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Solar - Geophysical Data

NO. 404 APRIL 1978

Part II (Comprehensive Reports)

DATA FOR
OCTOBER 1977
SEPTEMBER 1977
& MISCELLANEA

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

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SOLAR-GEOPHYSICAL DATA

No. 404

Issued in two parts

Helen E. Coffey, Editor

J. Virginia Lincoln, Director
Solar-Terrestrial Data Services Division

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----- = no data available.
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ACTIVE REGIONS

CARRINGTON ROTATION 1660

(September 30 - October 27, 1977)

Region No.	Coordinates Lat.	Coordinates Long.	Age at CMP	Imp.	Spot-less Region	Region No. in Rotation 1659	Activity at West Limb
1	15°N	344°	>6	4			decreasing
2	32 N	338	+2	3			decreasing
3	26 N	318	>6	1	x		dispersed
4	36 S	317	+4	1	x		disappeared
5	22 S	303	>6	3			decreasing
6	20 N	298	>6	2			decreasing
7	32 N	298	>6	1	x		dispersed
8	29 N	267	+3	1	x		disappeared
9	19 N	260	+6	2	x		increasing
10	34 S	259	+1	1	x		disappeared
11	23 N	209	>6	1	x		decreasing
12	16 N	207	>6	1	x	(9)	decreasing
13	6 N	204	>6	3		(10)	decreasing
14	30 N	199	0	2			decreasing
15	17 S	191	+1	1	x		disappeared
16	18 N	173	+1	2			decreasing
17	24 S	170	-5	1	x		(?)
18	23 N	165	-5	2			(?)
19	24 N	160	>6	1	x		dispersed
20	19 N	159	>6	3			decreasing
21	23 N	148	0	2			stable
22	26 N	148	>6	1	x	(12)	dispersed
23	39 N	140	0	1	x		disappeared
24	22 S	120	+6	1	x		dispersed
25	25 S	114	+6	1	x		dispersed
26	23 N	109	+6	3			decreasing
27	28 S	91	>6	1	x	(17)	dispersed
28	29 N	89	>6	1	x	(18)	dispersed
29	24 S	85	+3	4			decreasing
30	17 N	81	+6	1	x		dispersed
31	29 N	63	>6	1	x	(19)	dispersed
32	29 N	48	>6	1	x	(19)	dispersed
33	18 N	43	-2	2			decreasing
34	26 S	40	+4	1	x		decreasing
35	31 N	30	>6	1	x		dispersed

ACTIVE REGIONS

CARRINGTON ROTATION 1661

(October 27 - November 24, 1977)

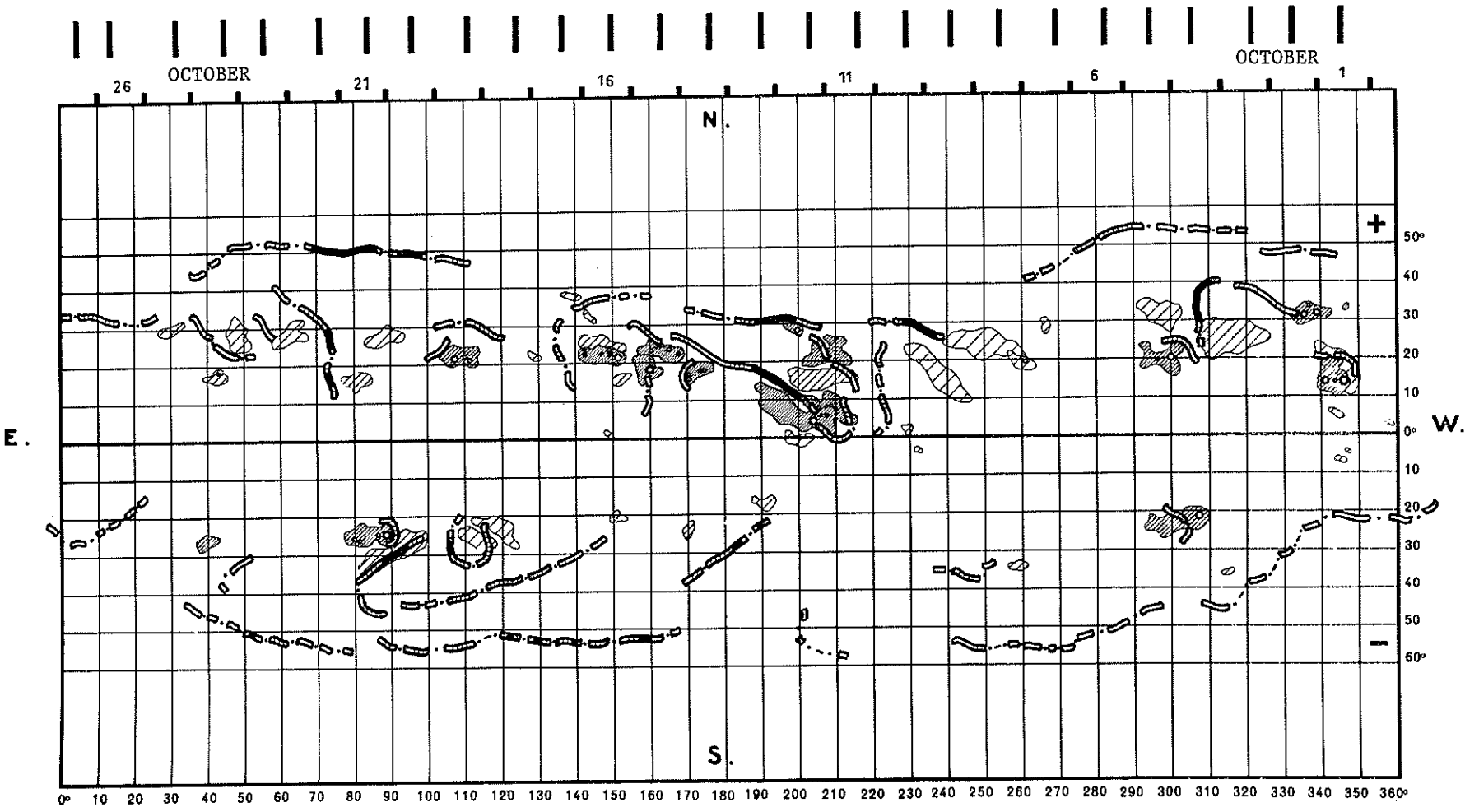
Region No.	Coordinates Lat.	Coordinates Long.	Age at CMP	Imp.	Spot-less Region	Region No. in Rotation 1660	Activity at West Limb
1	19°N	352°	>6	1	x		dispersed
2	17 N	351	>6	1	x		disappeared
3	18 S	346	-1	1	x		stable
4	17 S	341	+2	1	x		decreasing
5	21 N	330	>6	1	x		decreasing
6	32 N	328	>6	1	x	(2)	decreasing
7	32 N	328	+3	2			decreasing
8	22 N	300	>6	1	x	(5)	dispersed
9	21 N	297	>6	1	x	(6)	dispersed
10	23 S	269	>6	3			decreasing
11	20 N	252	>6	3			decreasing
12	20 N	241	0	1	x		disappeared
13	9 N	212	>6	1	x		decreasing
14	20 N	206	>6	1	x	(11 + 12)	dispersed
15	8 N	202	>6	1	x	(13)	decreasing
16	26 S	189	-4	1	x		increasing
17	26 N	167	>6	1	x	(18)	dispersed
18	21 N	150	>6	1	x	(20)	decreasing
19	23 S	147	+5	2			decreasing
20	30 N	137	>6	1	x		dispersed
21	24 N	136	>6	2		(21)	decreasing
22	25 S	135	-1	1	x		dispersed
23	13 N	103	-3	1	x		decreasing
24	27 N	103	>6	1	x		dispersed
25	6 N	99	-2	1	x		disappeared
26	13 N	90	-4	1	x		stable
27	25 S	80	>6	1	x	(29)	dispersed
28	38 N	76	>6	2			decreasing
29	27 S	66	0	1	x		dispersed
30	24 N	63	+4	4			decreasing
31	31 N	63	+5	1	x		disappeared
32	22 N	53	>6	1	x		dispersed
33	18 S	46	>6	2			dispersed
34	22 N	41	>6	1	x		dispersed
35	25 S	38	+4	1	x		disappeared
36	15 N	35	-3	1	x		decreasing
37	15 N	29	>6	2			decreasing
38	25 N	27	-1	2			decreasing
39	31 N	18	>6	1	x		decreasing

SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1660

SEPTEMBER 30 TO OCTOBER 27, 1977

MEUDON OBSERVATORY

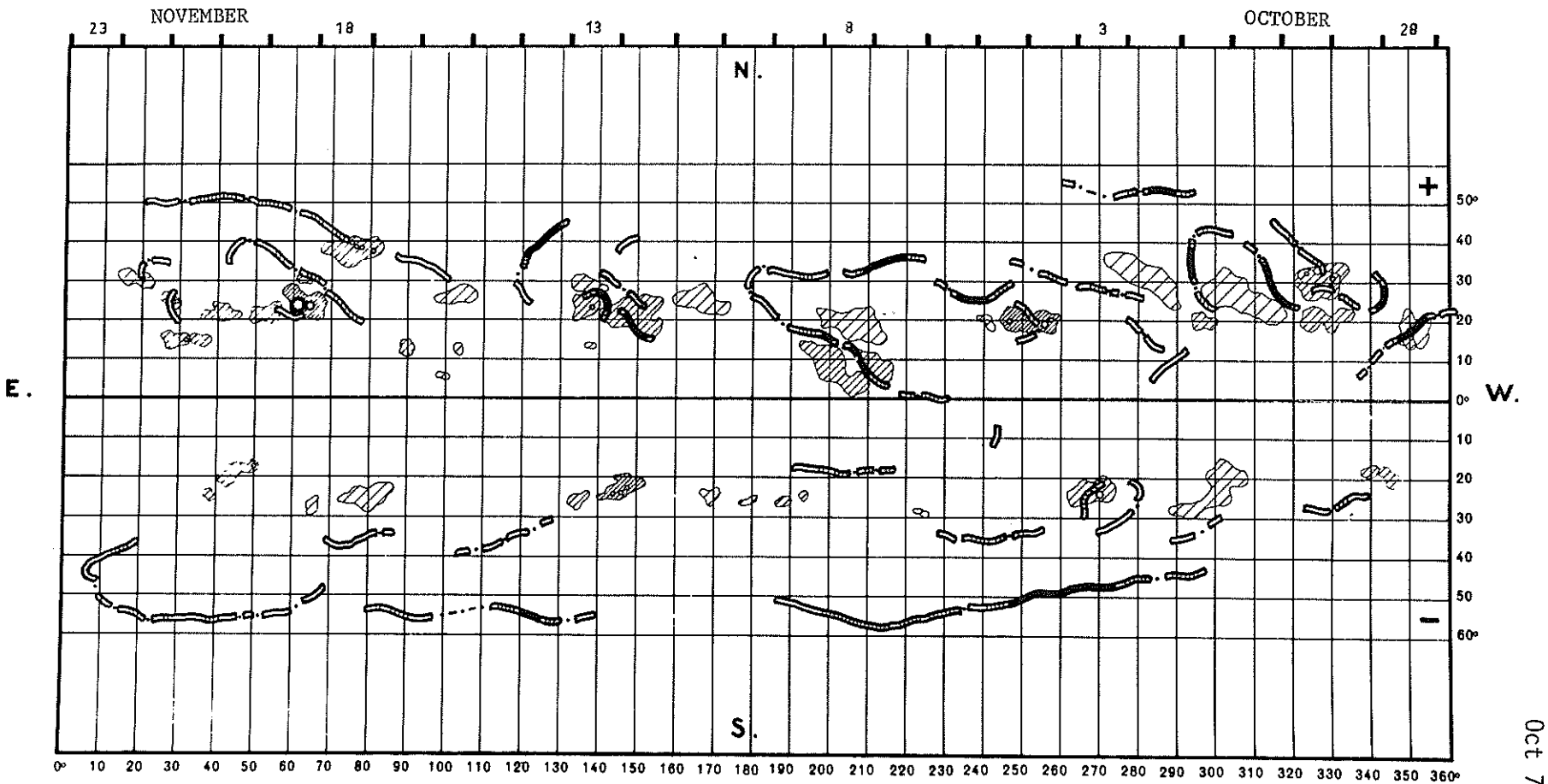


SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1661

OCTOBER 27 TO NOVEMBER 24, 1977

MEUDON OBSERVATORY



7 Oct 77

Hα SOLAR FLARES

OCTOBER 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE OCT	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.		
723 CATA	01	0750	0755	0800D	N16	E01	.162	14963	1.4	10D	-N	2		0755	28	.3		Y5
724 CATA	01	0935	0935	0955	N13	E04	.129	14963	1.7	20	-B	2		0935	56	.6		Y5
725 KANZ	01	1142	1149	1206	N15	E01	.145	14963	1.6	24	-F		C					Y5
	01	1948	1959	NO FLARE PATROL														
	01	2018	2035	NO FLARE PATROL														
726 CULG	02	0126	0148	0206	S25	W52	.863	14958	28.2	40	-F		C	0148	50	1.0		Y5
727 CATA	02	0855	0855	0915	N14	W11	.226	14963	1.5	20	-B	2		0855	28	.3		Y5
	02	1836	1845	NO FLARE PATROL														
GRP64728	02	2132E	2132	2143D	N14	W18	.328	14963	1.5	11	-F				40	.4	H	
PALE	02	2132E	2132U	2137D	N13	W19	.338	14963	1.5	5D	-F	3	V		37		DE H	
RAMY	02	2136E	2136U	2143D	N15	W17	.320	14963	1.6	7D	-N	3	C		40			
	02	2143	2245	NO FLARE PATROL														
	02	2303	2318	NO FLARE PATROL														
	02	2349	2356	NO FLARE PATROL														
	03	0002	0008	NO FLARE PATROL														
	03	0056	0215	NO FLARE PATROL														
729 CULG	03	0256	0310	0345	N16	W20	.370	14963	1.6	49	-F		C	0310	20	.2		Y5
730 KANZ	03	0716	0810	0813	N32	W17	.499	14967	2.0	57	-F		C					Y5
GRP64731	03	0913>9	0915	0941	N32	W18	.506	14967	2.0	28	-F						E	
			0929+2															
MONT	03	0913	0915	0924	N31	W19	.503	14967	2.0	11	-F		C	0915	40		E	
MONT	03	0921	0929	0946	N33	W19	.526	14967	2.0	25	-N		C	0929	80		E	
KANZ	03	0928	0931	0935	N32	W17	.499	14967	2.1	7	-F		C				E	
GRP64732	03	0931+0	0933+2	0937	N17	W25	.447	14963	1.5	6	-F							
KANZ	03	0931	0935	0938	N17	W25	.447	14963	1.5	7	-F		C				E	
MONT	03	0931	0933	0936	N18	W25	.452	14963	1.5	5	-F		C	0933	40		D	
GRP64733	03	1014>9	1034+1	1045D	N13	W23	.399	14963	1.7	31	-F						D	
MONT	03	1014	1035	1045D	N14	W23	.403	14963	1.7	31D	-N		C	1035	110			
MEUD	03	1032	1034	1038D	N13	W24	.414	14963	1.6	6D	-F		C	1034	40	.4	D	
734 MCMA	03	1158E		1245D	N33	W18	.518	14967	2.1	47D	-N		C	1212	80	1.0	E	Y5
735 MCMA	03	1710		1730D	N13	W30	.503	14963	1.5	20D	-F		P	1717	40	.5	EL	Y5
736 MCMA	03	1717E		1718D	N32	W23	.548	14967	2.0	1D	-N		P	1717	40	.5	E	Y5
GRP64737	03	2321+2	2325+0	2336	N13	W32	.532	14963	1.6	15	-N				60	.7		
CULG	03	2321	2325	2344	N13	W33	.546	14963	1.5	23	-N		C	2325	25	.3		
PALE	03	2323	2325	2335	N13	W30	.503	14963	1.7	12	-N	3	C		93		FDE	
MANI	03	2327E	2327U	2336	N12	W32	.530	14963	1.6	9D	-N		V	2327	60	.7		
738 PALE	03	2356	2357	0006	N13	W31	.518	14963	1.7	10	-F	3	C		55		F	Y5
GRP64739	04	0800+2	0805+2	0817	N33	W28	.603	14967	2.2	17	-N				120	1.5	E	
BUCA	04	0800	0806	0820	N33	W28	.603	14967	2.2	20	-F		C	0806	128	1.7	CE	
CATA	04	0800	0805	0815	N32	W28	.594	14967	2.2	15	-B	2		0805	112	1.4		
KANZ	04	0802	0807	0817	N33	W27	.594	14967	2.3	15	-N		C					
740 HUAN	04	1434	1435	1437	N33	W31	.630	14967	2.3	3	-F	1	C	1435	20	.2	D	Y5
741 HUAN	04	1543		1548	N31	W33	.634	14967	2.2	5	-F	1	C					Y5
GRP64742	04	1606+8	1614+2	1623	N33	W33	.649	14967	2.2	17	-N							
MCMA	04	1606	1614	1625	N34	W34	.665	14967	2.1	19	-N		C	1614	80	1.1	E	
HUAN	04	1614	1616	1620	N33	W32	.639	14967	2.3	6	-N	1	C	1616	30	.4	D	
743 MCMA	04	1823		1930D	N34	W37	.692	14967	2.0	67D	-F		C	1844	70	1.0	EK	Y5
	05	0039	0045	NO FLARE PATROL														
744 BUCA	05	0745E		0805	N31	W46	.760	14967	1.9	20D	-N		C	0745	53	.8	CD	Y5

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE OCT	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.		
GRP64745	05	0805+5	0813+2	0824	N10	E90	1.000	14979	12.1	19	-N							
KANZ	05	0805	0813	0824	N09	E90	1.000	14979	12.1	19	-F		C					
CATA	05	0810	0815	0815D	N11	E90	1.000	14979	12.1	5D	1N	2		0815	112			
GRP64746	05	1007+1	1009 1018	1030	N31	W47	.769	14967	1.9	23	-F						D	
ZURI	05	1007	1009	1033	N31	W47	.769	14967	1.9	26	-F		P	1009	20	.3		
KANZ	05	1008	1018	1026	N32	W48	.781	14967	1.8	18	-F		C				D	
GRP64747	05	1203	1219	1231	N31	W48	.778	14967	1.9	28	-N				45	.7	E	
ZURI	05	1203	1219	1231	N31	W48	.778	14967	1.9	28	-N		C	1219	60	1.0		
HUAN	05	1219E		1224D	N31	W49	.787	14967	1.8	5D	-N	1	P	1220	30	.4	E	
748 ZURI	05	1255	1317	1329	N31	W48	.778	14967	1.9	34	-N		C	1317	40	.7		Y5
GRP64749	05	1315+4	1325+5	1342	N08	E90	1.000	14979	12.3	27	-N							
CATA	05	1315	1330	1330D	N07	E90	1.000	14979	12.3	15D	1N	2		1330	56			
KANZ	05	1319	1325	1342	N09	E90	1.000	14979	12.3	23	-N		C					
RAMY	05	1323E	1326	1334D	N09	E90	1.000	14979	12.3	11D	-N	4	C				FDE	
GRP64750	05	1333+2	1337+2	1354	N16	W54	.805	14963	1.5	21	-N				60	1.0		
ZURI	05	1333	1337	1401	N18	W55	.817	14963	1.4	28	-N		C	1337	40	.8		
KANZ	05	1335	1339	1353	N15	W54	.805	14963	1.5	18	-N		C					
RAMY	05	1335E	1337	1354	N15	W54	.805	14963	1.5	19D	-N	4	C		80		FDE	
GRP64751	05	1353+4	1359+6	1416	N31	W50	.795	14967	1.8	23	-N							
ZURI	05	1353	1359	1415	N31	W49	.787	14967	1.9	22	-N		C	1359	70	1.2		
KANZ	05	1357	1405	1416	N32	W51	.807	14967	1.8	19	-N		C					
GRP64752	05	1446+1	1449	1501	N30	W50	.792	14967	1.9	15	-F							
HUAN	05	1446		1453D	N30	W51	.801	14967	1.8	7D	-F	1	P					
ZURI	05	1447	1449	1501	N31	W49	.787	14967	1.9	14	-N		C	1449	50	.8		
GRP64753	05	1528+7	1539+4	1551	N31	W51	.804	14967	1.8	23	-N						D	
KANZ	05	1528	1543	1551	N32	W52	.815	14967	1.7	23	-B		C				D	
ZURI	05	1535	1539	1543D	N31	W50	.795	14967	1.9	8D	-N		P	1539	50	.8		
	05	1551	1713	NO FLARE PATROL														
754 PALE	05	1713	1715	1722D	N30	W50	.792	14967	2.0	9D	-F	3	C		42		DE	Y5
	05	1918	2121	NO FLARE PATROL														
	05	2209	2215	NO FLARE PATROL														
	05	2223	2230	NO FLARE PATROL														
755 CULG	05	2235E	2243	2317	N17	W59	.853	14963	1.5	42D	-F		P	2243	30	.6		Y5
GRP64756	05	2242+3	2246+1	2252	N30	W54	.827	14967	1.9	10	-N				50	.9	D	
CULG	05	2242	2247	2253	N31	W55	.837	14967	1.8	11	-N		C	2247	25	.5		
VORO	05	2245	2246	2251	N30	W54	.827	14967	1.9	6	-B		C	2246	72	1.3	D	
757 CULG	05	2316	2340	2350	N03	E90	1.000	14979	12.7	34	-F		C	2340	10			Y5
GRP64758	06	0023+4	0031+6	0040	N30	W55	.835	14967	1.9	17	-N				90	1.7	E	
CULG	06	0023	0037	0058	N31	W55	.837	14967	1.9	35	-N		C	0037	70	1.3		
VORO	06	0026	0032	0038	N30	W58	.859	14967	1.7	12	-B		C	0032	99	1.9		
MITK	06	0027	0031	0039	N30	W55	.835	14967	1.9	12	-N		C	0031	100	1.9	E	
MANI	06	0028E	0031	0040D	N30	W53	.819	14967	2.0	12D	-N		V	0031	80	1.4		
759 MANI	06	0215E	0215U	0223D	N06	E85	.995	14979	12.5	8D	-F		V	0215	30	.8		Y5
760 MITK	06	0248	0251	0258	N30	W57	.851	14967	1.8	10	-F		C	0251	60	1.2	E	Y5
GRP64761	06	0425+2	0432 0444	0500	N31	W59	.868	14967	1.8	35	1N				110	2.4	EHJK	
VORO	06	0425		0430D	N31	W60	.875	14967	1.7	5D	-B		C	0429	81	1.7	E	
CULG	06	0425	0444	0503	N32	W58	.862	14967	1.8	38	1N		C	0444	115	2.2	FKJ	
MITK	06	0427	0432	0457	N30	W58	.859	14967	1.8	30	1N		C	0432	140	2.9	EH	
GRP64762	06	0459+5	0502+6	0517	N32	W59	.870	14967	1.8	18	1N				120	2.6	VZ	
MITK	06	0459	0502	0517	N33	W58	.864	14967	1.9	18	1N		C	0502	190	4.0	E	
MANI	06	0500	0503	0509D	N31	W60	.875	14967	1.7	9D	-N		V	0503	80	1.5	Z	
CULG	06	0500	0502	0520	N34	W58	.866	14967	1.9	20	1N		C	0502	160	3.2	V	
TACH	06	0504	0508	0514	N31	W60	.875	14967	1.7	10	-B		C	0508	80	1.5	D	
763 ABST	06	0643E	0646	0648D	N33	W59	.871	14967	1.9	5D	-F		P	0646	79	1.6	DJ	Y5

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OBSERV-ATORY	OBSERVED UT DATE OCT	START	MAX. PHASE	END	LOCATION APPROX LAT.	MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	DURA-TION MIN.	IMPOR-TANCE	OBS. COND	TYPE	MEASUREMENTS TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	REMARKS	
764 ABST	06	0651E	0651	0657D	N31	W59	.868	14967	1.9	6D	-F		P	0651	87	1.8	EJ	Y5
GRP64765	06	0801+5	0805+5	0822	N06	E81	.986	14979	12.4	21	-N						E	
BUCA	06	0801	0805	0829	N07	E80	.983	14979	12.3	28	-B		C	0805	64		E	
TEHR	06	0805E	0809	0831	N06	E82	.989	14979	12.5	26D	-F	3	C		95			
ZURI	06	0805E	0805	0813	N06	E81	.986	14979	12.4	8D	-N		P	0805	10			
KANZ	06	0806	0810	0815	N06	E82	.989	14979	12.5	9	-N		C					
GRP64766	06	0907+3	0908+5	0915	N32	W63	.897	14967	1.7	8	-N						DJ	
ABST	06	0907E	0908	0913	N32	W65	.909	14967	1.5	6D	1N		P	0913	96	2.3	DJ	
KANZ	06	0910	0913	0917	N32	W61	.884	14967	1.8	7	-F		C					
GRP64767	06	0940+1	0941	0945	N09	E85	.995	14979	12.8	5	-F						D	
BUCA	06	C940		0945	N09	E85	.995	14979	12.8	5	-F		C	0941	43		D	
KANZ	06	0941	0941	0945	N09	E85	.995	14979	12.8	4	-F		C				D	
GRP64768	06	0941+7	0951+5	0958	N33	W62	.892	14967	1.8	17	-F						DJ	
KANZ	06	0941	0956	0956	N32	W62	.890	14967	1.8	15	-F		C					
ABST	06	0948	0951	0959	N34	W63	.899	14967	1.7	11	-N		C	0951	79	1.9	DJ	
GRP64769	06	1051+4	1053 1101	1105	N06	E82	.989	14979	12.6	14	-N						EJ	
ABST	06	1051	1053	1056	N06	E85	.995	14979	12.8	5	1N		C	1053	70	3.0	EJ	
TEHR	06	1055	1101	1113	N07	E80	.983	14979	12.5	18	-F	3	C		127			
GRP64770	06	1215>9	1223 1348	1405D	N31	W63	.896	14967	1.8	110	-N						K	
MCMA	06	1215E	1223	1405D	N32	W62	.890	14967	1.9	110D	-N		C	1223	75	1.5	EK	
LVOV	06	1342	1348	1415	N30	W64	.901	14967	1.8	33	1F		C	1348	100	2.6	D	
GRP64771	06	1406	1413 1437	1547D	N32	W64	.903	14967	1.8	101	-N						EHK	
MCMA	06	1406	1437	1547D	N32	W64	.903	14967	1.8	101D	-N		C	1437	80	1.9	EHK	
MCMA	06	1406	1413	1547D	N32	W64	.903	14967	1.8	101D	-N		C	1413	50	1.4		
772 MCMA	06	1420	1423	1500	N05	E74	.959	14979	12.1	40	-N		C	1423	40	1.5	E	Y5
773 MCMA	06	1548	1552	1604D	N32	W64	.903	14967	1.9	16D	-N		C	1552	60	1.5	E	Y5
774 MCMA	06	1605	1608	1700D	N32	W65	.909	14967	1.8	55D	1B		C	1608	90	2.2	E	Y5
775 PALE	06	1821	1826	1837	N29	W64	.900	14967	2.0	16	-N	3	C		79		FDE	Y5
776 PALE	06	1946	1950	2001	N29	W66	.913	14967	1.9	15	-B	3	C		119		FDE	Y5
	06	2020	2047	NO FLARE PATROL														
777 CULG	06	2104	2107	2117	N30	W70	.937	14967	1.6	13	-F		C	2107	40	1.0		Y5
	06	2138	2146	NO FLARE PATROL														
778 CULG	06	2345	2348	2355	N20	W78	.973	14963	1.1	10	-F		C	2348	25			Y5
GRP64779	06	2345+1	2348+1	2357	N21	W23	.448	14969	5.3	12	-F				30	.3	D	
CULG	06	2345	2349	0002	N22	W23	.455	14969	5.3	17	-F	*	C	2349	20	.2		
VORO	06	2346	2348	2352	N20	W24	.453	14969	5.2	6	-F	*	C	2348	36	.4	D	
780 CULG	07	0030	0037	0050	N20	W23	.440	14969	5.3	20	-F		C	0037	50	.6		Y5
GRP64781	07	0124+7	0133+6	0206	N20	W25	.467	14969	5.2	42	-N				100	1.1	EJ	
VORO	07	0124	0133	0206	N21	W24	.461	14969	5.3	42	1N		C	0137	251	2.7	EJ	
MITK	07	0130E	0139	0148	N20	W25	.467	14969	5.2	18D	-N		C	0139	100	1.2	E	
CULG	07	0131	0136	0215	N20	W25	.467	14969	5.2	44	-N		C	0136	90	1.0		
GRP64782	07	0353+1	0355+0	0400	N08	E65	.902	14979	12.0	7	-N						D	
CULG	07	0353	0355	0401	N08	E65	.902	14979	12.0	8	-N		C	0355	30	.7		
VORO	07	0354	0355	0358	N09	E65	.902	14979	12.0	4	-B		C	0355	90	2.0	D	
783 CULG	07	0414	0423	0434	N30	W70	.937	14967	1.9	20	-F		C	0423	60	1.4		Y5
784 KANZ	07	0801	0805	0816	N19	W79	.976	14963	1.4	15	-F		C				D	Y5
785 MONT	07	0803E	0806	0814	N06	E67	.917	14979	12.4	11D	-F		C	0806	20		D	Y5
786 MONT	07	0813	0816	0819	N12	E65	.901	14979	12.2	6	-F		C	0816	20			Y5
787 MONT	07	0815	0822	0829	N07	E69	.930	14979	12.5	14	-F		C	0822	40		E	Y5

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE OCT	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.		
788 MONT	07	0855	0859	0904	S34	E13	.672	14982	8.3	9	-F		C	0859	20		D	Y5
789 KANZ	07	0909	0909	0916	N19	W79	.976	14963	1.5	7	-F		C				E	Y5
790 MONT	07	1015	1021	1025	N29	W78	.972	14967	1.6	10	-F		C	1021	40		D	Y5
791 MONT	07	1134	1135	1136	N12	E64	.893	14979	12.3	2	-F		C	1135	20		D	Y5
GRP64792	07	1137+3	1141+6	1159	N06	E65	.910	14979	12.4	22	-F						D	
MONT	07	1137	1141	1156	N06	E65	.903	14979	12.4	19	-F		C	1141	20		D	
LVOV	07	1140	1147	1201	N06	E68	.924	14979	12.6	21	-F		C	1147	100		D	
GRP64793	07	1253>9	1310	1310D	N03	E58	.847	14979	11.9	17	-N						EW	
MCMA	07	1253	1313	1430D	N03	E58	.847	14979	11.9	97D	-N		C	1313	40	.8	EW	
KANZ	07	1306	1310	1310	N03	E59	.856	14979	12.0	4	-N		C					
794 MCMA	07	1425	1428	1434	N18	W88	.998	14963	1.0	9	-F		C	1428			D	Y5
GRP64795	07	1548+1	1550+0	1557	N05	E62	.880	14979	12.3	9	-N				50	1.1	OH	
MCMA	07	1548	1550	1559	N05	E62	.880	14979	12.3	11	-N		C	1550	60	1.3	OH	
HUAN	07	1549	1550	1555	N05	E63	.888	14979	12.4	6	-N	1	C	1550	50	1.0		
	07	1656	1710	NO FLARE PATROL														
796 PALE	07	1752	1756	1839	N07	E56	.825	14979	11.9	47	-F	3	V		43		FDE	Y5
	07	1808	1835	NO FLARE PATROL														
797 HUAN	07	1848E		1907D	N05	E56	.826	14979	12.0	19D	-F	1	P				E	Y5
798 HUAN	07	1848E		1855	N14	E70	.934	14979	13.0	7D	-F	1	P					Y5
	07	1934	1956	NO FLARE PATROL														
	07	2031	2038	NO FLARE PATROL														
GRP64799	07	2208	2211	2240	N04	E57	.837	14979	12.2	32	-N						L	
CULG	07	2208	2211	2240	N03	E58	.847	14979	12.3	32	-N		C	2211	70	1.3	L	
PALE	07	2223E	2223U	2224D	N06	E57	.835	14979	12.2	1D	1N	3	V		153		FDE	
800 CULG	08	0005	0027	0036	N05	E58	.845	14979	12.4	31	-F		C	0027	25	.5		Y5
GRP64801	08	0055E	0105 0126	0127	N07	E52	.784	14979	11.9	32	-F							
PALE	08	0055E	0105	0127	N07	E52	.784	14979	11.9	32D	-F	3	V		49		FDE	
PALE	08	0055E	0126	0127	N07	E52	.784	14979	11.9	32D	-F	3	V		22		FDE	
GRP64802	08	0231	0232 0252+3	0310	N05	E56	.826	14979	12.3	39	-N				80	1.4	F	
PALE	08	0231	0255	0300D	N06.	E55	.816	14979	12.2	29D	-N	3	V		98		FDE	
PALE	08	0231	0232	0300D	N06	E55	.816	14979	12.2	29D	-N	3	V		63		FDE	
CULG	08	0237E	0252	0310	N05	E57	.836	14979	12.4	33D	-N		C	0252	55	.9	F	
803 ABST	08	0551	0552	0553	N08	E52	.784	14979	12.1	2	-F		C	0552	87	1.3	DJ	Y5
804 ABST	08	0736	0737	0740	N03	E48	.742	14979	11.9	4	-F		C	0737	70	.9	DJ	Y5
GRP64805	08	1230+5	1241+4 1301+1	1402	N06	E44	.691	14979	11.8	92	1N						EIJSU	
MONT	08	1217	1241	1315D	N05	E43	.679	14979	11.7	58D	1N		C	1241	250		F	
KHAR	08	1230E	1245	1320D	S00	E44	.699	14979	11.8	50D	1N		C	1230	165	2.4	E	
LVOV	08	1230	1301	1410	N07	E45	.703	14979	11.9	100	2N		C	1301	400	5.8	EJ	
TEHR	08	1235	1242	1326	N08	E43	.678	14979	11.7	51	-N	2	C		190		U S	
TEHR	08	1235	1242	1326	N08	E43	.678	14979	11.7	51	-N	3	C		160		U S	
KIEV	08	1235E	1302	1400D	N05	E44	.692	14979	11.8	85D	2N		C	1302	360	5.2	EI	
HUAN	08	1250E		1403	N05	E43	.679	14979	11.8	73D	-N	1	P	1250	120	1.6	E	
	08	1420	1429	NO FLARE PATROL														
	08	1630	1703	NO FLARE PATROL														
	08	1839	1922	NO FLARE PATROL														
	08	2013	2037	NO FLARE PATROL														
GRP64806	08	2044	2050+1	2053D	N07	E44	.691	14979	12.2	9	-F				80	1.1	S	
CULG	08	2044	2050	2140	N07	E46	.715	14979	12.3	56	-N		C	2050	75	1.0	FS	
PALE	08	2050E	2051	2053	N07	E43	.678	14979	12.1	30	-F	3	V		80		FDE	
807 CULG	09	0445	0448	0501	N07	E43	.678	14979	12.4	16	-F		C	0448	20	.4		Y5

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OBSERVATORY	OBSERVED UT DATE OCT	START	MAX. PHASE	END	LOCATION APPROX LAT.	MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY	DURATION MIN.	IMPORTANCE	OBS. COND	TYPE	MEASUREMENTS TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	REMARKS
GRP64808	09	0546+0	0553+4	0619D	N06	E42	.666	14979	12.4	33	-F						FJS
			0616														
CULG	09	0546E	0623U	0702D	N07	E43	.678	14979	12.5	76D	-F		P	0623	140	1.8	FS
ABST	09	0546	0553	0607	N06	E46	.716	14979	12.7	21	-F		C	0553	79	1.1	DJ
ABST	09	0553	0557	0607	N04	E43	.680	14979	12.5	14	-F		C	0557	87	1.2	DJ
ABST	09	0615	0616	0619	N07	E39	.626	14979	12.2	4	-F		C	0616	79	1.0	DJ
809 CULG	09	0547	0550	0558	N18	W15	.321	14975	8.1	11	-F		C	0550	20	.2	Y5
810 KANZ	09	0921	0921	0945	N10	E34	.557	14979	11.9	24	-F		C				Y5
	09	1416	1435	NO FLARE PATROL													
	09	1453	1919	NO FLARE PATROL													
	09	1923	2049	NO FLARE PATROL													
811 VORO	09	2303	2304	2309	N06	E28	.467	14979	12.1	6	-B		C	2304	72	.9	JL Y5
812 VORO	10	0006	0014	0025	N06	E32	.527	14979	12.4	19	-B		C	0014	161	1.9	EL Y5
	10	1759	1812	NO FLARE PATROL													
	10	1814	1821	NO FLARE PATROL													
	10	1838	1843	NO FLARE PATROL													
	10	1918	2027	NO FLARE PATROL													
GRP64813	10	2027E	2027	2120	N06	E10	.173	14979	11.6	53	-N						E
CULG	10	2027E	2027E	2120	N06	E11	.190	14979	11.7	53D	-N		P	2027	130	1.3	
MCMA	10	2040E		2100D	N06	E10	.173	14979	11.6	20D	-N		P	2042	100	1.0	E
814 CULG	10	2107	2110	2134	N20	E70	.934	14984	16.1	27	-F		C	2110	50	1.1	F Y5
815 CULG	10	2203	2207	2225	N20	E65	.902	14984	15.8	22	-F		C	2207	30	.7	Y5
816 CULG	11	0550	0559	0625	N20	E66	.909	14984	16.2	35	-N		C	0559	50	1.1	Y5
817 ABST	11	0636E	0654	0702D	N19	E63	.887	14984	16.0	26D	-F		P	0654	87	1.8	DJK Y5
GRP64818	11	0735E	0735	0748	N16	E60	.862	14984	15.8	13	-N						DJ
			0744														
CATA	11	0735E	0735	0740D	N17	E60	.862	14984	15.8	5D	-N	1		0735	84	1.7	
ABST	11	0740E	0744	0748	N15	E61	.870	14984	15.9	8D	-F		P	0744	105	2.0	DJ
819 ZURI	11	0916E	0916	0942	N19	W46	.726	14975	7.9	26D	-F		P	0916	20	.3	Y5
820 ABST	11	0925	0934	0942D	N22	E60	.865	14984	15.9	17D	?F		P	0934	105	2.3	DJ Y5
	IMP1	NO	MEUD2	ZURI2	KHAR1	KIEV1	CATA1										
821 ZURI	11	1144E	1146	1150	N19	W47	.737	14975	8.0	6D	-F		P	1146	20	.3	Y5
	11	1352	1402	NO FLARE PATROL													
	11	1508	1510	NO FLARE PATROL													
	11	1515	1742	NO FLARE PATROL													
	11	1752	1819	NO FLARE PATROL													
	11	1825	1926	NO FLARE PATROL													
	11	1943	2029	NO FLARE PATROL													
822 CULG	11	2102	2116	2130	N13	E02	.124	14979	12.0	28	-F		C	2116	40	.4	Y5
GRP64823	11	2301E	2301	2309	N14	E02	.140	14979	12.1	8	-B				90	.9	H
PALE	11	2301E	2301U	2309	N14	E02	.140	14979	12.1	8D	-B	3	C		89		DE H
PALE	11	2301E	2301U	2309	N06	E02	.035	14979	12.1	8D	-B	3	V		89		DE H
CULG	11	2304E	2304E	2309	N14	E02	.140	14979	12.1	5D	-N		P	2304	20	.2	
824 VORO	11	2355E		0000	N15	E03	.162	14979	12.2	5D	-N		C	2357	27	.3	Y5
GRP64825	12	0003+1	0007+2	0015	N14	E01	.138	14979	12.1	12	-N						D
VORO	12	0003	0007	0015	N15	E01	.156	14979	12.1	12	-B		C	0007	90	.9	D
CULG	12	0004	0009	0015	N14	E02	.142	14979	12.2	11	-F		C	0009	20	.2	
GRP64826	12	0020	0034+5	0042	N10	E01	.070	14979	12.1	22	-N				60	.6	
CULG	12	0020	0036	0103	N08	W02	.046	14979	11.9	43	-N		C	0036	20	.2	
CULG	12	0027	0037	0040	N14	E01	.138	14979	12.1	13	-N		C	0037	25	.3	
MANI	12	0030E	0034U	0039	N14	E01	.138	14979	12.1	9D	-N		V	0034	90	.9	E
PALE	12	0033	0039	0042	N06	E01	.017	14979	12.1	9	-F	3	V		38		FDE

