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Solar - Geophysical Data

NO. 391 MARCH 1977

Part II (Comprehensive Reports)

DATA FOR
SEPTEMBER 1976
AUGUST 1976
& MISCELLANEA

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

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Solar-Geophysical Data, 390 Part I (or Part II), pages, February 1977, U.S. Department of Commerce, (Boulder, Colorado, U.S.A. 80302).

SOLAR - GEOPHYSICAL DATA

No. 391

Issued in two parts

Helen E. Coffey, Editor

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

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SEPTEMBER 1976 DATA

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ACTIVE REGIONS

CARRINGTON ROTATION 1645

(August 17 - September 13, 1976)

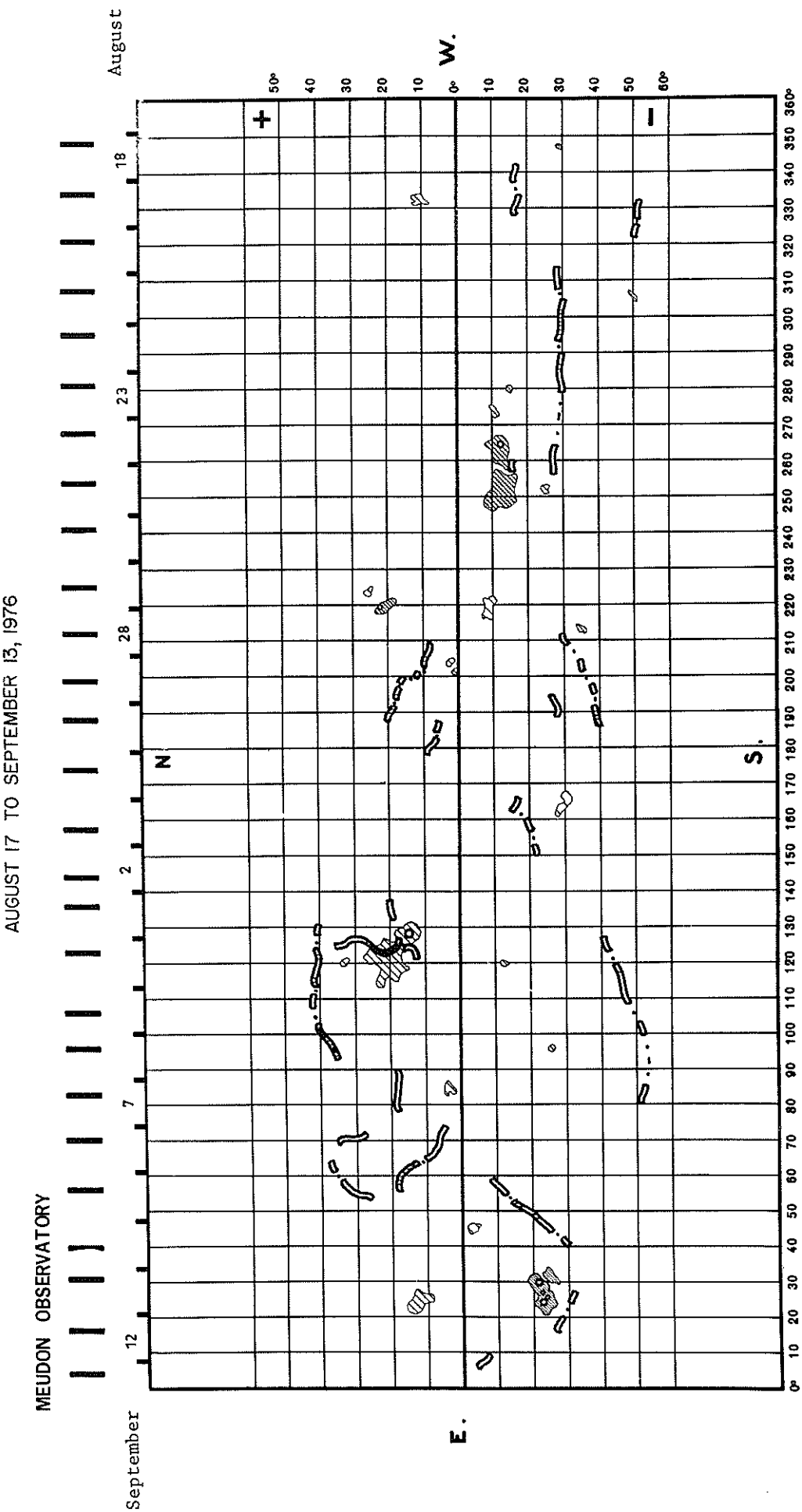
Region No.	Coordinates		Age at CMP	IMP	Spot-less Region	Region No. in Rotation 1644	Activity at West Limb
	Lat.	Long.					
1	12°S	262°	>6	2			decreasing
2	12 S	252	>6	1	x		decreasing
3	26 N	223	+4	1	x		disappeared
4	8 S	219	+1	1	x		dispersed
5	20 N	217	-4	1			increasing
6	20 N	123	>6	3		Rc 1644(5)	decreasing
7	5 N	84	+1	1	x		disappeared
8	2 S	45	-6	1	x		(?)
9	24 S	31	-1	1	x		dispersed
10	22 S	26	+3	3			decreasing
11	15 N	23	+6	1	x		disappeared

ACTIVE REGIONS

CARRINGTON ROTATION 1646

(September 13 - October 10, 1976)

Region No.	Coordinates		Age at CMP	IMP	Spot-less Region	Region No. in Rotation 1645	Activity at West Limb
	Lat.	Long.					
1	26°N	329°	0	1	x		disappeared
2	20 N	276	+2	1	x		dispersed
3	13 S	271	>6	1	x	Rc 1645(1)	dispersed
4	12 S	265	>6	2			decreasing
5	14 S	256	>6	1	x	Rc 1645(2)	dispersed
6	22 N	225	>6	1	x		decreasing
7	18 N	218	>6	1	x		dispersed
8	22 N	173	-4	1	x		stable
9	28 N	172	-1	1	x		decreasing
10	33 N	129	0	2			decreasing
11	18 N	126	>6	3		Rc 1645(6)	decreasing
12	28 S	125	>6	2			decreasing
13	26 N	112	>6	1	x	Rc 1645(6)	dispersed
14	1 N	86	-5	1	x		(?)
15	17 N	81	-4	1	x		decreasing
16	5 S	30	+5	1	x		disappeared
17	24 S	28	>6	1	x	Rc 1645(10)	dispersed
18	24 S	13	>6	1	x		decreasing

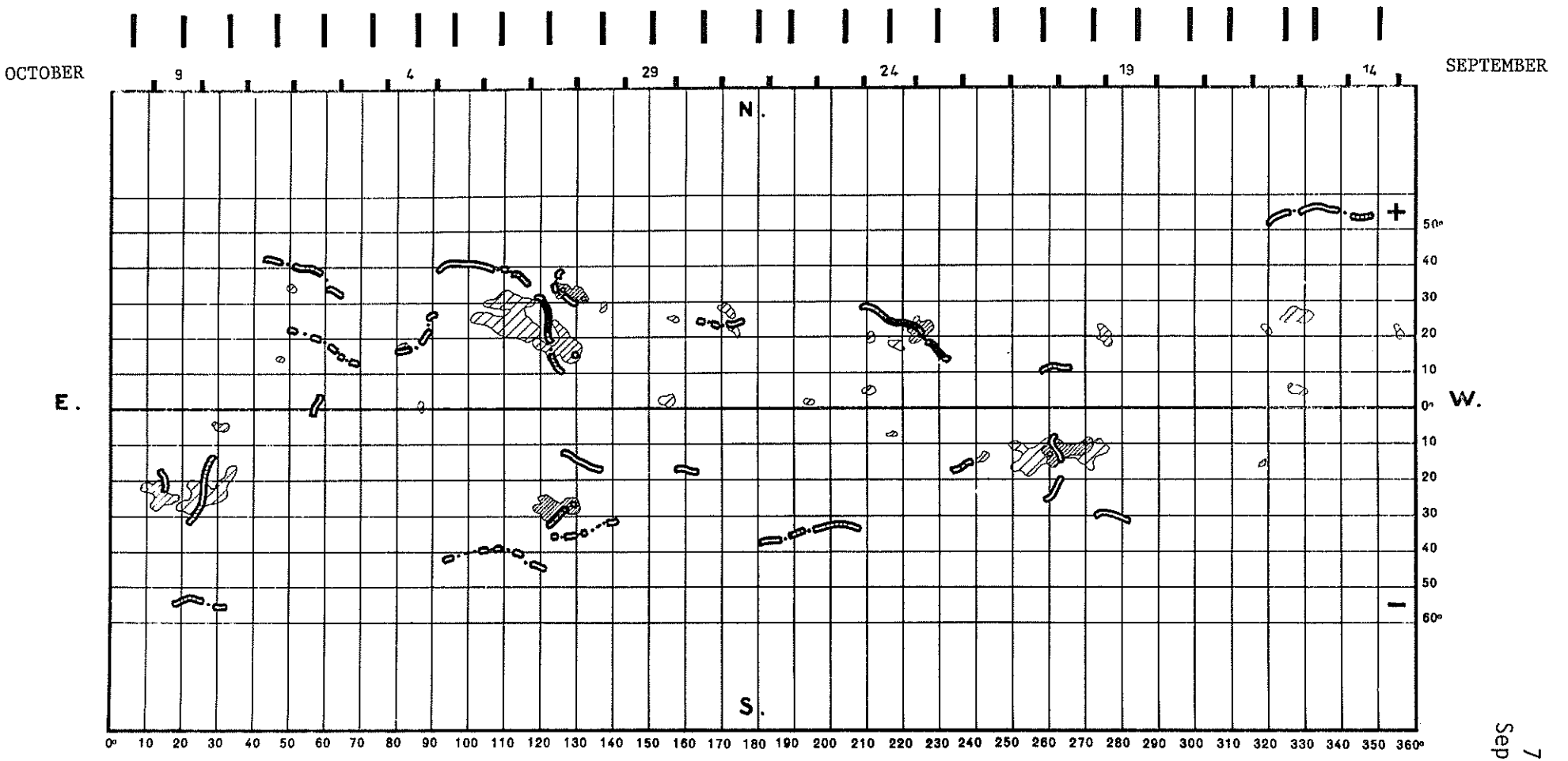

SYNOPTIC SOLAR MAP
CARRINGTON ROTATION 1645
AUGUST 17 TO SEPTEMBER 13, 1976
MEUDON OBSERVATORY
August
September
E.
W.
N
S.
+
−

SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1646

SEPTEMBER 13 TO OCTOBER 10, 1976

MEUDON OBSERVATORY



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Hα SOLAR FLARES

SEPTEMBER 1976

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE SEP	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.		
	01	0007	0014	NO FLARE PATROL														
	01	0136	0145	NO FLARE PATROL														
	01	0153	0200	NO FLARE PATROL														
GRP6355+6	01	0650		0735	N19	W57	.834	14403	28.0	45	-N						E	
BUCA	01	0650	0000	0735	N19	W57	.834	14403	28.0	45	-B		C	0703	75	1.4		
HTPR	01	0716E	0000	0733D	N20	W58	.844	14403	27.9	230	-F		C	0716	40	.7	E	
547 HERS	01	0836E	0836	0852	N20	W60	.861	14403	27.9	160	-F		S	0842	28	.6	D	Y5
548 HTPR	01	0905	0908	0915	N21	W60	.861	14403	27.9	10	-F		C	0908	10	.2		Y5
549 HTPR	01	1119	1120	1129	N20	W61	.869	14403	27.9	10	-F		C	1120	20	.3		Y5
550 HTPR	01	1316	1330	1413	N20	W62	.877	14403	27.9	57	-F		C	1330	20	.4		Y5
551 HTPR	01	1429	1433	1440	N19	W63	.884	14403	27.9	11	-F		C	1433	40	.8	E	Y5
552 HTPR	01	1617	0000	1633D	N19	W63	.884	14403	28.0	160	-F		C	1618	10	.2		Y5
	01	1823	2205	NO FLARE PATROL														
553 MANI	01	2246E	2251	2258D	N19	W69	.926	14403	27.8	180	-N	3	P	2251	50	1.1	F	Y5
	02	0217	0220	NO FLARE PATROL														
GRP63554	02	0556+0	0557 0614	0622	N19	W70	.932	14403	28.0	26	-N							
HTPR	02	0556E	0000	0620	N19	W70	.932	14403	28.0	240	-N		C	0614	100	2.0		
CULG	02	0556	0557	0601	N20	W70	.932	14403	28.0	5	-F		C	0557	20	.6		
CULG	02	0609	0614	0624	N19	W70	.932	14403	28.0	15	-N		C	0614	30	.9		
555 ZURI	02	0809E	0903	1013D	N19	W73	.949	14403	27.9	1240	?F		P	0903	80			Y5
	IMP.1 NO : HTPR MONT CATA																	
	02	2222	2231	NO FLARE PATROL														
556 ATHN	03	0615E	0627	0636	N18	W84	.991	14403	28.0	210	-N	2	C	0000			DE	Y5
GRP63557	03	0825+5	0830+5	0840	N14	E05	.146	14395	3.7	15	-N				50	.5	E	
CATA	03	0825E	0835	08400	N14	E05	.146	14395	3.7	150	-N	2		0835	56	.6		
HTPR	03	0828	0830	0839	N14	E06	.156	14395	3.8	11	-N		C	0830	40	.4	E	
BUCA	03	0830	0000	0840	N15	E04	.151	14395	3.7	10	-N		C	0835	53	.6		
GRP63558	03	0905+2	0910+2	0930	N14	E05	.146	14395	3.8	25	-B						E	
BUCA	03	0905	0910	0930	N15	E06	.169	14395	3.8	25	1B		C	0910	272	2.8	E	
HTPR	03	0907	0912	0929	N14	E05	.146	14395	3.8	22	-B		C	0912	60	.6	E	
GRP63559	03	0917+2	0921+2	0925	N20	W90	.999	14403	27.6	8	-F				20		D	
HTPR	03	0917	0921	0925	N20	W90	.999	14403	27.6	8	-F		C	0921	10			
BUCA	03	0919	0923	0925	N21	W90	.999	14403	27.6	6	-F		C	0923	32		D	
560 HTPR	03	1030	1032	1036	N20	W90	.999	14403	27.7	6	-F		C	1032	10			Y5
GRP63561	03	1122+3	1123+3	1136	N18	W89	.998	14403	27.8	14	-N							
HTPR	03	1122	1123	1135	N20	W90	.999	14403	27.7	13	-N		C	1123	10			
ATHN	03	1122	1126	1136	N16	W88	.998	14403	27.9	14	-N	3	C	0000			DE	
562 HTPR	03	1125	1148	1227	N25	E09	.338	14395	4.2	62	-F		C	1148	30	.3		Y5
563 HTPR	03	1219	1242	1245	N21	W88	.997	14403	27.9	26	-F		C	1242	10			Y5
GRP63564	03	1353+2	1356+2	1400	N14	E04	.136	14395	3.9	7	-N				30	.3	OH	
MCMA	03	1353	1356	1400	N13	E06	.144	14395	4.0	7	-N		C	1356	30	.3	OH	
HTPR	03	1355	1356	1400	N14	E02	.123	14395	3.7	5	-N		C	1356	40	.4		
ATHN	03	1355	1358	1403	N15	E03	.145	14395	3.8	8	-N	3	C	0000	32		DE H	
565 MCMA	03	1438	1439	1453	N13	E03	.113	14395	3.8	15	-F		C	1439	30	.3	E	Y5
	03	1859	1910	NO FLARE PATROL														
	03	1926	1929	NO FLARE PATROL														
	03	2144	2233	NO FLARE PATROL														
GRP63566	04	0715		0750	N16	W07	.193	14395	3.8	35	-F				35	.4		
BUCA	04	0715	0000	0750	N17	W08	.217	14395	3.7	35	-F		C	0720	53	.6		
HTPR	04	0721E	0000	0750	N16	W07	.193	14395	3.8	290	-N		C	0722	20	.2		

Note: Although these flare listings give all reported events, not all possible brightenings are reported. Thresholds of reporting vary from observatory to observatory.

