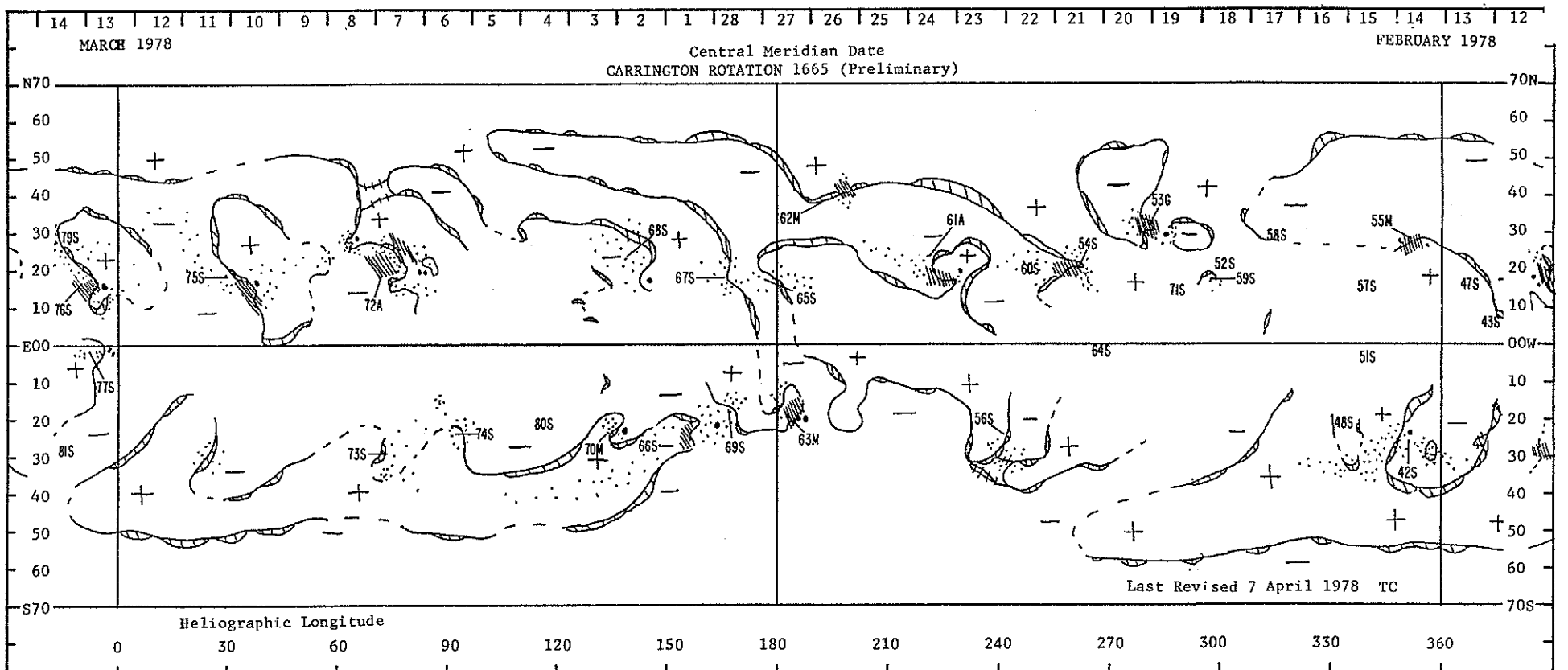
JANUARY - FEBRUARY 1978



ABBREVIATED CALENDAR RECORD

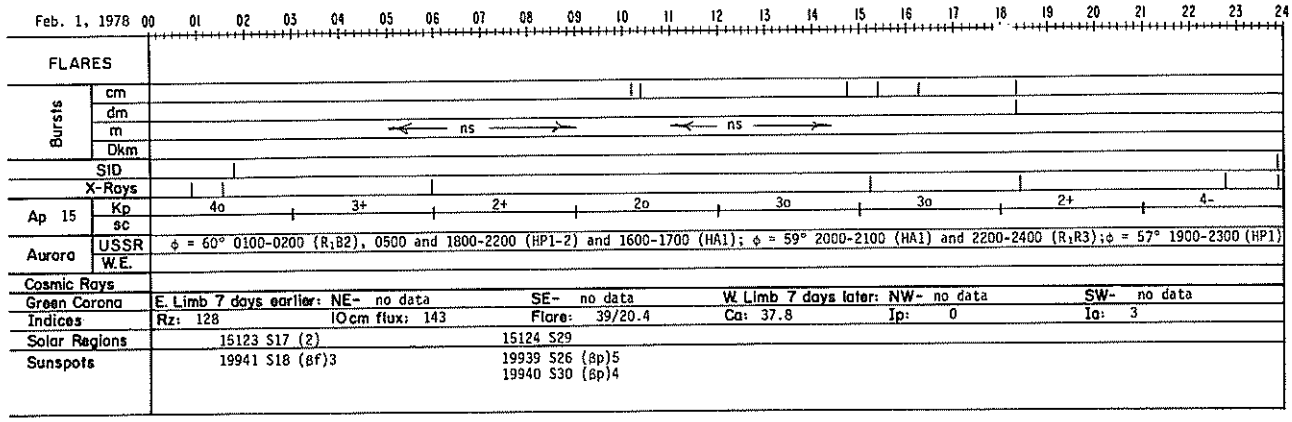
Hα SYNOPTIC CHART

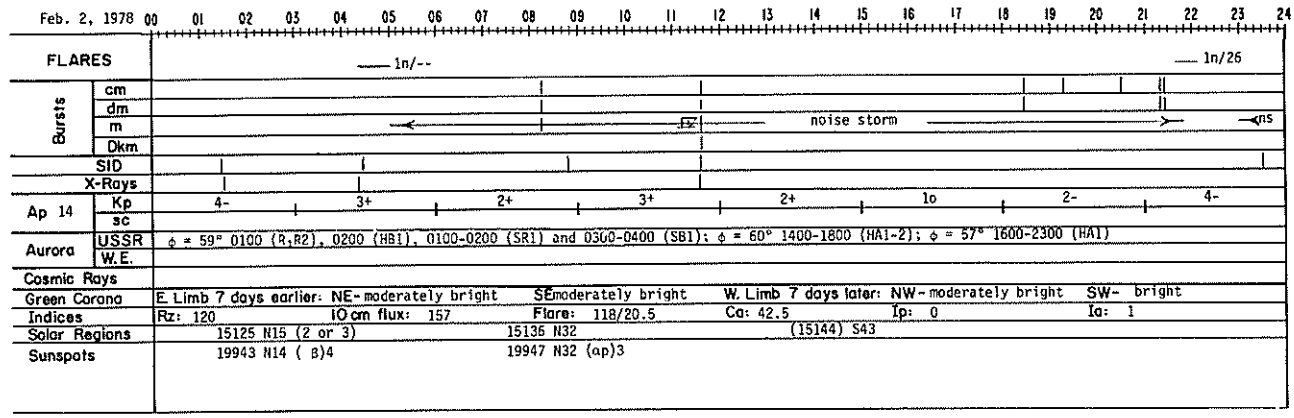
FEBRUARY - MARCH 1978

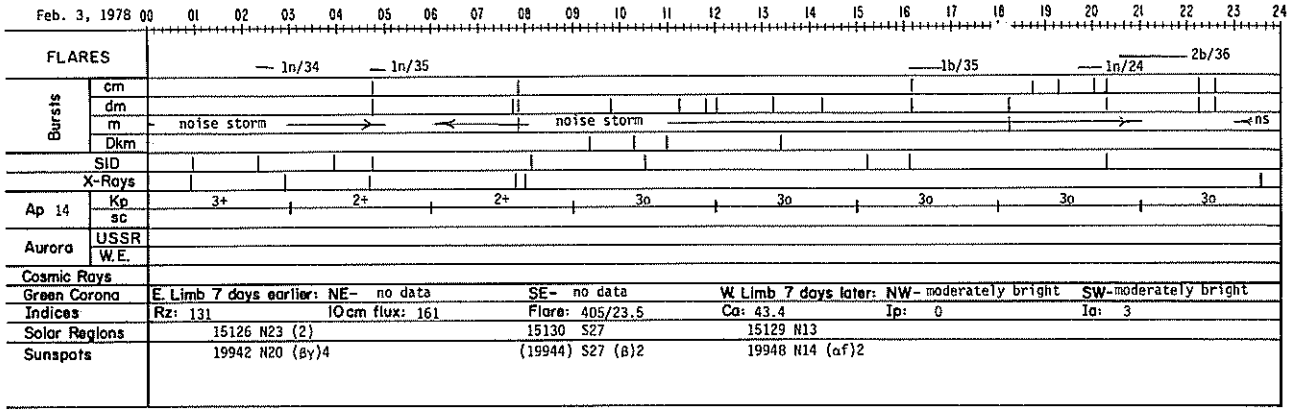


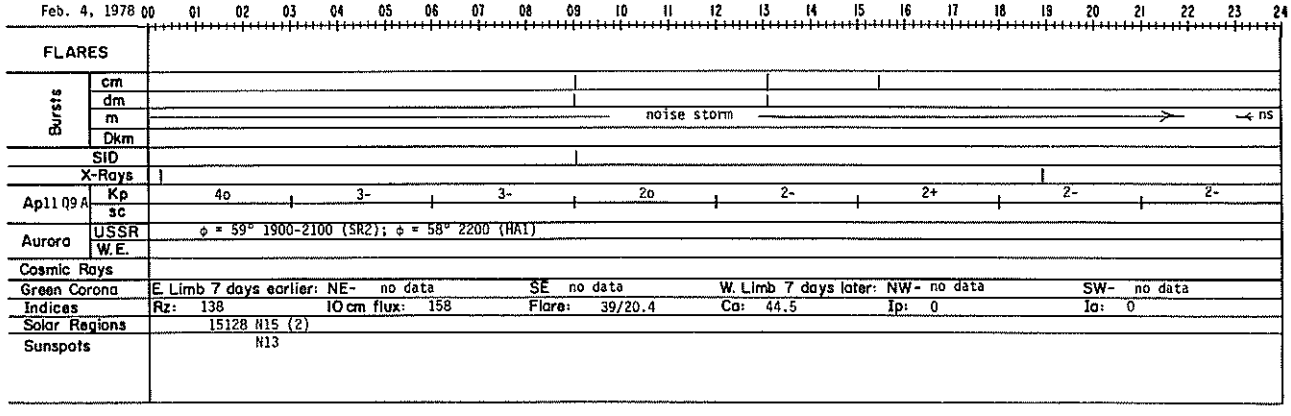
ABBREVIATED CALENDAR RECORD

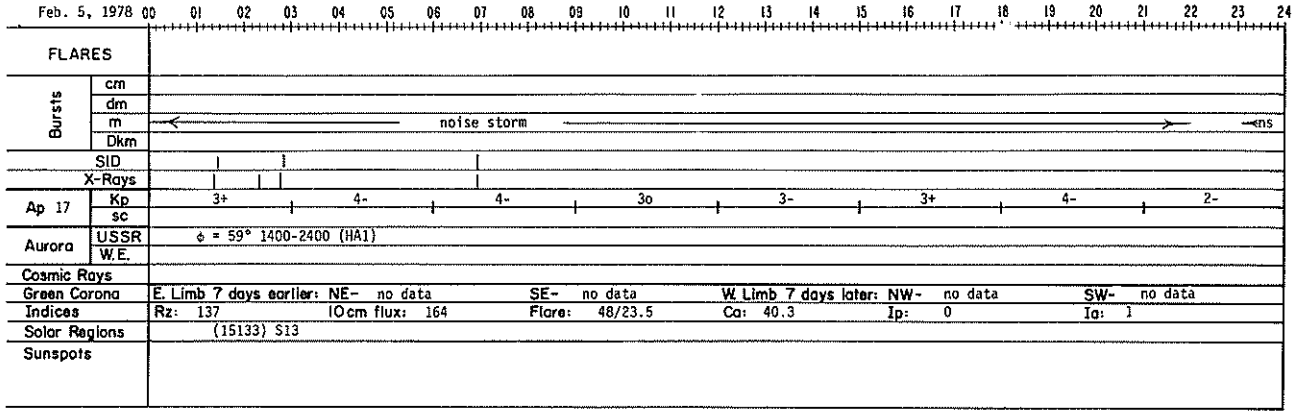
FEBRUARY 1978

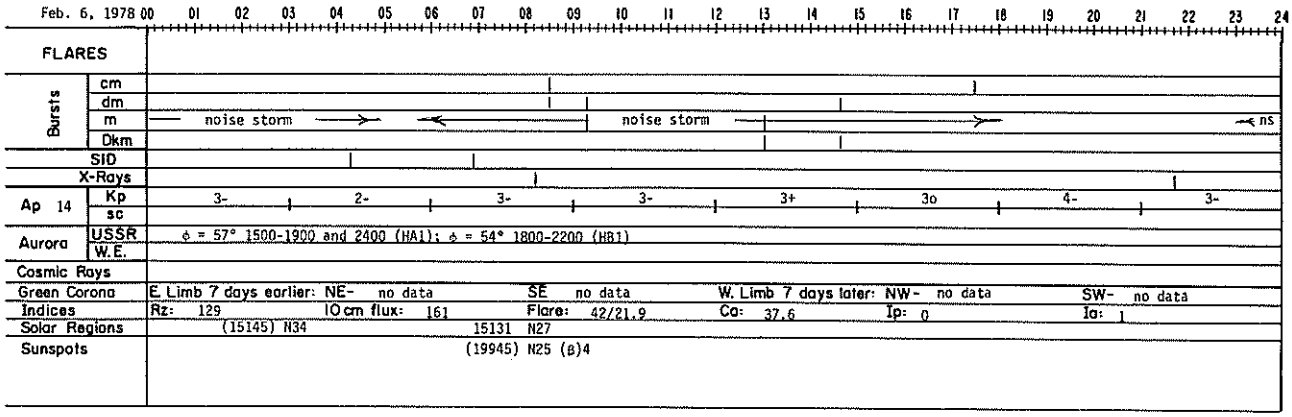


