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Solar - Geophysical Data

NO. 414 FEBUARY 1979

Part II (Comprehensive Reports)

DATA FOR
AUGUST 1978
JULY 1978
& MISCELLANEA

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SOLAR-GEOPHYSICAL DATA

No. 414

Issued in two parts

Helen E. Coffey, Editor

J. Virginia Lincoln, Chief
Solar-Terrestrial Physics Division

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

AUGUST 1978 DATA

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ACTIVE REGIONS

CARRINGTON ROTATION 1671

(July 27 to August 23, 1978)

Region No.	Coordinates Lat.	Coordinates Long.	Age at CMP	IMP.	Spot-less Region	Region No. in Rotation 1670	Activity at West Limb
1	23°S	356°	+5	1			disappeared
2	17 N	348	>6	1	x		dispersed
3	15 S	339	>6	1	x		disappeared
4	13 N	334	>6	1	x		dispersed
5	28 S	330	>6	1	x	(7)	dispersed
6	18 S	316	>6	1	x	(10)	decreasing
7	29 S	314	>6	1	x	(8)	dispersed
8	24 N	307	0	1	x		decreasing
9	18 N	291	+4	2			decreasing
10	23 N	283	>6	1	x	(14)	dispersed
11	19 N	275	>6	3			decreasing
12	35 N	272	>6	3			decreasing
13	23 S	270	+6	3			decreasing
14	11 N	267	+5	1	x		disappeared
15	23 S	259	+1	1	x		decreasing
16	25 N	259	0	1	x		decreasing
17	24 N	257	>6	1	x	(16)	decreasing
18	23 S	244	>6	1	x	(18)	dispersed
19	20 S	206	-4	2			increasing
20	32 S	205	>6	1	x		decreasing
21	19 S	203	+4	1			disappeared
22	22 S	192	+6	1	x		disappeared
23	21 N	190	-3	1	x		decreasing
24	33 S	190	-2	3			increasing
25	25 N	180	>6	1	x	(24)	dispersed
26	18 N	176	>6	2		(27)	decreasing
27	28 S	175	>6	6			decreasing
28	24 N	161	>6	1	x		decreasing
29	16 N	160	>6	2			decreasing
30	22 S	137	>6	1	x		dispersed
31	12 N	134	+1	1	x		dispersed
32	15 N	123	+6	1	x		dispersed
33	25 N	123	0	1	x		decreasing
34	21 N	122	-2	3			stable
35	25 S	121	-3	1	x		dispersed
36	8 N	112	>6	1	x		dispersed
37	20 N	112	>6	1	x	(35)	decreasing
38	16 N	100	>6	1	x	(37+40)	dispersed
39	44 N	70	+5	3			decreasing
40	20 S	64	>6	1	x		dispersed
41	37 N	49	>6	2			decreasing
42	32 N	42	+4	1	x		disappeared
43	24 N	41	>6	1	x		dispersed
44	28 S	38	>6	1	x		dispersed
45	20 S	31	>6	3			decreasing
46	21 N	21	0	1	x		decreasing
47	27 N	19	>6	1	x	(51)	decreasing
48	31 N	2	>6	1	x	(53+54)	dispersed

ACTIVE REGIONS

CARRINGTON ROTATION 1672

(August 23 to September 20, 1978)

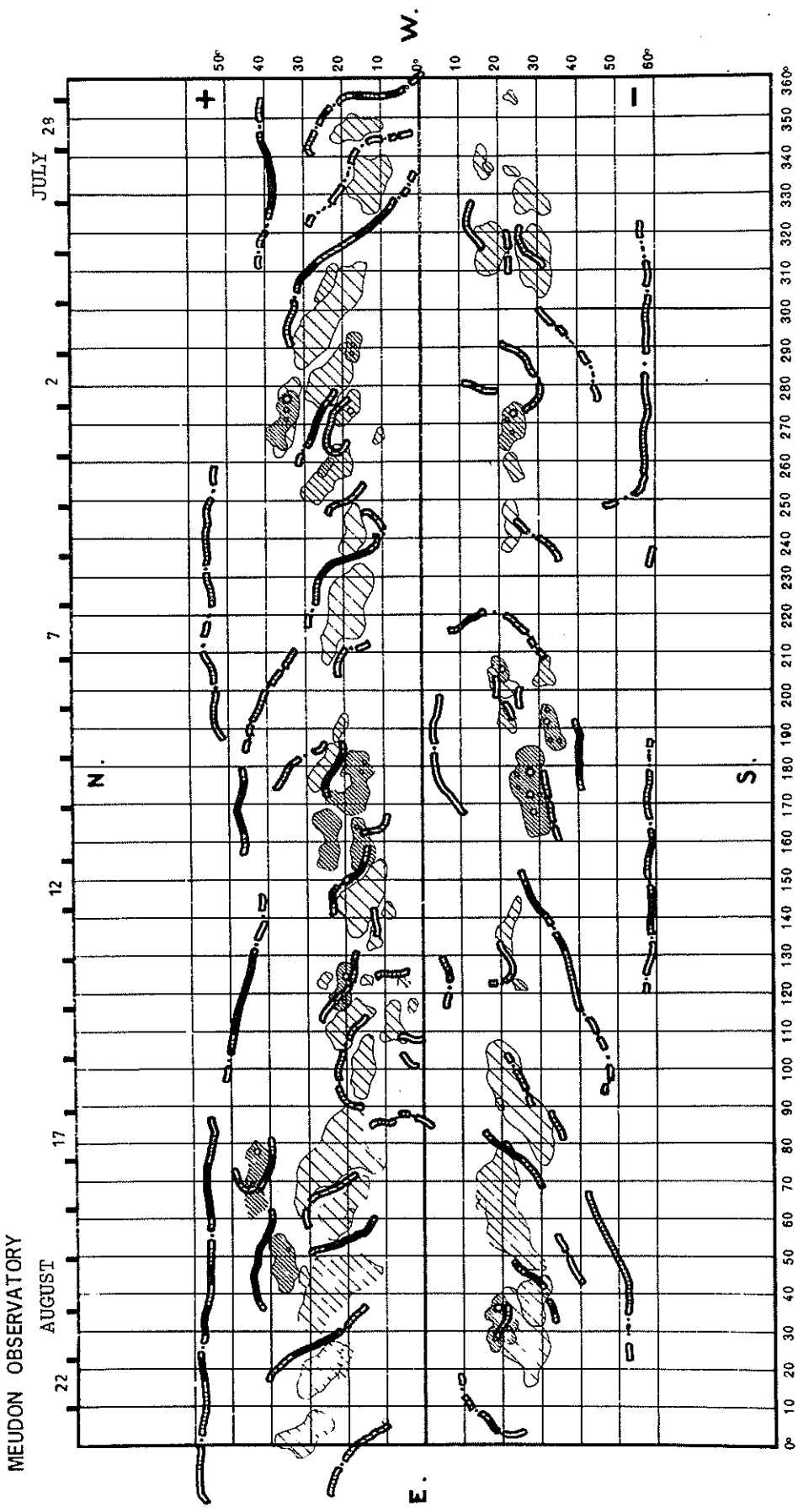
Region No.	Coordinates Lat.	Coordinates Long.	Age at CMP	IMP	Spot-less Region	Region No. in Rotation 1671	Activity at West Limb
1	9°S	359°	+3	1	x		disappeared
2	20 S	348	-3	2			decreasing
3	23 S	345	+4	1	x		dispersed
4	12 N	340	-2	3			decreasing
5	15 N	340	-4	1	x		(?)
6	23 S	340	-2	2			increasing
7	19 S	333	+5	1	x		disappeared
8	23 S	324	+5	2			decreasing
9	21 N	313	-3	1	x		decreasing
10	16 S	312	+4	2			decreasing
11	23 N	301	-4	1	x		stable
12	10 N	288	+5	1	x		disappeared
13	17 N	275	>6	1	x		dispersed
14	13 N	270	+2	1	x		disappeared
15	21 S	267	+5	2			decreasing
16	20 N	248	>6	4			decreasing
17	41 N	246	>6	1	x		disappeared
18	34 N	240	>6	1	x		dispersed
19	13 S	232	-4	1	x		stable
20	36 N	230	>6	1	x		disappeared
21	37 N	229	0	3			decreasing
22	37 N	223	0	1	x		decreasing
23	21 S	218	>6	3			decreasing
24	39 N	217	-6	1	x		(?)
25	18 N	214	+2	3			decreasing
26	25 N	212	>6	1	x		disappeared
27	18 N	203	>6	5			decreasing
28	22 S	196	+2	4			decreasing
29	30 S	194	>6	8			decreasing
30	14 S	189	-4	1	x		stable
31	23 N	189	>6	1	x	(23)	decreasing
32	32 S	180	>6	2			decreasing
33	37 S	176	>6	2			decreasing
34	19 N	175	>6	1	x	(26)	dispersed
35	20 S	173	>6	2			decreasing
36	38 S	170	-3	1	x		stable
37	27 S	166	>6	1	x	(27)	decreasing
38	15 S	155	>6	1	x		decreasing
39	26 N	155	>6	1	x	(28)	dispersed
40	18 S	134	+5	2			decreasing
41	21 N	124	>6	1	x		decreasing
42	19 N	114	-1	1	x		decreasing
43	33 N	103	>6	5			decreasing
44	23 S	82	0	2			decreasing
45	17 N	67	>6	4			decreasing
46	17 S	52	0	3			decreasing
47	18 N	45	>6	1	x		disappeared
48	19 S	41	>6	1	x	(45)	decreasing
49	19 N	36	+3	2			decreasing
50	36 N	28	>6	5			decreasing
51	25 S	27	>6	1	x		dispersed
52	27 N	19	>6	4			decreasing
53	35 N	11	>6	8			decreasing
54	28 S	10	>6	3			decreasing
55	30 N	8	>6	2			decreasing

SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1671

JULY 27 TO AUGUST 23, 1978

MEUDON OBSERVATORY

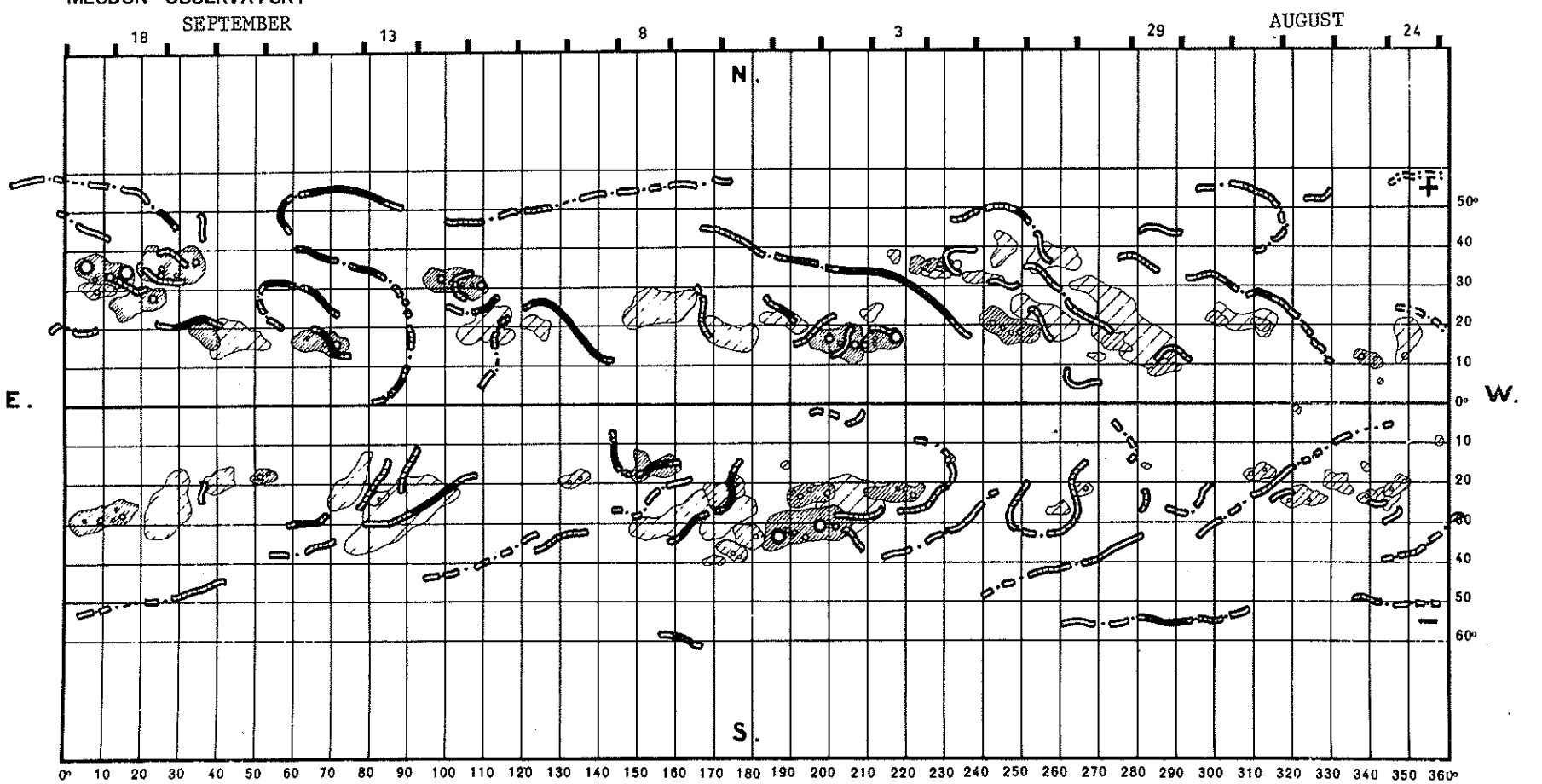


SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1672

AUGUST 23 TO SEPTEMBER 20, 1978

MEUDON OBSERVATORY



7 Aug 78

Hα SOLAR FLARES

AUGUST 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE AUG	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
467 KHAR	01	0837E	0837	0844D	S22	E59	.899	15447	5.8	7D	?F		P	0837	110	2.5	D Y5
	IMP.1	NO	MONT2	KANZ2	CATA1												
468 KHAR	01	0855E	0900	0917D	S23	E27	.630	15446	3.4	22D	-F		P	0914			ET Y5
469 KHAR	01	0939E		0949D	S23	E27	.630	15446	3.4	10D	-F		P				ET Y5
	01	1714	1718	NO FLARE PATROL													
	01	1848	1858	NO FLARE PATROL													
	01	1902	1904	NO FLARE PATROL													
	01	1909	1917	NO FLARE PATROL													
	01	1924	1931	NO FLARE PATROL													
	01	2120	2144	NO FLARE PATROL													
	02	2033	2049	NO FLARE PATROL													
	02	2139	2155	NO FLARE PATROL													
	02	2300	2350	NO FLARE PATROL													
470 CULG	03	0513	0516	0555	N13	E03	.230	15445	3.4	42	-F		C	0516	30	.3	Y5
471 KANZ	03	1003	1007	1014D	S23	E90	1.001	15454	10.2	11D	-F		C				Y5
472 KANZ	03	1103	1106	1106	N37	W02	.517	15441	3.3	3	-F		C				FH Y5
473 KANZ	03	1340	1343	1348D	S28	E90	1.001	15454	10.3	8D	-B		C				Y5
	03	2118	2203	NO FLARE PATROL													
	03	2212	2213	NO FLARE PATROL													
	03	2216	2224	NO FLARE PATROL													
474 CULG	03	2346	2351	0023	N37	W07	.526	15441	3.5	37	-N		C	2351	60	.8	Y5
475 CULG	04	0210	0217	0235	S24	W13	.538	15446	3.1	25	-N		C	0217	40	.5	Y5
476 CULG	04	0328	0354	0635D	N21	E58	.848	0	8.5	187D	?N		C	0354	140	2.7	S Y5
	IMP.1	NO	VORO2														
477 TEHR	04	1130E	1132U	1148	S21	E16	.518	15447	5.7	18D	-B	2	C		159		U H Y5
478 MCMA	04	1553	1559	1609	S23	W15	.537	15446	3.5	16	-N		C	1559	60	.8	E Y5
GRP68479	04	1624+1	1626+2	1634	S20	W18	.522	15446	3.3	10	-N						E
KANZ	04	1624	1628	1639	S19	W18	.510	15446	3.3	15	-B		C				
MCMA	04	1624	1626	1634	S20	W18	.522	15446	3.3	10	-N		C	1626	50	.7	E
HUAN	04	1625		1631	S20	W18	.522	15446	3.3	6	-F	1	C				E
GRP68480	04	1847+2	1856+1	1901D	S20	W21	.547	15446	3.2	14	-F				45	.5	EH
MCMA	04	1847	1856	2000D	S20	W20	.539	15446	3.3	73D	-F		C	1856	50	.7	EH
PALE	04	1849	1857	1901	S21	W22	.567	15446	3.1	12	-N	3	C		39		DE
	04	2102	2125	NO FLARE PATROL													
	04	2128	2130	NO FLARE PATROL													
GRP68481	04	2222+2	2224 2232+4	2243	N36	W22	.590	15441	3.3	21	-N				40	.5	E
CULG	04	2222	2236	2250	N36	W22	.590	15441	3.3	28	-N		C	2236	40	.5	
VORO	04	2224	2224	2228	N36	W22	.590	15441	3.3	4	-N		C	2224	36	.4	E
VORO	04	2231	2232	2236	N36	W22	.590	15441	3.3	5	-N		C	2232	36	.4	E
482 CULG	05	0314E	0314U	0317D	S22	W21	.571	15446	3.6	3D	-N		P	0314	50	.6	Y5
GRP68483	05	0618		0645D	S25	E66	.947	15454	10.2	27	-N						K
KANZ	05	0618	0637	0637D	S26	E68	.957	15454	10.4	19D	-N		C				
ISTA	05	0620E		0645D	S25	E65	.942	15454	10.1	25D	-N						K
484 ISTA	05	0755E		0759	S25	E65	.942	15454	10.2	4D	-F						Y5
485 KHAR	05	0957E		1050D	N16	E87	.997	15451	11.9	53D	-F		P	1000			D Y5
GRP68486	05	1022+3	1028+3	1102	S19	W28	.605	15446	3.3	4D	-F						H
KHAR	05	1022E	1028	1108D	S21	W28	.623	15446	3.3	46D	1F		P	1028	150	2.1	H
KANZ	05	1023	1031	1055	S18	W29	.607	15446	3.3	32	-N		C				
ZURI	05	1025	1031	1033D	S19	W28	.605	15446	3.3	8D	-F		P	1031	50	.7	
GRP68487	05	1102E		1315	N16	E83	.989	15451	11.7	133	-F						D
KHAR	05	1102E		1150D	N16	E87	.997	15451	12.0	48D	-F		V	1112			D
KANZ	05	1121E		1315	N16	E80	.981	15451	11.5	114D	-N		C				T

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	AUG																	
GRP68488	05	1249+2	1253+4	1318	S20	W30	.634	15446	3.3	29	-N				45	.6		
KANZ	05	1249	1257	1318	S19	W30	.626	15446	3.3	29	-B		C					
MCMA	05	1251	1255	1330D	S20	W31	.644	15446	3.2	39D	-N		C	1255	35	.5	E	
RAMY	05	1251	1253	1304	S20	W27	.605	15446	3.5	13	-N	3	C		48		FDE	
489 MCMA	05	1349	1356	1520D	S20	W31	.644	15446	3.3	91D	-B		C	1356	80	1.1	EH	Y5
490 MCMA	05	1457	1505	1530	N20	W53	.801	15444	1.6	33	-F		C	1505	50	.9	E	Y5
491 MCMA	05	1520	1529	1550	S20	W32	.654	15446	3.2	30	-N	*	C	1529	40	.5	E	Y5
	05	2150	2259	NO FLARE PATROL														
GRP68492	06	0415	0422	0426	S28	E60	.921	15454	10.7	11	-F						E	
MITK	06	0415		0424	S28	E61	.927	15454	10.8	9	-F		C	0415		.3		
TACH	06	0420E	0422	0427	S28	E60	.921	15454	10.7	7D	1F		C	0422	132	3.4	E	
493 ABST	06	0618	0620	0625	S26	E61	.922	15454	10.8	7	-N		C	0620	87		DJ	Y5
GRP68494	06	0712+4	0717+2	0728	S26	E58	.904	15454	10.6	16	-F						DJ	
ABST	06	0712	0717	0725	S26	E60	.916	15454	10.8	13	-N		C	0717	87		DJ	
KANZ	06	0716	0719	0730	S27	E56	.894	15454	10.5	14	-F		C					
495 KANZ	06	0943	1015	1051	S29	E57	.907	15454	10.7	68	-F		C				H	Y5
496 KANZ	06	1238	1242	1254	N26	W79	.976	15448	30.6	16	-F		C					Y5
GRP68497	06	1251+0	1252+1	1300	S22	W39	.736	15446	3.6	9	-B						F	
KANZ	06	1251	1253	1301	S21	W40	.740	15446	3.5	10	-B		C					
RAMY	06	1251	1252	1259	S23	W38	.734	15446	3.7	8	-B	3	C		60		F	
498 KANZ	06	1514	1518	1527	S21	W42	.758	15446	3.5	13	-F		C					Y5
	06	2153	2159	NO FLARE PATROL														
	06	2211	2306	NO FLARE PATROL														
	06	0014	0016	NO FLARE PATROL														
499 KHAR	07	1050E	1050	1057D	S26	E45	.811	15454	10.8	7D	-F		P	1050	100	1.8	T	Y5
GRP68500	07	1114E		1135D	S28	E41	.791	15454	10.5	21	-B						H	
KHAR	07	1114E		1206D	S28	E44	.814	15454	10.8	52D	1N		P	1130	250	4.8	EHT	
RAMY	07	1126E	1126U	1135	S28	E39	.775	15454	10.4	9D	-B	2	C		42		F	
GRP68501	07	1114E	1126+3	1147	S22	E26	.615	15450	9.4	33	-N						H	
KHAR	07	1114E	1129	1145D	S22	E26	.615	15450	9.4	31D	-N		P	1130	120	1.5	EH	
RAMY	07	1126E	1126U	1147	S22	E26	.615	15450	9.4	21D	-N	2	C		28		F	
502 KHAR	07	1131E	1131	1135D	N35	W56	.856	15441	3.3	4D	-F		P				E	Y5
	07	1525	1554	NO FLARE PATROL														
	07	0114	0122	NO FLARE PATROL														
	07	0130	0137	NO FLARE PATROL														
	07	0142	0200	NO FLARE PATROL														
503 RAMY	07	1629	1631	1633	S26	E38	.754	15454	10.5	4	-N	3	C		25		F	Y5
504 HOLL	07	1736	1749	1758D	S26	E40	.771	15454	10.7	22D	-F	3	C		50		FDE	Y5
505 PALE	07	1912	1912U	2005D	S26	E38	.754	15454	10.7	53D	-N	3	C		20		DE	Y5
GRP68506	07	2010+4	2018	2034	S26	E37	.746	15454	10.6	24	-N							
HOLL	07	2010	2018	2022	S26	E38	.754	15454	10.7	12	-N	3	C		56		DE	
PALE	07	2014		2046	S26	E37	.746	15454	10.6	32	-N	2	C				DE	
507 HOLL	07	2215	2218	2225	S26	E37	.746	15454	10.7	10	-N	3	C		36		DE	Y5
GRP68508	07	2311	2316	2356	S26	E37	.746	15454	10.7	45	-B						FH	
HOLL	07	2311	2316	0003	S26	E36	.737	15454	10.7	52	-B	3	C		93		F H	
VORO	07	2345E		2348	S26	E38	.754	15454	10.8	3D	-N		C	2345	72	1.1		
509 CULG	08	0550	0555	0605	N21	W70	.934	15443	3.0	15	-F		C	0555	20			Y5
510 MCMA	08	1210	1226	1300	N19	W74	.956	15443	3.0	50	-N		C	122E	20	1.0	D	Y5
511 RAMY	08	1414	1415	1424	S26	E27	.663	15454	10.6	10	-N	3	C		30		F	Y5
512 RAMY	08	1438	1438	1442	N20	E35	.597	15451	11.2	4	-N	3	C		32			Y5

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE AUG	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.		
513 RAMY	08	1444	1510	1519	S26	E26	.655	15454	10.6	35	-N	3	C		35		F	Y5
	08	2114	2212	NO FLARE PATROL														
	08	2216	2304	NO FLARE PATROL														
	08	2305	2325	NO FLARE PATROL														
	08	0113	0139	NO FLARE PATROL														
	08	0144	0216	NO FLARE PATROL														
	08	0043	0112	NO FLARE PATROL														
514 CULG	08	2327	2341	2357	S24	W80	.994	15446	3.0	30	-N		C	2341	30		J	Y5
515 CULG	09	0244	0245	0252	S28	E20	.634	15454	10.6	8	-F		C	0245	30	.4		Y5
516 CULG	09	0308	0311	0326	S24	W88	1.000	15446	2.5	18	-F		C	0311	20			Y5
517 CULG	09	0508E	0512	0513D	S32	E17	.664	15454	10.5	50	-F		P	0512	60	.8	FI	Y5
518 ISTA	09	0655		0700	S29	E21	.652	15454	10.9	5	-B			0658				Y5
519 KHAR	09	0837E		0912D	S27	E18	.610	15454	10.7	35D	-F		P	0910			D	Y5
520 KHAR	09	1112E		1112D	N16	E65	.901	15458	14.3		-F		P	1112	100		D	Y5
521 KANZ	09	1141	1145	1145D	N16	E27	.472	15451	11.5	40	-F		C					Y5
	09	1710	1719	NO FLARE PATROL														
	09	1750	1812	NO FLARE PATROL														
	09	1818	1824	NO FLARE PATROL														
	09	1859	1913	NO FLARE PATROL														
	09	2037	2132	NO FLARE PATROL														
	09	0109	0114	NO FLARE PATROL														
522 PALE	09	2329	2329	2342	N16	E06	.197	15451	10.4	13	-N	3	C		62		DE	Y5
523 CULG	10	0235E	0236	0251	N15	E05	.173	15451	10.5	160	-N		C	0236	30	.3		Y5
524 CULG	10	0358	0402	0416	N15	E05	.173	15451	10.5	18	-F		C	0402	30	.3		Y5
525 CULG	10	0425	0435U	0510	N23	W70	.934	15443	4.9	45	-F		C	0435	60		FS	Y5
526 CULG	10	0459	0500	0525	N15	E04	.165	15451	10.5	26	-N		C	0500	40	.4	K	Y5
527 CULG	10	0638	0642	0645D	S23	E45	.797	15461	13.7	70	-F		P	0642	20	.3		Y5
528 ZURI	10	1314E	1314	1320D	S25	E02	.521	15454	10.7	60	-F		P	1314	60	.7		Y5
GRP68529	10	1541+5	1547+3	1612	S26	00	.535	15454	10.7	31	-N				80	.9		
HOLL	10	1541	1547	1611	S26	E02	.536	15454	10.8	30	-B	3	C		107		F	
MCMA	10	1546	1550	1613	S26	W01	.535	15454	10.6	27	-N		C	1550	50	.6	E	
530 HOLL	10	1621	1641	1647	S26	E01	.535	15454	10.8	26	-N	3	C		48			Y5
531 HOLL	10	1656	1656	1715	S26	E01	.535	15454	10.8	19	-N	3	C		29			Y5
GRP68532	10	1730+4	1735	1743	N15	W03	.159	15451	10.5	13	-F				30	.3	E	
MCMA	10	1730		1744D	N15	W02	.154	15451	10.6	14D	-F		C	1740	30	.3	E	
HOLL	10	1734	1735	1741	N16	W04	.181	15451	10.4	7	-N	3	C		34			
533 HOLL	10	1751	1751	1758	S26	E01	.535	15454	10.8	7	-N	3	C		26			Y5
534 CULG	10	2130	2144U	2155	N15	W08	.202	15451	10.3	25	-F		C	2144	30	.3		Y5
	10	2252	2310	NO FLARE PATROL														
	10	2313	2320	NO FLARE PATROL														
535 PALE	11	0038	0038	0042	N15	W08	.202	15451	10.4	4	-N	3	C		22		DE	Y5
536 CULG	11	0113	0116	0127	N16	W09	.225	15451	10.4	14	-F		C	0116	20	.2		Y5
537 CULG	11	0249	0251	0256	S28	W09	.581	15454	10.4	7	-F		C	0250	20	.2		Y5
538 CULG	11	0339	0347	0410	N17	E06	.210	15451	11.6	31	-F		C	0347	30	.3	H	Y5
GRP68539	11	0340+1	0343+2	0355	S27	W07	.561	15454	10.6	15	-B				40	.5		
CULG	11	0340	0344	0355	S28	W09	.581	15454	10.5	15	-N		C	0344	30	.4		
TEHR	11	0341E	0343	0356	S27	W06	.558	15454	10.7	15D	-B	2	C		127		DE	
PALE	11	0341	0345	0353	S26	W07	.546	15454	10.6	12	-B	3	C		44		DE	

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	AUG																	
540 CULG	11	0452	0455	0507	S29	W11	.601	15454	10.4	15	-N		C	0455	50	.6		Y5
541 ISTA	11	0734		0755	N19	E42	.678	15458	14.5	21	-F						D	Y5
542 ISTA	11	0800		0808	S24	W08	.521	15454	10.7	8	-F						D	Y5
543 KHAR	11	0814E		0820D	S24	W12	.539	15454	10.4	60	-F		P				DT	Y5
GRP68544	11	0925+3	0928+0	0936D	N16	W14	.288	15451	10.3	11	-N						DH	
KHAR	11	0925E	0928	0936D	N16	W14	.288	15451	10.3	11D	-F		V	0927			DH	
KANZ	11	0928	0928	0931D	N16	W14	.288	15451	10.3	3D	-B		C					
545 KHAR	11	1003E	1013	1017D	S28	W08	.578	15454	10.8	14D	-F		P				DT	Y5
GRP68546	11	1029+6	1037+0 1051	1117	S28	W10	.584	15454	10.7	48	-N				110	1.3	EJ	
ZURI	11	1029	1037	1117	S28	W11	.588	15454	10.6	48	-N		C	1037	70	.9		
KHAR	11	1030E	1037	1103D	S29	W12	.605	15454	10.5	33D	1N		P	1037	150	2.2	ET	
ABST	11	1035	1051	1100	S28	W10	.584	15454	10.7	25	-F		C	1051	87	1.1	EJ	
KHAR	11	1103E		1127D	S28	W07	.575	15454	10.9	24D	-F		P				DT	
GRP68547	11	1206+5	1209+4	1227	S28	W12	.592	15454	10.6	21	-N							
KHAR	11	1206E	1209	1227D	S29	W12	.605	15454	10.6	21D	1N		P	1213	200	2.8	ET	
RAMY	11	1211	1213	1223	S26	W11	.561	15454	10.7	12	-B	2	C		44		FDE	
ZURI	11	1211	1213	1233D	S28	W12	.592	15454	10.6	22D	-N		P	1213	70	.9		
	11	1729	1737	NO FLARE PATROL														
548 PALE	11	2025	2025	2030	N16	W19	.357	15451	10.4	5	-B	3	C		42		DE	Y5
	11	2045	2105	NO FLARE PATROL														
	11	2127	2136	NO FLARE PATROL														
	11	2149	2151	NO FLARE PATROL														
	11	2219	2224	NO FLARE PATROL														
	11	2231	2245	NO FLARE PATROL														
	11	2253	2259	NO FLARE PATROL														
	11	2300	2303	NO FLARE PATROL														
GRP68549	11	2355+7	0002+0	0015	S24	W18	.575	15454	10.6	20	-F							
PALE	12	0002	0002	0010	S26	W18	.600	15454	10.7	8	-N	3	C		20		DE	
CULG	11	2355	2402U	0019D	S23	W19	.571	15454	10.6	24D	-F		C	2402	100	1.2		
550 CULG	12	0054E	0055U	0101D	S30	W21	.665	15454	10.5	7D	-F		P	0055	50	.7	F	Y5
551 CULG	12	0118	0146	0310	S23	E24	.611	15461	13.9	112	-F		C	0146	60	.7	SF	Y5
552 KHAR	12	0851E		0854D	S33	W40	.817	15470	9.4	3D	-F		P				DT	Y5
GRP68553	12	0904+4	0914	0926	S32	W38	.797	15470	9.5	22	-F						E	
KHAR	12	0904E		0927D	S33	W40	.817	15470	9.4	23D	-F		P				ET	
ZURI	12	0908	0914	0924	S31	W37	.783	15470	9.6	16	-F		C	0914	50	.9		
554 KHAR	12	0941E	0957	1004D	S21	W57	.885	15474	8.1	23D	-F		P	0956			T	Y5
555 KHAR	12	0941E		0947D	S34	W42	.836	15470	9.3	6D	-F	*	P				DT	Y5
556 KHAR	12	0957E		1004D	S33	W39	.810	15470	9.5	7D	-F		P				ET	Y5
GRP68557	12	1023+1	1024+2	1048	S33	W38	.804	15470	9.6	25	-F				70	1.1	EJ	
ABST	12	1023	1026	1035	S34	W38	.810	15470	9.6	12	-F		C	1026	87	1.3	EJ	
ZURI	12	1024	1024	1048D	S31	W38	.790	15470	9.6	24D	-F		P	1024	60	1.1		
KHAR	12	1044E	1050	1150D	S33	W42	.830	15470	9.3	66D	-F		P	1054			ET	
558 KHAR	12	1054E	1054	1113D	S20	W58	.890	15474	8.1	19D	-F		P	1106			DT	Y5
559 KHAR	12	1105E	1117	1130D	S33	W23	.708	15454	10.7	25D	-N		P	1117	120	1.7	EL	Y5
560 KHAR	12	1150E	1159	1211D	S20	W57	.883	15474	8.2	21D	-F		V	1159			T	Y5
561 KHAR	12	1222E		1222D	S33	W42	.830	15470	9.4		-F		P				ET	Y5
GRP68562	12	1231	1236	1243	N15	W30	.510	15451	10.3	12	-F						E	
MCMA	12	1231	1236	1243	N15	W30	.510	15451	10.3	12	-F		C	1236	20	.3	E	
KHAR	12	1235E		1238D	N15	W31	.524	15451	10.2	3D	-F		P					
563 KHAR	12	1235E		1255D	S21	W58	.892	15470	8.2	20D	-F		P				T	Y5