Hα SOLAR FLARES

SEPTEMBER 1976

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE 1976 SEP	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
GRP63567	04	0730+2	0731+3	0744	N22	W90	.999	14403	28.6	14	-F				30			
MONT	04	0730E	0731	0748	N23	W90	.999	14403	28.6	18D	-F		C	0731	40			
HTPR	04	0732	0734	0740	N22	W90	.999	14403	28.6	8	-F		C	0734	20	.2		
GRP63568	04	0807+3	0814	0828	N15	W08	.191	14395	3.7	21	-N						E	
HTPR	04	0807	0814	0830	N15	W08	.191	14395	3.7	23	-N		C	0814	70	.7	E	
BUCA	04	0810	0000	0825	N15	W08	.191	14395	3.7	15	1N		C	0812	214	2.2	E	
569 BUCA	04	0840	0000	0905	N17	W08	.217	14395	3.8	25	-F		C	0855	53	.6	E	Y5
GRP63570	04	1025+1	1035 1045+3	1113	N15	W08	.191	14395	3.8	48	-N						E	
CATA	04	1025	1045	1055D	N15	W08	.191	14395	3.8	30D	-N	2		1045	140	1.5		
HTPR	04	1026	1035	1100	N15	W09	.204	14395	3.8	34	-N		C	1045	80	.8	E	
KIEV	04	1035E	1045	1100D	N14	W07	.168	14395	3.9	25D	1F		C	1045	250	2.7	E	
HTPR	04	1040	1048	1113	N18	W10	.251	14395	3.7	33	-F		C	1048	20	.2		
GRP63571	04	1619+1	1622+6	1637	N15	W12	.244	14395	3.8	18	-F				25	.3	E	
HTPR	04	1619	1628	1636	N16	W12	.253	14395	3.8	17	-F		C	1628	20	.2		
MCMA	04	1626	1622	1638	N15	W13	.258	14395	3.7	18	-F		C	1622	30	.3	E	
	05	1630	1644	NO FLARE PATROL														
	05	2136	2216	NO FLARE PATROL														
	05	2245	2251	NO FLARE PATROL														
GRP63572	06	0131+2	0138+0 0147+0	0210	N19	W28	.494	14395	4.0	39	-N				150	1.7	EHJS	
VORO	06	0131	0138	0209	N26	W26	.516	14395	4.1	38	1N		C	0136	448	5.5	CEJ	
CULG	06	0133	0136	0210	N18	W29	.503	14395	3.9	37	-N		C	0138	120	1.4		
MITK	06	0141E	0000	0210	N18	W29	.503	14395	3.9	29D	-N		P	0141	150	1.8	E	
MANI	06	0144E	0147U	0155D	N18	W28	.490	14395	4.0	11D	-F	1	V	0147	80	.9	F	
PALE	06	0147E	0147U	0148D	N17	W28	.485	14395	4.0	1D	-F	1	C	0000	80		S H	
573 MCMA	06	1651	1652	1657	N18	W38	.623	14395	3.9	6	-F		C	1652	50	.7	E	Y5
574 MCMA	06	1810	1817	1825	N12	E68	.921	14408	11.9	15	-N		C	1817	30	.9	D	Y5
	06	2053	2055	NO FLARE PATROL														
	06	2219	2228	NO FLARE PATROL														
GRP63575	07	0808+7	0811+6	0820	N20	W43	.689	14395	4.1	12	-F				30	.4	E	
ATHN	07	0808E	0811	0819	N20	W40	.653	14395	4.3	11D	-F	3	C	0000	32		DE	
MEUD	07	0809	0815	0822	N19	W42	.675	14395	4.2	13	-F		C	0815	40	.5	E	
MONT	07	0810	0817	0821	N19	W43	.687	14395	4.1	11	-F		C	0817	20		D	
HTPR	07	0810	0817	0820	N18	W43	.685	14395	4.1	10	-N		C	0817	40	.5	E	
ISTA	07	0815	0000	0820	N22	W48	.749	14395	3.7	5	-N			0000	5			
576 HTPR	07	1553	1556	1558	N19	W42	.675	14395	4.5	5	-F		C	1556	10	.1		Y5
	08	0100	0105	NO FLARE PATROL														
577 CULG	08	0510	0513	0526	N17	W60	.859	14395	3.7	16	-F		C	0513	20	.4		Y5
578 HTPR	08	1011	1020	1047	S22	E43	.760	14416	11.6	36	-F		C	1020	20	.3		Y5
579 MCMA	08	1208	1215	1233	S22	E42	.771	14416	11.7	25	-N		C	1215	25	.4	DH	Y5
	08	1935	2056	NO FLARE PATROL														
580 HTPR	09	0759E	0000	0805	S21	E34	.691	14416	11.9	6D	-F		C	0801	10	.1		Y5
	09	1656	1657	NO FLARE PATROL														
	09	1827	1912	NO FLARE PATROL														
	09	2107	2155	NO FLARE PATROL														
	09	2212	2232	NO FLARE PATROL														
	09	2238	2325	NO FLARE PATROL														
	09	2330	2341	NO FLARE PATROL														
	09	2349	0001	NO FLARE PATROL														
	10	0126	0130	NO FLARE PATROL														
	10	0145	0150	NO FLARE PATROL														
581 CATA	10	0930	0930	0945D	S21	E15	.528	14416	11.5	15D	-N	2		0930	84	1.0		Y5
GRP63582	10	1059>9	1120 1304+1	1309	S22	E14	.534	14416	11.5	130	-F						EI	
KIEV	10	1059E	1305	1305D	S23	E15	.554	14416	11.6	126D	1F		C	1305	200	2.4	EI	
HTPR	10	1117	1120	1132	S21	E15	.528	14416	11.6	15	-F		C	1120	20	.2		
HTPR	10	1300	1304	1309	S21	E14	.521	14416	11.6	9	-F		C	1304	20	.2		

Hα SOLAR FLARES

SEPTEMBER 1976

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE 1976 SEP	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
583 HTPR	10	1545	1546	1552	S21	E13	.515	14416	11.6	7	-F		C	1546	30	.3	E Y5
584 HTPR	10	1559	1602	1606	S22	E13	.529	14416	11.6	7	-F		C	1602	10	.1	Y5
	10	1822	1903	NO FLARE PATROL													
	10	1905	1923	NO FLARE PATROL													
	10	1930	2057	NO FLARE PATROL													
	10	2137	2204	NO FLARE PATROL													
	10	2252	2300	NO FLARE PATROL													
585 VORO	10	2327E	0000	2346D	S23	W02	.505	14416	10.8	19D	-N		P	2327	161	1.6	DJ Y5
586 VORO	11	0210E	0218	0315D	S23	W02	.505	14416	10.9	65D	?N		C	0218	251	2.6	DJ Y5
	IMP.1 NO. CULG2 PALE1																
	11	1618	1757	NO FLARE PATROL													
	11	1804	2131	NO FLARE PATROL													
	12	1959	2055	NO FLARE PATROL													
	12	2226	2235	NO FLARE PATROL													
	14	0036	0140	NO FLARE PATROL													
	14	0150	0215	NO FLARE PATROL													
	14	0235	0242	NO FLARE PATROL													
587 MCMA	14	1832	1843	1855D	S22	W46	.806	14416	11.3	23D	-F		C	1843	40	.6	E Y5
	14	2306	2310	NO FLARE PATROL													
	15	0100	0114	NO FLARE PATROL													
	15	0144	0145	NO FLARE PATROL													
	15	0155	0200	NO FLARE PATROL													
	15	1440	1513	NO FLARE PATROL													
	15	2113	2149	NO FLARE PATROL													
	16	2145	2150	NO FLARE PATROL													
	16	2227	2254	NO FLARE PATROL													
	17	0117	0120	NO FLARE PATROL													
	17	0132	0135	NO FLARE PATROL													
588 HTPR	17	1229	1231	1237	S14	E47	.780	14425	21.0	8	-F		C	1231	20	.3	E Y5
GRP63589	17	1805	1806 1814	1905D	N20	E82	.985	14429	23.9	60	1N						DR
RAMY	17	1805	1806	1905D	N23	E80	.978	14429	23.8	60D	1N	3	C	0000			DE R
RAMY	17	1806E	1814	1831D	N20	E80	.979	14429	23.8	25D	-N	3	V	0000			DE R
MCMA	17	1833E	0000	1833D	N18	E85	.993	14429	24.1		1B		P	1833			D
	17	2151	2242	NO FLARE PATROL													
	17	2304	2320	NO FLARE PATROL													
590 HTPR	18	1312	1313	1320	S12	E31	.592	14425	20.9	8	-F		C	1313	20	.2	E Y5
GRP63591	18	1456+4	1503+3	1530	S12	E30	.580	14425	20.9	34	-N				150	1.8	
RAMY	18	1456	1503	1530	S10	E31	.576	14425	20.9	34	-N	4	C	0000	153		FDE
HTPR	18	1457	1506	1525	S12	E29	.568	14425	20.8	28	1B		C	1506	190	2.3	E
RAMY	18	1457E	1504	1519D	S12	E30	.580	14425	20.9	22D	-N	4	V	0000	159		FDE
MCMA	18	1500	1504	1530	S13	E32	.611	14425	21.0	30	-N		C	1504	100	1.3	E
592 MEUD	19	0952	0952	1003	N22	E60	.862	14429	23.9	11	-F		C	0952	40	.8	E Y5
	19	1758	1831	NO FLARE PATROL													
	19	1854	1911	NO FLARE PATROL													
	19	1926	0135	NO FLARE PATROL													
	20	0215	0218	NO FLARE PATROL													
	20	0224	0236	NO FLARE PATROL													
593 CULG	20	0255	0258	0310	N22	E51	.780	14429	23.9	15	-F		C	0258	20	.3	Y5
594 MONT	20	0823	0826	0834	S12	E08	.354	14425	20.9	11	-F		C	0826	40		Y5
595 MONT	20	0928	1009	1030D	S12	E08	.354	14425	21.0	62D	-N		C	1009	110		Y5
596 CATA	20	1045	1050	1100D	S14	E06	.374	14425	20.9	15D	-F	2		1050	112	1.2	Y5
	20	1600	1653	NO FLARE PATROL													
	20	1932	1933	NO FLARE PATROL													
	20	2030	2107	NO FLARE PATROL													
	20	2146	0140	NO FLARE PATROL													
	21	0150	0220	NO FLARE PATROL													

Hα SOLAR FLARES

SEPTEMBER 1976

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE - SEP	START	MAX. PHASE	END	APPROX LAT.	APPROX HER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMR. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
GRP63597	21	1223+0	1223+3	1252	S13	W08	.368	14425	20.9	29	1N				210	2.3	FU
ATHN	21	1223	1231	1258	S13	W06	.358	14425	21.1	35	-B	4	C	0000	190		U F
ATHN	21	1223	1231D	1231D	S13	W06	.358	14425	21.1	8D	-B	4	V	0000	190		U F
RAMY	21	1224E	1228	1240D	S11	W14	.388	14425	20.5	16D	1F	2	V	0000	222		F
HTPR	21	1225E	0000	1245	S12	W06	.342	14425	21.1	20D	1B		C	1226	220	2.2	E
RAMY	21	1228E	1228	1232D	S15	W07	.393	14425	21.0	4D	1F	2	C	0000	222		F
GRP63598	21	1303E	1305	1343	S11	W07	.332	14425	21.0	40	1N						E
ZURI	21	1303E	1305	1343	S11	W07	.332	14425	21.0	40D	1N		P	1305	250	2.8	
MCMA	21	1314E	0000	1317D	S12	W08	.353	14425	21.0	3D	-N		P	1316	150	1.6	E
	21	1911	1919	NO FLARE PATROL													
	21	1952	2023	NO FLARE PATROL													
	21	2031	2054	NO FLARE PATROL													
	21	2055	2250	NO FLARE PATROL													
	21	2304	2333	NO FLARE PATROL													
	22	0041	0046	NO FLARE PATROL													
	23	0459	0500	NO FLARE PATROL													
GRP63599	24	0756	0809+4	0825	N23	W06	.293	14429	23.9	29	-N						FGH
BUCA	24	0756	0000	0825	N22	W04	.267	14429	24.0	29	-N		C	0801	161	1.7	
MONT	24	0804E	0809	0833	N23	W07	.298	14429	23.8	29D	-N		C	0809	180		GH
ATHN	24	0806E	0813	0824	N23	W07	.298	14429	23.8	18D	-N	2	C	0000	48		F
	24	2130	2140	NO FLARE PATROL													
	24	2200	2222	NO FLARE PATROL													
	25	1906	2050	NO FLARE PATROL													
	25	2150	2240	NO FLARE PATROL													
600 CULG	27	0006E	0006U	0024	N13	E57	.833	14446	1.3	18D	-F		P	0006	20	.4	Y5
	27	1450	1505	NO FLARE PATROL													
	27	1515	1525	NO FLARE PATROL													
	27	1530	1545	NO FLARE PATROL													
	27	1800	1807	NO FLARE PATROL													
	27	2213	2221	NO FLARE PATROL													
601 CULG	28	0334	0337	0342	S27	E49	.850	14447	1.8	8	-F		C	0337	30	.6	Y5
	28	1448	1503	NO FLARE PATROL													
	28	1539	1546	NO FLARE PATROL													
	28	1610	1618	NO FLARE PATROL													
	28	1950	2002	NO FLARE PATROL													
	29	0136	0145	NO FLARE PATROL													
	29	0155	0210	NO FLARE PATROL													
	29	0215	0220	NO FLARE PATROL													
	29	2038	2041	NO FLARE PATROL													
	29	2200	2212	NO FLARE PATROL													
	29	2227	2233	NO FLARE PATROL													
602 HTPR	30	0942	0948	1001	N17	E17	.334	14446	1.7	19	-N		C	0948	50	.5	E Y5
	30	1850	1853	NO FLARE PATROL													
	30	1854	1907	NO FLARE PATROL													
	30	1945	2008	NO FLARE PATROL													

"Remarks":