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OBSERV-ATORY	OBSERVED UT DATE OCT	START	MAX. PHASE	END	LOCATION APPROX LAT.	MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	DURA-TION MIN.	IMPOR-TANCE	OBS. COND.	TYPE	MEASUREMENTS TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	REMARKS	
GRP64827	12	0150	0152	0215	N06	W02	.035	14979	11.9	25	1B				320	3.2	VZ	
CULG	12	0150	0152	0215	N07	W03	.054	14979	11.9	25	1B		C	0152	260	2.6	VZ	
MITK	12	0155E		0202D	N04	E02	.050	14979	12.2	7D	1N		P	0155	390	4.0		
PALE	12	0209E	0209U	0210D	N06	W02	.035	14979	11.9	10	-N	3	V		65		FDE	
828 CULG	12	0200	0204	0210	N14	E01	.138	14979	12.2	10	-N		C	0204	20	.2		Y5
829 CULG	12	0402	0408	0435	N20	E90	.999	14991	18.9	33	?N		C	0408	60			Y5
	IMP. 1 NO	MITK1																
830 CULG	12	0420	0433	0500	N22	E53	.804	14984	16.2	40	-F		C	0433	60	1.0	L	Y5
GRP64831	12	0618>9	0642+3	0732	N06	W08	.138	14979	11.7	74	-F				80	.8	DJ	
CULG	12	0618	0642U	0732D	N06	W09	.156	14979	11.6	74D	-F		C	0642	60	.6		
ABST	12	0636	0645	0732	N06	W08	.138	14979	11.7	56	-F		C	0645	105	1.1	DJ	
GRP64832	12	0755	0755	0809	N22	E90	.999	14991	19.1	14	-N							
CATA	12	0755	0755	0810	N22	E90	.999	14991	19.1	15	1N	2		0755	45			
MONT	12	0803E	0803	0807	N22	E90	.999	14991	19.1	4D	-F		C	0803	40			
833 ABST	12	0800	0802	0808	N23	E50	.777	14984	16.1	8	-F		C	0802	114	1.8	EJ	Y5
834 KHAR	12	0825	0830	0835	N24	E50	.779	14984	16.1	10	-F		C				D	Y5
GRP64835	12	0943+9	0952+3	1001	N07	W02	.038	14979	12.3	18	-N				45	.5	E	
MONT	12	0943	0952	1004	N06	W03	.052	14979	12.2	21	-N		C	0952	60		E	
ZURI	12	0945	0955	1001	N06	W02	.035	14979	12.3	16	-F		C	0955	30	.3		
WEND	12	0952		1001	N08	W01	.037	14979	12.3	9	-N							
836 ABST	12	1102	1105	1108	N16	E45	.709	14984	15.8	6	-F		C	1105	87	1.1	D	Y5
837 ZURI	12	1147	1153	1201	N20	W60	.864	14988	8.0	14	-F		C	1153	40	.8		Y5
GRP64838	12	1211+0	1211+3	1224	N06	W03	.052	14979	12.3	13	-F				50	.5	E	
MONT	12	1211	1214	1225D	N06	W04	.069	14979	12.2	14D	-F		C	1214	40		E	
ZURI	12	1211	1211	1223	N06	W03	.052	14979	12.3	12	-F		C	1211	60	.6		
839 CATA	12	1250E	1250	1250D	N22	E90	.999	14991	19.3		-N	1		1250	28			Y5
GRP64840	12	1313+1	1315	1329	N06	W04	.069	14979	12.3	16	-F				45	.5	E	
ZURI	12	1313	1315	1329	N06	W04	.069	14979	12.3	16	-N		C	1315	60	.6		
MEUD	12	1314		1328	N07	W04	.071	14979	12.3	14	-F		C	1320	30	.3	E	
GRP64841	12	1431+4	1441	1448	N06	W03	.052	14979	12.4	17	-F							
ZURI	12	1431	1441	1445	N06	W04	.069	14979	12.3	14	-F		C	1441	50	.5		
WEND	12	1435		1451	N07	W03	.054	14979	12.4	16	-F							
842 ZURI	12	1501	1511	1517	N06	W05	.087	14979	12.3	16	-N		C	1511	60	.6		Y5
843 HUAN	12	1542E		1600D	N20	E88	.998	14991	19.3	18D	-F	1	P	1548	20		D	Y5
	12	1610	1937	NO FLARE PATROL														
	12	1943	2031	NO FLARE PATROL														
844 CULG	12	2033	2039	2057	N06	W09	.156	14979	12.2	24	-F		C	2039	30	.3		Y5
845 CULG	12	2146	2149	2213	N06	W11	.190	14979	12.1	27	-F		C	2149	30	.3	F	Y5
846 VORO	12	2243	2243	2249	N07	W09	.156	14979	12.3	6	-B		C	2246	99	1.0	D	Y5
	12	2246	2250	NO FLARE PATROL														
847 VORO	12	2257	2258	2304	N07	W12	.207	14979	12.1	7	-B		C	2258	108	1.1		Y5
848 VORO	12	2312	2313	2315	N07	W12	.207	14979	12.1	3	-B		C	2313	63	.7	D	Y5
GRP64849	13	0004+2	0005+2	0015	N07	W09	.156	14979	12.3	11	-N						E	
CULG	13	0004	0005	0015	N07	W09	.156	14979	12.3	11	-N		C	0005	20	.2		
VORO	13	0006	0007	0015	N07	W10	.173	14979	12.3	9	-B		C	0007	116	1.1	E	
GRP64850	13	0033+2	0036+1	0047	N06	W09	.156	14979	12.3	14	-N							
CULG	13	0033	0036	0050	N06	W09	.156	14979	12.3	17	-N		C	0036	35	.4	F	
VORO	13	0035	0037	0043	N06	W09	.156	14979	12.3	8	-B		C	0037	108	1.1	E	

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE OCT	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.		
GRP64851	13	0109+3	0110+0 0118+5	0126	N06	W12	.207	14979	12.1	17	-F				50	.5	K	
CULG	13	0109	0123	0140	N06	W11	.190	14979	12.2	31	-F		C	0123	40	.4		
PALE	13	0109	0110	0124	N05	W14	.241	14979	12.0	15	-F	3	V		45		FDE	
PALE	13	0109	0110	0124	N05	W14	.241	14979	12.0	15	-F	3	C		45		FDE	
VORO	13	0110	0120	0129	N07	W11	.190	14979	12.2	19	-B		C	0120	63	.6	DK	
MANI	13	0112	0118	0124	N05	W11	.191	14979	12.2	12	-F		P	0118	50	.5	F	
GRP64852	13	0747+0	0750+0	0753	N07	W19	.324	14979	11.9	6	-F						DHJ	
ABST	13	0747	0750	0752	N06	W20	.340	14979	11.8	5	-F		C	0750	87	1.0	DJ	
MONT	13	0747	0750	0753	N08	W18	.309	14979	12.0	6	-F		C	0750	20		DH	
853 ABST	13	0852	0853	0900	N05	W19	.325	14979	11.9	8	-F		C	0853	131	1.4	EJK	Y5
854 KANZ	13	0955	0958	1002	N22	E81	.983	14991	19.5	7	-N		C				D	Y5
GRP64855	13	1030+5	1035+2	1043	N22	E80	.980	14991	19.4	13	-N				50		D	
CATA	13	1030E	1035	10350	N25	E78	.973	14991	19.3	50	1B	1		1035	56			
KANZ	13	1033	1037	1043	N22	E80	.980	14991	19.4	10	-N		C					
ABST	13	1033E	1036	1046	N22	E88	.997	14991	20.0	130	1F		P	1036	96		D	
MONT	13	1034	1036	1044	N22	E79	.977	14991	19.4	10	-N		C	1036	40			
MEUD	13	1034	1036	1043	N22	E78	.973	14991	19.3	9	-F		C	1036	30			
KHAR	13	1035	1035	1043	N23	E85	.993	14991	19.8	8	-F		C				D	
856 ZURI	13	1433	1435	1449	N06	W17	.291	14979	12.3	16	-F		C	1435	40	.4		Y5
	13	1638	1645	NO FLARE PATROL														
GRP64857	13	1706+5	1712+0	1807	N05	W22	.373	14979	12.1	61	-N				100	1.1		
MCMA	13	1706		1820	N05	W20	.341	14979	12.2	74	-B		P	1715	100	1.1	E	
PALE	13	1711	1712	1753	N05	W23	.389	14979	12.0	42	-N	3	V		99		FDE	
PALE	13	1711	1712	1753	N05	W23	.389	14979	12.0	42	-N	3	C		99		FDE	
PALE	13	1711	1712	17280	N05	W23	.389	14979	12.0	170	-N	3	V		99		FDE	
GRP64858	13	1844+1	1850+0	1955	N29	W14	.446	14990	12.7	71	-N				110	1.2	U	
MCMA	13	1844	1850	1927	N30	W14	.460	14990	12.7	43	-B		C	1850	100	1.1	EU	
PALE	13	1845	1850	1955	N29	W14	.446	14990	12.7	70	-N	3	V		135		FDE	
PALE	13	1845	1850	1955	N29	W14	.446	14990	12.7	70	-N	3	C		135		FDE	
HUAN	13	1847E		18570	N29	W15	.454	14990	12.7	100	-F	1	P	1847	80	.9	E	
	13	1939	1954	NO FLARE PATROL														
GRP64859	13	2224+2	2228+0	2242	N06	W24	.405	14979	12.1	18	-N				60	.7		
CULG	13	2224	2228	2248	N07	W22	.373	14979	12.3	24	-N		C	2228	40	.4		
PALE	13	2226	2228	2236	N05	W26	.437	14979	12.0	10	-N	3	V		77		FDE	
GRP64860	14	0123+0	0125+2	0158	N06	W26	.436	14979	12.1	35	-N				90	1.0		
CULG	14	0123	0127	0205	N07	W26	.436	14979	12.1	42	-N		C	0127	70	.8	F	
PALE	14	0123	0125	0150	N05	W27	.452	14979	12.0	27	-N	3	V		114		FDE	
GRP64861	14	0300+9	0303+7	0320	N06	W27	.452	14979	12.1	20	-N				60	.7	FJ	
CULG	14	0300	0308	03250	N07	W28	.467	14979	12.0	250	-N		C	0308	55	.6	F	
VORO	14	0302	0303	0320	N07	W25	.420	14979	12.3	18	1N		C	0303	206	2.3	J	
MANI	14	0304E	0306U	03150	N06	W27	.452	14979	12.1	110	-F		V	0306	50	.5	F	
PALE	14	0309	0310	0319	N05	W28	.468	14979	12.0	10	-N	3	V		68		FDE	
	14	0330	0331	NO FLARE PATROL														
862 CULG	14	0350	0403	0433	N07	W25	.420	14979	12.3	43	-F		C	0403	35	.4	F	Y5
GRP64863	14	0605>9	0640+3	0649	N07	W29	.482	14979	12.1	44	-F						DJK	
BUCA	14	0605		0627	N08	W28	.467	14979	12.2	22	-F		C	0610	86	1.0	D	
ABST	14	0625	0640	0649	N06	W30	.497	14979	12.0	24	-F		C	0640	175	2.0	DJK	
CULG	14	0637	0643U	07100	N07	W28	.467	14979	12.2	330	-F		P	0643	30	.3	F	
864 ABST	14	0707	0708	0725	N07	W28	.467	14979	12.2	18	-F		C	0708	114	1.3	DJ	Y5
865 MONT	14	0804	0807	0831	N07	W30	.497	14979	12.1	27	-N		C	0807	80			Y5
GRP64866	14	0947+3	0956+1 1005	1016	N06	W28	.467	14979	12.3	29	-F						K	
MONT	14	0947	1005	1059	N07	W31	.512	14979	12.1	72	-N		C	1059	80		FK	
MEUD	14	0950	0956	1005	N06	W28	.467	14979	12.3	15	-F		C	0956	40	.4	E	
KHAR	14	0950	0957	1007	N06	W28	.467	14979	12.3	17	-F		C				D	
CATA	14	1015E	1020	10250	N07	W27	.452	14979	12.4	100	-N	2		1020	56	.6		
867 KANZ	14	1309	1309	1312	N07	W31	.512	14979	12.2	3	-N		C					Y5

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OBSERVATORY	OBSERVED UT DATE OCT	START	MAX. PHASE	END	LOCATION APPROX LAT.	MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	DURATION MIN.	IMPORTANCE	OBS. COND	TYPE	MEASUREMENTS TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	REMARKS	
868 KANZ	14	1411	1415	1419	N17	E01	.192	14993	14.7	8	-F		C				D	Y5
	14	1940	2243	NO FLARE PATROL														
	14	2248	2254	NO FLARE PATROL														
	14	2257	2307	NO FLARE PATROL														
	14	2315	2330	NO FLARE PATROL														
	14	2341	2358	NO FLARE PATROL														
	15	0015	0022	NO FLARE PATROL														
	15	0029	0034	NO FLARE PATROL														
	15	0135	0137	NO FLARE PATROL														
	15	0210	0217	NO FLARE PATROL														
	15	0224	0225	NO FLARE PATROL														
	15	0235	0244	NO FLARE PATROL														
GRP64869	15	1018+5	1022+1	1032	N18	W10	.268	14993	14.7	14	-F							
MONT	15	1018	1022	1029	N18	W10	.268	14993	14.7	11	-F		C	1022	40		E	
KHAR	15	1023	1023	1035	N19	W10	.281	14993	14.7	12	-F		C				D	
	15	1521	1700	NO FLARE PATROL														
	15	1810	1821	NO FLARE PATROL														
	15	1956	2120	NO FLARE PATROL														
	15	2124	2132	NO FLARE PATROL														
	16	0252	0253	NO FLARE PATROL														
870 KANZ	16	1308		1402	N19	W27	.491	14993	14.5	54	-F		C				H	Y5
GRP64871	16	1427>9	1430 1448	1456	N19	W28	.504	14993	14.5	29	-F							
KANZ	16	1427	1430	1452	N20	W28	.510	14993	14.5	25	-F		C					
ZURI	16	1440	1448	1500	N19	W29	.518	14993	14.4	20	-F		C	1448	30	.4		
	16	1654	1716	NO FLARE PATROL														
	16	1918	2019	NO FLARE PATROL														
	16	2026	2035	NO FLARE PATROL														
GRP64872	16	2219+0	2220	2227	N23	E34	.602	14991	19.5	8	-N						E	
VORO	16	2219E		2226	N24	E35	.619	14991	19.6	70	-B		C	2220	108	1.3	E	
CULG	16	2219	2220	2227	N23	E34	.602	14991	19.5	8	-F		C	2220	20	.2		
873 VORO	16	2249	2251	2258	N25	E35	.624	14991	19.6	9	-B		C	2251	99	1.2	E	Y5
	17	1938	2018	NO FLARE PATROL														
874 VORO	18	0031	0032	0041	N19	W45	.717	14993	14.6	10	-N		C	0032	72	1.0	J	Y5
875 VORO	18	0103	0105	0110	S25	E46	.811	14995	21.5	7	-N		C	0105	99	1.6	OG	Y5
	18	0215	0234	NO FLARE PATROL														
876 CULG	18	0600	0622	0647	S23	E47	.810	14995	21.8	47	-F		C	0622	40	.6		Y5
GRP64877	18	0808+1	0811+1	0817	N25	W22	.479	14984	16.7	9	-F						E	
MONT	18	0808	0811	0818	N25	W23	.490	14984	16.6	10	-F		C	0811	40		E	
KANZ	18	0809	0812	0816	N25	W22	.479	14984	16.7	7	-F		C				E	
878 HCMA	18	1749E		1818D	N26	E16	.430	14991	19.9	29D	-N		C	1754	50	.6	E	Y5
	18	1818	2020	NO FLARE PATROL														
879 CULG	18	2024	2027	2038	S22	E40	.742	14995	21.9	14	-F		C	2027	15	.2		Y5
GRP64880	19	0036+7	0040+5	0056	N23	E07	.320	14991	19.5	20	-F						EJ	
CULG	19	0036	0040	0045D	N23	E07	.320	14991	19.6	9D	-F		C	0040	35	.4		
VORO	19	0043	0045	0056	N24	E08	.341	14991	19.6	13	-N		C	0045	116	1.2	EJ	
881 CULG	19	0108	0139	0301D	S28	E27	.676	14995	21.1	130	?F		C	0139	240	3.1	SF	Y5
	IMP.1	NO	VORO2	MITK1														
GRP64882	19	0216+1	0218+1	0228	N21	W33	.581	14984	16.6	12	-F				45	.6	E	
CULG	19	0216	0219	0230	N22	W32	.574	14984	16.7	14	-F		C	0219	40	.5		
MITK	19	0217	0218	0226	N21	W35	.605	14984	16.5	9	-F		C	0218	50	.7	E	
883 CULG	19	0541	0545	0607	S24	E28	.646	14995	21.3	26	-F		C	0545	30	.4		Y5
GRP64884	19	0719+1	0720	0742	S25	E28	.655	14995	21.4	23	-F				30	.4	D	
HTPR	19	0719E	0720	0738	S25	E27	.647	14995	21.3	19D	-F		C	0720	20	.2		
BUCA	19	0720		0745	S25	E29	.664	14995	21.5	25	-N		C	0725	43	.6	D	

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GRP64885	19	1105	1114	1159	N20	W66	.910	14993	14.5	54	-N						E	
LVOV	19	1105	1114	1159	N20	W68	.923	14993	14.4	54	-F		C	1114	100		E	
CATA	19	1130E	1130	1145D	N20	W65	.904	14993	14.6	15D	-E	2		1130	73	1.8		
886 LVOV	19	1156	1202	1215	S25	E26	.638	14995	21.4	19	-F		C	1202	150	2.0	D	Y5
887 ZURI	19	1442	1456	1506	N21	W42	.688	14984	16.5	24	-F		C	1456	40	.6		Y5
888 ZURI	19	1512	1512	1516	S25	E25	.630	14995	21.5	4	-N		C	1512	60	.8		Y5
	19	1556	1638	NO FLARE PATROL														
	19	1639	1745	NO FLARE PATROL														
	19	1757	1808	NO FLARE PATROL														
	19	1904	1928	NO FLARE PATROL														
	19	2203	2212	NO FLARE PATROL														
GRP64889	19	2212	2230 2242	2310	S26	E16	.576	14995	21.1	58	-N							
CULG	19	2212	2230	2322D	S27	E17	.595	14995	21.2	70D	-N		C	2230	140	1.8		
PALE	19	2219E	2242	2258	S26	E15	.570	14995	21.1	39D	-N	3	V		137			
	19	2321	2332	NO FLARE PATROL														
GRP64890	20	0032E	0035+1	0058	N23	W44	.718	14984	16.7	26	-F				30	.4		
PALE	20	0032E	0036	0058	N24	W44	.721	14984	16.7	26D	-F	3	V		32		DE	
MANI	20	0035E	0035U	0055D	N23	W45	.728	14984	16.6	20D	-F		V	0035	25	.3		
891 CULG	20	0224	0232	0242	S26	E16	.575	14995	21.3	18	-F		C	0232	20	.2		Y5
892 MITK	20	0617	0629	0644	N22	W52	.797	14984	16.4	27	-N		C	0629	50	.8	D	Y5
893 ZURI	20	1352E	1358	1400D	N20	W69	.930	14984	15.4	8D	-N		P	1358	50			Y5
894 CATA	20	1405E	1405	1425	N21	W70	.936	14984	15.3	20D	-B	2		1405	56			Y5
895 ZURI	20	1444	1446	1450	N23	W66	.912	14984	15.7	6	-N		C	1446	40			Y5
GRP64896	20	1541+2	1554 1605	1700	S26	E04	.526	14995	21.0	79	1B				200	2.3	KLU	
MCMA	20	1541	1554	1700	S26	E04	.526	14995	21.0	79	1B							
MCMA	20	1541	1605	1700	S26	E04	.526	14995	21.0	79	1B		C	1554	225	2.7	KLU	
MEUD	20	1543		1551D	S26	E05	.528	14995	21.0	8D	1N		C	1551	18	2.1	U	
	20	1734	1741	NO FLARE PATROL														
	20	1946	2035	NO FLARE PATROL														
	20	2204	2220	NO FLARE PATROL														
GRP64897	21	0048+2	0052+1	0059	N25	W20	.460	14991	19.5	11	-N						J	
VORO	21	0048	0053	0058	N26	W22	.491	14991	19.4	10	-N		C	0053	134	1.5	J	
CULG	21	0050	0052	0100	N25	W19	.450	14991	19.6	10	-N		C	0052	20	.2		
898 CULG	21	0141	0146	0157	N21	W70	.936	14984	15.8	16	-F		C	0146	30			Y5
899 KANZ	21	0713	0750	0757	N20	W88	.998	14984	14.7	44	-F		C					Y5
GRP64900	21	0813+3	0834+3 0845	0932	S25	W07	.518	14995	20.8	79	-N				110	1.3	EI	
MONT	21	0813	0834	0933	S24	W04	.495	14995	21.0	80	-N		C	0834	80		E	
KANZ	21	0816	0837	0928	S25	W06	.515	14995	20.9	72	-N		C				E	
CATA	21	0830E	0845	0935	S25	W08	.521	14995	20.8	65D	-B	2		0845	84	1.0		
KHAR	21	0830E	0835	0930	S24	W07	.503	14995	20.8	60D	-F		C	0835	110	1.3	E	
KIEV	21	0839E	0839	0936D	S26	W08	.535	14995	20.8	57D	1F		C	0839	200	2.5	BEI	
ATHN	21	0904E	0907	0922	S24	E01	.491	14995	21.5	18D	-N	1			80	.8		
GRP64901	21	0948+3	0950+1	1005	S26	W07	.532	14995	20.9	17	-F				25	.3		
MONT	21	0948	0951	1009	S26	W07	.532	14995	20.9	21	-F		C	0951	20		D	
MEUD	21	0949	0950	1005	S26	W08	.535	14995	20.8	16	-F		C	0950	30	.3		
KANZ	21	0951	0951	1005	S26	W07	.532	14995	20.9	14	-N		C				E	
902 KHAR	21	0950	0950	0957	N22	W89	.999	14984	14.7	7	-F		C				DT	Y5
GRP64903	21	1030+1	1043+1	1051	N21	W89	.999	14984	14.8	21	-F						D	
KHAR	21	1030	1043	1050	N22	W89	.999	14984	14.8	20	-F		C				DT	
KANZ	21	1031	1044	1051	N20	W90	.999	14984	14.7	20	-N		C					

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GRP64904	21	1127+0	1127+3	1135	N21	W87	.997	14984	15.0	8	-F						D
KANZ	21	1127	1130	1137	N20	W85	.993	14984	15.1	10	-F		C				
KHAR	21	1127	1127	1133	N22	W89	.999	14984	14.8	6	-F		C				DT
GRP64905	21	1239+1	1240+4	1248	S27	W06	.544	14995	21.1	9	-F				50	.6	E
MONT	21	1239	1244	1248	S27	W06	.544	14995	21.1	9	-F		C	1244	40		E
KANZ	21	1240	1243	1246	S27	W06	.544	14995	21.1	6	-F		C				
CATA	21	1240	1240	1305	S26	W06	.529	14995	21.1	25	-N	1		1240	67	.8	
MEUD	21	1240	1244	1248	S27	W07	.546	14995	21.0	8	-F		C	1244	50	.6	E
GRP64906	21	1505+2	1508+1	1518	S25	W09	.525	14995	21.0	13	-F				50	.6	E
MCMA	21	1505	1508	1520	S25	W09	.525	14995	21.0	15	-N		C	1508	45	.5	E
MEUD	21	1507	1509	1516	S26	W09	.539	14995	21.0	9	-F		C	1509	50	.6	E
907 MCMA	21	1536	1555	1640	S26	W09	.539	14995	21.0	64	-N		C	1555	75	.9	EL YS
	21	1946	2015	NO FLARE PATROL													
908 CULG	21	2125	2145	2255	S25	W15	.555	14995	20.8	90	-N		C	2145	160	1.9	SF YS
GRP64909	21	2127E	2143+0	2148D	N29	W14	.455	14996	20.8	21	-N				40	.5	Z
PALE	21	2127E	2143U	2148D	N29	W14	.455	14996	20.8	21D	-N	3	C		39		DE
PALE	21	2127E	2143U	2148D	N29	W14	.455	14996	20.8	21D	-N	3	V		39		DE Z
GRP64910	22	0050+3	0054+1	0103	N22	W78	.974	14984	16.2	13	-N						DJ
CULG	22	0050	0055	0103	N21	W78	.974	14984	16.2	13	-N		C	0050	20		
MITK	22	0052	0055	0105	N23	W77	.970	14984	16.3	13	-N		C	0055	50		D
VORO	22	0053	0054	0100	N23	W78	.974	14984	16.2	7	-N		C	0054	90	1.9	J
GRP64911	22	0406+1	0410+2	0425	N21	W77	.970	14984	16.4	19	1N				90		
CULG	22	0406	0410	0427	N20	W78	.974	14984	16.3	21	1N		C	0410	60		
MITK	22	0407	0412	0422	N22	W79	.977	14984	16.2	15	1B		C	0412	130		
MANI	22	0410E	0412U	0416D	N20	W75	.962	14984	16.5	6D	-N		V	0412	80	1.9	
GRP64912	22	0514+3	0518+1	0532	N22	W34	.600	14991	19.7	18	-F						EG
CULG	22	0514	0519	0526	N18	W37	.620	14991	19.4	12	-F		C	0519	20	.2	
MITK	22	0517	0518	0537	N26	W32	.600	14991	19.8	20	-N		C	0518	60	.8	EG
GRP64913	22	0850+2	0852+1	0905	N23	W78	.974	14984	16.5	15	-N				60		E
MONT	22	0850	0853	0900D	N23	W79	.977	14984	16.4	10D	1N		C	0853	220		
ZURI	22	0850	0852	0858	N23	W76	.966	14984	16.7	8	-B		C	0852	60		
BUCA	22	0850		0912	N22	W80	.981	14984	16.4	22	-N		C	0856	64		E
KANZ	22	0852	0852	0910	N23	W78	.974	14984	16.5	18	-N		C				
914 KANZ	22	0907	0910	0913	N18	E90	1.000	15006	29.1	6	-F		C				YS
GRP64915	22	1048+0	1051+1	1101	S26	W19	.593	14995	21.0	13	-F						E
MONT	22	1048	1052	1100	S26	W19	.593	14995	21.0	12	-N		C	1052	80		E
KANZ	22	1048	1051	1101	S26	W19	.593	14995	21.0	13	-F		C				
916 CATA	22	1130	1130	1145D	S29	W17	.616	14995	21.2	15D	-N	2		1130	28	.4	YS
917 LVOV	22	1213	1216	1304	S27	W18	.598	14995	21.2	51	?F		C	1216	200	2.6	YS
	IMP.1 NO	CATA1															
	22	1527	1735	NO FLARE PATROL													
	22	1745	2045	NO FLARE PATROL													
	22	2104	2115	NO FLARE PATROL													
918 CULG	22	2346	2352	2357	N23	W90	.999	14984	16.2	11	-N		C	2352	25		YS
GRP64919	23	0028+9	0040	0047D	N24	W44	.722	14991	19.7	19	-N						G
CULG	23	0028	0057U	0145	N25	W43	.715	14991	19.8	77	-N		C	0057	100	1.5	F
VORO	23	0037	0040	0047	N23	W45	.730	14991	19.7	10	-B		C	0045	125	1.8	EG
	23	0314	0329	NO FLARE PATROL													
	23	0335	0342	NO FLARE PATROL													
	23	0443	0448	NO FLARE PATROL													
	23	0450	0509	NO FLARE PATROL													
	23	0513	0522	NO FLARE PATROL													
	23	0525	0700	NO FLARE PATROL													
GRP64920	23	1140+5	1143+2	1155	S27	W23	.632	14995	21.8	15	-F				100	1.3	
CATA	23	1140	1145	1210	S27	W22	.624	14995	21.8	30	-N	2		1145	112	1.5	
KHAR	23	1143	1143	1150	S27	W24	.639	14995	21.7	7	-F		C	1143	90	1.2	
KANZ	23	1145	1145	1155	S26	W24	.629	14995	21.7	10	-F		C				

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	DATE OCT	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.		
921 KANZ	23	1207	1211	1231	S24	E16	.547	15005	24.7	24	-N		C					Y5
GRP64922	23	1243+7	1250+0	1305	N30	E87	.996	15008	30.1	22	-B							
KANZ	23	1243	1250	1305	N33	E85	.992	15008	29.9	22	-B		C					
CATA	23	1250	1250	1305	N28	E90	.999	15008	30.3	15	1N	2		1250	84			
	23	1430	1445	NO FLARE PATROL														
	23	1450	1704	NO FLARE PATROL														
	23	1905	2050	NO FLARE PATROL														
	23	2132	2147	NO FLARE PATROL														
	23	2209	2215	NO FLARE PATROL														
923 MITK	23	2336	2338	2346	N18	E63	.889	15006	28.7	10	-N		C	2338	50	1.1	DG	Y5
924 VORO	24	0038	0039	0041	N17	E62	.881	15006	28.7	3	-F		C	0039	72	1.5	DG	Y5
GRP64925	24	1428+3	1433+0	1459	S24	W43	.778	14995	21.4	31	-N				45	.7	E	
MCMA	24	1428	1433	1500	S25	W44	.791	14995	21.3	32	-N		C	1433	45	.8	E	
ZURI	24	1431	1433	1457	S24	W43	.778	14995	21.4	26	-N		C	1433	40	.7		
926 MCMA	24	1535	1537	1550	S25	W44	.791	14995	21.3	15	-F		C	1537	20	.3	D	Y5
927 MCMA	24	1650	1653	1707	S25	W44	.791	14995	21.4	17	-F		C	1653	15	.2	D	Y5
	24	2106	2215	NO FLARE PATROL														
	25	0100	0144	NO FLARE PATROL														
	25	0147	0156	NO FLARE PATROL														
	25	1435	1445	NO FLARE PATROL														
928 VORO	25	2348	2352	0000	S18	E42	.736	15011	29.1	12	-F		C	2352	54	.8	EGJ	Y5
	26	0241	0242	NO FLARE PATROL														
	26	0325	0343	NO FLARE PATROL														
929 KANZ	26	1153	1153	1203	N20	E40	.665	15009	29.5	10	-F		C					Y5
	26	1602	1914	NO FLARE PATROL														
	26	1918	1927	NO FLARE PATROL														
GRP64930	26	1934E	1934	1941	N21	E44	.714	15009	30.1	7	-F		C		30	.4	F	
PALE	26	1934E	1934	1941	N21	E44	.714	15009	30.1	7D	-F	3	C		31		F	
PALE	26	1934E	1934	1941	N21	E44	.714	15009	30.1	7D	-F	3	V		31		F	
	26	1945	2020	NO FLARE PATROL														
	26	2206	2214	NO FLARE PATROL														
931 MITK	27	0209	0212	0231	N21	E43	.703	15009	30.3	22	-N		C	0212	80	1.1	DG	Y5
932 MITK	27	0507	0517	0530	N19	W33	.576	15015	24.7	23	-N		C	0517	60	.8	DG	Y5
933 PALE	27	2338	2338	2341	N22	E61	.877	15013	1.6	3	-F	3	V		19		DE	Y5
GRP64934	28	0042	0046	0100	N21	E24	.475	15009	29.8	18	-N							
PALE	28	0042	0046	0058	N21	E24	.475	15009	29.8	16	-N	3	V		101		FDE	
CULG	28	0050E	0050E	0101	N21	E24	.475	15009	29.8	11D	-N		P	0050	20	.2		
935 CULG	28	0304	0317	0345	N20	E23	.455	15009	29.9	41	-F		C	0317	30	.3		Y5
936 CULG	28	0355	0400	0417	S29	E90	1.001	15016	3.9	22	1N		C	0400	100			Y5
937 CULG	28	0530	0538	0550	N21	E25	.488	15009	30.1	20	-F		C	0538	35	.4	F	Y5
GRP64938	28	0722+8	0730+2	0735D	N21	W49	.768	15015	24.6	13	-N				45	.7		
CULG	28	0722	0732D	0732D	N22	W48	.760	15015	24.7	10D	-N		P	0732	30	.8		
CATA	28	0730	0730	0735D	N20	W50	.776	15015	24.6	5D	-N	2		0730	56	.9		
GRP64939	28	0915+1	0915 0940+1	0950	S26	E84	.998	15083	4.7	35	-N							
CATA	28	0915E	0915	0925	S28	E90	1.001	15083	4.1	10D	1N	2		0915	56			
KANZ	28	0916	0941	0949	S25	E84	.998	15083	3.7	33	-N		C					
CATA	28	0935	0940	0950	S28	E80	.994	15083	3.4	15	1F	2		0940	112			

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GRP64940	28	1203+2	1218+1 1225+8	1244	S24	E80	.992	15016	4.5	41	1N						EH
KANZ	28	1203	1233	1246	S25	E80	.993	15016	3.5	43	1N		C				
LVOV	28	1204		1254	S23	E90	1.001	15016	4.3	50			P				CH
RAMY	28	1205	1225	1245D	S21	E80	.991	15016	3.5	40D	1N	4	C				DE H
RAMY	28	1205	1218	1245D	S21	E80	.991	15016	3.5	40D	-B	4	C				DE H
CATA	28	1215	1230	1240D	S27	E75	.981	15016	3.1	25D	2N	2		1230	337		
HTPR	28	1218	1219	1221	S25	E82	.996	15016	3.7	3	-F		C	1219	10	.2	
GRP64941	28	1425+1	1429+4	1440	S25	E80	.993	15016	4.6	15	-F						K
HTPR	28	1425	1429	1440	S25	E81	.994	15016	3.7	15	-F		C	1429	30	.6	K
KANZ	28	1426	1433	1440	S26	E80	.993	15016	3.6	14	-F		C				
	28	1557	1636	NO FLARE PATROL													
	28	1709	1726	NO FLARE PATROL													
	28	1945	2027	NO FLARE PATROL													
942 CULG	28	2206	2213	2245	N20	E20	.418	15009	30.4	39	-F		C	2213	15	.2	Y5
	28	2220	2229	NO FLARE PATROL													
943 CULG	28	2234	2305U	2353	S28	E80	.994	15016	3.9	79	1F		C	2305	70		Y5
944 CULG	29	0157E	0158	0209	N22	E11	.347	15009	29.9	12D	-N		P	0158	10	.1	Y5
945 MITK	29	0204	0208	0220	S23	E70	.959	15016	3.3	16	?N		C	0208	80		Y5
	IMP	1 NO	PALE2	CULG2													
946 CULG	29	0214	0219	0238	N18	E15	.339	15009	30.2	24	-F		C	0219	15	.2	Y5
947 MITK	29	0358	0407	0412D	S23	E69	.955	15016	3.3	14D	1N		C	0407	80		Y5
	29	0412	0415	NO FLARE PATROL													
948 CULG	29	0446	0450	0522	N20	E15	.361	15009	30.3	36	-F		C	0450	20	.2	Y5
949 CULG	29	0521	0524	0555	N21	E13	.352	15009	30.2	34	-N		C	0524	30	.3	Y5
950 CULG	29	0721	0732	0742D	N18	E90	1.000	15017	5.1	21D	-N		P	0732	25		Y5
951 CATA	29	0725E	0730	0730D	S18	E90	1.000		5.1	5D	-N	2		0730	28		T Y5
952 CATA	29	0745E	0745	0930D	S18	E90	1.000		5.1	105D	?N	2		0745	56		T Y5
	IMP	1 NO	HTPR														
GRP64953	29	0820>9	0820 0835	0915D	N20	E90	1.000	15017	6.1	55	-F						D
MONT	29	0820E	0820	1012	N20	E90	1.000	15017	5.1	112D	-F		C	0820	20		D
HTPR	29	0831	0835	0842	N20	E90	1.000	15017	5.1	11	-F		C	0835	20		
HTPR	29	0849	0900	0915	N20	E90	1.000	15017	5.1	26	-F		C	0900	10		
954 WEND	29	0914E		0928	S22	E62	.915	15017	3.0	14D	-N						Y5
955 HTPR	29	1005	1008	1020	S25	E65	.938	15016	3.3	15	-F		C	1008	30	.6	Y5
GRP64956	29	1400E	1400	1430	S24	E63	.925	15016	4.3	30	-B						E
CATA	29	1400E	1400	1425D	S24	E63	.925	15016	3.3	25D	1B	2		1400	84		
HTPR	29	1405E		1430	S25	E63	.927	15016	3.3	25D	-F		C	1408	50	1.0	E
957 HTPR	29	1519		1537D	N30	E06	.437	15008	30.1	18D	-F		C	1521	40	.4	Y5
	29	1630	2040	NO FLARE PATROL													
958 PALE	29	2009E	2009	2021	S23	E63	.923	15016	3.6	12D	-N	3	C		84		FDE Y5
GRP64959	29	2040+5	2049+1	2107	S25	E65	.938	15016	4.7	27	-N				60		
CULG	29	2040E	2050U	2115	S27	E68	.955	15016	4.0	35D	-N		P	2050	60	1.5	
PALE	29	2045	2049	2058	S23	E63	.923	15016	3.6	13	-N	3	C		67		FDE
	29	2043	2049	NO FLARE PATROL													
960 CULG	29	2109	2114	2130	N22	E02	.299	15009	30.0	21	-F		C	2114	70	.8	F Y5
	29	2140	2208	NO FLARE PATROL													
	29	2209	2215	NO FLARE PATROL													
	29	2219	2228	NO FLARE PATROL													
	29	2232	0033	NO FLARE PATROL													

Hα SOLAR FLARES

OCTOBER 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE OCT	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.		
961 CULG	29	2349	2353	0012	S18	E02	.387		30.1	23	-F		C	2353	15	.2		Y5
	30	0105	0235	NO FLARE PATROL														
GRP64962	30	0223+0	0225+0	0230	N21	W01	.283	15009	30.0	7	-F				60	.6	F	
PALE	30	0223	0225	0230	N21	W01	.283	15009	30.0	7	-F	3	C		57		F	
PALE	30	0223	0225	0230	N21	W01	.283	15009	30.0	7	-F	3	V		57		F	
	30	0320	0325	NO FLARE PATROL														
	30	0330	0359	NO FLARE PATROL														
	30	0706	0715	NO FLARE PATROL														
	30	0722	0725	NO FLARE PATROL														
963 HTPR	30	1154	1202	1240	S18	W22	.520	15018	28.8	46	-F		C	1202	10	.1		Y5
964 ZURI	30	1322	1323	1324	N20	W80	.982	15015	24.6	2	-F		C	1323	20			Y5
GRP64965	30	1327+2	1328+1	1333	N18	E70	.937	15017	5.8	6	-N				50			
HTPR	30	1327	1328	1331	N19	E69	.931	15017	4.7	4	-N		C	1328	60	1.3		
ZURI	30	1329	1329	1335	N18	E71	.943	15017	4.9	6	-B		C	1329	50			
	30	1600	1621	NO FLARE PATROL														
	30	1625	1636	NO FLARE PATROL														
	30	1646	1718	NO FLARE PATROL														
966 PALE	30	1733	1734	1738	N19	E69	.931	15017	4.9	5	-F	3	C		46		HOE	Y5
967 MITK	31	0132	0142	0221	N17	W90	1.000	15015	24.3	49	?N		C	0142	60		G	Y5
	IMP.1 NO		: CULG2															
968 CULG	31	0340	0344	0352	N28	E85	.994		6.5	12	-F		C	0344	25			Y5
969 MITK	31	0411	0417	0430	N20	E70	.938	15017	5.4	19	-N		C	0417	80		H	Y5
970 MITK	31	0437	0440	0456	S28	W90	1.001	15005	24.4	19	?N		C	0440	90		G	Y5
	IMP.1 NO		: CULG2															
971 CULG	31	0508	0515	0525	N29	E80	.982		6.2	17	-F		C	0515	20			Y5
972 KHAR	31	0840E	0847	0917	N21	W90	1.000	15015	24.6	370	-F		C				DT	Y5
GRP64973	31	1043>9	1050	1110	N21	W90	1.000	15015	24.7	27	-F						D	
			1100															
KHAR	31	1043	1050	1117	N21	W90	1.000	15015	24.7	34	1F		C				DT	
KANZ	31	1057	1100	1102	N21	W90	1.000	15015	24.7	5	-F		C				D	
GRP64974	31	1145	1150	1205	N21	W90	1.000	15015	24.7	20	-F						D	
KHAR	31	1145	1150	1205	N21	W90	1.000	15015	24.7	20	-F		C				DT	
KHAR	31	1145	1150	1205	N21	W90	1.000	15015	24.7	20	-F		C				DT	
	31	1600	1654	NO FLARE PATROL														
	31	1943	2024	NO FLARE PATROL														
	31	2035	2043	NO FLARE PATROL														
	31	2053	2110	NO FLARE PATROL														
	31	2131	2133	NO FLARE PATROL														

"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.