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	AUG																	
564 KHAR	12	1235E		1252D	S33	W42	.830	15474	9.4	17D	-F	*	P				ET	Y5
565 KHAR	12	1305E		1318D	S33	W42	.830	15470	9.4	13D	-F		P				ET	Y5
566 MCMA	12	1526	1529	1545	S25	W27	.656	15454	10.6	19	-F		C	1529	30	.4	E	Y5
567 MCMA	12	1558E		1605	N15	W31	.524	15451	10.3	7D	-F		C	1558	20	.3	E	Y5
GRP68568	12	1900>9	1915+3	1937	S21	W58	.892	15474	8.4	37	-N				50	1.1		
RAMY	12	1900	1915	1944	S23	W58	.898	15474	8.4	44	-N	3	C		47			
PALE	12	1913	1918	1930	S20	W59	.897	15474	8.4	17	-N	3	C		63		DE	
569 RAMY	12	1925	1927	1934	S34	W41	.829	15470	9.7	9	-N	3	C		16			Y5
570 RAMY	12	1959	2000	2005	S23	W58	.898	15474	8.5	6	-N	3	C		18			Y5
571 CULG	12	2131	2135	2142	S19	W62	.915	15474	8.2	11	-N		C	2135	40	1.0	T	Y5
572 CULG	12	2240	2248	2305	N34	E90	.998	15472	19.7	25	-N		C	2248	40			Y5
573 CULG	13	0106	0128	0143	N34	E90	.998	15472	19.8	37	-N		C	0128	20			Y5
574 PALE	13	0224E	0231U	0245D	S20	W63	.923	15474	8.4	21D	-N	2	C		25		F	Y5
575 CULG	13	0233	0236	0240	N34	E90	.998	15472	19.9	7	-N		C	0236	20			Y5
GRP68576	13	0404>9	0407 0443	0453	S19	W67	.944	15474	8.1	49	-N						E	
TACH	13	0404E	0407	0448	S19	W66	.939	15474	8.2	44D	1N		C	0417	172		E	
CULG	13	0440	0443	0457	S20	W68	.950	15474	8.1	17	-N		C	0443	60		T	
577 TACH	13	0412	0414	0420	S31	W49	.866	15470	9.5	8	-F		C	0417	66	1.3	D	Y5
578 CULG	13	0434	0440	0456	N33	E90	.998	15472	19.9	22	-F		C	0440	20			Y5
579 KHAR	13 IMP.1	0848E NO	ABST1	0914D CATA1	S32	W54	.900	15470	9.3	26D	?N		P	0848	150	3.8		Y5
580 KHAR	13	0908E		0926D	S21	W71	.965	15474	8.1	18D	-N		P	0916			D	Y5
581 ABST	13	0916	0924	0940	N40	E70	.943	15471	18.6	24	-F		C	0924	87		EJ	Y5
582 KHAR	13	0953E		1001D	S23	W39	.746	15454	10.5	8D	-F		V	0956			D	Y5
583 RAMY	13	1104E	1104U	1115	S23	W66	.945	15474	8.5	11D	-B	3	C		35		F	Y5
584 RAMY	13	1109	1115	1120	N46	E59	.899	15471	17.9	11	-F	3	C		29		F	Y5
GRP68585	13	1158>9	1218 1223+4	1250	S21	W68	.952	15474	8.4	52	-B				90		H	
MCMA	13	1158	1225	1245	S22	W73	.974	15474	8.0	47	1B		C	1225	50	2.0	E	
KHAR	13	1206E	1218	1238D	S21	W70	.961	15474	8.3	32D	1N		P	1222	180		H	
TEHR	13	1220	1227	1250	S21	W65	.936	15474	8.6	30	-B		C		111	300.0	2	
RAMY	13	1221	1223	1250	S22	W67	.948	15474	8.5	29	-B	3	C		77		F	
GRP68586	13	1254	1255 1412	1420	S26	W38	.757	15454	10.7	8G	-B				35	.5		
RAMY	13	1254	1255	1404	S25	W37	.741	15454	10.8	7D	-B	3	C		21		F	
MCMA	13	1350E		1415	S26	W40	.773	15454	10.6	25D	-F		C	1411	50	.8	E	
RAMY	13	1410	1412	1425	S27	W37	.755	15454	10.8	15	-B	3	C		24		F	
GRP68587	13	1418+5	1424+3	1434	S22	W70	.962	15474	8.3	16	-N				25		D	
MCMA	13	1418	1427	1438	S22	W73	.974	15474	8.1	20	-N		C	1427	30	1.2	D	
RAMY	13	1423	1424	1430	S22	W67	.948	15474	8.6	7	-N	3	C		18			
588 RAMY	13	1443	1444	1450	S27	W37	.755	15454	10.8	7	-B	3	C		23		F	Y5
GRP68589	13	1525+1	1532+2	1545	S22	W69	.958	15474	8.5	20	-N				30		D	
MCMA	13	1525	1532	1545	S22	W73	.974	15474	8.2	20	-N		C	1532	30	1.2	D	
HOLL	13	1526	1534	1539	S24	W69	.960	15474	8.5	13	-N	3	C		20			
RAMY	13	1526	1534	1546	S22	W68	.953	15474	8.5	20	-B	3	C		31			
590 RAMY	13	1616	1616	1624	S28	W37	.762	15454	10.9	8	-N	3	C		16			Y5
GRP68591	13	1639>9	1655+1	1708	S23	W70	.963	15474	8.4	29	-N				30			
RAMY	13	1639	1655	1712	S23	W70	.963	15474	8.4	33	-B	3	C		41			
HOLL	13	1653	1656	1703	S24	W70	.964	15474	8.5	10	-N	3	C		18			

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE AUG	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.	
592 RAMY	13	1655	1655	1703	S28	W37	.762	15454	10.9	8	-N	3	C		17		Y5
GRP68593	13	1755+3	1759+1	1817	S23	W71	.967	15474	8.4	22	-B				40		U
RAMY	13	1755	1800	1817	S23	W70	.963	15474	8.5	22	-B	3	C		67		
HOLL	13	1756	1759	1811	S24	W71	.968	15474	8.4	15	-B	3	C		32		U F
PALE	13	1758	1800	1832	S20	W71	.964	15474	8.4	34	-B	3	C		30		FDE
	13	1940	2020	NO FLARE PATROL													
	13	2043	2052	NO FLARE PATROL													
594 CULG	13	2143E	2143E	2150	S30	W61	.933	15470	9.3	70	-F		P	2143	20		Y5
595 CULG	13	2312	2320	2335	S31	W62	.940	15470	9.3	23	-N		C	2320	50		Y5
596 CULG	13	2328	2334	2345	S20	W80	.992	15474	8.0	17	-F		C	2334	40		Y5
597 CULG	13	2359	2402	0007	S28	W51	.867	15454	10.2	8	-F		C	2402	30	.6	Y5
598 CULG	14	0002	0021	0048	S33	W59	.930	15470	9.6	46	1F		C	0021	90	2.3	Y5
599 CULG	14	0125	0127	0145	S24	W45	.804	15454	10.7	20	-N		C	0127	30	.5	Y5
600 CULG	14	0210	0224	0244	N38	E53	.841	15471	18.1	34	-F		C	0224	40	.8	Y5
601 CULG	14	0411	0417	0445	S23	W49	.832	15454	10.5	34	-F		C	0417	40	.7	Y5
602 CULG	14	0450	0453	0459	S35	W58	.931	15470	9.9	9	-F		C	0453	20		Y5
603 CULG	14	0601	0613U	0621	S32	W67	.963	15470	9.2	20	-F		P	0613	20		F Y5
604 KHAR	14	0825E		0838D	S20	W88	1.000	15474	7.8	130	-F		P				Y5
605 ZURI	14	0933E	0933	0939	S24	W51	.851	15454	10.6	60	-F		P	0933	60	1.2	Y5
606 KHAR	14	0940E	0947	1005D	S20	W88	1.000	15474	7.8	250	-F		P	0950			Y5
607 RAMY	14	1152	1248	1308	N19	W80	.980	0	8.5	76	-N	3	C		12		Y5
608 RAMY	14	1247	1250	1310	S34	W63	.951	15470	9.8	23	-B	3	C		14		Y5
609 RAMY	14	1320	1325	1348	S34	W63	.951	15470	9.8	28	-N	3	C		14		Y5
610 RAMY	14	1329	1329	1337	N19	W80	.980	0	8.6	8	-N	3	C		8		Y5
GRP68611	14	1736	1738+0	1759	S28	W52	.874	15454	10.8	23	-N				45	.9	E
PALE	14	1736	1738	1759	S27	W52	.870	15454	10.8	23	-N	3	C		42		DE
MCMA	14	1737E	1738	1757D	S29	W53	.884	15454	10.8	20D	-N		C	1738	50	1.0	E
612 PALE	14	2105	2106	2111	S27	W53	.877	15454	10.9	6	-N	3	C		37		DE Y5
GRP68613	14	2141+1	2141+1	2147	S28	W55	.893	15454	10.8	6	-F				20	.4	
CULG	14	2141	2141	2146	S28	W56	.900	15454	10.7	5	-F		C	2141	20	.5	
HOLL	14	2142	2142	2147	S29	W55	.897	15454	10.8	5	-N	3	C		24		
614 CULG	15	0121	0129	0140	S28	W71	.973	15454	9.7	19	-F		C	0129	40		Y5
615 CULG	15	0145	0200	0325	S33	W75	.988	15470	9.4	100	-N		C	0200	30		KT Y5
616 CULG	15	0233	0242	0258	S28	W55	.894	15454	11.0	25	-N		C	0242	20	.5	Y5
GRP68617	15	0318+3	0322+3 0334	0336	N44	E37	.759	15471	17.9	18	1N				140	2.2	
CULG	15	0318	0322	0345	N44	E37	.759	15471	17.9	27	1N		C	0322	140	2.1	
VORO	15	0321	0325	0332	N46	E35	.761	15471	17.8	11	1F		C	0325	152	2.3	
TEHR	15	0330E	0334	0336	N44	E44	.804	15471	18.4	60	-N	2	C		127		
GRP68618	15	0724	0728	0738	S11	E69	.945	0	20.5	14	-F						
KANZ	15	0724	0728	0739	S11	E67	.933	0	20.3	15	-F		C				
ZURI	15	0732E	0732	0736	S12	E72	.961	0	20.7	40	-F		P	0732	60		
GRP68619	15	0742+0	0746+0	0749	N44	E34	.740	15471	17.9	7	-N				70	1.1	D
KANZ	15	0742	0746	0749	N44	E33	.734	15471	17.8	7	-B		C				D
ZURI	15	0742	0746	0748	N46	E34	.756	15471	17.9	6	-F		C	0746	50	.8	
ABST	15	0745E	0746	0750	N44	E35	.746	15471	17.9	5D	-F		P	0746	87	1.3	D
620 KANZ	15	0806	0809	0824	N04	W04	.083	15462	15.0	18	-F		C				G Y5

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX HER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	AUG																	
GRP68621	15	0844+0	0846+3	0900	S29	W60	.926	15454	10.9	16	-F						E	
ZURI	15	0844	0846	0856	S29	W60	.926	15454	10.9	12	-F		C	0846	40			
KANZ	15	0844	0849	0900	S29	W61	.931	15454	10.8	16	-F		C					
KHAR	15	0843E		0908D	S30	W60	.928	15454	10.9	200	-N		P				ET	
GRP68622	15	0952>9	1006+6 1017+6	1034	S30	W64	.948	15454	10.6	42	1N				120		EJU	
KHAR	15	0910E	0936	1025D	S22	W67	.949	15454	10.4	750	-F		P	0936			ET	
KHAR	15	0913E	1006	1025D	S33	W68	.968	15454	10.3	720	1N		P	1006			T	
KANZ	15	0952	1008	1014	S31	W62	.940	15454	10.8	22	-N		C					
ABST	15	1006E	1012	1021	S31	W66	.958	15454	10.5	150	1F		P	1012	79		DJ	
HURB	15	1013E	1017	1039D	S32	W70	.974	15454	10.2	260	1N		V					
KHAR	15	1014E	1018	1047D	S29	W61	.931	15454	10.9	330	-N		P				ET	
KANZ	15	1014	1021	1039	S29	W61	.931	15454	10.9	25	-N		C				U	
MEUD	15	1015	1017	1030	S30	W60	.928	15454	10.9	15	-N		C				E	
ABST	15	1015	1017	1025	S30	W61	.933	15454	10.9	10	1F		C	1017	166		EJ	
TEHR	15	1020E	1023U	1037	S27	W65	.947	15454	10.6	17D	-B	2	C		159		F	
GRP68623	15	1051+1	1052+1	1059	N16	W68	.921	15451	10.4	8	-F						DG	
ABST	15	1051	1053	1058	N17	W70	.933	15451	10.2	7	-F		C	1053	87		D	
KANZ	15	1052	1052	1100	N16	W67	.914	15451	10.4	8	-F		C				G	
624 ZURI	15	1106	1110	1112	N46	E32	.744	15471	17.9	6	-F		C	1110	80	1.3		Y5
625 ZURI	15	1242	1246	1250	S32	W65	.956	15454	10.7	8	-F		C	1246	40			Y5
626 KANZ	15	1328	1328	1328	N44	E31	.721	15471	17.9		-B		C				D	Y5
627 KANZ	15	1506	1506	1514	S31	W65	.954	15454	10.8	8	-B		C				D	Y5
GRP68628	15	1547+1	1548+2 1558	1611	S28	W64	.944	15454	10.9	24	-N				25		F	
MCMA	15	1547E		1610	S31	W65	.954	15454	10.8	23D	-N		C	1553			E	
RAMY	15	1547	1548	1607	S28	W62	.934	15454	11.0	20	-B	3	C		28		F	
HOLL	15	1547	1550	1611	S29	W65	.950	15454	10.8	24	-N	3	C		24		F	
KANZ	15	1548	1558	1612	S28	W63	.939	15454	10.9	24	-B		C					
GRP68629	15	1621+0	1621+2	1626	N43	E32	.719	15471	18.1	5	-N							
KANZ	15	1621	1621	1626	N43	E33	.726	15471	18.2	5	-N		C					
RAMY	15	1621	1623	1625	N44	E31	.721	15471	18.0	4	-N	3	C		18			
630 KANZ	15	1645	1653	1701	S32	W70	.974	15454	10.4	16	-N		C					Y5
GRP68631	15	1827+3	1836+0	1855	N36	E58	.870	15472	20.1	28	-N				70	1.5		
RAMY	15	1827	1836	1854	N36	E58	.870	15472	20.1	27	-B	3	C		54		FDE	
MCMA	15	1828E		1832D	N31	E66	.914	15472	20.7	40	1N		C	1831	100	2.4	E	
HOLL	15	1830	1836	1855	N39	E57	.870	15472	20.0	25	-N	3	C		55		F	
	15	2102	2118	NO FLARE PATROL														
	15	2121	2203	NO FLARE PATROL														
632 PALE	15	2205	2214	2221	S35	W88	1.001	15470	9.3	16	-N	3	C		18		F	Y5
	15	2241	2244	NO FLARE PATROL														
633 CULG	16	0413	0420	0446	N32	W38	.688	0	13.3	33	-F		C	0420	40	.6		Y5
634 CULG	16	0532	0552	0609	S26	W85	1.000	15454	9.9	37	-N		C	0552	40		F	Y5
GRP68635	16	0552	0619 0629	0642	N45	E31	.729	15471	18.6	50	-N						KU	
CULG	16	0552	0619	0627D	N43	E32	.719	15471	18.6	35D	-N		C	0619	100	1.4	K	
ISTA	16	0600E		0645	N45	E31	.729	15471	18.6	45D	-N						K	
TEHR	16	0621	0629	0639	N45	E27	.706	15471	18.3	18	-N	2	C		127		U	
GRP68636	16	0640E	0642	0700	S30	W74	.984	15454	10.7	20	-N							
ISTA	16	0640E		0710D	S33	W75	.988	15454	10.7	30D	-N							
TEHR	16	0641E	0642U	0650	S27	W73	.979	15454	10.8	9D	-B	2	C		63			
637 KHAR	16	0930E	0930	1003D	S26	W76	.986	15454	10.7	33D	-F		P	0933	80		D	Y5
GRP68638	16	1324+6	1337+1	1406	S26	W76	.986	15454	10.9	42	1N				110			
KANZ	16	1324E	1338	1407	S26	W74	.981	15454	11.0	43D	-B		C					
HOLL	16	1326	1337	1406	S28	W76	.988	15454	10.9	40	-B	3	C		70		F	
LVOV	16	1330	1337	1405	S25	W78	.990	15454	10.7	35	1F		C	1337	150		E	
639 HURB	16	1340E	1344	1415D	S14	E58	.876	15477	20.9	35D	?N		V				D	Y5
	IMP.1 NO : KANZ2 KIEV1 LVOV1 HOLL1																	

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	AUG																	
640 MCMA	16	1533E		1545	N44	E17	.645	15471	17.9	12D	-N		C	1538	25	.3	EHY	Y5
GRP68641	16	1729+1	1732+0	1736	N44	E15	.637	15471	17.9	7	-F				25	.3	E	
HOLL	16	1729	1732	1736	N45	E17	.657	15471	18.0	7	-N	3	C		21			
MCMA	16	1730	1732	1736	N44	E14	.633	15471	17.8	6	-F		C	1732	30	.3	E	
642 PALE	16	2029	2030	2034	N44	E14	.633	15471	17.9	5	-N	3	C		22		DE	Y5
GRP68643	17	0005	0006+0	0010	S14	E56	.860	15477	21.2	5	-N				40	.8	F	
PALE	17	0005	0006	0009	S15	E56	.862	15477	21.2	4	-N	3	C		47		F	
HOLL	17	0006E	0006U	0010D	S14	E57	.868	15477	21.3	4D	-N	2	C		29			
644 PALE	17	0055E	0055U	0057D	N20	W33	.568	15467	14.6	2D	-N	3	C		27		F	Y5
GRP68645	17	0343+0	0345+0	0359	N44	E10	.620	15471	17.9	16	-B				120	1.5	FR	
TEHR	17	0343	0345	0357	N45	E10	.633	15471	17.9	14	-B	2	C		127		R	
MANI	17	0343	0345	0359	N44	E10	.620	15471	17.9	16	-N	3	C		80	1.0		
PALE	17	0345E	0345U	0405D	N44	E10	.620	15471	17.9	20D	-B	3	C		143		F	
646 PALE	17	0345E	0345U	0405D	N20	W34	.581	15467	14.6	20D	-N	3	C		50		F	Y5
647 KHAR	17	0808E	0842	0905D	N18	W90	.999	15451	10.6	57D	-F		V	0840			HT	Y5
648 KHAR	17	0811E		0841D	S23	W90	1.001	15454	10.6	30D	-F		V	0816			DH	Y5
649 KHAR	17	0826E		0920D	N21	W38	.635	15467	14.5	54D	-F		P	0848	120	1.6	E	Y5
650 KHAR	17	0947E		1020D	N18	W90	.999	15451	10.7	33D	-N		P	0947			HT	Y5
GRP68651	17	1323+5	1333 1350	1430D	S30	E40	.800	15476	20.6	67	1N						LU	
MCMA	17	1323	1350	1520	S30	E40	.800	15476	20.6	117	1N		C	1350	150	2.5	ELU	
ZURI	17	1323	1341	1341D	S28	E40	.787	15476	20.6	18D	1N		P	1341	160	2.8		
LVOV	17	1328	1333	1430	S32	E40	.812	15476	20.6	62	-F		C	1333	100	1.8	D	
652 MCMA	17	1408	1412	1419	N46	E06	.638	15471	18.0	11	-F		C	1412	30	.4	E	Y5
653 MCMA	17	1451	1452	1500	N46	E06	.638	15471	18.1	9	-F		C	1452	30	.4	EL	Y5
654 MCMA	17	1524	1528	1543	N46	E06	.638	15471	18.1	19	-N		C	1528	30	.4	EL	Y5
655 MCMA	17	1619	1621	1645	N23	W41	.677	15467	14.6	26	-F		C	1621	50	.7	E	Y5
	17	1748	1758	NO FLARE PATROL														
GRP68656	17	1905+2	1909+2	1920	N38	E35	.701	15472	20.4	15	-N				30	.4		
MCMA	17	1905	1909	1920D	N37	E38	.719	15472	20.6	15D	-N	*	C	1909	30	.4	E	
HOLL	17	1907	1911	1919	N39	E32	.685	15472	20.2	12	-9	*	C		27		FDE	
GRP68657	17	1906+1	1907+2	1914	N45	E04	.622	15471	18.1	8	-N				40	.5		
MCMA	17	1906	1909	1915	N45	E12	.638	15471	18.7	9	-N		C	1909	30	.4	E	
HOLL	17	1907	1908	1913	N45	E04	.622	15471	18.1	6	-N	3	C		71		FDE	
PALE	17	1907	1907U	1911D	N44	E03	.607	15471	18.0	4D	-N	3	C		30		DE	
GRP68658	17	1937+6	1945+0	1954	S19	E47	.798	15477	21.3	17	-N				50	.8	E	
MCMA	17	1937	1945	1952D	S22	E48	.820	15477	21.4	15D	-N		C	1945	70	1.2	E	
PALE	17	1943	1945	1954	S17	E47	.790	15477	21.3	11	-N	3	C		35		DE	
	17	2007	2023	NO FLARE PATROL														
	17	2212	2215	NO FLARE PATROL														
	17	2317	2326	NO FLARE PATROL														
	17	2346	2354	NO FLARE PATROL														
GRP68659	18	0714+1	0719+0	0732	S19	E39	.723	15477	21.2	18	-N				50	.7	DK	
ISTA	18	0714E		0730D	S19	E41	.742	15477	21.4	16D	-N						K	
BUCA	18	0715	0719	0733	S19	E38	.713	15477	21.2	18	-N		C	0719	53	.8	D	
TEHR	18	0717E	0719U	0731	S20	E39	.729	15477	21.2	14D	-N	2	C		63			
GRP68660	18	0739	0739	0755	N29	E71	.940	0	23.6	16	-F							
KANZ	18	0739	0739	0754	N29	E69	.930	0	23.5	15	-F		C					
ISTA	18	0740E		0755D	N30	E73	.951	0	23.8	15D	-N							
661 KANZ	18	0838	0841	0845	S19	E35	.683	15477	21.0	7	-B		C				D	Y5

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY			COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
	AUG									MIN.							
GRP68662	18	0918+4	0924+2	0937	S17	E35	.669	15477	21.0	19	-N				100	1.3	OHU
KHAR	18	0918E	0924	0937D	S17	E36	.679	15477	21.1	19D	-N		P	0922	100	1.4	DH
ZURI	18	0920	0926	0940	S17	E35	.669	15477	21.0	20	-N		C	0926	120	1.7	
MONT	18	0922	0926	0930	S18	E35	.676	15477	21.0	8	-F		C	0926	50		D
KANZ	18	0922	0925	0936	S17	E35	.669	15477	21.0	14	-B		C				U
GRP68663	18	1030+4	1035+3	1042	S17	E35	.669	15477	21.1	12	-N				80	1.1	DH
KHAR	18	1030E	1035	1042	S17	E36	.679	15477	21.1	12D	-N		P	1038	100	1.4	DH
ZURI	18	1034	1038	1042	S17	E35	.669	15477	21.1	8	-N		C	1038	60	.8	
664 KHAR	18	1048E	1050	1101	S20	E34	.680	15477	21.0	13D	-N		P	1057	90	1.3	DH Y5
665 KHAR	18	1106E	1106	1110	S21	E37	.716	15477	21.2	4D	-F		V	1108			DH Y5
GRP68666	18	1112E	1118+8	1138	S18	E34	.665	15477	21.0	26	-N				70	.9	EHK
KHAR	18	1112E	1118	1128	S16	E34	.651	15477	21.0	16D	1N		V	1118			DE
RAMY	18	1119E	1123U	1137	S17	E35	.669	15477	21.1	18D	-B	2	C		75		H
MCMA	18	1123E		1130	S18	E33	.655	15477	20.9	7D	-N		C	1123	50	.7	DH
ZURI	18	1124	1124	1130	S17	E34	.658	15477	21.0	6	-N		C	1124	80	1.1	
KHAR	18	1124	1126	1137	S21	E34	.687	15477	21.0	13	-F		V	1126			DH
MCMA	18	1130		1204D	S20	E40	.738	15477	21.5	34D	-N		C	1133	100	1.5	EK
KHAR	18	1136E		1138	S18	E34	.665	15477	21.0	2D	-F		V	1136			DH
GRP68667	18	1145+7	1154+3	1209	S19	E40	.732	15477	21.5	24	-N				70	1.0	H
KHAR	18	1145E	1154	1210D	S20	E43	.767	15477	21.7	25D	1F		P	1157	200	3.1	H
RAMY	18	1149	1157	1215	S17	E38	.700	15477	21.3	26	-B	3	C		55		F
ZURI	18	1152	1157	1205	S18	E42	.746	15477	21.6	13	-N		C	1157	70	1.1	
KHAR	18	1204E		1207D	S21	E34	.687	15477	21.1	3D	-F		V	1204			DH
668 RAMY	18	1237	1242	1333	S17	E38	.700	15477	21.4	56	-B	3	C		62		F Y5
GRP68669	18	1346+4	1352+0	1402	S16	E34	.651	15477	21.1	16	-N						FH
RAMY	18	1346	1352	1358	S16	E35	.662	15477	21.2	12	-B	3	C		46		F H
ZURI	18	1350	1352	1406	S17	E33	.648	15477	21.1	16	1F		C	1352	260	3.6	
GRP68670	18	1418+1	1420+4	1434	S18	E35	.676	15477	21.2	16	-N				50	.7	FH
ZURI	18	1418	1420	1428	S17	E33	.648	15477	21.1	10	-N		C	1420	60	.8	
RAMY	18	1419	1420	1434	S17	E35	.669	15477	21.2	15	-B	3	C		38		F H
ZURI	18	1422	1424	1434	S21	E36	.706	15477	21.3	12	-N		C	1424	70	1.1	
671 PALE	18	1929	1941	1954	S18	E34	.665	15477	21.4	25	-N	3	C		46		DE Y5
	18	2143	2150	NO FLARE PATROL													
	18	2226	2302	NO FLARE PATROL													
	18	2332	2359	NO FLARE PATROL													
672 KANZ	19	1516	1520	1522	S21	E22	.577	15477	21.3	6	-F		C				Y5
673 PALE	19	1852	1907	1914	S18	E21	.535	15477	21.4	22	-N	3	C		47		DE Y5
	19	2058	2059	NO FLARE PATROL													
	19	2103	2125	NO FLARE PATROL													
	19	2128	2150	NO FLARE PATROL													
	19	0232	0237	NO FLARE PATROL													
	19	0239	0244	NO FLARE PATROL													
	19	0310	0315	NO FLARE PATROL													
	19	0411	0418	NO FLARE PATROL													
	19	0007	0019	NO FLARE PATROL													
674 CULG	19	2336	2343	2355	N17	W76	.964	15467	14.3	19	-F		C	2343	40		Y5
	20	0139	0200	NO FLARE PATROL													
	20	0203	0208	NO FLARE PATROL													
	20	0051	0052	NO FLARE PATROL													
675 CULG	20	0523	0534U	0536	S22	E11	.512	15477	21.0	13	-N		P	0534	30	.3	Y5
676 KHAR	20	1010E	1016	1032D	N20	W80	.979	15467	14.4	22D	-N		V	1016			D Y5
677 KHAR	20	1125E		1147D	N18	W88	.998	15467	13.9	22D	-F		V	1125			D Y5
GRP68678	20	1307+6	1313+1	1320	N21	W79	.976	15467	14.6	13	-F						
KANZ	20	1307	1314	1321	N23	W78	.972	15467	14.7	14	-F		C				
RAMY	20	1313	1313	1318	N20	W80	.979	15467	14.6	5	-N	3	C		10		
679 RAMY	20	1647	1647	1650	N20	W81	.982	15467	14.6	3	-N	3	C		9		Y5

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX HER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	AUG																	
680 PALE	21	0239	0240	0243	S18	E06	.432	15477	21.6	4	-N	3	C		42		DE	Y5
681 RAMY	21	1450	1451	1459	S18	W04	.426	15477	21.3	9	-N	3	C		22			Y5
682 HOLL	21	1728	1738	1757	S27	W18	.617	15476	20.4	29	-N	3	C		63		F	Y5
683 MCMA	21	1811E		1812D	N24	W90	.999	15467	15.0	10	-F		P	1811				Y5
684 CULG	21	2155	2200	2220	S20	E60	.905	15487	26.4	25	-F		C	2200	30	.7		Y5
GRP68685	22	0759+0	0801+4	0814	S18	W13	.470	15477	21.4	15	-F				70	.8	E	
MEUD	22	0759	0801	0815	S19	W13	.484	15477	21.4	16	-F		C				E	
MONT	22	0759	0805	0814	S18	W13	.470	15477	21.4	15	-N		C	0805	80		E	
ZURI	22	0804E	0804	0810	S18	W12	.463	15477	21.4	6D	-F		P	0804	70	.8		
686 KANZ	22	0905	0909	0915	S20	W14	.504	15477	21.3	10	-F		C					Y5
687 ABST	22	1029E	1029	1036	S18	W14	.477	15477	21.4	7D	-F		P	1029	87	1.0	EJ	Y5
GRP68688	22	1349+0	1353+0	1356	N21	W05	.257	15478	22.2	7	-N				25	.3	FG	
HOLL	22	1349	1353	1356	N21	W09	.285	15478	21.9	7	-F	2	C		34		F	
KANZ	22	1349	1353	1356	N21	W04	.252	15478	22.3	7	-N		C				FG	
MCMA	22	1350E		1351D	N22	W05	.273	15478	22.2	10	-N		P	1351	20	.2	D	
689 ZURI	22	1526	1530	1552	S19	E43	.762	15485	25.9	26	-F		C	1530	60	1.0		Y5
690 MCMA	22	1935	1945	2000	S18	E63	.920	15490	27.5	25	-N		C	1945	20	.6	D	Y5
	22	2056	2124	NO FLARE PATROL														
	22	2223	2232	NO FLARE PATROL														
691 CULG	23	0220	0236U	0300	S20	E32	.662	15485	25.5	40	-F		C	0236	50	.7		Y5
692 CULG	23	0357	0402	0420	S18	W22	.546	15477	21.5	23	-F		C	0402	70	.8		Y5
GRP68693	23	0710+0		0738	S19	W22	.557	15477	21.6	28	-F							
ISTA	23	0710E		0747D	S20	W21	.559	15477	21.7	37D	-N			0719			F	
BUCA	23	0710		0729	S18	W24	.565	15477	21.5	19	-F		C	0716	107	1.3	E	
694 KANZ	23	0837	0850	0853D	N18	E90	.999	15493	30.1	16D	-N		C					Y5
695 ZURI	23	0951	0953	1001	S17	W31	.628	15477	21.1	10	-F		C	0953	60	.8		Y5
GRP68696	23	1524+5	1532+2	1548	S18	W29	.615	15477	21.5	24	-N				70	.9		
RAMY	23	1524	1532	1611	S19	W29	.624	15477	21.5	47	-9	3	C		85		FDE	
HOLL	23	1525	1533	1546	S18	W29	.615	15477	21.5	21	-N	3	C		66			
MCMA	23	1525	1534	1552	S18	W31	.636	15477	21.3	27	-N		C	1534	60	.8	E	
KANZ	23	1526	1532	1546D	S18	W29	.615	15477	21.5	20D	-N		C				F	
ZURI	23	1529	1533	1539	S19	W30	.634	15477	21.4	10	-N		C	1533	50	.7		
GRP68697	23	1554+1	1557+0	1606	S18	W29	.615	15477	21.5	12	-N				35	.4	E	
MCMA	23	1554	1557	1606	S18	W30	.626	15477	21.4	12	-N		C	1557	40	.6	E	
HOLL	23	1555	1557	1606	S18	W29	.615	15477	21.5	11	-N	3	C		33			
698 RAMY	23	1635	1635	1646	S21	W30	.651	15477	21.4	11	-N	3	C		40			Y5
GRP68699	23	1745+1	1748	1758	S19	W30	.634	15477	21.5	13	-N				50	.6		
MCMA	23	1745		1800	S18	W30	.626	15477	21.5	15	-N		C	1746	40	.5	E	
RAMY	23	1746	1748	1756	S21	W30	.651	15477	21.5	10	-N	3	C		74		FDE	
	23	2051	2114	NO FLARE PATROL														
700 CULG	23	2203	2208	2219	S20	E48	.813	15490	27.5	16	-F		C	2208	30	.5		Y5
701 CULG	23	2247	2254	2313	S17	W38	.702	15477	21.1	26	-F		C	2254	20	.3		Y5
GRP68702	23	2355+2	2359+1	0012	S18	E44	.767	15490	27.3	17	-F				50	.8		
VORO	23	2355	2359	0008	S17	E46	.781	15490	27.4	13	-N		C	2359	45	.7		
CULG	23	2357	2400	0015	S19	E43	.763	15490	27.2	18	-F		C	2400	60	1.0		
703 CULG	24	0021	0024	0043	S19	E22	.557	15485	25.7	22	-F		C	0024	40	.5		Y5
GRP68704	24	0029+0	0033+4	0102	N20	W26	.475	15478	22.1	33	-N				60	.7	D	
VORO	24	0029	0033	0058	N20	W26	.475	15478	22.1	29	-N		C	0033	81	.9	D	
CULG	24	0029	0037	0105	N21	W26	.481	15478	22.1	36	-N		C	0037	40	.5		