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

DAILY FLARE INDICES
Includes all Flares

SEPTEMBER 1976

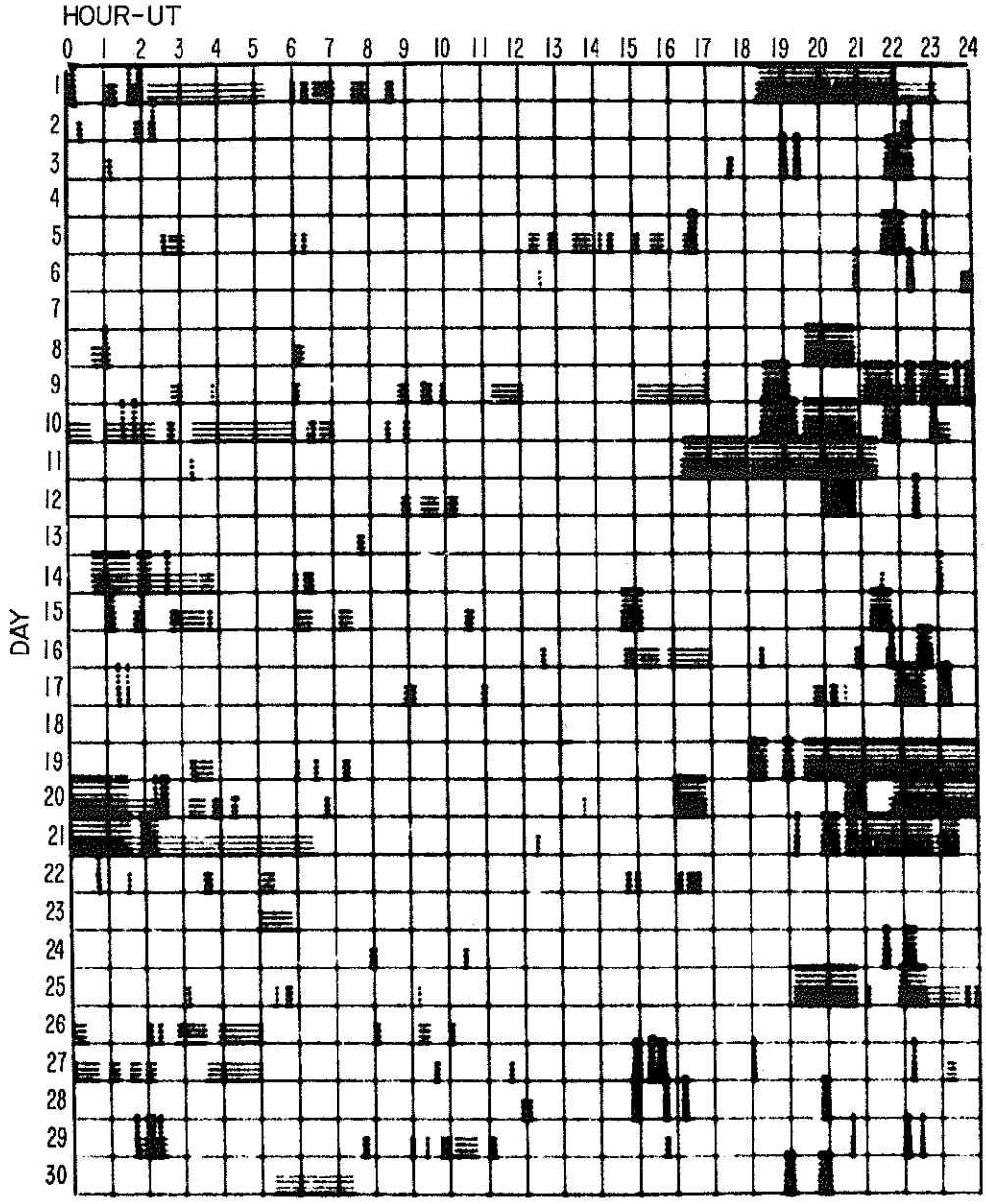
Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.
760901	8.91	19.9	760910	18.33	20.8	760920	22.24	18.3
760902	.84	23.8	760911	0.00	18.9	760921	51.50	20.1
760903	21.58	22.9	760912	0.00	22.9	760922	0.00	23.9
760904	17.28	24.0	760914	1.96	22.3	760923	0.00	24.0
760905	0.00	23.0	760915	0.00	22.5	760924	5.28	23.5
760906	16.10	23.8	760916	0.00	23.5	760925	0.00	21.4
760907	2.38	24.0	760917	5.28	22.8	760927	1.90	23.1
760908	4.79	22.6	760918	15.25	24.0	760928	.85	23.3
760909	2.12	20.9	760919	1.15	17.0	760929	0.00	23.2
						760930	5.29	23.4

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

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

SEPTEMBER 1976



Observatories included in total patrol:

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

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

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

SEPTEMBER 1976

SEP 1976	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	207	VORO	44 NS	0000	0028	240	58			
	200	GORK	44 NS	0436 E		504		5		
	100	GORK	43 NS	0530		270		5		
	260	ONDR	44 NS	0640 E		506 D	54			
	127	TORN	43 NS	0735 U	1234	445 D				
	253	DWIN	44 NS	1340 E		78		3		
	240	DWIN	44 NS	1340 E		78		2		
	176	DWIN	44 NS	1340 E		78		6		
	169	DWIN	44 NS	1340 E		78		5		
	160	DWIN	44 NS	1340 E		78		5		
	9650	IRKU	1 S	0636.5	0646.2	7	5			SR
	3100	CRIM	25 R	0653						
	950	GORK	21 GRF	0655.8		87.2				
	808	ONDR	45 C	0657.8	0659.2	3.5	20	5		
	2000	TYKW	45 C	0657	0659.4	5	5	1.7		65L
	3100	CRIM	1 S	0658	0659	4	2.5	1		
	950	GORK	4 S/F	0658.7	0659.3	2.6	24	5.6		
	1000	TYKW	45 C	0658	0659.3	7	25	4		20L
	1000	TYKW	45 C	0710	0710.9	4	2.6	0.7		0L
	2000	TYKW	5 S	0710	0710.7	2	1.2	0.4		0L
	9100	GORK	20 GRF	0713	0745	77	5.9	2.8		
	228	HARS	47 GB	0717	0730	26	220	54		
	237	TRST	47	0717.9	0731.9	28	300			18R
	200	HIRA	45 C	0718		28		60		
	200	HIRA		0718	0723		100			WL
	200	HIRA		0718	0731.8		310			WL
	3100	CRIM	1 S	0718	0721	5	6	2		
	500	HIRA	45 C	0718.1		60		60		
	500	HIRA		0718.1	0720.1		30			ML
	500	HIRA		0718.1	0728.6		37			ML
	500	HIRA		0718.1	0731.7		110			WL
	500	HIRA		0718.1	0736.8		50			ML
	500	HIRA		0718.1	0744.5		25			ML
	200	GORK	46 C	0718.2	0723.1	23	400			
	200	GORK		0718.2	0731.8		100			
	260	ONDR	47 GB	0718.2	0731.7	24	108	87		
	536	ONDR	47 GB	0718.2	0731.4	30	91	43		
	536	ONDR		0718.2	0720.8		45			
	808	ONDR	47 GB	0718	0731.5	30	190	85		
	808	ONDR		0718	0721.2		140			
	1000	TYKW	45 C	0718	0745.2	30	385	60		15R/15L
	1000	TYKW		0718	0722.5		53			
	1000	TYKW		0718	0728.6		53			
	1000	TYKW		0718	0733.7		220			
	2000	TYKW	45 C	0718	0721.2	6	10	5		20L
	2000	TYKW	30 PBI	0724		6	2.4	2.2		
	3750	TYKW	5 S	0718	0721	12	3	1		0R
	950	GORK	46 C	0718	0722.4	28.7	66			
	950	GORK		0718	0731.7		275			
	950	GORK		0718	0745.1		256			
	100	GORK	6 S	0721.2	0731.7	18.9	110	55		
	127	TORN	40 F	0721 U	0732.5	15	94			
	100	HIRA	45 C	0727.7	0731.7	15.5	85	35		WL
	2000	TYKW	5 S	0728	0728.4	1	3	1.7		45L
	3100	CRIM	3 S	0729	0734	13	10.5	3		
	2950	GORK	22 GRF	0730.4	0733	5.7	5.7	3		
	2000	TYKW	45 C	0730	0733.8	30	16	5		15L/15R/25L
	2000	TYKW		0730	0744		5			
	3750	TYKW	5 S	0730	0734.4	25	8	2		0R
	127	TORN	7 C	1237.5	1238.3	2.2	35	15		
	200	HIRA	44 NS	2010 E	0319	770 D	27	5		SL
	207	VORO	44 NS	2200	0319	360	23			
	4995	BOUL	8 S	2158.5	2159	1.5	10	3		
	2695	BOUL	8 S	2200	2200.5	1	53	20		
	9400	TYKW	5 S	2216	2217.5	4	6	2		0R
	4995	BOUL	4 SF	2227	2250	53	21	7		
	1415	SGMR	4 S/F	2233.7	2251.1	21.4	185.5	55.6		1
	245	SGMR	6 S	2235.4	2245.8	25.8	26.6	5.3		1
	1415	MANI	4	2237.8	2251.5	29.9	157	32.5		1
	1420	BOUL	45 C	2237	2251	23.5	158	3.8		
	8800	MANI	22	2238	2254.5	73.3	12.4	2.5		1
	2695	PENT	46F C	2238	2251	22	27	10.8		
	2695	PENT	29 PBI	2300	2300	150	4.4	2.2		
	3750	TYKW	45 C	2238	2250	20	15	7		15L
	3750	TYKW		2238	2243.6	0.1	48			45L
	3750	TYKW	29 PBI	2258		100	6	2		
	1000	TYKW	45 C	2238	2251.1	30	39	8		25L
	2695	MANI	4	2239.3	2250.8	22.1	26.3	7.5		1
	606	SGMR	22 GRF	2240.5	2245.8	15.7	29.3	17.6		1
	9400	TYKW	20 GRF	2240	2253	140	18	9		0R
	606	MANI	4	2241	2245.7	30	24.9	10.2		1
	700	SYDN	45 C	2241.3	2245.8	13.9				
	700	SYDN	29 PBI	2255.2	2255.7	11.7				
	4995	MANI	4	2241.4	2249.9	18	19.3	5.4		1

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SEP 1976	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	BOUL	45 C	2241.5	2252	19.5	29	9		
	207	VORO	7 C	2242	2245	14	34			
	18	MCMA	42 SER	2243	2248	7			2	
	200	HIRA	45 C	2244	2245.5	4	100	30		ML
	500	HIRA	28 PRE	2241.3	2242	3.5	3	2		WR
	500	HIRA	45 C	2244.8		21		10		
	500	HIRA		2244.8	2245.8		26			O
	500	HIRA		2244.8	2252.7		24			MR
	410	SGMR	6 S	2245.5	2245.9	2.5	18.9	5.7		1
	1400	SYDN	28 PRE	2241.3	2255.7	7.7				
	1400	SYDN	4 S	2248	2251.1	11.3				
	1415	MANI	8	2251	2251.2	.4	58	23.2		2
	4995	BOUL	8 S	2258	2258.5	1	82	26		
	2695	BOUL	1 S	2302.5	2303	2	4	1		
	2695	BOUL	1 S	2355	2356	1.5	3	1		
2	200	GORK	44 NS	0412		408 D		5		
	260	ONDR	44 NS	0640 E		506 D	7			
	127	TORN	44 NS	0700 E	1011	480 D	13.5			
	169	DWIN	44 NS	0903 E		342		4		
	160	DWIN	44 NS	0903 E		342		3		
	240	DWIN	44 NS	0903 E		240		2		
	176	DWIN	44 NS	0903 E		342		4		
	2695	BOUL	8 S	1700	1701	1.5	22	7		
	4995	BOUL	8 S	1702.5	1703	1.5	15	5		
	2930	VORO	22 GR	2241	2250	18	23			
3	200	HIRA	45 C	0142.7	0143	1	220	50		ML
	100	HIRA	45 C	0142.8	0143	1	500	180		ML
	201	VORO	48 C	0142	0143	4	102			
	100	HIRA	45 C	0245.5	0245.7	0.5	490	250		ML
	200	HIRA	45 C	0245.5	0245.6	0.3	380	120		ML
	200	GORK	44 NS	0358		422 D		5		
	100	GORK	44 NS	0400		420 D		5		
	260	ONDR	44 NS	0642 E		504 D	138	16		
	127	TORN	44 NS	0700 E	1117.8	480 D	60			
	169	DWIN	44 NS	0808 E		369		15		
	160	DWIN	44 NS	0808 E		369		10		
	253	DWIN	44 NS	0808 E		369		7		
	240	DWIN	44 NS	0808 E		369		7		
	176	DWIN	44 NS	0808 E		369		15		
	650	GORK	21 GRF	0558	0604.7	34	4	2		
	500	HIRA	45 C	0559.6	0602.3	31	23	3		O
	4995	MANI	3	0559.6	0602.5	28	17.8	7.1		1
	606	MANI	4	0559.6	0602.2	33.7	37	10.9		1
	1415	MANI	4	0559.6	0602.3	33.7	22.6	8.1		1
	8800	MANI	3	0559.6	0602.5	18.2	11.7	4.7		1
	2695	MANI	3	0559.6	0602.4	15.2	23.8	11.9		1
	650	GORK	21 GRF	0600	0620.6	52	7.6	2.8		
	650	GORK	4 S/F	0600.9	0602.4	3.3	14.8	6.1		
	650	GORK	3 S	0600.9	0602.6	27	14	5.8		
	3750	TYKW	45 C	0600	0615.1	20	20	10		20L
	3750	TYKW		0600	0602.4		17			
	3750	TYKW	29 PBI	0620		100 D	6	5 D		
	1000	TYKW	45 C	0600	0602.1	30	18	5		20L
	1000	TYKW	29 PBI	0630		90 D	1.6	1.2D		
	2000	TYKW	45 C	0600	0602.3	33	28	11		07R
	2000	TYKW	29 PBI	0633		67 D	4.5	4 D		
	2950	GORK	22 GRF	0601	0603	22	12.7			
	127	TORN	42 SER	0821.8	0825.2	12	52	7		
	127	TORN		0821.8	0827.5		365			
	127	TORN		0821.8	0833.2		157			
	160	DWIN	45 C	0821	0828	14	300 U	20		
	240	DWIN	45 C	0821	0828	14	290	40		
	176	DWIN	45 C	0821	0828	14	400 D	40		
	169	DWIN	45 C	0821	0828	14	400 D	40		
	100	GORK	41 F	0822	0825.5	13	110			
	100	GORK		0822	0829 U		110			
	100	GORK		0822	0833.5		400			
	200	HIRA	45 C	0824	0824.8	1.5	170	20		ML
	100	HIRA	45 C	0824	0825	1.5	200	50		ML
	200	GORK	41 F	0824.7	0828.7	9.1	100			
	200	GORK		0824.7	0833.6		100			
	200	HIRA	45 C	0827.3	0828.2	2.7	580	130		ML
	100	HIRA	45 C	0827.5	0828.5	2.8	600	150		ML
	237	TRST	42	0827.6	0829.6	5.4	340			9R
	200	HIRA	45 C	0832	0833.1	3	180	50		ML
	100	HIRA	45 C	0832	0833.3	3	350	100		ML
	228	HARS	45 C	0832	0833.5	3	110	34		
	3100	CRIM	3 S	0902 U	0911	25	12	4		
	3100	CRIM	29 PBI	0927		63				
	200	GORK	41 F	0905.4	0908	7.8	100			
	200	GORK		0905.4	0911.1		280			
	100	GORK	41 F	0905.5	0908 U	6.5	80			
	100	GORK		0905.5	0910.8		700			