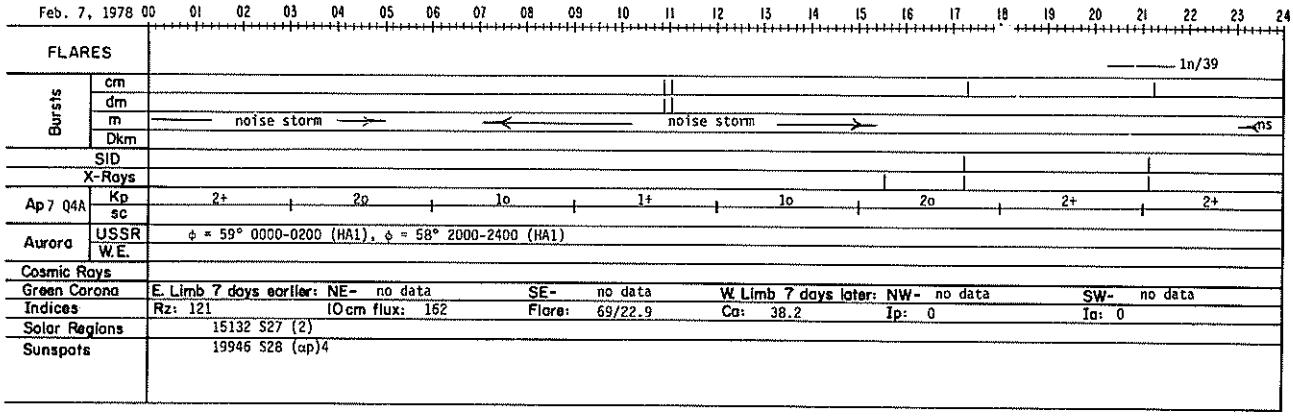


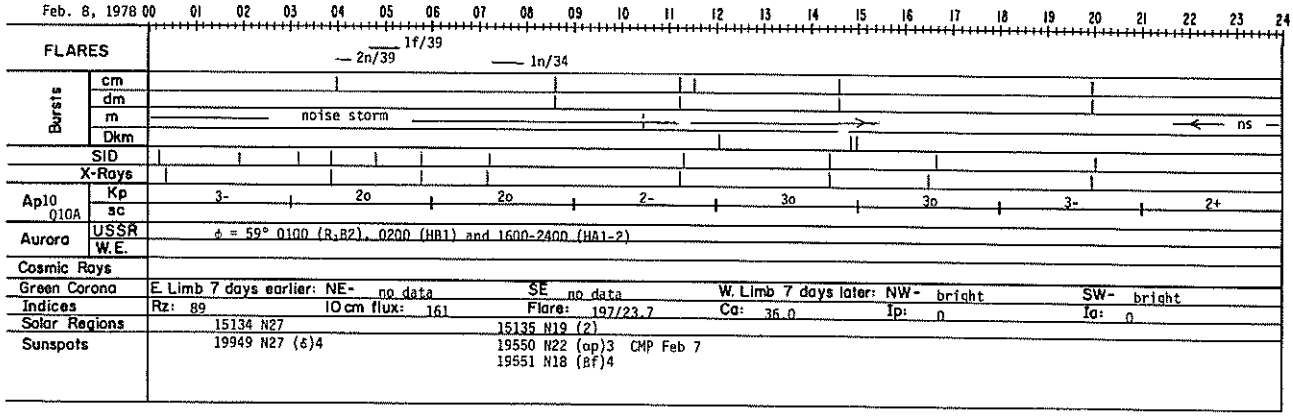


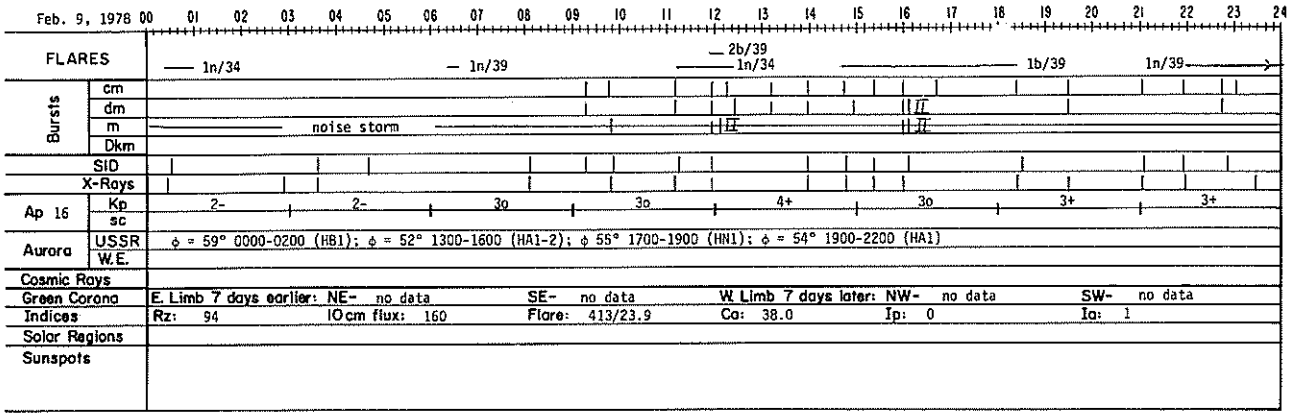


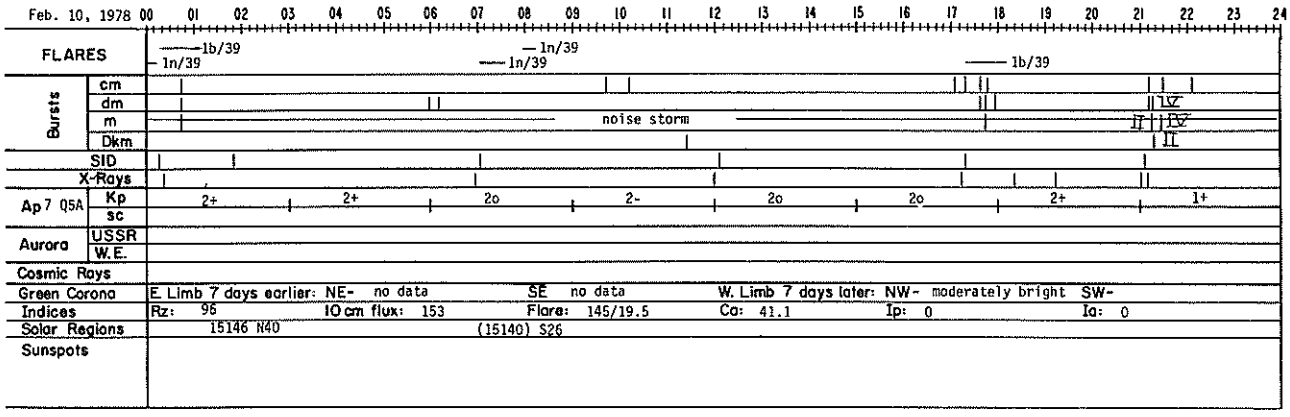

Feb. 5, 1978 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
ns
SID
X-Rays
Ap 17
Kp
sc
3+ 4- 4- 3o 3- 3+ 4- 2-
Aurora
USSR
W.E.
ϕ = 59° 1400-2400 (HA1)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 137 10cm flux: 164 Flare: 48/23.5 Ca: 40.3 Ip: 0 Ia: 1
Solar Regions