OCTOBER 1977

DAILY FLARE INDICES
Includes all Flares

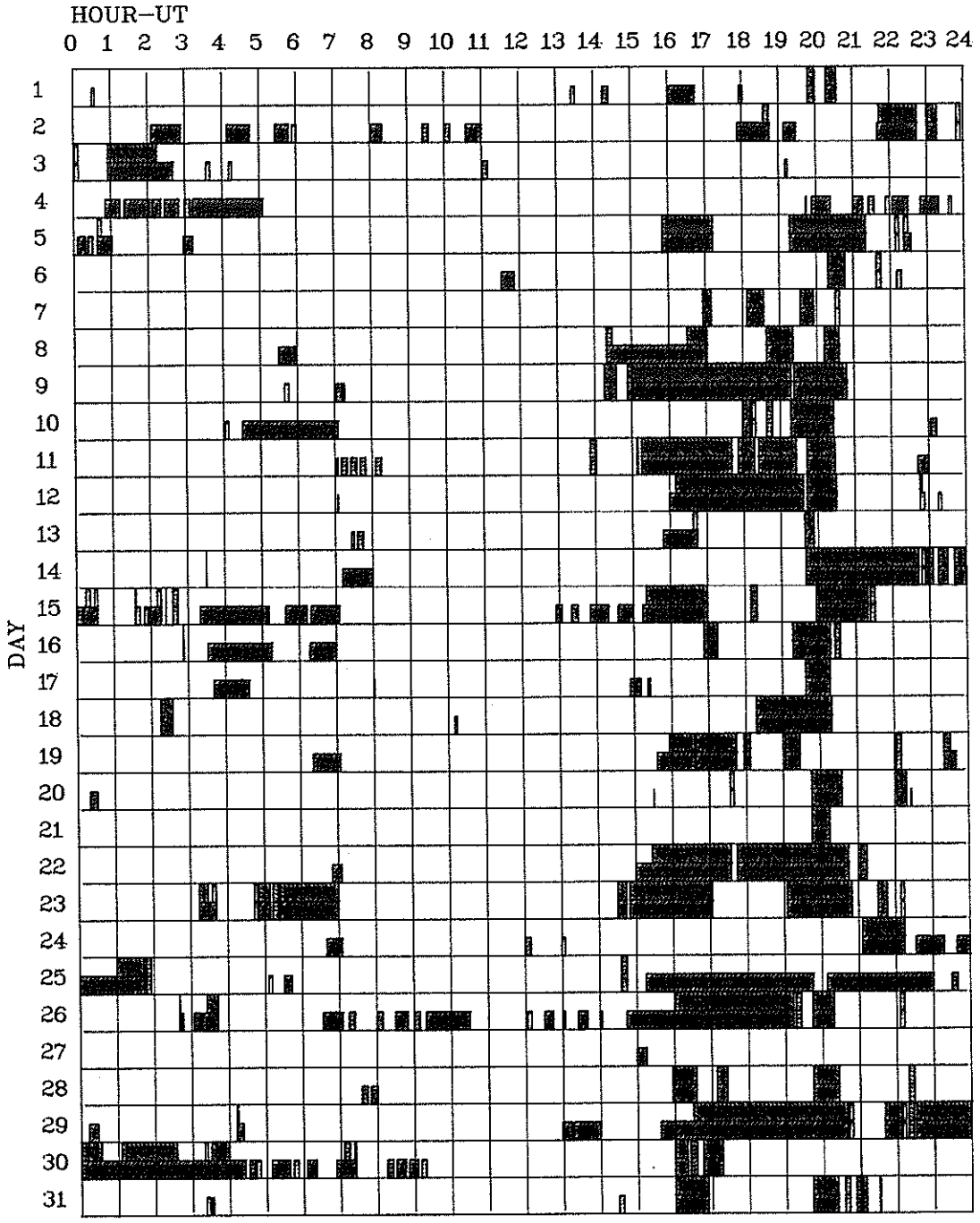
Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.
771001	15.92	23.5	771011	24.00	19.1	771021	24.55	23.5
771002	7.18	22.5	771012	141.38	19.7	771022	23.19	18.7
771003	38.81	22.6	771013	43.44	23.6	771023	15.37	16.9
771004	19.63	24.0	771014	37.24	20.1	771024	5.94	22.9
771005	23.68	20.3	771015	5.91	20.1	771025	1.94	23.0
771006	40.95	23.4	771016	13.58	22.5	771026	2.79	19.6
771007	31.71	22.8	771017	0.00	23.3	771027	6.12	24.0
771008	24.70	22.2	771018	17.38	21.7	771028	28.36	22.2
771009	20.69	17.8	771019	24.29	21.3	771029	64.36	17.0
771010	10.46	22.4	771020	29.40	22.8	771030	8.55	20.7
						771031	5.35	22.0

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

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

OCTOBER 1977



Observatories included in total patrol:

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

OCTOBER 1977

OCT 1977	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	MEAN	INT	POLARIZATION OR REMARKS
1	200	GORK	44	NS	0500 E		480		5		
	9100	ARCE	20		0828.5	0936.8	134				
	9100	GORK	5	S	0921.4	0921.7	.4	24	12		
	9100	GORK	2	SF	0925	0925.5	2	7	3		
	9100	GORK	20	GRF	0933.7	0936.4	12.6	8	2.4		
	9100	GORK	2	SF	1022.2	1023	6.8	8	2		
	1420	ARCE	22		1053.3	1056.8	12				
	4995	ATHN	2	GRF	1146.6	1149.8	6.3	7	4.2		
	9100	ARCE	1		1148.9	1149.9	11.4				
	9100	ARCE	22		1305	1357.8	105				
	2800	OTTA	20	GRF	1500	1600	160	1.8	.9		
	245	SGMR	43	NS	2115.9	2141.4	65.1D	26.5			
2	1000	TYKW	5	S	0202.8	0203	.5	12	3		OR
	1000	TYKW	5	S	0312	0312.2	.5	7	1.5		OR
	9400	TYKW	5	S	0436	0436.7	2	8	3		
	200	GORK	44	NS	0500 E		240		5		
	260	ONDR	44	NS	0700 E		490 D	14			
	245	SGMR	44	NS	1045 E	2022.8	694 D	52.5			
	200	HIRA	44	NS	2035 E	0150	720 D	20	5		SL
	3100	CRIM	24	R	0535 U	0625		2			
	536	ONDR	42	SER	0841.2	0850	12	81			
	808	ONDR	42	SER	0843.3	0852.2	9	20	2.2		
	9100	ARCE	4		0900	0901.6	3				
	1420	ARCE	40		0940.1		17.5				
	9100	ARCE			0948.6	0948.8	1.3				
	9100	ARCE	46		0948.6	0948.8	2.8				
	9100	ARCE			0949.9	0950	1.5				
	1420	ARCE	2		1017.7	1017.9	.6				
	930	BORO	3	S	1018	1018	1	30	2		
	1420	ARCE	40		1027	1035.4	16.5				
	9100	ARCE	8		1028	1028.1	.5				
	9100	ARCE			1112	1113.6	1.8				
	9100	ARCE	46		1112	1113.6	7				
	9100	ARCE			1113.8	1114.4	1.5				
	9100	ARCE			1115.3	1115.5	3.7				
	808	ONDR	4	S/F	1122	1122	.4	45			
	245	SGMR	6	S	1548.6	1550.2	2.8	129.8	38.9		
	606	SGMR	3	S	1549.4	1549.5	.6	12.5	3.8		
	410	SGMR	6	S	1549.6	1550.2	.7	108.3	32.5		
	1420	ARCE	40		1556.1	1604.5	10				AT SUNSET
	9100	ARCE	4		1559.7	1600.8	2.9				
	9100	ARCE	29		1602.6		20				AT SUNSET
	245	SGMR	6	S	1604.5	1605.3	2.3	224.3	67.3		
	410	SGMR	6	S	1605.1	1605.4	1.3	121.4	36.4		
	606	SGMR	1	S	1605.2	1606.2	1.4	9.1	2.7		
	18	MCMA	6	S	1636	1638	3			1	
	245	SGMR	6	S	2121.6	2131.4	12.2	74.9	22.5		
	1420	BOUL	3	S	2122.5	2123.5	2	10	3		
	410	SGMR	6	S	2128.5	2128.7	1.9	13.7	5		
	1415	SGHR	3	S	2128.5	2128.8	2.5	14.9	4.5		
	2800	OTTA	2	S/F	2128	2129.5	6	3.2	1.6		
	2695	BOUL	3	S	2129.5	2130.5	2.5	4	1		
3	208	VORO	44	NS	0100		60		16		
	100	HIRA	43	NS	0330	0547	300 D	80	10		SL
	100	GORK	44	NS	0457 E		180		20		
	200	GORK	44	NS	0500 E		300		5		
	260	ONDR	44	NS	0740 E		450 D	118	10		
	202	IZMI	43	NS	1039.2		80.8	50			
	245	SGMR	44	NS	1047 E	1205.3	690 D	286.9			
	228	HARS	43	NS	1136	1315	300 D	35 U			
	200	HIRA	44	NS	2040 E	2315	260 D	15	3		SL
	208	VORO	44	NS	2220	2310	220	30	11		
	3100	CRIM	24	R	0728	0745		2			
	237	TRST	41	F	0740.3	0740.5	.7	132			L
	1000	TYKW	5	S	0740.4	0740.8	1	12	2		20L
	2000	TYKW	5	S	0740.4	0740.7	1	3.5	1		OR
	1470	BERL	3	S	0740	0740.5	1	7.3			
	536	ONDR	45	C	0740 E	0740.8	6	31	1.6		
	228	HARS	45	C	1206.3	1206.5	1.2	250	90		
	2800	OTTA	20	GRF	1440	1515	70	1	.5		
	2800	OTTA	21	GRF	1615	1725	105	1.4	.7		
	2800	OTTA	8	S	1716	1716.2	.5	3.6			
	700	SYDN	45	C	2245.2	2247	2.4				
	1000	TYKW	45	C	2245	2246.6	2.5	7	1.5		OR
	1400	SYDN	2	S	2246.3	2246.4	.9				
	2000	TYKW	5	S	2246	2246.5	1	1.5	.5		OR
	200	HIRA	27	RF	2250	2316	56	17	5		
	200	HIRA	45	C	2307	2310	7	17	8		
4	3750	TYKW	5	S	0131.5	0132.2	2.5	1.5	.5		
	2000	TYKW	5	S	0132	0132.3	2	2	.6		60L
	1000	TYKW	45	C	0132	0132.8	1.5	1.6	.4		20L

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

OCTOBER 1977

OCT 1977	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22} Wm^{-2} Hz^{-1}$ PEAK	MEAN	INT	POLARIZATION OR REMARKS
	606	MANI	4		0432.2	0434.6	5.4	18.5	6.7		
	2695	MANI	4		0432.4	0435	3.6	14.9	6		
	4995	MANI	4		0432.7	0435	4	10.6	2.7		
	1415	MANI	4		0432.9	0435.1	4.1	11.4	5.2		
	700	SYDN	40	F	0433	0435.8	4.2				
	500	HIRA	45	C	0433.6	0435.7	3	260	50		WR
	3750	TYKW	5	S	0433	0435.4	4	11	4		OL
	3750	TYKW	29	PBI	0437		25	2	1		
	1000	TYKW	45	C	0433	0435.6	4	19	3		COMPLEX POL
	2000	TYKW	5	S	0433	0435.8	4	24	6		10R
	2000	TYKW	29	PBI	0437		20	1.4	.6		
	1400	SYDN	40	F	0434	0435.8	3				
	200	GORK	44	NS	0503 E		87		5		
	200	GORK	6	S	0504.6	0505 U	.7	20			
	260	ONDR	44	NS	0700 E		490 D	14			
	200	GORK	44	NS	0900 E		90		5		
	9100	ARCE	40		0750.8	0750.8					AT SUNRISE
	9100	ARCE	46		0858.6	0901.5	20.5				
	9100	ARCE			0858.6	0901.5	6.9				
	9100	ARCE			0905.5	0909	13.6				
	1420	ARCE	40		0909.6		8.5				
	930	BORD	8	S	1159.8	1159.8	.1	19	1		
	2800	OTTA	1	S	1613	1614.5	7	.8	.4		
	208	VORO	27	RF	2312.5	2337.5	43	22			
	200	HIRA	27	RF	2329	2338	25	15	.7		
	100	HIRA	27	RF	2330	0030	130	80	30		WLMR
	500	HIRA	45	C	2332	2333.3	18	8	3		WR
5	3750	TYKW	5	S	0331.5	0332.6	6	4	1.2		064102F
	200	GORK	44	NS	0500 E		320		15		
	202	IZMI	43	NS	0600		360	60			
	260	ONDR	44	NS	0730 E		457 D	57	9		
	127	TORN	44	NS	0730 E	1026.5	430 D	16			V=1
	100	GORK	43	NS	0842		78		5		
	245	SGHR	44	NS	1049 E	1624.7	685 D	118.3			3G
	200	HIRA	44	NS	2040 E	2350	290 D	10	3		SL
	208	VORO	44	NS	2200		360		12		
	100	GORK	41	F	0612	0615	54	56			
	100	GORK			0612	0625.3		56			
	100	GORK			0612	0649		56			
	100	GORK			0612	0658.4		56			
	3100	CRIM	24	R	0620 U	0920		4			
	9100	ARCE	20		0916.2	0933.5	22				
	1420	ARCE	1		0932.9	0933.3	.6				
	9100	ARCE	20		1112	1129.9	29.5				
	9500	BERL	4	S/F	1319.5	1320.1	56	157			
	9100	ARCE	3		1319.8	1321.2	4				
	4995	ATHN	4	S/F	1319.8	1321.2	6.6	20.4	6.1		
	4995	SGMR	3	S	1320	1321.1	22.4	239.8	71.9		
	8800	SGMR	3	S	1320	1321.1	19.6	149	44.7		
	3000	BERL	4	S/F	1320	1320.5	55	87			
	1470	BERL	42	SER	1320	1333.5	75	23			
	2695	SGMR	3	S	1320.5	1321.2	18.3	73.1	21.9		
	15400	SGMR	3	S	1320.6	1321.1	2.3	46.8	14		
	1420	ARCE	1		1320.7	1321.2	1.5				
	1415	SGMR	3	S	1320.9	1333.9	19.4	31	9.3		
	410	SGMR	6	S	1320.9	1333	18.3	13.6	4.1		
	2800	OTTA	3	S	1320	1321.1	2.5	77	19.2		
	2800	OTTA	30	PBI	1322.5	1322.5	100	7			
	4995	BOUL	8	S	1320	1321	2	209	68		
	2695	BOUL	8	S	1321	1322.5	3.5	54	18		
	9100	ARCE	20		1332.4	1334.8	22.8				
	1420	BOUL	8	S	1332.5	1333.5	2.5	10	3		
	1420	ARCE	4		1332.6	1333.6	5.5				
	930	BORD	40	F	1332.7	1334.8	3.3	14	3		
	2800	OTTA	22	GRF	1332	1334	12 D	4.6			
	237	TRST	41	F	1356.3	1356.7	1.5	386			L
	228	HARS	45	C	1356.3	1356.7	2	85	30		
	260	ONDR	8	S	1430.3	1430.3	.3	209			
	1470	BERL	3	S	1446.5	1447.2	2	2.7			
	2800	OTTA	1	S	1446.5	1447.2	2.5	8.2	4.1		
	1415	SGMR	1	S	1446.6	1447.8	7	2.8	1.1		
	4995	ATHN	2	GRF	1446.7	1447.7	3.1	6.6	3.9		
	9100	ARCE	2		1446.7	1448	3.3				
	1420	ARCE	2		1446.7	1447.8	3.5				
	2695	SGMR	3	S	1446.8	1447.8	6.5	11.3	4.5		
	8800	SGMR	1	S	1446.8	1447.6	5.3	9.7	3.9		
	4995	SGMR	1	S	1446.9	1447.6	6.7	8	3.2		
	1420	BOUL	3	S	1446	1447.5	2.5D	4	1		
	4995	BOUL	1	S	1446	1447.5	3.5	8	3		
	3000	BERL	3	S	1446	1447	4	9.6			
	2695	BOUL	3	S	1447.5	1448.5	2	9	3		
	1420	BOUL	8	S	1529.5	1530.5	3	4	1		
	1415	SGMR	20	GRF	1530.8	1544.4	14.8	3	.9		
	2800	OTTA	21	GRF	1530	1625	190	5.8	2.9		

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OCT 1977	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22} Wm^{-2} Hz^{-1}$ PEAK	MEAN	INT	POLARIZATION OR REMARKS
	2800 OTTA	1 S	1533.1	1533.9	2	.8	.4		
	606 SGMR	20 GRF	1534.1	1544.3	19.4	7.4	2.2		
	1420 BOUL	3 S	1542	1544	3.5	6	2		
	4995 SGMR	22 GRF	1603.3	1606.8	13.2	3.5	1.4		
	2695 SGMR	22 GRF	1603.4	1606.9	13.5	11.5	4.6		
	606 SGMR	22 GRF	1603.5	1605.5	13	33.6	10.1		
	2800 OTTA	40 F	1603	1607	4.1	13.4			
	1415 SGMR	22 GRF	1605.5	1606.9	11.1	11.8	4.7		
	1420 BOUL	8 S	1605.5	1606.5	1	8	3		
	2695 BOUL	8 S	1606.5	1607.5	1.5	9	3		
	2800 OTTA	1 S	1614	1615	2	1	.5		
	2800 OTTA	1 S	1656.8	1657.2	2	2.4	1.1		
	4995 BOUL	2 SF	1656	1657.5	2.5	6	2		
	1420 BOUL	8 S	1656	1657.5	3	3	1		
	2695 BOUL	1 S	1657.5	1658.5	2	4	1		
	2800 OTTA	40 F	1759.5	1804	6	3			
	2695 BOUL	45 C	1800	1802.5	2.5	3	1		
	1420 BOUL	8 S	1803	1803.5	2	6	2		
	2695 BOUL	1 S	1804.5	1805	1.5	4	1		
	2695 PENT	240 R	2206	2220	14	2.6	1.3		
	3750 TYKW	5 S	2307	2310.2	6	1.5	.5		
6	3750 TYKW	5 S	0035.8	0036.1	1	1.5	.5		
	9400 TYKW	5 S	0035.8	0036.1	1	24	6		
	100 HIRA	45 C	0224.3	0224.3	.5	1200	500		WL
	2000 TYKW	21 GRF	0245	0420	130	2.5	1		OR
	3750 TYKW	21 GRF	0245	0340	130	2	1		
	700 SYDN	45 C	0424	0425.7	4				
	1400 SYDN	40 F	0424.2	0425.7	3.1				
	500 HIRA	45 C	0424.2	0433	25	165	10		WR
	200 HIRA	45 C	0424.5	0425.7	1.5	55	20		ML
	100 HIRA	45 C	0424.7	0425.5	2	600	200		SL
	2695 MANI	4	0424.8	0432.7	19.4	90	26		
	1415 MANI	4	0424.8	0432.7	19.4	70	17.4		
	606 MANI	4	0424.8	0433.5	22.2	215	22.8		
	5730 IRKU	45 C	0424	0432	29	135	11		L
	5730 IRKU		0424	0432.4		89			L
	5730 IRKU		0424	0432.9		84			L
	5730 IRKU		0424	0434		59			L
	5730 IRKU		0424	0435.4		37			L
	5730 IRKU		0424	0439.6		22			L
	5730 IRKU		0424	0440.9		29			L
	8800 MANI	4	0426	0432.7	16.8	166	54		2 SPA
	4995 MANI	4	0426	0432.7	18.2	79	17		2 SCNA
	4995 ATHN	14 C	0427.8	0432.2	23.8	227	68.1		
	1400 SYDN	48 GB	0430.7	0432.2	12.6				
	9400 TYKW	28 PRE	0424	0425.2	6	7	2		
	9400 TYKW	45 C	0430	0433	25	250	30		
	9400 TYKW		0430	0432.1		235			
	9400 TYKW	30 PBI	0455		35	10	5		
	1000 TYKW	28 PRE	0424	0425.2	6	8	2.5		OR
	1000 TYKW	45 C	0430	0432.7	20	150	20		05R
	2000 TYKW	28 PRE	0424	0425.2	6	20	5		10L
	2000 TYKW	45 C	0430	0432.2	15	75	15		COMPLEX POL
	3750 TYKW	28 PRE	0424	0425.2	6	7	3		244043F
	3750 TYKW	45 C	0430	0432.1	15	104	20		OL.244043F
	700 SYDN	48 GB	0431	0433	12.2				
	35000 NAGO	5 S	0432	0433	2	82			
	35000 NAGO	29 PBI	0434	0440	20	18			
	100 HIRA	41 F	0435	0435.5	5	1200 D			WL
	200 HIRA	45 C	0435	0436	2	4500	400		HR
	200 HIRA	45 C	0438	0442	6.3	40	15		WR
	4995 ATHN	4 S/F	0459.7	0502.3	14.3	70.6	21.2		
	4995 MANI	4	0500	0504.5	10	93	28.8		
	500 HIRA	45 C	0500	0501.7	5	340	150		WL
	1400 SYDN	47 GB	0500.5	0502	3.5				
	700 SYDN	47 GB	0500.6	0502.6	3.9				
	2695 MANI	4	0500.9	0504.8	9.1	74	20.8		
	9400 TYKW	45 C	0500	0502.8	7	170	35		
	3750 TYKW	45 C	0500	0502.3	7	50	10		
	1000 TYKW	45 C	0500	0501.5	5	320	30		10R
	2000 TYKW	45 C	0500	0501.7	5	132	17		05R
	200 HIRA	45 C	0500	0504	6	5000	200		O
	606 MANI	40	0501	0503.5	9	161	65		
	1415 MANI	4	0501	0504.2	9	220	76		
	100 HIRA	45 C	0501 E	0504 U	4 D	1200 D	600 D		WL
	5730 IRKU	45 C	0501 U	0501.6	5 U	17	18		L
	5730 IRKU		0501 U	0502.3		76			L
	5730 IRKU		0501 U	0502.9		94			L
	5730 IRKU		0501 U	0503.4		55			L
	8800 MANI	4	0502.1	0504.5	7.9	172	70		
	35000 NAGO	5 S	0502	0503	2	45			
	3100 CRIM	40 F	0520 U						
	100 GORK	44 NS	0631 E		369		5		
	127 TORN	44 NS	0700 E	1056.8	460 D	41			V=0

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OCT 1977	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	MEAN	INT	POLARIZATION OR REMARKS
6	200	GORK	44	NS	0720 E		340		5		
	260	ONDR	44	NS	0732 E		452 D	138			
	245	SGHR	43	NS	1231.3	1522.8	580.7D	21.1			3,CONT,SWF
	9100	GORK	23	GRF	0639.4	0805.3	145	27	5.8		
	9100	ARCE	28		0754.1	0756.7	9.1				
	5730	IRKU	45	C	0754	0756	9	60	8		L
	5730	IRKU			0754	0803.8		83			L
	5730	IRKU			0754	0804		75			L
	4995	ATHN	4	S/F	0802.2	0804.2	20	66.3	19.9		
	9100	ARCE	4		0803.2	0804.2	2.4				
	9100	GORK	4	SF	0803.3	0804.2	2	235			
	200	GORK	6	S	0803.5	0804.1U	1.3	30			
	1470	BERL	4	S/F	0803.5	0804.6	27				
	237	TRST	41	F	0803.5	0804.1	.9	140			
	3000	BERL	4	S/F	0803	0804	22	24			
	9500	BERL	4	S/F	0803	0804	14	155			
	3100	CRIM	1	S	0804	0805	6	8	3		
	8800	MANI	4		0804.8	0806.1	2.2	59	26.8		
	2695	MANI	4		0804.8	0806	2	20.8	6.5		
	606	MANI	4		0804.8	0805.8	2	10.4	3.3		
	4995	MANI	4		0804.8	0806.1	2.2	39.3	18.3		
	1415	MANI	1		0805.3	0806.2	1.5	2.2	1.1		
	9100	ARCE	29		0805.6		31.5				
	9100	ARCE	1		1013.5	1013.7	1.4				
	9100	GORK	23	GRF	1027.7	1118.2	177	21	.9		
	3000	BERL	21	GRF	1032	1104	126	19			
	1470	BERL	21	GRF	1035	1146	123	2.9			
	1420	ARCE	21		1036.8	1055	108				
	2950	GORK	46	C	1036.9	1040.1	19.6	14.5			
	2950	GORK			1036.9	1052.1		50			
	2950	GORK	29	PBI	1036.9	1056.6	124	21			
	3000	BERL	4	S/F	1038.5	1039.5	3.5	19			
	9100	ARCE	21		1039.4	1129.4	74				
	4995	ATHN	2	GRF	1039.9	1052.3	13.9	42.8	25.7		
	3000	BERL	4	S/F	1048.5	1052	9.5	54			
	9500	BERL	21	GRF	1048	1137	92	17			
	1420	ARCE	4		1050.1	1052.1	3.2				
	950	GORK	1	S	1050.4	1052.2	2.1	4.5	2		
	650	GORK	1	S	1050.5	1052.5	2.5	2	.5		
	9100	GORK	4	SF	1050.5	1051.8	3	24	11		
	9500	BERL	3	S	1050	1052	5	22			
	9100	ARCE	3		1051	1052.2	5.6				
	1470	BERL	4	S/F	1052	1053.7	36	22			
	930	BORD	8	S	1056.7	1056.7	.1	28	1		
	234	POTS	2	S/F	1122	1122.3	1.3	3500	350		
	113	POTS	2	S/F	1122	1122.3	3.3	600	30		
	237	TRST	41	F	1122.3	1122.5	.4	1590			L
	202	IZHI	3	S	1122.4	1122.5	.5	800	210		
	9100	GORK	2	SF	1136	1136.4	2	10	5		
	2800	OTTA			1140	1142	70 D	17.8			
	100	GORK	41	F	1224.2	1224.5U	8.1	65			
	100	GORK			1231.5U			65			
	113	POTS	45	C	1230.8	1231	1.5	280	30		
	2695	SGHR	20	GRF	1418.8	1421.6	20.5	11.2	3.4		CONT
	2800	OTTA	21	GRF	1418	1430	80	7.8	3.2		
	4995	SGHR	20	GRF	1419	1421.6	19.7	24.7	7.4		CONT
	8800	SGHR	20	GRF	1419.2	1421.6	19.3	52	15.6		CONT
	4995	BOUL	4	SF	1419.5	1421	4	23	8		
	15400	SGHR	20	GRF	1419.6	1421.6	21.9	30.7	9.2		CONT
	2800	OTTA	1	S	1419	1421.9	5	7.6	3.4		
	3000	BERL	4	S/F	1419	1421.3	14	8.8			
	9500	BERL	4	S/F	1419	1421.1	14	46			
	9100	ARCE	21		1419	1422.4	18.8				
	1420	ARCE	22		1420	1522.5	71				
	1470	BERL	1	S	1420	1421.4	8	1.9			
	9100	ARCE	3		1421	1421.6	1.3				
	2695	BOUL	3	S	1422	1422.5	2.5	6	2		
	113	POTS	1	S	1434.8	1434.9	.3	150	50		
	2800	OTTA	1	S	1520	1523	10	2	.6		
	1420	BOUL	45	C	1522	1522.5	3	3	1		
	2800	OTTA	23	GRF	1545	1557	40	3.2	1.6		
	237	TRST	41	F	1550.8	1551.4	.9	770			L
	1420	BOUL	8	S	1604.5	1605.5	2	5	2		
	9100	ARCE	3		1604.5	1605.9	5.8				AT SUNSET
	410	SGHR	6	S	1604.6	1605.3	2	15.2	4.6		CONT
	8800	SGHR	3	S	1604.6	1605.7	4.9	58.2	17.5		CONT
	245	SGHR	6	S	1604.9	1605.7	3.4	43.5	13.1		CONT
	2800	OTTA	4	S/F	1604	1605.9	3	30	6.7		
	2695	SGHR	3	S	1605	1605.8	4.6	30.1	9		CONT
	606	SGHR	1	S	1605	1605.8	1.5	4.3	1.3		CONT
	4995	SGHR	3	S	1605	1605.8	4.3	65.8	19.7		CONT
	15400	SGHR	3	S	1605.1	1605.7	5	29.2	8.8		CONT
	4995	BOUL	8	S	1605	1605	1.5	56	19		
	2695	BOUL	8	S	1606	1607	2.5	24	8		
	930	BORD	41	F	1620	1620.3	.6	47	2		

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OCT 1977	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	MEAN	INT	POLARIZATION OR REMARKS
	2800	OTTA	20	GRF	1640	1648	25	1	.5		
	18	MCMA	6	S	1741	1743	3			1	
	2800	OTTA	1	S	1825	1826.5	5	4.6	1.1		
	2695	BOUL	8	S	1826.5	1827.5	3.5	4	1		
	4995	BOUL	1	S	1948	1949	2.5	8	3		
	245	SGMR	6	S	1949	1953	7.6	13.2	4		CONT,SWF
	410	SGMR	6	S	1949	1949.5	2.3	84.7	25.4		CONT,SWF
	4995	SGMR	2	S/F	1949.1	1949.7	2.6	6.9	1.9		CONT,SWF
	2695	SGMR	2	S/F	1949.2	1949.7	2.3	7.6	2.3		CONT,SWF
	606	SGMR	4	S/F	1949.3	1949.6	2.1	10	3		CONT,SWF
	2695	BOUL	3	S	1949	1950.5	3	7	2		
	2695	PENT	2	S/F	1949	1949.9	3	6.8	3.4		
	2695	PENT	20	GRF	2000	2010	20	2.6	1.3		
7	2000	TYKW	20	GRF	0418	0421.7	90	2	1		OR
	3750	TYKW	20	GRF	0418	0421.7	80	2	1		
	200	GORK	44	NS	0509 E		530		5		
	100	GORK	44	NS	0509 E		414		5		
	127	TORN	44	NS	0700 E	1201.9	480 D	43			V=1
	260	ONDR	44	NS	0720 E		465 D	88			
	245	SGMR	44	NS	1051 E	2022.1	679 D	114			3,CONT
	410	SGMR	44	NS	1051 E	2022.2	679 D	192			3,CONT
	100	HIRA	44	NS	2040 E	2220	700 D	160	50		SR
	200	HIRA	44	NS	2040 E	2300	700 D	25	15		SR
	208	VORO	44	NS	2200		360		18		
	9100	GORK	20	GRF	0755.7	0822	35.1	8	2.5		
	237	TRST	41	F	0811.3	0811.5	.3	160			L
	9100	GORK	20	GRF	0901.7	0902	7.6	8	2		
	9100	ARCE	1		0901.8	0902.6	7.5				
	1420	ARCE	1		0908.1	0908.5	.7				
	9100	GORK	20	GRF	1032	1039.8	25	6	1.5		
	930	BORO	3	S	1048.3	1048.4	.1	60	1		
	200	GORK	41	F	1106	1113.4U	29.4	25			
	200	GORK			1106	1132 U		25			
	408	TRST	42	SER	1129.8	1133.7	5.2	140			
	237	TRST	41	F	1129.9	1129.9	.7	265			L
	202	IZMI	41	F	1130	1130.1	20	90			
	127	TORN	8	S	1133.7	1135.1	2.3	100			
	1420	ARCE	1		1134.4	1134.7	1				
	9100	GORK	20	GRF	1139	1141.3	14.3	7	1.5		
	9100	ARCE	1		1139.8	1141.2	3.6				
	237	TRST	47	GB	1239.1	1431.5	204	23			R
	536	ONDR	40	F	1241	1251.6	11	16	7.8		
	808	ONDR	40	F	1242.6	1247.3	10	10	4.5		
	2800	OTTA	20	GRF	1245	1345	175	3.6	1.8		
	536	ONDR	4	S/F	1432.5	1435.6	14	48	12.8		
	808	ONDR	4	S/F	1435	1435.8	3	10	6.3		
	2800	OTTA	20	GRF	1730	1805	135	4.4	2.3		
	606	SGMR	22	GRF	1738.2	1832	92.6	46.5	18.6		CONT
	1420	BOUL	3	S	1739.5	1740.5	2	2	1		
	1420	BOUL	4	SF	1805	1806.5	5	4	1		
	4995	BOUL	45	C	2207	2208	23.5	47	9		
	2695	BOUL	45	C	2208.5	2209.5	45.5	34	15		
	2695	PENT	4	S/F	2208	2209.1	12	40	12		
	2695	PENT	29	PBI	2220	2220	30	5.6	2.6		
	9400	TYKW	45	C	2208	2209.1	8	20	7		
	9400	TYKW	29	PBI	2216		40	6	2		
	1000	TYKW	45	C	2208	2211.6	4	53	15		10R
	2000	TYKW	45	C	2208	2208.8	8	32	7		25R
	2000	TYKW	29	PBI	2216		40	3	1		
	3750	TYKW	45	C	2208	2209.1	10	48	14		05L
	3750	TYKW	29	PBI	2216		40	5	2		
	1420	BOUL	45	C	2208	2210	3	59	20		
	3750	TYKW	5	S	2351	2353.3	9	1.5	.5		
	2000	TYKW	5	S	2351	2353.3	9	1.5	.5		OR
8	3750	TYKW	5	S	0023	0025	9	1	.5		
	3750	TYKW	5	S	0055	0057.3	15	3	1		064075F
	3750	TYKW	5	S	0132	0133.6	20	3	.8		064075F
	2000	TYKW	5	S	0132	0134	10	1.5	.5		20R
	2000	TYKW	21	GRF	0229	0232	32	3	1		15R
	3750	TYKW	21	GRF	0229	0232	40	2.5	.8		064075F
	9400	TYKW	45	C	0239	0243	25	6	2		
	3750	TYKW	5	S	0245	0249	15	1.5	.5		
	2000	TYKW	5	S	0246	0250	14	2	1		20R
	200	GORK	44	NS	0457 E		360		10		
	100	GORK	44	NS	0457 E		363		10		
	202	IZMI	44	NS	0700		300	42			
	260	ONDR	44	NS	0700 E		490 D	49	12		
	127	TORN	44	NS	0700 E	1028.1	480 D	150			V=2
	245	SGMR	44	NS	1052 E	1226.9	677 D	48.6			CONT
	100	HIRA	44	NS	2040 E	2230	700 D	40	15		SR
	127	TORN			0700 E	1010.8		160			
	127	TORN	45	C	0910.7	0911.4	1.8	260	85		
	200	GORK	41	F	1015.7	1016.4U	19.3	90			

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OCT 1977	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	MEAN	INT	POLARIZATION OR REMARKS
	200	GORK			1015.7	1024.8U		90			
	234	POTS	1	S	1056.7	1056.8	.6	330	100		
	127	TORN	45	C	1132	1132.7	1.5	270	65		
	1420	ARCE	23		1209.4	1242.4	100				
	1470	BERL	21	GRF	1213	1306	96	4.5			
	2800	OTTA	20	GRF	1215	1245	80	8.8	4.4		
	3000	BERL	20	GRF	1220	1245	110	13			
	9500	BERL	20	GRF	1223	1258	111	9.3			
	930	BORD	46	C	1223	1235	33	270	15		
	1415	SGMR	46	C	1224.4	1233.1	25.1	74.4	29.8		CONT
	1415	SGMR	46	C	1224.4	1235.3		60			CONT
	808	ONDR	46	C	1224	1235.2	32	210	31		
	410	SGMR	6	S	1228.5	1233.8	42.3	30.5	12.2		CONT
	606	SGMR	46	C	1228.6	1235.5	40.8	23.8	21.3		CONT
	606	SGMR	46	C	1228.6	1244.1		53.4			CONT
	536	ONDR	46	C	1228	1246.8	42	32	12.1		
	1420	ARCE	40		1229.3	1232.7	8.5				
	1470	BERL	4	C	1230.5	1233	6	39			
	9100	ARCE	20		1231.8	1256.4	88				
	1470	BERL	4	S/F	1243.5	1244	6.5	26			
	1420	ARCE	4		1243.7	1244.3	6				
	1420	ARCE	1		1252.6	1252.8	.7				
	536	ONDR	42	SER	1310	1320	77	28			
	808	ONDR	8	S	1416.3	1416.3	.3	46			
	1420	ARCE	1		1417.1	1417.3	.5				
	930	BORD	3	S	1417.1	1417.3	.2	30	2		
	9100	ARCE	1		1419.7	1420	.7				
	2800	OTTA	21	GRF	1520	1537	30	5.2	2.2		
	2800	OTTA	1	S	1523.5	1524	1	1.6	.8		
	2695	BOUL	8	S	1524	1524.5	1.5	4	1		
	2695	BOUL	45	C	1528	1531	21	10	3		
	2800	OTTA	2	S/F	1530	1530.2	4	5.2	1.8		
	2800	OTTA	1	S	1557	1602	9	1	.5		
	2800	OTTA	1	S	1836	1837	6	1.4	.8		
	245	SGMR	7	C	2032	2036.8	6.2	374	112		CONT
	1420	BOUL	3	S	2033.5	2034	6.5	4	1		
	2800	OTTA	1	S	2034	2034.5	6	4.4	1.1		
	2695	BOUL	8	S	2035	2035.5	2.5	4	1		
	2800	OTTA	21	GRF	2043.5	2045	36	4.4	2.2		
	2695	BOUL	3	S	2045	2051	14.5	9	3		
	2800	OTTA	1	S	2047	2050	9	5.2	2		
	100	HIRA	45	C	2239	2240.5	2	1200	30		MR
9	100	HIRA	45	C	0310	0311	2	80	30		SR
	100	HIRA	45	C	0338	0339.5	3	1200	150		WR
	100	HIRA	41	F	0421	0421	7	1200 D			WLWR
	1000	TYKW	45	C	0425.7	0426.1	2	130	15		25L
	2000	TYKW	45	C	0425.9	0426	4	12	2		COMPLEX POL
	3750	TYKW	5	S	0426	0427.2	3	4	1		064060F
	100	HIRA	27	RF	0500	0555	75	60	20		MR
	100	GORK	44	NS	0500 E		360		7		
	200	GORK	44	NS	0500 E		360		5		
	260	ONDR	44	NS	0737 E		453 D	21			
	2000	TYKW	21	GRF	0545	0622	90	3	1		
	3750	TYKW	21	GRF	0550	0636	70	10	2		
	3750	TYKW	5	S	0641	0642.3	3	6	2		
	2000	TYKW	5	S	0641	0642.4	5	3.5	1		15L
	3100	CRIM	1	S	0642	0643	3	3	1		
	127	TORN	40	F	0700 E		80 U				
	100	GORK	41	F	0734.8	0736.8	10.2	74			
	100	GORK			0739.9			74			
	100	GORK			0739.9	0744.4		74			
	100	GORK	2	S/F	0757.8	0758.2	1.5	80			
	100	GORK	3	S	0834.4	0834.6	.3	90	40		
	100	GORK	41	F	0845.5	0846.4	4.2	90			
	100	GORK			0845.5	0848.6		1500			
	200	GORK	41	F	0846	0846.5	4.3	10			
	200	GORK			0846	0849.4		30			
	113	POTS	45	C	0847.4	0847.9	2.2	560	100		
	1470	BERL	1	S	0921.8	0922.3	1.2	1.5			
	113	POTS	45	C	0921.9	0922.8	1.4	3500	500		
	100	GORK	4	S/F	0922	0923.6	1.6	14000			
	202	IZMI	3	S	0922.2	0922.7	1.4	70	32		
	200	GORK	6	S	0922.8	0923.5	1.3	30			
	536	ONDR	4	S/F	0922	0922	1.3	21	3.2		
	3000	BERL	3	S	0922	0922.1	1	7.5			
	650	GORK	2	SF	0923.3	0923.7	.9	4	1.7		
	100	GORK	42	SER	0935	0936	43	100			
	100	GORK			0935	0949.3		100			
	100	GORK			0935	1011.7		95			
	100	GORK			0935	1018		95			
	234	POTS	45	C	1051.8	1051.9	.2	500	175		
	113	POTS	1	S	1055.8	1055.9	.3	1000	350		
	100	GORK	3	S	1056	1056.2	.4	90			
	113	POTS	45	C	1138.7	1140.4	2.2	250	25		