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	127	TORN	45 C	0905.5	0906	2.5	530	75			
	160	DWIN	45 C	0905	0910	10	400 D	40			
	240	DWIN	45 C	0905	0910	10	400 D	50			
	176	DWIN	45 C	0905	0910	10	400 D	50			
	169	DWIN	45 C	0905	0910	10	400 D	40			
	237	TRST	42	0906.1	0910.6	9.1	420			3R	
	536	ONDR	42 SER	0906.3	0911.3	9	14				
	228	HARS	47 GB	0907	0910	6	220	63			
	950	GORK	2 S/F	0909.7	0910.5	3.5	6.7	1.3			
	2950	GORK	3 S	0909.7	0911.4	2.3	14				
	9100	GORK	20 GRF	0910	0911.3	17	9.9	4.7			
	650	GORK	2 S/F	0910.3	0911.4	1.6	4.9	2.5			
	127	TORN	8 S	1012.2	1012.5	1	165	80			
	100	GORK	6 S	1012.8	1012.8	1.1	120				
	100	GORK	41 F	1050.9	1051.2	6.5	120				
	100	GORK		1050.9	1054.8		120				
	100	GORK		1050.9	1056.7		120				
	127	TORN	45 C	1053	1056.5	5.5	155	15			
	2800	OTTA	8 S	1349.9	1350	0.5	3	1.5			
	245	SGMR	6 S	1353.7	1354.5	1.5	14.7	2.9		5	1
	245	SGMR	6 S	1400.1	1408.2	14.1	121.8	12.2		3G	2
	200	HIRA	44 NS	2010 E	2035	410 D	27	2		SL	
	207	VORO	44 NS	2200	0103	240	13				
	18	MCMA	6 S	2153	2155	2			1		
	2695	PENT	240 R	2305	0010	65	2.6	1.3			
4	2695	PENT	24P R	0010		80 D	2.6				
	100	HIRA	45 C	0214.7	0215.4	1.5	400	70		WL	
	260	ONDR	44 NS	0634 E		486 D	40	4			
	127	TORN	44 NS	0700 E	1049.3	480 D	300				
	127	TORN		0700 E	1052.5		138				
	100	HIRA	43 NS	0700	0835	120 D	120	40		SL	
	200	GORK	43 NS	0715		165		5			
	100	GORK	44 NS	0715		165		10			
	200	HIRA	43 NS	0715	0747	100 D	27	7		SL	
	100	GORK	41 F	0727.2	0729.9	52.8	135				
	100	GORK		0727.2	0743.5		125				
	100	GORK		0727.2	0755.1		125				
	100	GORK		0727.2	0813.9		1500				
	100	GORK		0727.2	0818.3		1500				
	3100	CRIM	2 S/F	0728	0730	15	3.5	1			
	3100	CRIM	20 GRF	0810	0813	52	3.5	1			
	127	TORN	8 S	0813.6	0814	1	1090	550			
	127	TORN	8 S	0817.8	0818.2	1	860	280			
	3100	CRIM	4 S/F	1020	1045	44	8	3			
	237	TRST	42	1034.8	1048.7	18.5	170			7R	
	536	ONDR	45 C	1045.5	1049.2	7.5	56				
	245	SGMR	6 S	1045.7	1048.7	9.8	41.2	12.3		CONT	1
	408	TRST	5	1046.3	1046.4	0.2	10	3			
	408	TRST	5	1047.7	1047.8	0.3	18	4			
	408	TRST	42	1048.2	1048.6	1.7	90				
	808	ONDR	45 C	1048.2	1052	6	28	2			
	410	SGMR	6 S	1048.5	1049.5	3	34	10.2		CONT	1
	18	MCMA	6 S	1601	1603	3			2		
	2800	OTTA	20 GRF	1615	1620	20	0.8	0.4			
	245	SGMR	6 S	1619.6	1619.7	1	16	3.2		3G	2
	18	MCMA	6 S	1621	1625	4			3		
	207	VORO	48 C	2312	2316	5	13				
	2695	BOUL	8 S	2350.5	2351.5	1.5	7	2			
5	207	VORO	48 C	0143	0146	6	15				
	100	HIRA	45 C	0145.5	0146.6	2.5	200	60		WL	
	200	HIRA	45 C	0145.5	0146.8	2.5	300	50		SL	
	200	GORK	43 NS	0642		258 D		5			
	260	ONDR	44 NS	0755 E		455 D	35				
	245	SGMR	43 NS	1216	1930.5	650 D	27.3			3,5	1
	3100	CRIM	24 R	0643	0834		5				
	100	GORK	41 F	0753.6	0754.5	2.5	200				
	100	GORK		0753.6	0755.7		200				
	245	SGMR	6 S	1329.3	1329.4	.9	30.2	9.1		5	2
	410	SGMR	6 S	1329.5	1329.7	.8	3.8	1.5		5	2
	1415	SGMR	2 S/F	1852.7	1853	1.1	4.6	1.4		5	3
	245	SGMR	6 S	1852.8	1853.1	.6	24.8	10		5	3
	18	MCMA	6 S	1854	1857	4			3		
	18	MCMA	6 S	2005	2007	3			2		
	18	MCMA	6 S	2033	2034	1			1		
	18	MCMA	6 S	2137	2140	4			2		
6	1400	SYDN	45 C	0130.6	0136.1	12.3					
	2000	TYKW	45 C	0130	0136.5	12	30	5		05R	
	2000	TYKW	29 PBI	0142		40	3	1.5			
	200	HIRA	45 C	0131	0135.5	8	30	10		WL	
	100	HIRA	45 C	0131	0136.2	8	170	40		WL	
	207	VORO	48 C	0132	0136	7	128				
	2930	VORO	7 C	0132	0136	7	38				

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SEP 1976	FREQUENCY	STATION	TYPE		STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	POLARIZATION OR REMARKS
	1415	MANI	4		0133.5U	0136.4U	8 U	24.6U	7.4U		DRIFT 1
	606	MANI	4		0133.8	0136.4	17.9	45.2	12.5		1
	2695	MANI	4		0133.8U	0136.4U	7.7U	21 U	8.4U		DRIFT 1
	1000	TYKW	45	C	0133	0136.3	10	72	5		06R
	500	HIRA	45	C	0134	0137.2U	6	20	5		ML
	700	SYDN	45	C	0134.1	0136	6.9				
	3750	TYKW	45	C	0134	0136.4	4	25	7		20R,248039F
	3750	TYKW	29	PBI	0138		40	6	2		
	2695	PENT	4	S/F	0134	0136.5	4	34	15		
	2695	PENT	29	PBI	0138	0138	10	9.6			
	9400	TYKW	5	S	0135 E	0136	30 D	6	3 D		OL
	200	GORK	44	NS	0415 E		405 D		5		
	260	ONDR	44	NS	0646 E		503 D	44			
	200	GORK	8	S	0612.9	0613	0.7	180	20		
	500	HIRA	45	C	0750.5	0753.5	6	500	150		SLMR
	200	GORK	8	S	1053.2	1053.5	0.5	190	70		
	18	MCMA	6	S	1443	1444	2			2	
	1420	BOUL	8	S	1650	1651	1.5	11	4		
	18	MCMA	6	S	1652	1655	4			2	
7	260	ONDR	44	NS	0642 E		508 D	78			
	245	SGMR	6	S	1359.7	1413.7	48.6	158.8	31.9		3 1
	4995	BOUL	45	C	1741	1747	9	23	4		
	2695	BOUL	1	S	1741	1741.5	1.5	4	1		
	18	MCMA	6	S	2029	2032	8			2	
	2695	BOUL	45	C	2148.5	2157.5	11	15	5		
	4995	BOUL	45	C	2152	2255	5.5	3.2	10		
8	176	DWIN	43	NS	1040	1120	90	25	5		
	169	DWIN	43	NS	1040	1120	90	25	5		
	160	DWIN	43	NS	1040	1120	90	25	5		
	18	MCMA	6	S	1428	1430	2			1	
	245	SGMR	6	S	1602	1609.6	8.1	23.2	7		1
	606	SGMR	40	F	1602.3	1609.4	7.3	32.5	19.5		1
	2695	SGMR	40	F	1602.6	1609.3	6.9	11.4	6.8		1
	1415	SGMR	4	S/F	1608.6	1609.3	1.5	15.2	4.6		1
	4995	SGMR	2	S/F	1608.7	1609.2	.7	1.8	.5		1
	410	SGMR	6	S	1609.3	1609.4	.7	9.9	3		1
9	1420	BOUL	8	S	1430.5	1431	1	11	4		
	2800	OTTA	8	S	1430.9	1431	0.5	5.4	2.7		
	806	ONDR	8	S	1430.9	1430.9	0.3	25			
	536	ONDR	8	S	1431.1	1431.1	0.3	35			
	2695	BOUL	8	S	1940	1941	2	20	7		
	4995	BOUL	40	F	2056.5	2057.5	6.5	105	28		
	2695	BOUL	40	F	2059.5	2101	6	6	2		
	4995	BOUL	8	S	2303.5	2304	1	30	10		
10	260	ONDR	44	NS	0644 E		504 D	17			
	169	DWIN	44	NS	0819 E		324		3		
	160	DWIN	44	NS	0819 E		324		3		
	240	DWIN	44	NS	0819 E		324		3		
	176	DWIN	44	NS	0819 E		324		3		
	3100	CRIM	24	R	0832	0931		2			
	2800	OTTA	20	GRF	1630	1715	90	1	0.5		
	2695	BOUL	45	C	1651	1652	3	30	12		
	4995	BOUL	8	S	1721	1721.5	1.5	12	3		
	2695	BOUL	8	S	1723	1723.5	1	7	2		
	2695	BOUL	8	S	1725	1725.5	1	5	2		
	2695	BOUL	8	S	1728	1728.5	1.5	8	3		
	2800	OTTA	27	RF	1820		155	1	0.9		
	2800	OTTA	24	R	1820	1840	20	1	0.5		
	2800	OTTA	24P	R	1840		110	1			
	2800	OTTA	26	FAL	2030	2055	25	-1	-0.5		
11	127	TORN	44	NS	0700 E	1039.2	480 D	180			
	260	ONDR	44	NS	0700 E		470 D	37			
	3100	CRIM	46	C	0758	0803	19	2	1		
	3100	CRIM			0758	0808		2			
	127	TORN	8	S	1255.3	1255.6	0.5	850	570		
	2800	OTTA	20	GRF	1610	1613	15	0.8	0.4		
12	260	ONDR	42	SER	1118	1132.7	60	6			
	2695	BOUL	45	C	1234	1238	18.5	37	13		
	4995	BOUL	45	C	1235	1237	8.5	27	9		
	1420	BOUL	45	C	1235	1241	29	51	15		
13	3100	CRIM	24	R	0925 E	0954		2			
14	200	HIRA	5	S	0041.4	0041.5	0.5	140	80		0
	100	HIRA	5	S	0041.4	0041.5	0.5	520	200		ML
	3100	CRIM	1	S	1035	1045	20	3	1		
	4995	BOUL	45	C	1610.5	1612	3	14	5		
	2800	OTTA	20	GRF	1830		50	0.8	0.5		
	2695	BOUL	8	S	1933	1933.5	3	10	3		

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15	2800	OTTA	1 S	1735	1735.4	1	2.8	0.9		
16	2695	BOUL	8 S	0015	0016	2	10	3		
	200	HIRA	45 C	0602.5E	0603.8	3 D	280	15 U		O
	536	ONDR	8 S	1252.6	1252.6	0.3	58			
	2800	OTTA	240 R	1430	1455	25	0.8	0.4		
	2800	OTTA	24P R	1455		215	0.8			
	2800	OTTA	240 R	1830	2030	120	1.4	0.7		
	2800	OTTA	24P R	2030		270 D	1.4			
	2800	OTTA	20 GRF	2110		60	1.2	0.8		
17	237	TRST	5	1637.1	1637.3	0.4	51	15		23L
	1415	SGMR	4 S/F	1800.9	1804.1	9.1	40	12		3G,SWF 1
	1420	BOUL	45 C	1800	1804.5	10.5	25	8		
	2800	OTTA	21 GRF	1800	1825	225	5.2	2.6		
	606	SGMR	4 S/F	1801.4	1804.8	6.6	94.2	28.2		3G,SWF 1
	410	SGMR	6 S	1801.4	1806.3	6.6	201.8	60.5		3G,SWF 1
	245	SGMR	6 S	1801.5	1805.6U	6.5	153.3D	46 U		3G,SWF 1
	2695	SGMR	4 S/F	1803	1804.9	4.2	22	6.6		3G,SWF 1
	2800	OTTA	4 S/F	1803.5	1804.9	4	17.4	5.8		
	4995	SGMR	2 S/F	1803.9	1804.2	1.5	7.4	2.2		3G,SWF 1
	2695	BOUL	4 SF	1803	1806	5	18	6		
	18	MCMA	6 S	1805	1806	5			1	
	18	MCMA	42 SER	2220	2237	19			1	
18	2800	OTTA	22 GRF	1458	1504	25	1	0.5		
20	2000	TYKW	5 S	0255.3	0256.1	2	1.6	0.5		OR
	1000	TYKW	45 C	0256	0256.1	1	1.1	0.3		50R
	3100	CRIM	24 R	0655	0919		1			
21	3100	CRIM	1 S	1050	1051	2	2	1		
	3100	CRIM	1 S	1055	1057	4	3	1		
	3100	CRIM	1 S	1100	1102	3	2	1		
	3100	CRIM	1 S	1108	1109	1	2	1		
	3100	CRIM	1 S	1111	1111 O	2	2	1		
	3100	CRIM	24 R	1139	1157 O		2			
	3100	CRIM	20 GRF	1220	1231	34	5	2		
	2800	OTTA	22 GRF	1220	1238	130	2.8	1.5		
	1415	SGMR	2 S/F	1225.2	1226.4	2.2	4	1.2		1
22	18	MCMA	41 F	1406	1443	105			2	
	930	BORD	46 C	1500	1500.4	0.4	36	2		
	18	MCMA	42 SER	2142	2216	30			1	
24	200	HIRA	45 C	0436.5	0437	1	90	25		WL
	260	ONDR	45 C	0756.3	0757.4	5	32	3.4		
	237	TRST	42	0756.8	0757.3	2.3	110			7R
	100	HIRA	45 C	0757	0757.6	2	1200	500		WL
	200	HIRA	45 C	0757	0757.2	2.8	110	15		WL
	1000	TYKW	5 S	0758	0758.6	1 U	15 U	3 U		OR
26	18	MCMA	6 S	1630	1632	2			1	
27	4995	BOUL	1 S	2147.5	2148	2	10	3		
28	260	ONDR	44 NS	0655 E		495 D	25			
	930	BORD	46 C	0818	0818.7	2	19	2		
	536	ONDR	42 SER	1441	1452.3	11.3	77			
	4995	BOUL	45 C	1925	1927	10	60	13		
29	260	ONDR	44 NS	0700 E		378	17			
	536	ONDR	8 S	1449.8	1449.8	0.3	21			
30	260	ONDR	43 NS	1236	1341.7	144 D	30			
	18	MCMA	41 F	1444	1446	4			1	

Reports received from the following observatories:

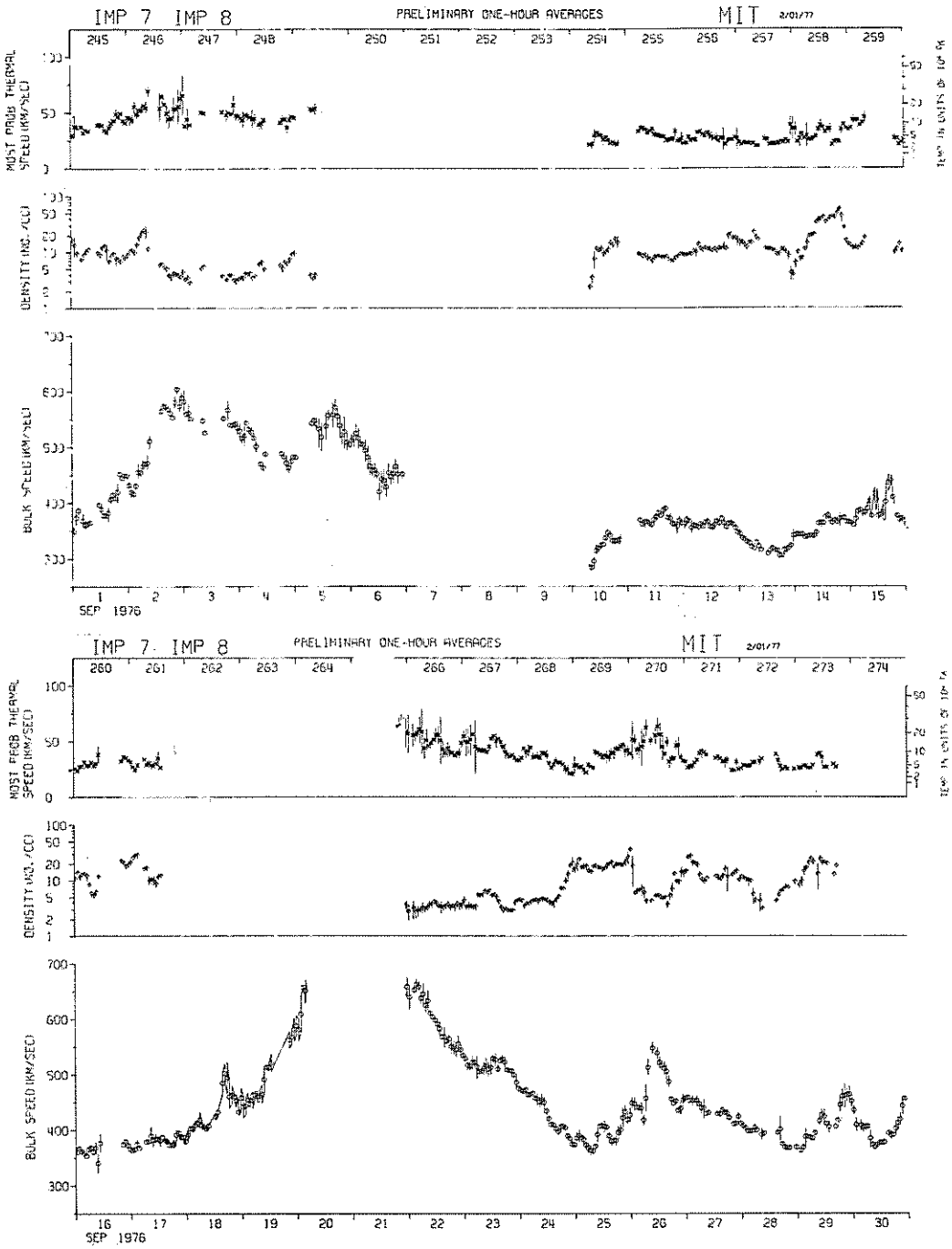
ARCE = Arcetri
BERL = Berlin-Adlershof
BORD = Bordeaux
BOUL = Boulder
CRIM = Simferopol
DWIN = Dwingeloo
GORK = Gorky
HARS = Harestua
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk
KIEV = Kiev
MANI = Manila
MCMA = McMath-Hulbert
ONDR = Ondrejov
OTTA = Ottawa
PENT = Penticton
POTS = Potsdam
SAOP = Sao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

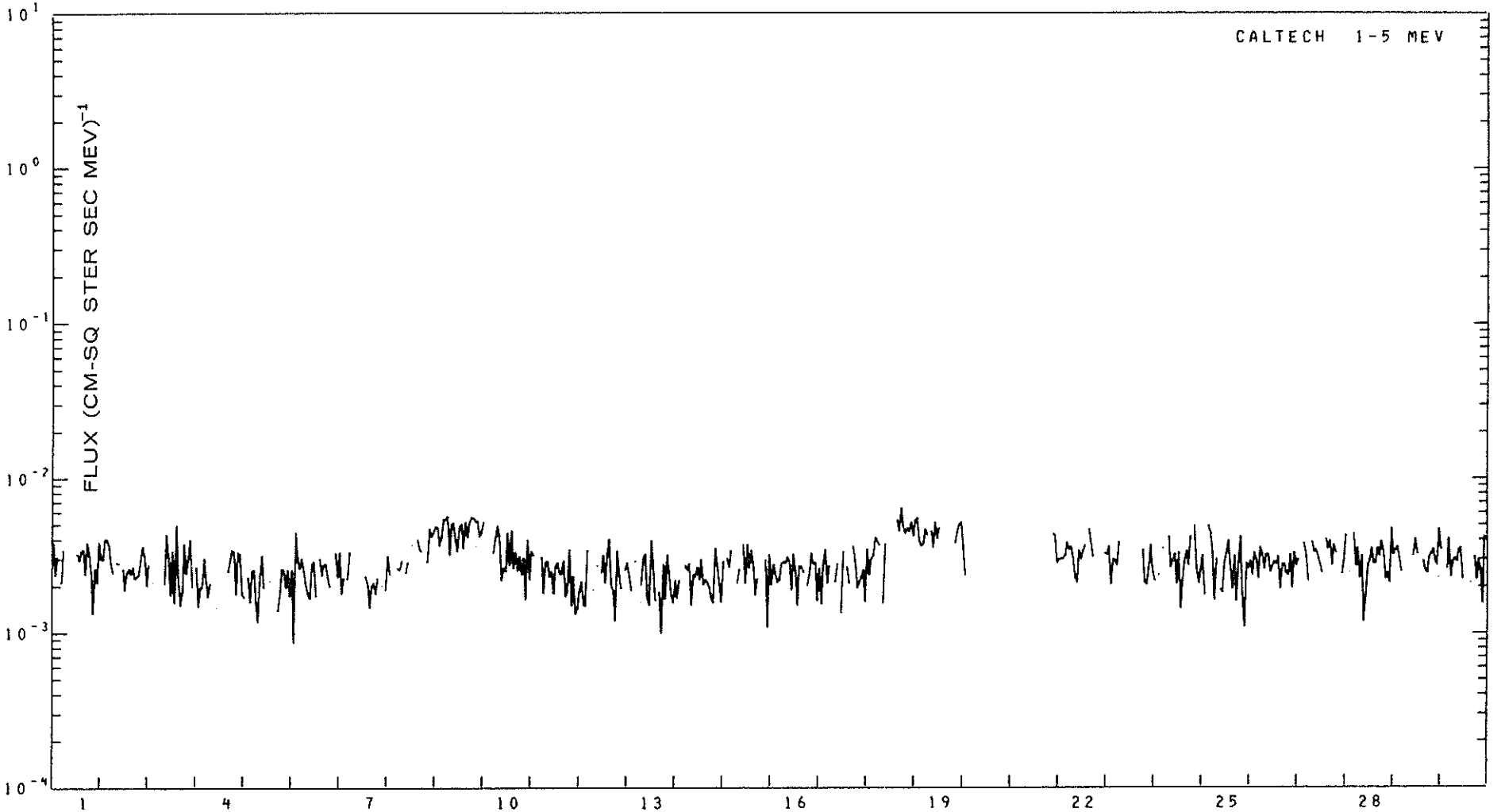
SEPTEMBER 1976



20 Sep 76

IMP 7 AND 8 ELECTRONS

SEPTEMBER, 1976



IMP 7 AND 8 LOW ENERGY PROTONS

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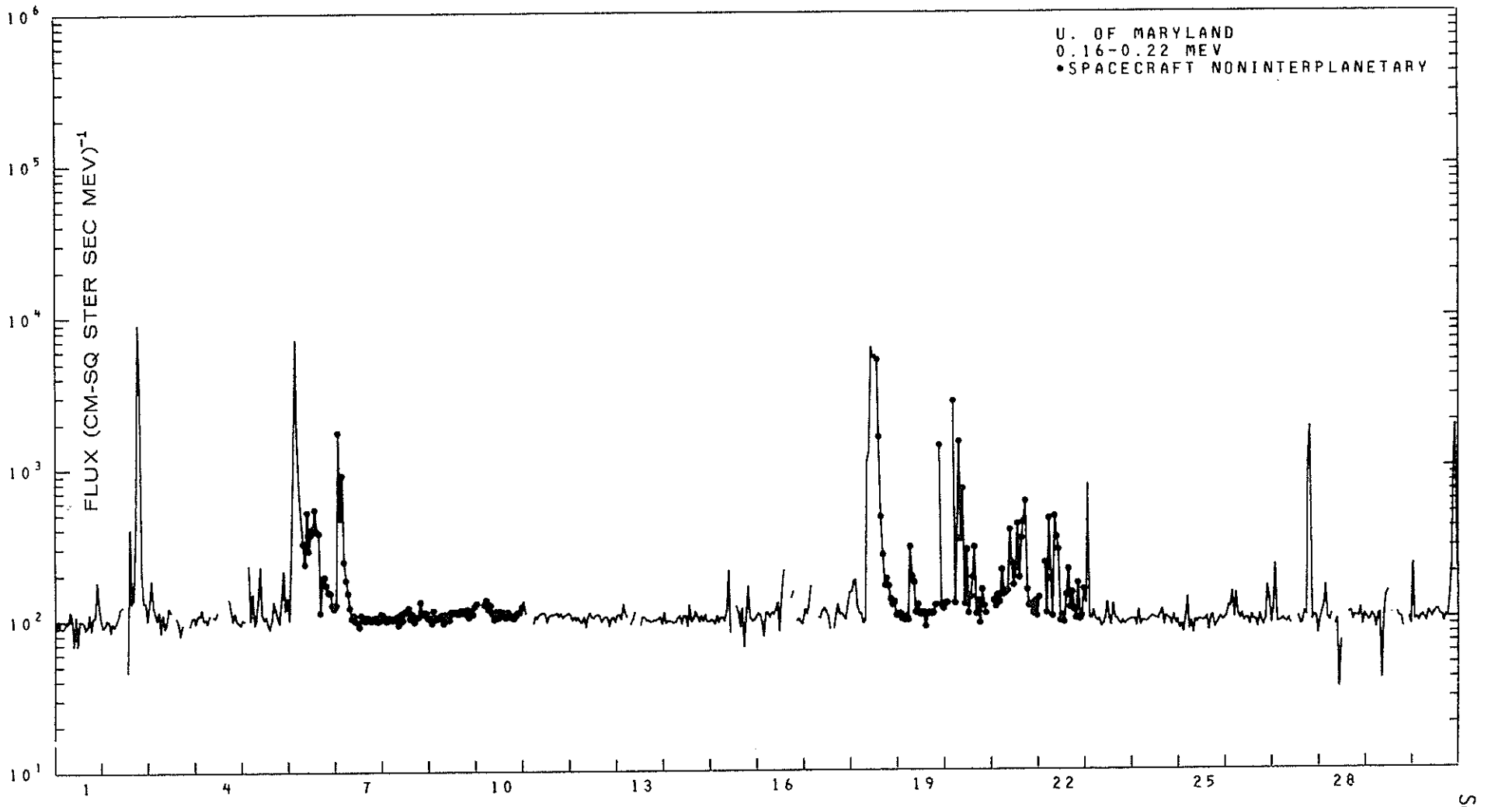
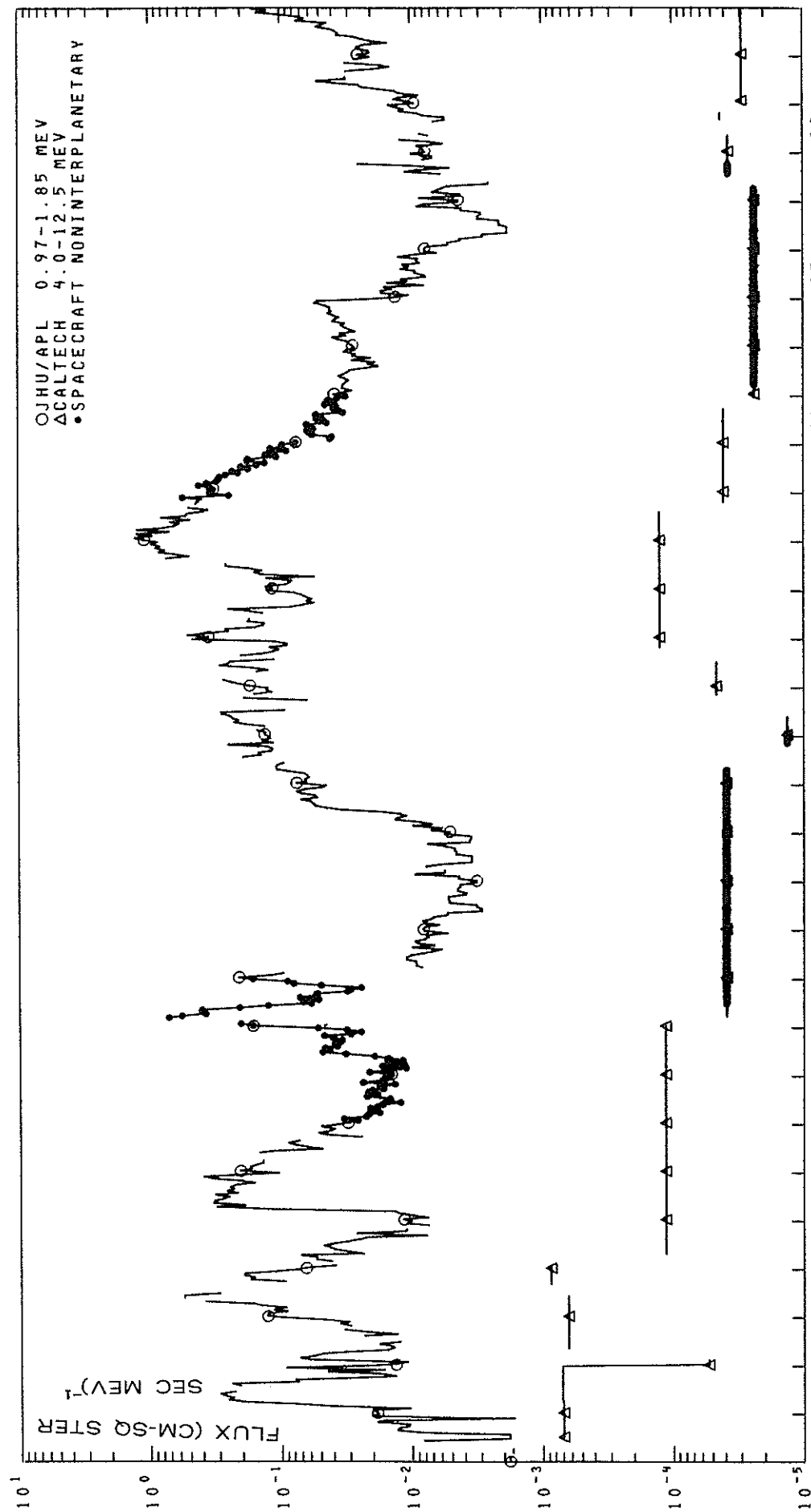