(15133) S13
Sunspots

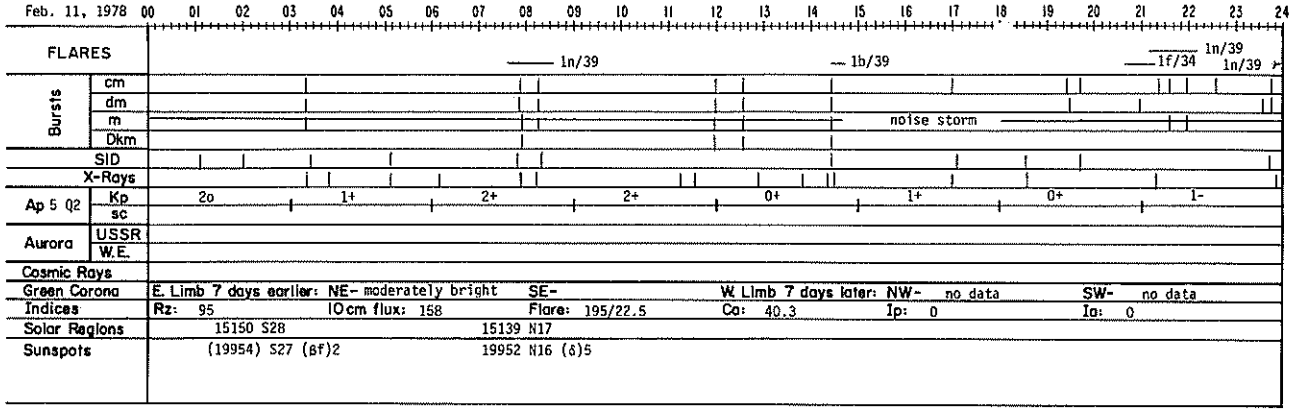

Feb. 6, 1978 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
noise storm
ns
SID
X-Rays
Ap 14
Kp
sc
3- 2- 3- 3- 3+ 3o 4- 3-
Aurora
USSR
W.E.
ϕ = 57° 1500-1900 and 2400 (HA1); ϕ = 54° 1800-2200 (HB1)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 129 10cm flux: 161 Flare: 42/21.9 Ca: 37.6 Ip: 0 Ia: 1
Solar Regions
(15145) N34 15131 N27
Sunspots
(19945) N25 (B)4