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OCT 1977	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22}Wm^{-2}Hz^{-1}$ PEAK	MEAN	INT	POLARIZATION OR REMARKS
	2800	OTTA	21	GRF	1550	1605	120	7.2	2.4		
	2800	OTTA	4	S/F	1550.1	1551.1	2.9	10.4	5.2		
	2800	OTTA	29	PBI	1553	1553	8	3.4	1.7		
	1420	BOUL	23	GRF	1550	1551	35	4	1		
	2695	BOUL	23	GRF	1551	1552	34.5	14	5		
	100	HIRA	43	NS	2300	0410	560 D	60	20		SR
10	100	GORK	44	NS	0530 E		330		5		
	127	TORN	44	NS	0700 E	0957.5	330 D	60			V=2
	100	GORK	41	F	0942.2	0942.7	4.6	80			
	100	GORK			0942.2	0943.6		80			
	100	GORK			0942.2	0944.7		80			
	100	GORK			0942.2	0945.3		60			
	100	GORK			0942.2	0946.4		50			
	100	GORK	41	F	1026.3	1026.8	14.8	80			
	100	GORK			1026.3	1027.4		80			
	100	GORK			1026.3	1035.2		80			
	100	GORK			1026.3	1035.8		80			
	100	GORK			1026.3	1036.9		80			
	100	GORK			1026.3	1040.1		80			
	100	GORK			1026.3	1040.8		80			
	2800	OTTA	20	GRF	1956	2008	100	4.2	1.8		
	2695	PENT	1	S	2203	2203.1	1	.8	.4		
11	3000	BERL	1	S	1105	1107.1	18	5			
	1470	BERL	3	S	1106.7	1107	1.4	33			
	1420	ARCE	8		1106.9	1107	1				
	9100	GORK	1	S	1107.1	1107.5	1.2	8	4		
	930	BORD	3	S	1107.2	1107.3	.8	29	3		
	9100	ARCE	20		1107.4	1107.8	12				
	9500	BERL	1	S	1107	1107.1	24	5.3			
	930	BORD	3	S	1139.4	1139.4	.1	122	2		
	536	ONDR	8	S	1407.6	1407.6	.3	22			
	2800	OTTA	40	F	1431	1432	9	5.4			
	1420	ARCE	1		1442.6	1442.8	1				
	100	HIRA	45	C	2256.5	2257	6	1200	150		WL
12	1400	SYDN	21	GRF	0032.7	0034.6	5.8				
	500	HIRA	45	C	0032.8	0042.1	14	39	6		SR
	9400	TYKW	5	S	0032	0037	12	10	5		
	1000	TYKW	45	C	0032	0034.7	16	7.5	1.5		COMPLEX POL
	2000	TYKW	45	C	0032	0034.7	17	9	2		10R
	3750	TYKW	45	C	0032	0035.7	20	14	5		35L,244002F
	700	SYDN	1	S	0034.2	0034.6	.9				
	2000	TYKW	5	S	0147	0151.6	12	375	60		COMPLEX POL
	2000	TYKW	29	PBI	0159		20	5	1.5		
	3750	TYKW	47	GB	0148	0151.5	11	560	80		10L,244002F
	3750	TYKW	29	PBI	0159		20	4	2		
	1000	TYKW	47	GB	0148	0151.9	12	1380	185		30L/15R
	1000	TYKW	29	PBI	0200		20	20	5		
	208	VORO	47	GB	0148	0152	18	1200			
	1400	SYDN	48	GB	0149.5	0152	80.5				
	200	HIRA	48	C	0149	0151.2	11	5500	200		MR
	500	HIRA	48	C	0150	0153	11.5	6600	1000		SR
	500	HIRA	29	PBI	0150	0201.5	40	18	5		WL
	700	SYDN	48	GB	0150	0152	56				
	606	MANI	47		0150.7	0152.6	19.3D	5600	855		IIIG
	9400	TYKW	47	GB	0150	0151.4	9	1850	250		
	9400	TYKW	29	PBI	0159		20	15	4		
	100	HIRA	48	C	0150		13	1200 D			
	2930	VORO	47	GB	0150	0152	10	420			
	1415	MANI	47		0151.1E	0151.9U	25.9D	760	126		
	2695	MANI	47		0151.3E	0151.6U	11.7D	610	154		
	8800	MANI	47		0151.4E	0152.6U	21.1D	1190	310		3 SPA
	4995	MANI	47		0151.4E	0151.6U	12.4D	835	172		
	35000	NAGO	45	C	0151	0153	6	395			
	35000	NAGO	29	PBI	0157	0157	20	19			
	200	HIRA	27	RF	0200 E	0230	55	7	3		MR
	100	HIRA	27	RF	0213 E	0410	215	140	50		SR
	3100	CRIM	24	R	0746	0805		1			
	1470	BERL	1	S	0943	0944.6	3	3.7			
	9100	GORK	20	GRF	0949.6	0951.1	9.9	6	1.4		
	9500	BERL	20	GRF	1145	1216	48	5.4			
	3000	BERL	20	GRF	1206	1211	14	3.9			
	1470	BERL	20	GRF	1208	1210.5	7	2.7			
	9500	BERL	20	GRF	1300	1318	34	4			
	2800	OTTA	21	GRF	1305	1320	30	1.4	.7		
	3000	BERL	20	GRF	1310	1318.2	16	2.9			
	1470	BERL	1	S	1311	1312.4	9	3.5			
	2800	OTTA	1	S	1312	1312.7	2	1.2	.6		
	2800	OTTA	1	S	1317.5	1318.1	2	1.4	.7		
	2800	OTTA	1	S	1436	1438	3	1.2	.6		
	237	TRST	41	F	1511.9	1512.1	.4	180			R
	2695	PENT	1	S	1700	1701.5	8	1.6	.8		
	1420	BOUL	3	S	1700	1701.5	4.5	4	1		

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OCT 1977	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	MEAN	INT	POLARIZATION OR REMARKS
	2695	BOUL	1	S	1701.5	1703	3.5	2	1		
	2695	PENT	20	GRF	1710	1715	50	1	.5		
	2800	OTTA	20	GRF	1835	1850	40	1.4	.7		
13	3750	TYKW	5	S	0033	0034.5	3	4	2		244020F
	3750	TYKW	29	PBI	0036		25	2	1		
	2000	TYKW	5	S	0033	0034.8	3	3.5	1.3		0R
	2000	TYKW	29	PBI	0036		12	.7	.3		
	208	VORO	4	S/F	0344	0344	2	60			
	200	GORK	6	S	0630.3	0630.7U	.6	40			
	200	GORK	41	F	0643.6	0644.9	2.4	16			
	200	GORK			0643.6	0645.2		40			
	113	POTS	45	C	0745.3	0746.6	3.3	420	40		
	202	IZMI	4	S/F	0746	0747	1.5	270	100		
	100	GORK	41	F	0746.2	0746.3	6.7	75			
	100	GORK			0746.2	0748.2		900			
	100	GORK			0746.2	0751		80			
	100	GORK			0746.2	0752.7		80			
	237	TRST	41	F	0746.2	0747.3	1.9	550			
	200	GORK	6	S	0746.4	0747.4U	2.2	140			
	200	GORK	6	S	0752.4	0752.8	.7	100			
	200	GORK	42	SER	1148.1	1148.3	11.5	30			
	200	GORK			1148.1	1155.5U		30			
	200	GORK			1148.1	1159.3		30			
	113	POTS	45	C	1158.6	1158.9	1.1	100	25		
	536	ONDR	3	S	1404.7	1404.7	.2	20			
	4995	BOUL	1	S	1513	1513.5	2.5	9	3		
	1420	BOUL	23	GRF	1625	1626	7	3	1		
	2800	OTTA	21	GRF	1710	1725	80	2.8	1.4		
	2695	SGHR	3	S	1711.4	1712.1	1.8	10.8	3.2		SWF
	4995	SGHR	1	S	1711.4	1712	1.8	6.4	1.9		SWF
	1415	SGHR	4	S/F	1711.6	1711.7	1.3	76.8	23		SWF
	1420	BOUL	8	S	1711	1712	2	5	2		
	2695	BOUL	8	S	1711	1712.5	4.5	9	3		
	2800	OTTA	1	S	1711	1712	3	9.4	3.2		
	1420	BOUL	23	GRF	1715	1715.5	11	2	1		
	1420	BOUL	1	S	1844	1845	1.5	2	1		
	2800	OTTA	20	GRF	1844	1930	100	1.4			
	1420	BOUL	3	S	2225.5	2226.5	2	2	1		
	2800	OTTA	1	S	2226.5	2227	1.5	3.6	1.8		
	2800	OTTA	29	PBI	2228	2228	35	1.2	.6		
	3750	TYKW	5	S	2226.5	2226.8	1.5	5	1.5		
	2000	TYKW	5	S	2226	2227	3	2.5	.7		0R
	2695	BOUL	1	S	2227	2228	2	4	1		
14	3750	TYKW	5	S	0123	0123.7	2	5	2		244039F
	3750	TYKW	29	PBI	0125		65	1.5	1		
	2000	TYKW	5	S	0123	0123.8	2	9	3		0R
	2000	TYKW	29	PBI	0125		65	1.5	.7		
	1000	TYKW	5	S	0123	0123.7	1	1.5	.5		10R
	2695	MANI	3		0124.3	0124.7	2.7	12.6	3.2		
	1415	MANI	2		0124.3	0124.7	2.7	5.9	2.7		CONT
	4995	MANI	1		0124.5	0124.7	2	5.4	1.8		
	5730	IRKU	1	S	0225	0228.8	4	11	4		
	2000	TYKW	20	GRF	0300	0304	120	1.5	.7		0R
	3750	TYKW	20	GRF	0300	0304	120	2	1		
	260	ONDR	44	NS	0700 E		474 D	9			
	9100	GORK	1	S	1030.7	1031	.6	7	3.4		
	2800	OTTA	20	GRF	1600	1634	100	1.6	.8		
	2800	OTTA	20	GRF	1910	1917	40	1.4	.7		
15	208	VORO	4	S/F	0117.5	0118	1	110			
	200	GORK	44	NS	0515 E		345		5		
	260	ONDR	44	NS	0720 E		458 D	31	6		
	245	SGHR	44	NS	1100 E	1310	657 D	23.5			
	37	SLOU	47		1056	1058	6	25			
	37	SLOU	31		1102.5	1110	45.5				
	8800	ATHN	3	S	1225.2	1225.4	.4	26	7.8		
	2800	OTTA	24	R	1550	1610	20	1	.5		
	2800	OTTA	27	RF	1550		100	1	.8		
	2800	OTTA	24P	R	1610		50	1			
	2800	OTTA	26	FAL	1700	1730	30	-1	-0.5		
	2800	OTTA	20	GRF	1920	1927	20	1.4	.7		
	208	VORO	44	NS	2200		240		9		
16	200	GORK	44	NS	0500 E		180		5		
	100	GORK	44	NS	0500 E		240		5		
	127	TORN	44	NS	0610 E	0816.4	510 D	120			V=1
	260	ONDR	44	NS	0720 E		456 D	21	7		
	245	SGHR	44	NS	1102 E	1614.6	653 D	82.1			CONT
	9400	TYKW	5	S	0559.5	0600.1	1.5	32	6		
	127	TORN			0610 E	1111		105			
	200	GORK	41	F	0612	0618 U	29.2	20			
	200	GORK			0612	0627.4U		20			
	100	GORK	41	F	0653.1	0653.3	53.3	40			

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OCT 1977	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	MEAN	INT	POLARIZATION OR REMARKS
	100	GORK			0653.1	0659.1		55			
	100	GORK			0653.1	0706.1		55			
	100	GORK			0653.1	0712.1		50			
	100	GORK			0653.1	0717.5		50			
	100	GORK			0653.1	0724.1		50			
	100	GORK			0653.1	0732.9		50			
	100	GORK			0653.1	0745.3		45			
	100	GORK	46	C	0826.4	0827.7	2.6	50			
	100	GORK			0826.4	0828.7		50			
	127	TORN	45	C	0903.5	0905.2	3.3	135	45		
	1420	ARCE	45		1018.5	1019.6	1.5				
	536	ONDR	4	S/F	1120.8	1120.8	1	22	2.8		
	127	TORN	45	C	1156.7	1158	3	120	30		
	2695	PENT	20	GRF	2015	2020	45	1.4	.9		
	208	VORO	44	NS	2200	0143	240	32	23		
17	202	IZMI	44	NS	0600		360	45			
	127	TORN	44	NS	0610 E	0809.5	510 D	240			V=2
	260	ONDR	44	NS	0720 E		457 D	24	9		
	245	SGMR	44	NS	1103 E	1803.2	651 D	81.6			CONT
	127	TORN			0610 E	0918.2		220 D			OFF SCALE
	208	VORO	44	NS	2200		240		21		
18	127	TORN	44	NS	0610 E	1115	510 D	100			V=1
	100	GORK	44	NS	0646 E		374		5		
	234	POTS	45	C	0908.9	0909.3	1.1	2500	500		
	1470	BERL	4	SF	0909	0909.3	1	9.2			
	930	BORD	3	S	1103.4	1103.4	.1	33	2		
	2800	CTTA	20	GRF	1740	1800	45	1.2	.6		
19	3750	TYKW	20	GRF	0110	0220	180	3	1.5		
	2000	TYKW	20	GRF	0110	0220	180	3	1.5		OR
	260	ONDR	44	NS	0730 E		421 D	29			
	127	TORN	43	NS	1200 U		160 D				V=1
	3100	CRIM	24	R	0944	1118		5			
	930	BORD	3	S	1219	1219	.1	19	2		
	2800	OTTA	240	R	1310	1525	15	1.8	.9		
	2800	OTTA	24	R	1340	1352	12	1.8	.9		
	2800	OTTA	27F	RF	1340		287	1.8	1.6		
	930	BORD	3	S	1348.1	1348.2	.1	49	2		
	2800	OTTA	24P	R	1352		248	1.8			
	2800	OTTA	26	FAL	1800	1827	27	-1.8	-.9		
	2800	OTTA	21	GRF	1830	1840	20	2	1		
	4995	BOUL	1	S	1836.5	1838	2	9	3		
	2800	OTTA	1	S	1837	1838.3	2	2	.9		
	2695	BOUL	1	S	1838	1838.5	1.5	3	1		
	245	SGMR	43	NS	2009.6	2119.9	101.40	48.9			
	2695	PENT	21	GRF	2150	2235	100	6.2	3.1		
	208	VORO	44	NS	2200	2305	240	30	18		
	2695	BOUL	23	GRF	2207.5	2309.5	24	7	2		
	2000	TYKW	21	GRF	2212	2222	70	3	1.5		
	3750	TYKW	20	GRF	2213	2219	80	6	3		
	2695	PENT	20	GRF	2214	2219	13	6.4	3		
	1400	SYDN	40	F	2216.5	2217.1	3.2				
	606	MANI	40		2216.9	2219.1	7.1	70	13		
	1415	MANI	40		2216.9	2219.1	5.6	12.8	5.1		
	1420	BOUL	23	GRF	2216	2218	12.5	4	1		
	2000	TYKW	5	S	2216	2218.6	4	4	2		20L
	700	SYDN	40	F	2217	2217.8	2.7				
	500	HIRA	45	C	2217.7	2219.3	3	60	25		WR
	1000	TYKW	45	C	2217	2219.3	5	74	15		SL
	1420	BOUL	3	S	2305.5	2307	3	1			
	2695	BOUL	3	S	2307.5	2309	2.5	2	1		
20	260	ONDR	44	NS	0818 E		353 D	30			
	245	SGMR	44	NS	1106 E	1154.4	79 D	8			
	245	SGMR	44	NS	1355 E	2005.1	474 D	18.5			3
	1420	ARCE	20		0820.4	0840.1	22				
	9100	ARCE	21		0827.6		5				RECORDDISTURBED
	9100	ARCE	1		0828.2	0828.5	1				
	9100	ARCE	1		0830.8	0830.9	.7				
	9100	ARCE	3		0843.9	0844	.8				RECORDDISTURBED
	9100	ARCE	1		1032.4	1032.6	1	----			3
	930	BORD	3	S	1402.8	1402.8	.1	17	2		
	245	SGMR	6	S	1538.1	1552	51.5	20.7	6.2		
	1415	SGMR	20	GRF	1540.2	1544	13.7	13.2	4		
	2800	OTTA	22	GRF	1540	1615	120	9.6	4.7		
	1420	BOUL	45	C	1540	1545.5	8	4	1		
	4995	SGMR	20	GRF	1541.5	1604.7	47.3	10.8	3.2		
	606	SGMR	20	GRF	1541.9	1546.5	30.6	30.6	9.2		
	2695	SGMR	20	GRF	1541.9	1604.6	46.7	9.7	2.9		
	2695	BOUL	45	C	1542.5	1548	7	4	1		
	930	BORD	40	F	1542	1546.3	7	23	4		
	208	VORO	44	NS	2200	0036	240	34	22		
21	202	IZMI	44	NS	0600		360	30			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

OCTOBER 1977

OCT 1977	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	MEAN	INT	POLARIZATION OR REMARKS
	127	TORN	44	NS	0610 E	0843.8	500 D	120			V=1
	260	ONDR	44	NS	0735 E		428 D	37			
	245	SGMR	44	NS	1108 E	1615	640 D	49.1			3,5
	100	HIRA	44	NS	2055 E	2245	660 D	200	70		SR
	200	HIRA	44	NS	2055 E	0435	660 D	35	10		SR
	208	VORO	44	NS	2345	2400	145	23	14		
	127	TORN			0610 E	1231.2		60			
	3100	CRIM	24	R	0804	1225 U		7			
	237	TRST	5	S	0936	0936	.1	205	70		R
	2800	OTTA	240	R	1500	1508	8	2	1		
	2800	OTTA	20	GRF	1535	1605	125	3.2	1.8		
	2695	PENT	20	GRF	2135	2150	85	2	1		
22	3750	TYKW	5	S	0211.3	0211.7	1.5	2.5	.8		
	8800	MANI	3		0211.4	0211.9	.9	29.9	15		
	4995	MANI	1		0211.4	0211.9	.9	8.6	2.9		
	9400	TYKW	5	S	0211	0211.5	1.5	15	4		
	500	HIRA	27	RF	0242	0349	130	10	2		O
	9400	TYKW	21	GRF	0400	0420	90	6	3		
	3750	TYKW	21	GRF	0400	0420	120	5	2.5		244064F
	2000	TYKW	20	GRF	0400	0422	70	2.5	1.3		OL
	3750	TYKW	5	S	0407.5	0408.1	2	6	1.5		
	9400	TYKW	5	S	0407.5	0408.1	2	9	3		
	4995	MANI	3		0408.9	0409.3	1.3	10.1	1.4		
	8800	MANI	3		0408.9	0409.2	1.9	23.9	3		
	202	IZMI	44	NS	0600		300	70			
	127	TORN	44	NS	0610 E	1110.3	500 D	290			V=2
	260	ONDR	44	NS	0830 E		355 D	50	5		
	245	SGMR	44	NS	1109 E	1709.9	637 D	65.5			
	3100	CRIM	24	R	0720	0911		2			
	9100	GORK	23	GRF	0850.2	0910.4	130	14	8.7		
	9100	GORK			0852.6	0853.2	1	8	4		
	9100	ARCE	21		0850.3	0909.6	107				
	3000	BERL	20	GRF	0851.5	0859	39	2.9			
	9100	ARCE	1		0852.4	0853.1	1.8				
	9500	BERL	3	S	0852	0852.7	83	11			
	408	TRST	42	SER	1012.7	1013.4	1.5	84			
	237	TRST	41	F	1012.7	1012.8	.7	250			R
	2800	OTTA	27	RF	1258		167	1	.9		
	2800	OTTA	24	R	1258	1305	7	1	.5		
	2800	OTTA	24P	R	1305		130	1			
	2800	OTTA	26	FAL	1515	1545	30	-1	-.5		
	2800	OTTA	22	GRF	1725		100	1.8	1		
	4995	BOUL	8	S	1922.5	1923.5	2.5	16	5		
	2695	SGMR	1	S	1923.7	1924.2	1.1	4.4	1.3		
	8800	SGMR	3	S	1923.8	1924.1	1.4	11.3	3.4		
	4995	SGMR	3	S	1924.2	1924.6	1.5	17.8	5.3		
	2695	BOUL	1	S	1924	1925	2	4	1		
	2800	OTTA	2	S/F	1933.8	1934.2	2	4.2	1.6		
	208	VORO	44	NS	2200	2325	240	23	11		
23	500	HIRA	27	RF	0245	0331	80	6	2		O
	200	HIRA	27	RF	0328	0355	177	60	10		HR
	100	HIRA	27	RF	0330	0440	260 D	350	60		SR
	127	TORN	44	NS	0610 E		430 D				V=0
	260	ONDR	44	NS	0800 E		410 D	12			
	245	SGMR	44	NS	1110 E	1351.2	635 D	11.7			5
	237	TRST	5	S	1149.3	1149.3	.1	105	40		L
	237	TRST	5	S	1350.7	1350.7	.1	45	15		L
	237	TRST	41	F	1351.3	1351.3	.1	50			L
	237	TRST	41	F	1352.3	1352.5	.3	60			L
24	9100	ARCE	1		0918.6	0918.7	.5				
	9100	ARCE	41		0918.6	0919.6	8				
	9100	ARCE	3		0919.5	0919.6	1				
	9100	ARCE	1		0924.9	0925	1.7				
	245	SGMR	44	NS	1111 E	1831.3	632 D	28.6			
	410	SGMR	44	NS	1111 E	1830.9	632 D	9			
	4995	ATHN	2	GRF	1132.3	1139.8	15.2	9.6	5.8		
	4995	ATHN	2	GRF	1211.9	1226.7	25.4	13.2	7.9		
	8800	ATHN	4	S/F	1216.8	1217	1.3	71.1	21.3		
	930	BORO	3	S	1240.8	1240.9	.1	18	2		
	4995	ATHN	2	GRF	1255.5	1307.7	25.2	30	18		
	8800	ATHN	2	GRF	1303.1	1310.1	14.9	9.8	5.9		
	2800	OTTA	1	S	1431	1432	2	3.4	1.7		
	2800	OTTA	29	PBI	1433	1433	15	1.2	.6		
	2695	BOUL	1	S	1432.5	1433.5	2	4	1		
	930	BORO	3	S	1432.8	1432.9	.1	72	2		
25	127	TORN	44	NS	0650 E	0928.8	460 D	22			V=1
	260	ONDR	42	SER	1018	1052.1	112	35			
	237	TRST	41	F	1034.8	1034.9	.2	60			
26	1420	ARCE	8		0935.2	0935.3	.4				
	1420	ARCE	1		1248.3	1248.5	.5				

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

OCTOBER 1977

OCT 1977	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY $10^{-22}Wm^{-2}Hz^{-1}$ PEAK	MEAN	INT	POLARIZATION OR REMARKS
	9100	ARCE	1		1249.4	1249.7	.6				
	930	BORD	3	S	1339.3	1339.4	.1	29	2		
	1420	ARCE	2		1436.5	1437.6	2.3				
	1470	BERL	2	SF	1436.8	1437.2	1.7	2.7			
	1420	BOUL	8	S	1437	1437.5	1	2	1		
	18	MCMA	4	F	2100	2102	3			1	
27	9500	BERL	4	S/F	1109.5	1110.8	2	59			
	1470	BERL	1	S	1255	1255.7	1.5	2			
	1420	ARCE	2		1255	1255.6	1.6				
28	245	SGMR	44	NS	1116 E	1322	621 D	20.8			
	260	ONDR	43	NS	1150		170 D	26			
	930	BORD	3	S	1204.8	1204.8	.1	18	2		
	237	TRST	41	F	1209.9	1210	.2	42			
	1470	BERL	3	S	1218	1218.2	1	8.9			
	536	ONDR	3	S	1218.3	1218.3	.2	11			
	808	ONDR	3	S	1218.3	1218.3	.3	19			
	930	BORD	3	S	1218.4	1218.4	.2	35	2		
	237	TRST	41	F	1218.4	1218.5	.3	53			
	1415	SGMR	3	S	1218.4	1218.5	.2	11.3	3.4		
	245	SGMR	6	S	1218.5	1218.7	.5	10.8	3.2		
	410	SGMR	6	S	1218.6	1218.9	1	30.4	9.1		
	237	TRST	5	S	1226.8	1226.8	.1	52	18		
	237	TRST	5	S	1228.9	1228.9	.1	48	18		
	113	POTS	2	S/F	1426.7	1427	3.2	450	20		
	930	BORD	42	SER	1542.7	1543.1	12.3	29	3		
	2800	OTTA	240	R	1638	1655	17	1.6	.8		
	2800	OTTA	20	GRF	1700	1720	60	1.4	.7		
29	260	ONDR	44	NS	0750 E		408 D	15			
	245	SGMR	44	NS	1118 E	1530.8	618 D	31.2			
	3100	CRIM	20	CRF	0958	1019	24	2	1		
	9500	BERL	3	S	1301.8	1301.9	.4	52			
	18	MCMA	42	SER	1342	1357	23			2	
	2695	BOUL	3	S	2003.5	2004.5	3	4	1		
	2695	PENT	1	S	2057.5	2058.5	4.5	5.6	1.9		
	208	VORO	44	NS	2210		230		7		
30	202	IZMI	3	S	0756.3	0756.9	.7	125	35		
	1470	BERL	46	C	0759.5	0801	2	12			
	245	SGMR	44	NS	1119 E	1943.1	616 D	14.8			
	606	SGMR	4	S/F	2046.7	2048.2	2	22.4	6.7		
	410	SGMR	6	S	2047.5	2050	6.5	62	18.6		
	245	SGMR	6	S	2049.6	2052	4.2	21.6	6.5		
31	606	MANI	4		0409	0414.2	8	12.8	3.8		
	1415	MANI	2		0410.5	0412.7	7.5	5.2	1.2		
	2695	MANI	4		0410.5	0412.7	7.5	24.2	10.5		
	3750	TYKW	45	C	0410.5	0411.4	4	19	3		10L.065094F
	200	HIRA	45	C	0410.8	0414	7.5	300	7		WR
	1400	SYDN	40	F	0411.3	0413.9	3.2				
	700	SYDN	21	GRF	0411.6	0414	2.8				
	2000	TYKW	45	C	0411	0413.8	6	6	2		45R
	1000	TYKW	45	C	0411	0411.7	4	12	4		70R
	500	HIRA	45	C	0411	0414.3	4	33	10		WL
	100	HIRA	45	C	0417	0418	3	1100	450		WL
	100	GORK	44	NS	0630		360		5		
	127	TORN	44	NS	0650 E	1048.4	430 D	27			V=1
	245	SGMR	44	NS	1120 E	1414.5	613 D	29.9			
	9100	GORK	2	S/F	0851.2	0851.3	.5	21	10		
	9100	ARCE	1		0929.9	0930	.5				
	9100	ARCE	1		1007.6	1008.1	1				
	9100	ARCE	1		1012.6	1013	1				
	9100	ARCE	3		1129.2	1129.4	1.4				
	9100	ARCE	3		1149	1149.4	1.4				
	237	TRST	41	F	1414.3	1414.7	.5	85			
	237	TRST	41	F	1424.2	1424.2	.1	85			
	9100	ARCE	4		1531.5	1532.6	1.6				AT SUNSET

Reports received from the following observatories:

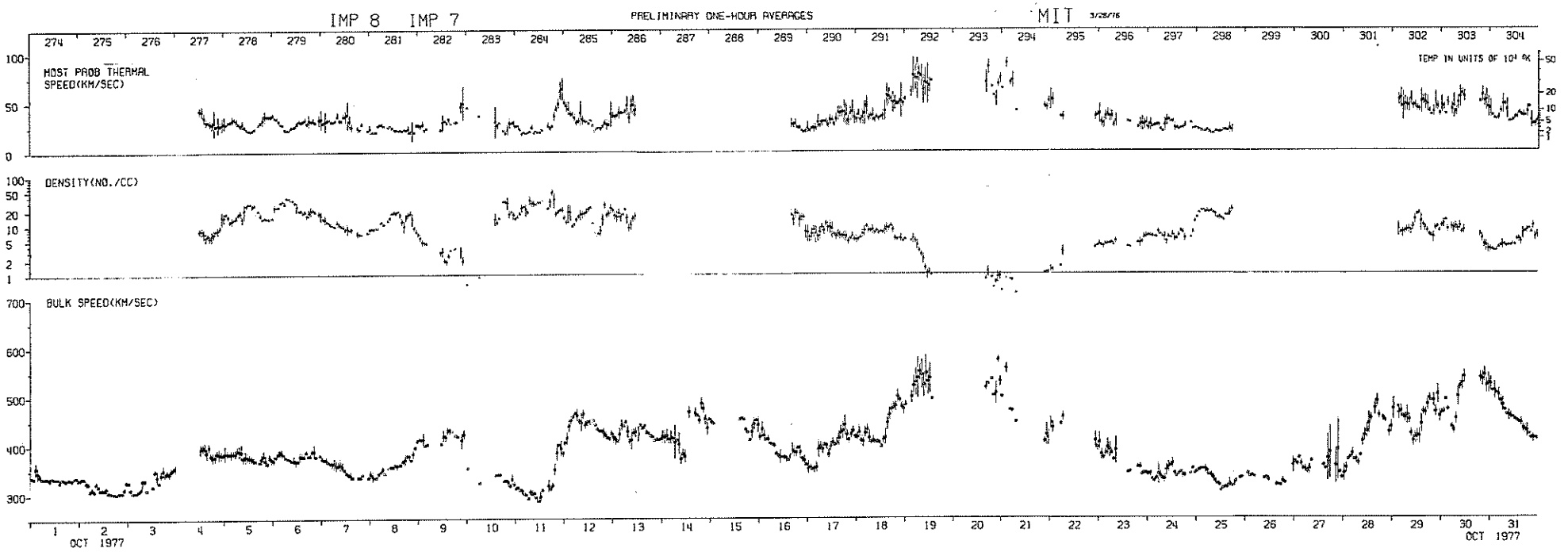
ARCE = Arcetri
BERL = Berlin-Adlershof
BORD = Bordeaux
BOUL = Boulder
CRIM = Simferopol
DWIN = Dwingeloo
GORK = Gorky
HARS = Harestua
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk
KIEV = Kiev
MANI = Manila
MCMA = McMath-Hulbert
NAGO = Nagoya
ONDR = Ondrejov
OTTA = Ottawa
PENT = Penticton
POTS = Potsdam
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 +

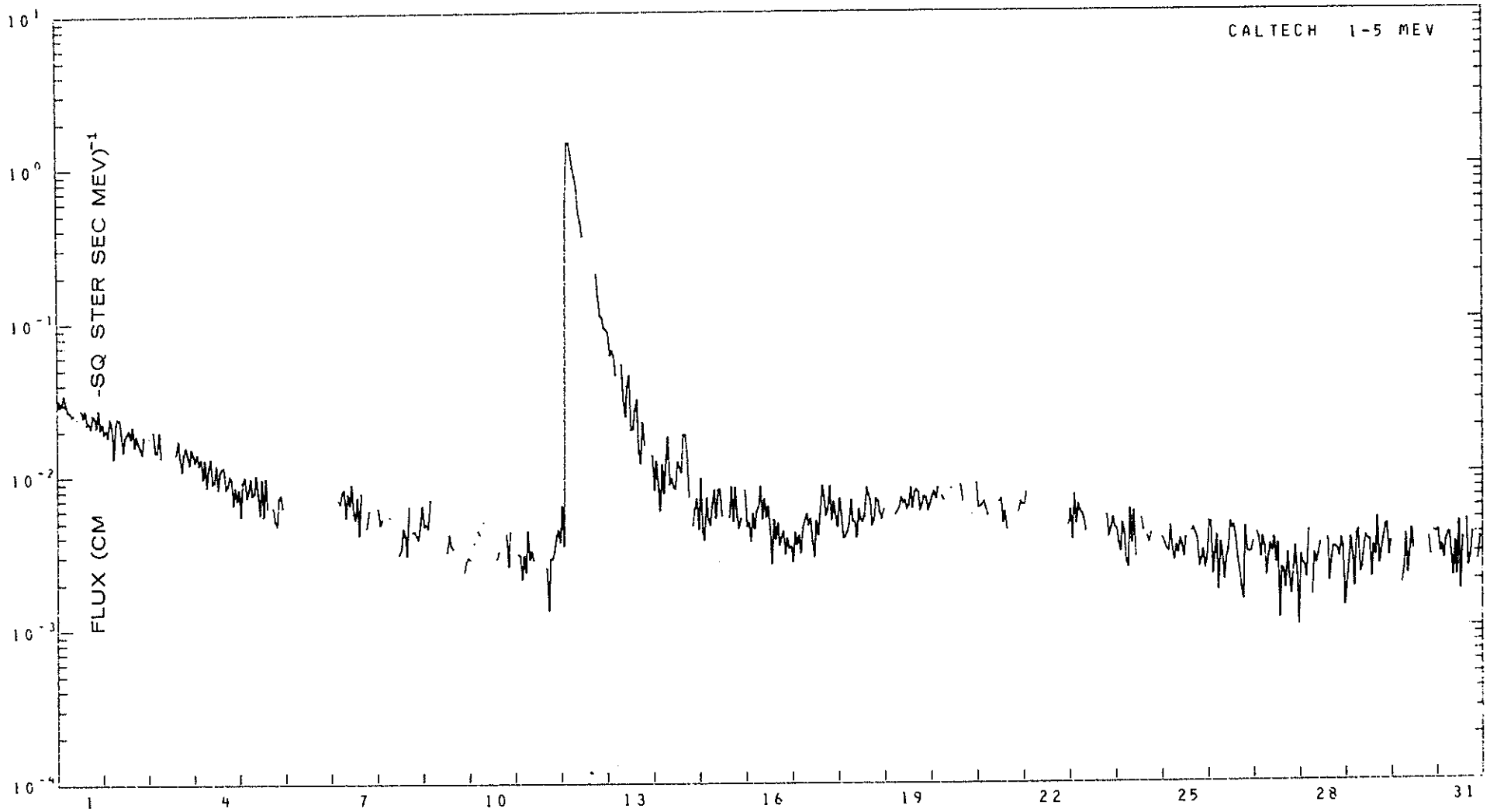
IMP 7 AND 8 SOLAR WIND PLASMA

OCTOBER 1977



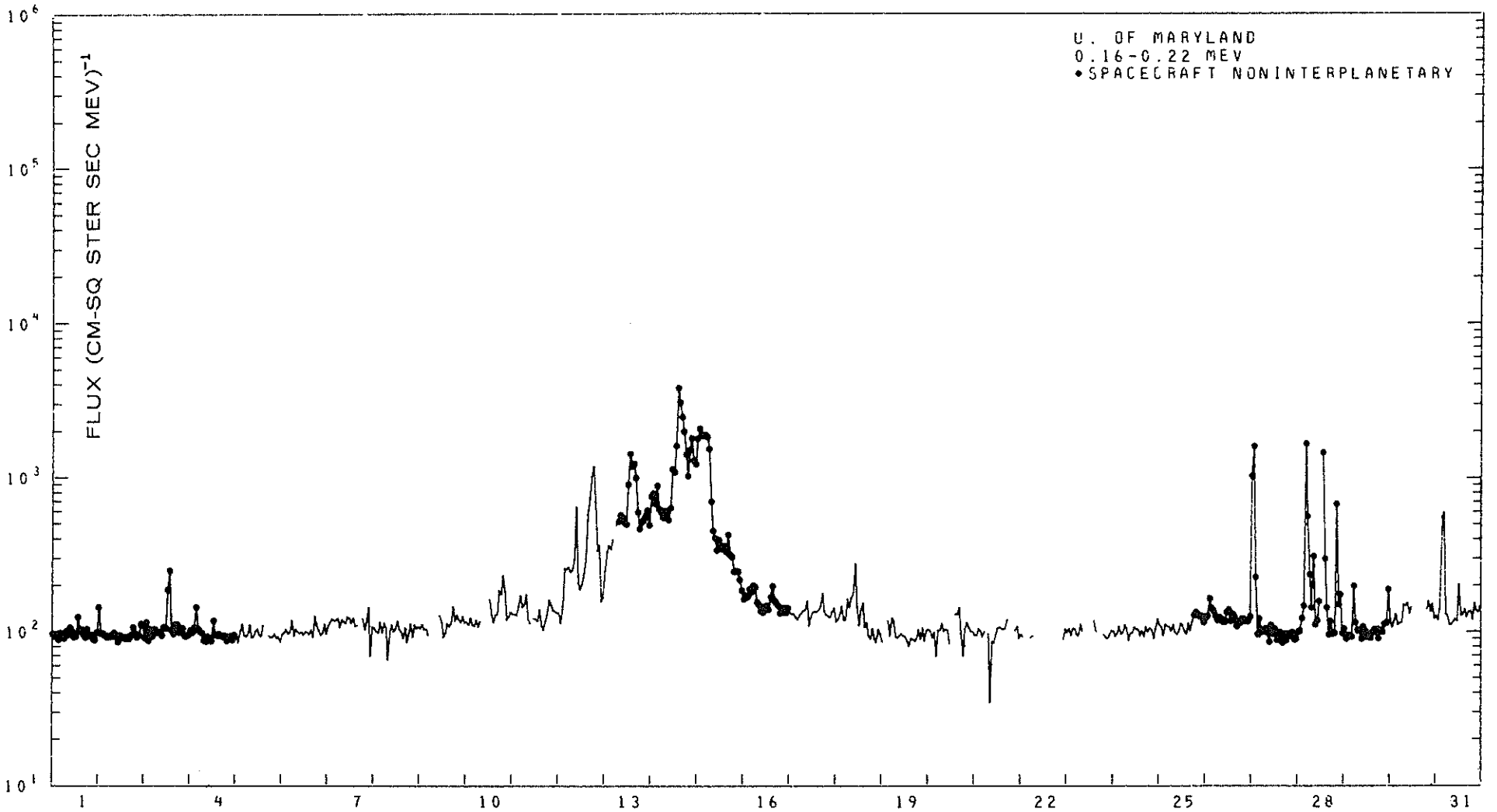
IMP 7 AND 8 ELECTRONS

OCTOBER 1977



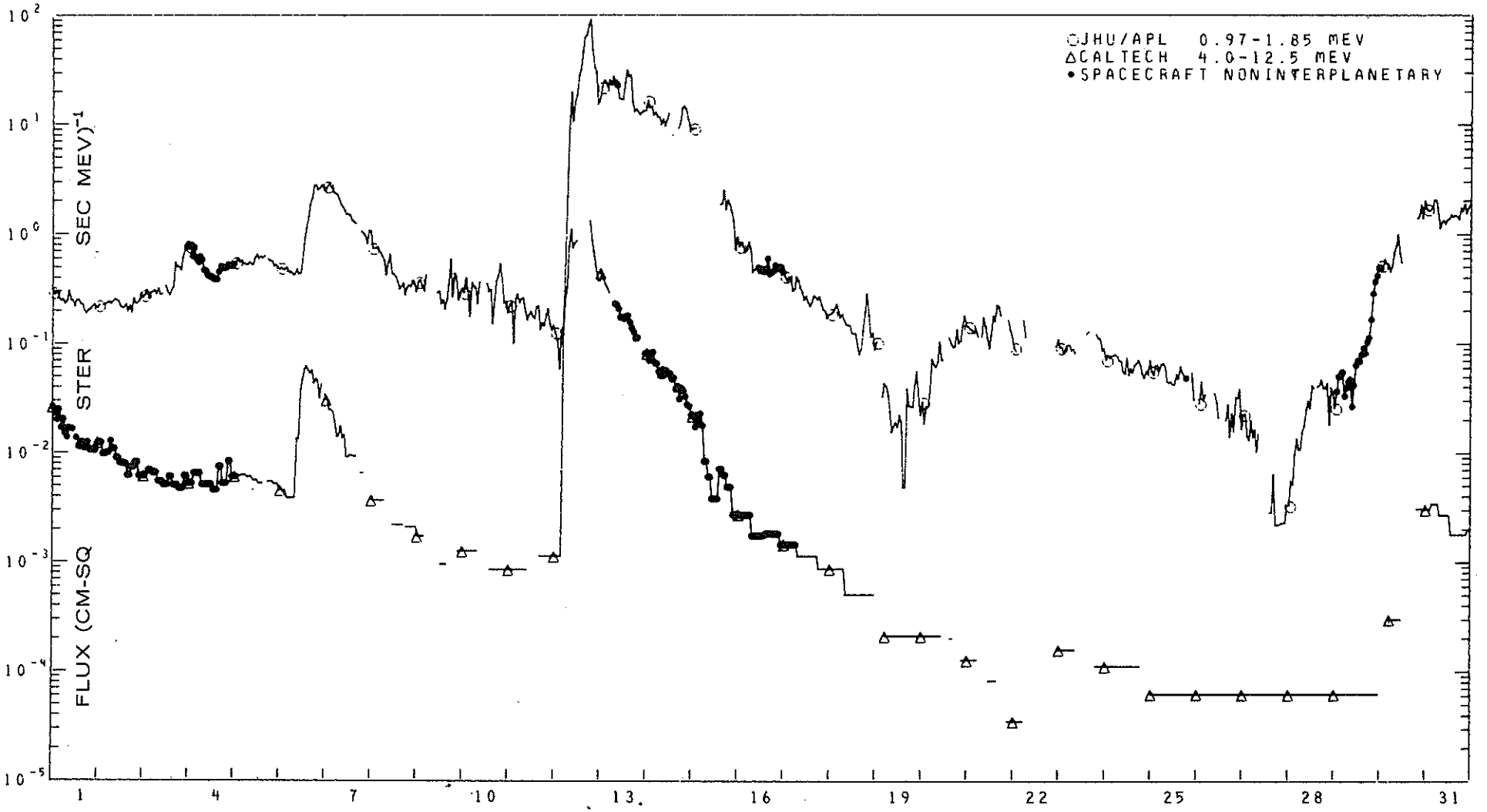
IMP 7 AND 8 LOW ENERGY PROTONS

OCTOBER 1977



IMP 7 AND 8 INTERMEDIATE ENERGY PROTONS

OCTOBER 1977



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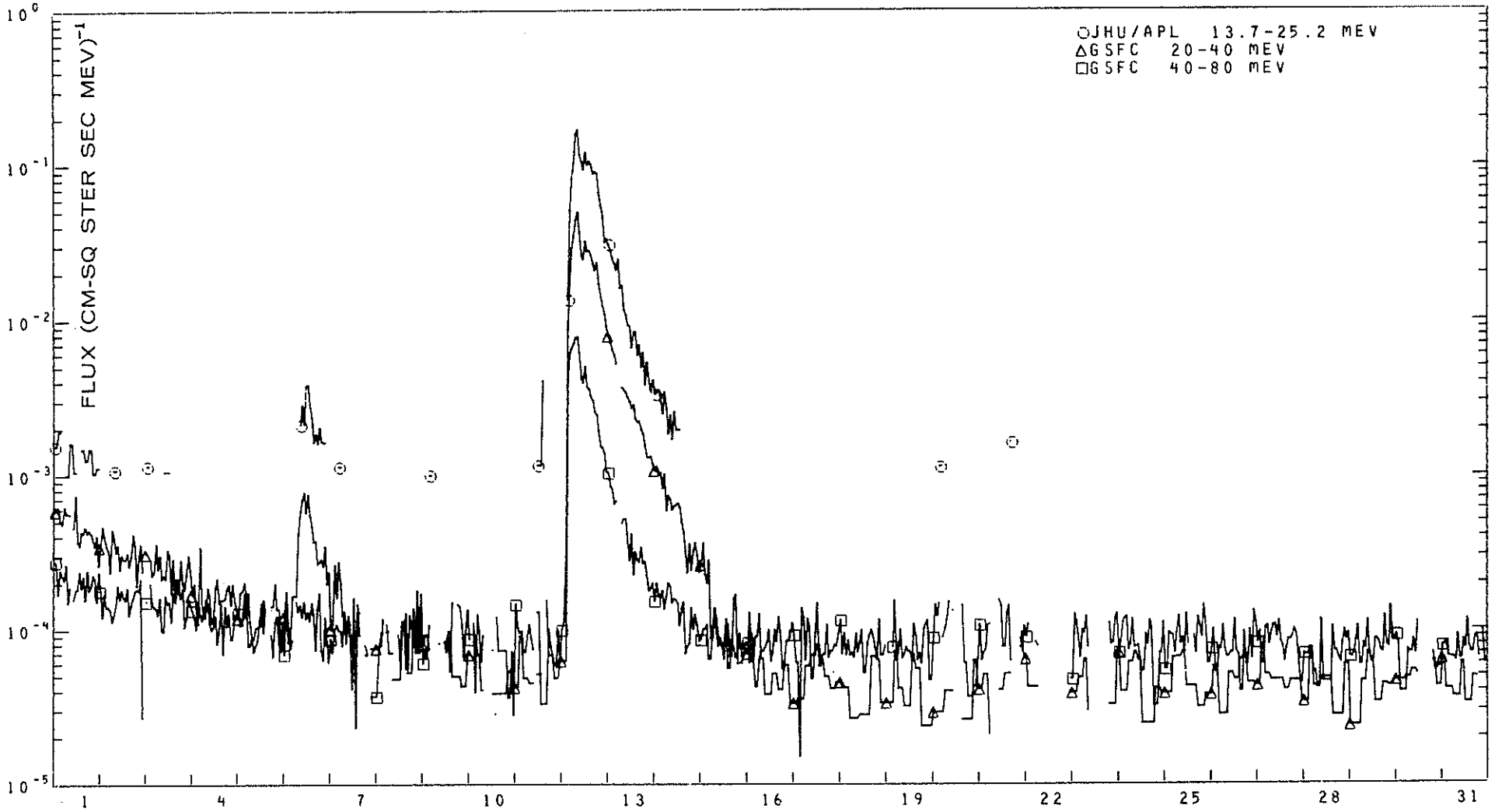
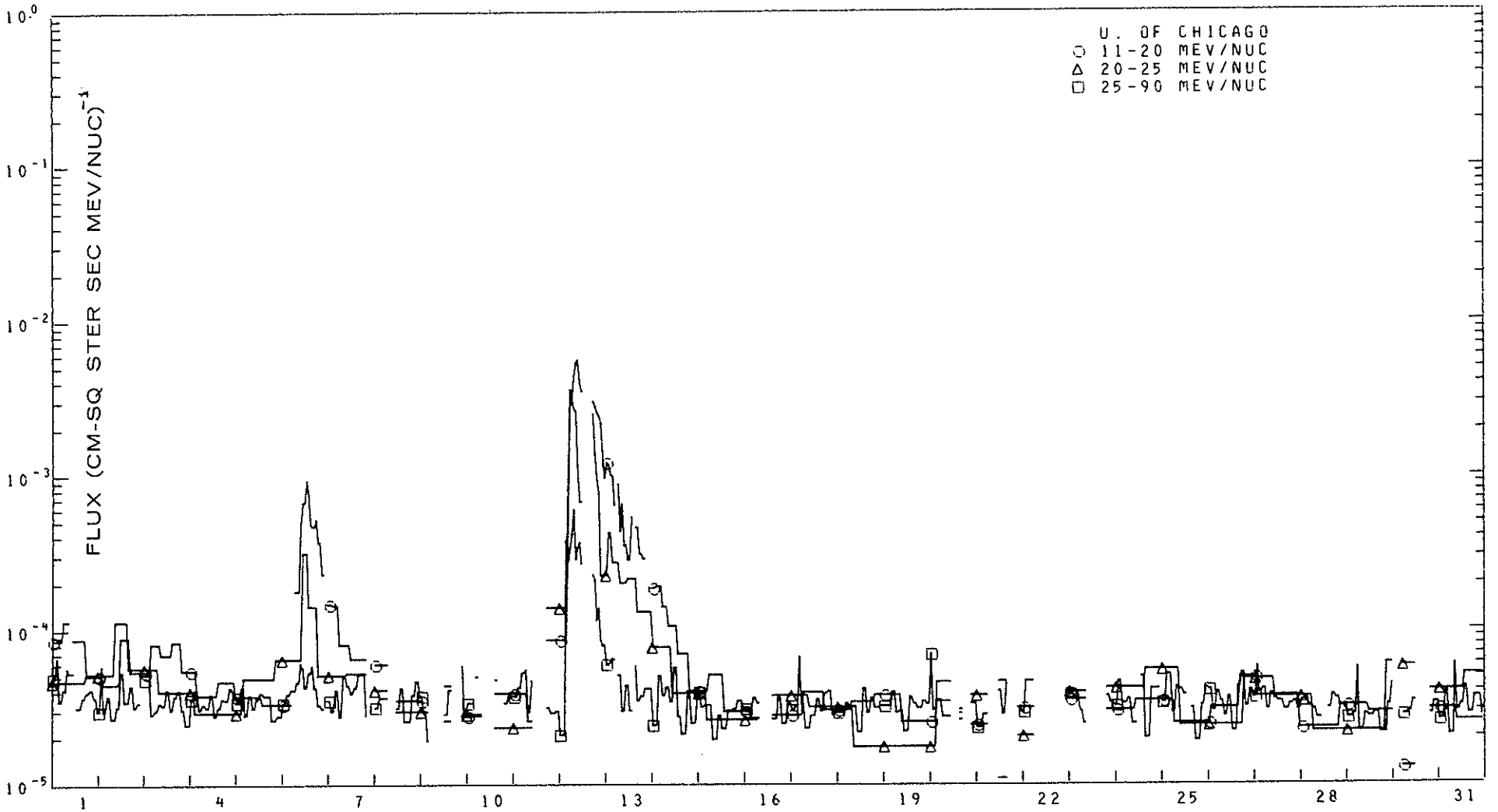
Oct 77