21 Sep 76

22
Sep 76

IMP 7 AND 8 'NTERMEDIATE ENERGY PROTONS

SEPTEMBER, 1976



IMP 7 AND 8 HIGH ENERGY PROTONS

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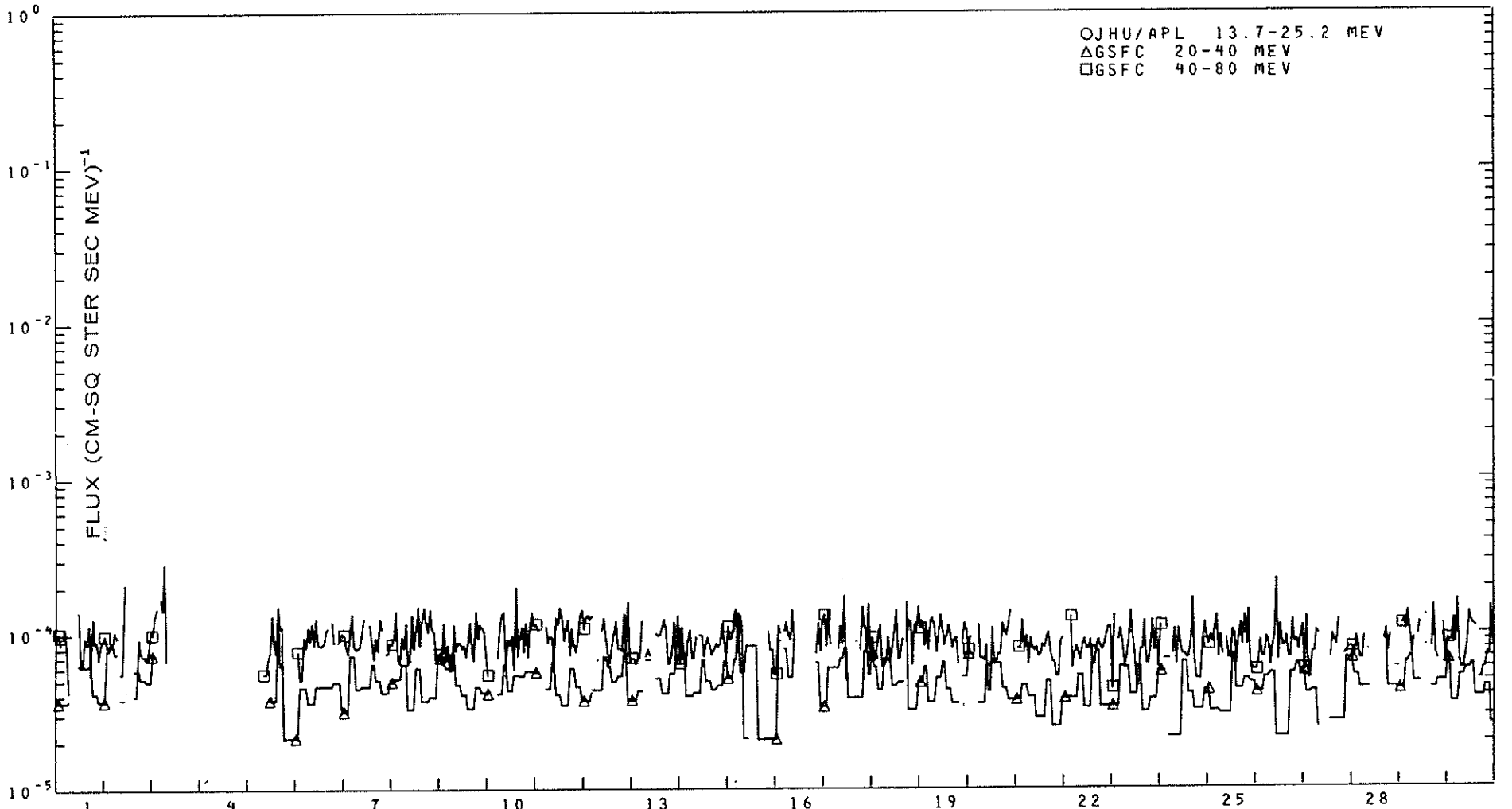
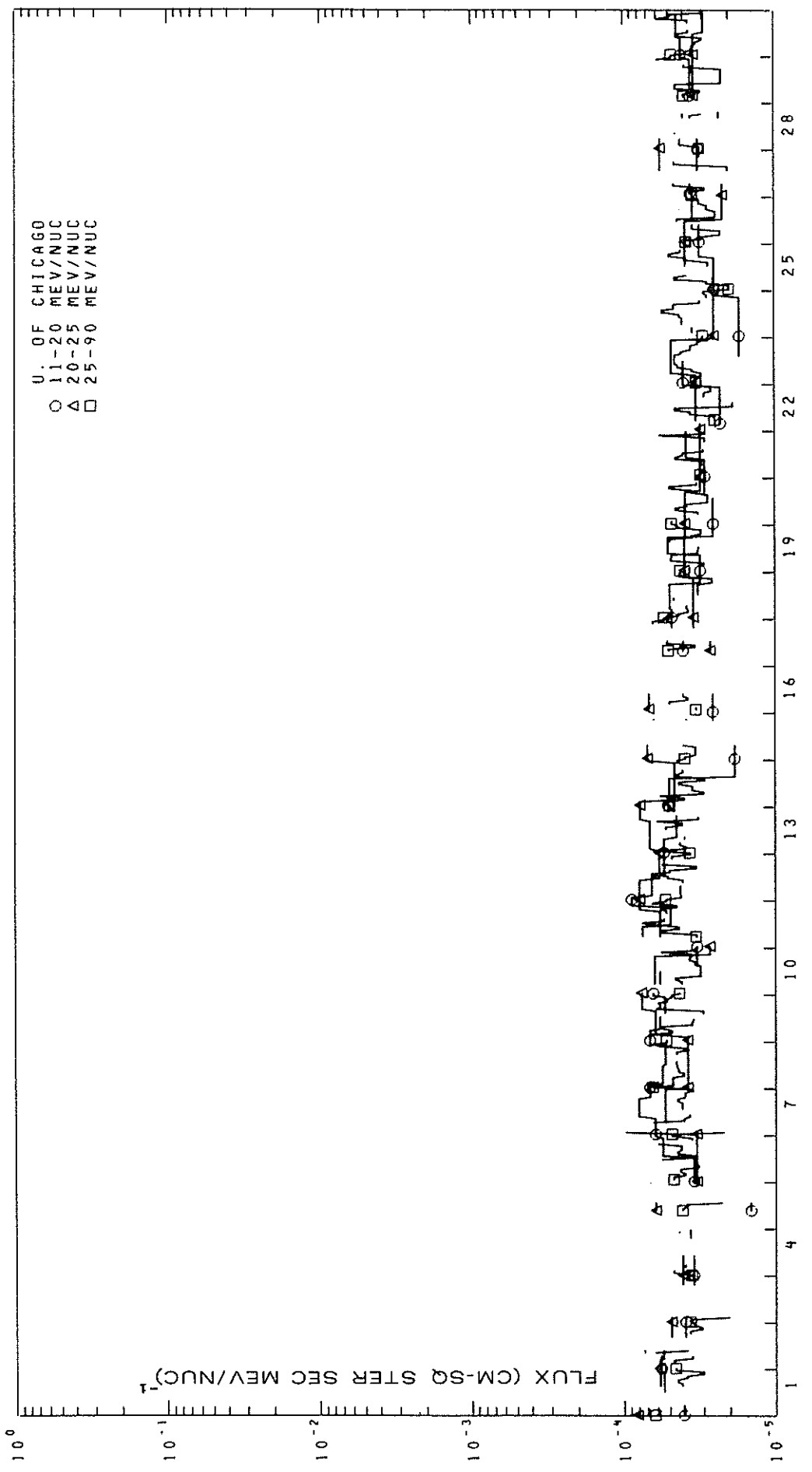


23 Sep 76

IMP 7 AND 8 ALPHA PARTICLES

SEPTEMBER, 1976



COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
SEPTEMBER 1976

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

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	5.40	5.54	5.77	5.98	5.98	6.20	5.86	6.14	6.15	6.33	6.25	6.31	6.39	6.46	6.35	6.23	6.31	6.27	6.24	6.22	M	6.14	6.08	6.13
3	6.16	6.37	6.35	6.25	6.23	5.98	M	5.18	5.41	5.50	5.67	5.82	5.85	5.84	6.07	M	6.20	6.12	5.99	6.05	5.98	5.95	5.91	5.67
4	5.29	5.86	5.94	6.22	6.21	6.18	6.12	6.24	5.70	5.84	6.02	6.07	6.30	6.20	5.94	M	5.90	6.60	6.46	6.67	6.57	6.50	M	M
5	6.47	6.37	6.39	6.58	6.65	6.60	6.63	6.66	6.71	6.67	6.70	6.77	6.98	6.89	6.96	6.84	6.79	6.59	M	6.64	6.72	6.67	6.81	6.83
6	6.87	6.77	5.60	6.73	6.73	6.75	6.82	6.97	6.97	7.05	6.95	7.09	6.99	6.86	7.08	6.96	7.02	6.95	M	6.95	7.02	7.02	7.07	7.19
7	7.07	7.08	7.19	7.09	7.01	7.03	7.10	7.19	7.14	6.87	6.99	M	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	6.31	6.33	6.30	6.34	6.34	6.33	6.34	6.34	6.20	M	6.26	6.21	6.28	6.34	6.40	6.39	6.49	6.43	6.40	6.43	6.17	6.00	6.14	6.35
20	6.40	6.38	6.40	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	6.66	6.60	6.53	6.51	6.48	6.61	6.63	6.62	6.77	6.74	M	6.54	M	5.92	6.66	M	6.72	6.65	6.65	6.56	6.55	6.62	6.79
22	6.69	6.71	6.71	6.69	6.69	6.95	6.77	M	6.88	6.80	M	6.66	6.62	6.73	6.79	6.89	6.82	6.82	6.74	6.71	6.72	6.68	6.72	6.69
23	6.76	6.78	6.79	6.78	6.72	6.84	6.77	M	6.73	6.59	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

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

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
SEPTEMBER 1976

Si XIV (6.18Å) Hourly Averages (-Log (flux), ergs/cm^2 s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	5.92	6.12	7.54	M	M	M	6.00	M	6.80	M	7.45	M	M	M	M	M	M	M	M	M	M	6.30	6.55	M
3	7.89	M	7.85	M	M	7.36	M	6.17	5.84	6.44	6.77	7.08	M	6.21	M	M	M	M	M	7.02	M	B	6.78	5.51
4	5.57	7.28	7.08	M	6.50	7.84	6.62	6.99	6.11	5.87	7.15	7.97	5.90	7.17	6.76	M	7.21	7.69	7.01	7.84	7.69	B	M	M
5	7.34	7.18	B	7.55	7.61	B	7.40	M	7.66	B	B	7.62	M	M	M	7.71	7.44	7.22	M	7.68	M	B	B	M
6	B	B	5.27	7.73	B	7.87	M	M	7.58	B	B	M	M	M	M	7.92	B	B	M	8.00	B	M	B	B
7	M	M	M	B	B	7.62	B	M	M	7.93	B	M	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	6.69	M	M	7.62	M	6.15	M	M	M	M	M	M	M	M	M	5.71	7.62	7.13	M
20	7.89	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	B	M	B	M	M	7.41	M	M	M	M	M	M	M	M	M	M	M	M	M	M	B
22	M	M	B	M	B	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

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

COLUMBIA OSO-8 GRAPHITE CRYSTAL SPECTROMETER DATA
X-RAY EMISSION LINE FLUXES
SEPTEMBER 1976

Si XIII (6.64Å) Hourly Averages (-Log (flux), ergs/cm^2 s)

DAY/HR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	5.39	5.27	5.29	5.42	5.43	5.59	5.30	5.60	5.54	5.76	5.65	M	M	5.91	5.82	5.70	5.80	5.64	5.67	5.60	M	5.49	5.38	5.51
3	5.55	5.79	5.75	5.63	5.66	5.36	M	5.40	5.13	5.15	5.15	5.23	5.24	5.26	5.44	M	5.61	5.51	5.35	5.43	5.31	5.32	5.29	5.00
4	4.94	5.31	5.38	5.69	5.72	5.65	5.66	5.67	5.27	5.65	5.83	5.83	6.17	6.31	6.30	M	6.37	6.95	6.43	6.73	6.98	7.13	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	B	6.63	6.54	6.41	M	6.58	6.68	6.64	6.71	6.81
6	6.79	6.74	5.27	6.69	6.60	6.47	6.52	6.74	6.71	6.82	6.78	6.76	6.71	6.42	6.68	6.60	6.69	6.53	M	6.56	6.59	6.62	6.56	6.68
7	6.61	6.57	6.58	6.47	6.49	6.58	6.61	6.61	6.62	6.29	6.46	M	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	5.55	5.56	5.57	5.57	5.56	5.57	5.56	5.58	5.32	M	5.35	5.32	5.45	5.44	5.58	5.53	5.64	5.61	5.58	5.63	5.14	5.12	5.24	5.48
20	5.56	5.52	5.55	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	5.83	5.77	5.70	5.67	5.64	5.75	5.81	5.82	5.91	5.91	M	5.69	M	5.02	5.82	M	5.95	5.85	5.84	5.77	5.74	5.79	5.98
22	5.93	5.98	5.93	5.91	6.01	6.06	6.05	M	6.04	6.07	M	5.89	5.91	5.99	6.02	6.06	6.10	6.07	6.03	5.93	5.93	5.92	5.95	6.02
23	5.98	6.06	6.04	6.07	6.01	6.04	6.05	M	5.98	5.84	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

Note: "B" indicates the flux was below the cut-off levels.
"M" denotes periods of missing data.
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AUGUST 1976 DATA