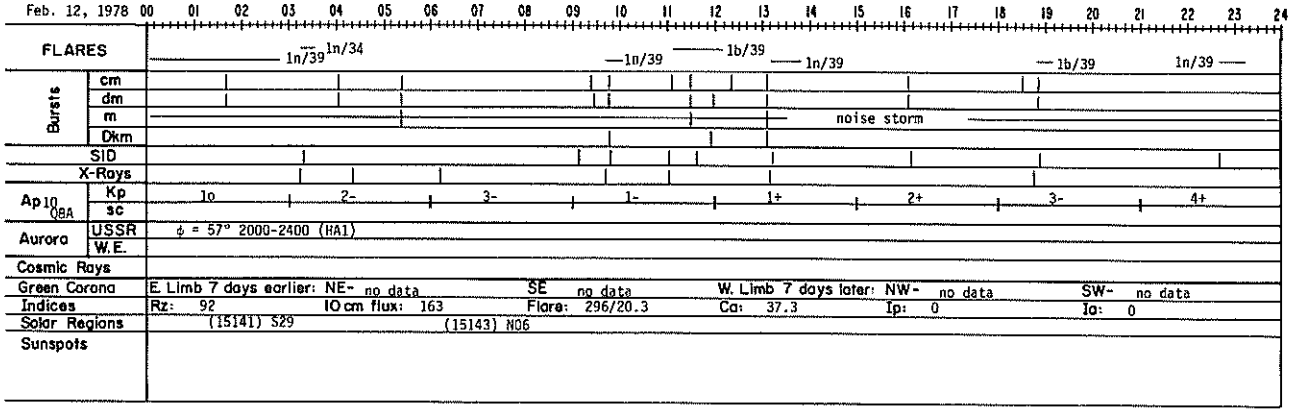

Feb. 7, 1978 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/39
Bursts
cm
dm
m
Dkm
noise storm
noise storm
ns
SID
X-Rays
Ap 7 Q4A
Kp
sc
2+ 2o 1o 1+ 1o 2o 2+ 2+
Aurora
USSR
W.E.
ϕ = 59° 0000-0200 (HA1), ϕ = 58° 2000-2400 (HA1)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 121 10cm flux: 162 Flare: 69/22.9 Ca: 38.2 Ip: 0 Ia: 0
Solar Regions
15132 S27 (2)
Sunspots
19946 S28 (ap)4

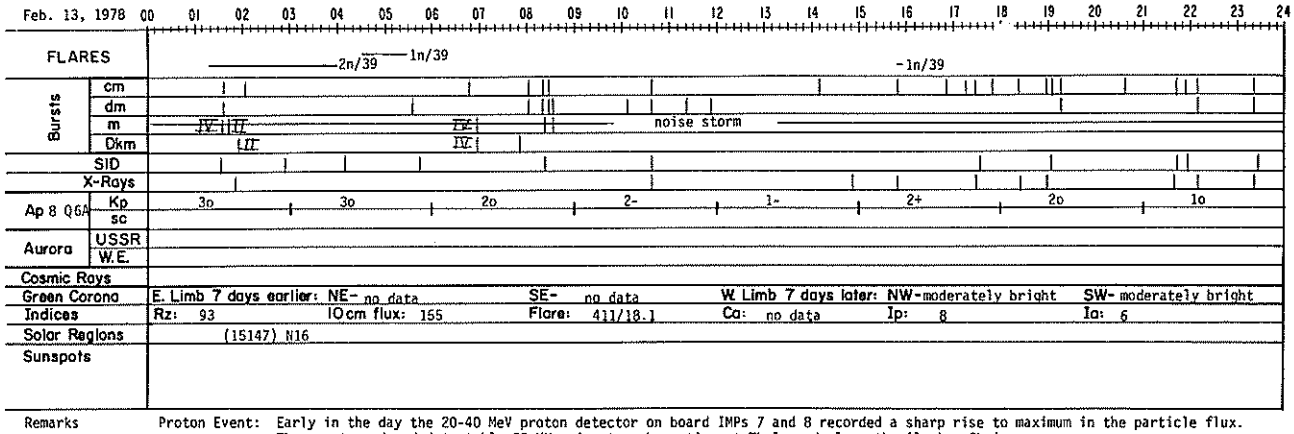

Feb. 8, 1978 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
2n/39
1f/39
1n/34
Bursts
cm
dm
m
Dkm
noise storm
ns
SID
X-Rays
Ap10
Q10A
Kp
sc
3- 2o 2o 2- 3o 3o 3- 2+
Aurora
USSR
W.E.
ϕ = 59° 0100 (R,B2), 0200 (HB1) and 1600-2400 (HA1-2)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- bright SW- bright
Indices
Rz: 89 10cm flux: 161 Flare: 197/23.7 Ca: 36.0 Ip: 0 Ia: 0
Solar Regions
15134 N27 15135 N19 (2)
Sunspots
19949 N27 (δ)4
19550 N22 (ap)3 CMP Feb 7
19551 N18 (Bf)4


Feb. 9, 1978
FLARES
1n/34
1n/39
2b/39
1n/34
1b/39
1n/39
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 16
Kp
2-
2-
3o
3o
4+
3o
3+
3+
sc
Aurora
USSR
ϕ = 59° 0000-0200 (HB1); ϕ = 52° 1300-1600 (HA1-2); ϕ 55° 1700-1900 (HN1); ϕ = 54° 1900-2200 (HA1)
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: 94
10cm flux: 160
Flare: 413/23.9
Ca: 38.0
Ip: 0
Ia: 1
Solar Regions
Sunspots

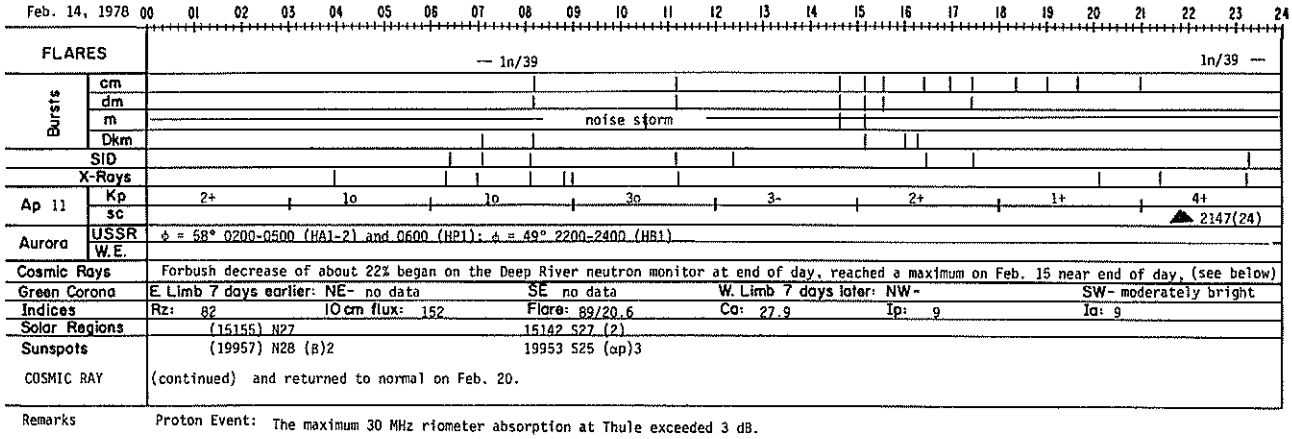

Feb. 10, 1978
FLARES
1b/39
1n/39
1n/39
1n/39
1b/39
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 7 Q5A
Kp
2+
2+
2o
2-
2o
2o
2+
1+
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data
SE no data
W. Limb 7 days later: NW- moderately bright
SW-
Indices
Rz: 96
10cm flux: 153
Flare: 145/19.5
Ca: 41.1
Ip: 0
Ia: 0
Solar Regions
15146 N40
(15140) S26
Sunspots


Feb. 11, 1978
FLARES
1n/39
1b/39
1f/34
1n/39
1n/39
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 5 Q2
Kp
2o
1+
2+
2+
0+
1+
0+
1-
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright
SE-
W. Limb 7 days later: NW- no data
SW- no data
Indices
Rz: 95
10cm flux: 158
Flare: 195/22.5
Ca: 40.3
Ip: 0
Ia: 0
Solar Regions
15150 S28
15139 N17
Sunspots
(19954) S27 (βf)2
19952 N16 (δ)5