IMP 7 AND 8 HIGH ENERGY PROTONS

OCTOBER 1977



IMP 7 AND 8 ALPHA PARTICLES
OCTOBER 1977



COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
OCTOBER 1977

Si XV (5.09Å) Hourly Averages (-Log (flux), ergs/cm^2 s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	M	5.76	M	5.39	M	5.95	6.05	5.98	5.77	5.50	M	5.96	5.83	M	5.79	6.00	M	6.05	5.62	5.85	5.88	5.99	6.06	5.99
2	6.23	6.05	5.82	5.94	6.02	6.04	6.18	5.90	6.11	5.84	5.74	5.88	6.01	6.04	6.00	6.07	6.09	6.09	5.95	M	6.07	6.03	5.34	5.88
3	5.90	5.84	5.85	5.69	5.84	5.96	5.82	5.67	5.71	5.75	5.58	5.41	5.66	5.67	5.68	5.61	5.63	5.66	5.55	5.48	5.51	5.56	5.66	M
4	4.85	5.08	5.47	5.50	5.24	5.42	5.46	5.54	5.50	5.48	5.49	5.43	5.44	5.22	5.25	5.39	4.76	5.00	5.33	5.38	5.20	5.35	5.43	4.83
5	4.03	4.19	4.57	4.66	4.60	4.68	4.72	4.74	4.36	4.63	4.74	4.65	4.74	4.72	4.63	4.68	4.02	M	4.60	4.89	4.87	4.89	4.80	4.53
6	4.74	4.57	4.77	4.79	4.81	M	4.63	4.46	4.58	4.76	4.88	3.93	4.27	4.86	M	M	4.77	M	5.18	5.16	5.26	5.06	5.28	*-1.
7	5.11	5.16	5.29	5.33	5.36	5.14	5.44	5.38	5.01	5.31	5.49	5.47	M	5.01	4.82	4.81	5.01	4.95	4.79	4.90	4.97	5.20	M	M
8	5.11	5.20	5.37	4.91	5.28	5.45	5.38	5.32	5.36	5.43	5.49	5.35	5.07	M	M	M	4.84	M	5.25	5.48	M	4.88	5.39	*-1.
9	5.40	5.47	5.49	5.55	M	5.33	M	M	5.55	5.61	5.59	5.18	5.48	5.63	5.67	M	5.05	5.35	5.45	5.55	5.54	5.54	5.48	*-1.
10	5.36	5.34	5.54	5.24	5.47	5.56	5.57	5.48	5.45	5.55	5.49	5.35	5.47	5.47	5.63	5.77	5.73	5.68	M	5.75	4.69	5.11	5.59	*-1.
11	5.76	5.71	5.36	5.75	5.80	5.61	5.51	5.73	5.69	5.84	5.77	5.72	5.42	5.42	5.43	5.52	5.41	5.25	M	5.42	5.28	5.54	5.66	5.67
12	M	5.53	5.32	5.25	5.02	5.06	5.04	5.01	4.97	5.11	5.14	5.35	5.07	5.29	5.23	5.24	M	5.47	M	5.09	5.55	5.09	5.25	5.37
13	5.39	5.06	5.37	5.56	5.58	5.61	5.74	5.43	5.68	5.59	5.77	5.64	5.72	5.84	5.87	5.34	M	5.62	5.94	5.77	5.77	5.95	5.95	5.79
14	5.90	5.93	5.91	5.88	5.45	5.76	5.79	5.26	5.51	5.56	M	M	5.38	5.38	5.61	5.43	M	5.54	5.92	5.91	5.83	5.84	*-1.	5.96
15	5.88	5.73	5.90	5.70	5.84	6.03	6.00	6.08	6.03	6.22	5.89	6.00	6.00	6.02	M	5.98	5.87	5.52	5.69	5.77	5.79	5.84	5.65	5.89
16	5.93	5.90	5.96	5.96	6.00	6.03	5.94	5.98	6.06	6.12	6.13	5.99	6.03	6.03	5.95	5.89	5.93	6.04	5.98	M	5.72	5.67	5.80	5.86
17	5.85	5.69	5.99	5.98	5.72	6.04	5.96	5.99	5.93	6.00	6.08	6.05	6.08	5.99	5.78	5.98	6.04	5.96	5.80	5.97	5.94	5.98	*-1.	5.91
18	5.84	5.77	5.52	5.68	5.69	5.82	5.92	5.84	5.36	5.95	6.00	5.95	5.87	5.92	5.88	5.71	5.83	5.76	5.42	5.74	M	5.75	5.57	5.44
19	M	M	4.94	5.10	5.27	5.25	5.15	5.26	5.13	5.24	5.15	4.82	4.68	5.14	4.94	5.00	5.24	5.22	M	5.32	5.30	5.60	M	4.73
20	5.15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	5.38	5.07	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	5.00	M
23	M	M	M	M	M	M	M	M	M	M	M	M	5.23	M	5.49	M	5.67	5.52	M	M	5.86	*-1.	5.88	A\
24	5.75	5.97	5.80	5.75	5.76	5.85	5.82	5.93	5.60	M	6.00	6.04	6.02	5.71	M	5.09	5.38	5.77	M	M	M	M	5.60	5.67
25	5.71	5.79	5.60	5.83	5.97	6.15	5.87	5.96	6.06	M	5.21	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
OCTOBER 1977

Si XIII (5.68A) Hourly Averages (-Log (flux), ergs/cm^{2}s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	M	6.09	M	5.82	M	6.42	6.43	6.35	6.13	5.89	M	6.14	6.21	M	6.11	6.60	M	6.82	5.97	6.40	6.19	6.42	6.38	6.28
2	6.56	6.39	6.27	6.27	6.50	6.44	6.57	6.30	6.43	6.19	6.11	6.16	6.43	6.40	6.04	6.47	6.75	7.06	6.28	M	6.55	6.34	5.69	6.22
3	6.29	6.05	6.16	6.03	6.13	6.33	6.23	6.13	6.14	6.19	5.95	5.77	6.14	6.09	6.05	6.00	6.03	6.07	5.97	5.90	5.97	6.02	6.10	M
4	5.19	5.47	5.85	6.02	5.66	5.75	5.89	6.04	5.88	5.95	5.97	5.95	5.86	5.61	5.76	5.82	5.13	5.43	5.73	5.82	5.57	5.75	5.77	5.26
5	4.46	4.60	4.95	5.03	4.97	5.06	5.08	5.13	4.69	4.98	5.12	5.03	5.13	5.14	4.99	5.13	4.41	M	5.05	5.37	5.30	5.31	5.25	4.95
6	5.21	5.00	5.24	5.35	5.32	M	5.06	4.88	4.96	5.19	5.34	4.28	4.63	5.32	M	M	5.20	M	5.69	5.68	5.70	5.50	5.69	*-1.
7	5.54	5.57	5.69	5.83	5.79	5.49	5.79	5.77	5.38	5.64	5.87	5.87	M	5.30	5.20	5.17	5.34	5.26	5.10	5.22	5.24	5.51	M	M
8	5.42	5.48	5.63	5.15	5.51	5.86	5.74	5.72	5.79	5.80	5.83	5.77	5.46	M	M	M	5.12	M	5.63	6.36	M	5.16	5.74	*-1.
9	5.88	5.76	5.94	5.84	M	5.78	M	M	5.55	6.22	5.79	5.55	5.70	6.22	6.27	M	5.44	6.10	5.80	6.03	5.90	6.04	5.83	*-1.
10	5.70	5.65	6.01	5.60	5.97	5.93	5.95	5.88	5.83	6.02	5.93	5.77	5.94	5.94	6.12	6.31	6.16	6.07	M	6.10	5.03	5.47	6.03	*-1.
11	6.12	6.15	5.73	6.16	6.43	6.01	5.94	6.28	6.21	6.28	6.13	6.10	5.80	5.67	5.78	5.89	5.92	5.78	M	5.91	5.72	6.02	6.08	6.11
12	M	6.10	5.77	5.65	5.44	5.46	5.42	5.38	5.34	5.50	5.55	5.74	5.44	5.64	5.56	5.63	M	5.98	M	5.46	5.88	5.44	5.57	5.75
13	5.72	5.37	5.71	5.94	5.98	5.96	6.12	5.80	6.07	5.92	6.12	6.00	6.03	6.26	6.25	5.68	M	6.00	6.43	6.18	6.17	6.20	6.28	6.16
14	6.30	6.36	6.20	6.45	5.84	6.20	6.15	5.62	5.81	5.84	M	M	5.66	5.82	5.83	5.65	M	5.87	6.27	6.28	6.17	6.23	*-1.	6.28
15	6.25	6.05	6.26	6.12	6.22	6.40	6.55	6.39	6.37	7.05	6.10	6.49	6.29	6.53	M	6.68	6.48	5.90	6.08	6.02	6.28	6.24	5.99	6.27
16	6.49	6.44	6.33	6.41	6.39	6.56	6.42	6.44	6.75	6.71	6.38	6.32	7.87	6.38	6.41	6.32	6.32	6.36	6.51	M	6.06	6.04	6.32	6.32
17	6.24	6.14	6.39	6.35	6.37	6.77	6.62	6.59	6.32	6.47	6.78	6.50	6.52	6.51	6.22	6.52	6.59	6.31	6.22	6.34	6.41	6.50	*-1.	6.42
18	6.27	6.15	5.97	6.10	6.16	6.26	6.46	6.33	5.77	6.41	6.35	6.81	6.28	6.37	6.42	6.12	6.34	6.11	5.83	6.21	M	6.22	6.06	5.86
19	M	M	5.43	5.61	5.79	5.76	5.68	5.73	5.60	5.74	5.63	5.25	5.12	5.65	5.39	5.51	5.79	5.66	M	5.81	5.77	6.11	M	5.16
20	5.62	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	5.06	M
23	M	M	M	M	M	M	M	M	M	M	M	M	5.60	M	5.81	M	6.08	6.08	M	M	6.23	*-1.	6.33	AA
24	6.21	6.48	6.28	6.27	6.11	6.16	6.26	6.11	6.05	M	6.39	6.62	6.73	6.22	M	5.40	5.74	6.22	M	M	M	M	6.02	6.06
25	6.12	6.24	5.93	6.26	6.43	6.52	6.22	6.35	6.53	M	5.66	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
OCTOBER 1977

Si XII (5.82Å) Hourly Averages (-Log (flux), ergs/cm^2 s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	M	5.92	M	5.68	M	5.90	6.04	5.97	5.91	5.82	M	6.00	5.97	M	5.96	6.08	M	6.01	5.92	5.87	6.00	6.14	6.13	6.04
2	6.00	6.02	5.92	6.01	6.05	6.08	6.10	6.03	6.04	5.96	5.88	5.94	6.04	5.99	6.17	5.99	5.95	6.03	5.94	M	6.05	5.98	5.65	5.89
3	5.86	5.82	5.88	5.82	5.85	5.91	5.97	5.83	5.85	5.85	5.76	5.76	5.81	5.77	5.73	5.70	5.73	5.74	5.67	5.64	5.63	5.69	5.68	M
4	5.20	5.33	5.58	5.60	5.53	5.56	5.56	5.63	5.57	5.58	5.59	5.52	5.54	5.43	5.45	5.48	5.19	5.29	5.45	5.50	5.43	5.45	5.47	5.24
5	4.66	4.79	5.02	5.11	5.07	5.10	5.12	5.12	4.83	5.02	5.08	5.06	5.07	5.11	5.05	5.06	4.62	M	5.00	5.16	5.16	5.19	5.11	5.01
6	5.09	4.99	5.17	5.18	5.17	M	5.05	4.97	5.01	5.12	5.22	4.42	4.74	5.16	M	M	5.16	M	5.38	5.36	5.35	5.29	5.40	*-1.
7	5.33	5.36	5.43	5.50	5.47	5.37	5.51	5.49	5.39	5.48	5.57	5.54	M	5.40	5.21	5.22	5.35	5.32	5.22	5.22	5.29	5.36	M	M
8	5.40	5.42	5.44	5.28	5.43	5.50	5.50	5.41	5.46	5.50	5.50	5.45	5.24	M	M	M	5.17	M	5.40	5.36	M	5.00	5.23	*-1.
9	5.37	5.04	5.24	5.27	M	5.27	M	M	5.35	5.41	5.50	5.33	5.46	5.53	5.68	M	5.36	5.46	5.50	5.57	5.55	5.55	5.55	*-1.
10	5.50	5.45	5.55	5.45	5.57	5.58	5.62	5.59	5.54	5.59	5.60	5.56	5.61	5.54	5.67	5.69	5.68	5.65	M	5.71	5.18	5.41	5.63	*-1.
11	5.69	5.69	5.57	5.70	5.77	5.69	5.65	5.74	5.69	5.79	5.75	5.70	5.62	5.53	5.58	5.63	5.61	5.51	M	5.59	5.52	5.62	5.68	5.69
12	M	5.66	5.60	5.53	5.39	5.41	5.39	5.31	5.34	5.36	5.42	5.49	5.44	5.39	5.42	5.46	M	5.58	M	5.33	5.58	5.45	5.50	5.56
13	5.51	5.39	5.56	5.65	5.67	5.72	5.75	5.66	5.74	5.71	5.76	5.69	5.79	5.81	5.81	5.61	M	5.76	5.80	5.79	5.78	5.88	5.83	5.84
14	5.85	5.90	5.86	5.79	5.70	5.83	5.87	5.53	5.71	5.75	M	M	5.75	5.63	5.68	5.62	M	5.62	5.92	5.84	5.80	5.89	*-1.	5.83
15	5.74	5.82	5.95	5.84	5.94	5.95	6.00	6.02	5.88	5.99	5.99	5.90	5.94	5.94	M	5.97	5.99	5.76	5.79	5.82	5.82	5.80	5.77	5.87
16	5.88	5.84	5.89	5.85	5.87	5.93	5.87	5.88	5.90	5.94	5.97	5.89	5.85	5.87	5.90	5.89	5.87	5.94	5.91	M	5.76	5.72	5.79	5.84
17	5.85	5.74	5.86	5.86	5.84	5.94	5.89	5.86	5.89	5.91	5.97	5.94	5.89	5.91	5.80	5.90	5.99	5.86	5.83	5.86	5.84	5.86	*-1.	5.84
18	5.79	5.80	5.73	5.74	5.68	5.79	5.82	5.80	5.69	5.80	5.87	5.85	5.82	5.85	5.83	5.70	5.80	5.79	5.65	5.79	M	5.76	5.71	5.61
19	M	M	5.35	5.46	5.49	5.48	5.45	5.46	5.42	5.46	5.42	5.34	5.13	5.40	5.29	5.33	5.47	5.50	M	5.55	5.58	5.69	M	5.25
20	5.42	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	5.41	4.18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	4.81	M
23	M	M	M	M	M	M	M	M	M	M	M	M	5.55	M	5.75	M	5.80	5.73	M	M	5.95	*-1.	5.98	AJ
24	5.81	5.92	5.89	5.88	5.95	5.91	6.01	5.99	5.76	M	5.94	6.01	5.97	5.87	M	5.41	5.59	5.85	M	M	M	M	5.84	5.89
25	5.86	5.91	5.76	5.90	6.07	6.07	6.00	6.02	6.00	M	5.66	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

SEPTEMBER 1977 DATA

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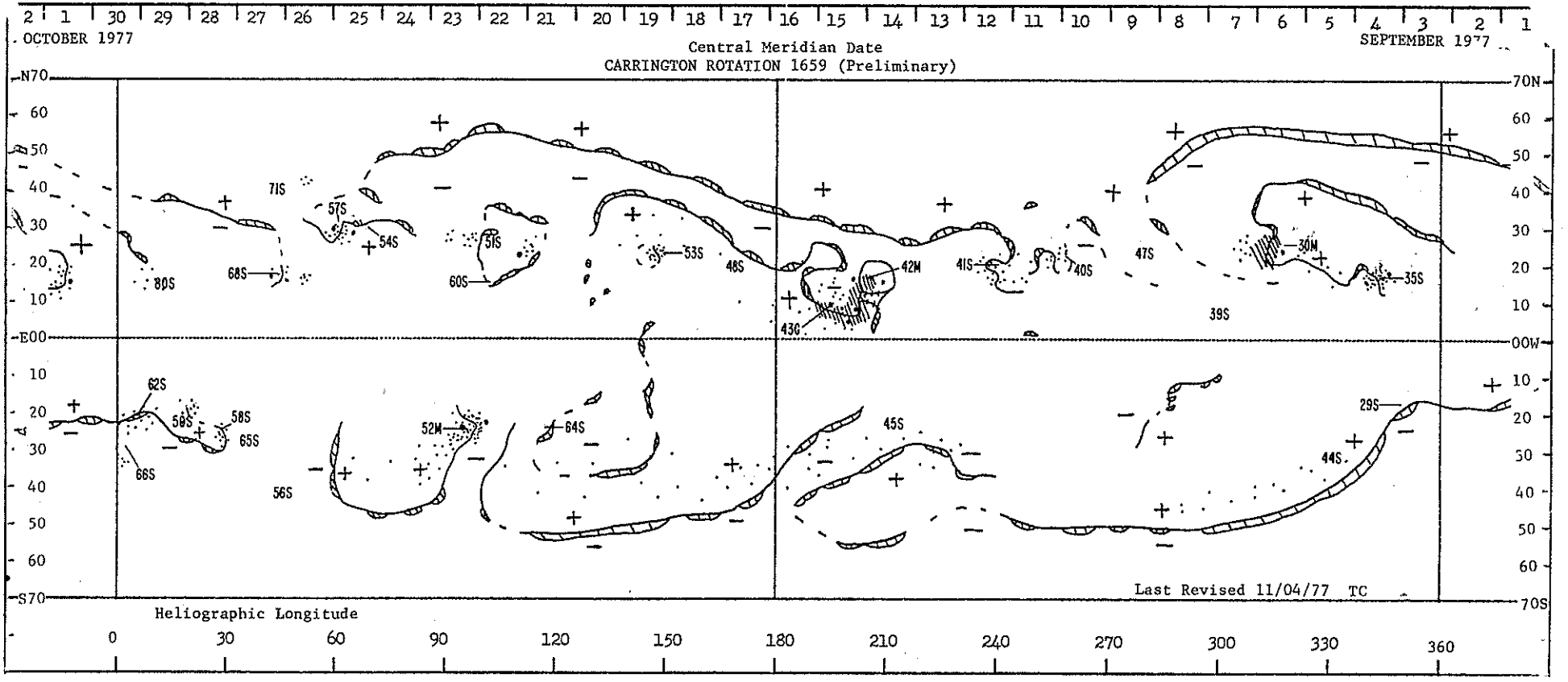
ABBREVIATED CALENDAR RECORD

Hα SYNOPTIC CHART

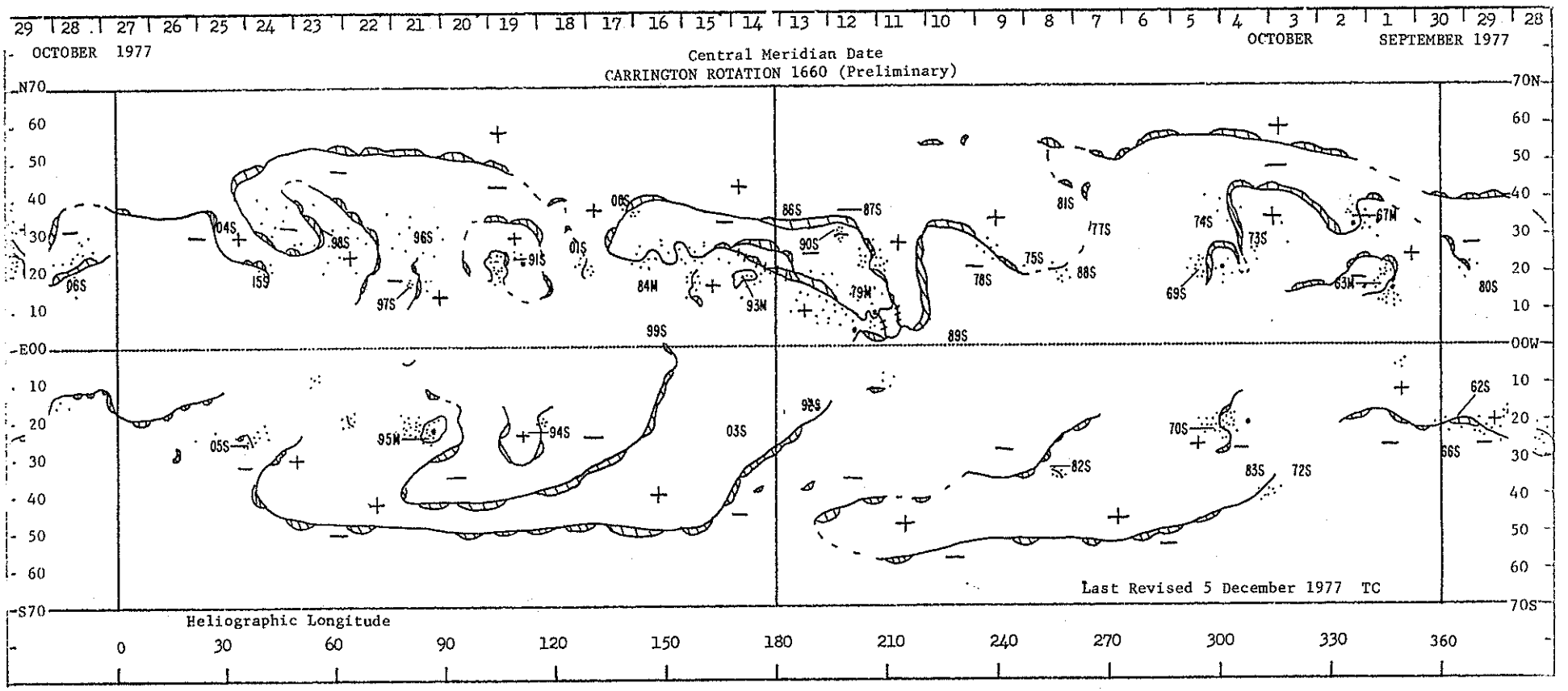
CARRINGTON ROTATION 1659 (PRELIMINARY)



ABBREVIATED CALENDAR RECORD

Hα SYNOPTIC CHART

SEPTEMBER 1977 - OCTOBER 1977



ABBREVIATED CALENDAR RECORD

SEPTEMBER 1977

Sep. 1, 1977

		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
FLARES																										
Bursts	cm																									
	dm																									
	m																									
	Dkm																									
SID																										
X-Rays																										
Ap 4 Q4	Kp	2-				1o				1o				1-				1+				1-			0+		1-
	sc																									
Aurora	USSR																									
	W.E.																									
Cosmic Rays																										
Green Corona		E. Limb 7 days earlier: NE- moderately bright SE- moderately bright W. Limb 7 days later: NW- SW-																								
Indices		Rz: 22 (Final) 10cm flux: 82 Flare: 10/16.0 Ca: 8.0 Ip: 0 Ia: 0																								
Solar Regions																										
Sunspots																										

Sep. 2, 1977

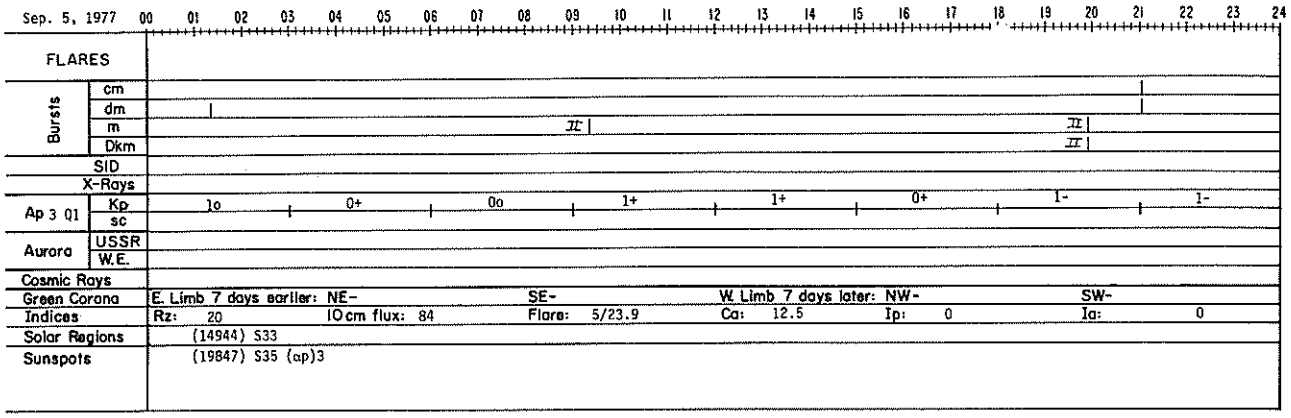
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
FLARES																										
Bursts	cm																									
	dm																									
	m																									
	Dkm																									
SID																										
X-Rays																										
Ap 6 Q6	Kp	1o				1o				0+				1-				2o				2+			2-		3-
	sc																									
Aurora	USSR																									
	W.E.																									
Cosmic Rays																										
Green Corona		E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- SW-																								
Indices		Rz: 29 10cm flux: 83 Flare: 4/21.3 Ca: 9.3 Ip: 0 Ia: 0																								
Solar Regions		(14925) S19																								
Sunspots																										

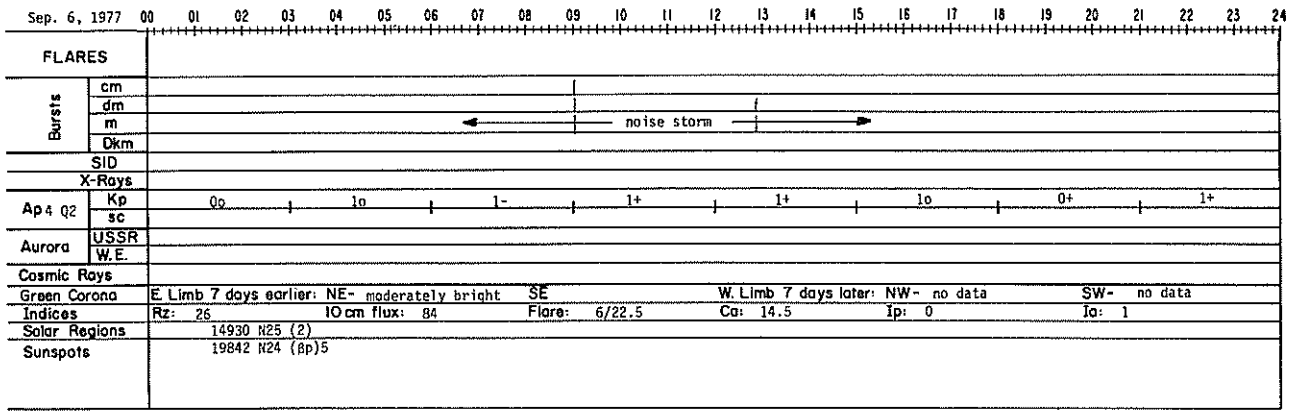
Sep. 3, 1977

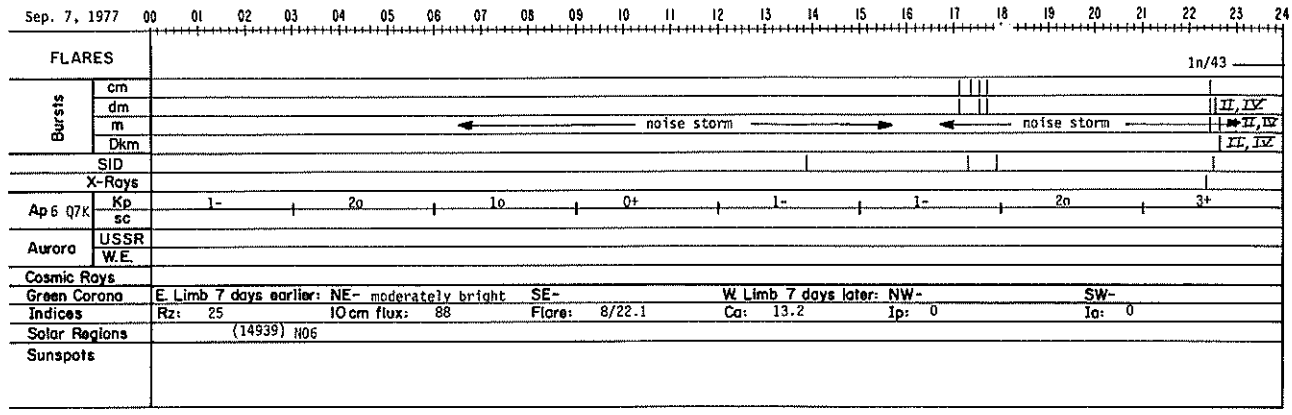
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
FLARES																										
Bursts	cm																									
	dm																									
	m								←					noise storm					→							
	Dkm																									
SID																										
X-Rays																										
Ap 8	Kp	3+				3+				2-				1+				1+				1o			1-		1o
	sc																									
Aurora	USSR																									
	W.E.																									
Cosmic Rays																										
Green Corona		E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data																								
Indices		Rz: 29 10cm flux: 86 Flare: 5/23.3 Ca: 12.8 Ip: 0 Ia: 0																								
Solar Regions		(14929) S18																								
Sunspots																										

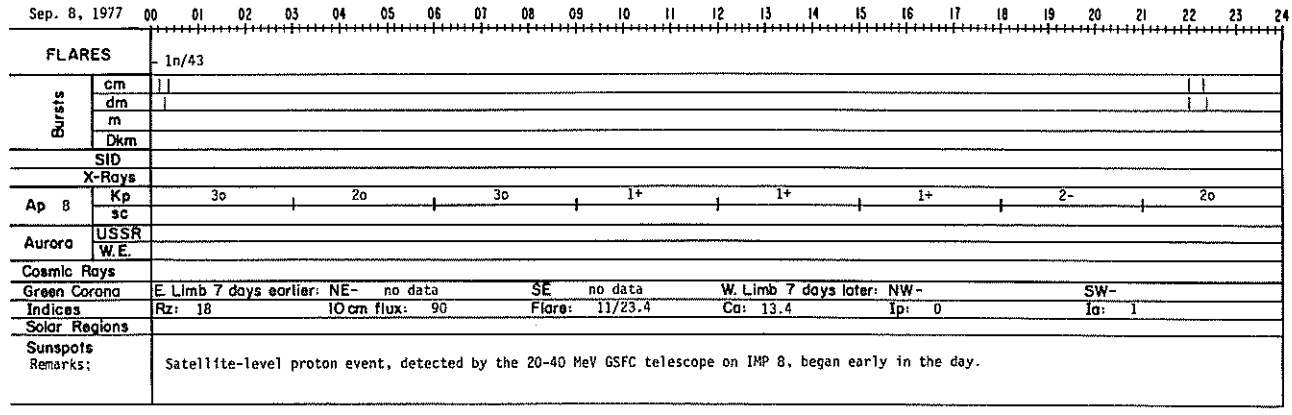
Sep. 4, 1977

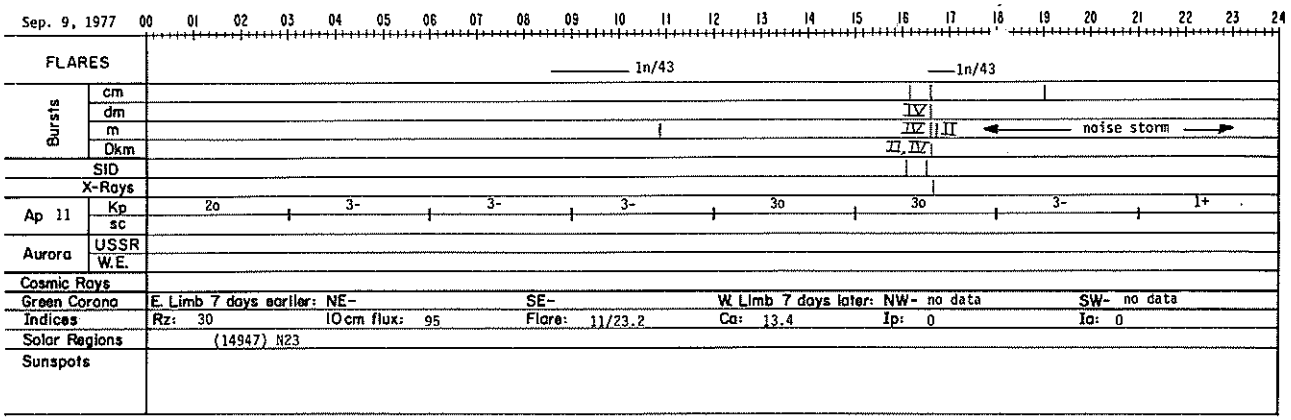
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
FLARES																										
Bursts	cm																									
	dm																									
	m																									
	Dkm																									
SID																										
X-Rays																										
Ap 6 Q9K	Kp	1o				1+				3-				3-				2-				1+			1-		1o
	sc																									
Aurora	USSR																									
	W.E.																									
Cosmic Rays																										
Green Corona		E. Limb 7 days earlier: NE- moderately bright SE moderately bright W. Limb 7 days later: NW- SW-																								
Indices		Rz: 25 10cm flux: 83 Flare: 0/22.8 Ca: 13.6 Ip: 0 Ia: 0																								
Solar Regions		14935 N16																								
Sunspots		19845 N15 (8)4																								

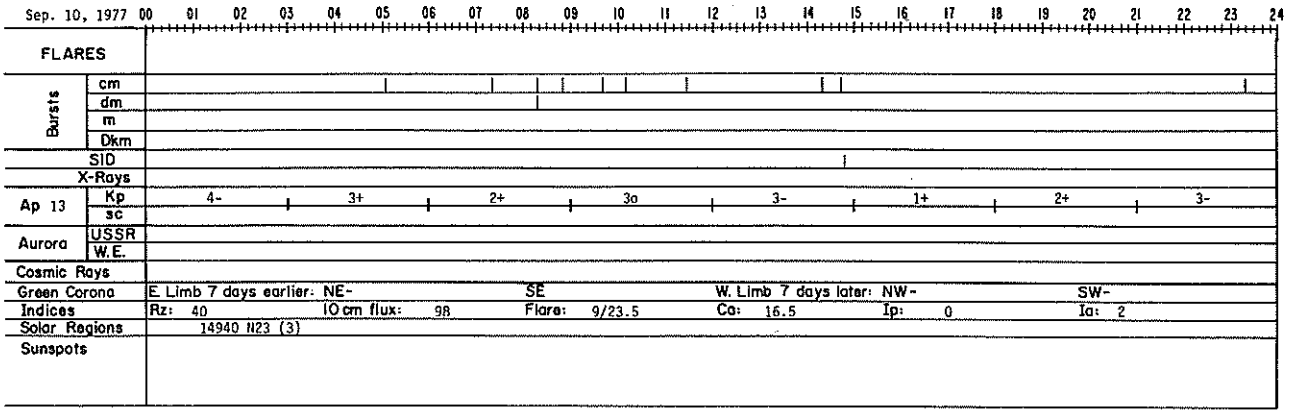

Sep. 5, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
II
II
II
SID
X-Rays
Ap 3 Q1
Kp
sc
1o 0+ 0o 1+ 1+ 0+ 1- 1-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- SW-
Indices
Rz: 20 10cm flux: 84 Flare: 5/23.9 Ca: 12.5 Ip: 0 Ia: 0
Solar Regions
(14944) S33
Sunspots
(19847) S35 (ap)3