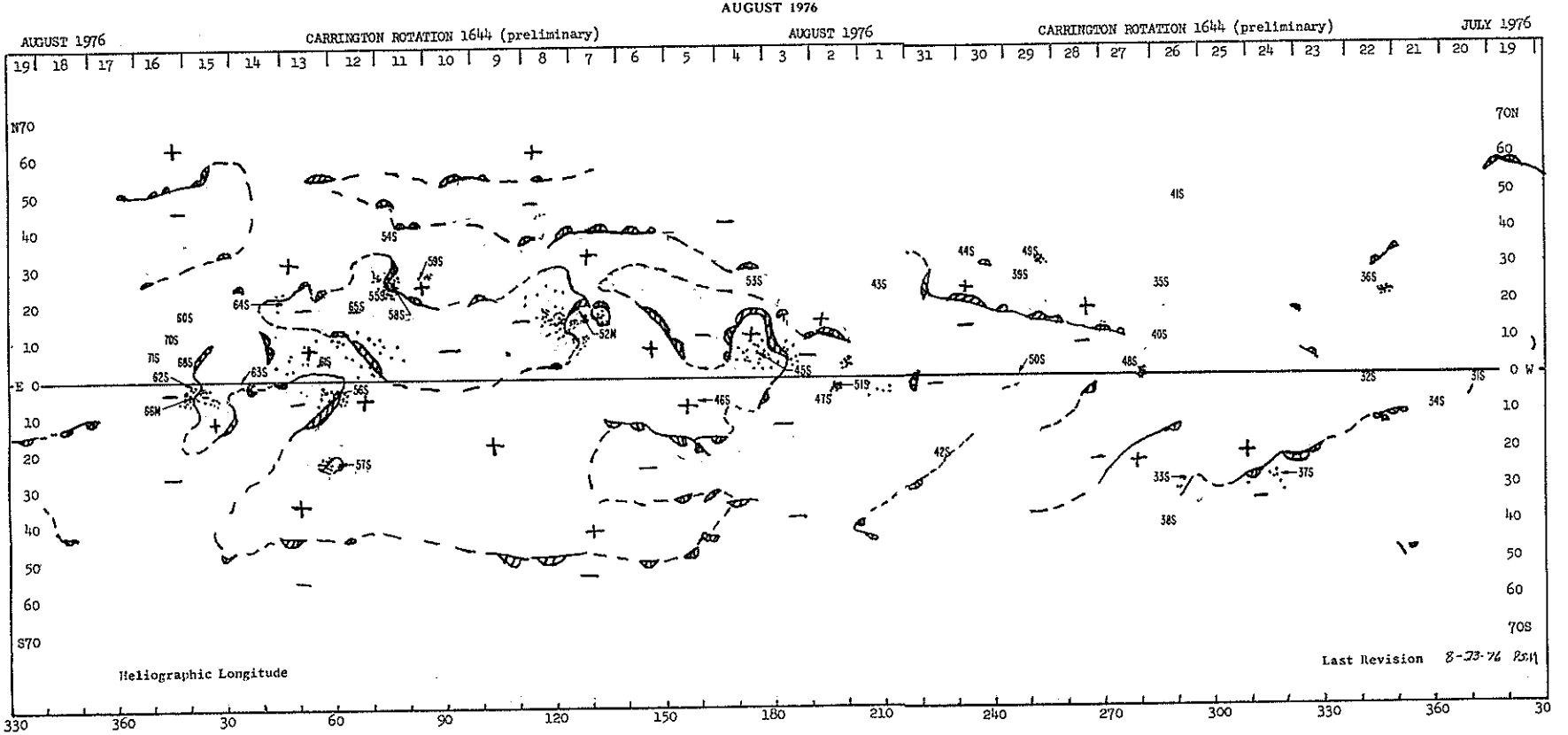
Contents

Aug 30 76

ABBREVIATED CALENDAR RECORD

Hα SYNOPTIC CHART

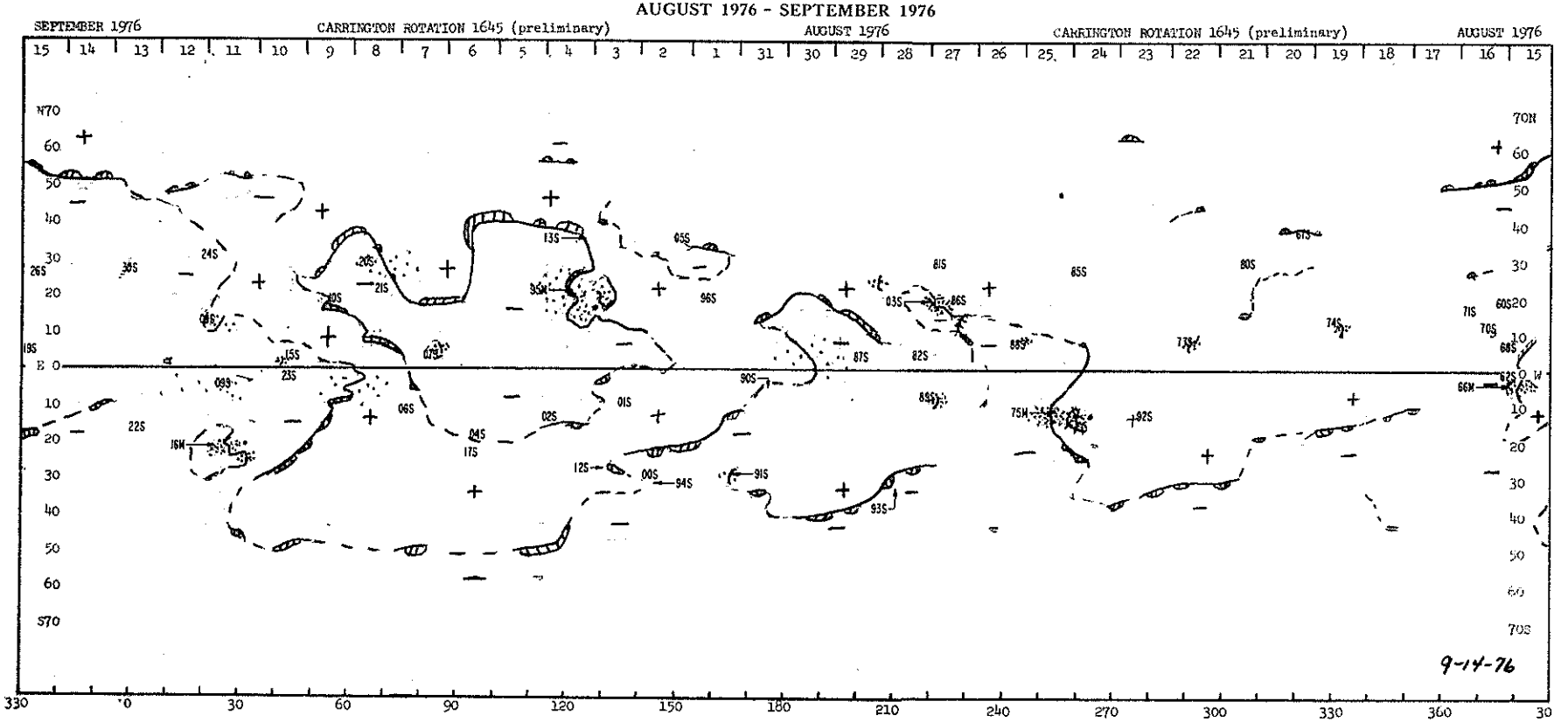
AUGUST 1976



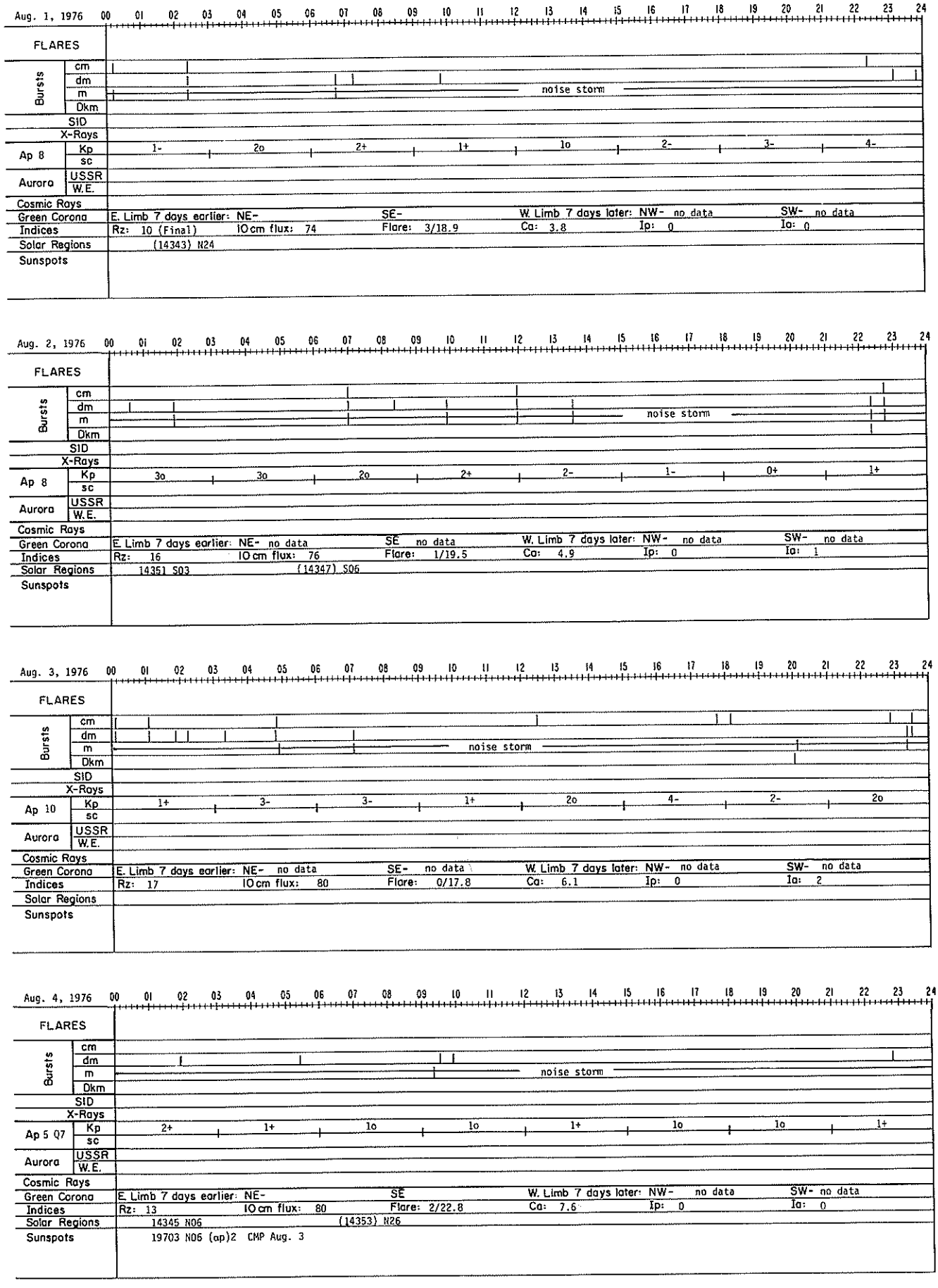
ABBREVIATED CALENDAR RECORD

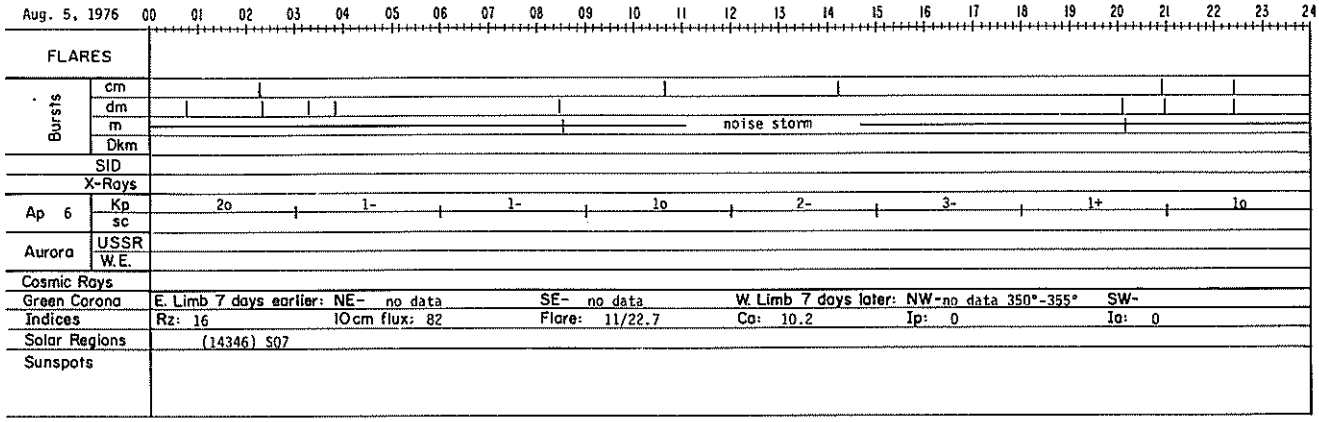
Hα SYNOPTIC CHART

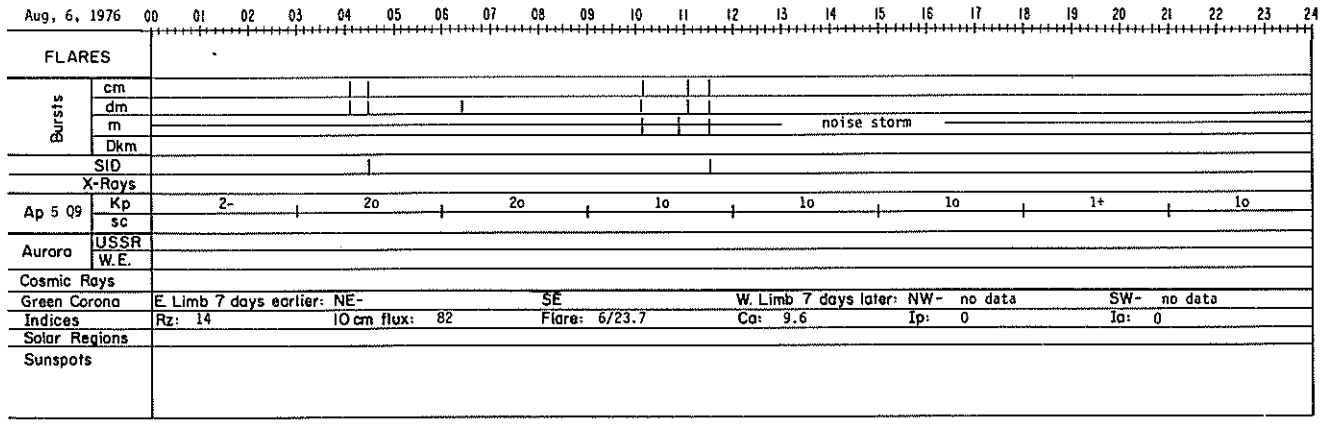
AUGUST 1976 - SEPTEMBER 1976

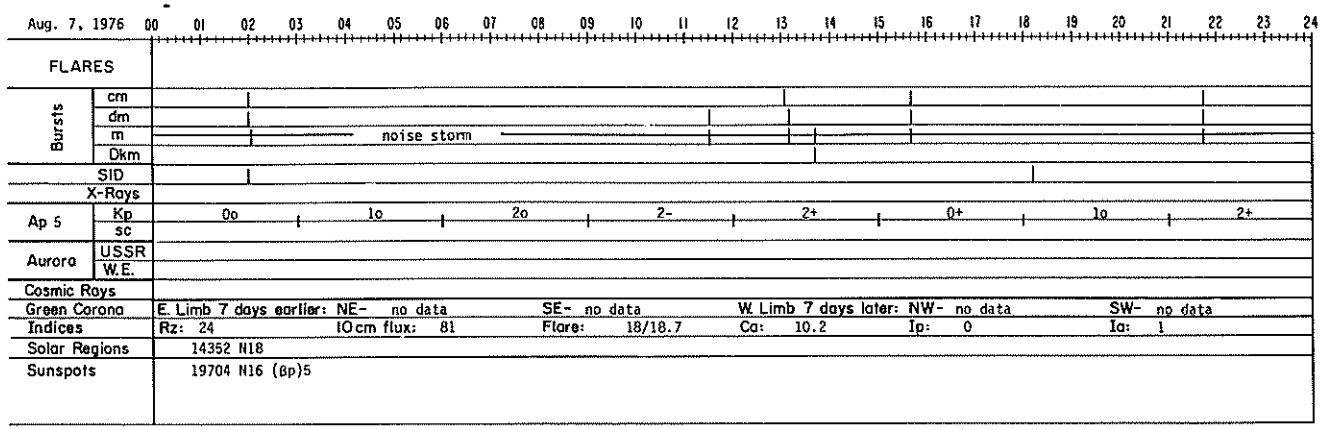


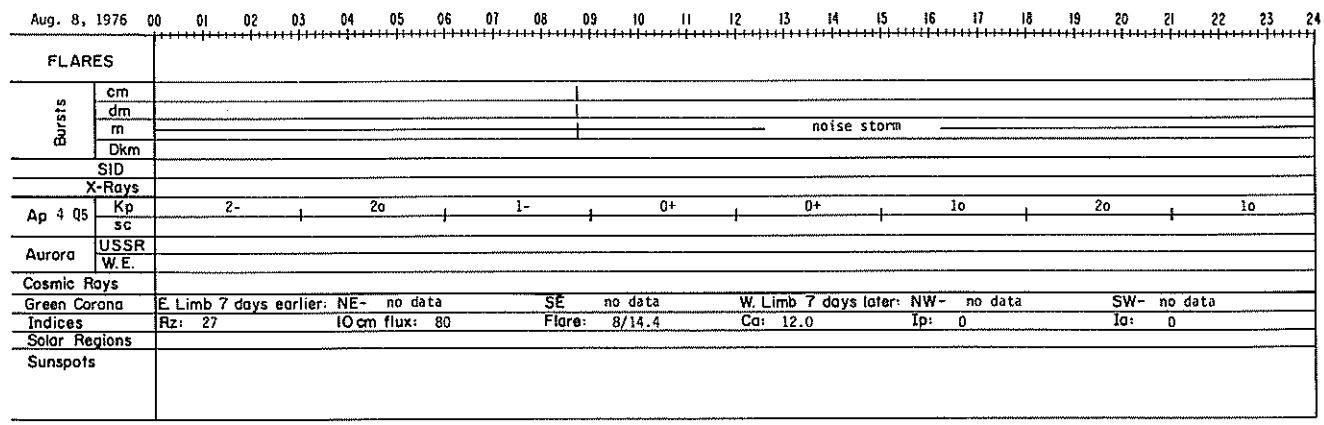
ABBREVIATED CALENDAR RECORD

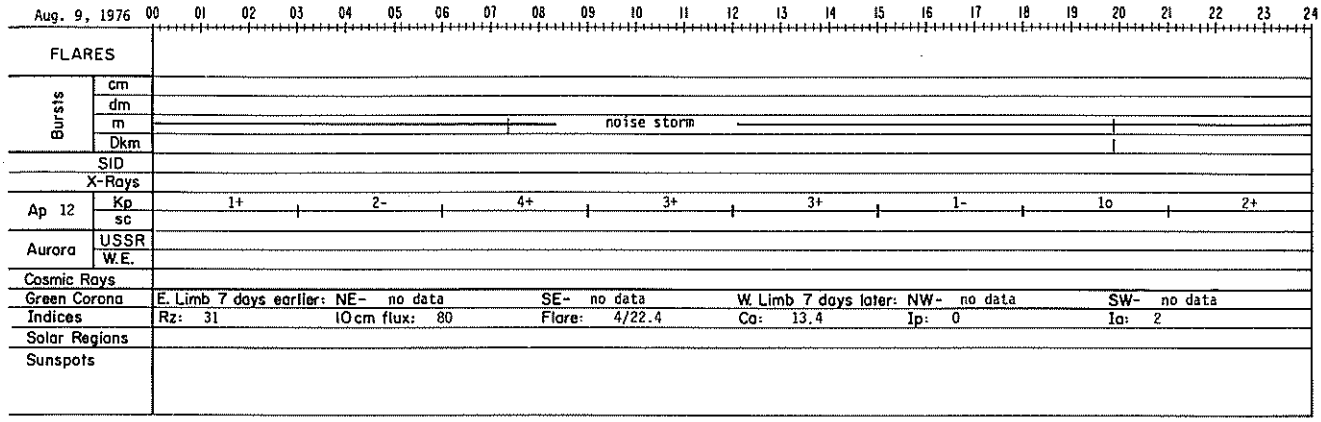


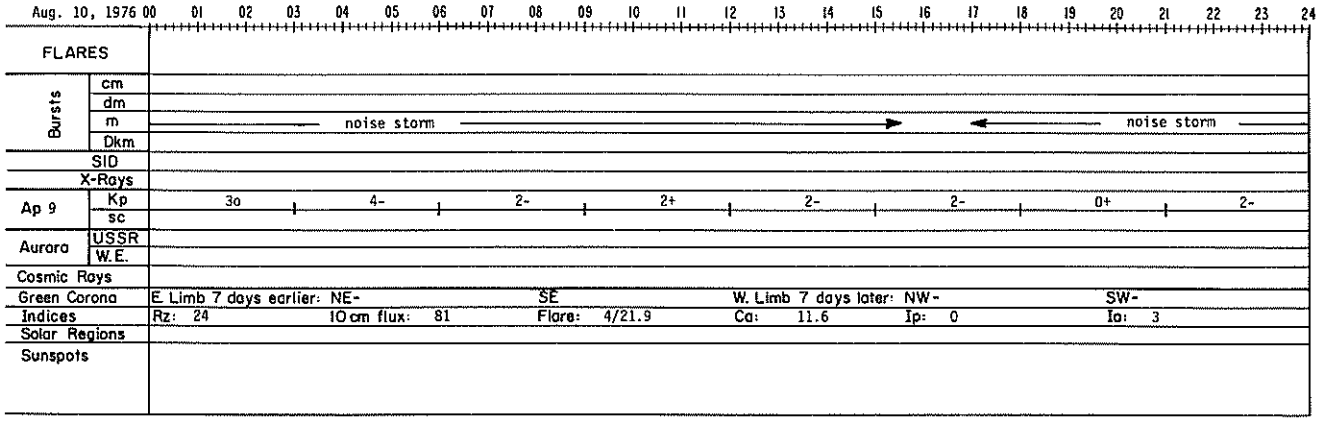

Aug. 5, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 6
Kp
sc
2o 1- 1- 1o 2- 3- 1+ 1o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW-no data 350°-355° SW-
Indices
Rz: 16 10cm flux: 82 Flare: 11/22.7 Ca: 10.2 Ip: 0 Ia: 0
Solar Regions
(14346) S07
Sunspots

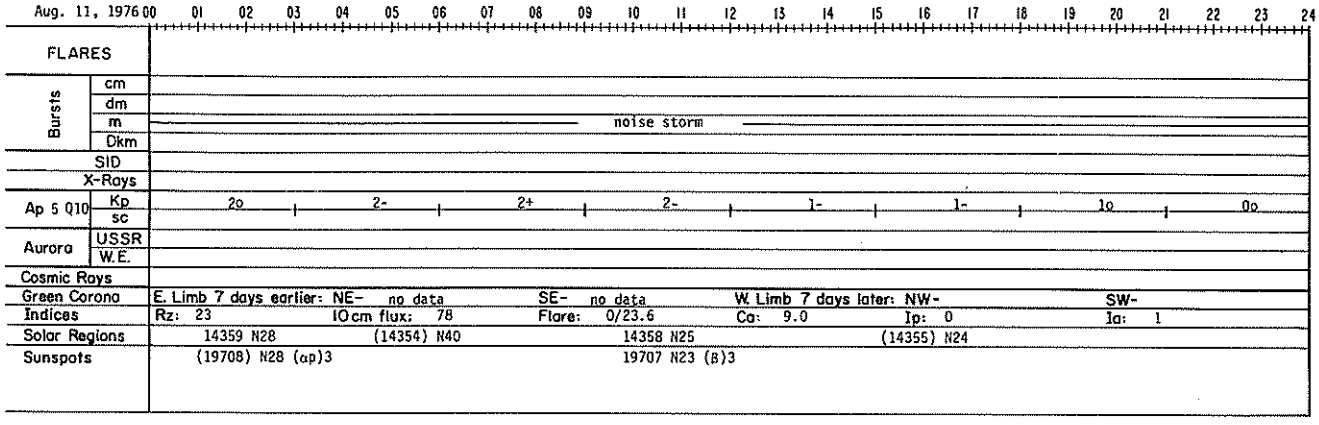

Aug, 6, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 5 Q9
Kp
sc
2- 2o 2o 1o 1o 1o 1+ 1o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 14 10cm flux: 82 Flare: 6/23.7 Ca: 9.6 Ip: 0 Ia: 0
Solar Regions
Sunspots