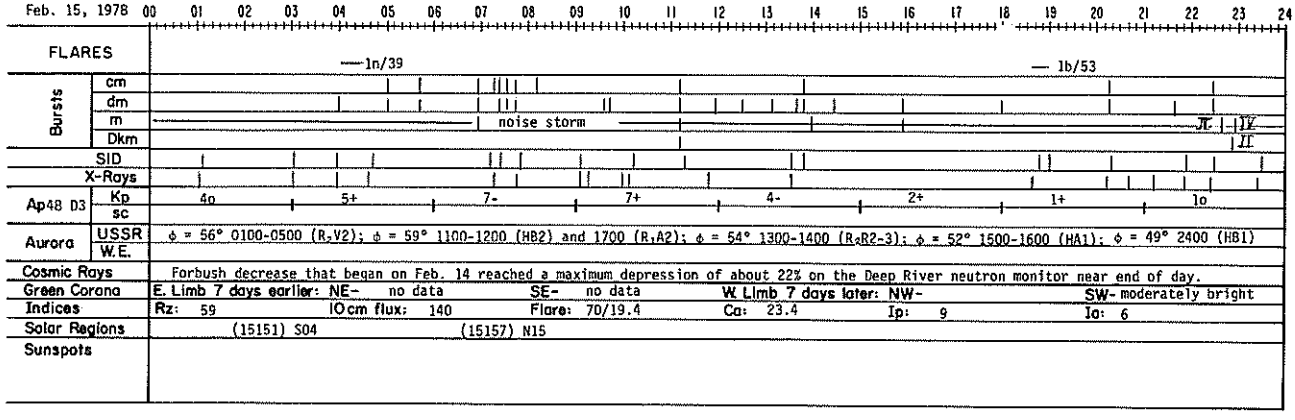

Feb. 12, 1978
FLARES
1n/39
1n/34
1n/39
1b/39
1n/39
1b/39
1n/39
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 10 Q8A
Kp
1o
2-
3-
1-
1+
2+
3-
4+
sc
Aurora
USSR
ϕ = 57° 2000-2400 (HA1)
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data
SE ng data
W. Limb 7 days later: NW- no data
SW- no data
Indices
Rz: 92
10cm flux: 163
Flare: 296/20.3
Ca: 37.3
Ip: 0
Ia: 0
Solar Regions
(15141) S29
(15143) N06
Sunspots

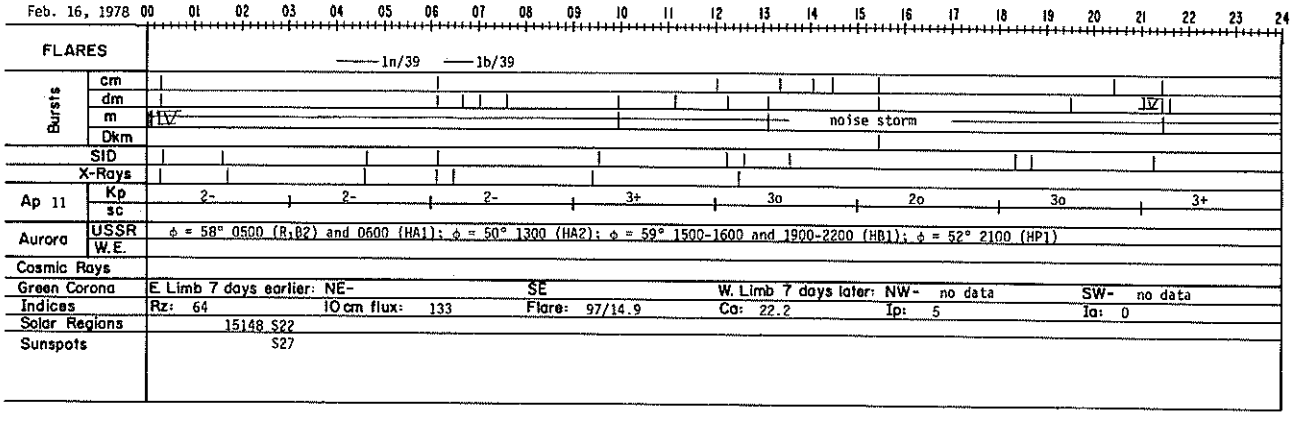


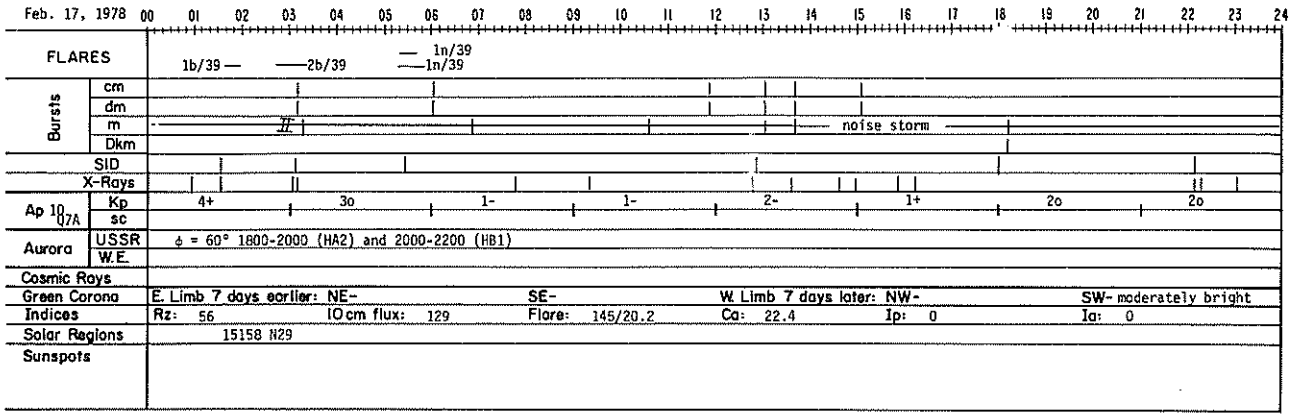
Remarks Proton Event: Early in the day the 20-40 MeV proton detector on board IMPs 7 and 8 recorded a sharp rise to maximum in the particle flux. The event produced detectable 30 MHz riometer absorption at Thule and along the Alaskan Chain.