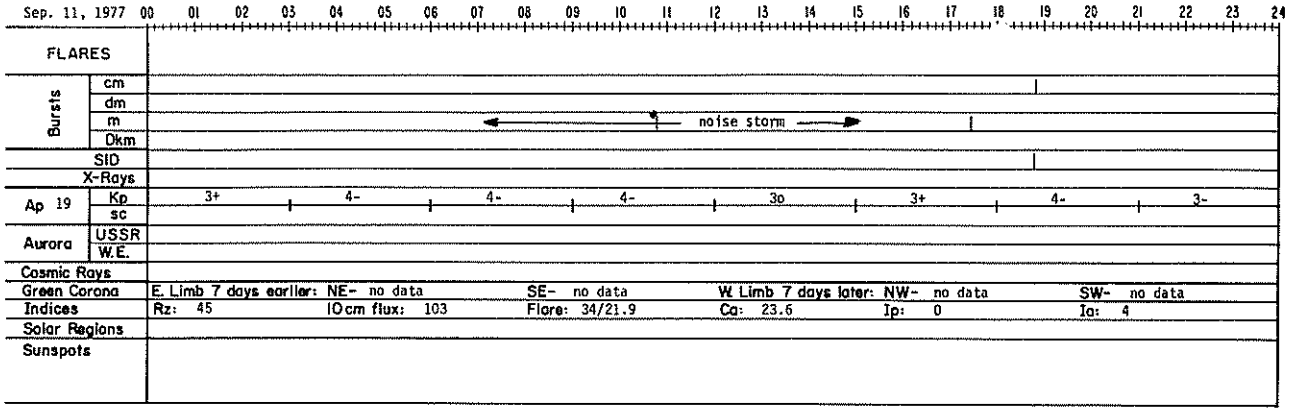

Sep. 6, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 4 Q2
Kp
sc
0o 1o 1- 1+ 1+ 1o 0+ 1+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 26 10cm flux: 84 Flare: 6/22.5 Ca: 14.5 Ip: 0 Ia: 1
Solar Regions
14930 N25 (2)
Sunspots
19842 N24 (ap)5

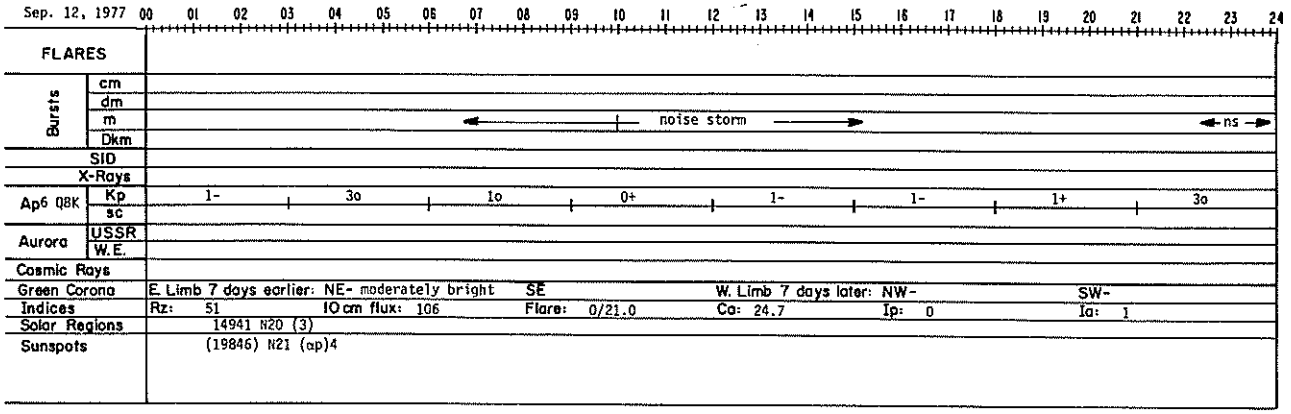

Sep. 7, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/43
Bursts
cm
dm
m
Dkm
II, IV
noise storm
noise storm
II, IV
II, IV
SID
X-Rays
Ap 6 Q7K
Kp
sc
1- 2o 1o 0+ 1- 1- 2o 3+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE- W. Limb 7 days later: NW- SW-
Indices
Rz: 25 10cm flux: 88 Flare: 8/22.1 Ca: 13.2 Ip: 0 Ia: 0
Solar Regions
(14939) N06
Sunspots

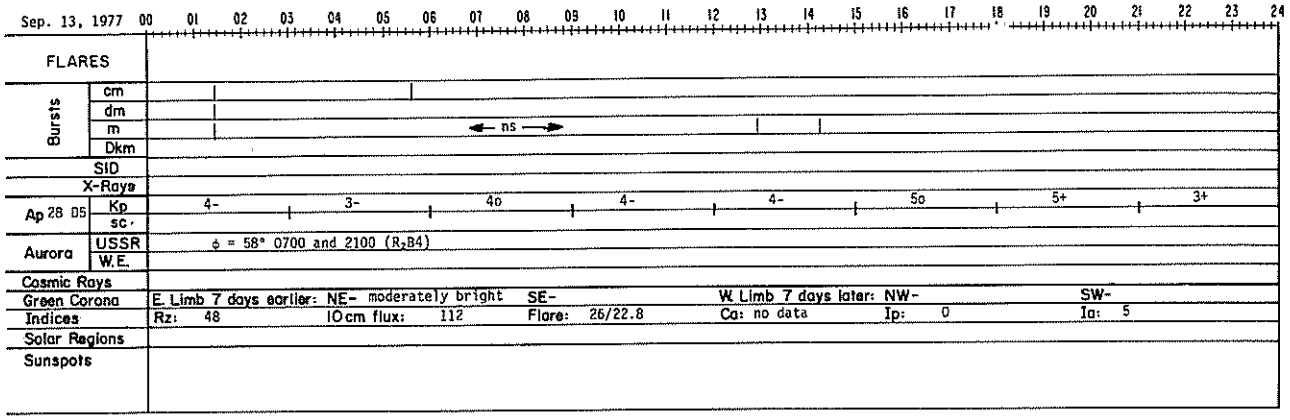

Sep. 8, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/43
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 8
Kp
sc
3o 2o 3o 1+ 1+ 1+ 2- 2o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- SW-
Indices
Rz: 18 10cm flux: 90 Flare: 11/23.4 Ca: 13.4 Ip: 0 Ia: 1
Solar Regions
Sunspots
Remarks:
Satellite-level proton event, detected by the 20-40 MeV GSFC telescope on IMP 8, began early in the day.

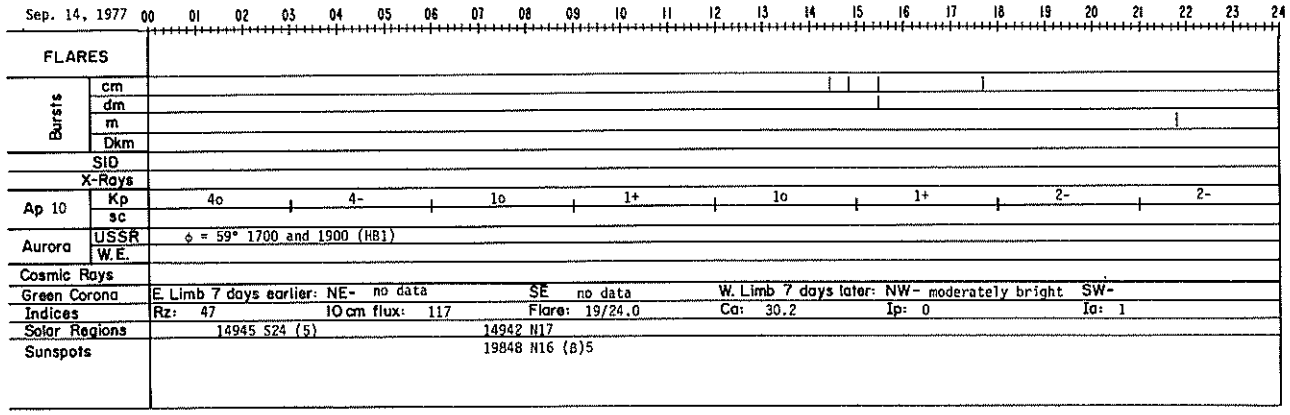

Sep. 9, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/43
1n/43
Bursts
cm
dm
m
Dkm
IV
IV
II, III
noise storm
II, IV
SID
X-Rays
Ap 11
Kp
sc
2o
3-
3-
3-
3o
3o
3-
1+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE-
SE-
W. Limb 7 days later: NW- no data
SW- no data
Indices
Rz: 30
10cm flux: 95
Flare: 11/23.2
Ca: 13.4
Ip: 0
Ia: 0
Solar Regions
(14947) N23
Sunspots

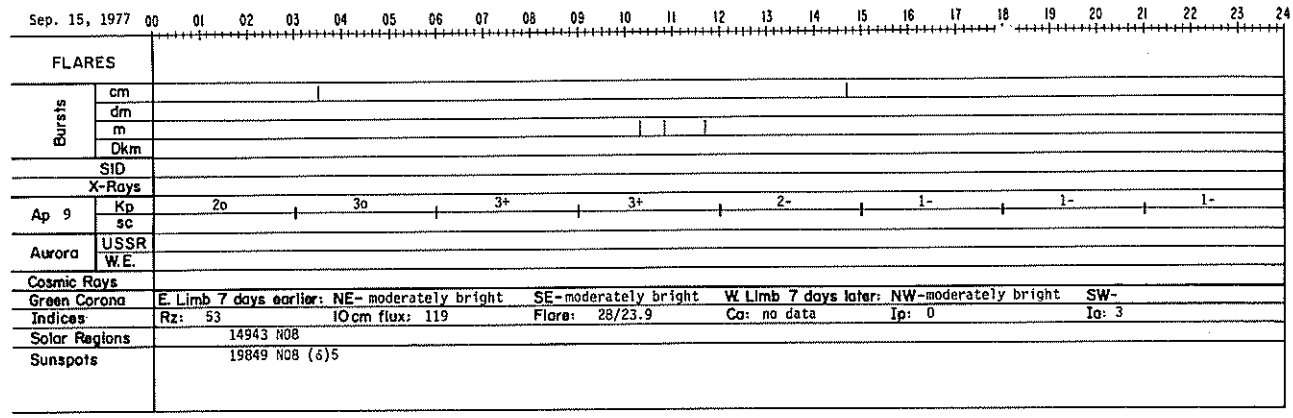

Sep. 10, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 13
Kp
sc
4-
3+
2+
3o
3-
1+
2+
3-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE-
SE
W. Limb 7 days later: NW-
SW-
Indices
Rz: 40
10cm flux: 98
Flare: 9/23.5
Ca: 16.5
Ip: 0
Ia: 2
Solar Regions
14940 N23 (3)
Sunspots

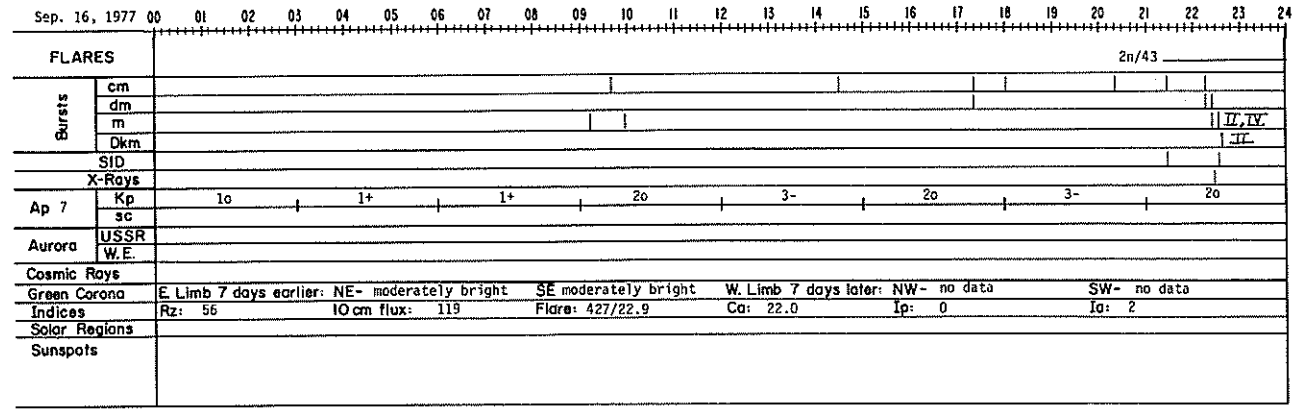

Sep. 11, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 19
Kp
sc
3+
4-
4-
4-
3o
3+
4-
3-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data
SE- no data
W. Limb 7 days later: NW- no data
SW- no data
Indices
Rz: 45
10cm flux: 103
Flare: 34/21.9
Ca: 23.6
Ip: 0
Ia: 4
Solar Regions
Sunspots

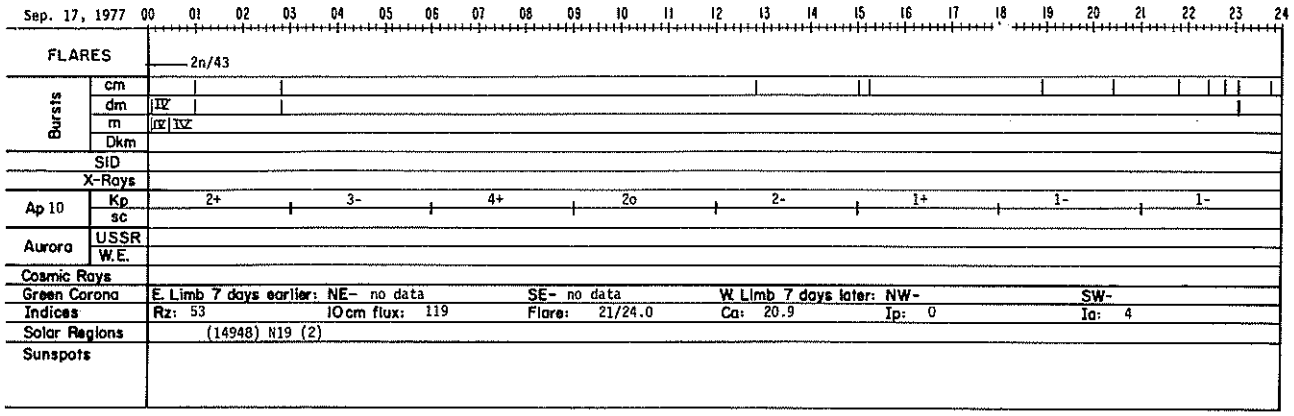

Sep. 12, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
ns
SID
X-Rays
Ap6 08K
Kp
sc
1-
3o
1o
0+
1-
1-
1+
3o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright
SE
W. Limb 7 days later: NW-
SW-
Indices
Rz: 51
10cm flux: 106
Flare: 0/21.0
Ca: 24.7
Ip: 0
Ia: 1
Solar Regions
14941 N20 (3)
Sunspots
(19846) N21 (ap)4

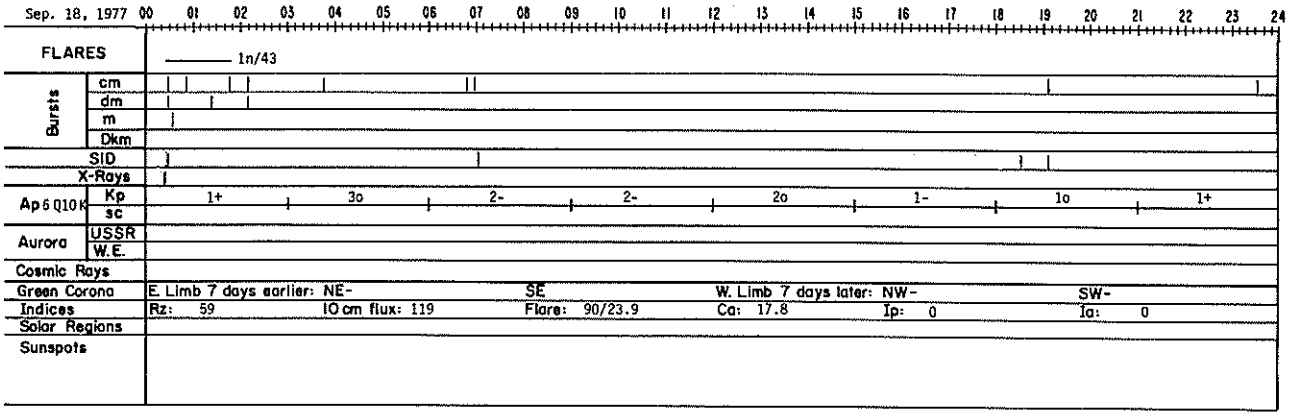

Sep. 13, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
ns
SID
X-Rays
Ap 28 D5
Kp
sc
4- 3- 4o 4- 4- 5o 5+ 3+
Aurora
USSR
W.E.
ϕ = 58° 0700 and 2100 (R2B4)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE-
W. Limb 7 days later: NW- SW-
Indices
Rz: 48 10cm flux: 112 Flare: 26/22.8 Ca: no data Ip: 0 Ia: 5
Solar Regions
Sunspots

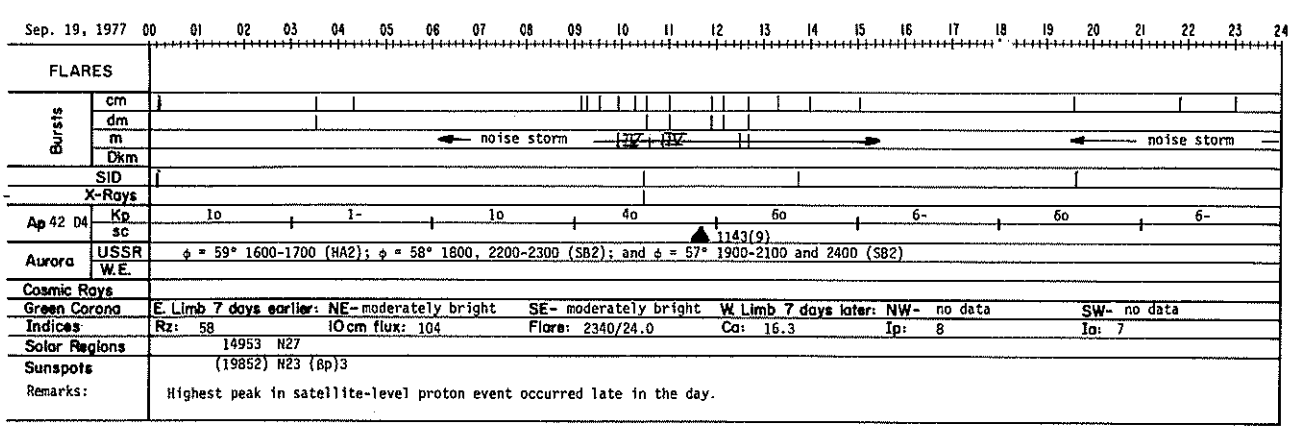

Sep. 14, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 10
Kp
sc
4o 4- 1o 1+ 1o 1+ 2- 2-
Aurora
USSR
W.E.
ϕ = 59° 1700 and 1900 (HB1)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data
W. Limb 7 days later: NW- moderately bright SW-
Indices
Rz: 47 10cm flux: 117 Flare: 19/24.0 Ca: 30.2 Ip: 0 Ia: 1
Solar Regions
14945 S24 (5) 14942 N17
Sunspots
19848 N16 (8)5

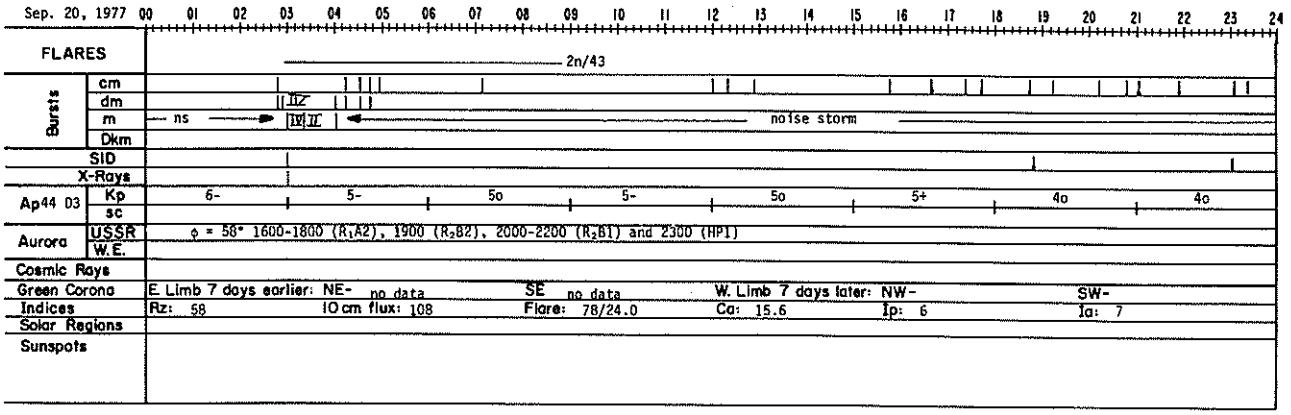

Sep. 15, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 9
Kp
sc
2o 3o 3+ 3+ 2- 1- 1- 1-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE-moderately bright
W. Limb 7 days later: NW-moderately bright SW-
Indices
Rz: 53 10cm flux: 119 Flare: 28/23.9 Ca: no data Ip: 0 Ia: 3
Solar Regions
14943 N08
Sunspots
19849 N08 (6)5

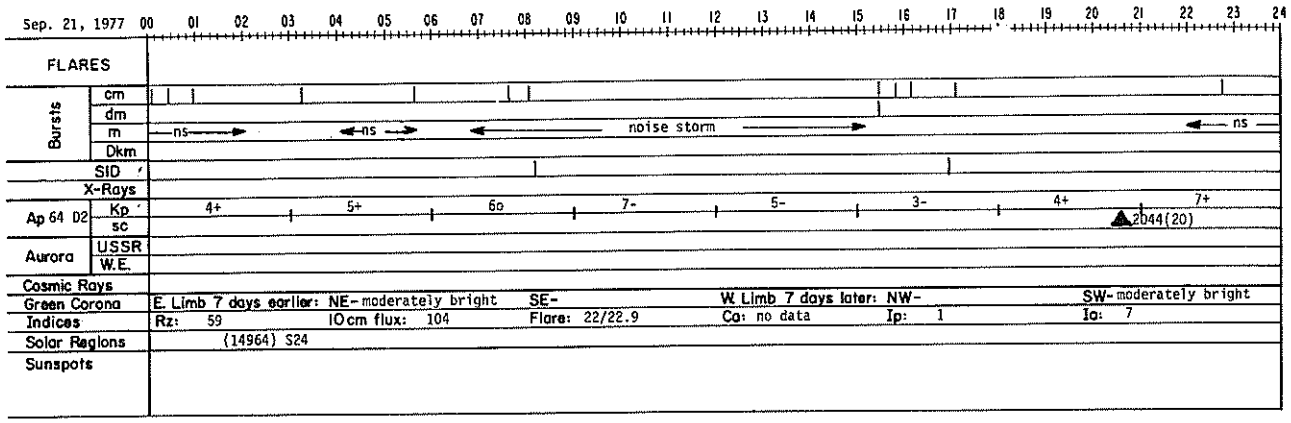

Sep. 16, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
2n/43
Bursts
cm
dm
m
Dkm
II,IV
II
SID
X-Rays
Ap 7
Kp
sc
1o 1+ 1+ 2o 3- 2o 3- 2o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE moderately bright
W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 56 10cm flux: 119 Flare: 427/22.9 Ca: 22.0 Ip: 0 Ia: 2
Solar Regions
Sunspots

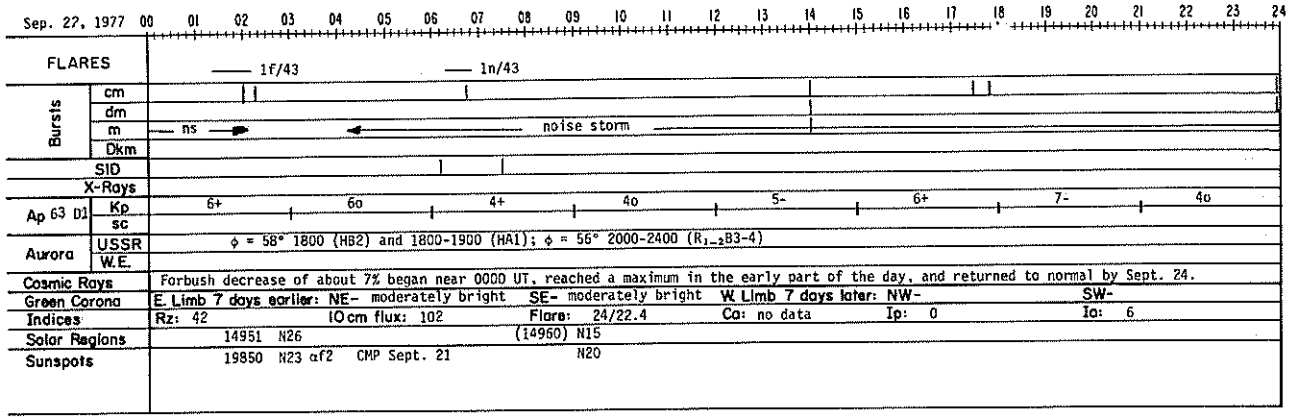

Sep. 17, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
2n/43
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 10
Kp
sc
2+ 3- 4+ 2o 2- 1+ 1- 1-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- SW-
Indices
Rz: 53 10cm flux: 119 Flare: 21/24.0 Ca: 20.9 Ip: 0 Ia: 4
Solar Regions
(14948) N19 (2)
Sunspots

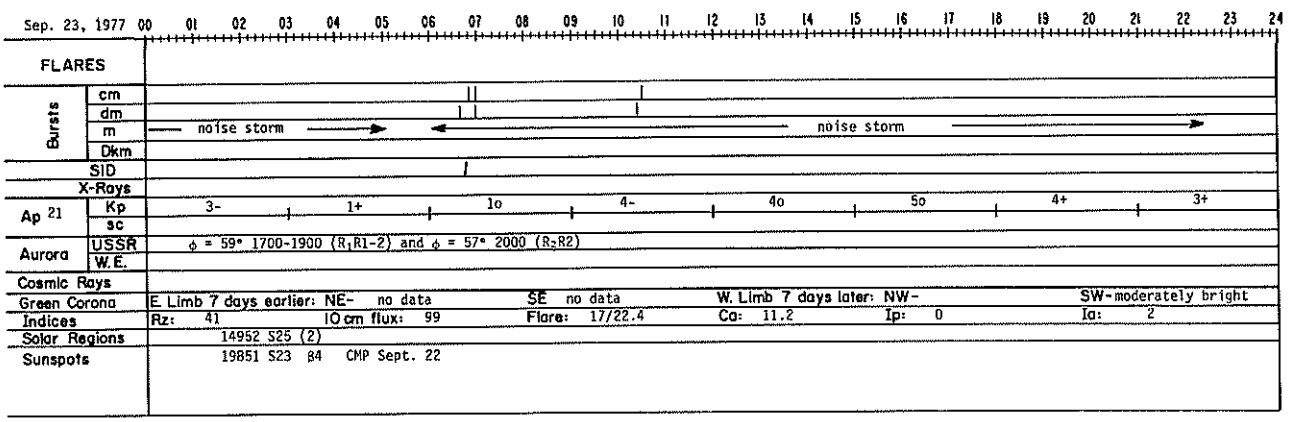

Sep. 18, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/43
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 6 Q10K
Kp
sc
1+ 3o 2- 2- 2o 1- 1o 1+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- SW-
Indices
Rz: 59 10cm flux: 119 Flare: 90/23.9 Ca: 17.8 Ip: 0 Ia: 0
Solar Regions
Sunspots

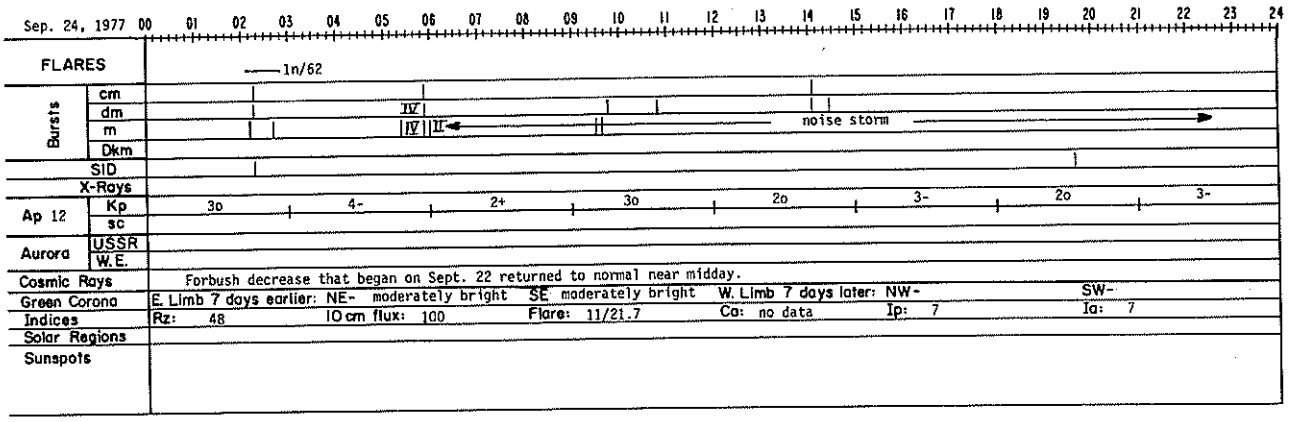

Sep. 19, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
noise storm
noise storm
Dkm
SID
X-Rays
Ap 42 D4
Kp
sc
1o 1- 1o 4o 6o 6- 6o 6-
1143(9)
Aurora
USSR
φ = 59° 1600-1700 (HA2); φ = 58° 1800, 2200-2300 (SB2); and φ = 57° 1900-2100 and 2400 (SB2)
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE-moderately bright SE- moderately bright W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 58 10cm flux: 104 Flare: 2340/24.0 Ca: 16.3 Ip: 8 Ia: 7
Solar Regions
14953 N27
Sunspots
(19852) N23 (βp)3
Remarks:
Highest peak in satellite-level proton event occurred late in the day.

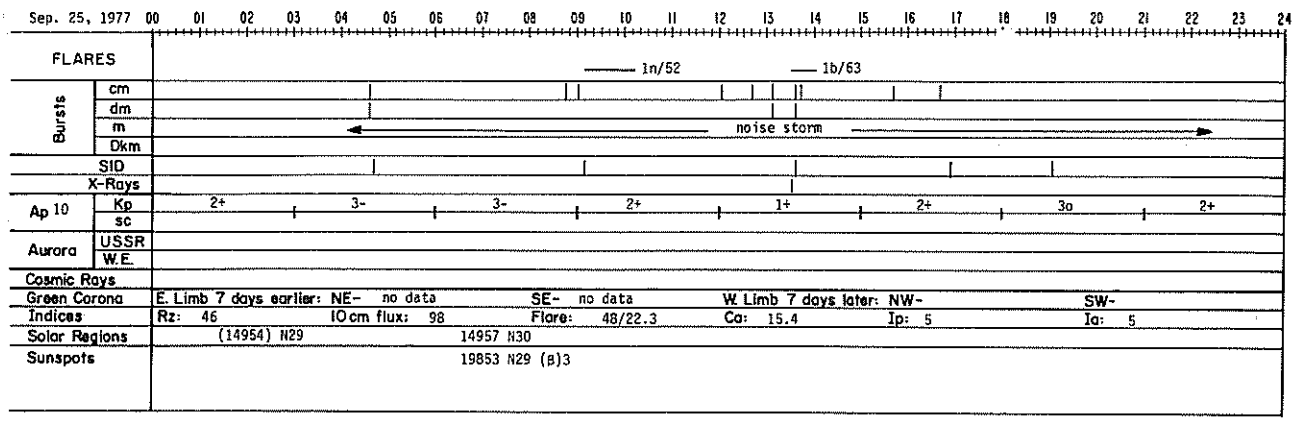

Sep. 20, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
2n/43
Bursts
cm
dm
m
ns
noise storm
Dkm
SID
X-Rays
Ap44 03
Kp
sc
6- 5- 5o 5- 5o 5+ 4o 4o
Aurora
USSR
φ = 58° 1600-1800 (R1A2), 1900 (R2B2), 2000-2200 (R2B1) and 2300 (HP1)
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- SW-
Indices
Rz: 58 10cm flux: 108 Flare: 78/24.0 Ca: 15.6 Ip: 6 Ia: 7
Solar Regions
Sunspots

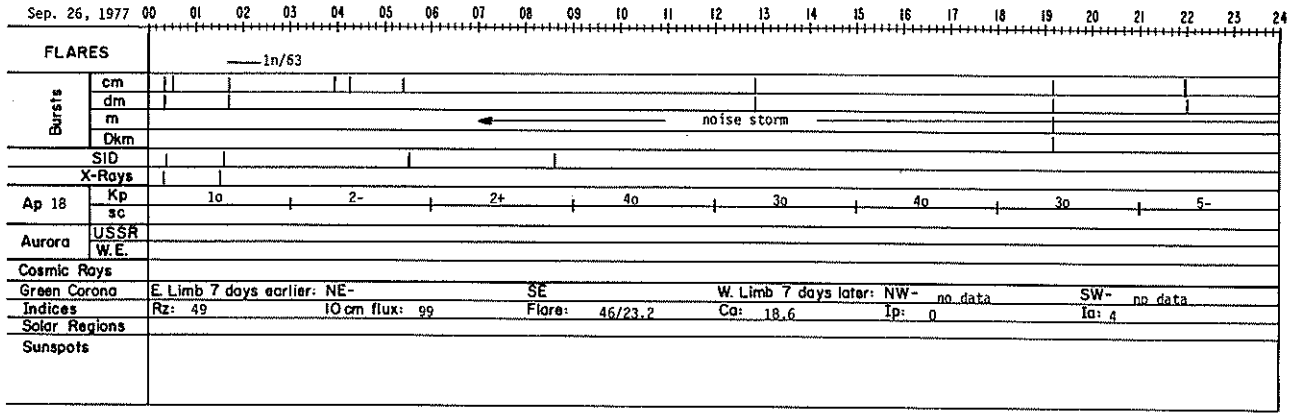

Sep. 21, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
ns
noise storm
SID
X-Rays
Ap 64 D2
Kp
sc
4+ 5+ 6o 7- 5- 3- 4+ 7+
2044(20)
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE-
W. Limb 7 days later: NW- SW- moderately bright
Indices
Rz: 59 10cm flux: 104 Flare: 22/22.9 Ca: no data Ip: 1 Ia: 7
Solar Regions
(14964) S24
Sunspots

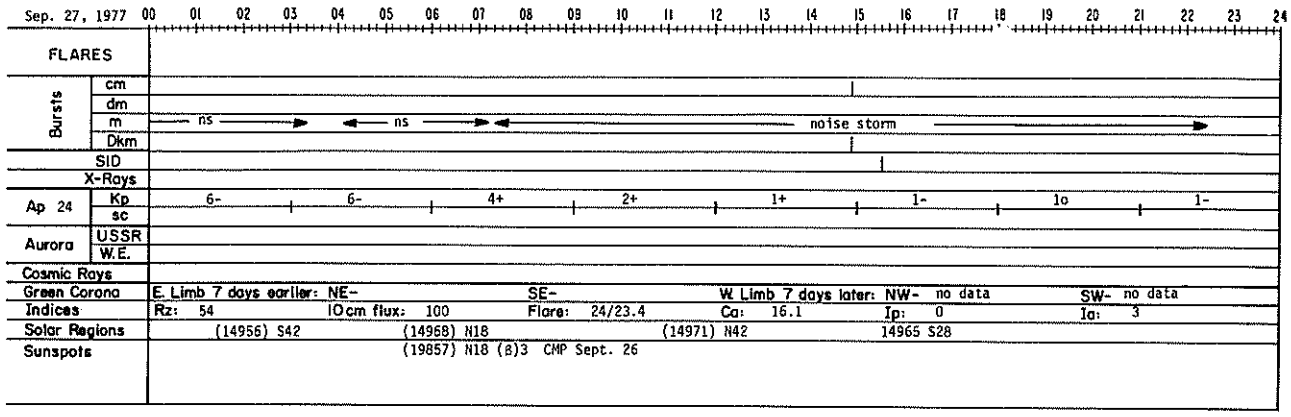

Sep. 22, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1f/43
1n/43
Bursts
cm
dm
m
Dkm
ns
noise storm
SID
X-Rays
Ap 63 D1
Kp
sc
6+ 6o 4+ 4o 5- 6+ 7- 4o
Aurora
USSR
W.E.
φ = 58° 1800 (HB2) and 1800-1900 (HA1); φ = 56° 2000-2400 (R1-2B3-4)
Cosmic Rays
Forbush decrease of about 7% began near 0000 UT, reached a maximum in the early part of the day, and returned to normal by Sept. 24.
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE- moderately bright
W. Limb 7 days later: NW- SW-
Indices
Rz: 42 10cm flux: 102 Flare: 24/22.4 Ca: no data Ip: 0 Ia: 6
Solar Regions
14951 N26 (14960) N15
Sunspots
19850 N23 αf2 CMP Sept. 21 N20

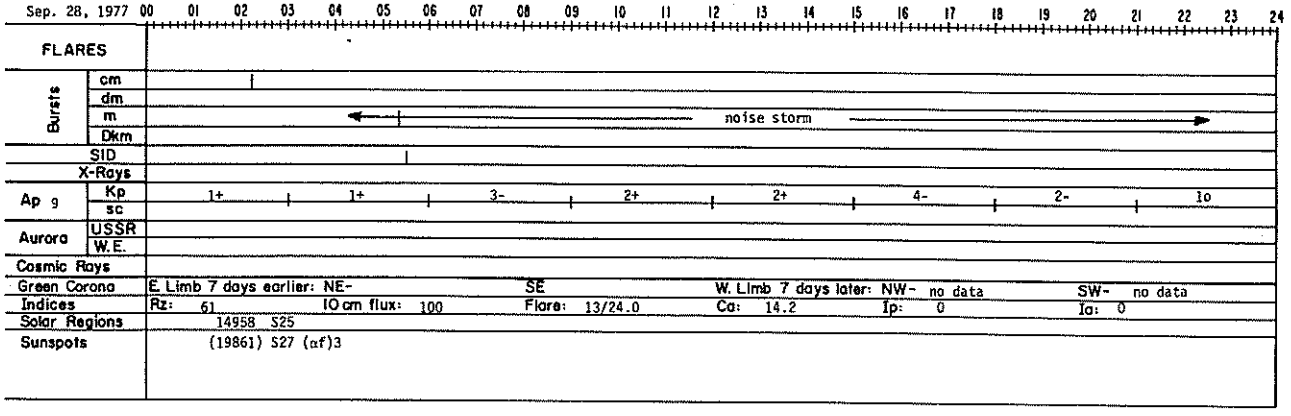

Sep. 23, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 21
Kp
sc
3- 1+ 1o 4- 4o 5o 4+ 3+
Aurora
USSR
W.E.
φ = 59° 1700-1900 (R1R1-2) and φ = 57° 2000 (R2R2)
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data
W. Limb 7 days later: NW- SW- moderately bright
Indices
Rz: 41 10cm flux: 99 Flare: 17/22.4 Ca: 11.2 Ip: 0 Ia: 2
Solar Regions
14952 S25 (2)
Sunspots
19851 S23 β4 CMP Sept. 22

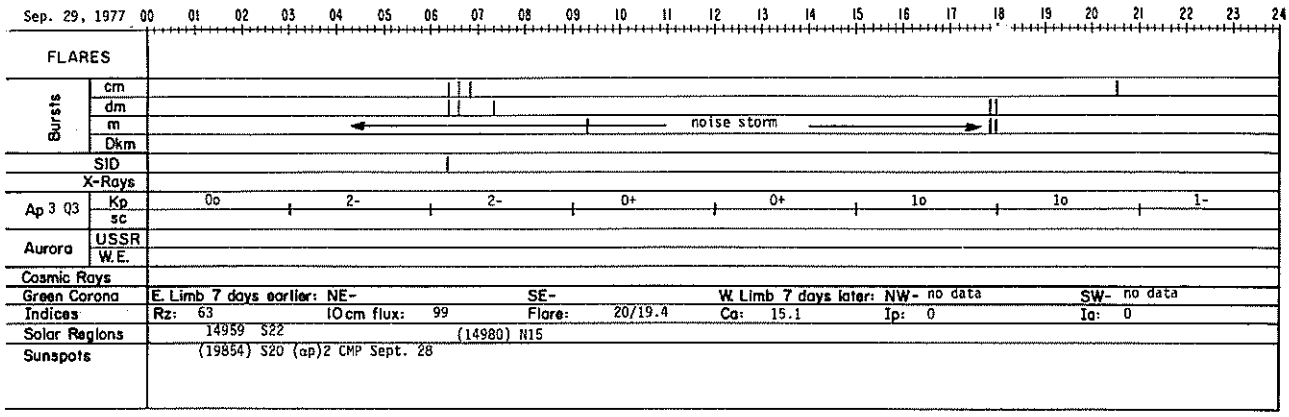

Sep. 24, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/62
Bursts
cm
dm
m
Dkm
IV
II
noise storm
SID
X-Rays
Ap 12
Kp
sc
3o 4- 2+ 3o 2o 3- 2o 3-
Aurora
USSR
W.E.
Cosmic Rays
Forbush decrease that began on Sept. 22 returned to normal near midday.
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE moderately bright
W. Limb 7 days later: NW- SW-
Indices
Rz: 48 10cm flux: 100 Flare: 11/21.7 Ca: no data Ip: 7 Ia: 7
Solar Regions
Sunspots