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONC	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	AUG																	
GRP68705	24	0031+6	0039+3	0102	S17	E45	.772	15490	27.4	31	-F				80	1.2	EH	
CULG	24	0031	0042	0110	S19	E44	.772	15490	27.3	39	-F		C	0042	60	1.0		
VORO	24	0037	0039	0053	S16	E46	.777	15490	27.5	16	-N		C	0039	108	1.7	EH	
706 VORO	24	0148	0151	0159	S17	E46	.782	15490	27.5	11	-N		C	0151	54	.8	D	Y5
707 TEHR	24	0311	0315	0347	N11	E68	.922	15494	29.2	36	-F	2	C		31			Y5
708 TEHR	24	0602	0604	0636	S16	E42	.737	15490	27.4	34	-N	2	C		95		F H	Y5
GRP68709	24	0937+2	0940	0951	S16	W44	.758	15477	21.1	14	-F						D	
KHAR	24	0937E		0948D	S16	W46	.777	15477	21.0	11D	-F		V				D	
MONT	24	0939	0940	0951	S16	W43	.748	15477	21.2	12	-F		C	0940	50		D	
	24	1345	1419	NO FLARE PATROL														
	24	1424	1515	NO FLARE PATROL														
	24	1545	1609	NO FLARE PATROL														
	24	1659	1729	NO FLARE PATROL														
	24	1742	1800	NO FLARE PATROL														
710 RAMY	24	1823	1823	1843	S16	E36	.674	15490	27.5	20	-N	3	C		16			Y5
711 RAMY	24	1933	1933	1945	S16	E35	.664	15490	27.4	12	-N	3	C		18			Y5
	24	2115	2121	NO FLARE PATROL														
712 CULG	24	2354	2354	0014	S18	W55	.864	15477	20.9	20	-N		C	2354	20	.4		Y5
713 ABST	25	0728E	0733	0745	S19	E29	.625	15490	27.5	17D	-F		P	0733	140	1.8	EJ	Y5
GRP68714	25	1154>9	1209+3	1222	S16	E26	.567	15490	27.4	28	-N				130	1.6		
RAMY	25	1154	1209	1230	S16	E26	.567	15490	27.4	36	-B	3	C		109		FDE	
ZURI	25	1207	1209	1219	S17	E27	.587	15490	27.5	12	-N		C	1209	100	1.3		
LVOV	25	1210E	1212	1222	S16	E26	.567	15490	27.5	12D	1F		C	1212	180	2.3	E	
715 MCMA	25	1650	1650	1705	N34	E90	.998	15495	1.5	15	-F		C	1650				Y5
716 MCMA	25	1809	1811	1817	N34	E90	.998	15495	1.5	8	-F		C	1811				Y5
	25	2023	2051	NO FLARE PATROL														
	25	2055	2057	NO FLARE PATROL														
	25	2103	2110	NO FLARE PATROL														
	25	2138	2216	NO FLARE PATROL														
	25	2221	2232	NO FLARE PATROL														
	25	2250	2309	NO FLARE PATROL														
	25	2310	2315	NO FLARE PATROL														
	25	2326	2328	NO FLARE PATROL														
GRP68717	25	2328E	2336 2352	0016	S24	E09	.534	15487	26.7	48	-N						EU	
CULG	25	2328E	2352	0025	S24	E08	.530	15487	26.6	57D	-N		C	2352	130	1.6	U	
MITK	25	2334E	2336	0007	S24	E10	.538	15487	26.7	33D	-N		C	2336			E	
	25	2330	2334	NO FLARE PATROL														
718 CULG	25	2349	2349	2353	N13	W77	.970	0	20.2	5	-F		C	2349	20			Y5
	26	1831	1838	NO FLARE PATROL														
	26	0156	0158	NO FLARE PATROL														
	26	0018	0023	NO FLARE PATROL														
	26	0025	0031	NO FLARE PATROL														
GRP68719	26	2110+1	2112+2	2123	N21	E71	.938	15496	2.2	13	-N				50		FU	
HOLL	26	2110	2112	2121	N22	E71	.938	15496	1.2	11	-N	3	C		59		U F	
PALE	26	2111	2114	2125	N20	E71	.938	15496	1.2	14	-N	2	C		48		F	
GRP68720	26	2152+3	2154+1	2213	N21	E70	.933	15496	2.2	21	-N						FU	
HOLL	26	2152	2154	2219	N22	E70	.933	15496	1.2	27	-N	3	C		59		U F	
PALE	26	2155	2155	2206	N20	E71	.938	15496	1.2	11	-N	3	C		23		F	
721 HOLL	26	2308	2334	0003	N22	E69	.927	15496	1.1	55	-B	3	C		22		U F	Y5
722 CULG	26	2332	2352U	0032	N18	E70	.933	15496	1.2	60	-F		C	2352	30			Y5
723 PALE	27	0306	0313	0316	N20	E68	.920	15496	1.2	10	-N	3	C		24		F	Y5
724 CULG	27	0415	0417	0425	N22	W68	.920	15478	22.1	10	-F		C	0417	30	.8		Y5

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE AUG	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
725 CULG	27	0448	0453	0503	N18	E68	.920	15496	1.3	15	-N		C	0453	60		T Y5
726 CULG	27	0516	0525	0550	S19	W35	.685	15504	24.6	34	-N		C	0525	40	.6	Y5
727 MITK	27	0724E	0729	0739	N19	E67	.914	15496	1.3	15D	1N		C	0729	180		Y5
	27	1100	1110	NO FLARE PATROL													
	27	1115	1125	NO FLARE PATROL													
GRP68728	27	1126>9	1131	1140D	N20	E62	.877	15496	2.1	14	-F						
KANZ	27	1126E	1131	1140	N20	E63	.885	15496	1.2	140	-F		C				T
RAMY	27	1136	1205	1211	N20	E62	.877	15496	1.1	35	-N	3	C		30		
	27	1152	1202	NO FLARE PATROL													
729 RAMY	27	1214	1217	1319	N20	E62	.877	15496	1.2	65	-B	3	C		109		Y5
	27	1247	1311	NO FLARE PATROL													
	27	1315	1335	NO FLARE PATROL													
730 KANZ	27	1359	1410	1418	N20	E64	.893	15496	1.4	19	-B		C				Y5
731 RAMY	27	1417	1418	1422	S22	W38	.734	15504	24.7	5	-N	3	C		22		Y5
732 HOLL	27	1545	1548	1551	N23	E61	.871	15496	1.2	6	-B	3	C		32		FDE Y5
GRP68733	27	1559+2	1625+2 1633	1657	N20	E60	.861	15496	2.2	58	-B						F
HOLL	27	1559	1625	1657	N23	E60	.863	15496	1.2	58	-B	3	C		128		F
KANZ	27	1601	1627	1655	N20	E62	.877	15496	1.3	54	-B		C				
RAMY	27	1631	1633	1659	N20	E59	.853	15496	1.1	28	-B	3	C		38		
GRP68734	27	1701+0	1709 1719	1729	N21	E59	.853	15496	2.1	28	-N						F
RAMY	27	1701	1709	1728	N20	E59	.853	15496	1.1	27	-N	3	C		22		
HOLL	27	1701	1719	1730	N23	E60	.863	15496	1.2	29	-N	3	C		48		F
GRP68735	27	1841+4	1847+3	1905	N22	E58	.846	15496	2.1	24	-B				35	.7	F
HOLL	27	1841	1847	1910	N23	E59	.855	15496	1.2	29	-B	3	C		45		
PALE	27	1845	1850	1900	N21	E58	.845	15496	1.1	15	-B	3	C		22		F
GRP68736	27	1940+1	1944+1	1955	N11	E19	.328	15494	29.2	15	-B				140	1.5	F
HOLL	27	1940	1944	1951	N11	E21	.360	15494	29.4	11	-B	3	C		132		
PALE	27	1941	1945	1959	N11	E18	.312	15494	29.2	18	-B	3	C		145		F
GRP68737	27	2036+1	2038+1	2055	N22	E57	.837	15496	2.1	19	-B				100	1.9	F
HOLL	27	2036	2038	2054	N23	E58	.847	15496	1.2	18	-B	3	C		113		
PALE	27	2037	2039	2055	N21	E57	.836	15496	1.1	18	-B	3	C		89		F
738 HOLL	27	2308	2313	0003	N22	E69	.927	15496	2.1	55	-F	3	C		45		U F Y5
GRP68739	27	2327+3	2333+1	0001	N20	E57	.835	15496	2.3	34	-N				70	1.3	FJ
CULG	27	2327	2333	0005	N18	E58	.843	15496	1.3	38	-F		C	2333	70	1.3	J
HOLL	27	2330	2334	2357	N23	E56	.829	15496	1.2	27	-B	3	C		70		F
GRP68740	28	0208+3	0214+3	0314	N10	E13	.228	15494	29.1	66	-B				70	.7	U
PALE	28	0208E	0217U	0235D	N11	E15	.264	15494	29.2	27D	-N	3	C		87		U F
MITK	28	0208	0217	0232D	N10	E13	.228	15494	29.1	24D	-B		C	0217			E
CULG	28	0211	0214	0314	N09	E13	.225	15494	29.1	63	-B		C	0214	60	.6	U
741 CULG	28	0248	0253	0310	N18	E57	.834	15496	1.4	22	-F		C	0253	30	.5	Y5
GRP68742	28	0336+7	0349+2	0420	N19	E56	.825	15496	2.3	44	-F						E
CULG	28	0336	0349	0430	N18	E57	.834	15496	1.4	54	1F		C	0349	140	2.5	
MITK	28	0343	0351	0409	N20	E56	.826	15496	1.4	26	-F		C	0351			E
GRP68743	28	0754	0757 0815+6	0845D	N18	E54	.805	15496	2.4	51	-N						FJ
ABST	28	0754	0757	0824D	N16	E54	.804	15496	1.4	30D	-F		P	0757	105	1.8	FJ
KHAR	28	0804E	0815	0845D	N18	E54	.805	15496	1.4	41D	-N		P	0840	100	1.8	C
HURB	28	0819E	0821	0830D	N18	E44	.697	15496	31.6	11D	1N		V				
744 KHAR	28	1024E	1029	1035D	N16	E90	.999	15508	4.2	11D	-N		P	1033	80		DH Y5
745 KHAR	28	1047E	1048	1054D	N16	E24	.424	15493	30.2	7D	-F		V	1049			D Y5
746 KHAR	28	1124E	1130	1136D	N29	E58	.854	15495	1.8	12D	-F		V	1130			DH Y5

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OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	AUG																	
GRP68747	28	1559+6	1606+1	1613	N10	E06	.115	15494	29.1	14	-B				70	.7		
RAMY	28	1559	1607	1644	N10	E06	.115	15494	29.1	45	-B	4	C		54		FDE	
ZURI	28	1601	1607	1613	N10	E06	.115	15494	29.1	12	-N		C	1607	90	1.0		
HOLL	28	1605	1606	1613	N10	E09	.163	15494	29.3	8	-B	3	C		80		F	
GRP68748	28	1707+1	1707+1	1720	N10	E05	.100	15494	29.1	13	-N				50	.5	F	
RAMY	28	1707	1707	1722	N10	E05	.100	15494	29.1	15	-B	4	C		35			
PALE	28	1708	1708	1718	N11	E06	.123	15494	29.2	10	-N	3	C		62		F	
	28	2022	2041	NO FLARE PATROL														
	28	2053	2119	NO FLARE PATROL														
749 HOLL	29	0047	0048	0052	S25	W31	.696	15487	26.7	5	-N	2	C		21		F	Y5
750 VORO	29	0138	0141	0151	N20	E46	.724	15496	1.5	13	-N		C	0141	108	1.5	E	Y5
GRP68751	29	0730>9		0936	N11	W54	.803	15502	25.3	126	-F						D	
ISTA	29	0730E		0900D	N10	W53	.793	15502	25.3	90D	-F						B	
WENO	29	0842		0936	N12	W55	.813	15502	25.2	54	-F		V				D	
752 KHAR	29	0945E		1018D	S26	E82	.998	15509	4.6	33D	?F		P	0945	120		H	Y5
	IMP.1 NO ; ZURI2			CATA1	ABST1													
GRP68753	29	0958+3	1009	1015	N10	E81	.985	15508	5.5	17	-F						D	
KHAR	29	0958E		1016D	N08	E80	.982	15508	4.4	18D	-F		V	1007			D	
ZURI	29	1001	1009	1013	N12	E82	.987	15508	4.6	12	-F		C	1009		.5		
754 RAMY	29	1241	1243	1251	N17	E78	.972	15508	4.4	10	-F	3	C					Y5
GRP68755	29	1412+1	1414+1	1433	S31	E79	.995	15509	5.5	21	-N						E	
RAMY	29	1412	1414	1432	S30	E79	.995	15509	4.5	20	-F	4	C					
KANZ	29	1412	1415	1434	S31	E78	.994	15509	4.4	22	-B		C					
ZURI	29	1413	1415	1433	S33	E90	1.002	15509	5.3	20	1F		C	1415	180		E	
GRP68756	29	1531+2	1536+1	1543	N16	E77	.969	15508	5.4	12	-F						E	
KANZ	29	1531		1538	N16	E77	.969	15508	4.4	7	-F		C					
RAMY	29	1532	1537	1546	N17	E77	.968	15508	4.4	14	-N	4	C					
MCMA	29	1533	1536	1543	N14	E80	.980	15508	4.6	10	-F		C	1536			E	
757 RAMY	29	1717	1717	1735	S25	W57	.899	15504	25.4	18	-N	4	C		13			Y5
GRP68758	29	1802+1	1804+0	1810	N16	E77	.969	15508	5.5	8	-N							
MCMA	29	1802	1804	1809	N15	E80	.980	15508	4.8	7	-N		C	1804			D	
RAMY	29	1803	1804	1811	N17	E75	.959	15508	4.4	8	-B	4	C		19		FDE	
759 RAMY	29	1913	1913	1925	N17	E75	.959	15508	4.4	12	-F	4	C		9		FDE	Y5
760 RAMY	29	1933	1933	1941	N17	E74	.955	15508	4.4	8	-F	4	C		10		FDE	Y5
GRP68761	29	2025+0	2033	2047	N16	E77	.969	15508	5.6	22	-N							
MCMA	29	2025		2029D	N15	E80	.980	15508	4.9	4D	-N		P	2025			E	
RAMY	29	2025	2033	2047	N17	E74	.955	15508	4.4	22	-N	3	C		17		FDE	
	29	2038	2055	NO FLARE PATROL														
	29	2100	2111	NO FLARE PATROL														
	29	2121	2135	NO FLARE PATROL														
	29	2143	2146	NO FLARE PATROL														
762 CULG	30	0416	0418	0425D	S21	W78	.989	15504	24.3	9D	-B		C	0418	40			Y5
763 CULG	30	0418	0421	0425D	N15	E70	.933	15508	4.4	7D	-F		P	0421	30			Y5
764 TEHR	30	0534E	0537	0546	N15	E74	.955	15508	4.8	12D	-N	2	C		95			Y5
GRP68765	30	0601+3	0607+0	0618	S22	E56	.884	15507	4.5	17	-F						D	
ABST	30	0601	0607	0620	S22	E55	.877	15507	3.4	19	-F		C	0607	87	1.8	D	
CULG	30	0604	0607	0616	S22	E57	.891	15507	3.5	12	-F		C	0617	40	.9		
766 ABST	30	0638	0640	0648	N15	E72	.945	15508	4.7	10	?F		C	0640	157		E	Y5
	IMP.1 NO ; CATA1																	
767 TEHR	30	0734E	0737	0746	N15	E74	.955	15508	4.9	12D	-N	2	C		95			Y5
768 ISTA	30	0759		0809D	N19	E71	.938	15508	4.7	10D	-F						Z	Y5
769 ABST	30	1050E	1051	1056	N15	E72	.945	15508	4.9	6D	-F		P	1051	61		D	Y5

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
					APPROX													
	DATE	START	MAX. PHASE	END	LAT.	MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	AUG																	
770 RAMY	30	1137	1200	1249	N19	E65	.899	15508	4.4	72	-B	4	C		33		FDE	Y5
771 RAMY	30	1145	1157	1217	S27	E70	.969	15509	4.7	32	-B	3	C		37		FDE	Y5
772 RAMY	30	1148	1148	1204	N35	E33	.658	15495	2.0	16	-N	3	C		19			Y5
773 RAMY	30	1309	1309	1324	S25	W67	.954	15504	25.5	15	-N	4	C		14			Y5
774 RAMY	30	1338	1340	1344	N19	E65	.899	15508	4.4	6	-B	4	C		44			Y5
GRP68775	30	1418+0	1419+0 1437	1442	N18	E65	.899	15508	5.5	24	-B				45			
RAMY	30	1418	1419	1440	N19	E64	.892	15508	4.4	22	-B	4	C		40		FDE	
HOLL	30	1418	1419	1427	N18	E67	.913	15508	4.6	9	-B	3	C		50			
HOLL	30	1431	1437	1444	N18	E66	.906	15508	4.6	13	-B	3	C		19			
776 RAMY	30	1510	1512	1522	S27	E68	.962	15509	4.7	12	-N	4	C		13			Y5
GRP68777	30	1530+4	1544+0	1703	N18	E65	.899	15508	5.5	93	1B				190		FU	
RAMY	30	1503	1544	1702	N19	E64	.892	15508	4.4	119	1B	*	C		180		F	
HOLL	30	1530	1544	1545D	N18	E66	.906	15508	4.6	15D	1B	*	C		214		U F	
HOLL	30	1530	1548	1703	N18	E65	.899	15508	4.5	93	1B	*	C		191		U F	
RAMY	30	1534	1544	1550D	N19	E64	.892	15508	4.4	16D	1B	*	V		180			
MCMA	30	1606E		1611D	N15	E66	.907	15508	4.6	5D	-N	*	P	1606	40	1.0	E	
778 RAMY	30	1727	1727	1732	N19	E63	.885	15508	4.5	5	-N	4	C		13			Y5
GRP68779	30	1741+5	1746+0	1811	N18	E63	.884	15508	5.5	30	-B				25	.6	F	
HOLL	30	1741	1746	1803	N18	E65	.899	15508	4.6	22	-B	3	C		27			
RAMY	30	1746	1746	1819	N19	E62	.877	15508	4.4	33	-B	3	C		19		F	
GRP68780	30	1832	1838+0	1901	N18	E63	.884	15508	5.5	29	-B				25	.6		
HOLL	30	1832	1838	1856	N18	E64	.892	15508	4.6	24	-B	3	C		31			
PALE	30	1837E	1838	1905D	N18	E63	.884	15508	4.5	28D	-B	3	C		23		FDE	
781 HOLL	30	1908	1908	1918	S30	E72	.979	15509	5.2	10	-N	3	C		8			Y5
GRP68782	30	1909+2	1914+1	1926	N18	E63	.884	15508	5.5	17	-N				15	.3		
PALE	30	1909E	1915U	1933D	N18	E63	.884	15508	4.5	24D	-N	3	C		14		DE	
HOLL	30	1911	1914	1918	N18	E64	.892	15508	4.6	7	-N	3	C		19		FDE	
783 HOLL	30	2040	2045	2051	S30	E72	.979	15509	5.3	11	-N	3	C		18			Y5
784 PALE	30	2131	2131	2135	S30	E67	.962	15509	4.9	4	-N	3	C		21		DE	Y5
GRP68785	30	2213+4	2217+1	2222	S30	E71	.976	15509	6.3	9	-N				50		D	
HOLL	30	2213	2217	2224	S30	E71	.976	15509	5.3	11	-N	3	C		46			
VORO	30	2215E		2221	S31	E71	.977	15509	5.3	6D	-N		C	2217	45		CD	
PALE	30	2217	2218	2222	S30	E67	.962	15509	5.0	5	-N	3	C		48		DE	
GRP68786	30	2238+1	2243+0	2252	S30	E70	.973	15509	6.2	14	-B				60		D	
HOLL	30	2238	2243	2256	S30	E70	.973	15509	5.2	18	-B	2	C		70			
VORO	30	2239	2243	2248	S31	E71	.977	15509	5.3	9	-B		C	2243	45		D	
GRP68787	30	2313+3	2317+0	2322	S30	E68	.966	15509	6.1	9	-N				20			
HOLL	30	2313	2317	2322	S30	E70	.973	15509	5.2	9	-N	2	C		19			
PALE	30	2316	2317	2322	S30	E66	.958	15509	4.9	6	-N	3	C		21		DE	
788 PALE	30	2316	2319	2337	N17	E60	.860	15508	4.5	21	-N	3	C		47		DE	Y5
GRP68789	30	2331+1	2337 2345	2349	S30	E68	.966	15509	6.1	18	-N							
HOLL	30	2331	2345	2352	S30	E70	.973	15509	5.2	21	-N	2	C		24			
PALE	30	2332	2337	2346	S30	E66	.958	15509	4.9	14	-N	3	C		16		DE	
790 PALE	31	0137	0139	0144	S30	E65	.954	15509	4.9	7	-N	3	C		48		DE	Y5
791 TACH	31	0431E	0440	0450D	N16	E58	.842	15508	4.5	19D	1N		C	0440	136	2.6	E	Y5
GRP68792	31	0526+1	0531+2	0603	N15	E57	.832	15508	5.5	37	1N				180	3.3	EJ	
TACH	31	0526E	0531	0542D	N15	E55	.813	15508	4.4	16D	1N		C	0531	178	3.3	E	
TEHR	31	0527	0533	0603	N17	E57	.833	15508	4.5	36	-B	2	C		95		F	
ABST	31	0528E	0531	0552D	N14	E59	.850	15508	4.7	24D	1N		P	0531	244	4.8	EJ	
793 ABST	31	0630	0635	0638D	N15	W14	.272	15493	30.2	8D	-F		P	0635	96	1.0	D	Y5
794 ABST	31 IMP.1	0640E NO	0641 CATA1	0651	N12	W85	.994	15502	24.9	11D	?F		P	0641	79		D	Y5

Hα SOLAR FLARES

AUGUST 1978

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	AUG																	
795 ABST	31	0653	0655	0658	N14	E60	.859	15508	4.8	5	?F		C	0655	140	2.8	OJ	Y5
	IMP.1	NO	CATA1															
796 KHAR	31	0727E		0750D	S26	E90	1.001	15518	7.1	23D	-F		P	0727			OH	Y5
797 ABST	31	0754	0800	0807	N13	E59	.850	15508	4.8	13	-F		C	0800	87	1.6	OJ	Y5
798 KHAR	31	1009	1010	1027	N14	E58	.841	15508	4.8	18	?N		P	1014	160	3.2	HL	Y5
	IMP.1	NO	CATA1															
799 KHAR	31	1022E	1025	1031D	S19	E88	1.000	15518	7.0	9D	-N		V	1025			OH	Y5
800 KHAR	31	1144E	1146	1153	N14	E58	.841	15508	4.8	9D	-F		V	1146			OH	Y5
GRP68801	31	1306+0	1306+5	1343	N09	W32	.526	15494	29.1	37	-N				35	.4	EU	
RAMY	31	1306	1306	1343	N10	W32	.526	15494	29.1	37	-B	4	C		23		U	
MCMA	31	1306	1311	1325D	N09	W33	.540	15494	29.1	19D	-N		C	1311	45	.6	E	
802 RAMY	31	1324	1328	1345	N21	E08	.273	15496	1.2	21	-N	4	C		51			Y5
803 UPIC	31	1400E		1435D	S25	E90	1.001	15518	7.3	35D	?B		P	1400				Y5
	IMP.2	NO	RAMY1															
804 MCMA	31	1548	1550	1606D	N20	E00	.268	15496	31.7	18D	-N		C	1550	75	.8	E	Y5
804 RAMY	31	1548	1549	1607	N21	E07	.266	15496	1.2	19	-B	4	C		64		FDE	Y5
804 HOLL	31	1549	1551	1605	N22	E06	.274	15496	1.1	16	-B	3	C		90		F	Y5
GRP68805	31	1626+7	1633 1701+1	1726	S30	E61	.935	15509	6.3	60	1B				160		FU	
HOLL	31	1626	1701	1730	S30	E61	.935	15509	5.3	64	1B	*	C		177		U F	
RAMY	31	1633	1633	1652	S27	E55	.893	15509	4.8	19	-N	*	C		13		F	
RAMY	31	1657	1702	1726	S27	E55	.893	15509	4.8	29	1B	*	C		154			
RAMY	31	1657	1702	1726	S27	E55	.893	15509	4.8	29	1B	*	C		154			
MCMA	31	1708E		1718	S33	E61	.942	15509	5.3	10D	-N	*	C	1708	50	1.5	E	
GRP68806	31	1629	1629	1643	N21	E07	.266	15496	2.2	14	-N						F	
RAMY	31	1629	1629	1643	N21	E07	.266	15496	1.2	14	-N	4	C		21		F	
807 RAMY	31	1900	1900	1902D	N18	E49	.753	15508	4.5	2D	-N	3	C		18			Y5
808 PALE	31	2129	2143	2157	N18	E42	.673	15508	4.0	28	-N	3	C		38		FDE	Y5
GRP68809	31	2154+2	2156+1	2204	S22	E32	.680	15507	4.3	10	-N				60	.8		
VORO	31	2154	2157	2203	S22	E32	.680	15507	3.3	9	-N		C	2157	63	.8	D	
MCMA	31	2154	2156	2205D	S22	E31	.671	15507	3.2	11D	-N		C	2156	50	.7	E	
CULG	31	2155	2156	2205	S22	E29	.652	15507	3.1	10	-N		C	2156	60	.8		
HOLL	31	2156E	2157U	2206	S20	E32	.664	15507	3.3	10D	-N	2	C		54		F	
PALE	31	2156	2157	2202	S21	E33	.681	15507	3.4	6	-N	3	C		57			
810 PALE	31	2222	2237	2242	N17	E48	.741	15508	4.5	20	-N	3	C		134		DE	Y5
GRP68811	31	2250+1	2253+1	2308	N16	E48	.740	15508	5.6	18	-N				90	1.4	D	
PALE	31	2250	2254	2318	N17	E48	.741	15508	4.6	28	-B	3	C		128		DE	
VORO	31	2251	2253	2257	N15	E48	.739	15508	4.6	6	-N		C	2253	63	.9	D	
812 PALE	31	2321	2354	0006	N17	E47	.730	15508	4.5	45	-N	3	C		22		DE	Y5

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.

AUGUST 1978

DAILY FLARE INDICES
Includes all Flares

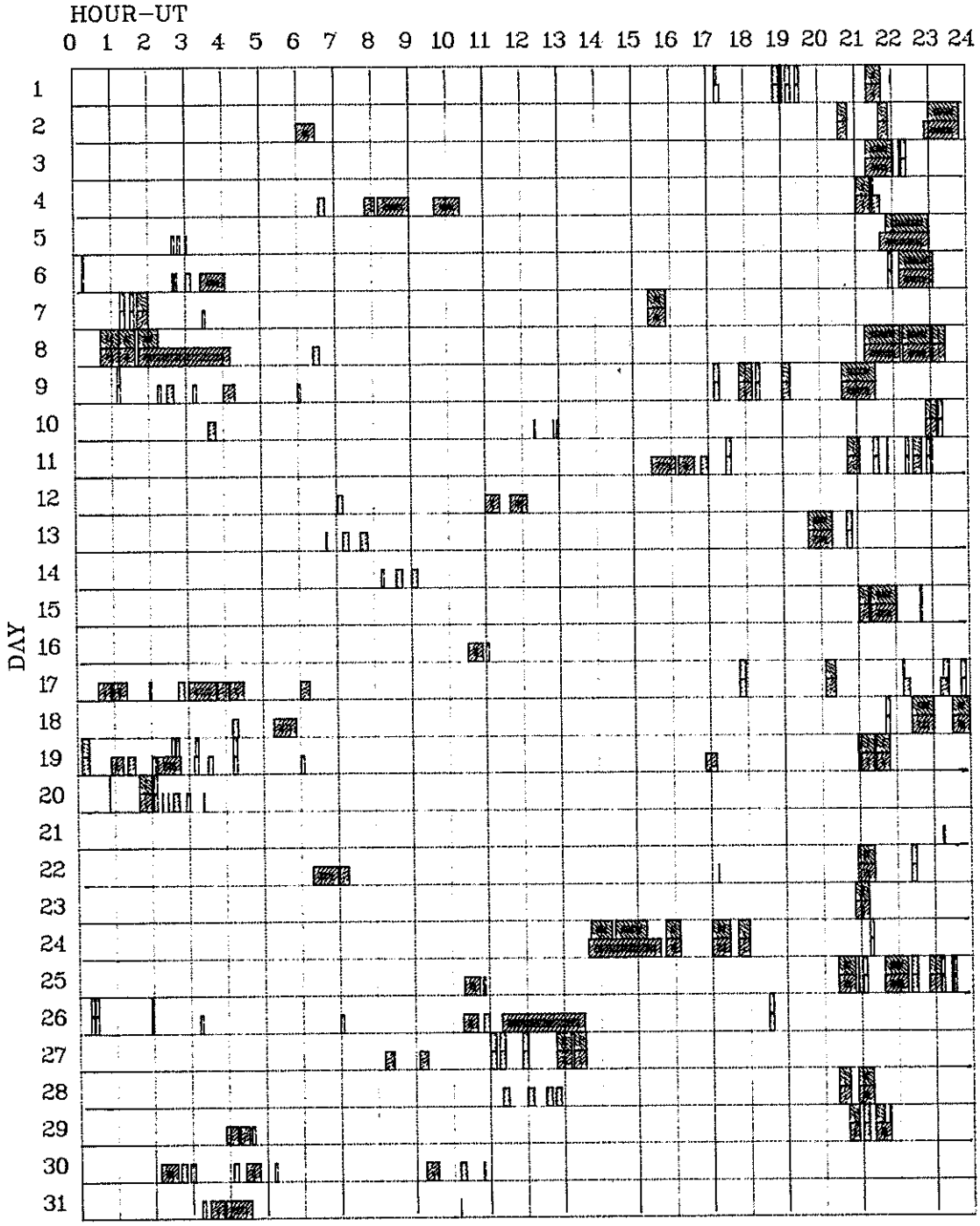
Date	Flare Index	HR. OBS	Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.
780801	6.76	23.1	780811	59.16	22.9	780821	15.62	24.0
780802	0.00	22.6	780812	40.85	24.0	780822	12.57	23.4
780803	13.75	23.1	780813	26.47	23.2	780823	24.45	23.6
780804	15.42	23.6	780814	18.80	24.0	780824	20.57	21.3
780805	19.26	22.9	780815	43.60	23.0	780825	18.34	22.1
780806	8.29	23.0	780816	19.80	24.0	780826	3.85	23.7
780807	19.42	23.0	780817	46.13	23.2	780827	34.82	22.8
780808	11.18	20.5	780818	29.22	22.8	780828	19.58	23.3
780809	21.68	22.2	780819	7.81	22.7	780829	13.55	23.3
780810	41.28	23.6	780820	6.79	23.6	780830	41.43	24.0
						780831	79.87	24.0

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

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

AUGUST 1978



Observatories included in total patrol:

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

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1978

AUG 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
1	245	SGMR	44	NS	0939 E	1014.3	860 D	16.7			
	410	SGMR	43	NS	1445	1455.4	355	33.7			
	260	ONDR	41	F	1017.5	1018.5	8	8			
	930	BORD	41	F	1117.2	1117.3	.4	63	2		
	202	IZMI	7	C	1120.3	1120.5	.7	67	30		
	33	UPIC	3	S	1120.5	1120.7	.5				
	29	UPIC	8	S	1120.6	1120.9	.4				
	260	ONDR	2	S/F	1130.6	1130.6	.4	25			
	2800	OTTA	240	R	2035	2300	145	3.6	1.5		
2	260	ONDR	43	NS	0749		371	32			
	237	TRST	41	F	1752.7	1752.7	.3	210			SL
3	260	ONDR	41	F	0708	0718.2	15	18			
	260	ONDR	41	F	0905	0918.2	13	7			
	245	SGMR	44	NS	0942 E	1543	854 D	35.4			
	536	ONDR	3	S	1105.7	1105.7	.2	24			
	536	ONDR	1	S	1116.3	1116.3	.2	11			
	930	BORD	8	S	1559.5	1559.5	.3	25	2		
	2695	BOUL	40	F	1840	1841.5	6.5	9	3		
	2695	PENT	240	R	2310	2400	50	2.2	.8		
4	260	ONDR	3	S	0725.2	0725.2	.2	12			
	260	ONDR	45	C	0945.6	0948	3	25	16		
	29	UPIC	4	S/F	0956.6	0956.9	.7				
	33	UPIC	4	S/F	0956.8	0956.8	.6				
	536	ONDR	3	S	1312.8	1312.8	.2	21			
	2800	OTTA	40	F	1335.5	1338.9	6.5	13.2			
	930	BORD	41	F	1342.6	1342.7	.3	22	2		
	930	BORD	41	F	1352.3	1352.3	.6	11	2		
	930	BORD	41	F	1412.1	1412.3	.3	12	2		
	9400	HUAN	20	GRF	1554.1	1605.7	11.6	6.4	2.6		O
	930	BORD	41	F	1624	1625.1	2	17	2		
	2800	OTTA	8	S	1625	1625	.1	2.2			
	9400	HUAN	1	S	1736.4	1739	2.6	9.6	3.4		R
5	260	ONDR	43	NS	0610		510	32			
	245	SGMR	43	NS	1345	1355.8	610 D	33			
	410	SGMR	43	NS	1345	1355.8	610 D	11.2			
	3100	CRIM	24	R	0727	1031		3			
	536	ONDR	3	S	1355	1355	.2	20			
6	2695	BOUL	2	SF	0115.5	0116.5	2.5	5	2		
	260	ONDR	44	NS	0610 E		540 D	13			
	3100	CRIM	1	S	0618	0623	5	3	1		
	3100	CRIM	24	R	0845	1052		3			
	2800	OTTA	1	S	1251.5	1252	3	5.6	1.9		
	2695	BOUL	1	S	1252	1252.5	1	3	1		
	2800	OTTA	27	RF	1955		265	2.2	1.9		
	2800	OTTA	24	R	1955	2045	50	2.2	1.1		
	2800	OTTA	24P	R	2045		195	2.2			
	2695	PENT	26	FAL	2400	2410	20	-2.2	-1.1		
7	2650	DWIN	41	F	0920	0934	17	40	5		
	2800	OTTA	20	GRF	1228	1303	65	2	1.6		
	2800	OTTA	240	R	1335	1350	15	2	1		
	9400	HUAN	3	S	1347.2	1349.8	2.6	19.2	8.3		O
	9400	HUAN	20	GRF	1402	1416.4	14.4	9.6	3.4		O
	2800	OTTA	20	GRF	1425	1432	12	2	1		
	2800	OTTA	240	R	1500	1545	45	3.2	1.6		
	2800	OTTA	21	GRF	1705	1753	85	2.4	1.2		
	4995	BOUL	4	SF	1753.5	1754.5	3	19	6		
	1415	SGMR	3	S	1754.5	1755.5	6.5	21.9	8.8		2
	606	SGMR	3	S	1754.5	1758.5	4.9	20.2	8.1		2
	8800	SGMR	3	S	1754.7	1755	7	27	10.8		2
	2800	OTTA	4	S/F	1754.8	1755.1	5	29	10		
	410	SGMR	6	S	1754.8	1758.5	4.8	83.6	33.4		2
	245	SGMR	49	GB	1754.8	1755.2	24.2	2117	847		2
	4995	SGMR	3	S	1754.8	1755.1	4.7	24	9.6		2
	7000	SAOP	2	F	1754	1755.2	39.4				
	2695	SGMR	3	S	1755	1755.3	10.4	18.6	7.5		2
	2695	BOUL	4	SF	1755	1755.5	3	30	10		
	930	BORD	45	C	1756.5	1757.1	3.5	27	9		
	2695	PENT	21	GRF	2110	2325	250	7	2.7		
	2695	PENT	8	S	2310.5	2310.5	.1	2.2			
	4995	BOUL	4	SF	2312.5	2314.5	5 D	109	36		
	8800	MANI	3	S	2313.6	2315.6	3.6	131.5	43.8		
	2695	MANI	3	S	2313.9	2315.2	2.4	32.7	10.9		
	2695	PENT	3	S	2313	2315.5	7	23.4	5.2		
	2695	BOUL	4	SF	2314	2316	4.5	19	6		
	1415	MANI	3	S	2313.9	2315.3	2.4	2.5	.8		
	4995	MANI	3	S	2314.2	2315.5	5.6	85.3	28.4		
8	260	ONDR	44	NS	0610 E		544 D	18			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1978

AUG 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	245	SGMR	44	NS	0946 E	1733.5	845 D	20			
	9100	ARCE	40	F	0943.7	0944	7.5				
	536	ONDR	8	S	1149.3	1149.3	.3	49			
	536	ONDR	8	S	1208.6	1208.6	.3	58			
	9400	HUAN	20	GRF	2022.7	2039.4	16.7	6.7	4.7		O
9	260	ONDR	41	F	0611	0634	39	10			
	9400	HUAN	8	S	1218	1218.7	.7	28.8	13.1		O
	9400	HUAN	20	GRF	1355.6	1408.7	13.1	5.1	3.2		O
	260	ONDR	8	S	1410.8	1410.8	.4	32			
	2800	OTTA	20	GRF	1535	1610	240	6.2	3.1		
	2800	OTTA	1	S	2146	2148	8	1.6	.8		
10	2800	OTTA	20	GRF	1325	1328	13	2.6	1.3		
	2800	OTTA	20	GRF	1540	1550	20	1.8	.9		
	2800	OTTA	20	GRF	1740	1755	30	1.4	.7		
	2800	OTTA	20	GRF	1940	1952	15	1.6	.8		
	245	SGMR	6	S	1945	1945.5	3.2	45.6	18.2		
	410	SGMR	6	S	1946.8	1946.9	.3	13.6	5.4		
	245	SGMR	7	C	2044.2	2048.8		45.6			
	245	SGMR	7	C	2044.2	2044.5	6.1	284	114		
	245	SGMR	43	NS	2050.3	2135.5	177.70	62.2			
11	29	UPIC	2	S/F	0704.7	0705	.6				
	33	UPIC	2	S/F	0704.9	0704.9	.2				
	260	ONDR	43	NS	0718		332	30			
	127	TORN	43	NS	1230 U	1303	150 D	120	2.9		V=1
	237	TRST	41	F	0717.6	0717.7	.1	257			8L
	237	TRST	41	F	0927.3	0927.5	.5	96			O
	237	TRST	5	S	0929.8	0929.8	.1	111	37		3L
	260	ONDR	46	C	0940.5	0945	5	145	128		UNCERTN
	2800	OTTA	20	GRF	1211.5	1212	18	3	1		
	113	POTS	48	C	1224.2	1228.7	4.7	400	15		
	410	SGMR	6	S	2024.3	2025.2	1.1	42.4	17		
12	260	ONDR	41	F	0725	0732	39	11			
	3100	CRIM	24	R	0730	0900		14			
	260	ONDR	3	S	1117.3	1117.3	.3	15			
	260	ONDR	41	F	1228	1230.5	6.5	30			
	260	ONDR	42	SER	1415	1418.3	4	17	6		
	18	MCMA	6	S	1601	1608	16			1	
	2800	OTTA	1	S	2121.8	2123	4	1.2	.6		
13	2800	OTTA	24	R	1103	1126	23	2.6	1.3		
	2800	OTTA	27	RF	1103		170	2.6	1.8		
	2800	OTTA	24P	R	1126		59	2.6			
	9100	ARCE	2	S/F	1219.7	1220.2	3.3				
	8800	ATHN	20	GRF	1224.4	1225	12.1	16	9.6		
	2800	OTTA	26	FAL	1225	1353	88	-2.6	-1.3		
	9100	ARCE	1	S	1339.6	1340	1.5				
	1420	ARCE	8	S	1339.6	1340	.8				
	1470	BERL	3	S	1340	1340.2	.5	11			
	2800	OTTA	24	R	1425	1455	30	2.2	1.1		
	2800	OTTA	27A	RF	1425		485	2.2	2		
	2800	OTTA	24P	R	1455		405	2.2			
	2800	OTTA	27	RF	1731		134	2	1.7		
	2800	OTTA	24	R	1731	1733	2	2	1		
	2800	OTTA	24P	R	1733		97	2			
	2800	OTTA	26	FAL	1910	1945	35	-2	-1.2		
	9400	HUAN	20	GRF	2106	2113.2	7.2	15.1	7.1		R
	2800	OTTA	26	FAL	2140	2230	50	-1.8	-.9		
14	2695	PENT	1	S	0016.3	0017	2	3.6	1.8		
	3100	CRIM	20	GRF	0814	0912	114	5	2		
	260	ONDR	3	S	1000.7	1000.7	.2	20			
	260	ONDR	45	C	1051.8		1.5	40	29		
	9400	HUAN	1	S	1228	1233	5	5	2.1		R
	260	ONDR	41	F	1350.4	1350.4	2.5	47			
	260	ONDR	2	S/F	1453.8	1453.8	.4	13			
	2800	OTTA	1	S	1618	1618.9	2	2	.7		
	2800	OTTA	22	GRF	1730	1855	225	3.8	2.2		
	7000	SAOP	2	F	1734	1738	26.3		13		
	9100	ARCE	1	S	1737.5	1738.1	1.2				
	2695	PENT	26	FAL	2350	2430	40	-2.2	-1.1		
15	9100	ARCE	4	S/F	0951.3	0951.6	.8				
	113	POTS	45	C	0958	0958.1	.5	200	60		
	9100	ARCE	1	S	1006.2	1006.4	.7				
	8800	ATHN	4	S/F	1013.1	1015.6	13.4	50	15		
	4995	ATHN	3	S	1013.2	1015.5	19.1	24.8	7.4		
	10400	BERN	4		1013.6	1015.4	19	50			
	9100	ARCE	21	GRF	1013	1023.8	21.5				
	9500	BERL	2	S/F	1014.5	1015.6	21	43			
	3000	BERL	1	S	1014.5	1016.5	3.5	4.5			
	9100	ARCE	3	S	1014.6	1015.5	2.9				

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AUG 1978	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	POLARIZATION OR REMARKS
	2695	ATHN	20	GRF	1014.6	1023.7	19.4	3.3	2		
	10715	OWIN	3	S	1014	1015	3	50	20		
	1415	ATHN	20	GRF	1016.4	1024.9	18.2	5.1	3.1		
	260	ONDR	43	NS	1215		180	64	12		
	2800	OTTA	20	GRF	1330	1550	240	5.6	3		
	7000	SAOP	3	S	1534.6		8				
	9400	HUAN	20	GRF	1545.2	1608.6	23.4	8.4	3.4		0
	2800	OTTA	20	GRF	1825	1839	35	3.4	1.6		
	9400	HUAN	20	GRF	1922.7	2017.5	54.8	6.7	3.4		0
	2800	OTTA	20	GRF	1925	1950	95	2.2	1.1		
	2695	PENT	20	GRF	2200	2300	90	2.2	1.1		
16	3100	GRIM	1	S	0634	0635	4	3	1		
	260	ONDR	46	C	0802	0810	9	14	6.3		
	245	SGMR	44	NS	1030 E	1729.5	570 D	221.6			
	410	SGMR	44	NS	1030 E	1518.6	570 D	12			
	8400	BERN	23		1203.2	1205.2	5	17			OPR
	10400	BERN	23		1203.2	1205.2	5	8 U			OPR
	8900	BERN	23		1203.2	1205.2	5	14			OPR
	7000	SAOP	2	F	1203.4	1205.2	13.7		9		
	9500	BERL	22	GRF	1203	1205	13	11			
	930	BORD	8	S	1204.6	1204.6	.2	21	2		
	7000	SAOP			1307.4	1332.7	33.3		14		
	7000	SAOP			1307.4	1327.4	27.4		9		
	7000	SAOP	45	C	1307.4						2 COMPONENTS
	2800	OTTA	21	GRF	1322	1325	70	4			
	9100	ARCE	21	GRF	1323.8	1332.9	25				
	9400	HUAN	21	GRF	1323.8	1402.4	38.6	11.3	4.4		0
	10400	BERN	23		1324.3	1327.7	11	9 U			OPR
	8900	BERN	23		1324.3	1327.7	11	20			OPR
	8400	BERN	23		1324.3	1327.7	11	25			OPR
	9500	BERL	22	GRF	1326	1333	39	15			
	9400	HUAN	3	S	1327	1328.5	1.5	13	6.5		0
	3000	BERL	22	GRF	1330	1333.5	25	5.4			
	2800	OTTA	1	S	1330	1333.5	5	3.2	1.5		
	9400	HUAN	1	S	1331.8	1334.8	3	9.7	6.3		R
	237	TRST	41	F	1729.4	1729.4	.6	341			7L
	2800	OTTA	20	GRF	1955	2035	155	2.8	1.4		
17	202	IZMI	41	F	0607.5	0609.8	3.5	130			
	260	ONDR	43	NS	0804		396	29			
	245	SGMR	43	NS	1412	1430.3	348 D	117			
	410	SGMR	43	NS	1412	1650.4	348 D	70.4			
	2800	OTTA	21	GRF	1310		270	4.4	2.2		
	113	POTS	21	SF	1437.2	1438.4	2.6	350	20		
	237	TRST	41	F	1437.3	1438.2	1.6	360			14R
	930	BORD	45	C	1438.5	1438.5	.5	25	2		
	237	TRST	41	F	1622.9	1623	.3	440			18R
	2800	OTTA	1	S	1630.5	1632	5	1.4	.7		
	2800	OTTA	21	GRF	1903	1955	180	5	2.5		
	2800	OTTA	1	S	1935	1937	9	3.6	1.7		
18	237	TRST	42	SER	0923.4	0925.3	2.4	107			2R
	33	UPIC	4	S/F	1017.3	1017.7	.8				
	29	UPIC	4	S/F	1017.3	1017.8	.6				
	29	UPIC	8	S	1024.1	1024.3	.4				
	33	UPIC	8	S	1024	1024.1	.4				
	29	UPIC	8	S	1028.8	1029.3	.5				
	33	UPIC	8	S	1029	1029.1	.2				
	237	TRST	42	SER	1033.9	1033.9	3.2	134			5R
	237	TRST			1033.9	1036.8		628			0
	234	POTS	21	S/F	1034.6	1037.7	4.6	350	10		
	113	POTS	21	S/F	1034.8	1035.2	3.3	140	5		
	408	TRST	42	SER	1034.8	1037.7	4.3	110 D			
	410	SGMR	6	S	1034.9	1038	4.4	151	45.3		
	606	SGMR	3	S	1034.9	1038	3.6	49.2	14.8		
	245	SGMR	7	S	1034.9	1038	4.4	298	89.4		
	930	BORD	46	C	1036.4	1037.7	1.6	24	3		
	2800	OTTA	21	GRF	1115	1243	360	3.2	1.6		
	2800	OTTA	20	GRF	1154	1156	20	2	1		
	410	SGMR	43	NS	1305	1439	415 D	34			
	245	SGMR	43	NS	1305	1350.2	415 D	53.9			
	9400	HUAN	20	GRF	1924.8	1948	23.2	6.8	3.3		0
20	29	UPIC	4	S/F	1002.3	1002.4	.2				
	33	UPIC	2	S/F	1002	1002.1	.3				
	260	ONDR	2	S/F	1011.3	1011.8	1	15			
21	260	ONDR	42	SER	1359.3	1414.2	26	21			
	2800	OTTA	20	GRF	1705	1800	175	3.6	2		
22	260	ONDR	42	SER	1003	1020.5	18	50			
	8800	ATHN	3	S	1156	1156.9	7.7	28.6	17.1		
	260	ONDR	42	SER	1235	1235.5	80	54			
	9400	HUAN	20	GRF	1319.9	1425.6	65.7	7.8	3.4		R

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	245	SGMR	43	NS	1353.1	1735.5	366.9D	99.1			3
	260	ONDR	8	S	1456	1456	.3	32			
	2800	OTTA	20	GRF	1525	1550	35	1.4	.7		
	9100	ARCE	40	F	1528.6	1530.1	3.8				
	9400	HUAN	1	S	1911.3	1913.7	2.4	6.3	2.2		R
	9400	HUAN	1	S	1937	1938.3	1.3	7.8	2.4		0
	2800	OTTA	240	R	2147	2150	3	1.2	.6		
23	260	ONDR	43	NS	0807	1205	343	175			
	245	SGMR	43	NS	1125.5	1158.2	514.5D	49.5			
	410	SGMR	43	NS	1125.5	1249.8	514.5D	28.5			
	2800	OTTA	20	GRF	1120	1250	330	4.2	2.1		
	113	POTS	45	C	1126.8	1127.5	1.4	100	15		
	536	ONDR	4	S/F	1225.3	1226	1.5	62			
	29	UPIC	45	C	1613.1	1613.9	1.1				
	33	UPIC	45	C	1613.4	1614.1	.8				
24	1420	ARCE	20	GRF	0910.3	0940.4	84				
	29	UPIC	4	S/F	0911.1	0911.4	1.1				
	33	UPIC	45	C	0911.3	0911.4	3.9				
	536	ONDR	8	S	0924.7	0924.7	.3	78			
	260	ONDR	2	S/F	0940	0940.6	2	10	2.4		
	9100	ARCE	1	S	0951.4	0951.6	1.2				RECORDDISTURBED
	9100	ARCE	1	S	1032.2	1032.5	.7				
	9100	ARCE	1	S	1114.2	1114.4	.6				
	2800	OTTA	20	GRF	1727	1810	110	1.2	.7		
25	234	POTS	45	C	1025.3	1025.6	.4	125	25		
	2800	OTTA	20	GRF	1200	1207	90	3.6	1.2		
	260	ONDR	42	SER	1318.3	1319.7	71	24	2		
	245	SGMR	43	NS	1419	1423	341 D	55			
	237	TRST	42	SER	1420.5	1422	2.9	260			17R
	536	ONDR	3	S	1439.2	1439.2	.2	27			
	245	SGMR	7	S	1534.9	1542.6	11.1	308	92.4		3
	237	TRST	42	SER	1541.2E	1542.5	2.7D	770			0
	237	TRST			1541.2E	1543.8		127			0
	9400	HUAN	22	GRF	1938.2	2029	50.8	11.5	3.9		R
26	245	SGMR	44	NS	1030 E	1724	570 D	26.4			
27	3100	CRIM	26	C	0834	0928		5			
	3100	CRIM			0915	0926					
	3100	CRIM	45	C	0915	0920.5	7	4	1		
	808	ONDR	45	C	0918.6	0925.4	7.5	70	11		
	1420	ARCE	4	S/F	0918.7	0919.5	2				
	3000	BERL	1	S	0919	0919.8	1.5	4.6			
	1470	BERL	4	S/F	0919	0919.9	1.5	28			
	9100	ARCE	20	GRF	0919.4	0925.5	32				
	1420	ARCE	1	S	0924.8	0925.1	1.8				
	3000	BERL	1		0925	0925.3	3.5	4.6			
	1470	BERL	4	S/F	0925	0925.4	1.2	7.2			
	9400	HUAN	20	GRF	1159	1222.5	23.5	6.8	3.7		0
	2800	OTTA	240	R	1237	1357	80	2.8	1.4		
	260	ONDR	45	C	1244	1246.3	6	14	1		
	2800	OTTA	20	GRF	1545	1725	175	5.2	3.3		
	9400	HUAN	20	GRF	1624	1817	113	10.2	4.3		R
	2800	OTTA	27A	RF	1924		135	1.2	1		
	2800	OTTA	24	R	1924	1946	22	1.2	.6		
	2800	OTTA	1	S	1944	1945.3	2.5	2.2	.8		
	2800	OTTA	24P	R	1946		96	1.2			
	2800	OTTA	2	S/F	2037	2037.5	5	5.4	1.8		
	2695	BOUL	45	C	2038	2038	2	3	1		
	2800	OTTA	26	FAL	2122	2139	17	-1.2	-.6		
28	2800	OTTA	240	R	1455	1500	5	1.6	.8		
	2800	OTTA	20	GRF	1545	1640	115	1.8	.9		
	1420	BOUL	1	S	1715.5	1716	1.5	2			
	4995	BOUL	45	C	1830	1833.5	6.5	12	4		
29	606	MANI	3	S	0252.4	0252.8	1.8	6	3		
	1415	MANI	3	S	0252.4	0252.9	2.2	19.6	6.5		
	4995	MANI	3	S	0252.5	0253	2.6	27.3	9.1		
	2695	MANI	3	S	0252.5	0252.9	2.5	41.6	13.5		
	5730	IRKU	1	S	0252	0252.8	4	26			R
	8800	MANI	3	S	0253.3	0252.9	1.5	8.5	3.6		
	3100	CRIM	24	R	0734	0910		7			
	9100	ARCE	1	S	1015.5	1015.7	.5				
	9100	ARCE	20	GRF	1048.1	1114.2	75				
	4995	BOUL	2	SF	1410.5	1411.5	2	10	3		
	3000	BERL	4	S/F	1411	1412.6	4	13			
	1470	BERL	3	S	1411	1412.7	4	7.8			
	8400	BERN	22		1411.1	1411.8	3	13 U			
	10400	BERN	22		1411.1	1411.8	3	8 U			
	8900	BERN	22		1411.1	1411.8	3	12 U			
	1420	BOUL	2	SF	1411	1412	2.5	6	2		

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	2650	DWIN	3 S	1411	1413	3	15	10		
	7000	SAOP	1 F	1412.2	1412.8	7.5		100		
	2695	BOUL	4 SF	1412	1413	3	13	4		
	2800	OTTA	1 S	1801	1801.2	1	1.4	.7		
	9400	HUAN	3 S	1803.1	1805.2	2.1	15.2	4.5		R
	7000	SAOP	2 F	1803.4	1804.8	13.4		43		
	2695	PENT	240AR	2005	2030	25	2.2	1.1		
	2695	PENT	1 S	2024.5	2026.5	3.5	4	2		
	2695	BOUL	2 SF	2026 E	2027.5	3 D	4	1		
30	260	ONDR	44 NS	0606 E		546 D	16			
	3100	CRIM	1 S	0725	0726	3	3	1		
	9400	HUAN	1 S	1217.2	1222.6	5.4	8.4	3.4		R
	9400	HUAN	20 GRF	1240.4	1248	7.6	6.7	3.5		R
	9400	HUAN	20 GRF	1337.7	1403.2	25.5	10.1	5.9		R
	2800	OTTA	2 S/F	1339	1340	7	3	1		
	9400	HUAN	1 S	1433.3	1435.7	2.4	8.4	2.7		R
	2800	OTTA	240 R	1440	1510	30	2.6	1		
	8900	BERN	46	1536	1538.3	54	68			
	8400	BERN	46	1536	1538.3	54	70			
	10400	BERN	46	1536	1542.9	54	119			
	8900	BERN	46	1536	1542.9	54	169			
	8400	BERN	46	1536	1542.9	54	162			
	10400	BERN	46	1536	1538.3	54	53			
	4995	SGMR	3 S	1536.5	1544	26.5	167	66.8		SWF
	7000	SAOP	45 C	1536.5	1545.1	177.8		16		COMPLEX 4 COMP
	4995	ATHN	4 S/F	1536.6	1544.4	51.9	155	46.5		
	8800	ATHN	4 S/F	1536.7	1542.9	46.2	196	58.8		
	9100	ARCE	21 GRF	1536.8	1551.9	100				
	2800	OTTA	240AR	1536	1800	144	4.4			
	8800	SGMR	3 S	1537	1542.6	26	165	66		SWF
	9400	HUAN	46 C	1537.1	1553.4	16.3	143.3	57.1		R
	1420	ARCE	23 GRF	1537.3	1549.4	80				
	15400	SGMR	3 S	1537.5	1545	25.5	63	25.2		SWF
	1420	BOUL	41 F	1537.5 U		115 D	145	48		
	9100	ARCE	3 S	1537.6	1538.5	3.2				
	1415	SGMR	3 S	1537.8	1543.9	18.2	57	22.8		SWF
	2695	ATHN	4 S/F	1537.8	1544.3	46.7	73.5	22.1		
	4995	BOUL	41 F	1537	1644	116 D	121	40		
	10715	DWIN	47 GB	1537 E		60 D	130			SUNSET
	2650	DWIN	47 GB	1537 E		60 D	130			SUNSET
	2800	OTTA	45 C	1537	1544	23	84	18.6		
	930	BORD	46 C	1537	1544	45	104	10		
	2695	SGMR	3 S	1538	1545.3	25	93	37.2		SWF
	2695	BOUL	41 F	1538.5	1645.5	114.5D	153	51		
	410	SGMR	6 S	1539.5	1547	20.5	87.5	35		SWF
	606	SGMR	3 S	1541.5	1544.8	14.5	82.2	32.9		SWF
	1415	ATHN	3 S	1541.7	1544.1	40.7	44.5	13.4		
	9100	ARCE	4 S/F	1541.8	1542.9	5				
	1420	ARCE	4 S/F	1541.9	1543.7	5				
	245	SGMR	6 S	1543.8	15 9	16.2	12.4	5		SWF
	1420	ARCE	4 S/F	1550.7	1551.6	1.6				
	9400	HUAN	30 PBI	1553.4	1719.4	86	30.3	13.2		R
	410	SGMR	43 NS	1600	1714	240 D	57.5			CONT
	245	SGMR	43 NS	1600	1613.4	240 D	47.4			CONT
	2800	OTTA	30 PBI	1600	1600	115	9.8	4.9		
	1415	SGMR	3 S	1608	1613.7	13.8	21.9	6.6		CONT
	1420	ARCE	40 F	1610.4	1613.4	5				
	2800	OTTA	2 S/F	1610.5	1611.3	2	4.4	2		
	4995	SGMR	3 S	1612.8	1613.6	3.7	11.6	3.5		CONT
	2800	OTTA	3 S	1612.9	1613.5	4	12	3.4		
	2695	SGMR	3 S	1613	1613.7	4.5	10.5	3.2		CONT
	2800	OTTA	1 S	1618.2	1618.7	1.8	2.6	1.3		
	1415	SGMR	45 C	1629.9	1718.7		366			CONT
	1415	SGMR	45 C	1629.9	1643.9	54.1	487	195		CONT
	930	BORD	45 C	1629	1644.7	57	214	30		
	930	BORD	.	1629	1658		207			
	15400	SGMR	20 GRF	1630	1644.5	50.8	48.8	19.5		CONT
	606	SGMR	3 S	1630.2	1640.8	53.8	103	41.2		CONT
	9400	HUAN	45 C	1630.4	1707.6	37.2	114.6	39.4		R
	4995	SGMR	3 S	1630.6	1645	51.4	173	69.2		CONT
	2695	SGMR	3 S	1630.6	1650.3	52.6	166	66.4		CONT
	2800	OTTA	4 S/F	1630	1645	65	170	39		
	8800	SGMR	3 S	1631.2	1644.8	48.1	132	52.8		CONT
	1420	ARCE	4 S/F	1631.5	1643.3	19.5				AT SUNSET
	10400	BERN	4	1633.2	1644.4	60	112			
	8900	BERN	4	1633.2	1644.4	60	103			
	8400	BERN	4	1633.2	1644.4	60	112			
	9100	ARCE	20 GRF	1637.2	1645.1	30.5				AT SUNSET
	1420	ARCE	29 PBI	1651						
	1420	BOUL	1 S	2058.5	2059	1	2			
	2800	OTTA	1 S	2059	2059.5	1	7.6	3		
	2695	BOUL	1 S	2100	2100.5	1	8	3		
31	3100	CRIM	24 R	0648	0805		6			

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	260	ONDR	44	NS	0654 E		518 D	26			
	245	SGMR	44	NS	1030 E	1240.7	570 D	19.6			2,5
	410	SGMR	44	NS	1030 E	15 6.2	570 D	20			2,5
	2800	OTTA	20	GRF	1300	1350	140	4.4	2.6		
	33	UPIC	2	S/F	1354.1	1354.4	.7				
	29	UPIC	2	S/F	1354.2	1354.6	.7				
	33	UPIC	2	S/F	1407.6	1407.7	1				
	29	UPIC	2	S/F	1407.6	1407.9	.8				
	2800	OTTA	22	GRF	1530	1600	205	4	2		
	1420	BOUL	45	C	1553	1557	5	4	1		
	9400	HUAN	20	GRF	1657.8	1709	11.2	6.7	4.2		0
	2800	OTTA	22	GRF	1920	2035	160	4.6	2.6		

Reports received from the following observatories:

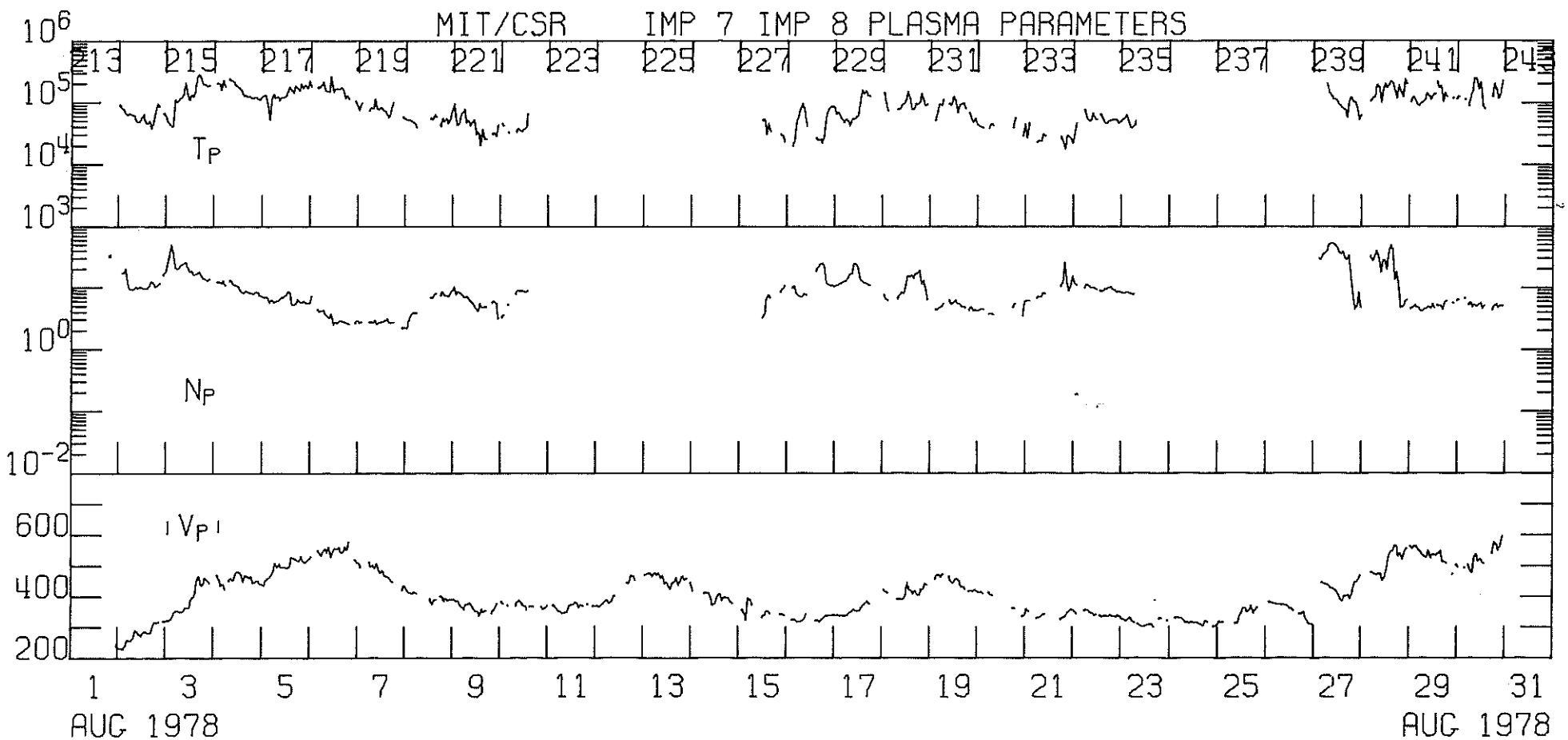
ARCE = Arcetri
BERL = Berlin-Adlershof
BORD = Bordeaux
BOUL = Boulder
CRIM = Simferopol
DWIN = Dwingeloo
GORK = Gorky
HARS = Harestua
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk
KIEV = Kiev
MANI = Manila
MCMA = McMath-Hulbert
NAGO = Nagoya
ONDR = Ondrejov
OTTA = Ottawa
PENT = Penticton
POTS = Potsdam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