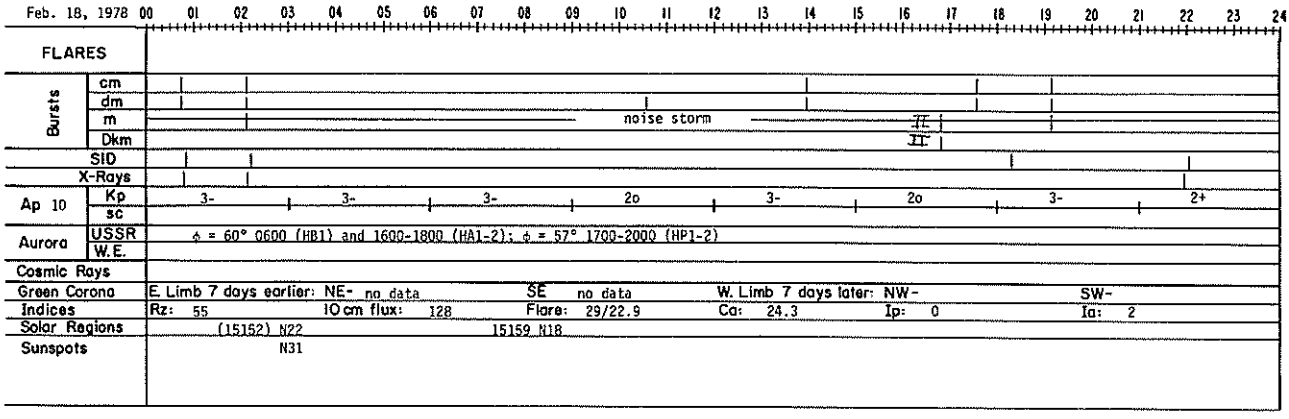


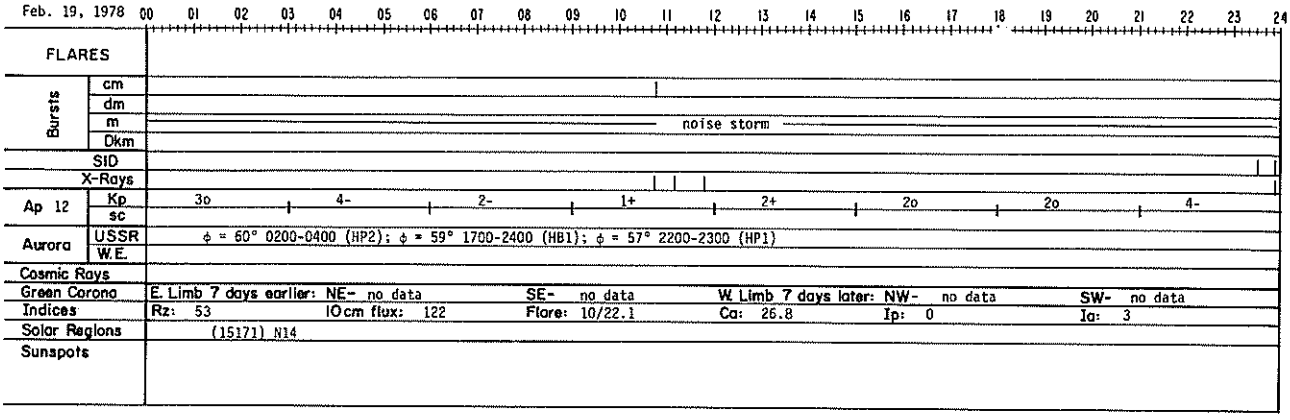
Remarks Proton Event: The maximum 30 MHz riometer absorption at Thule exceeded 3 dB.

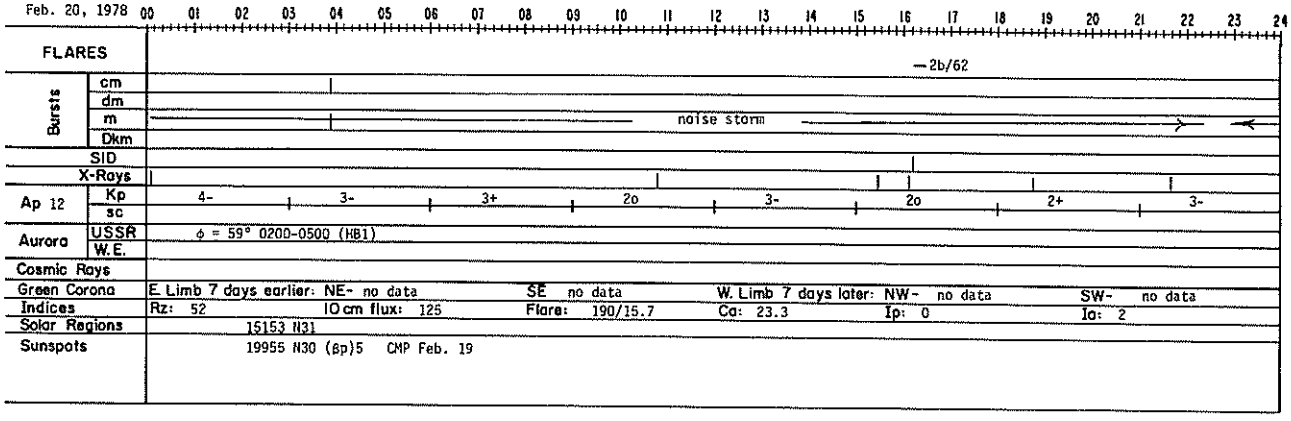


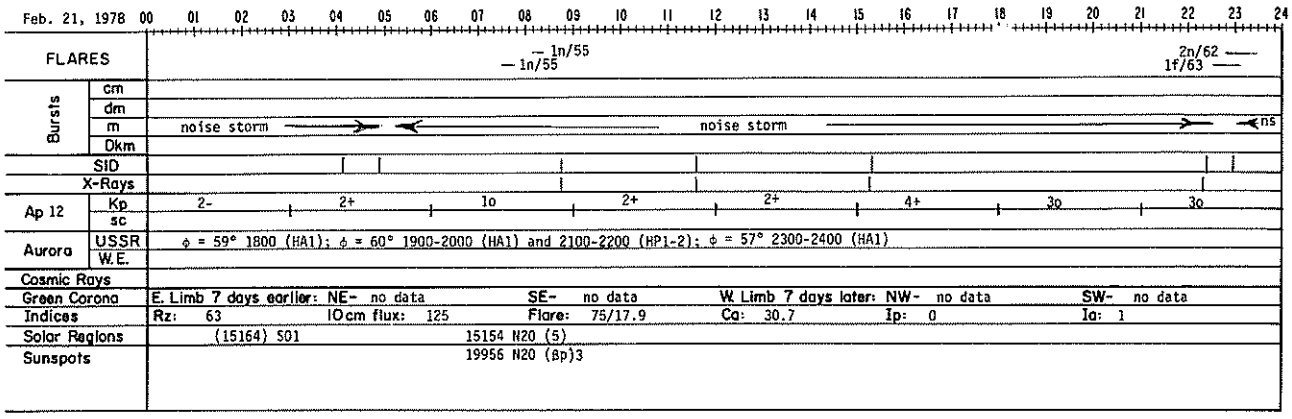


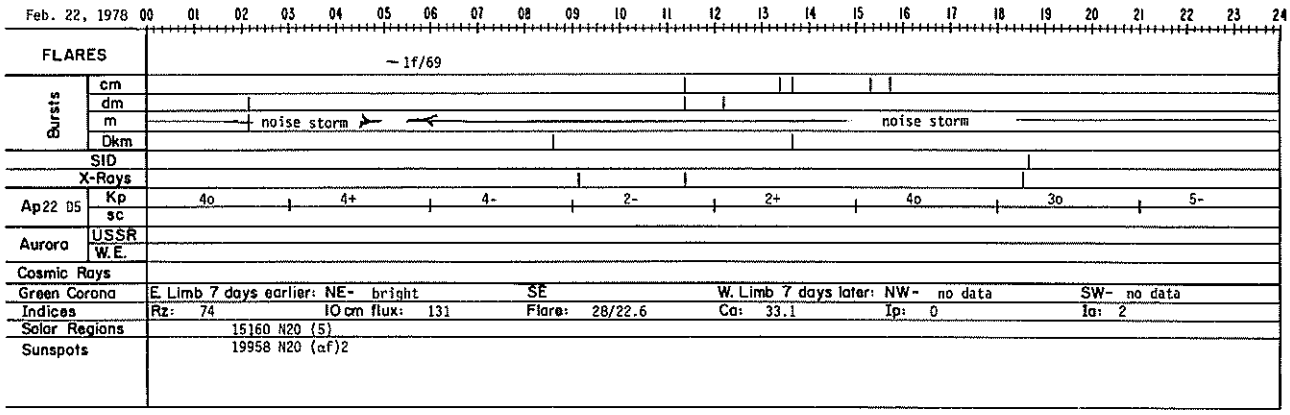

Feb. 17, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1b/39
2b/39
1n/39
1n/39
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 10
07A
Kp
sc
4+ 3o 1- 1- 2- 1+ 2o 2o
Aurora
USSR
W.E.
ϕ = 60° 1800-2000 (HA2) and 2000-2200 (HB1)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- SW- moderately bright
Indices
Rz: 56 10cm flux: 129 Flare: 145/20.2 Ca: 22.4 Ip: 0 Ia: 0
Solar Regions
15158 N29
Sunspots