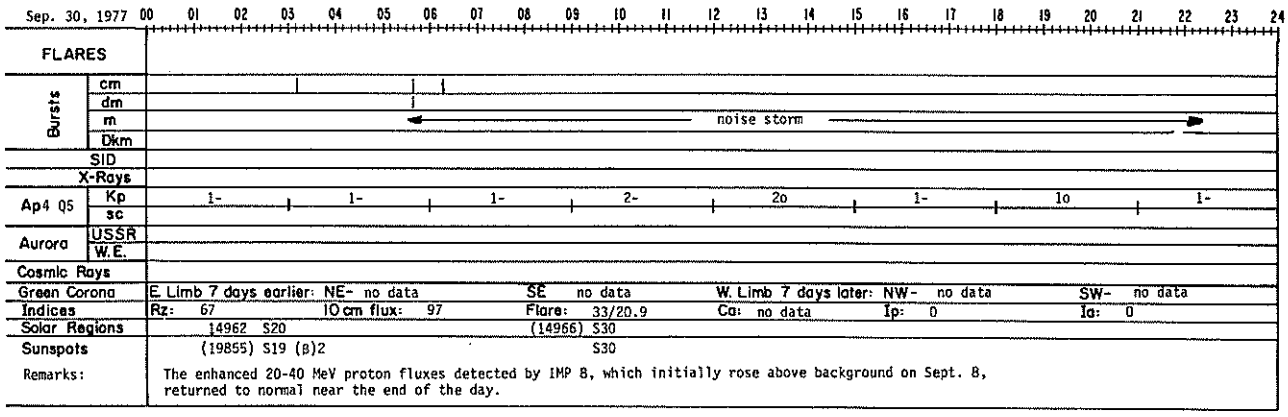

Sep. 25, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/52
1b/63
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 10
Kp
sc
2+ 3- 3- 2+ 1+ 2+ 3o 2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- SW-
Indices
Rz: 46 10cm flux: 98 Flare: 48/22.3 Ca: 15.4 Ip: 5 Ia: 5
Solar Regions
(14954) N29 14957 N30
Sunspots
19853 N29 (β)3


Sep. 26, 1977
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/63
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 18
Kp
sc
1o 2- 2+ 4o 3o 4o 3o 5-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 49 10cm flux: 99 Flare: 46/23.2 Ca: 18.6 Ip: 0 Ia: 4
Solar Regions
Sunspots


Sep. 27, 1977
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
ns
ns
noise storm
SID
X-Rays
Ap 24
Kp
sc
6- 6- 4+ 2+ 1+ 1- 1o 1-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 54 10cm flux: 100 Flare: 24/23.4 Ca: 16.1 Ip: 0 Ia: 3
Solar Regions
(14956) S42 (14968) N18 (14971) N42 14965 S28
Sunspots
(19857) N18 (β)3 CMP Sept. 26


Sep. 28, 1977
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 9
Kp
sc
1+ 1+ 3- 2+ 2+ 4- 2- 1o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 61 10cm flux: 100 Flare: 13/24.0 Ca: 14.2 Ip: 0 Ia: 0
Solar Regions
14958 S25
Sunspots
(19861) S27 (αf)3





REGIONAL FLARE INDEX

INCLUDES ALL FLARES

MC MATH PLAGE NO.	LAT	CMP DATE	DATE FIRST FLARE	DATE LAST FLARE	FLARE-INDEX SUM	FLARE-INDEX MEAN	TOTAL NO. OF FLARES
14929	S17	77/09/03.9	77/08/28	77/08/28	1.75	1.75	2
14935	N16	77/09/04.4	77/09/07	77/09/09	2.25	.75	2
14930	N25	77/09/06.4	77/08/30	77/09/13	111.44	7.43	27
14940	N22	77/09/10.9	77/09/07	77/09/07	.35	.35	1
14941	N21	77/09/12.3	77/09/06	77/09/08	2.06	.69	4
14942	N16	77/09/14.9	77/09/09	77/09/21	144.94	11.15	28
14943	N 8	77/09/15.6	77/09/07	77/09/22	2938.14	183.63	84
14948	N20	77/09/17.7	77/09/14	77/09/14	3.38	3.38	1
14964	S24	77/09/21.7	77/09/27	77/09/28	6.36	3.18	10
14951	N26	77/09/22.7	77/09/15	77/09/26	9.75	.81	3
14952	S25	77/09/23.2	77/09/18	77/09/28	112.88	10.26	40
14957	N29	77/09/25.8	77/09/25	77/09/26	17.16	8.58	4
14968	N18	77/09/27.1	77/09/30	77/09/30	4.62	4.62	2
14958	S25	77/09/28.3	77/10/02	77/10/02	.86	.86	1
14959	S21	77/09/29.0	77/09/24	77/09/24	.88	.88	1
14962	S20	77/09/30.0	77/09/24	77/09/27	17.45	4.36	10
14966	S30	77/09/30.2	77/09/28	77/09/28	1.90	1.90	1

SGD 404 Part II (Comprehensive)

Miscellaneous Data

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SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS
JANUARY 1978

JAN 1978	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
01	0000	0735	CULG	0000	0735								IS,W
			CULG				0016						IIIB,W
			CULG	0111.5	0112.5		0111.5	0112.5					IIIG,W
			CULG				0114						IIIB,W
			CULG	0213.5	0214		0213.5	0214					IIIG,W
			CULG				0402.5		1				IIIG
			CULG				0623	0624					IIIG,W
			CULG				0728.5	0729					IIIG,W
	2035	2400	CULG				2102	2147	1				IIIS
			CULG	2139	2400	1	2125	2147	1				IS
			CULG	2147.5	2149.5	2	2147.5	2149.5	2				IIIG
			CULG	2147	2400	2	2155	2400	2				IV
			CULG				2149	2216	3	2155	2200	2	II
			CULG							2150	2220	1	S.W.F.
			CULG				2152	2155	2	2152	2157	2	IIIG
			CULG				2205	2400	1				IIIN
			CULG				2230	2240	1				P
			CULG				2359		1				RSDP
02			CULG				0000	0736	1				IIIS
	0000	0736	CULG	0000	0100	1	0000	0245	1				IS
			CULG	0100	0736								IS,W
			CULG				0245	0736	1				IS
			CULG	2037	2400	1	2037	2400	1				IS
	2037	2400	CULG				2037	2400	1				IIIS
			CULG				2305.5		2				RSDP
03	0000	0736	CULG				0000	0736	1				IIIS
			CULG	0000	0736		0000	0736					IS,DC,W
			CULG	0308	0309	1	0308	0309	2	0308	0309	1	IIIG
			CULG				2037	2250	1				IS,DC
	2037	2400	CULG				2037	2400	1				IIIN
			CULG	2037	2400								IS,W
			CULG	2143.5	2145	1	2144	2145	1	2144	2145	1	IIIG
			CULG				2242.5	2245	2	2244	2245	2	IIIG
			CULG				2250	2400	1				IS,DC
04	0000	0737	CULG	0000	0737		0000	0737					IS,W
			CULG				0007	0008	1				IIIG
			CULG	0407.5	0412.5	2	0408	0412.5	3	0408	0411	2	IIIGG
			CULG	0601	0642	1	0051	0637.5	1				IIIN
	2037	2400	CULG	2258	2318		2309	2319					IIIN,W
05	0000	0737	CULG				0051	0711					IIIN,W
	2037	2400	CULG				2229	2400					IIIN,W
06			CULG	0000	0737								IS,W
	0000	0737	CULG	0432	0543	1	0000	0737	1				IIIN
	2039	2400	CULG	2039	2400	1	2039	2400	1				IS
			CULG				2039	2400	1				IIIN
07	0000	0728	CULG	0000	0100	1	0000	0100	1				IS,DC
			CULG				0000	0728	1				IIIN
			CULG	0100	0728	1	0100	0728	2				CONT,SLOWD
			CULG				0105	0130	2				IIIGN
			CULG				0304.5	0307	2	0305.5	0307.5	2	IIIG,V
	2039	2400	CULG	2039	2300	1	2039	2300	1				IS,DC,C
08	0000	0739	CULG	0000	0739		0000	0739					IS,W
			CULG				0000	0739	1				IIIN
			CULG				0001	0012.5	2	0001.5	0011.5	1	IIIGG
			CULG	0020	0120	1	0000	0205	1				CONT
			CULG				0208	0220	3	0208	0212	2	IIIGG,V
			CULG	0208	0400	2	0210	0400	2				IV
			CULG				0210	0239	2				II
			CULG							0211	0245	1	S.W.F.
			CULG				0708	0725	2				IIIGG
			CULG				0710	0739					IVW
			CULG	0710	0725	2							IV
			CULG				0712.5	0735	2				II

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS
JANUARY 1978

JAN 1978	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
08			CULG							0712	0735	1	S.W.F.
	2039	2400	CULG				2043	2258	1				IIIN
09	0000	0300	CULG										
	0309	0739	CULG				0500	0502	1				IIIG
	2040	2400	CULG				2317						IIIB,W
10	0000	0735	CULG				0327	0329	1				UNCLF.
			CULG				0645	0710					IIIN,W
			CULG	0656	0700	1	0654	0701	1				IIIGG
			CULG				0724	0735	1				CONT.
	2040	2400	CULG	2321.5	2322.5	1	2320	2325	2	2321	2325	1	IIIG,V
			CULG				2323.5	2335	2				II
			CULG	2335.5	2336.5	1	2334	2339	2	2334.5	2336	1	IIIGG,V
			CULG				2338	2355					II, W
			CULG				2340	2350	1				IIIN
11	0000	0740	CULG				0055	0246					IIIN,W
			CULG				0328	0337	1				II
			CULG				0521	0522	1				IIIG
	2040	2400	CULG				2241	2243	1				IIIG
12	0000	0720	CULG										
	2040	2400	CULG				2040	2400					IIIN,W
13			CULG	0142	0147	1	0142	0147	1				IIIGG
			CULG	0310	0311	1	0310	0311	1				IIIG,U
	0000	0740	CULG	0622	0652		0000	0610					IIIN,W
	2040	2400	CULG				2106.5						IIIB,W
			CULG				2214						IIIB,W
14	0000	0741	CULG				0140	0741					IS,W
	2021	2400	CULG	2041	2200	1	2041	2300	2				CONT
			CULG	2041	2400	1	2041	2400	2				IS,DC,C
			CULG				2041	2400	2				IIIS
15			CULG	0000	0741	1	0000	0741	2				IS,DC
	0000	0741	CULG				0000	0741	1				IIIS
			CULG				0426	0443	1				SCINTILLAT
	2041	2400	CULG	2041	2400	1	2041	2400	1				IS
			CULG				2041	2255					IIIN,W
16	0000	0741	CULG	0000	0030		0000	0030					IS,W
			CULG				0339.5	0340.5					IIIG,W
			CULG				0350	0352					IIIG,W
	2042	2400	CULG										
17	0000	0730	CULG										
	2043	2400	CULG				2212	2213	1				IIIG
			CULG				2324	2324.5	1				IIIG
18	0000	0742	CULG				0155.5						IIIB,W
			CULG				0353	0650	1				IS
			CULG				0357.5						IIIB,W
			CULG				0636.5	0638					IIIG,W
	2043	2400	CULG	2123	2123.5	1	2123	2124	1				IIIG
			CULG				2213						IIIB,W
19	0000	0743	CULG										
	2044	2400	CULG										
20	0000	0743	CULG										
	2044	2400	CULG										
21	0000	0743	CULG										
	2044	2400	CULG				2352.5		1				IIIB
22	0000	0744	CULG										
	2119	2400	CULG										
23	0000	0744	CULG				0004.5	0006	1				IIIG,V

SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

JANUARY 1978

JAN 1978	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
23			CULG	0012.5	0013		0012.5	0013					IIIG,W
			CULG	0350	0744								IS,W
	2044	2400	CULG	2044	2135	1	2044	2135	1				IS
			CULG				2308	2309					IIIG,W
			CULG				2313.5	2315					IIIG,W
24	0000	0744	CULG	0145.5		1							IIIB
			CULG				0410	0411					IIIG,U
	2045	2400	CULG				2055	2126					IIIN,W
25	0000	0744	CULG				0146	0147					IIIG,W,U
	2045	2400	CULG										
26	0000	0744	CULG				0233	0744					IS,W
			CULG				0244	0255	1				IIIGG,U
			CULG				0317	0744					IIIN,W
			CULG				0644	0645	1				IIIG,U
	2045	2400	CULG				2251	2255					IIIG,W
			CULG				2254	2400	1				IS
27	0000	0745	CULG				0000	0200	1				IS
			CULG				0117	0118					IIIG,W
			CULG				0430.5						IIIB,W
	2045	2400	CULG				2059	2400	1				IIIN
28	0000	0745	CULG	0023	0655	1	0000	0655	1				IIIN
			CULG	0220	0505		0310	0505					IS,W
			CULG	0432	0653		0432	0653					IIIN,W
	2045	2400	CULG				2045	2316	1				IIIN
			CULG	2055.5	2056	1	2055.5	2056.5	2				IIIG,U
29	0000	0740	CULG				0104		1				IIIB
			CULG	0342	0740	1	0203	0740	1				IIIN
			CULG	0345.5	0346.5	1	0345.5	0347.5	2				IIIG,V,U
			CULG	0400	0740		0342	0740					IS,W
			CULG				0548	0549	1				IIIG,U
			CULG				0738.5	0740	2				IIIG,U
	2045	2400	CULG				2045	2400	1				IS
			CULG				2150	2400					IIIN,W
30			CULG				0000	0310	1				IS
	0000	0541	CULG				0000	0240					IIIN,W
			CULG				0118	0119	1				IIIG
			CULG				0325	0333					II
	2036	2400	CULG				2108	2110	1				IIIG
31	0000	0745	CULG	0041	0602	1	0320	0602	1				IIIN
			CULG				0510	0745					IS,W
	2045	2400	CULG				2103	2400					IIIN,W

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

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of burst
C = Underlying continuum (particularly with type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III

RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES

JUNE 1977

Si XV (5.09Å) Hourly Averages (-Log (flux), ergs/cm^2 s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.48	5.53	5.37	5.55	5.45	5.52	M	5.15	5.64	5.64	5.47	M	5.61	5.83	5.83	M	5.80	5.90	5.61	5.04	4.83	5.03	5.33	*-1.
2	5.44	5.59	5.32	5.54	5.56	5.48	M	5.21	5.10	M	5.58	M	5.08	5.24	5.15	5.05	5.21	M	5.21	5.04	5.11	4.94	4.79	*-1.
3	4.72	4.66	4.63	4.87	5.04	4.70	M	4.94	4.98	M	4.69	5.21	5.20	4.84	5.11	5.06	4.93	4.61	4.91	4.90	5.05	4.90	M	5.27
4	5.17	5.20	5.16	5.24	5.30	5.06	5.06	5.28	5.03	4.92	4.96	5.20	4.48	4.99	5.13	5.10	5.29	5.22	4.95	5.40	4.91	5.24	M	5.51
5	5.30	5.39	5.00	5.53	5.56	5.41	5.61	5.44	5.53	5.42	5.49	5.47	5.52	5.62	5.49	5.54	5.51	5.60	5.62	5.60	5.74	5.37	M	5.79
6	5.56	5.79	5.74	5.27	5.53	5.66	5.53	M	5.71	5.17	5.35	5.70	5.63	5.72	M	5.78	5.61	5.68	5.71	5.01	5.25	5.53	5.61	M
7	5.62	5.72	5.63	5.37	5.76	5.84	5.66	M	5.72	5.71	5.82	5.80	5.94	5.70	5.66	5.64	5.72	5.76	5.78	5.33	5.46	5.50	AI	5.22
8	5.41	5.51	5.51	5.55	5.57	5.57	5.65	5.61	5.57	5.74	5.81	5.51	5.69	5.73	5.70	5.56	5.58	5.74	5.83	5.72	5.73	5.69	5.79	5.19
9	5.36	5.50	5.61	5.74	5.78	5.70	5.81	5.77	5.80	5.74	5.74	5.78	5.81	5.44	5.85	5.84	5.82	5.86	5.27	5.55	5.14	5.81	5.95	5.56
10	5.82	5.93	5.92	5.90	5.72	5.75	5.90	5.87	5.68	5.54	5.84	5.88	5.99	5.83	5.77	5.93	5.86	5.37	5.90	5.94	5.82	5.84	5.70	AU
11	5.58	5.82	5.95	5.95	5.92	5.97	5.76	5.87	5.92	5.86	5.94	5.93	5.95	5.96	5.91	5.92	5.99	5.72	5.94	5.95	5.57	5.70	5.73	A
12	5.98	6.02	5.96	5.85	5.92	5.88	5.50	5.82	5.72	5.44	6.08	6.06	5.93	6.10	6.09	5.82	6.12	6.14	6.12	6.17	6.21	6.36	6.39	*-1.
13	6.30	6.36	6.39	6.41	6.14	4.86	5.19	5.76	5.89	6.03	6.23	6.19	6.27	6.33	6.31	6.09	6.15	6.21	6.03	5.84	6.15	6.13	6.23	6.40
14	6.26	6.13	5.96	5.60	5.92	6.37	6.40	6.37	6.43	6.38	6.38	6.41	6.28	5.97	6.12	5.99	6.18	6.19	6.27	6.44	6.49	6.43	6.50	6.64
15	6.50	6.41	6.37	6.28	6.29	6.40	6.32	6.20	6.10	6.19	6.33	6.06	6.10	6.15	6.10	6.08	5.71	5.67	6.16	6.34	6.49	6.31	6.36	6.24
16	6.43	6.29	6.04	6.00	6.09	5.80	6.14	6.14	5.88	6.10	6.25	6.27	5.65	5.94	5.91	5.97	5.87	5.94	6.04	6.25	5.97	5.89	5.84	*-1.
17	6.11	6.00	6.19	6.30	6.23	5.68	5.76	5.73	5.96	5.93	5.85	M	M	6.07	6.16	6.14	6.01	6.12	6.07	6.24	6.18	6.06	M	5.54
18	5.88	5.99	6.04	6.02	6.12	5.92	5.76	5.96	5.97	5.96	5.83	M	6.10	6.04	6.02	6.00	5.84	5.99	5.94	6.05	5.94	M	M	M
19	6.07	5.84	5.98	5.86	5.87	5.93	6.01	6.08	M	6.08	M	5.54	6.12	5.92	5.74	6.01	5.98	5.85	M	5.98	5.63	5.84	M	M
20	5.47	5.41	5.36	5.51	5.66	5.88	6.03	5.90	5.90	5.96	5.75	5.83	5.91	5.73	5.75	5.82	5.95	6.01	6.05	5.92	6.13	5.82	6.00	6.04
21	5.96	5.49	5.66	5.94	6.13	6.10	5.78	5.87	5.92	5.83	5.58	5.53	5.63	5.45	5.68	5.54	5.55	5.30	M	5.34	5.53	5.60	5.69	5.50
22	5.51	5.71	5.76	5.64	5.65	5.70	5.64	5.39	5.41	5.25	M	5.36	5.59	5.57	5.39	4.76	4.69	5.09	M	5.27	5.24	5.11	5.30	M
23	M	5.22	M	M	5.37	5.53	5.44	5.50	5.37	5.48	5.23	4.76	M	M	5.27	M	M	5.44	M	M	5.37	5.25	5.09	4.94
24	*-1.	4.49	4.92	5.02	4.93	M	4.55	4.56	M	M	4.09	4.13	4.37	M	4.44	4.82	M	5.00	4.52	4.54	5.06	4.99	4.99	M
25	M	4.96	4.71	4.84	4.82	4.90	4.95	4.93	4.91	4.81	4.76	4.60	4.89	4.88	4.90	M	M	4.98	M	M	4.75	M	4.62	4.55
26	M	M	M	M	4.39	M	M	4.52	M	M	M	M	M	M	M	M	4.32	4.41	4.80	M	4.68	M	4.60	4.84
27	M	4.95	M	M	4.61	M	M	4.73	4.97	5.02	4.72	M	4.92	4.97	M	4.92	5.12	5.27	5.11	M	5.20	4.91	4.32	5.06
28	5.00	5.17	5.18	M	4.39	4.97	5.21	5.20	5.14	5.11	5.43	5.51	5.55	5.48	M	5.44	5.56	5.40	4.64	5.37	5.28	5.37	5.40	5.33
29	4.96	5.07	5.00	4.90	5.12	4.66	4.59	4.92	5.11	5.21	4.96	5.33	5.39	5.30	M	5.53	5.55	M	5.52	5.46	5.49	5.17	M	5.13
30	5.44	5.46	5.42	5.39	5.34	5.63	5.73	5.65	5.54	5.53	5.62	5.60	5.43	5.60	M	5.56	5.64	M	5.61	5.72	5.60	5.71	5.82	5.77

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

These June 1977 data are more accurate and replace those data published in SGD 402 Part II, pages 66-68, February 1978 issue.

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
JUNE 1977

Si XIII (5.68A) Hourly Averages (-Log (flux), ergs/cm^{2}s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.88	5.91	5.77	6.04	5.80	5.87	M	5.51	6.60	6.29	5.91	M	6.02	6.23	6.36	M	6.23	7.46	6.01	5.41	5.25	5.39	5.67	*-1.
2	5.91	6.11	5.69	6.02	5.94	5.90	M	5.62	5.55	M	6.10	M	5.41	5.66	5.66	5.50	5.70	M	5.65	5.49	5.55	5.33	5.17	*-1.
3	5.17	5.10	5.04	5.27	5.47	5.11	M	5.33	5.36	M	5.04	5.52	5.59	5.25	5.53	5.46	5.34	4.97	5.26	5.21	5.36	5.22	M	5.61
4	5.56	5.64	5.52	5.62	5.81	5.40	5.37	5.72	5.33	5.28	5.29	5.63	4.91	5.36	5.54	5.47	5.69	5.54	5.31	5.74	5.61	5.56	M	5.88
5	5.66	5.78	5.32	5.86	5.91	5.80	6.04	5.71	5.83	5.87	5.81	5.79	5.84	6.01	5.82	5.82	5.83	5.90	5.93	5.92	6.09	5.65	M	6.29
6	5.86	6.26	6.18	5.63	5.85	5.97	5.85	M	6.37	5.56	5.72	6.04	5.88	6.21	M	6.08	5.95	6.04	6.09	5.31	5.62	5.94	5.97	M
7	5.98	6.01	5.95	5.66	6.00	6.20	5.99	M	6.02	6.06	6.17	6.21	6.45	6.11	6.09	6.28	6.18	6.08	6.16	5.66	5.81	5.90	A0	5.61
8	5.79	5.95	5.79	5.90	5.94	5.88	6.09	5.89	5.95	6.05	6.26	5.80	6.07	6.08	6.02	5.91	5.87	6.06	6.23	6.11	6.06	6.85	6.15	5.51
9	5.75	5.86	5.87	6.00	6.12	5.97	6.16	6.14	6.24	6.05	6.05	6.14	6.20	5.85	6.22	6.10	6.13	6.24	5.68	5.92	5.43	6.24	6.35	5.91
10	6.28	6.25	6.25	6.34	6.09	6.05	6.31	6.17	6.14	5.97	6.24	6.21	6.32	6.37	6.19	6.38	6.28	5.68	6.25	6.35	6.27	6.14	6.07	AY
11	5.91	6.22	6.34	6.35	6.39	6.39	5.98	6.21	6.37	6.18	6.29	6.32	6.30	6.25	6.19	6.27	6.57	6.00	6.36	6.20	5.88	6.01	6.14	A
12	6.11	6.37	6.36	6.26	6.24	6.23	6.00	6.25	6.07	5.85	6.46	6.44	6.27	6.59	6.42	6.17	6.47	6.54	6.45	6.63	6.63	6.97	7.15	*-1.
13	6.83	6.76	7.15	6.98	6.48	5.24	5.61	6.16	6.45	6.60	6.84	6.75	7.91	7.41	7.07	6.53	6.59	6.99	6.39	6.32	7.01	6.64	6.86	6.88
14	6.92	6.66	6.43	6.13	6.40	7.05	6.89	6.94	6.97	7.03	6.83	6.52	6.92	6.44	6.52	6.51	6.98	7.01	6.69	6.81	7.30	7.00	7.08	7.13
15	6.89	6.72	6.97	6.66	6.69	6.77	6.85	6.61	6.53	6.59	6.65	6.43	6.59	6.51	6.76	6.47	6.27	6.09	6.46	6.74	6.92	6.87	7.50	6.60
16	6.82	6.57	6.45	6.38	6.49	6.17	6.32	6.52	6.27	6.68	6.61	6.46	6.03	6.31	6.18	6.40	6.17	6.23	6.43	6.59	6.38	6.29	6.27	*-1.
17	6.42	6.40	6.48	6.74	6.35	5.94	6.07	6.15	6.24	6.29	6.08	M	M	7.53	6.47	6.63	6.26	6.65	6.64	6.57	6.18	6.41	M	5.77
18	6.21	6.31	6.33	6.42	6.21	6.24	6.14	6.24	6.12	6.31	6.21	M	6.46	6.18	6.66	6.87	6.05	6.27	6.27	6.41	M	M	M	M
19	7.70	M	5.91	5.70	5.75	6.10	6.03	5.76	M	5.89	M	5.10	7.02	6.25	5.96	6.81	6.24	6.29	M	6.25	5.94	6.28	M	M
20	5.83	5.67	5.73	5.82	6.02	6.11	6.41	6.12	6.17	6.26	6.01	6.13	6.24	6.02	5.98	6.15	6.30	6.19	6.35	6.27	6.43	6.10	6.30	6.57
21	6.23	5.84	6.13	6.29	6.38	6.47	6.12	6.22	6.28	6.44	5.92	5.89	6.01	5.78	6.08	6.23	5.92	5.66	M	5.70	5.93	5.96	6.13	5.83
22	5.87	6.10	6.09	6.18	6.05	6.06	6.05	5.77	5.68	5.56	M	5.69	6.00	6.09	5.82	5.07	5.00	5.47	M	5.66	5.70	5.58	5.74	M
23	M	5.67	M	M	5.79	5.91	5.82	5.95	5.71	5.87	5.54	5.17	M	M	5.76	M	M	5.83	M	M	5.80	5.68	5.51	5.38
24	*-1.	4.90	5.37	5.43	5.36	M	4.95	4.95	M	M	4.48	4.52	4.78	M	4.90	5.23	M	5.45	5.03	5.05	5.56	5.51	5.46	M
25	M	5.40	5.18	5.29	5.32	5.37	5.44	5.44	5.40	5.28	5.22	5.03	5.36	5.37	5.36	M	M	5.49	M	M	5.26	M	5.15	5.13
26	M	M	M	M	4.85	M	M	5.07	M	M	M	M	M	M	M	M	4.82	4.85	5.28	M	5.21	M	5.07	5.31
27	M	5.36	M	M	5.02	M	M	5.17	5.39	5.45	5.14	M	5.35	5.38	M	5.31	5.59	5.74	5.57	M	5.65	5.29	4.74	5.43
28	5.32	5.55	5.58	M	4.72	5.34	5.63	5.59	5.47	5.44	5.82	5.98	5.97	5.87	M	5.79	5.96	5.81	4.94	5.75	5.66	5.74	5.75	5.69
29	5.31	5.44	5.31	5.22	5.44	4.99	4.94	5.27	5.46	5.57	5.39	5.74	5.79	5.67	M	5.95	5.91	M	5.93	5.82	5.85	5.54	M	5.51
30	5.85	5.95	5.85	5.74	5.80	6.04	6.29	6.06	5.98	5.92	6.04	6.04	5.94	5.99	M	5.87	6.08	M	6.08	6.21	6.00	6.15	6.31	6.14

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

These June 1977 data are more accurate and replace those data published in SGD 402 Part II, pages 66-68, February 1978 issue.

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
JUNE 1977

Si XII (5.82Å) Hourly Averages (-Log (flux), ergs/cm^2 s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.54	5.53	5.44	5.60	5.57	5.61	M	5.38	5.75	5.69	5.59	M	5.72	5.78	5.83	M	5.80	5.89	5.67	5.41	5.22	5.31	5.48	*-1.
2	5.55	5.61	5.54	5.64	5.63	5.60	M	5.49	5.37	M	5.58	M	5.45	5.48	5.39	5.44	5.41	M	5.44	5.31	5.37	5.24	5.13	*-1.
3	5.07	5.05	5.04	5.15	5.23	5.05	M	5.19	5.27	M	5.01	5.38	5.38	5.31	5.37	5.29	5.27	5.04	5.19	5.19	5.25	5.23	M	5.42
4	5.37	5.32	5.33	5.36	5.44	5.29	5.29	5.40	5.34	5.27	5.22	5.33	5.02	5.22	5.27	5.26	5.33	5.31	5.21	5.39	5.23	5.37	M	5.49
5	5.44	5.44	5.27	5.49	5.52	5.44	5.58	5.49	5.48	5.45	5.49	5.45	5.54	5.56	5.52	5.48	5.53	5.51	5.57	5.59	5.65	5.48	M	5.68
6	5.60	5.67	5.67	5.44	5.55	5.57	5.59	M	5.65	5.37	5.44	5.56	5.62	5.71	M	5.63	5.60	5.62	5.64	5.28	5.38	5.49	5.59	M
7	5.59	5.63	5.58	5.51	5.69	5.74	5.63	M	5.62	5.51	5.66	5.64	5.63	5.64	5.61	5.64	5.66	5.61	5.64	5.46	5.46	5.49	AQ	5.39
8	5.46	5.52	5.53	5.54	5.55	5.54	5.57	5.60	5.55	5.65	5.67	5.55	5.64	5.64	5.60	5.58	5.57	5.63	5.72	5.66	5.61	5.59	5.66	5.47
9	5.47	5.53	5.60	5.63	5.65	5.61	5.67	5.66	5.69	5.67	5.67	5.71	5.74	5.59	5.74	5.73	5.71	5.73	5.58	5.61	5.41	5.69	5.77	5.62
10	5.77	5.78	5.80	5.75	5.70	5.72	5.77	5.74	5.70	5.63	5.72	5.79	5.78	5.73	5.74	5.74	5.79	5.55	5.77	5.82	5.78	5.82	5.76	AW
11	5.62	5.71	5.79	5.83	5.80	5.82	5.78	5.77	5.82	5.78	5.85	5.85	5.82	5.82	5.81	5.80	5.86	5.73	5.90	5.80	5.69	5.73	5.74	A
12	5.78	5.84	5.86	5.82	5.82	5.80	5.64	5.83	5.80	5.62	5.94	5.90	5.87	5.96	5.95	5.88	6.02	6.04	6.03	6.01	6.06	6.22	6.15	*-1.
13	6.19	6.18	6.20	6.20	6.16	5.29	5.52	5.85	6.00	5.98	6.03	6.10	6.09	6.13	6.11	6.13	6.09	6.11	6.10	6.02	6.09	6.07	6.08	6.20
14	6.13	6.15	6.07	5.92	6.00	6.23	6.26	6.24	6.24	6.26	6.31	6.22	6.21	6.07	6.13	6.07	6.15	6.13	6.20	6.31	6.31	6.35	6.43	6.39
15	6.32	6.31	6.31	6.28	6.23	6.34	6.27	6.27	6.30	6.28	6.30	6.13	6.16	6.22	6.18	6.15	5.97	5.89	6.19	6.19	6.34	6.24	6.18	6.17
16	6.29	6.23	6.19	6.10	6.10	5.99	6.18	6.14	5.96	6.14	6.20	6.19	5.94	6.02	5.96	6.08	5.96	5.99	6.10	6.02	6.00	5.99	6.03	*-1.
17	6.01	5.99	6.09	6.14	6.06	5.79	5.91	5.82	5.92	5.87	5.82	M	M	5.94	6.11	5.99	5.94	6.09	6.17	6.13	5.91	5.95	M	5.90
18	5.87	5.84	6.02	6.00	5.91	5.88	5.82	5.97	5.86	5.89	5.95	M	6.03	5.99	5.70	5.87	5.71	6.03	5.68	5.67	5.84	M	M	M
19	5.92	5.70	5.56	5.10	5.05	5.25	5.60	M	M	7.84	M	5.54	5.45	5.64	5.74	5.87	5.86	5.76	M	5.87	5.69	5.76	M	M
20	5.58	5.61	5.48	5.62	5.74	5.83	5.93	5.95	5.85	5.89	5.79	5.80	5.75	5.82	5.84	5.82	5.88	5.92	5.95	5.84	6.00	5.91	5.92	5.99
21	5.97	5.84	5.83	5.95	5.99	6.01	5.85	5.95	5.93	5.83	5.75	5.68	5.74	5.61	5.69	5.70	5.70	5.51	M	5.51	5.61	5.64	5.67	5.60
22	5.57	5.68	5.70	5.63	5.63	5.64	5.65	5.51	5.57	5.42	M	5.45	5.59	5.58	5.50	5.15	5.08	5.26	M	5.43	5.43	5.40	5.44	M
23	M	5.41	M	M	5.49	5.54	5.48	5.51	5.47	5.50	5.48	5.24	M	M	5.40	M	M	5.53	M	M	5.47	5.49	5.39	5.26
24	*-1.	4.95	5.23	5.29	5.21	M	5.05	5.05	M	M	4.50	4.56	4.76	M	4.89	5.11	M	5.26	5.01	5.05	5.31	5.28	5.24	M
25	M	5.24	5.14	5.21	5.24	5.21	5.26	5.28	5.24	5.14	5.13	4.99	5.23	5.24	5.22	M	M	5.27	M	M	5.16	M	5.07	5.08
26	M	M	M	M	4.74	M	M	4.98	M	M	M	M	M	M	M	M	4.81	4.88	5.11	M	5.09	M	5.04	5.16
27	M	5.24	M	M	5.09	M	M	5.07	5.21	5.24	5.14	M	5.23	5.25	M	5.18	5.28	5.36	5.36	M	5.39	5.31	4.93	5.29
28	5.28	5.39	5.41	M	4.89	5,30	5.38	5.43	5.39	5.40	5.47	5.51	5.56	5.55	M	5.51	5.60	5.51	5.08	5.46	5.46	5.47	5.50	5.46
29	5.19	5.27	5.21	5.14	5.26	5.10	4.93	5.16	5.26	5.31	5.22	5.42	5.45	5.39	M	5.53	5.56	M	5.57	5.54	5.54	5.46	M	5.33
30	5.55	5.52	5.54	5.49	5.49	5.59	5.70	5.63	5.59	5.62	5.61	5.60	5.58	5.62	M	5.65	5.64	M	5.66	5.63	5.60	5.65	5.74	5.69

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
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COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
JULY 1977

Si XV (5.09Å) Hourly Averages (-Log (flux), ergs/cm² s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.64	M	5.77	5.53	5.54	5.60	5.68	5.76	5.72	5.66	5.67	5.67	M	5.64	5.60	M	M	M	M	5.00	4.80	5.63	5.67	*-1.
2	5.75	5.69	5.76	5.78	5.70	5.78	5.64	5.58	5.64	5.67	5.61	5.76	5.69	5.76	5.78	M	5.76	5.73	5.77	5.78	5.69	5.59	5.40	*-1.
3	5.67	M	M	5.80	5.76	5.84	5.89	5.88	5.85	5.69	5.68	5.70	5.89	5.91	5.67	5.52	5.55	5.74	5.73	5.57	5.61	5.52	5.55	5.45
4	5.39	5.64	5.59	5.61	5.71	5.78	5.66	5.63	5.82	5.78	5.84	5.84	5.85	5.69	5.85	5.66	5.70	5.57	M	5.94	5.77	5.88	5.50	AC
5	5.81	5.64	5.69	5.70	5.23	5.64	5.52	5.44	5.58	5.97	5.85	5.85	5.78	M	5.77	5.92	5.94	5.80	5.98	5.95	5.94	5.96	5.46	5.91
6	5.60	5.67	5.68	5.67	5.90	5.64	5.79	5.79	5.74	5.60	5.83	5.53	5.40	5.38	5.04	5.55	5.59	5.08	5.64	5.34	5.63	5.65	5.61	M
7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	5.55
8	5.95	6.08	5.75	5.88	5.55	5.90	5.68	6.19	5.99	M	M	M	M	M	M	M	M	M	M	M	6.43	6.34	6.40	6.67
9	M	6.45	6.54	6.44	6.37	6.49	6.26	6.50	6.41	6.35	6.44	6.48	5.58	6.13	5.89	6.40	6.52	6.55	M	5.99	6.19	6.46	6.53	6.67
10	6.83	6.66	6.76	6.64	6.82	6.63	6.66	6.74	6.64	6.84	6.90	6.85	6.74	6.87	6.47	6.73	6.71	6.75	6.73	6.35	6.33	6.69	6.81	*-1.
11	6.32	6.44	6.75	6.62	6.27	6.02	6.12	5.77	6.13	6.02	5.20	5.76	6.02	6.65	6.36	6.71	7.40	7.22	7.33	7.36	7.12	7.42	7.34	6.96
12	6.30	5.90	5.70	5.99	6.20	6.43	6.53	6.55	5.92	5.88	5.94	5.92	5.87	6.06	6.14	6.28	6.51	6.69	6.12	6.60	6.65	6.58	6.52	6.75
13	6.46	6.10	6.63	6.73	6.82	6.60	6.73	5.79	6.20	6.50	6.69	6.42	6.49	6.09	6.57	6.60	6.05	6.23	6.55	6.86	6.95	6.88	5.96	6.23
14	6.76	6.95	6.95	7.24	6.75	6.94	M	7.04	6.78	7.05	6.88	M	5.02	6.72	6.54	6.39	5.80	6.69	6.62	6.73	6.79	6.84	6.77	6.73
15	6.66	6.72	6.55	6.58	6.58	6.60	6.35	6.58	6.17	5.91	6.56	6.52	6.43	6.58	6.09	6.21	6.53	6.70	6.59	6.76	6.66	6.49	6.86	6.75
16	6.58	6.70	6.74	6.73	6.36	6.69	6.61	6.72	6.86	6.85	6.59	M	6.71	6.82	6.80	6.52	6.82	6.85	6.82	6.85	6.86	6.91	6.73	6.86
17	6.80	6.81	6.88	6.60	6.63	6.77	6.64	6.87	6.89	6.88	6.78	6.73	6.93	6.81	6.82	6.71	6.81	6.75	6.75	6.83	6.80	6.67	6.76	AL
18	6.69	6.72	6.70	6.73	6.56	6.63	6.54	6.51	6.62	M	6.43	6.43	6.54	6.44	6.11	5.52	5.87	6.21	6.29	6.41	6.43	6.41	6.52	6.46
19	6.36	M	M	6.52	6.46	6.35	6.80	6.40	M	M	M	M	M	M	M	6.34	6.27	6.63	M	6.69	6.11	M	5.30	M
20	M	4.22	M	4.68	4.95	M	5.19	M	5.41	5.55	M	M	M	M	5.93	M	M	6.18	M	M	6.33	M	6.43	6.32
21	6.21	6.34	M	6.23	6.45	M	6.45	M	6.59	M	M	M	6.44	M	6.43	6.49	M	6.42	6.44	6.53	6.37	M	6.48	5.79
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	6.06	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	6.29	6.23	6.00	6.03	M	M	5.84
24	M	M	M	M	6.24	M	M	M	M	M	M	6.33	M	6.40	6.56	5.90	6.20	6.27	M	M	6.42	6.22	*-1.	6.43
25	6.57	6.55	6.35	6.37	6.30	5.90	6.08	6.29	M	5.75	M	6.27	M	6.03	6.31	6.19	6.13	6.24	6.33	6.18	5.82	5.90	M	6.12
26	5.96	5.74	M	M	5.98	5.95	6.10	6.20	M	6.22	6.14	6.16	6.40	6.32	6.20	6.41	6.43	6.21	5.68	6.18	6.42	6.03	6.17	6.03
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	6.60
28	6.71	6.51	6.57	6.25	6.36	6.53	6.58	6.51	6.15	6.09	6.70	M	6.51	6.51	5.63	5.41	5.85	5.91	6.08	6.19	6.23	6.14	6.15	6.20
29	6.12	6.21	6.39	6.04	6.39	6.46	M	6.25	6.35	6.29	6.24	6.17	6.35	6.30	6.49	6.22	5.82	6.12	6.11	6.15	6.58	6.39	6.29	M
30	6.40	6.46	6.28	6.01	6.06	6.32	6.02	5.82	5.32	M	6.00	6.23	6.31	6.44	6.25	6.31	6.52	6.62	6.34	6.53	6.39	6.20	M	M
31	6.13	M	6.00	6.73	6.84	6.61	M	M	6.80	M	M	M	M	M	6.74	M	M	M	6.57	6.00	5.86	5.80	5.68	M

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

Data are missing for days 7, 22 and 27 July, 10 August, and 22 and 30 September 1977 due to a delay in data tape deliveries. Corrected versions of these tables will be published later.