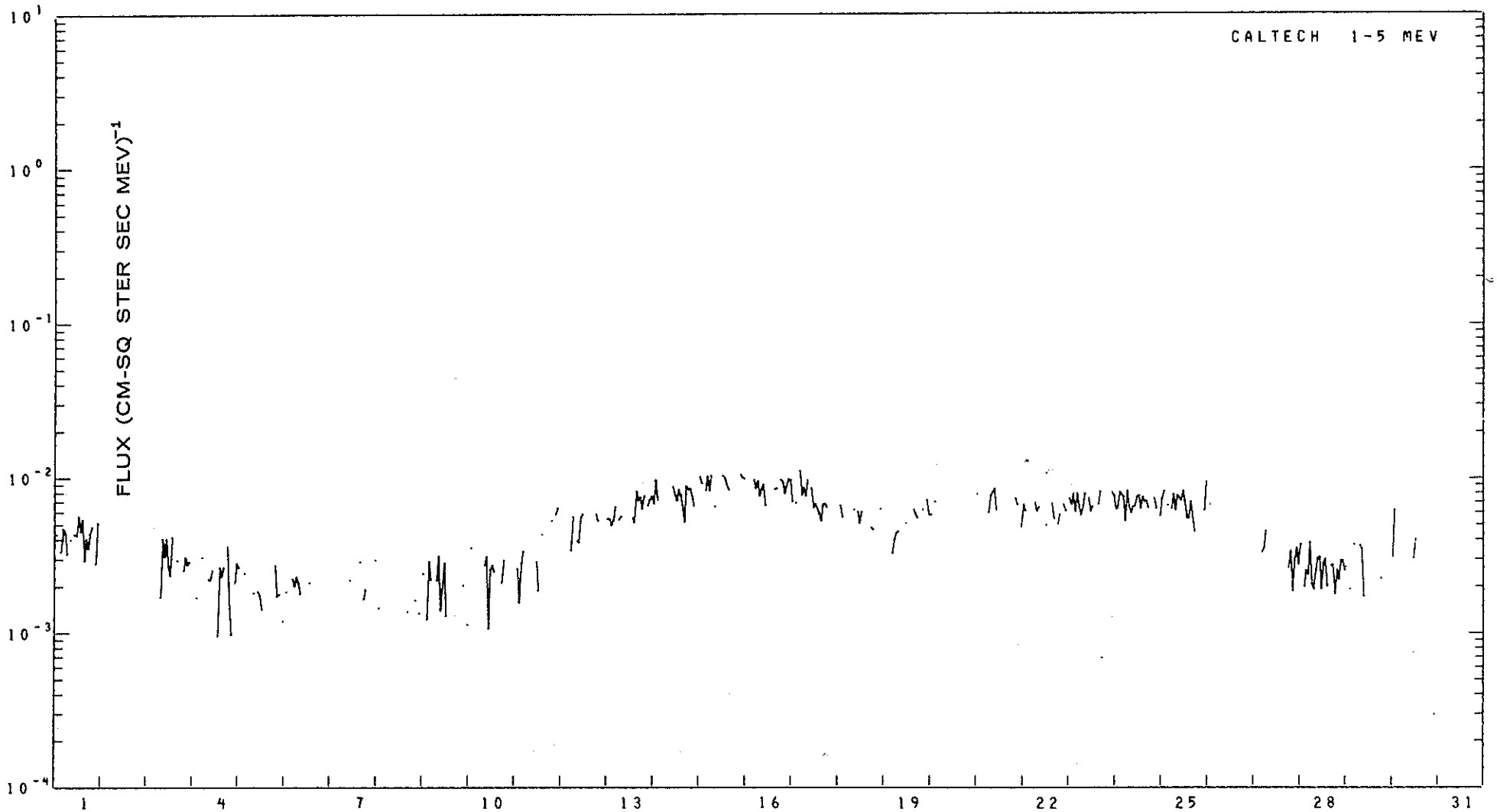
AUGUST 1978



31 Aug 78

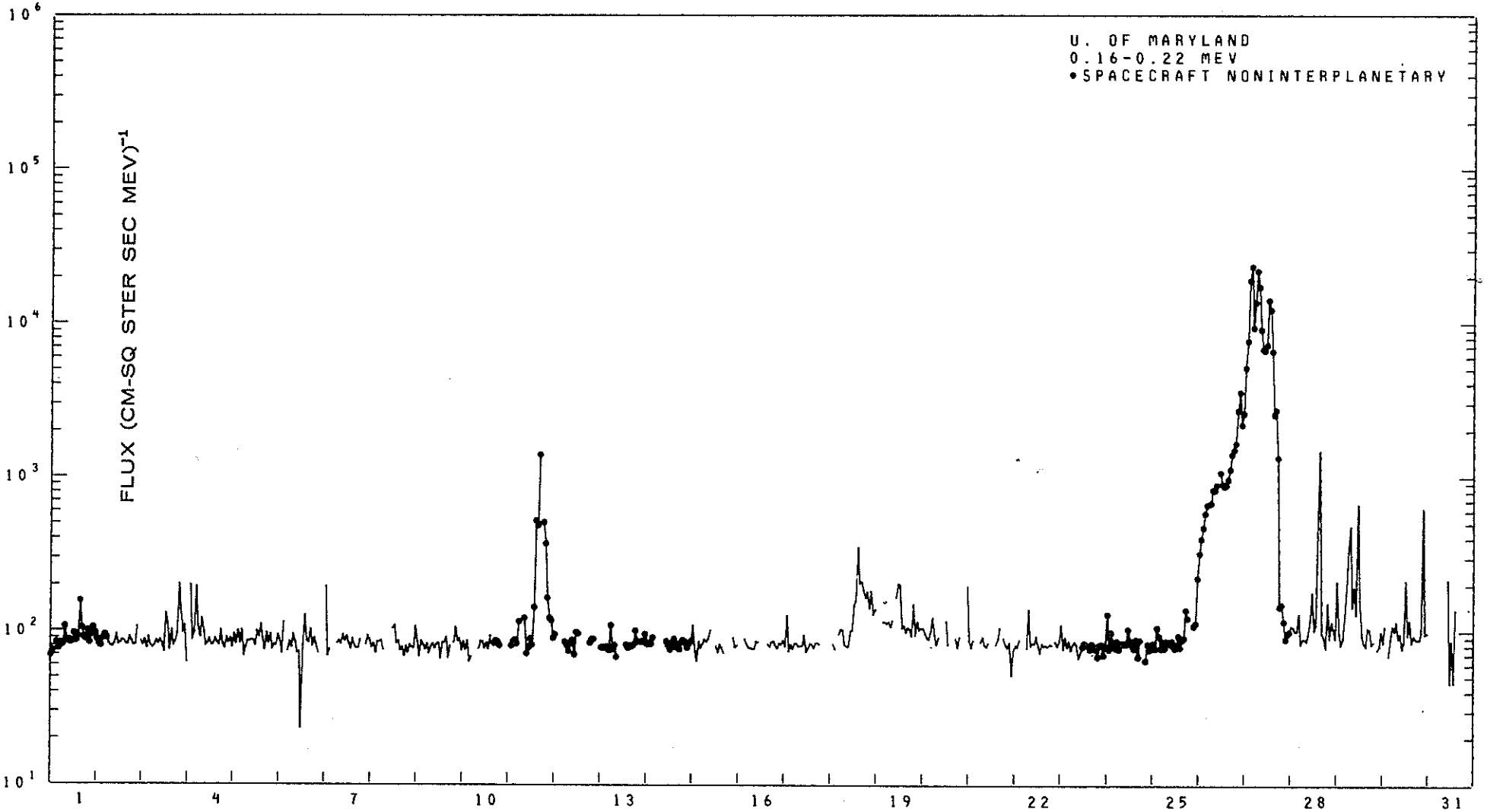
IMP 7 AND 8 ELECTRONS

AUGUST 1978



IMP 7 AND 8 LOW ENERGY PROTONS

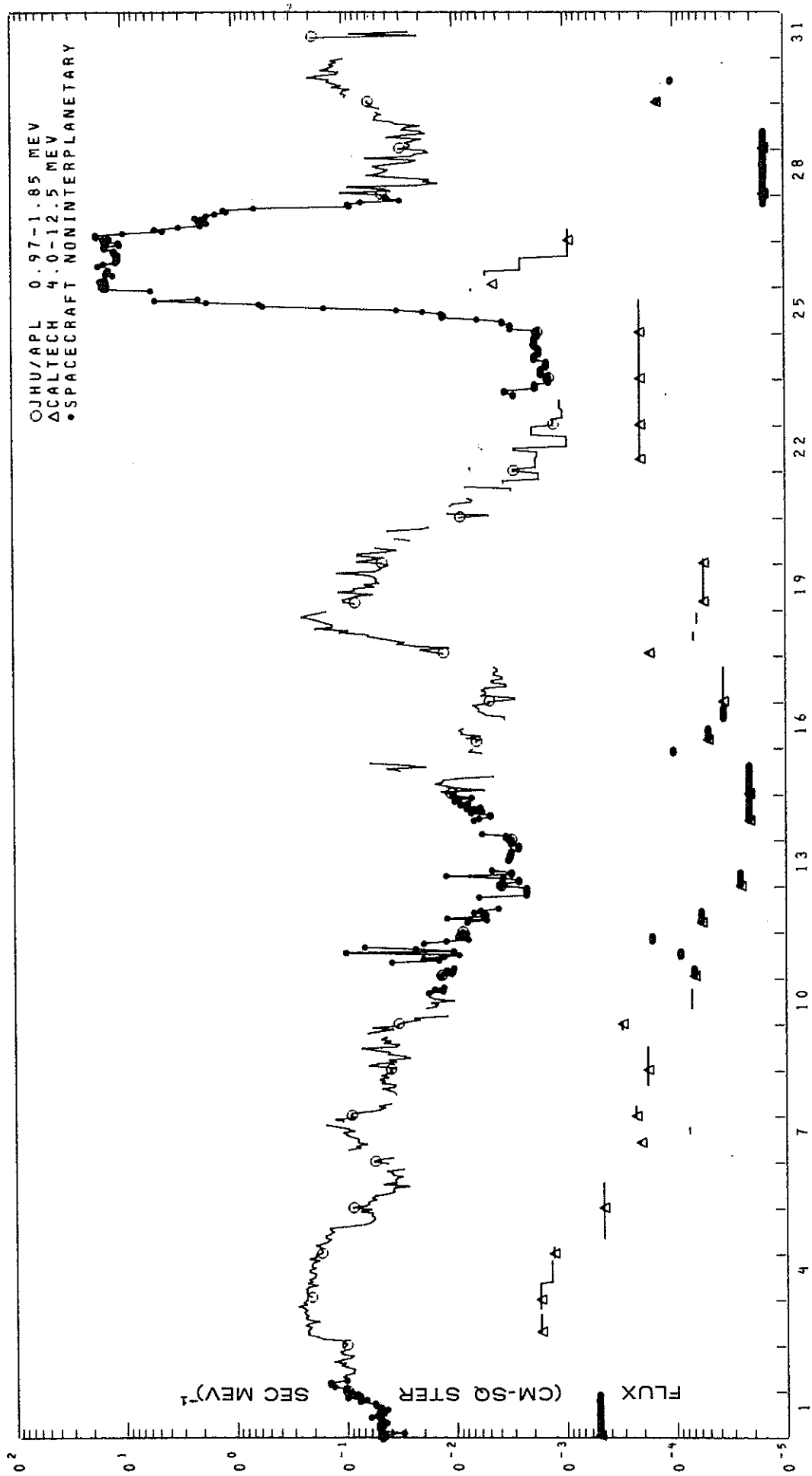
AUGUST 1978



33
Aug 78

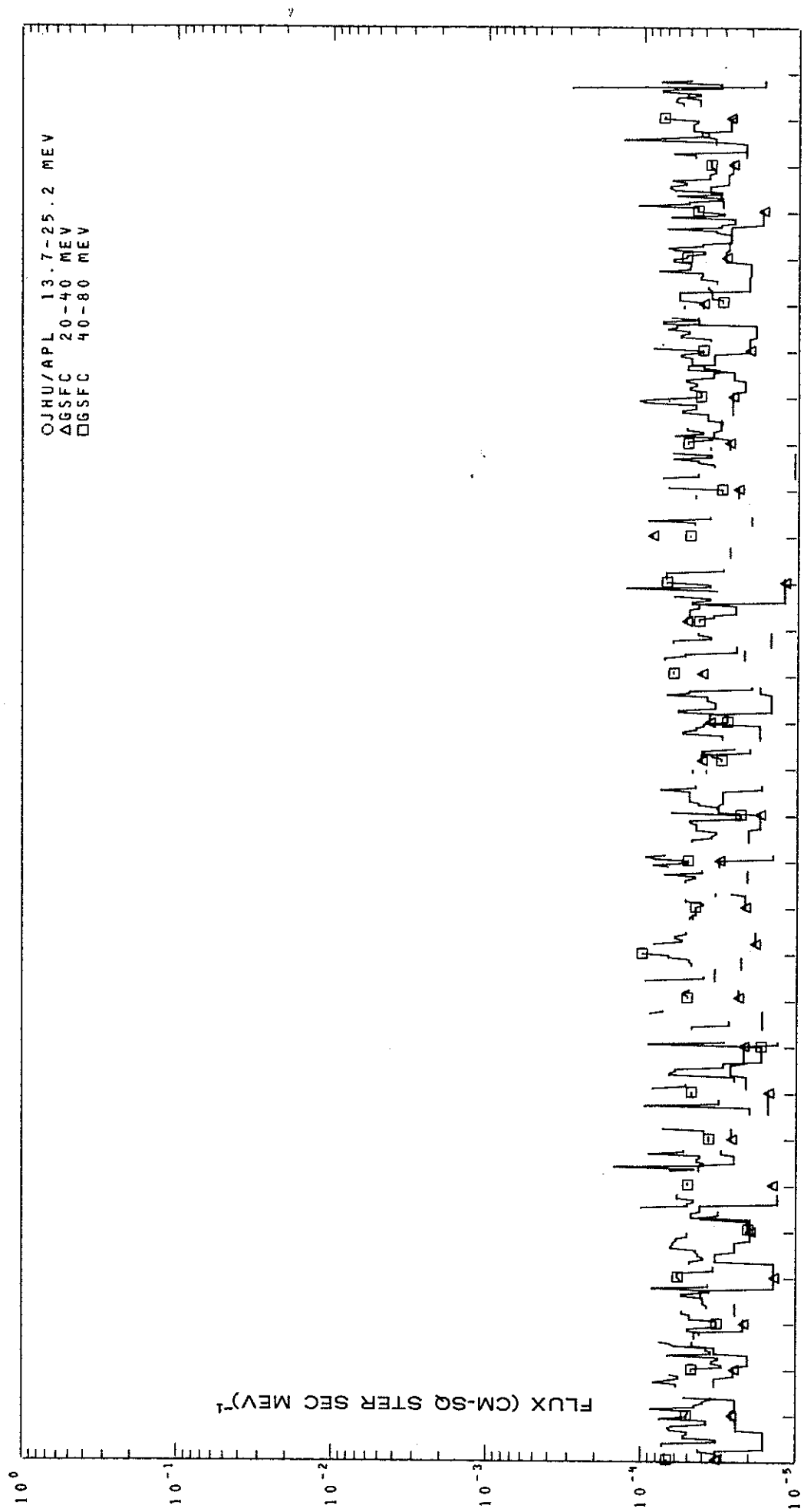
IMP 7 AND 8 INTERMEDIATE ENERGY PROTONS

AUGUST 1978



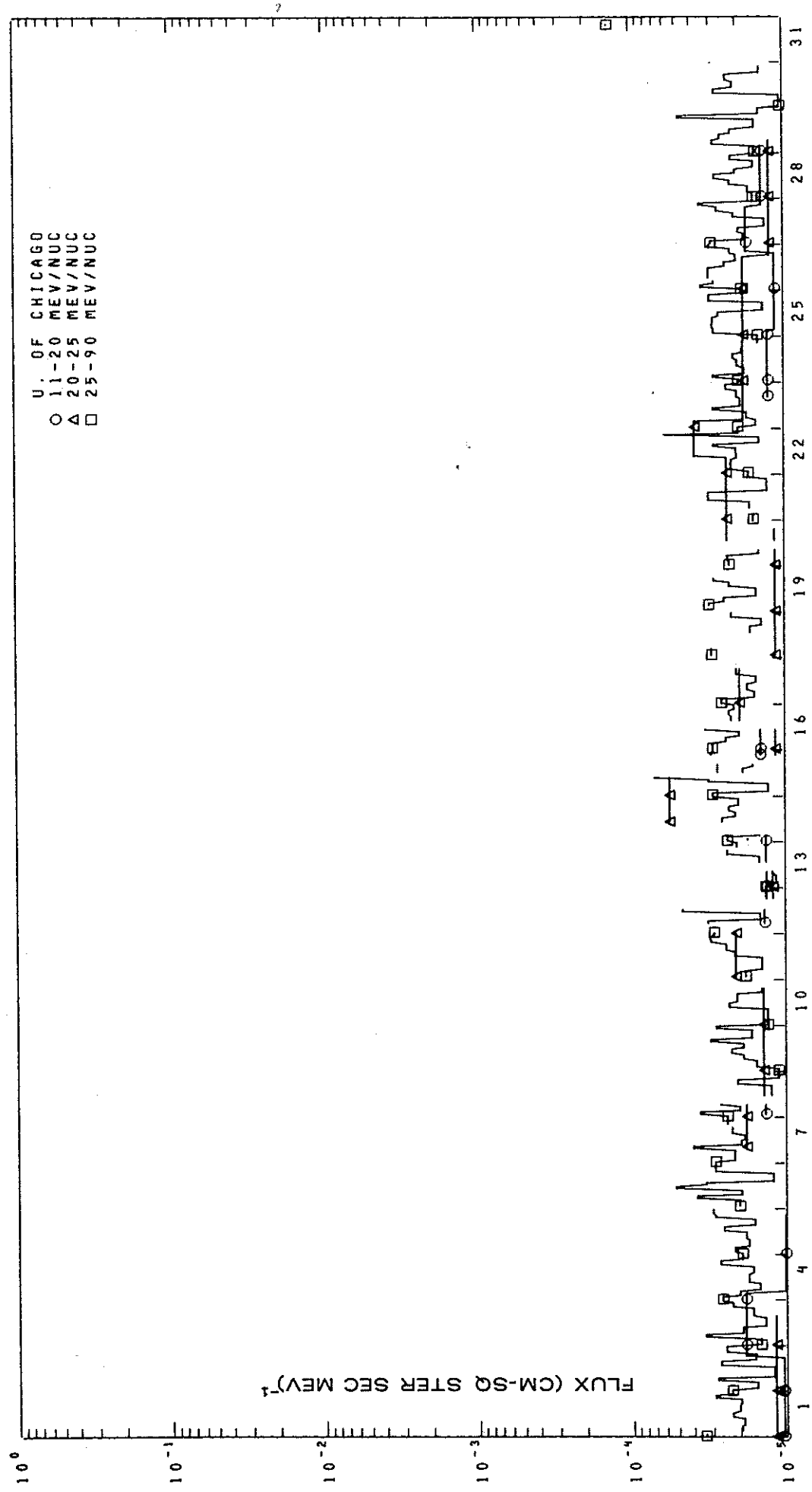
IMP 7 AND 8 HIGH ENERGY PROTONS

AUGUST 1978



IMP 7 AND 8 ALPHA PARTICLES

AUGUST 1978



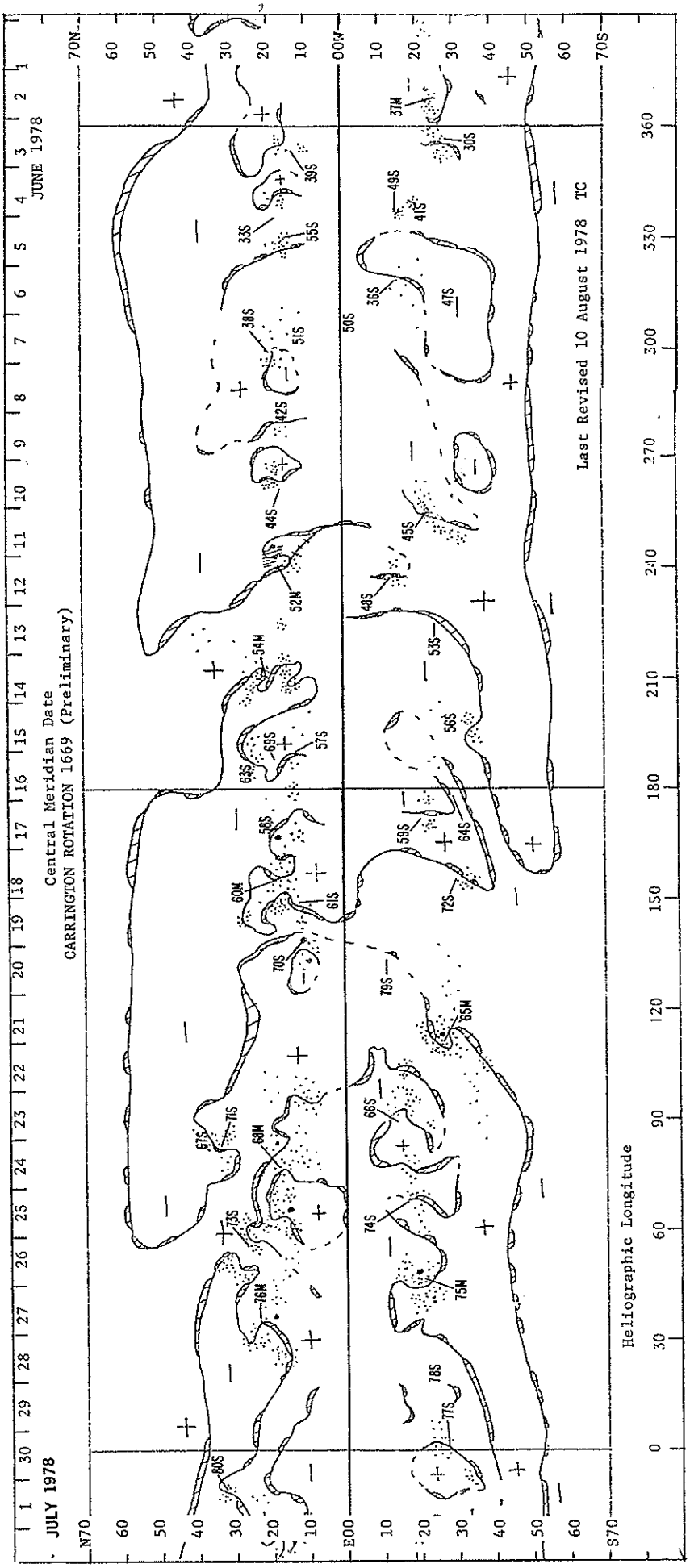
JULY 1978 DATA

Contents

ABBREVIATED CALENDAR RECORD

Hα SYNOPTIC CHART

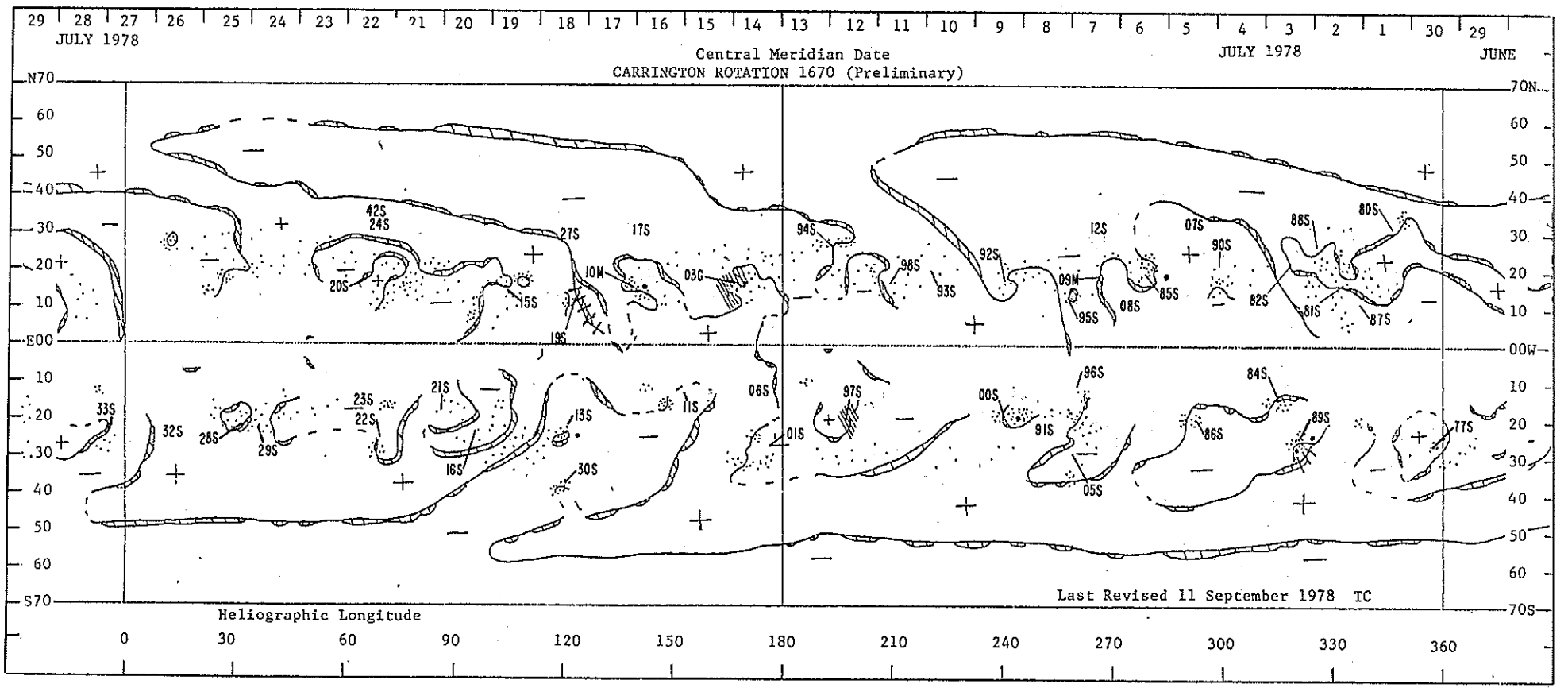
JUNE - JULY 1978



ABBREVIATED CALENDAR RECORD

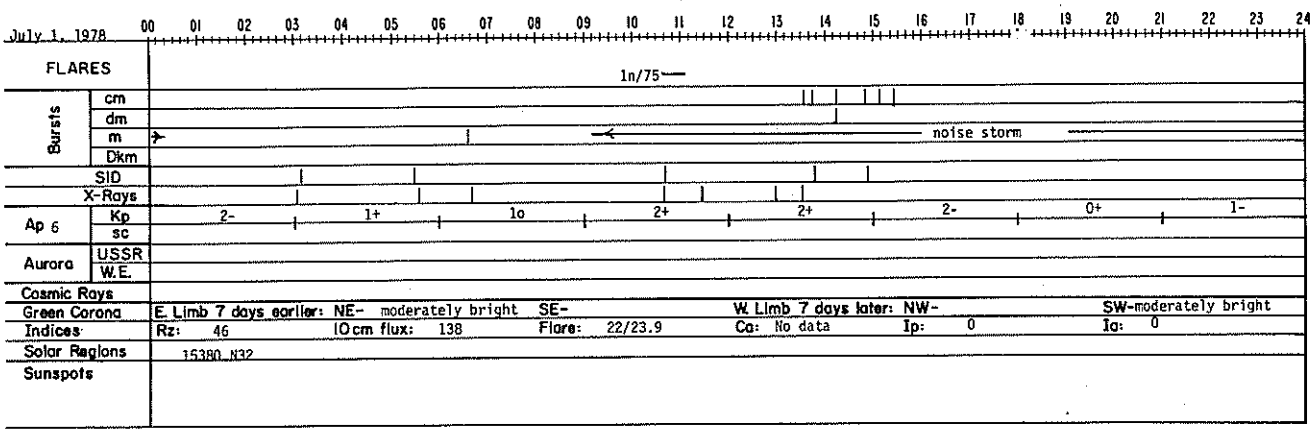
Hα SYNOPTIC CHART

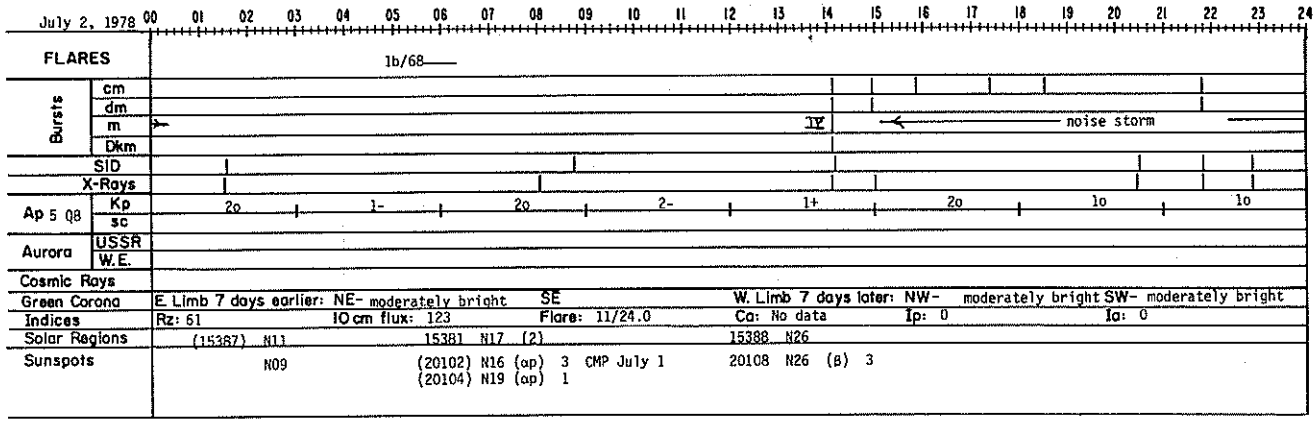
JUNE–JULY 1978

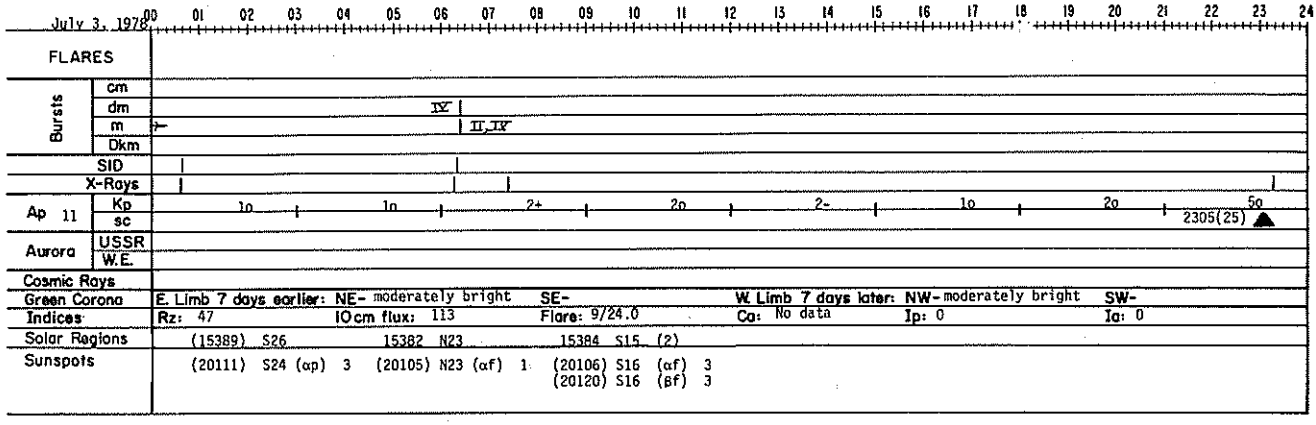


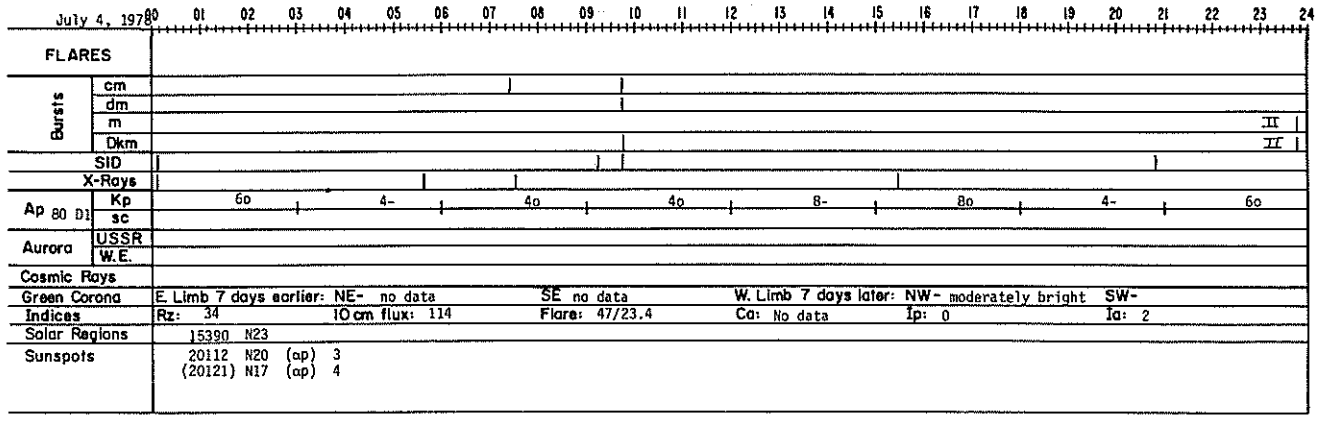
ABBREVIATED CALENDAR RECORD

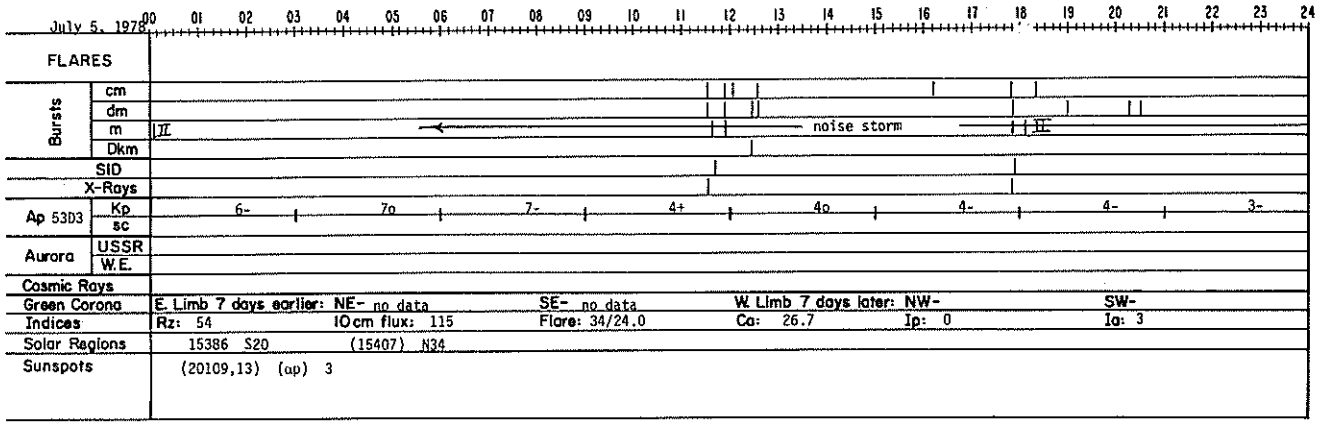
JULY 1978

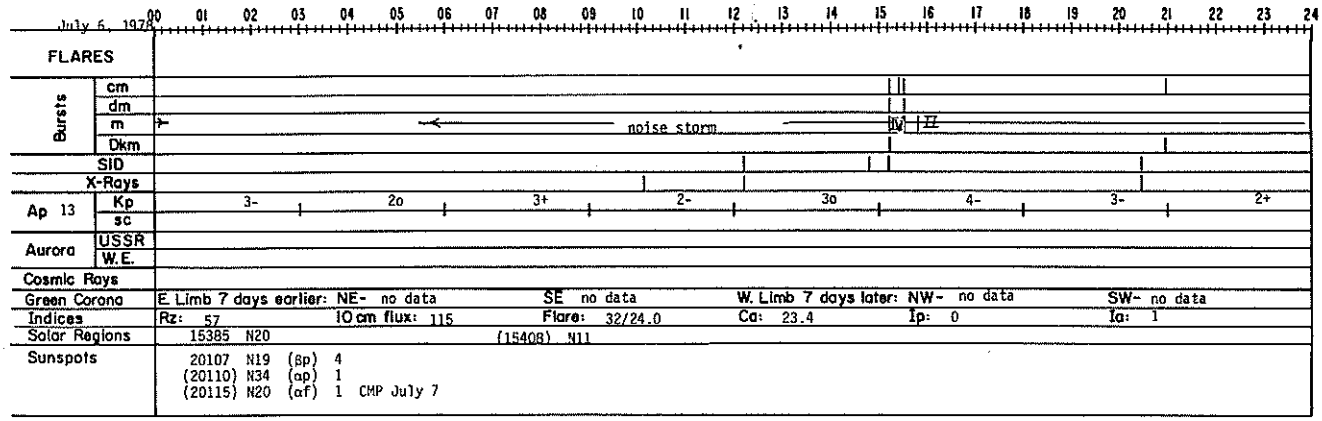


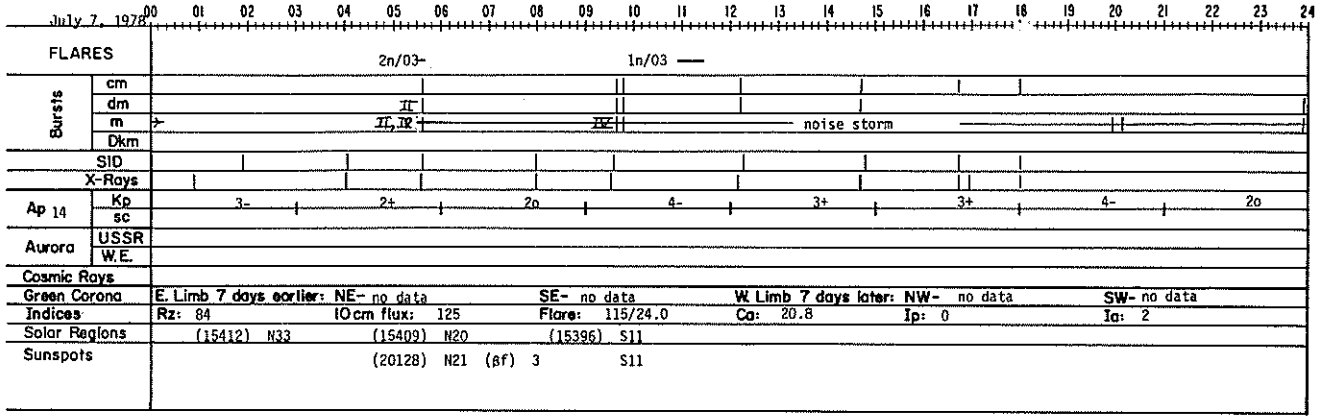


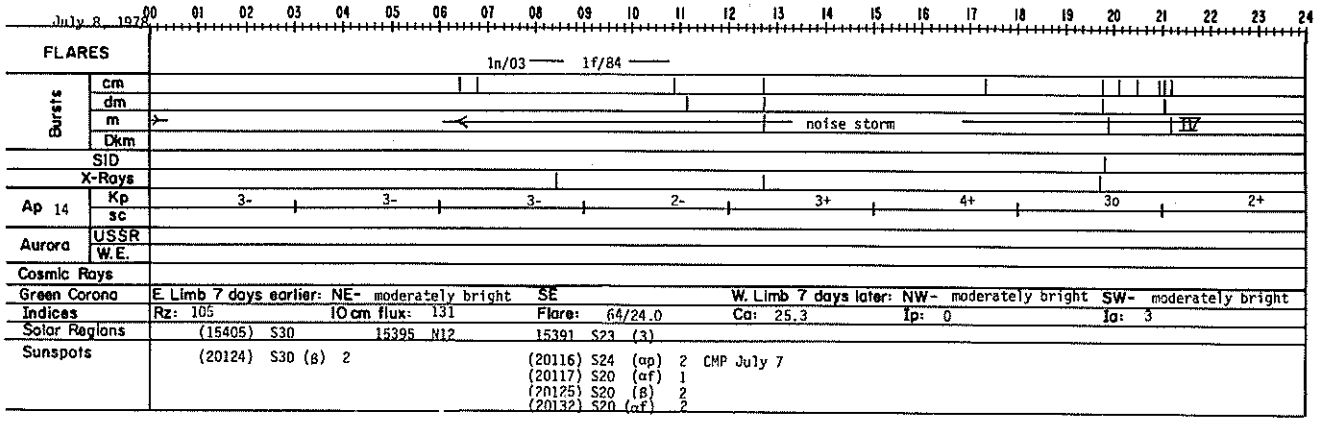


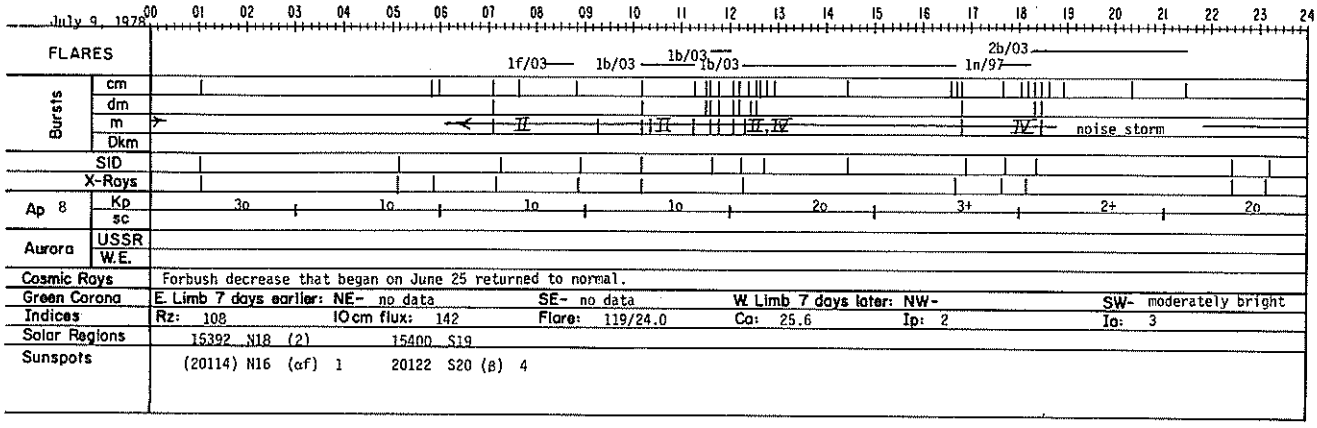


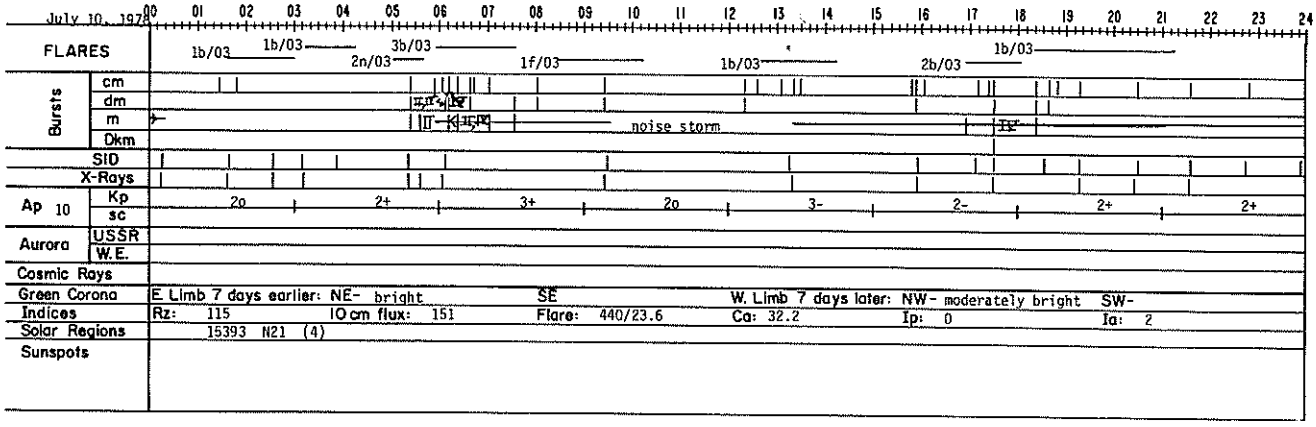

July 5, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 53D3
Kp
sc
6- 7o 7- 4+ 4o 4- 4- 3-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- SW-
Indices
Rz: 54 10cm flux: 115 Flare: 34/24.0 Ca: 26.7 Ip: 0 Ia: 3
Solar Regions
15386 S20 (15407) N34
Sunspots
(20109,13) (αp) 3

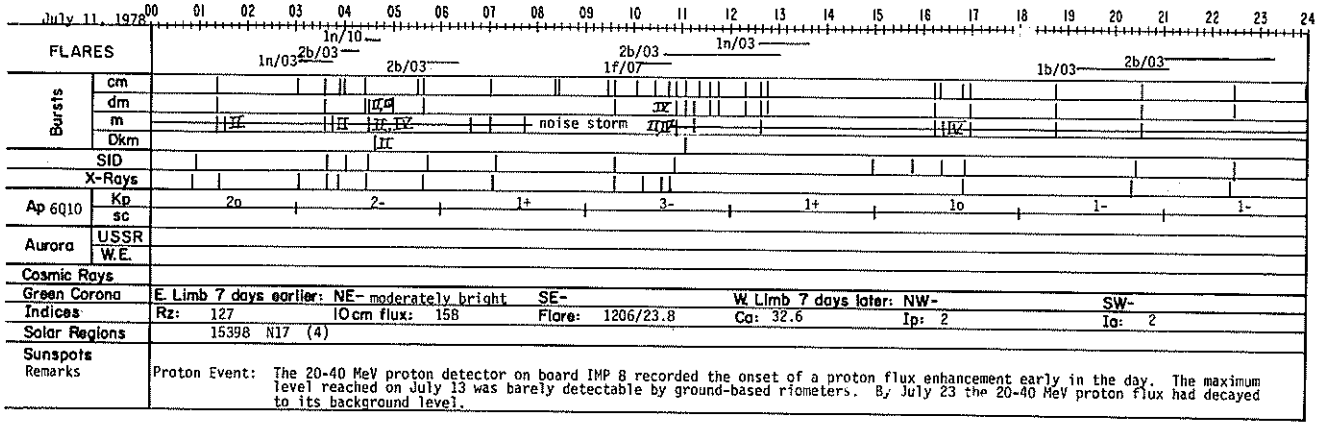

July 6, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 13
Kp
sc
3- 2o 3+ 2- 3o 4- 3- 2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 57 10cm flux: 115 Flare: 32/24.0 Ca: 23.4 Ip: 0 Ia: 1
Solar Regions
15385 N20 (15408) N11
Sunspots
20107 N19 (βp) 4
(20110) N34 (αp) 1
(20115) N20 (αf) 1 CMP July 7

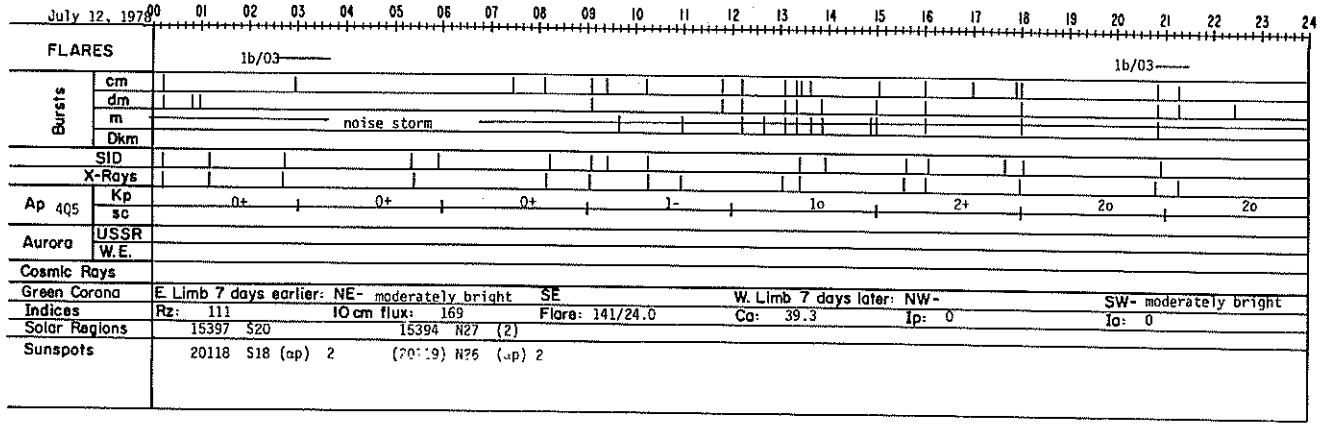

July 7, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
2n/03-
1n/03
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 14
Kp
sc
3- 2+ 2o 4- 3+ 3+ 4- 2o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 84 10cm flux: 125 Flare: 115/24.0 Ca: 20.8 Ip: 0 Ia: 2
Solar Regions
(15412) N33 (15409) N20 (15396) S11
Sunspots
(20128) N21 (βf) 3 S11

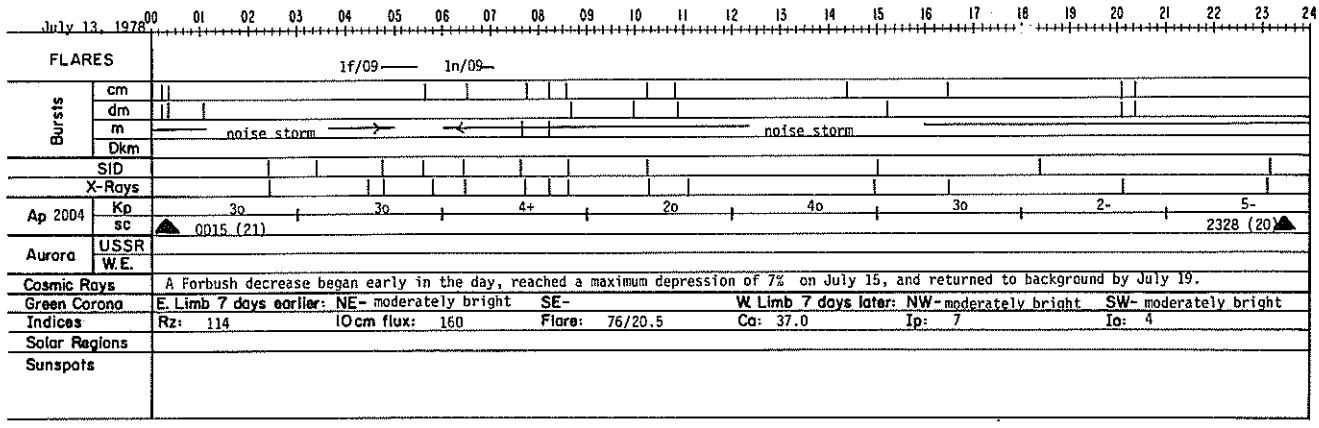

July 8, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/03
1f/84
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 14
Kp
sc
3- 3- 3- 2- 3+ 4+ 3o 2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE W. Limb 7 days later: NW- moderately bright SW- moderately bright
Indices
Rz: 105 10cm flux: 131 Flare: 64/24.0 Ca: 25.3 Ip: 0 Ia: 3
Solar Regions
(15405) S30 15395 N12 15391 S23 (3)
Sunspots
(20124) S30 (β) 2
(20116) S24 (αp) 2 CMP July 7
(20117) S20 (αf) 1
(20125) S20 (β) 2
(20132) S20 (αf) 2

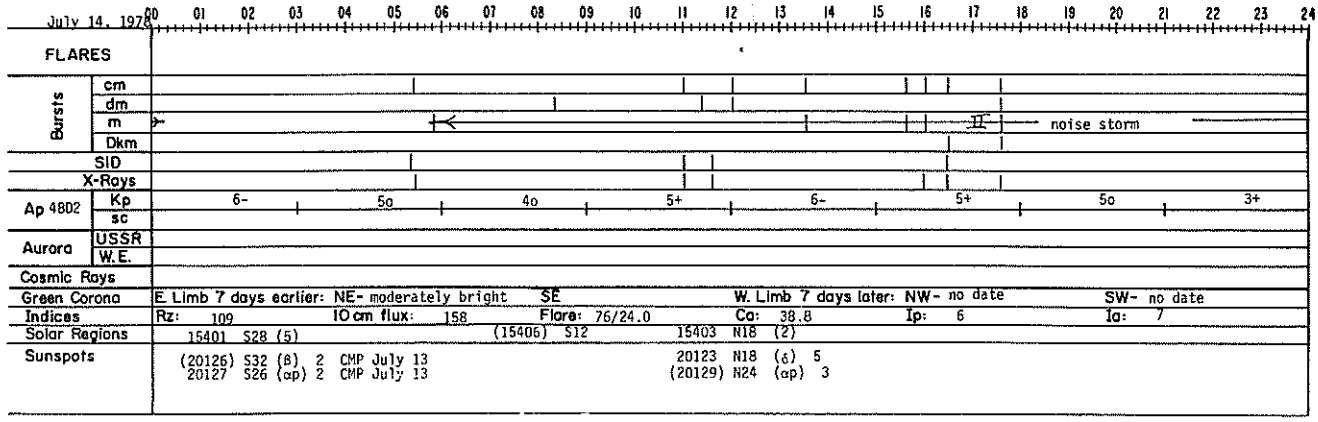

July 9, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1f/03
1b/03
1b/03
1b/03
2b/03
1n/97
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 8
Kp
sc
3o
1o
1o
1o
2o
3+
2+
2o
Aurora
USSR
W.E.
Cosmic Rays
Forbush decrease that began on June 25 returned to normal.
Green Corona
E. Limb 7 days earlier: NE- no data
SE- no data
W. Limb 7 days later: NW-
SW- moderately bright
Indices
Rz: 108
10cm flux: 142
Flare: 119/24.0
Ca: 25.6
Ip: 2
Ia: 3
Solar Regions
15392 N18 (2)
15400 S19
Sunspots
(20114) N16 (αf) 1
20122 S20 (β) 4

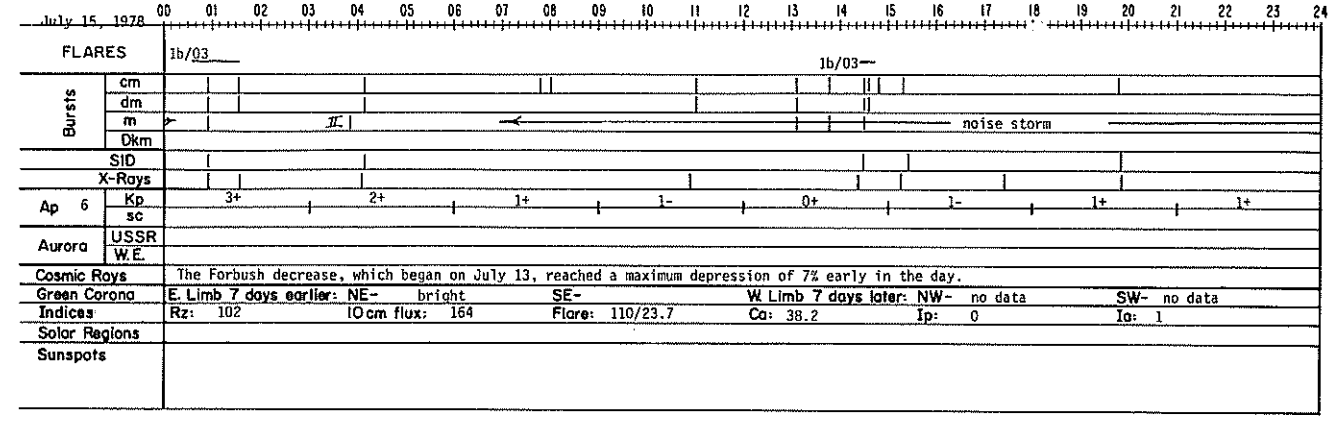

July 10, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1b/03
1b/03
3b/03
2n/03