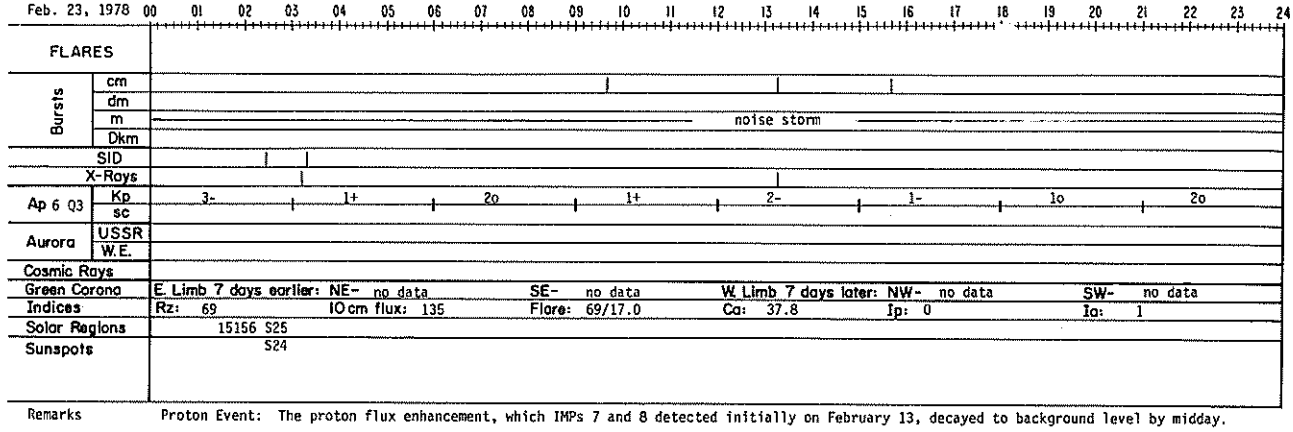

Feb. 18, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 10
Kp
sc
3- 3- 3- 2o 3- 2o 3- 2+
Aurora
USSR
W.E.
ϕ = 60° 0600 (HB1) and 1600-1800 (HA1-2); ϕ = 57° 1700-2000 (HP1-2)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- SW-
Indices
Rz: 55 10cm flux: 128 Flare: 29/22.9 Ca: 24.3 Ip: 0 Ia: 2
Solar Regions
(15152) N22
15159 N18
Sunspots
N31


Feb. 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 12
Kp
sc
3o 4- 2- 1+ 2+ 2o 2o 4-
Aurora
USSR
W.E.
ϕ = 60° 0200-0400 (HP2); ϕ = 59° 1700-2400 (HB1); ϕ = 57° 2200-2300 (HP1)
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: 53 10cm flux: 122 Flare: 10/22.1 Ca: 26.8 Ip: 0 Ia: 3
Solar Regions
(15171) N14
Sunspots

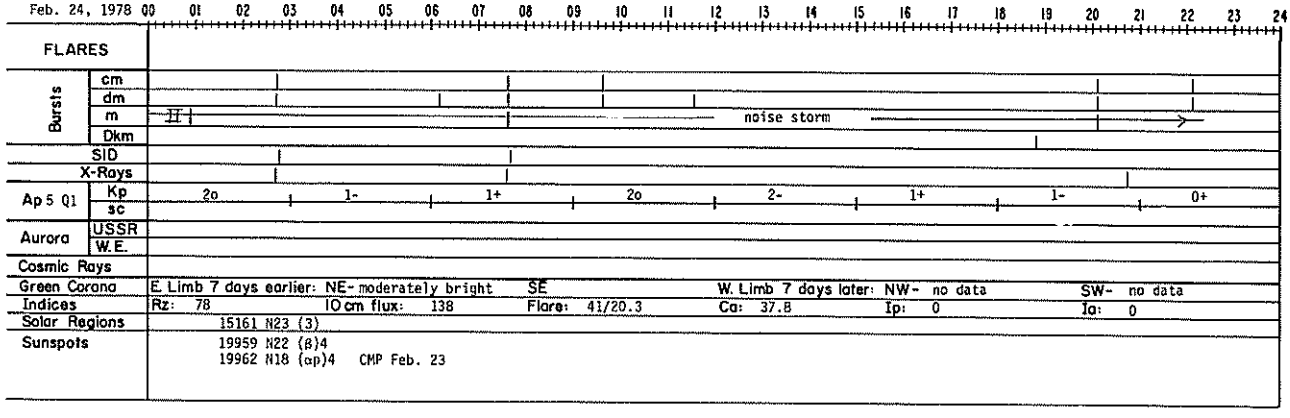

Feb. 20, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
2b/62
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 12
Kp
sc
4- 3- 3+ 2o 3- 2o 2+ 3-
Aurora
USSR
W.E.
ϕ = 59° 0200-0500 (HB1)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 52 10cm flux: 125 Flare: 190/15.7 Ca: 23.3 Ip: 0 Ia: 2
Solar Regions
15153 N31
Sunspots
19955 N30 (βp)5 CMP Feb. 19