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
JULY 1977

Si XIII (5.68A) Hourly Averages (-Log (flux), ergs/cm^{2}s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	6.02	M	6.23	5.98	5.94	6.10	6.05	6.20	6.13	6.09	6.04	6.05	M	6.05	6.21	M	M	M	M	5.32	5.08	6.02	6.15	*-1.
2	6.17	6.08	6.19	6.24	6.00	6.16	6.08	5.96	6.07	6.26	5.99	6.43	6.09	6.38	6.25	M	6.20	6.15	6.36	6.18	6.14	5.95	5.80	*-1.
3	6.09	M	M	6.30	6.09	6.24	6.49	6.43	6.35	6.24	6.15	6.11	6.45	6.33	6.11	6.19	6.06	6.21	6.05	6.09	6.17	5.95	6.13	5.89
4	5.96	6.08	6.12	6.08	6.21	6.39	6.13	6.12	6.31	6.21	6.28	6.32	6.27	6.07	6.29	6.10	6.04	6.01	M	6.33	6.19	6.37	5.82	AD
5	6.27	6.09	6.17	6.12	5.70	6.09	5.94	5.84	5.95	6.42	6.23	6.27	6.11	M	6.38	6.38	6.86	6.21	6.31	6.43	6.41	6.87	5.74	6.30
6	6.08	6.10	6.06	6.08	6.32	6.21	6.20	6.24	6.28	6.04	6.34	5.94	5.87	5.85	5.48	5.98	6.05	5.45	6.05	5.78	6.06	6.21	6.22	M
7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	5.87
8	6.35	6.51	6.21	6.22	5.91	6.39	6.11	6.46	6.44	M	M	M	M	M	M	M	M	M	M	M	7.02	6.59	6.93	6.88
9	M	7.32	6.92	6.89	6.84	6.91	6.60	7.05	6.72	6.88	6.93	6.95	5.85	6.60	6.28	7.53	6.89	7.76	M	6.19	6.80	6.89	6.95	7.34
10	7.15	7.11	7.43	7.22	B	6.89	7.12	7.21	7.49	7.25	7.20	7.26	7.27	7.18	6.97	7.15	7.75	7.35	7.60	6.86	6.74	B	B	*-1.
11	6.66	6.99	B	7.28	6.79	6.40	6.61	6.14	6.53	6.39	5.66	6.17	6.51	7.12	6.66	7.11	7.70	7.91	7.83	7.52	7.53	7.71	7.77	7.57
12	6.76	6.37	6.19	6.48	6.63	6.86	6.90	6.77	6.32	6.24	6.35	6.35	6.28	6.53	6.58	6.95	7.06	7.14	6.57	7.05	7.00	7.80	6.87	7.12
13	5.90	6.47	7.04	7.05	7.45	7.20	7.78	6.22	6.90	6.99	7.82	6.38	7.08	6.59	7.27	7.30	6.44	7.67	7.29	7.46	7.77	7.27	6.26	6.65
14	7.36	7.21	7.17	B	7.06	7.18	M	7.22	M	7.46	7.19	M	5.36	7.70	6.58	6.83	6.21	6.96	7.09	7.52	7.12	7.33	7.10	7.12
15	7.07	7.12	7.04	6.95	7.04	7.30	6.79	7.09	6.44	6.29	7.15	7.63	6.85	7.00	6.64	6.64	6.80	7.09	7.08	7.24	6.97	7.00	7.69	7.05
16	B	7.19	B	7.21	6.96	7.29	6.85	B	M	7.39	7.04	M	7.61	7.06	7.39	6.84	7.60	7.15	7.00	B	7.32	7.66	6.93	7.21
17	7.14	7.80	7.50	6.87	7.24	7.37	6.91	7.40	7.17	7.08	7.25	6.97	7.23	7.27	7.40	7.73	7.00	7.39	7.05	7.37	7.16	7.00	7.12	A
18	7.04	7.25	7.03	7.23	6.88	7.38	7.08	6.98	7.49	M	7.02	6.97	6.92	6.90	6.49	5.91	6.30	6.70	7.03	6.90	6.79	6.88	7.57	7.17
19	6.94	M	M	6.61	6.37	6.31	6.79	6.65	M	M	M	M	M	M	M	7.05	6.65	6.68	M	6.95	6.48	M	5.61	M
20	M	4.63	M	5.05	5.43	M	5.59	M	5.81	5.84	M	M	M	M	6.48	M	M	6.81	M	M	6.80	M	6.68	6.59
21	6.60	6.89	M	6.50	6.90	M	6.90	M	6.65	M	M	M	6.59	M	6.87	7.06	M	7.30	7.52	M	6.76	M	6.86	6.24
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	6.05	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	6.21	6.11	5.36	6.02	M	M	5.92
24	M	M	M	M	6.91	M	M	M	M	M	M	6.80	M	7.31	M	6.43	6.34	6.82	M	M	6.97	6.69	*-1.	6.85
25	6.64	6.98	6.64	6.80	6.61	6.37	6.47	7.63	M	6.09	M	6.50	M	6.43	6.63	6.68	6.46	6.58	6.62	6.44	6.24	6.44	M	6.59
26	6.41	6.34	M	M	6.38	6.30	6.69	7.43	M	6.61	6.44	6.55	6.65	6.49	6.31	6.72	7.10	6.61	6.19	6.48	6.76	6.69	6.52	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	6.77
28	B	7.33	7.04	6.78	6.93	7.34	7.45	6.84	6.43	6.52	B	M	7.03	7.18	6.00	5.80	6.28	6.39	6.64	6.63	6.90	6.67	6.99	7.65
29	6.57	6.49	6.80	6.42	6.74	6.74	M	6.43	6.71	6.64	6.70	6.47	6.65	6.82	7.60	6.59	6.28	6.52	6.45	6.63	6.56	6.94	6.75	M
30	6.70	7.79	6.73	6.52	6.66	6.98	6.31	6.23	5.76	M	6.49	6.54	6.78	7.45	6.89	6.60	6.83	6.97	6.74	6.69	6.61	6.51	M	M
31	6.33	M	6.26	7.05	6.80	6.99	M	M	6.85	M	M	M	M	M	M	M	M	M	7.71	6.75	6.35	6.41	6.32	M

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

Data are missing for days 7, 22 and 27 July, 10 August, and 22 and 30 September 1977 due to a delay in data tape deliveries. Corrected versions of these tables will be published later.

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
JULY 1977

Si XII (5.82Å) Hourly Averages (-Log (flux), ergs/cm^2 s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.61	M	5.70	5.60	5.59	5.60	5.68	5.65	5.67	5.63	5.66	5.68	M	5.62	5.66	M	M	M	M	5.32	5.20	5.60	5.63	*-1.
2	5.61	5.68	5.71	5.72	5.68	5.70	5.63	5.68	5.68	5.69	5.65	5.74	5.66	5.70	5.70	M	5.71	5.82	5.73	5.72	5.71	5.65	5.52	*-1.
3	5.67	M	M	5.73	5.77	5.81	5.82	5.80	5.84	5.78	5.77	5.74	5.84	5.83	5.75	5.68	5.73	5.79	5.74	5.72	5.71	5.68	5.69	5.70
4	5.66	5.74	5.71	5.74	5.78	5.79	5.75	5.73	5.81	5.84	5.84	5.86	5.84	5.79	5.84	5.76	5.73	5.72	M	5.87	5.76	5.80	5.67	AC
5	5.78	5.72	5.76	5.76	5.63	5.74	5.70	5.66	5.74	5.89	5.80	5.82	5.75	M	5.80	5.82	5.85	5.79	5.87	5.87	5.87	5.85	5.69	5.83
6	5.78	5.74	5.74	5.72	5.82	5.78	5.80	5.77	5.79	5.76	5.80	5.71	5.63	5.60	5.44	5.67	5.65	5.45	5.68	5.60	5.68	5.67	5.66	M
7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	5.75
8	5.90	5.96	5.91	5.90	5.77	5.91	5.86	6.06	5.98	M	M	M	M	M	M	M	M	M	M	M	6.12	6.16	6.16	6.35
9	M	6.23	6.27	6.30	6.20	6.24	6.19	6.28	6.25	6.25	6.25	6.30	5.94	6.12	6.03	6.21	6.30	6.27	M	6.18	6.17	6.27	6.28	6.33
10	6.48	6.33	6.42	6.38	6.48	6.37	6.40	6.48	6.44	6.52	6.48	6.52	6.45	6.51	6.39	6.47	6.49	6.44	6.47	6.33	6.34	6.43	6.45	*-1.
11	6.29	6.37	6.54	6.50	6.34	6.22	6.24	5.97	6.19	6.19	5.68	5.91	6.10	6.38	6.40	6.53	6.69	6.76	6.77	6.75	6.63	6.77	6.77	6.73
12	6.53	6.27	6.06	6.18	6.34	6.49	6.58	6.61	6.27	6.20	6.20	6.21	6.09	6.21	6.28	6.31	6.45	6.49	6.27	6.48	6.44	6.47	6.44	6.46
13	6.50	6.22	6.40	6.47	6.49	6.44	6.49	6.12	6.30	6.36	6.50	6.42	6.41	6.27	6.48	6.47	6.26	6.32	6.44	6.56	6.54	6.55	6.26	6.21
14	6.49	6.57	6.60	6.66	6.53	6.59	M	6.61	6.42	6.63	6.65	M	5.63	6.56	6.53	6.42	6.09	6.62	6.49	6.48	6.46	6.51	6.56	6.46
15	6.45	6.51	6.36	6.46	6.46	6.39	6.41	6.39	6.29	6.12	6.39	6.36	6.29	6.39	6.25	6.31	6.39	6.40	6.47	6.42	6.34	6.37	6.42	6.41
16	6.36	6.41	6.42	6.41	6.26	6.39	6.23	6.41	6.49	6.50	6.34	M	6.46	6.47	6.46	6.36	6.50	6.51	6.44	6.50	6.54	6.48	6.49	6.55
17	6.51	6.48	6.46	6.40	6.41	6.50	6.50	6.52	6.49	6.52	6.43	6.37	6.45	6.45	6.48	6.39	6.48	6.46	6.45	6.46	6.39	6.39	6.41	AF
18	6.40	6.36	6.36	6.35	6.34	6.33	6.29	6.28	6.30	M	6.26	6.23	6.32	6.24	6.14	5.84	5.93	6.09	6.07	6.22	6.23	6.23	6.21	6.23
19	6.20	M	M	6.07	5.76	6.13	6.09	6.03	M	M	M	M	M	M	M	6.09	6.15	6.30	M	6.41	6.15	M	5.66	M
20	M	4.71	M	5.07	5.33	M	5.51	M	5.68	5.77	M	M	M	M	5.95	M	M	6.17	M	M	6.15	M	6.18	6.10
21	6.09	6.16	M	6.00	6.21	M	6.19	M	6.17	M	M	M	6.35	M	6.18	6.18	M	6.28	6.32	6.31	6.28	M	6.32	6.06
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	5.73	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	5.41	5.39	5.00	5.23	M	M	5.10
24	M	M	M	M	5.78	M	M	M	M	M	M	5.94	M	6.39	M	6.15	6.08	6.45	M	M	6.44	6.24	*-1.	6.38
25	6.24	6.36	6.41	6.22	6.32	6.29	6.07	6.44	M	6.03	M	6.21	M	6.13	6.44	6.16	6.11	6.15	6.29	6.38	6.00	6.12	M	6.04
26	6.04	5.88	M	M	6.04	6.18	6.06	6.19	M	6.28	6.20	6.17	6.32	6.39	6.47	6.35	6.42	6.20	5.97	6.18	6.35	6.12	6.05	5.75
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	6.40
28	6.32	6.40	6.35	6.26	6.29	6.39	6.40	6.40	6.29	6.25	6.53	M	6.65	6.51	6.09	5.86	6.08	6.10	6.14	6.16	6.15	6.23	6.27	6.24
29	6.19	6.29	6.34	6.12	6.34	6.39	M	6.24	6.34	6.25	6.36	6.20	6.38	6.37	6.39	6.37	6.19	6.20	6.31	6.21	6.26	6.44	6.28	M
30	6.37	6.22	6.27	6.14	6.16	6.25	6.41	6.14	5.84	M	6.14	6.29	6.32	6.42	6.27	6.40	6.42	6.39	6.38	6.36	6.38	6.26	M	M
31	6.12	M	6.14	6.46	6.66	6.49	M	M	6.69	M	M	M	M	M	6.56	M	M	M	6.81	6.25	6.17	6.04	5.99	M

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

Data are missing for days 7, 22 and 27 July, 10 August, and 22 and 30 September 1977 due to a delay in data tape deliveries. Corrected versions of these tables will be published later.

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
AUGUST 1977

Si XV (5.09Å) Hourly Averages (-Log (flux), ergs/cm^2 s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.42	5.75	5.67	5.92	5.86	M	5.67	5.94	6.20	6.08	5.99	5.83	6.05	6.10	5.87	5.69	5.73	5.78	5.77	6.03	5.84	5.92	5.92	M
2	5.95	5.71	6.03	5.90	5.89	5.73	6.08	6.20	6.23	5.94	5.92	5.97	5.97	6.10	6.08	6.04	6.11	6.17	6.28	6.30	6.12	6.27	6.27	6.45
3	6.41	6.42	6.47	6.35	6.22	6.19	6.30	6.29	6.16	6.02	6.10	M	6.32	6.38	6.09	6.33	6.15	6.27	6.34	5.87	6.07	5.85	6.03	5.84
4	5.86	5.94	5.92	5.72	6.21	6.05	6.09	6.03	5.92	5.94	5.90	5.59	5.64	5.38	5.45	4.95	5.19	5.53	5.01	4.97	5.37	5.23	4.76	5.53
5	M	5.76	5.41	5.49	5.71	5.72	5.63	5.43	5.53	5.09	5.13	5.05	4.94	4.76	4.78	4.67	5.12	5.42	5.35	5.23	5.42	5.47	5.49	5.37
6	M	5.48	5.47	5.58	5.40	5.57	5.49	5.69	5.69	5.57	4.75	4.51	4.79	5.44	5.61	5.59	5.57	5.32	5.43	5.31	5.43	4.87	4.67	4.91
7	5.55	5.52	5.56	5.24	5.39	5.58	5.55	5.36	5.41	5.28	5.45	5.68	5.81	4.27	4.81	5.80	5.76	5.56	5.82	5.87	5.93	5.94	5.96	5.87
8	5.87	6.02	5.95	5.77	6.11	6.01	5.94	5.95	5.93	6.00	5.97	5.98	6.10	5.98	5.97	5.97	5.93	6.00	6.11	6.06	5.92	5.50	5.62	5.93
9	5.81	5.52	6.01	6.04	5.98	5.64	5.76	5.92	5.73	5.64	6.00	5.74	5.97	6.04	6.07	5.83	5.90	5.18	6.06	6.09	6.10	6.06	6.00	5.35
10	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
11	6.00	5.91	5.76	6.11	6.03	5.96	6.03	5.95	5.61	5.75	5.85	6.09	5.74	5.91	6.14	6.26	6.27	6.22	6.17	6.28	6.25	6.20	6.16	*-1.
12	6.05	5.86	6.06	6.08	6.05	6.14	6.24	6.20	5.99	6.06	6.33	6.33	6.30	6.18	6.34	6.28	6.19	5.80	6.10	6.23	6.11	6.26	6.31	M
13	6.28	6.11	6.17	6.06	5.81	5.82	5.42	5.41	5.39	5.45	5.49	5.68	5.75	5.75	5.87	5.90	6.00	6.06	5.95	6.10	6.26	6.29	6.12	M
14	6.18	6.12	6.02	5.36	5.88	6.11	M	M	6.38	6.41	6.13	5.94	6.20	6.34	6.24	M	6.19	6.32	6.07	6.20	6.04	6.32	6.06	6.22
15	5.77	5.96	6.07	6.19	6.22	6.30	5.83	5.99	6.28	6.29	6.34	6.34	6.30	5.83	6.11	6.10	6.07	6.34	6.19	6.36	6.41	6.31	6.41	6.28
16	M	5.79	6.09	6.28	M	M	6.20	6.25	6.32	6.29	6.37	6.35	5.92	6.24	5.40	6.02	5.95	6.20	M	6.30	6.32	6.34	6.28	6.23
17	6.11	6.06	6.28	6.29	M	M	6.16	5.97	6.06	6.45	6.46	6.10	5.37	5.85	6.31	6.20	6.15	6.28	5.54	6.04	6.14	5.81	5.43	6.25
18	6.30	6.34	5.83	5.40	M	M	6.22	6.31	6.18	5.94	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

Data are missing for days 7, 22 and 27 July, 10 August, and 22 and 30 September 1977 due to a delay in data tape deliveries. Corrected versions of these tables will be published later.

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
AUGUST 1977

Si XIII (5.68A) Hourly Averages (-Log (flux), ergs/cm^{2}s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	6.00	6.14	6.14	6.43	6.17	M	6.04	6.25	6.52	6.54	6.44	6.11	6.51	6.24	6.12	5.96	6.03	6.11	6.30	6.54	6.21	6.28	6.29	M
2	6.29	6.06	6.66	6.27	6.34	6.01	6.42	7.00	6.69	6.41	6.27	6.44	6.34	6.64	6.45	6.44	6.48	6.69	6.64	6.94	6.43	6.62	6.70	6.76
3	6.83	7.03	7.33	6.72	6.63	6.61	6.72	6.73	6.45	6.43	6.59	M	6.77	6.64	6.46	6.77	6.53	6.71	6.89	6.24	6.89	6.26	6.49	6.13
4	6.23	6.27	6.22	6.00	6.59	6.43	6.52	6.45	6.30	6.28	6.15	5.96	6.02	5.84	5.86	5.41	5.62	5.98	5.41	5.38	5.80	5.65	5.22	5.98
5	M	6.15	5.81	5.85	6.09	6.04	5.93	5.75	5.86	5.43	5.49	5.45	5.39	5.18	5.18	5.13	5.58	5.81	5.68	5.62	5.75	5.84	5.91	5.74
6	M	5.85	5.89	5.90	5.75	5.91	5.86	6.05	6.34	5.83	5.06	4.81	5.10	5.80	5.97	5.97	5.92	5.61	5.77	5.59	5.76	5.11	4.97	5.18
7	5.92	5.83	5.84	5.47	5.76	5.89	5.89	5.64	5.67	5.59	5.76	5.97	6.16	4.58	5.09	6.09	6.04	5.93	6.08	6.26	6.19	6.21	6.24	6.16
8	6.21	6.26	6.28	6.09	6.37	6.28	6.19	6.16	6.18	6.27	6.24	6.17	6.34	6.30	6.27	6.20	6.22	6.30	6.48	6.40	6.21	5.75	5.91	6.23
9	6.09	5.81	6.35	6.45	6.25	5.90	6.02	6.20	6.02	5.89	6.30	6.01	6.27	6.33	6.35	6.18	6.20	5.49	6.45	6.45	6.57	6.34	6.38	5.56
10	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
11	6.46	6.29	6.20	6.48	6.43	6.36	6.39	6.36	6.04	6.38	6.43	6.43	6.18	6.28	6.49	6.66	7.15	6.39	6.55	6.86	6.54	6.64	6.46	*-1.
12	6.44	6.33	6.44	6.40	6.37	6.88	6.93	6.51	6.28	6.37	6.92	6.69	6.71	7.81	6.76	6.59	6.59	6.05	6.55	6.80	6.50	6.71	6.74	M
13	6.80	6.51	6.57	6.46	6.27	6.24	5.86	5.87	5.85	5.95	5.96	6.18	6.18	6.27	6.56	6.36	6.50	6.51	6.44	6.54	6.56	6.62	6.52	M
14	6.64	6.50	6.39	5.77	6.32	6.48	M	M	7.03	7.09	6.52	6.40	6.69	6.81	6.80	M	6.91	6.72	6.56	6.72	6.89	6.88	6.44	6.54
15	6.64	6.30	6.60	6.75	6.54	6.91	6.16	6.68	6.65	6.56	7.15	6.83	6.62	6.07	6.91	6.26	7.52	6.82	6.59	7.78	6.45	6.65	6.84	6.60
16	M	6.16	6.54	6.57	M	M	6.57	6.77	6.69	6.72	7.27	7.19	6.86	6.55	6.15	6.52	6.28	6.65	M	6.84	6.57	6.67	6.77	6.58
17	6.68	6.63	6.69	6.63	M	M	6.64	6.36	6.64	7.01	7.12	6.50	5.76	6.34	B	6.94	6.56	6.69	5.85	6.39	6.51	6.23	5.79	6.68
18	6.85	6.90	6.48	5.81	M	M	6.68	6.76	6.51	6.42	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

Data are missing for days 7, 22 and 27 July, 10 August, and 22 and 30 September 1977 due to a delay in data tape deliveries. Corrected versions of these tables will be published later.

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
AUGUST 1977

Si XII (5.82Å) Hourly Averages (-Log (flux), ergs/cm^2 s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.80	5.97	5.99	6.04	6.06	M	5.90	6.01	6.25	6.09	6.12	5.95	6.00	6.10	5.82	5.89	5.88	5.92	5.87	5.97	5.94	5.92	5.95	M
2	5.97	5.88	6.00	5.93	5.88	5.84	5.97	6.02	6.09	6.03	5.94	6.00	5.96	6.02	6.00	6.03	6.03	6.03	6.05	6.10	6.01	6.03	6.19	6.24
3	6.18	6.17	6.24	6.12	6.06	6.04	6.08	6.11	6.07	5.94	6.01	M	6.12	6.16	6.04	6.15	6.09	6.13	6.18	6.03	6.07	5.95	6.06	5.95
4	5.97	5.97	5.95	5.90	6.08	6.07	6.01	5.99	5.94	5.92	5.89	5.77	5.82	5.69	5.69	5.41	5.57	5.76	5.55	5.39	5.67	5.61	5.14	5.73
5	M	5.83	5.70	5.65	5.78	5.78	5.78	5.61	5.63	5.41	5.44	5.36	5.33	5.19	5.16	5.06	5.31	5.59	5.57	5.58	5.55	5.65	5.70	5.63
6	M	5.74	5.73	5.73	5.60	5.70	5.72	5.79	5.77	5.67	5.16	5.07	5.04	5.54	5.67	5.69	5.67	5.52	5.56	5.53	5.56	5.23	5.13	5.21
7	5.61	5.65	5.68	5.52	5.55	5.65	5.64	5.50	5.51	5.49	5.54	5.70	5.82	4.84	5.16	5.82	5.80	5.72	5.84	5.94	5.91	5.90	5.95	5.90
8	5.91	5.97	5.94	5.90	5.99	5.98	5.93	5.93	5.94	5.95	5.94	5.92	5.97	5.92	5.93	5.89	5.89	5.90	5.97	5.93	5.89	5.69	5.74	5.94
9	5.86	5.73	5.92	5.98	5.94	5.76	5.82	5.87	5.90	5.81	5.99	5.87	5.91	5.98	6.01	5.88	5.88	5.61	6.00	6.09	6.01	5.97	6.00	5.72
10	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
11	5.91	5.89	5.79	6.00	5.94	5.93	5.95	5.91	5.80	5.84	5.86	5.96	5.88	5.88	6.01	6.06	6.10	6.02	6.04	6.08	6.09	6.03	5.95	*-1.
12	5.98	5.92	6.00	6.00	5.99	6.03	6.09	6.08	5.99	6.02	6.11	6.12	6.08	6.06	6.10	6.11	6.03	6.02	6.00	6.06	6.01	6.05	6.11	M
13	6.10	6.03	6.04	6.04	5.92	5.91	5.68	5.68	5.63	5.63	5.66	5.75	5.74	5.77	5.83	5.85	5.88	5.92	5.90	5.97	6.05	6.06	6.01	M
14	6.02	6.01	6.00	5.68	5.87	6.04	M	M	6.12	6.15	6.06	5.97	6.05	6.08	6.05	M	6.01	6.06	6.07	6.04	6.03	6.08	6.03	6.03
15	5.71	5.95	6.00	6.05	6.01	6.03	5.88	5.88	6.08	6.07	6.09	6.11	6.10	5.94	5.99	5.92	5.93	6.06	6.00	6.06	6.02	6.11	6.05	6.12
16	M	5.89	5.96	6.03	M	M	6.01	6.02	6.07	6.06	6.08	6.10	5.97	6.07	5.63	5.89	5.87	6.00	M	6.02	6.02	6.09	6.05	6.06
17	5.98	5.97	6.05	6.05	M	M	6.06	6.02	6.01	6.21	6.17	6.06	5.71	5.89	6.12	6.15	6.09	6.12	5.77	5.97	6.08	6.01	5.74	6.09
18	6.10	6.13	5.95	5.68	M	M	6.10	6.13	6.08	6.01	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

Data are missing for days 7, 22 and 27 July, 10 August, and 22 and 30 September 1977 due to a delay in data tape deliveries. Corrected versions of these tables will be published later.

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
SEPTEMBER 1977

Si XV (5.09Å) Hourly Averages (-Log (flux), ergs/cm² s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	5.83	5.96	5.81	5.73	5.75	5.58	5.11	5.69	5.94	6.04	5.75	5.92	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	5.70	5.60	5.38	5.28	5.35	5.35	5.36	M	M	5.27	5.68	5.70	5.81	5.81	5.97	5.92	5.90	5.72	5.91	5.67	5.14	4.82	4.80	4.87
7	4.87	4.89	4.44	M	M	4.40	4.46	4.69	M	4.87	5.00	4.97	4.91	4.84	4.85	4.76	M	M	M	4.24	4.38	4.61	4.62	M
8	M	M	M	4.08	4.11	4.28	4.29	4.30	4.34	4.40	4.53	M	4.53	4.68	4.63	4.71	4.74	4.72	4.88	4.99	5.00	4.92	4.90	5.03
9	4.95	4.90	4.74	5.05	4.94	4.29	4.43	4.85	5.01	5.06	4.93	M	5.03	5.13	5.05	5.02	4.75	M	M	4.12	4.17	4.33	4.30	4.39
10	M	4.50	4.59	4.80	4.82	4.59	M	4.55	4.58	4.65	4.82	M	M	M	M	M	5.04	5.14	5.17	5.33	5.34	5.32	M	5.32
11	5.37	5.45	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	5.19	5.31	5.42	5.28	5.28	5.17	5.32	5.40	M	5.35	5.23	5.34	5.34	5.27	5.44	5.43	5.45	5.44	5.39	5.47	5.50	5.48	5.38
13	5.37	5.31	5.32	5.33	5.37	5.39	5.32	5.34	5.32	5.02	5.15	5.01	5.10	5.06	5.17	5.26	5.38	5.26	5.24	5.23	5.15	5.22	5.35	5.36
14	5.33	5.33	5.24	5.26	4.82	4.77	5.09	5.17	5.28	5.31	5.36	5.32	5.18	4.91	5.14	4.85	4.30	4.88	5.02	5.04	5.15	5.02	5.09	5.21
15	5.27	5.02	4.92	5.08	4.93	4.95	5.04	5.15	5.03	5.00	4.96	4.72	4.70	4.74	5.20	5.28	5.31	5.27	5.19	5.11	5.20	5.15	5.14	5.22
16	5.40	5.05	5.29	5.31	M	5.22	5.28	5.23	5.25	5.14	4.94	5.11	5.25	5.24	5.15	5.18	5.15	5.04	4.50	4.83	5.28	5.16	M	M
17	M	M	4.01	4.10	4.36	4.42	4.60	4.74	4.75	4.86	M	4.93	4.76	4.84	4.89	4.74	4.92	4.87	4.86	4.81	4.57	4.72	4.60	4.39
18	4.59	M	3.94	3.94	4.10	4.26	4.34	4.22	4.42	4.64	4.79	4.78	4.63	4.86	4.87	4.98	5.01	5.02	4.70	4.91	4.82	5.04	4.86	A
19	4.31	4.21	5.03	5.08	4.76	4.84	4.76	4.71	4.71	4.53	M	M	M	M	M	3.85	3.94	3.99	4.08	4.20	4.20	4.34	4.40	4.43
20	M	M	4.55	4.61	M	M	M	M	3.87	3.90	4.00	4.05	4.09	4.16	4.20	4.24	4.31	4.30	4.35	4.39	4.38	4.20	4.43	4.46
21	4.44	4.54	4.59	4.51	4.60	4.76	4.73	4.64	4.72	4.90	4.87	4.71	4.69	4.69	4.88	5.00	4.20	4.44	4.91	5.00	5.00	4.94	4.97	4.95
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	4.85
23	4.61	4.94	4.93	5.16	4.89	5.03	5.06	4.91	4.77	4.86	5.02	4.99	5.15	4.74	4.93	5.11	5.18	5.21	5.25	5.11	5.14	5.13	*-1.	5.00
24	4.73	5.28	5.21	5.32	5.41	5.29	5.05	4.84	4.72	4.83	4.59	M	3.92	3.98	4.11	4.21	4.38	4.51	4.62	4.80	4.69	4.87	*-1.	5.00
25	5.03	5.05	4.94	5.17	4.54	4.48	4.44	4.68	5.04	4.96	4.15	4.76	5.07	5.02	4.18	4.72	5.01	4.82	5.00	4.88	4.86	4.92	5.33	5.28
26	5.22	4.88	4.47	4.89	4.97	5.19	4.61	5.22	5.21	4.79	5.25	5.46	5.01	4.87	5.31	5.12	5.35	5.43	5.33	4.90	5.00	5.21	5.05	5.23
27	5.38	5.24	5.11	5.28	5.61	5.35	5.30	5.41	5.36	5.14	5.24	5.41	5.57	5.33	5.16	5.37	4.96	5.22	5.28	5.14	5.41	5.35	5.51	5.54
28	5.38	5.39	5.45	5.34	5.58	5.37	5.17	5.47	5.38	5.44	5.55	5.47	5.57	5.57	5.53	5.32	5.55	5.53	5.31	5.58	5.72	5.72	5.58	5.66
29	5.61	5.42	5.60	5.58	5.45	5.44	5.27	M	M	5.00	5.12	5.32	5.53	5.54	5.49	5.71	5.68	5.56	5.51	5.56	5.51	5.60	5.66	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

Data are missing for days 7, 22 and 27 July, 10 August, and 22 and 30 September 1977 due to a delay in data tape deliveries. Corrected versions of these tables will be published later.

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
SEPTEMBER 1977

Si XIII (5.68A) Hourly Averages (-Log (flux), ergs/cm^{2}s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	6.23	6.40	6.14	5.96	6.19	5.91	5.36	6.08	6.25	6.48	6.05	6.19	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	6.01	5.86	5.68	5.59	5.68	5.63	5.69	M	M	5.56	6.06	6.03	6.14	6.08	6.32	6.27	6.20	6.13	6.30	6.11	5.57	5.26	5.24	5.33
7	5.35	5.38	4.86	M	M	4.92	4.96	5.15	M	5.31	5.48	5.40	5.43	5.33	5.34	5.35	M	M	M	4.72	4.86	5.11	5.15	M
8	M	M	M	4.51	4.52	4.69	4.71	4.73	4.79	4.82	4.95	M	4.97	5.11	5.13	5.15	5.20	5.21	5.34	5.40	5.43	5.39	5.37	5.53
9	5.43	5.39	5.23	5.57	5.47	4.79	4.90	5.32	5.55	5.58	5.47	M	5.55	5.59	5.48	5.51	5.21	M	M	4.49	4.53	4.67	4.68	4.78
10	M	4.92	5.02	5.19	5.20	5.04	M	5.09	5.15	5.21	5.30	M	M	M	M	M	5.59	5.63	5.63	5.74	5.73	5.81	M	5.74
11	5.78	5.85	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	5.62	5.69	5.86	5.68	5.69	5.54	5.73	5.80	M	5.75	5.58	5.73	5.69	5.61	5.81	5.79	5.79	5.78	5.71	5.81	5.82	5.82	5.79
13	5.78	5.71	5.79	5.66	5.78	5.73	5.67	5.63	5.63	5.27	5.45	5.35	5.45	5.39	5.53	5.63	5.77	5.59	5.55	5.52	5.55	5.59	5.84	5.61
14	5.71	5.66	5.55	5.73	5.23	5.15	5.51	5.67	5.65	5.69	5.73	5.69	5.59	5.29	5.50	5.18	4.70	5.25	5.38	5.43	5.53	5.38	5.51	5.62
15	5.65	5.38	5.29	5.39	5.23	5.31	5.39	5.55	5.34	5.33	5.29	5.02	5.03	5.08	5.59	5.70	5.72	5.68	5.55	5.47	5.56	5.49	5.52	5.59
16	5.75	5.52	5.69	5.70	M	5.75	5.62	5.60	5.59	5.53	5.29	5.48	5.61	5.61	5.52	5.56	5.50	5.37	4.82	5.15	5.63	5.44	M	M
17	M	M	4.46	4.55	4.77	4.83	5.00	5.15	5.13	5.24	M	5.33	5.06	5.19	5.27	5.12	5.30	5.20	5.25	5.17	4.89	5.09	4.96	4.71
18	4.94	M	4.41	4.37	4.47	4.61	4.68	4.56	4.81	4.98	5.10	5.09	4.95	5.20	5.22	5.32	5.36	5.36	5.02	5.21	5.17	5.43	5.22	A
19	4.63	4.60	5.45	5.49	5.12	5.23	5.12	5.09	5.08	4.90	M	M	M	M	M	4.26	4.39	4.41	4.47	4.60	4.53	4.68	4.80	4.75
20	M	M	4.87	4.96	M	M	M	M	4.26	4.29	4.39	4.46	4.47	4.54	4.58	4.60	4.67	4.68	4.72	4.74	4.74	4.61	4.82	4.84
21	4.81	4.90	4.97	4.86	4.97	5.12	5.07	5.01	5.05	5.25	5.23	5.02	5.00	5.01	5.20	5.35	4.56	4.75	5.24	5.33	5.35	5.32	5.33	5.33
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	5.18
23	5.01	5.28	5.31	5.50	5.26	5.40	5.38	5.30	5.26	5.37	5.44	5.37	5.56	5.08	5.30	5.47	5.54	5.61	5.64	5.46	5.49	5.48	*-1.	5.34
24	5.10	5.69	5.63	5.76	5.85	5.69	5.44	5.23	5.14	5.25	5.02	M	4.40	4.37	4.47	4.53	4.71	4.84	4.95	5.14	5.04	5.20	*-1.	5.37
25	5.38	5.46	5.34	5.57	5.00	4.91	4.92	5.08	5.47	5.37	4.51	5.17	5.42	5.40	4.79	5.24	5.42	5.19	5.40	5.25	5.29	5.40	5.78	5.72
26	5.64	5.36	4.92	5.37	5.34	5.56	5.02	5.65	5.62	5.17	5.74	5.88	5.40	5.25	5.68	5.49	5.78	5.80	5.73	5.28	5.36	5.64	5.45	5.65
27	5.84	5.64	5.57	5.68	6.02	5.78	5.72	5.85	5.79	5.65	5.69	5.88	6.06	5.74	5.57	5.80	5.35	5.63	5.72	5.57	5.80	5.85	6.02	5.93
28	5.75	5.82	5.87	5.84	6.18	5.81	5.63	6.01	5.87	5.95	6.04	5.92	6.21	5.97	6.02	5.79	5.98	5.99	5.69	6.06	6.14	6.18	6.09	6.17
29	6.13	5.90	6.02	6.11	5.97	5.97	5.69	M	M	5.41	5.53	5.76	6.03	6.05	5.97	6.47	6.16	6.02	5.92	5.98	6.02	6.13	6.07	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

Data are missing for days 7, 22 and 27 July, 10 August, and 22 and 30 September 1977 due to a delay in data tape deliveries. Corrected versions of these tables will be published later.

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
SEPTEMBER 1977

Si XII (5.82Å) Hourly Averages (-Log (flux), ergs/cm^2 s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	5.79	5.80	5.76	5.70	5.77	5.73	5.45	5.68	5.76	5.87	5.75	5.83	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	5.75	5.75	5.66	5.62	5.64	5.59	5.60	M	M	5.48	5.71	5.68	5.74	5.72	5.84	5.80	5.80	5.79	5.82	5.78	5.54	5.31	5.25	5.25
7	5.24	5.25	4.98	M	M	4.91	4.95	5.12	M	5.21	5.31	5.31	5.25	5.20	5.22	5.21	M	M	M	4.76	4.89	5.06	5.07	M
8	M	M	M	4.61	4.64	4.77	4.79	4.79	4.84	4.86	4.95	M	4.96	5.10	5.08	5.09	5.15	5.12	5.22	5.29	5.31	5.27	5.26	5.32
9	5.27	5.27	5.18	5.33	5.28	4.83	4.93	5.22	5.31	5.36	5.24	M	5.26	5.35	5.29	5.28	5.12	M	M	4.55	4.63	4.79	4.77	4.83
10	M	4.95	5.00	5.12	5.15	5.06	M	4.97	5.00	5.09	5.16	M	M	M	M	M	5.31	5.36	5.38	5.45	5.44	5.47	M	5.49
11	5.47	5.48	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	5.39	5.43	5.45	5.37	5.42	5.35	5.41	5.46	M	5.45	5.35	5.35	5.42	5.38	5.46	5.46	5.47	5.47	5.47	5.49	5.49	5.49	5.44
13	5.50	5.42	5.39	5.41	5.46	5.45	5.39	5.38	5.40	5.24	5.29	5.20	5.22	5.21	5.27	5.34	5.37	5.37	5.36	5.34	5.30	5.33	5.38	5.39
14	5.42	5.37	5.36	5.36	5.14	5.12	5.27	5.31	5.34	5.38	5.39	5.41	5.34	5.19	5.28	5.17	4.83	5.07	5.19	5.24	5.33	5.30	5.29	5.33
15	5.33	5.24	5.18	5.24	5.12	5.15	5.21	5.28	5.22	5.22	5.19	5.08	5.09	5.05	5.28	5.35	5.36	5.35	5.32	5.28	5.33	5.27	5.31	5.31
16	5.44	5.28	5.39	5.35	M	5.31	5.33	5.29	5.31	5.24	5.19	5.24	5.31	5.30	5.26	5.27	5.26	5.23	4.87	5.06	5.30	5.30	M	M
17	M	M	4.48	4.61	4.82	4.88	4.99	5.07	5.07	5.14	M	5.15	5.04	5.08	5.14	5.05	5.13	5.11	5.06	5.06	4.87	5.00	4.96	4.78
18	4.95	M	4.38	4.39	4.56	4.69	4.77	4.67	4.78	4.93	5.06	5.06	4.92	5.08	5.11	5.16	5.20	5.17	5.08	5.09	5.09	5.20	5.10	A
19	4.85	4.68	5.14	5.20	5.04	5.05	5.03	4.98	4.99	4.86	M	M	M	M	M	4.27	4.46	4.50	4.60	4.71	4.66	4.78	4.88	4.82
20	M	M	4.89	4.92	M	M	M	M	4.29	4.33	4.49	4.56	4.60	4.65	4.69	4.73	4.77	4.77	4.79	4.80	4.80	4.68	4.82	4.87
21	4.85	4.91	4.94	4.93	4.94	5.01	5.02	4.94	5.02	5.07	5.07	4.99	4.99	4.96	5.08	5.16	4.67	4.81	5.09	5.14	5.14	5.10	5.11	5.10
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	5.07
23	5.00	5.13	5.13	5.22	5.18	5.21	5.23	5.20	5.09	5.16	5.20	5.15	5.25	5.13	5.16	5.24	5.29	5.33	5.36	5.29	5.30	5.29	*-1.	5.22
24	5.07	5.33	5.35	5.38	5.43	5.40	5.38	5.27	5.12	5.18	5.16	M	4.35	4.49	4.63	4.72	4.83	4.91	5.01	5.14	5.14	5.18	*-1.	5.29
25	5.30	5.37	5.31	5.39	5.05	4.94	4.94	5.07	5.33	5.32	4.65	5.06	5.28	5.30	4.60	5.10	5.32	5.29	5.26	5.25	5.13	5.21	5.42	5.43
26	5.40	5.20	4.98	5.19	5.29	5.37	5.01	5.34	5.44	5.11	5.41	5.53	5.35	5.16	5.42	5.38	5.46	5.48	5.48	5.29	5.31	5.40	5.32	5.41
27	5.49	5.42	5.35	5.41	5.57	5.52	5.47	5.53	5.50	5.42	5.44	5.53	5.61	5.52	5.42	5.49	5.30	5.42	5.44	5.42	5.48	5.48	5.59	5.59
28	5.53	5.55	5.54	5.55	5.65	5.55	5.45	5.59	5.60	5.64	5.65	5.63	5.67	5.69	5.72	5.57	5.64	5.66	5.53	5.74	5.76	5.77	5.70	5.73
29	5.73	5.66	5.73	5.71	5.65	5.63	5.55	M	M	5.36	5.39	5.54	5.67	5.66	5.63	5.77	5.71	5.68	5.63	5.72	5.64	5.72	5.74	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
Earlier data available from WDC-A for Solar-Terrestrial Physics cover the period July 1975 - August 1976.

Data are missing for days 7, 22 and 27 July, 10 August, and 22 and 30 September 1977 due to a delay in data tape deliveries. Corrected versions of these tables will be published later.

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