1f/03
1b/03
2b/03
1b/03
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 10
Kp
sc
2o
2+
3+
2o
3-
2-
2+
2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- bright
SE
W. Limb 7 days later: NW- moderately bright
SW-
Indices
Rz: 115
10cm flux: 151
Flare: 440/23.6
Ca: 32.2
Ip: 0
Ia: 2
Solar Regions
15393 N21 (4)
Sunspots

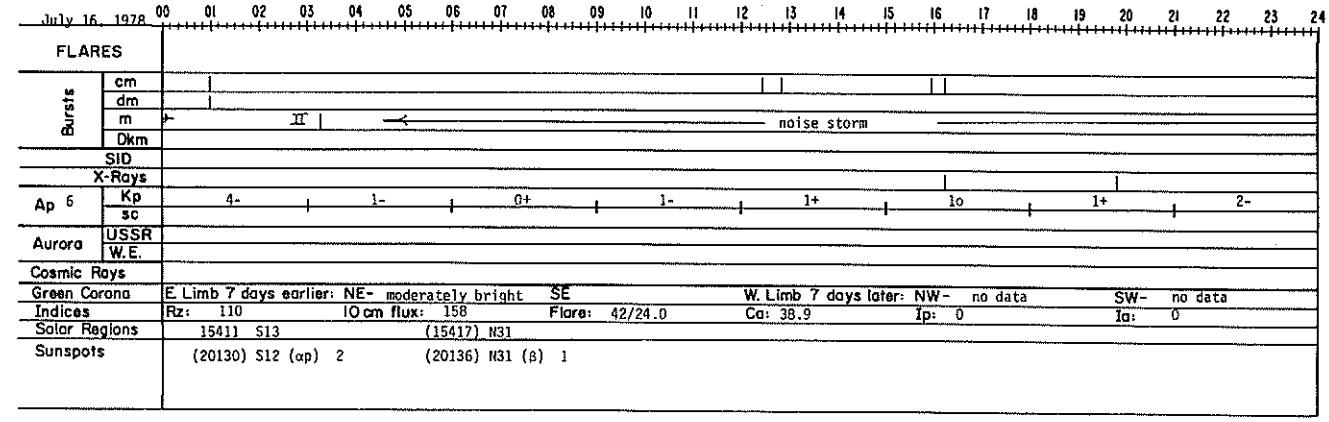

July 11, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/10
1n/03
2b/03
2b/03
2b/03
1f/07
1n/03
1b/03
2b/03
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 6Q10
Kp
sc
2o
2-
1+
3-
1+
1o
1-
1-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright
SE-
W. Limb 7 days later: NW-
SW-
Indices
Rz: 127
10cm flux: 158
Flare: 1206/23.8
Ca: 32.6
Ip: 2
Ia: 2
Solar Regions
15398 N17 (4)
Sunspots
Remarks
Proton Event: The 20-40 MeV proton detector on board IMP 8 recorded the onset of a proton flux enhancement early in the day. The maximum level reached on July 13 was barely detectable by ground-based riometers. By July 23 the 20-40 MeV proton flux had decayed to its background level.

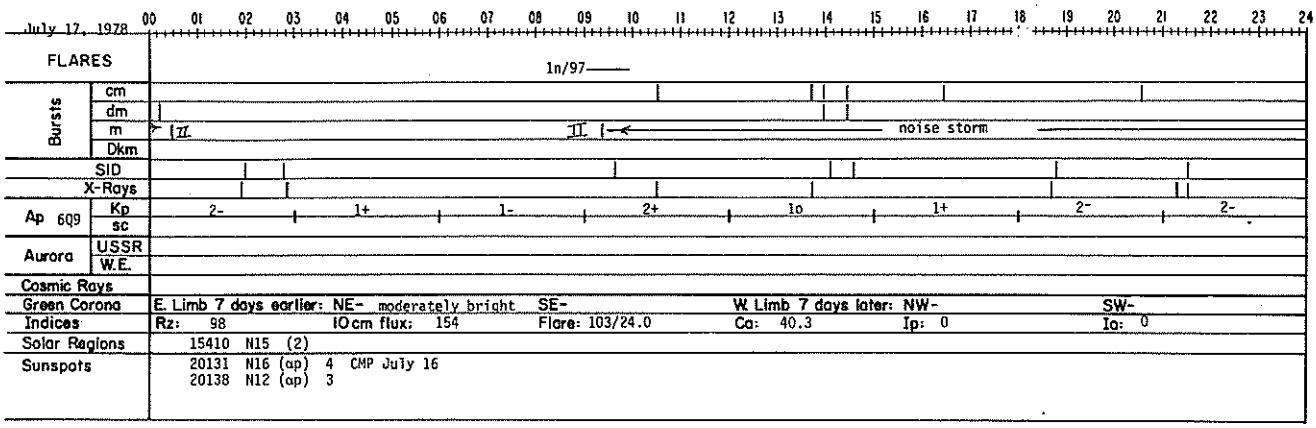

July 12, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1b/03
1b/03
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 405
Kp
sc
0+
0+
0+
1-
1o
2+
2o
2o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright
SE
W. Limb 7 days later: NW-
SW- moderately bright
Indices
Rz: 111
10cm flux: 169
Flare: 141/24.0
Ca: 39.3
Ip: 0
Ia: 0
Solar Regions
15397 S20
15394 N27 (2)
Sunspots
20118 S18 (αp) 2
(20119) N26 (αp) 2

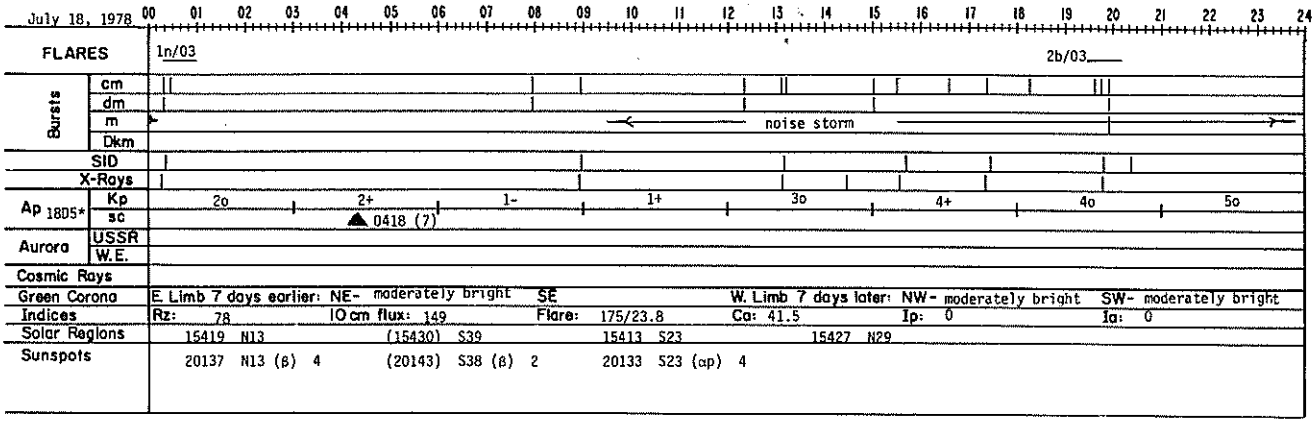

July 13, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1f/09
1n/09
Bursts
cm
dm
m
noise storm
noise storm
Dkm
SID
X-Rays
Ap 2004
Kp
3o 3o 4+ 2o 4o 3o 2- 5-
sc
0015 (21)
2328 (20)
Aurora
USSR
W.E.
Cosmic Rays
A Forbush decrease began early in the day, reached a maximum depression of 7% on July 15, and returned to background by July 19.
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE- W. Limb 7 days later: NW- moderately bright SW- moderately bright
Indices
Rz: 114 10cm flux: 160 Flare: 76/20.5 Ca: 37.0 Ip: 7 Ia: 4
Solar Regions
Sunspots

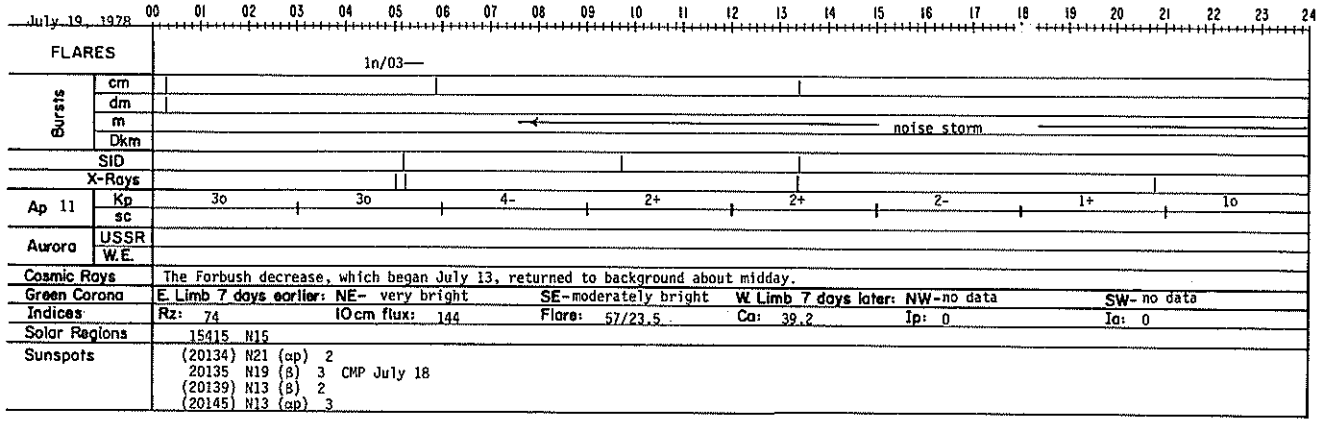

July 14, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 4802
Kp
6- 5o 4o 5+ 6- 5+ 5o 3+
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE W. Limb 7 days later: NW- no date SW- no date
Indices
Rz: 109 10cm flux: 158 Flare: 76/24.0 Ca: 38.8 Ip: 6 Ia: 7
Solar Regions
15401 S28 (5) (15406) S12 15403 N18 (2)
Sunspots
(20126) S32 (β) 2 CMP July 13
20127 S26 (αp) 2 CMP July 13
20123 N18 (δ) 5
(20129) N24 (αp) 3

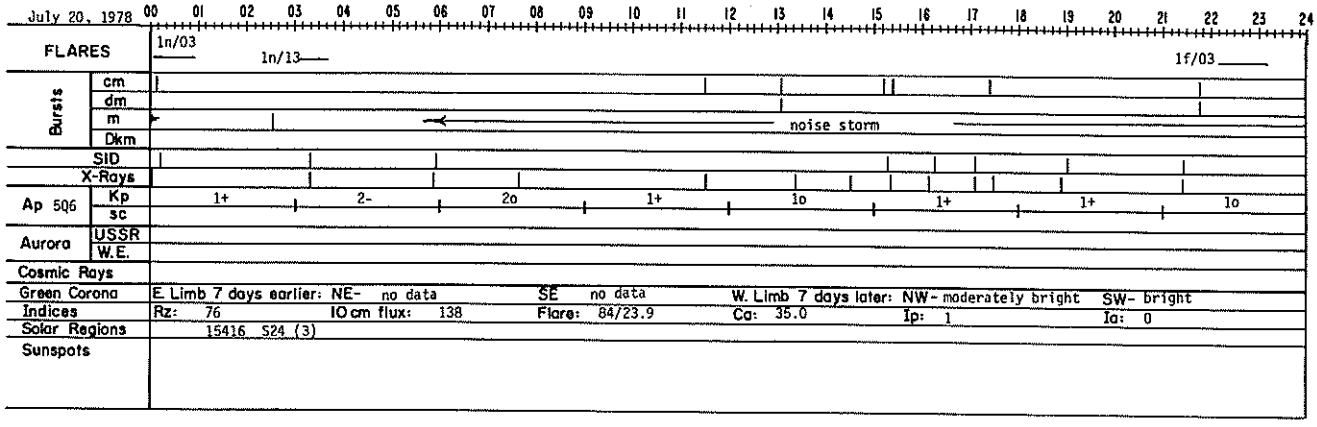

July 15, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1b/03
1b/03
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 6
Kp
3+ 2+ 1+ 1- 0+ 1- 1+ 1+
sc
Aurora
USSR
W.E.
Cosmic Rays
The Forbush decrease, which began on July 13, reached a maximum depression of 7% early in the day.
Green Corona
E. Limb 7 days earlier: NE- bright SE- W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 102 10cm flux: 164 Flare: 110/23.7 Ca: 38.2 Ip: 0 Ia: 1
Solar Regions
Sunspots

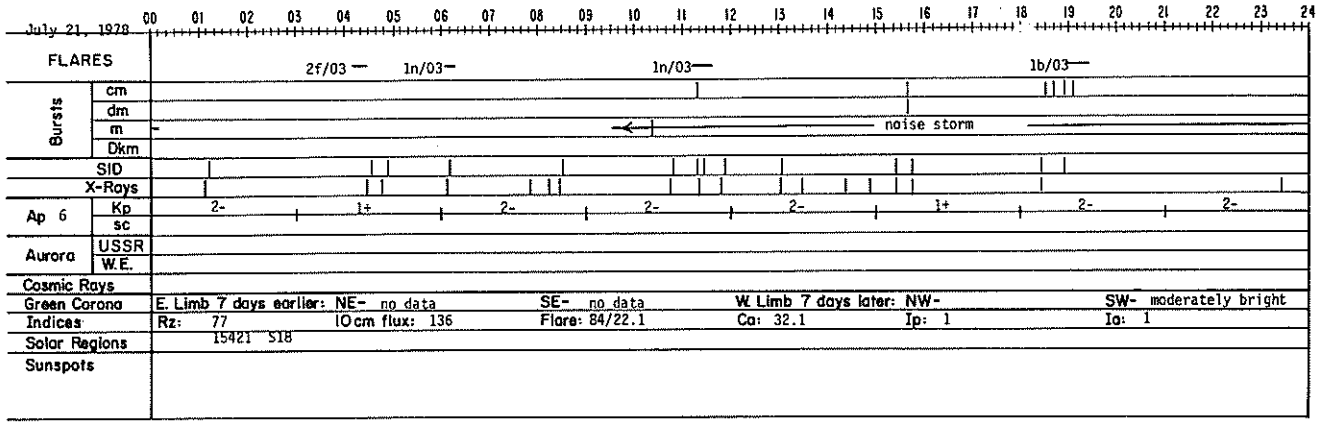

July 16, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
noise storm
Dkm
SID
X-Rays
Ap 6
Kp
4- 1- 0+ 1- 1+ 1o 1+ 2-
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 110 10cm flux: 158 Flare: 42/24.0 Ca: 38.9 Ip: 0 Ia: 0
Solar Regions
15411 S13 (15417) N31
Sunspots
(20130) S12 (αp) 2 (20136) N31 (β) 1