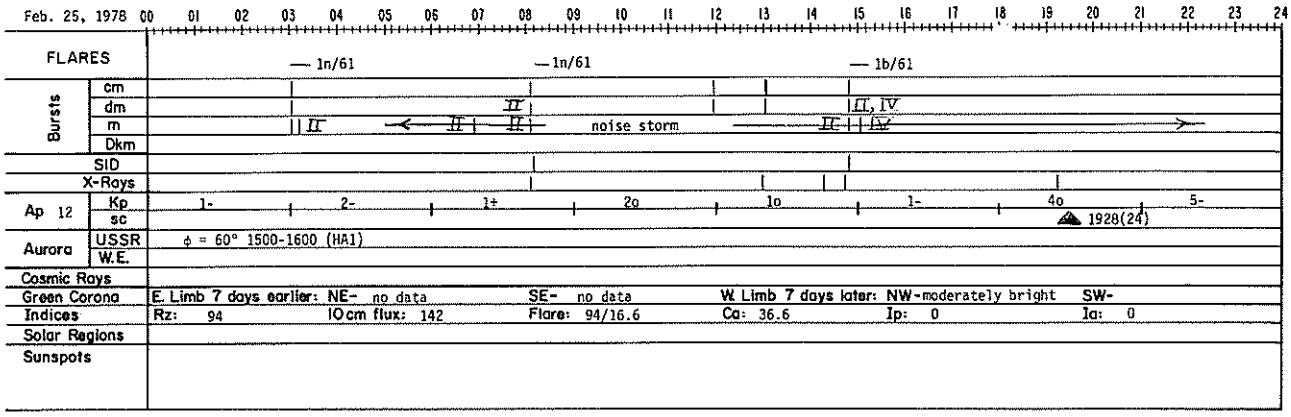


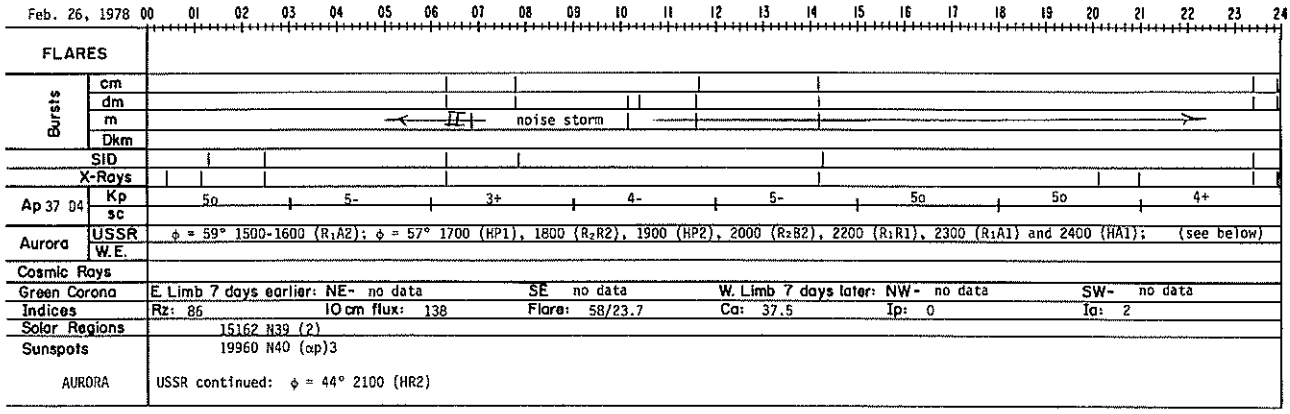


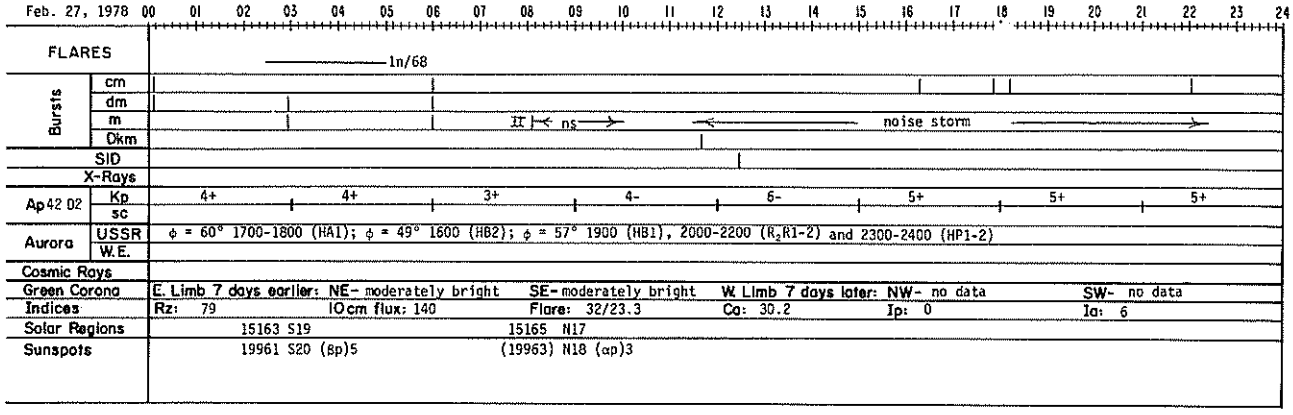


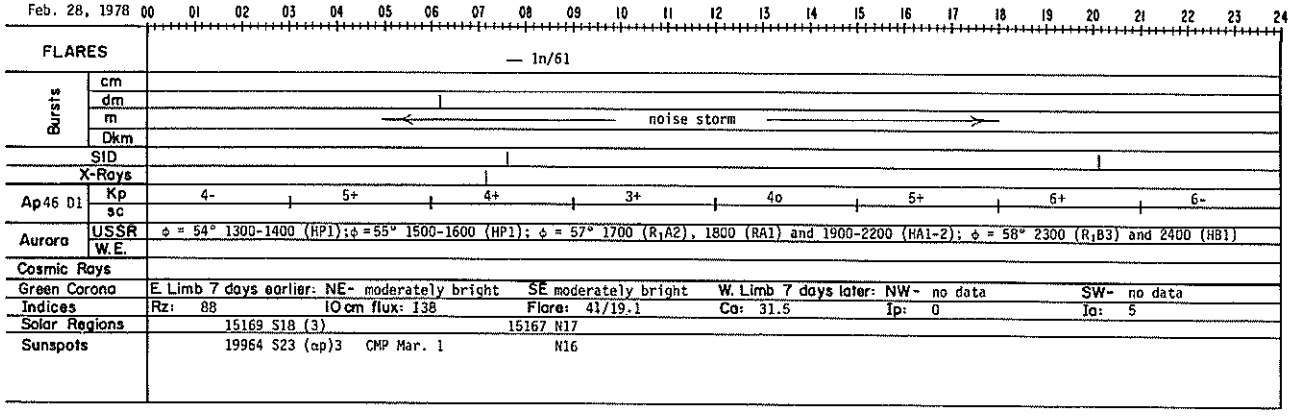
Remarks Proton Event: The proton flux enhancement, which IMPs 7 and 8 detected initially on February 13, decayed to background level by midday.




Feb. 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
1n/61
1n/61
1b/61
Bursts
cm
dm
m
Dkm
II
II
II
II, IV
noise storm
III
IV
SID
X-Rays
Ap 12
Kp
sc
1-
2-
1+
2o
1o
1-
4o
5-
1928(24)
Aurora
USSR
W.E.
φ = 60° 1500-1600 (HA1)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data
SE- no data
W. Limb 7 days later: NW-moderately bright
SW-
Indices
Rz: 94
10cm flux: 142
Flare: 94/16.6
Ca: 36.6
Ip: 0
Ia: 0
Solar Regions
Sunspots


Feb. 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
II
noise storm
SID
X-Rays
Ap 37 04
Kp
sc
5o
5-
3+
4-
5-
5o
5o
4+
Aurora
USSR
W.E.
φ = 59° 1500-1600 (R1A2); φ = 57° 1700 (HP1), 1800 (R2R2), 1900 (HP2), 2000 (R2B2), 2200 (R1R1), 2300 (R1A1) and 2400 (HA1); (see below)
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: 86
10cm flux: 138
Flare: 58/23.7
Ca: 37.5
Ip: 0
Ia: 2
Solar Regions
15162 N39 (2)
Sunspots
19960 N40 (αp)3
AURORA
USSR continued: φ = 44° 2100 (HR2)


Feb. 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
1n/68
Bursts
cm
dm
m
Dkm
II
ns
noise storm
SID
X-Rays
Ap 42 02
Kp
sc
4+
4+
3+
4-
6-
5+
5+
5+
Aurora
USSR
W.E.
φ = 60° 1700-1800 (HA1); φ = 49° 1600 (HB2); φ = 57° 1900 (HB1), 2000-2200 (R2R1-2) and 2300-2400 (HP1-2)
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: 79
10cm flux: 140
Flare: 32/23.3
Ca: 30.2
Ip: 0
Ia: 6
Solar Regions
15163 S19
15165 N17
Sunspots
19961 S20 (βp)5
(19963) N18 (αp)3


Feb. 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
1n/61
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 46 01
Kp
sc
4-
5+
4+
3+
4o
5+
6+
6-
Aurora
USSR
W.E.
φ = 54° 1300-1400 (HP1); φ = 55° 1500-1600 (HP1); φ = 57° 1700 (R1A2), 1800 (RA1) and 1900-2200 (HA1-2); φ = 58° 2300 (R1B3) and 2400 (HB1)
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: 88
10cm flux: 138
Flare: 41/19.1
Ca: 31.5
Ip: 0
Ia: 5
Solar Regions
15169 S18 (3)
15167 N17
Sunspots
19964 S23 (αp)3 CMP Mar. 1
N16

REGIONAL FLARE INDEX

INCLUDES ALL FLARES

HC MATH PLAGE NO.	LAT	CMP DATE	DATE FIRST FLARE	DATE LAST FLARE	FLARE-INDEX SUM	FLARE-INDEX MEAN	TOTAL NO. OF FLARES
15123	S17	78/02/01.2	78/01/27	78/02/07	20.68	1.72	9
15124	S29	78/02/01.9	78/01/25	78/02/06	258.77	19.91	73
15125	N16	78/02/02.0	78/01/28	78/02/08	20.00	1.67	9
15136	N33	78/02/02.2	78/02/03	78/02/07	295.17	59.03	13
15144	S43	78/02/02.5	78/02/06	78/02/06	.87	.87	1
15126	N24	78/02/03.1	78/01/27	78/02/08	145.30	11.18	40
15131	N27	78/02/06.1	78/02/01	78/02/01	1.82	1.82	2
15132	S27	78/02/07.8	78/02/01	78/02/09	13.73	1.53	5
15134	N27	78/02/08.3	78/02/02	78/02/14	494.36	38.03	51
15135	N20	78/02/08.4	78/02/01	78/02/15	140.69	9.38	53
15139	N17	78/02/11.8	78/02/05	78/02/18	1456.46	104.03	198
15142	S28	78/02/15.4	78/02/09	78/02/17	31.82	3.54	11
15148	S24	78/02/16.2	78/02/20	78/02/20	2.50	2.50	1

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