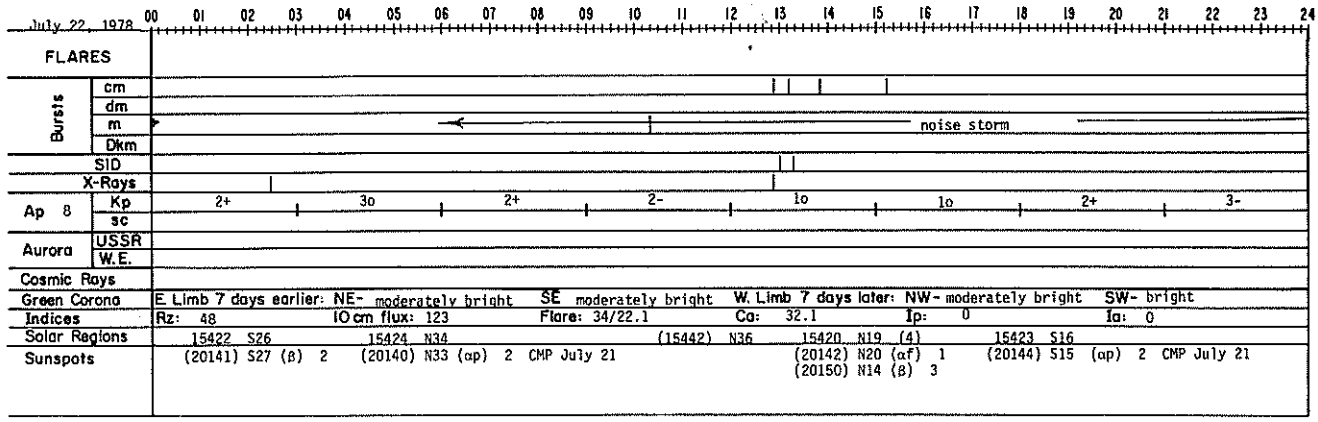

July 17, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/97
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 6Q9
Kp
2- 1+ 1- 2+ 1o 1+ 2- 2-
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE-
W. Limb 7 days later: NW- SW-
Indices
Rz: 98 IOcm flux: 154 Flare: 103/24.0 Ca: 40.3 Ip: 0 Ia: 0
Solar Regions
15410 N15 (2)
Sunspots
20131 N16 (ap) 4 CMP July 16
20138 N12 (ap) 3

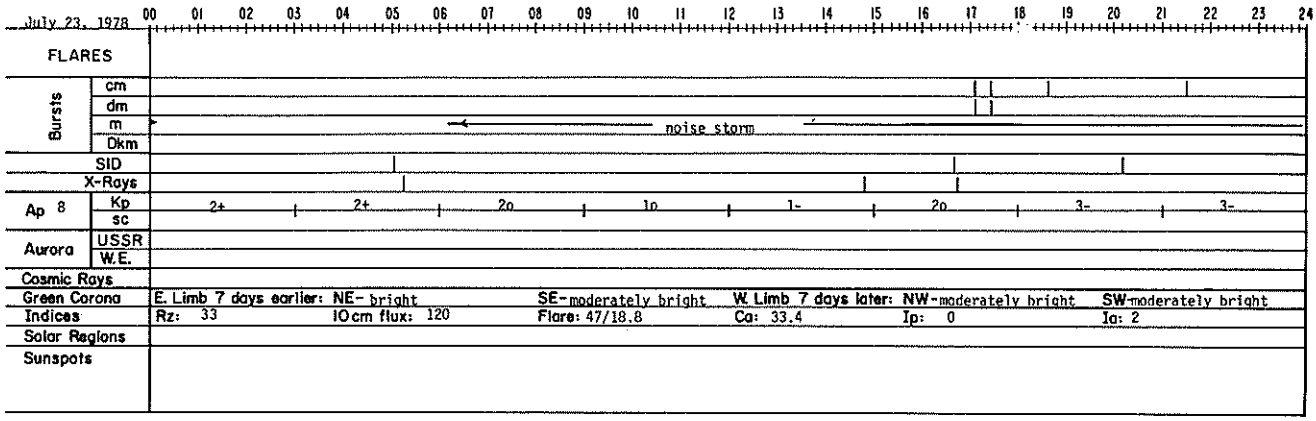

July 18, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/03
2b/03
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 1805*
Kp
2o 2+ 1- 1+ 3o 4+ 4o 5o
sc
0418 (7)
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE
W. Limb 7 days later: NW- moderately bright SW- moderately bright
Indices
Rz: 78 IOcm flux: 149 Flare: 175/23.8 Ca: 41.5 Ip: 0 Ia: 0
Solar Regions
15419 N13 (15430) S39 15413 S23 15427 N29
Sunspots
20137 N13 (β) 4 (20143) S38 (β) 2 20133 S23 (ap) 4

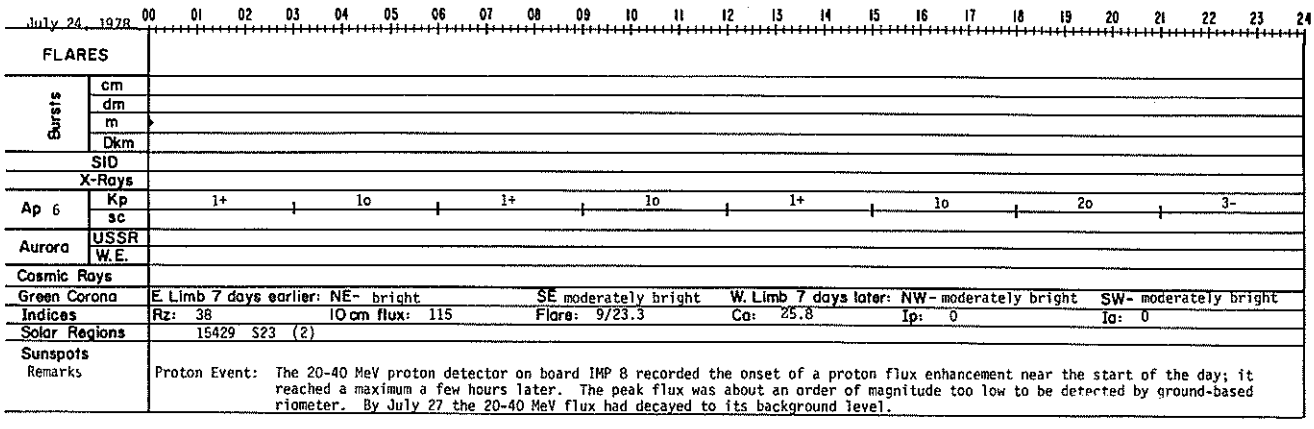

July 19, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/03
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 11
Kp
3o 3o 4- 2+ 2+ 2- 1+ 1o
sc
Aurora
USSR
W.E.
Cosmic Rays
The Forbush decrease, which began July 13, returned to background about midday.
Green Corona
E. Limb 7 days earlier: NE- very bright SE-moderately bright
W. Limb 7 days later: NW-no data SW- no data
Indices
Rz: 74 IOcm flux: 144 Flare: 57/23.5 Ca: 39.2 Ip: 0 Ia: 0
Solar Regions
15415 N15
Sunspots
(20134) N21 (ap) 2
20135 N19 (β) 3 CMP July 18
(20139) N13 (β) 2
(20145) N13 (ap) 3

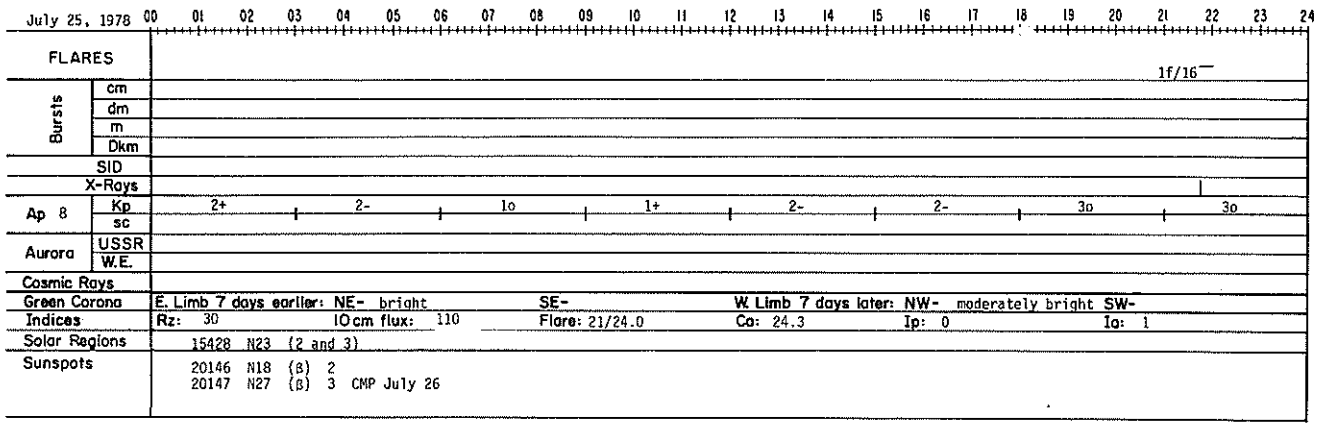

July 20, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
1n/03
1n/13
1f/03
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 5Q6
Kp
1+ 2- 2o 1+ 1o 1+ 1+ 1o
sc
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data
W. Limb 7 days later: NW- moderately bright SW- bright
Indices
Rz: 76 IOcm flux: 138 Flare: 84/23.9 Ca: 35.0 Ip: 1 Ia: 0
Solar Regions
15416 S24 (3)
Sunspots


July 21, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
2f/03
1n/03
1n/03
1b/03
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 6
Kp
sc
2- 1+ 2- 2- 2- 1+ 2- 2-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- SW- moderately bright
Indices
Rz: 77 10cm flux: 136 Flare: 84/22.1 Ca: 32.1 Ip: 1 Ia: 1
Solar Regions
15421 S18
Sunspots


July 22, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 8
Kp
sc
2+ 3o 2+ 2- 1o 1o 2+ 3-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- moderately bright SE moderately bright W. Limb 7 days later: NW- moderately bright SW- bright
Indices
Rz: 48 10cm flux: 123 Flare: 34/22.1 Ca: 32.1 Ip: 0 Ia: 0
Solar Regions
15422 S26 15424 N34 (15442) N36 15420 N19 (4) 15423 S16
Sunspots
(20141) S27 (β) 2 (20140) N33 (αp) 2 CMP July 21 (20142) N20 (αf) 1 (20144) S15 (αp) 2 CMP July 21
(20150) N14 (β) 3

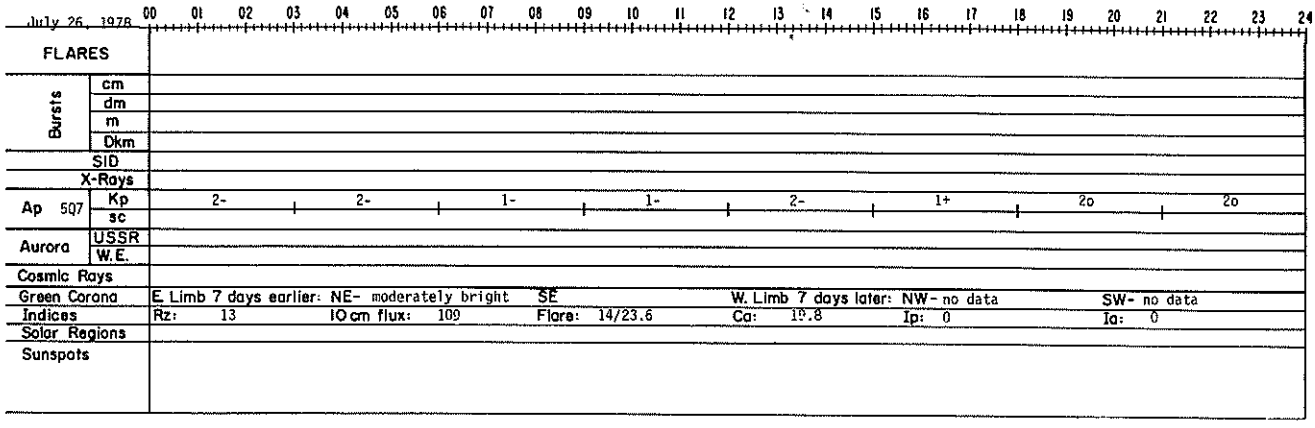

July 23, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 8
Kp
sc
2+ 2+ 2o 1o 1- 2o 3- 3-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- bright SE-moderately bright W. Limb 7 days later: NW-moderately bright SW-moderately bright
Indices
Rz: 33 10cm flux: 120 Flare: 47/18.8 Ca: 33.4 Ip: 0 Ia: 2
Solar Regions
Sunspots


July 24, 1978
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
SID
X-Rays
Ap 6
Kp
sc
1+ 1o 1+ 1o 1+ 1o 2o 3-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- bright SE moderately bright W. Limb 7 days later: NW- moderately bright SW- moderately bright
Indices
Rz: 38 10cm flux: 115 Flare: 9/23.3 Ca: 25.8 Ip: 0 Ia: 0
Solar Regions
15429 S23 (2)
Sunspots
Remarks
Proton Event: The 20-40 MeV proton detector on board IMP 8 recorded the onset of a proton flux enhancement near the start of the day; it reached a maximum a few hours later. The peak flux was about an order of magnitude too low to be detected by ground-based riometer. By July 27 the 20-40 MeV flux had decayed to its background level.



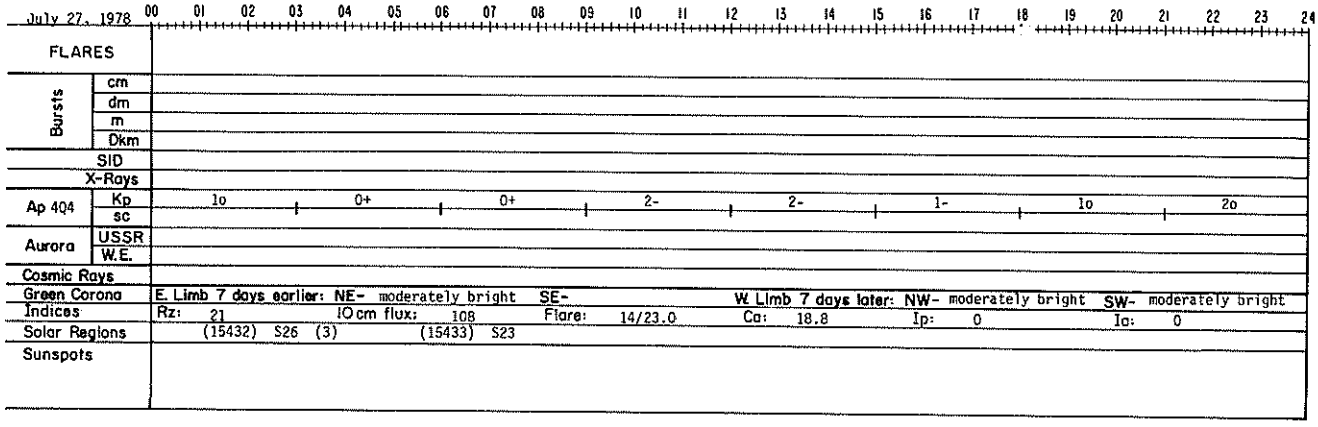
July 25, 1978

FLARES		1f/16
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 8	Kp	2+ 2- 1o 1+ 2- 2- 3o 3o
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- bright SE- W. Limb 7 days later: NW- moderately bright SW-
Indices		Rz: 30 10cm flux: 110 Flare: 21/24.0 Ca: 24.3 Ip: 0 Ia: 1
Solar Regions		15428 N23 (2 and 3)
Sunspots		20146 N18 (B) 2 20147 N27 (B) 3 CMP July 26



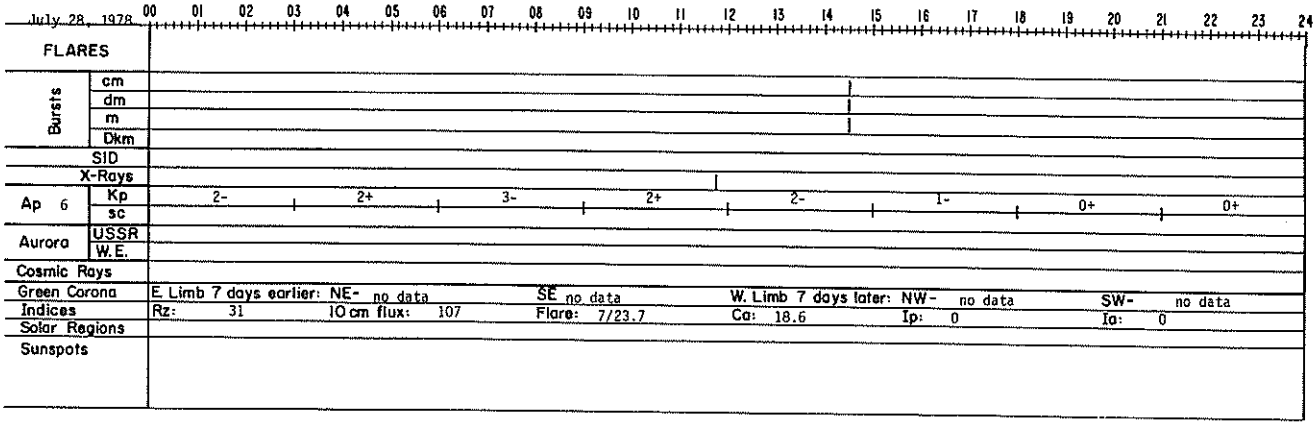
July 26, 1978

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 507	Kp	2- 2- 1- 1- 2- 1+ 2o 2o
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- moderately bright SE W. Limb 7 days later: NW- no data SW- no data
Indices		Rz: 13 10cm flux: 109 Flare: 14/23.6 Ca: 19.8 Ip: 0 Ia: 0
Solar Regions		
Sunspots		



July 27, 1978

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 404	Kp	1o 0+ 0+ 2- 2- 1- 1o 2o
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- moderately bright SE- W. Limb 7 days later: NW- moderately bright SW- moderately bright
Indices		Rz: 21 10cm flux: 108 Flare: 14/23.0 Ca: 18.8 Ip: 0 Ia: 0
Solar Regions		(15432) S26 (3) (15433) S23
Sunspots		



July 28, 1978

FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap 6	Kp	2- 2+ 3- 2+ 2- 1- 0+ 0+
	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: 31 10cm flux: 107 Flare: 7/23.7 Ca: 18.6 Ip: 0 Ia: 0
Solar Regions		
Sunspots		

July 29, 1978

		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
FLARES													1n/43													
Bursts	cm																									
	dm																									
	m																									
	Dkm																									
SID																										
X-Rays																										
Ap 403	Kp	0o				0+			1o			1+			1o			1o			1o			2o		
	sc																									
Aurora	USSR																									
	W.E.																									
Cosmic Rays																										

Green Corona: E. Limb 7 days earlier: NE- no data; SE- no data; W. Limb 7 days later: NW-; SW-moderately bright

Indices: Rz: 48; 10cm flux: 106; Flare: 17/24.0; Ca: 15.6; Ip: 0; Ia: 0

Solar Regions: 15434 N15 (2 and 3); 15435 S16

Sunspots: (20149) S14 (af) 3

July 30, 1978

		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
FLARES																										
Bursts	cm																									
	dm																									
	m																									
	Dkm																									
SID																										
X-Rays																										
Ap 302	Kp	2-				1-			0+			1o			1o			1o			0+			0+		
	sc																									
Aurora	USSR																									
	W.E.																									
Cosmic Rays																										

Green Corona: E. Limb 7 days earlier: NE- no data; SE no data; W. Limb 7 days later: NW-; SW- moderately bright

Indices: Rz: 35; 10cm flux: 106; Flare: 16/24.0; Ca: 14.0; Ip: 0; Ia: 0

Solar Regions: 15436 S27 (2); 15439 S17 (3)

Sunspots:

July 31, 1978

		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
FLARES																										
Bursts	cm																									
	dm																									
	m																									
	Dkm																									
SID																										
X-Rays																										
Ap 201	Kp	0o				0o			0+			0+			0+			1-			1-			0+		
	sc																									
Aurora	USSR																									
	W.E.																									
Cosmic Rays																										

Green Corona: E. Limb 7 days earlier: NE-; SE-; W. Limb 7 days later: NW-; SW- moderately bright

Indices: Rz: 36; 10cm flux: 106; Flare: 19/23.2; Ca: 14.3; Ip: 0; Ia: 0

Solar Regions: 15448 N27; (15440) N24 (2)

Sunspots: (20146) N24 (ap) 7

REGIONAL FLARE INDEX

INCLUDES ALL FLARES

JULY 1978

MC MATH PLAGE NO.	LAT	CMP DATE	DATE FIRST FLARE	DATE LAST FLARE	FLARE-INDEX SUM	FLARE-INDEX MEAN	TOTAL NO. OF FLARES
15387	N11	78/07/02.1	78/07/06	78/07/06	.84	.84	1
15381	N16	78/07/02.3	78/06/26	78/07/03	91.54	11.44	32
15388	N28	78/07/02.9	78/07/04	78/07/07	45.14	11.28	14
15389	S26	78/07/03.2	78/07/04	78/07/09	63.27	10.55	34
15382	N23	78/07/03.4	78/06/27	78/06/29	2.78	.93	3
15384	S15	78/07/03.7	78/06/28	78/07/09	28.49	2.37	24
15390	N22	78/07/04.5	78/07/07	78/07/07	3.38	3.38	1
15386	S20	78/07/05.4	78/07/05	78/07/05	5.28	5.28	1
15407	N34	78/07/05.5	78/07/11	78/07/12	7.23	3.62	2
15385	N20	78/07/06.3	78/06/29	78/07/04	12.84	2.14	13
15409	N20	78/07/07.5	78/07/10	78/07/13	55.58	13.89	33
15395	N12	78/07/08.1	78/07/07	78/07/07	5.28	5.28	1
15391	S22	78/07/08.4	78/07/08	78/07/12	4.22	.84	2
15400	S20	78/07/09.3	78/07/06	78/07/15	88.22	8.82	28
15397	S20	78/07/12.6	78/07/06	78/07/17	66.60	5.55	17
15394	N27	78/07/12.9	78/07/15	78/07/15	1.92	1.92	1
15401	S29	78/07/14.3	78/07/11	78/07/20	15.62	1.56	6
15403	N18	78/07/14.9	78/07/07	78/07/21	2357.72	157.18	172
15410	N15	78/07/17.3	78/07/10	78/07/21	86.55	7.21	36
15413	S24	78/07/18.3	78/07/14	78/07/23	59.58	5.96	16
15430	S39	78/07/18.3	78/07/21	78/07/21	1.98	1.98	1
15415	N16	78/07/19.6	78/07/13	78/07/23	106.37	9.67	31
15416	S25	78/07/20.0	78/07/25	78/07/25	12.03	12.03	6
15421	S18	78/07/20.9	78/07/26	78/07/26	.85	.85	1
15422	S27	78/07/22.1	78/07/17	78/07/17	2.59	2.59	1
15442	N36	78/07/22.4	78/07/28	78/07/28	.85	.85	1
15423	S17	78/07/22.7	78/07/20	78/07/23	40.01	10.00	8
15420	N19	78/07/22.7	78/07/17	78/07/17	.84	.84	1
15429	S23	78/07/24.8	78/07/22	78/07/27	11.29	1.88	5
15428	N23	78/07/25.2	78/07/22	78/07/31	53.35	5.33	17
15434	N15	78/07/29.2	78/07/27	78/07/27	3.45	3.45	1
15436	S27	78/07/30.7	78/07/24	78/07/24	.85	.85	1
15440	N23	78/07/31.4	78/07/24	78/07/27	3.66	.92	3
15448	N26	78/07/31.6	78/08/06	78/08/06	.87	.87	1

Miscellaneous Data

Contents

SOLAR WIND

Interplanetary Scintillations

OCTOBER 1978

DAY	3C48		3C144		3C147		3C161		3C237		3C273		3C298		3C459	
	VEL	ERR	VEL	ERR	VEL	ERR	VEL	ERR	VEL	ERR	VEL	ERR	VEL	ERR	VEL	ERR
1									480	66			373	5		
2			502	16			458	16	619	81			323	56		
3			351	60			439	40	463	8			382	13		
4			473	18			500	37	436	14			411	31		
5			604	188					568	16			363	35		
6			443	10			266	8	315	18			443	32		
7			447	95			325	108	274	14			379	6		
8							217	4	313	5			344	4		
9			337	52			266	5	272	15			440	10		
10			382	18			406	43	298	17			391	9		
11			315	8			291	22	405	6			373	4		
12			384	15	355	56	346	5	578	99			452	46		
13			503	9			384	26								
14			354	12			434	15	561	17			591	8		
15			520	14			337	6	365	23			447	59		
16			404	10			380	11	330	37			491	95		
17			336	35			389	37	336	6	288	60	411	70		
18			375	7			487	4					563	15		
19			369	29			285	6					610	126		
20			342	39			332	35	370	28	285	13	697	8		
21			356	17			603	71	475	20	466	74				
22			394	32					362	29	280	57	453	30		
23			444	50					317	20						
24									266	5	243	3	328	103	415	9
25			354	7			297	31	284	10	258	4	369	25	396	32
26			261	68					309	10	326	20	446	17	434	31
27			363	17	292	18	354	4	402	20	401	18	511	107	358	12
28			375	5			323	6	318	5	374	22	637	13	333	24
29			442	57			301	4	405	39	292	4	530	76		
30							310	5			274	7				
31			355	20			357	3	343	11	313	4				

OCTOBER	5				15				25			
	UT	LAT	DIST	DLON	UT	LAT	DIST	DLON	UT	LAT	DIST	DLON
3C48	9.	11.	1.27	5.	8.	10.	1.28	3.	8.	9.	1.28	1.
3C144	13.	5.	1.13	15.	12.	4.	1.17	13.	12.	3.	1.21	11.
3C147	12.	12.	1.11	14.	11.	11.	1.15	13.	11.	10.	1.19	11.
3C161	14.	-2.	1.07	14.	14.	-2.	1.11	13.	13.	-3.	1.15	11.
3C237	18.	-2.	0.67	48.	17.	-1.	0.78	38.	17.	0.	0.88	28.
3C273	20.	32.	0.14	84.	19.	13.	0.30	74.	19.	6.	0.45	63.
3C298	22.	49.	0.43	-57.	21.	68.	0.35	-45.	21.	71.	0.33	39.
3C459	6.	8.	1.28	-5.	6.	8.	1.26	-7.	5.	7.	1.24	-9.

SOLAR WIND

Interplanetary Scintillations

NOVEMBER 1978

DAY	3C48 VEL	ERR	3C144 VEL	ERR	3C147 VEL	ERR	3C161 VEL	ERR	3C237 VEL	ERR	3C273 VEL	ERR	3C298 VEL	ERR	3C459 VEL	ERR
1			395	12					291	23	311	15	446	30	309	36
2							255	6	313	25	300	5			327	25
3							289	30	370	5	348	22	465	7	311	15
4									353	5	323	4	452	18		
5							362	47	413	80	364	8				
6			247	19					393	69	338	5	242	23	347	4
7									389	15	383	13			339	31
8							439	29			338	10	443	85	432	38
9							462	53	351	7	421	10	461	42	466	66
10									266	5	339	16	556	82	369	8
11											451	23	497	40	506	18
13											423	9	344	5		
14											360	5	297	4		
15							387	9			368	5	331	5	390	49
16							394	40	369	8	360	6	304	4		
17							298	9	437	10	306	3	298	4		
19							380	21	387	43	323	5	321	3	351	10
20							380	3	364	4	407	4	383	12	474	3
21							439	28	471	89	506	5	376	5	388	59
22							421	17	438	12	550	8	483	5	521	38
23							505	58	334	25	494	9	434	4		
24									341	92	520	13	354	4	501	15
25									500	9	519	12	430	5	392	117
26							433	36	558	29	616	24	366	8	481	29
27							360	43	654	135	600	6	414	4	378	64
28											610	53	394	8		
29											544	50	404	5		
30									346	17	386	19	344	4	361	13

NOVEMBER 5	UT	LAT	DIST	DLON
3C48	7.	8.	1.28	-1.
3C144	11.	2.	1.24	9.
3C147	10.	9.	1.22	9.
3C161	12.	-4.	1.18	10.
3C237	16.	0.	0.95	17.
3C273	18.	3.	0.61	52.
3C298	20.	46.	0.40	59.
3C459	4.	6.	1.21	-11.

15	UT	LAT	DIST	DLON
3C48	6.	8.	1.27	-3.
3C144	10.	1.	1.27	7.
3C147	9.	7.	1.24	8.
3C161	12.	-5.	1.21	8.
3C237	15.	0.	1.01	17.
3C273	17.	1.	0.74	42.
3C298	19.	30.	0.50	56.
3C459	4.	6.	1.17	-13.

25	UT	LAT	DIST	DLON
3C48	6.	7.	1.26	-6.
3C144	10.	0.	1.29	5.
3C147	9.	6.	1.26	6.
3C161	11.	-6.	1.24	6.
3C237	15.	-1.	1.06	16.
3C273	17.	0.	0.85	32.
3C298	18.	20.	0.62	49.
3C459	3.	5.	1.13	-14.

SOLAR WIND

Interplanetary Scintillations

DECEMBER 1978

DAY	3C48 VEL	3C48 ERR	3C144 VEL	3C144 ERR	3C147 VEL	3C147 ERR	3C161 VEL	3C161 ERR	3C237 VEL	3C237 ERR	3C273 VEL	3C273 ERR	3C298 VEL	3C298 ERR	3C459 VEL	3C459 ERR
1	464	39							233	27	331	4	368	7	388	3
2	431	15							327	6	295	5	348	5	358	5
3	441	39							341	15	285	6	336	4	337	21
4	380	22							275	20	350	3	326	4	344	3
5	288	3									403	9	363	4	381	21
6											473	6	364	5	393	33
7	328	24									426	10	372	13		
8											379	8	384	9		
9											382	30				
10													403	8	215	37
11											327	42	372	4	267	38
12													388	22	311	8
13	353	4							256	29	313	4	492	5	353	9
14	313	7							519	5	469	5	515	11	445	11
15	373	4							598	45	377	5	566	6	376	8
16									470	20	479	6	397	6	465	5
17	347	4							460	15	366	8	382	4		
18	374	11							444	8	415	6	502	8	500	4
19	409	29							509	20	443	15	376	7	530	7
20	283	14									409	43	465	7	424	11
21	376	57									385	39	510	11		
22	554	67							461	16	328	61	468	17	501	6
23	400	5									722	77	489	22		
24	327	34									527	84	425	7	464	11
25	370	14									455	7	418	5	484	8
26	423	10							520	20	397	6	383	3	428	57
27	352	32							263	11	401	6	461	22	468	23
28	429	12									331	3	446	19	446	71
29	435	3									401	9	397	4		
30	426	15														
31									413	128	532	44	356	20	346	28

DECEMBER 5	UT	LAT	DIST	DLON
3C48	5.	6.	1.23	-8.
3C144	9.	0.	1.30	2.
3C147	8.	5.	1.27	3.
3C161	10.	-7.	1.25	4.
3C237	14.	-2.	1.11	15.
3C273	16.	0.	0.93	22.
3C298	18.	13.	0.73	41.
3C459	2.	4.	1.08	-15.

15	UT	LAT	DIST	DLON
	4.	5.	1.21	-9.
	8.	-1.	1.30	-0.
	7.	4.	1.28	1.
	10.	-7.	1.26	2.
	13.	-3.	1.15	14.
	15.	-1.	0.98	17.
	17.	7.	0.83	33.
	2.	3.	1.03	-16.

25	UT	LAT	DIST	DLON
	4.	4.	1.17	-11.
	7.	-2.	1.30	-2.
	7.	3.	1.27	-1.
	9.	-8.	1.27	-0.
	12.	-4.	1.19	12.
	14.	-2.	1.03	17.
	16.	3.	0.91	24.
	1.	2.	0.98	-17.

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

OCTOBER 1978

OCT 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	
01	1316	2245	HARV										
02	1316	2310	HARV										
03	1316	2300	HARV				1803	1813	3	1803	1813	3	IIIN
			HARV				1907	1908	2	1907	1908	2	IIIG
			HARV				2143		2	2143		2	IIIG
04	1316	2245	HARV				1504	1505	3	1504	1505	3	IIIG,V
			HARV	1528		2	1526	1530	3	1526	1530	3	IIIGG,V
			HARV				1532	1537	2	1534	1536	1	IIIGG
			HARV				1539	1543	1				I
			HARV				1732	1735	2	1732	1735	2	IIIGG
			HARV				2008		1	2008		1	IIIG
			HARV				2038		2	2038		2	IIIG
			HARV				2105	2109	2				IIIGG
			HARV				2142	2146	2				IIIG
05	1316	2245	HARV				1328	1852	1				IN,W
			HARV	1403	1408	2							IV
			HARV				1403	1412	2				UNCL
			HARV				1744	1745	2	1744	1745	2	IIIG
			HARV	1943	1944	1	1943	1945	3	1943	1945	3	IIIGG,V
			HARV				1949	1959	2	1949	1959	2	IIIGG
06	1316	2245	HARV				1502		2				IIIB
			HARV				1531		2				IIIG
			HARV	1533		1							IIIG
			HARV	1544		3							IIIG
			HARV				1644	1645	2	1644	1645	2	IIIG
			HARV	1654	1657	2	1653	1655	3	1653	1655	3	IIIGG,V
			HARV				1700	1705	2				I
			HARV				1703		3	1703		3	IIIG,V
			HARV				1706	1710	2	1706	1710	2	II
			HARV				1715	1721	1	1718	1719	1	II
			HARV	2119	2120	3							IIIG
07	1316	2245	HARV				1733		1				U,W
			HARV				2055	2245	1				IN,W
08	1316	2250	HARV				1828		1				IIIG,W
			HARV	1835	1837	1							
09	1316	2245	HARV	1738	1739	3							IIIG
			HARV				1758		1	1758		2	IIIB
			HARV				1824		1	1824		1	IIIB
			HARV	1924		1	1924		1				IIIG,W
			HARV	1939	1940	1	1939	1940	1				IIIG
			HARV	1950	1953	2	1950	1953	2				IIIGG,V
			HARV				1959	2016	3	2011	2016	2	II
			HARV				2017	2115	2				IC
			HARV				2024		1	2024		1	IIIG
10	1331	2245	HARV				1912		2				IIIG
11	1331	2245	HARV				1938		3	1938		3	IIIB
12	1331	2245	HARV										
13	1331	2245	HARV				1331	1510	1				I
			HARV	1331	1420	3							IIIN
			HARV				1505	2105	2	1505	2105	2	I
			HARV	1536	1543	3							IIIG
			HARV				1742	1744	3	1742	1744	3	IIIG
			HARV				1749	1750	3	1749	1750	2	IIIG
			HARV				1817	1820	3	1817	1820	3	IIIGG
			HARV				1935	1940	3				UNCL
			HARV				1953	2006	3	2053	2106	3	IIIGG
			HARV				2105	2200	1				IN
14	1330	2245	HARV				1447		2	1447		1	IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

OCTOBER 1978

OCT 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	
14			HARV				1513		2	1513		1	IIIB
			HARV				1612		2	1612		2	IIIG
			HARV				1729	1730	2	1729	1730	2	IIIG
			HARV				1740		1	1740		1	IIIB
			HARV				1900		1	1900		2	IIIB
15	1331	2245	HARV				1652	1653	1	1652	1653	1	IIIG
			HARV				1757		2	1757		2	IIIB
16	1330	2300	HARV				1632		2				IIIG
			HARV				1651		1				IIIG
17	1330	2245	HARV										
18	1330	2245	HARV				1539		2				IIIB
			HARV				2012	2014	2	2012	2014		IIIGG
19	1330	2245	HARV										
20	1330	2245	HARV										
21	1330	2245	HARV	1559	1602	1	1557	1602	2	1601	1602	2	IIIGG,V
			HARV				1609	1617	3				II
			HARV				1617	1630	1				IC
			HARV				1630	1725	2				IC
			HARV				1725	1738	1				I
			HARV				1911		2	1911		2	IIIG
			HARV				1934		1	1934		1	IIIB
			HARV				1955		1				
22	1330	2245	HARV				1801	1808	3	1801	1808	3	IIIGG
			HARV				1826		2	1826		2	IIIB
23	1330	2245	HARV	1657	1701	1							IIIG,N
			HARV				1702		2	1702		2	IIIG
			HARV				1806	1807	1	1806	1807	1	IIIG
24	1330	2245	HARV				1523		2				IIIB
			HARV				1842	1843	3	1842	1843	3	IIIG
25	1330	2245	HARV	1518		3	1518		3				IIIG
			HARV				1559		1				IIIG
			HARV	1855		1	1855		2				IIIG
			HARV				1914		2	1914		2	IIIG
26	1330	2245	HARV										
27	1330	2245	HARV				1826		1	1826		1	IIIG
			HARV				2056	2245	1				INN
28	1330	2250	HARV				1809	1852	2	1809	1852	2	IIIN
29	1330	2345	HARV										
30	1330	2345	HARV				1912	2029	2				I
			HARV				2029	2159	1				IN
31	1330	2345	HARV				1330	1345	1				INN
			HARV				1515	1517	2	1515	1517		IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

NOVEMBER 1978

NOV 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	
01	1330	2340	HARV				1339		1				IIIG
			HARV	1346		1							IIIG
			HARV	1404		2							IIIG
			HARV	1452	1453	1							IIIG
			HARV	1538	1542	2							IIIG
			HARV				1821		2				IIIG
02	1330	2340	HARV				1914		1				IIIB
			HARV				2006		1				IIIB
03	1330	2340	HARV				1515		2				IIIB
			HARV				1536		2				IIIB
04	1330	2340	HARV										
05	1350	2340	HARV				1829	1841	1				IIIG
			HARV				1907		2				IIIG
06	1350	2340	HARV				1507	2330	1				INW
			HARV				1642		1				IIIG
			HARV				1647	1648	1				IIIG
			HARV				1706		2				IIIG
07	1350	2340	HARV	1350	1442	2							I,DC
			HARV	1442	1538	1	1442	1559	1				IN
			HARV				1559	1853	2				I
			HARV				1709		3				IIIG
			HARV	1838	1844	1	1835	1847	3	1835	1847	3	IIIGG
			HARV				1853	2340	1				I
			HARV	1955	1956	1	1955	1956	3	1955	1956	3	IIIG
08	1350	2340	HARV				1350	2340	1				IN
			HARV	1751	1754	3	1751	1754	3	1751	1754	3	IIIGG,V
			HARV				1803	1805	2				II
			HARV				2030						IIIB
09	1345	2340	HARV				1621	1756	1				IIINW
			HARV				1759	1800	2	1759	1800	2	IIIG
			HARV				1904		2	1904		2	IIIG
			HARV				1907	1908	2	1907	1908	2	IIIG
10	1345	2340	HARV	1534	1535	2							IIIG
			HARV				1615		2				IIIB
			HARV				1630	1632	1				IIIG
			HARV				1641	2134	1				IN,IIIN
			HARV	1720	1721	2							IIIG
			HARV				2327		3				IIIG
11	1345	2340	HARV				1412	1417	3	1412	1417	3	IIIGG
			HARV	1417	1418	1							IIIG
			HARV				1526	1953	1				IN
			HARV				1536		2	1536		2	IIIG
			HARV				1600	2130	2	1600	2130	2	IIIN
			HARV				1923		3	1923		3	IIIG
			HARV				1953	2107	2				I
			HARV				2107	2340	1				IN
12	1345	2340	HARV										
			HARV				1700		3	1700		3	IIIG
			HARV	1823		1							IIIGW
			HARV	2046	2049	1							IIIG
			HARV	2108	2109	1							IIIG
13	1345	2234	HARV				1644	1647	3	1644	1647	3	IIIG
			HARV				1827		3	1827		3	IIIG
			HARV				2204	2208	3	2204	2208	3	IIIG
14	1551	2340	HARV										
15	1551	2340	HARV										

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

NOVEMBER 1978

NOV 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
16	1345	2340	HARV										
20	1556	1850	HARV										
	1853	2340	HARV										
21	1400	2335	HARV				2030		3	2030		3	IIIB
			HARV				2032		1	2032		1	IIIB
22	1400	2335	HARV				1408	1409	2				IIIG
			HARV				1443	1445	1				IIIG
			HARV				2057		2	2057		2	IIIG
23	1400	2335	HARV				1731	1732	2	1731	1732	2	IIIG
24	1400	2335	HARV				1430		1				IIIB
25	1400	2335	HARV				1524		2	1524		2	IIIG
26	1400	2335	HARV										
27	1400	2335	HARV				1449		3	1449		3	IIIG
			HARV				1453	1454	2	1453	1454	2	IIIGG
			HARV				1542		3	1542		3	IIIB
			HARV				1604		2	1604		2	IIIB
			HARV				2057	2059	2	2057	2059	2	IIIG
			HARV				2215	2216	2	2215	2216	2	IIIG
28	1400	2335	HARV	1544		2	1544		2				IIIG
			HARV	1613	1617	2							IIIG
			HARV	1910	1911	2	1908	1911	2				
			HARV	2047	2048	3	2047	2048	2				IIIG
			HARV	2104		1	2104		2				IIIG
			HARV	2113	2114	1							IIIG
			HARV	2132		2							IIIG
			HARV	2215	2216	3							IIIG
29	1400	2335	HARV				1400	1403	1				I
			HARV	1403	1404	2	1403	1405	2				IIIG
			HARV	1426		2	1426	1428	1				IIIG
			HARV	1432	1433	1	1432	1434	3				IIIGG,V
			HARV				1522	1524	3				IIIGG,V
			HARV				1549	1554	2				II
			HARV				1632	1634	1				IIIG
			HARV				1803		2				IIIB
			HARV				1809	1810	3	1809	1810	3	IIIG
			HARV				1919		1				IIIG
			HARV	1944	1945	3	1941	1947	3	1941	1947	3	IIIGG,V
			HARV				1948	1955	3				II, H
			HARV				1958		1				IIIB
			HARV				2137	2139	2				IIIGG
			HARV				2151	2152	2				IIIG
			HARV	2154		1	2154		2	2154		1	IIIG
			HARV				2209	2217	1				IIIG
			HARV	2217	2219	1							IIIG
			HARV				2255		1				IIIB
30	1400	2335	HARV				1622		2				U
			HARV	1802		2	1802	1804	3	1802	1804	3	IIIG,V

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
DCIM = Fast drift

COSMIC RAY INDICES
(Neutron Monitors)

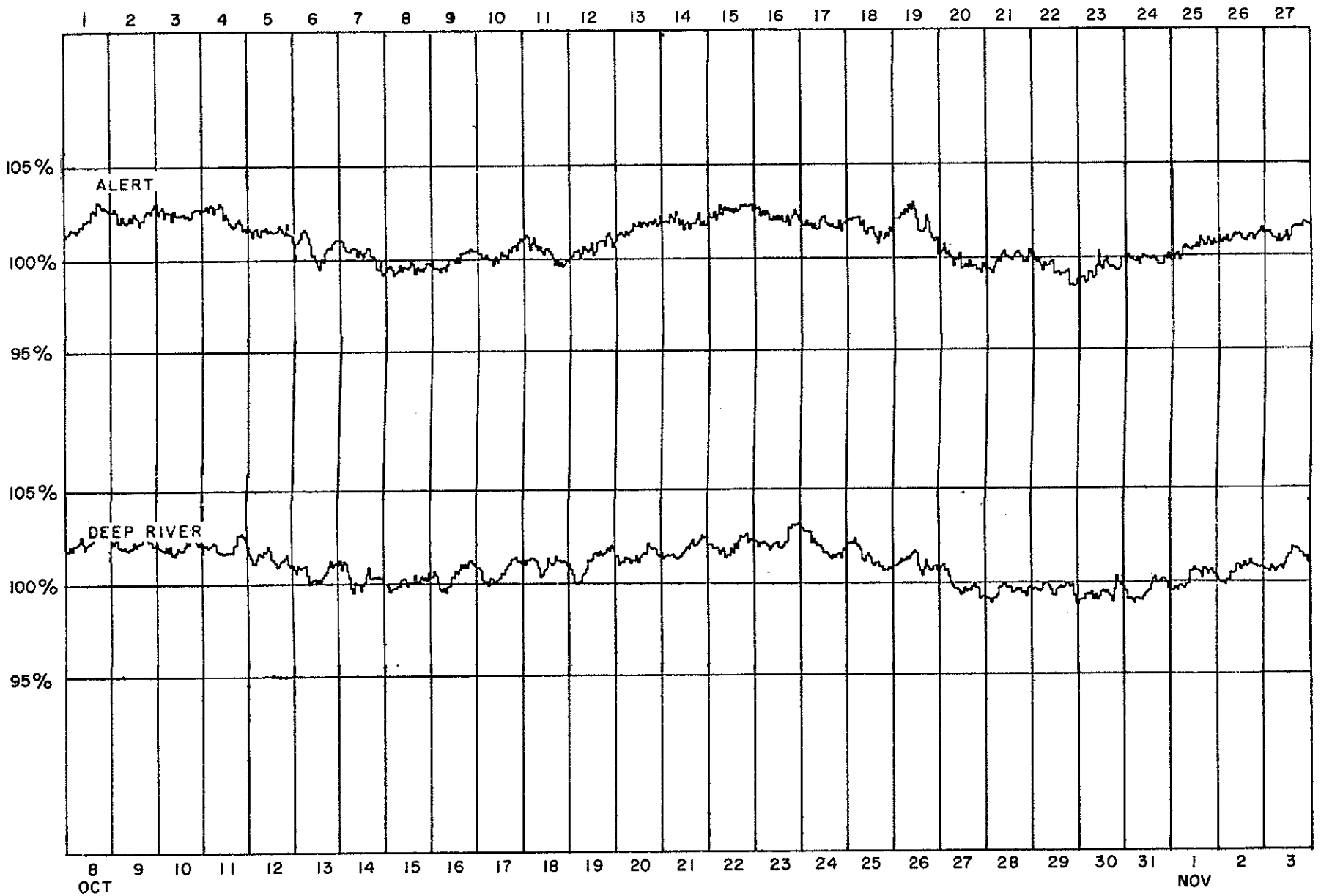
DATE Nov. 1978	ALERT Average cts/hr	DEEP RIVER Average cts/hr
1	7165.5	6752.5
2	7204.9	6788.5
3	7222.6	6815.5
4	7299.8	6840.1
5	7365.5	6916.3
6	7405.2	6922.7
7	7412.7	6977.7
8	7348.7	6920.2
9	7383.7	6936.2
10	7383.6	6938.0
11	7419.9	6940.3
12	7163.2	6735.1
13	7129.9	6717.7
14	7206.6	6748.3
15	7235.8	6828.8
16	7299.0	6878.1
17	7318.2	6899.8
18	7358.7	6915.7
19	7343.7	6922.1
20	7254.9	6872.5
21	7243.2	6851.4
22	7259.9	6837.9
12	7237.2	6798.3
24	7179.0	6768.3
25	7113.2	6733.2
26	7146.8	6757.6
27	7237.9	6791.9
28	7291.0	6835.3
29	7317.1	6868.8
30	7304.2	6898.2
MEAN	7275.1	6846.6

( ) Number of hours for which data are available if less than 24. Number of Section Hours at Climax if sum of both sections is less than 40 hours.

Thule, Alert, Calgary, Sulphur Mountain, Kiel and Climax Scaling Factors = 100.
Deep River Scaling Factor = 300.

COSMIC RAY INDICES
(Neutron Monitors)

Bartels Rotation 1985 (October - November 1978)



COSMIC RAY INDICES
(Neutron Monitors)

Bartels Rotation 1986 (November 1978)

Solar-Terrestrial Activity 1976

The last 6 months of Solar Cycle 20 and the first 6 months of Cycle 21 are presented as Solar-Terrestrial Activity Graphs that are similar to the STAC-A Yearly Charts for 1967, 1968 and 1969, prepared by T. Obayashi, Interdisciplinary Analysis Center for Solar-Terrestrial Activity, National Committee on Solar-Terrestrial Physics, Science Council of Japan. Observations available in World Data Center A for Solar-Terrestrial Physics have been used to construct these graphs for 1976. They are presented in half yearly form on two charts per year. The diagrams for 1977 and 1978, which will be published in the next issue of Solar-Geophysical Data, indicate the trends of increasing activity since the June 1976 sunspot minimum. One can easily select individual days of outstanding events. The comments below describe the sources of each kind of data.

Graph 1

2800 MHz Flux: Daily values of 2800 MHz solar flux (S) in units of 10^{-22} $Wm^{-2}.Hz^{-1}$ are furnished by A. E. Covington and M. B. Bell of the Astrophysics Branch, National Research Council of Canada, Ottawa. The largest burst of the day is indicated by a vertical line, the length of which equals the square root of the peak flux.

1-8 Å X-Ray Flux: The burst intensity of the solar x-ray flux in Wm^{-2} for the largest event of the day is plotted as a vertical line. Both solid and dashed verticle lines represent data acquired by the GOES satellites and are provided by Richard Donnelly of the Space Environment Laboratory of NOAA. The dashed entries highlight values taken from the somewhat more preliminary report and forecast of solar-geophysical data that Gary Heckman of the Space Environment Laboratory publishes.

Hα Flare Importance: The importance of the largest Hα solar flare of the day is plotted as a vertical line. Solid lines denote observations taken from the group flare reports in the Comprehensive section of Solar-Geophysical Data; dashed bars denote flares based on preliminary records received on a rapid schedule and published in the Prompt section of Solar-Geophysical Data.

IMP 8 Proton Flux: Vertical lines indicate peak proton flux to the nearest power of 10 in cm^{-2} sr^{-1} s^{-1} MeV^{-1} observed by IMP 8 between 19.8 and 40.1 MeV. F. B. McDonald and T. T. van Rosenvinge of NASA, Goddard Space Flight Center furnish these data.

Solar Wind Bulk Speed: Daily values of solar wind bulk speed in km s^{-1} are plotted as estimated from the graphical data provided by Lazarus of MIT. Values shown here emphasize the minima and maxima that occur on time scales of less than a day. They do not represent a strict average for each day.

Graph 2

Stanford Mean Magnetic Field: The solar magnetic field daily means in microteslas represent a weighted average of the net magnetic field over the visible disk of the sun. Positive values denote a mean solar magnetic field pointing away from the sun; negative values a field directed toward the sun. P. H. Sherrer of the Stanford Solar Observatory, Stanford University provides these observations.

Inferred IMF: The inferred interplanetary magnetic field (IMF) direction is indicated as a horizontal bar: T = toward the sun and A = away from the sun. These polarities are derived from variations on the Thule and Vostok magnetograms and are reproduced here thanks to Gary Heckman of the Space Environment Laboratory, NOAA and S. Mansurov of IZMIRAN, Moscow.

Deep River NM Corrected Rates: The Deep River Neutron Monitor (NM) daily average counting rates corrected for barometric pressure are plotted with a scaling factor of 3000. The data are provided by Margaret D. Wilson of the National Research Council of Canada.

aa Index: The daily geomagnetic *aa* index, provided by the Institut de Physique du Globe, Paris, is computed from the 3-hour K indices (converted to the amplitude of the magnetic field) at two antipodal observatories.

Provisional Equatorial Dst: This magnetic index characterizes quiet-time and storm-time variations in the geomagnetic field owing to the ring current in the magnetosphere. The charts show daily averages of the provisional hourly Dst prepared by M. Sugiura, NASA GSFC and D. J. Poros, Computer Sciences Corporation, Silver Spring, MD.

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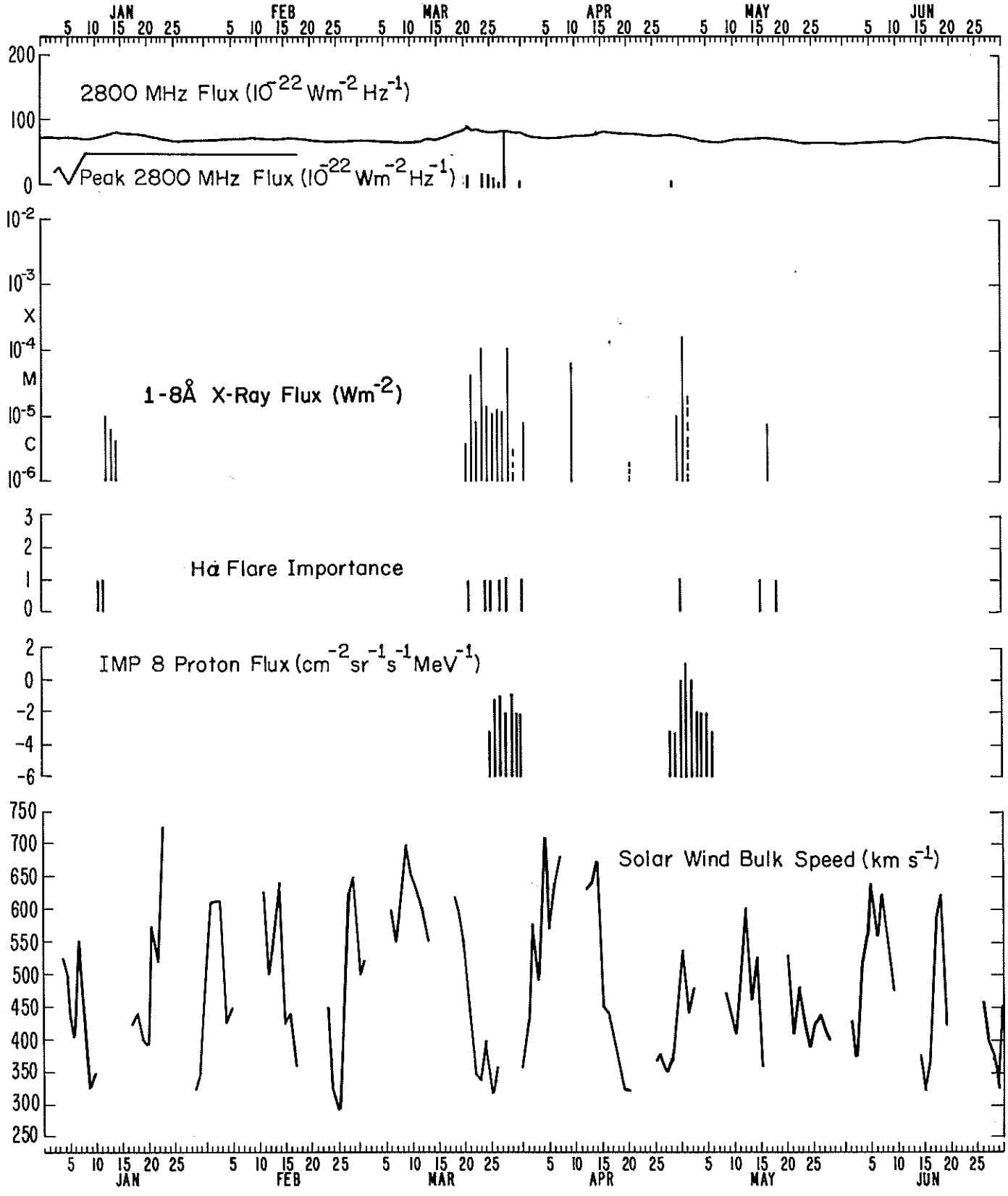
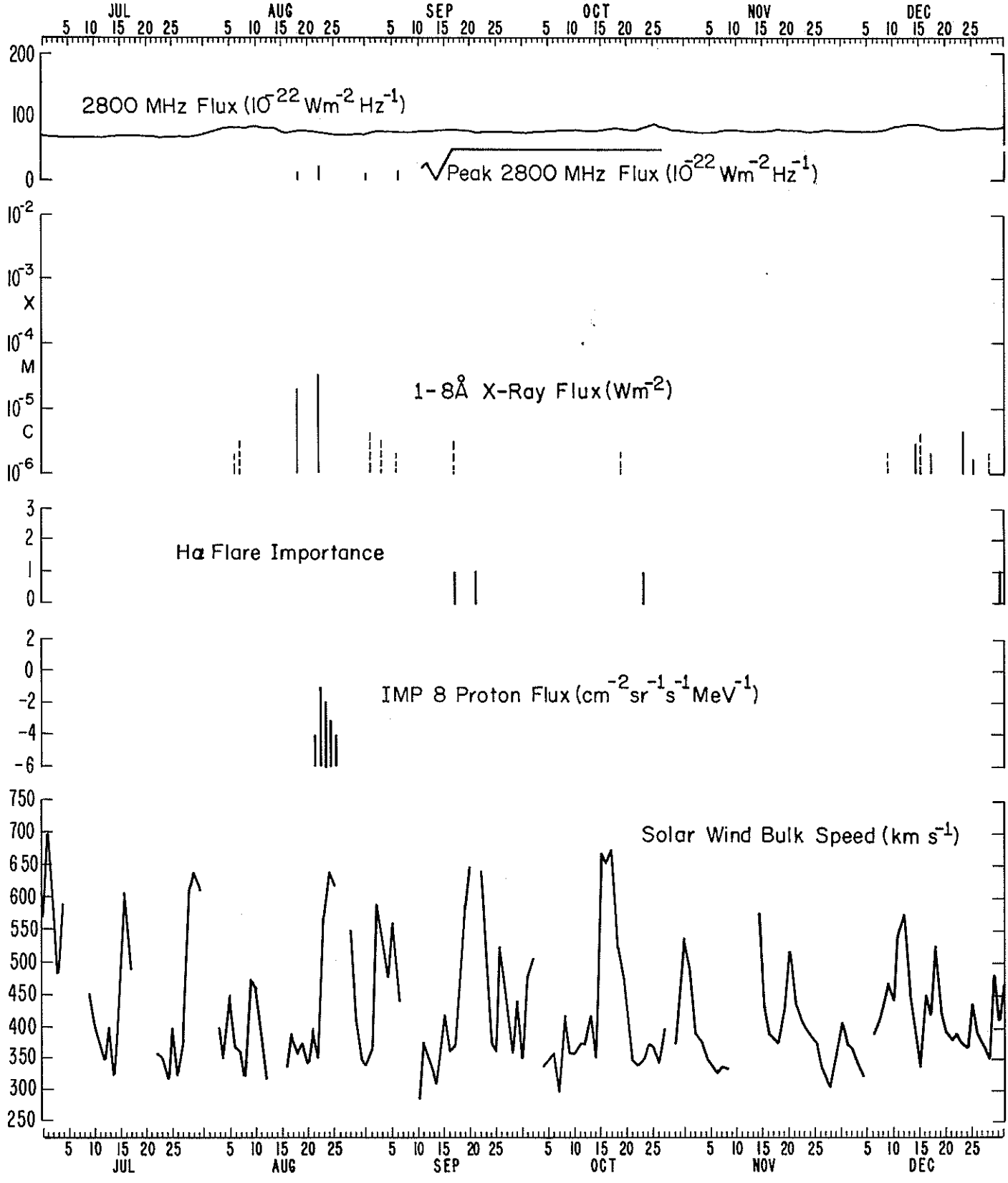
Misc
1976

SOLAR-TERRESTRIAL ACTIVITY 1976



SOLAR-TERRESTRIAL ACTIVITY 1976



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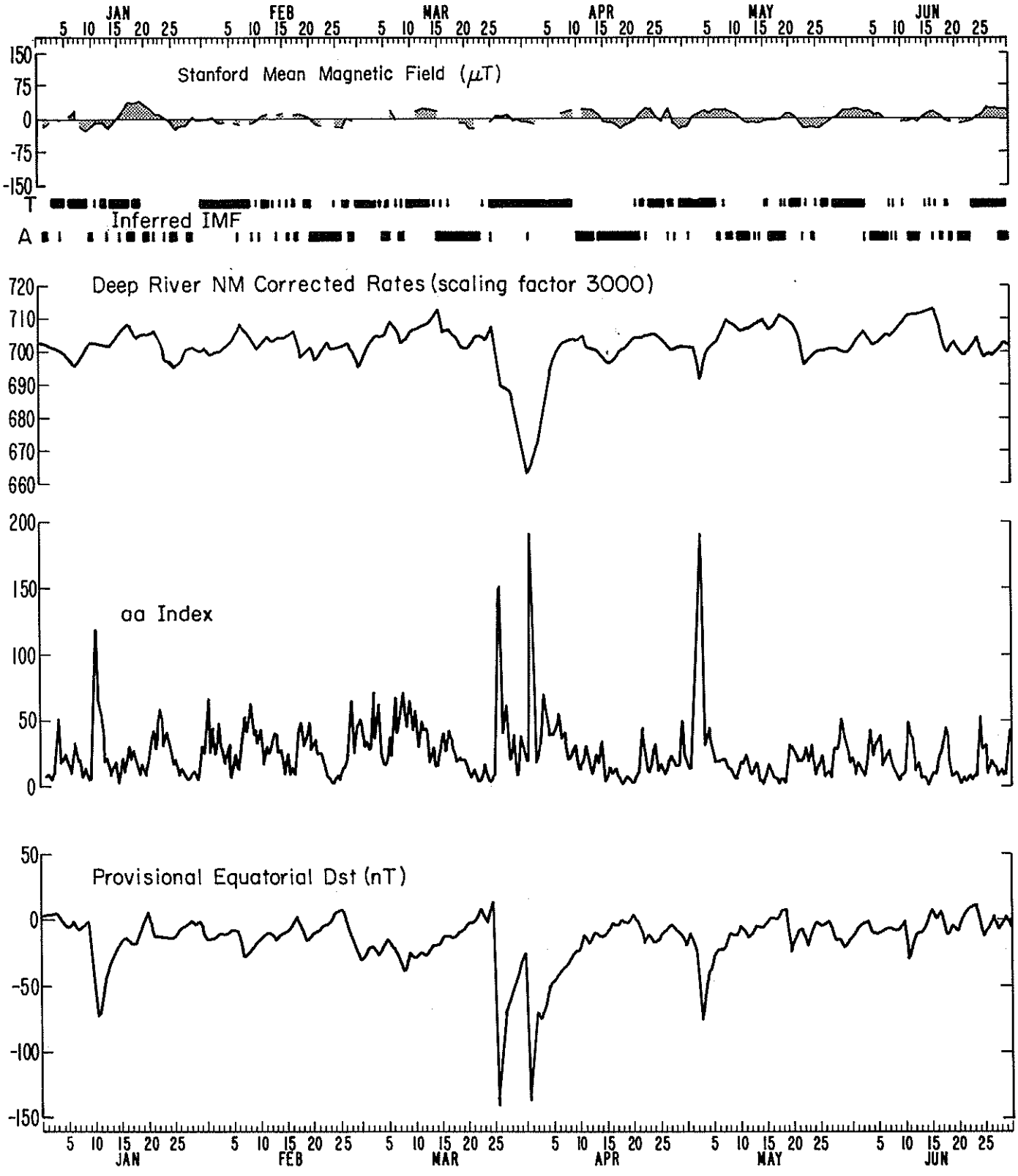
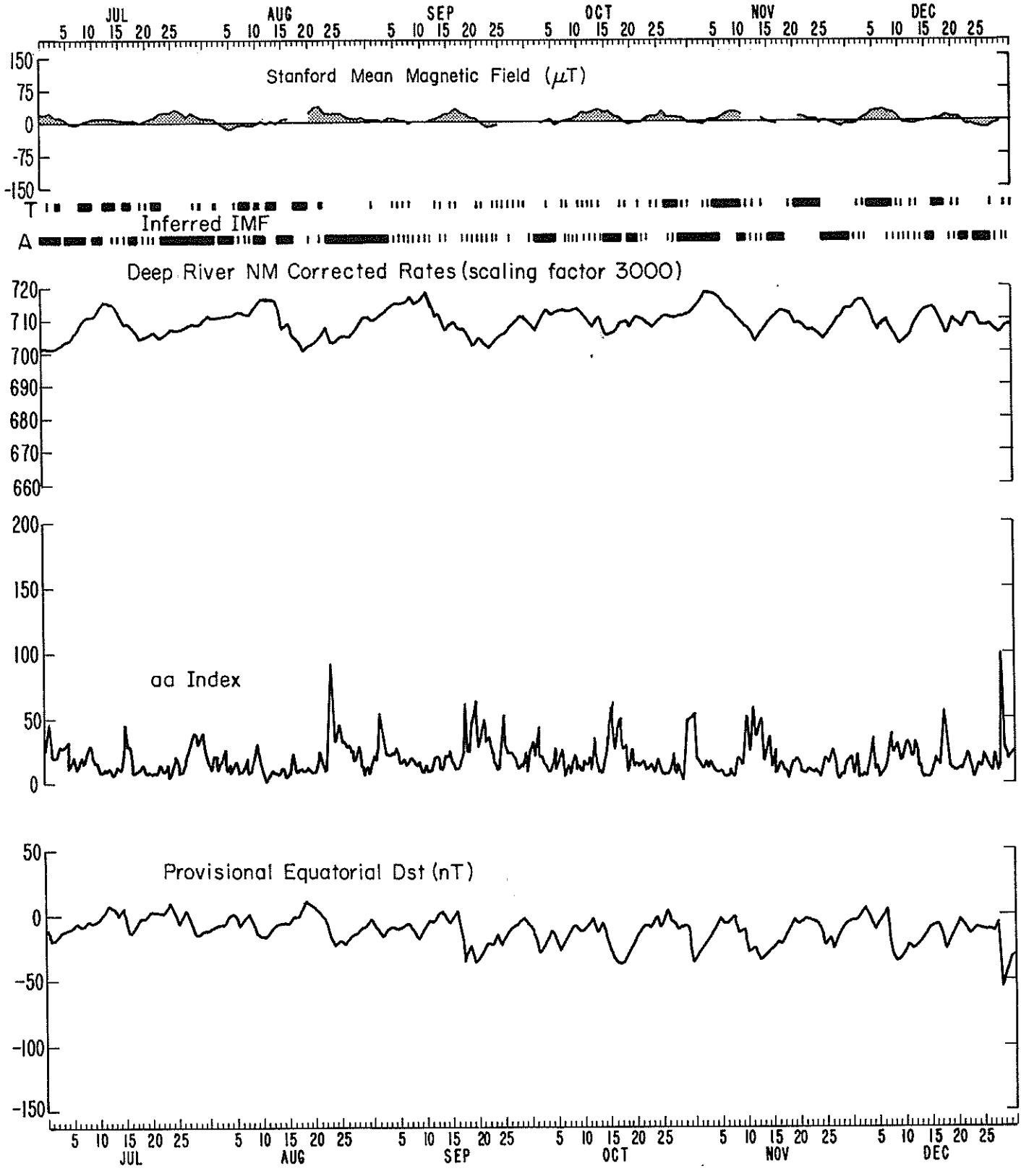
Misc
1976

SOLAR-TERRESTRIAL ACTIVITY 1976



SOLAR-TERRESTRIAL ACTIVITY 1976



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