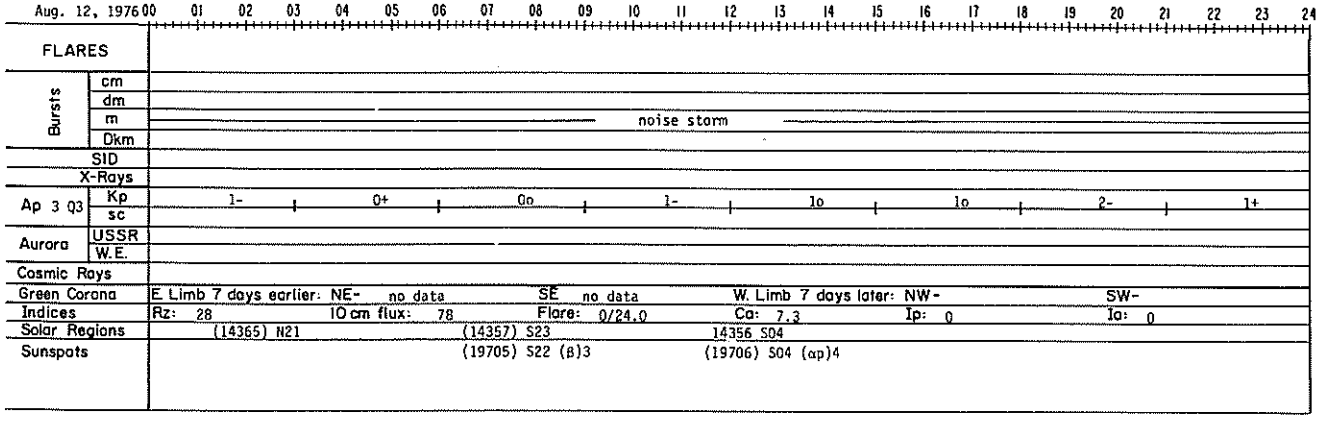

Aug. 7, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 5
Kp
sc
0o 1o 2o 2- 2+ 0+ 1o 2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 24 10cm flux: 81 Flare: 18/18.7 Ca: 10.2 Ip: 0 Ia: 1
Solar Regions
14352 N18
Sunspots
19704 N16 (Bp)5

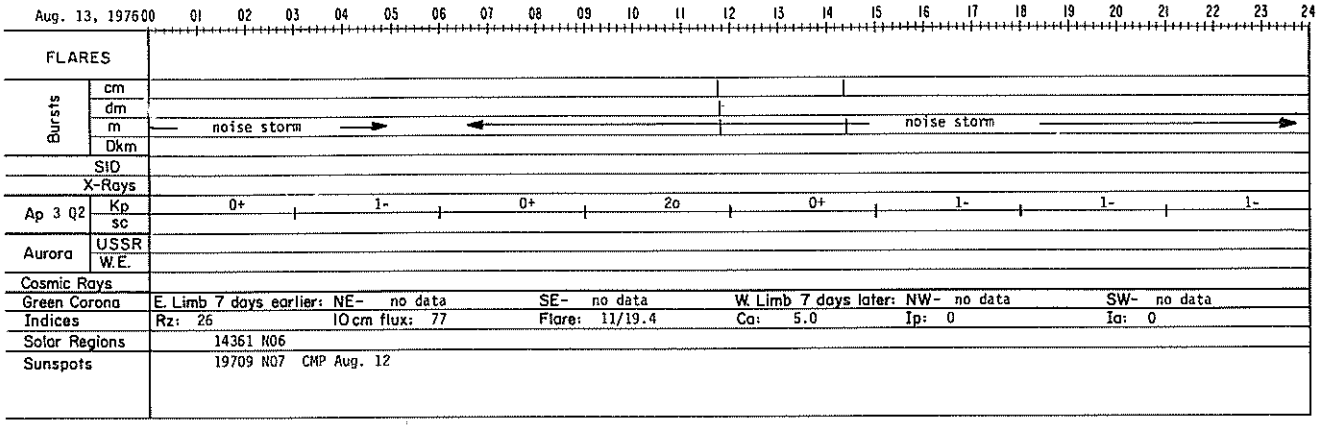

Aug. 8, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 4 Q5
Kp
sc
2- 2o 1- 0+ 0+ 1o 2o 1o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 27 10cm flux: 80 Flare: 8/14.4 Ca: 12.0 Ip: 0 Ia: 0
Solar Regions
Sunspots

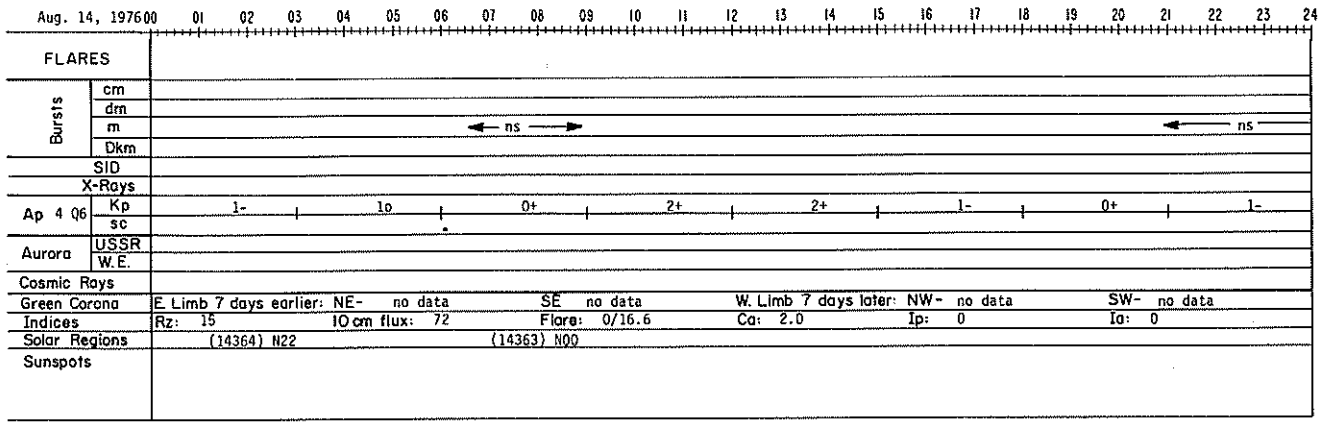

Aug. 9, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 12
Kp
sc
1+ 2- 4+ 3+ 3+ 1- 1o 2+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 31 10cm flux: 80 Flare: 4/22.4 Ca: 13.4 Ip: 0 Ia: 2
Solar Regions
Sunspots

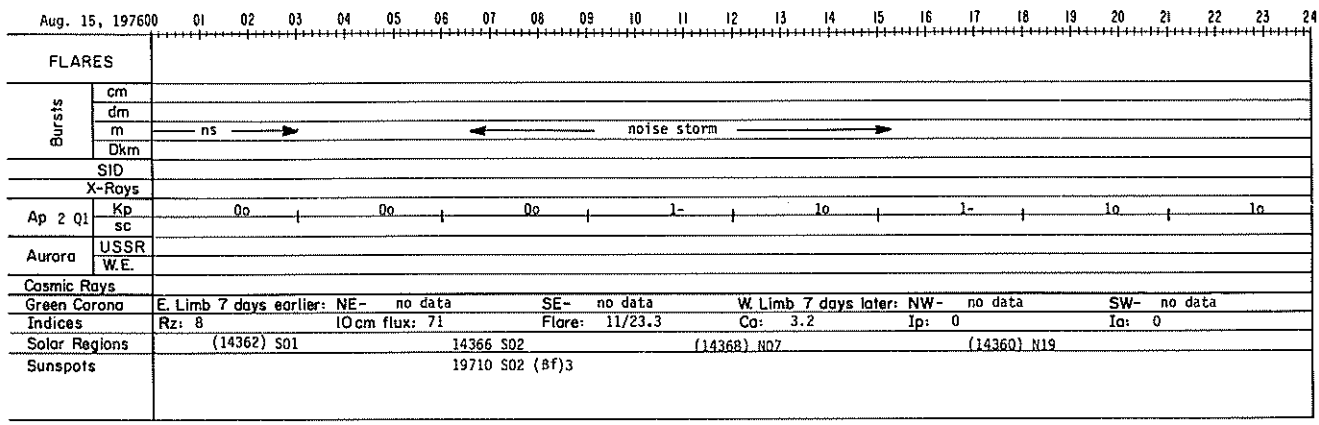

Aug. 10, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
noise storm
SID
X-Rays
Ap 9
Kp
sc
3o 4- 2- 2+ 2- 2- 0+ 2-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- SW-
Indices
Rz: 24 10cm flux: 81 Flare: 4/21.9 Ca: 11.6 Ip: 0 Ia: 3
Solar Regions
Sunspots

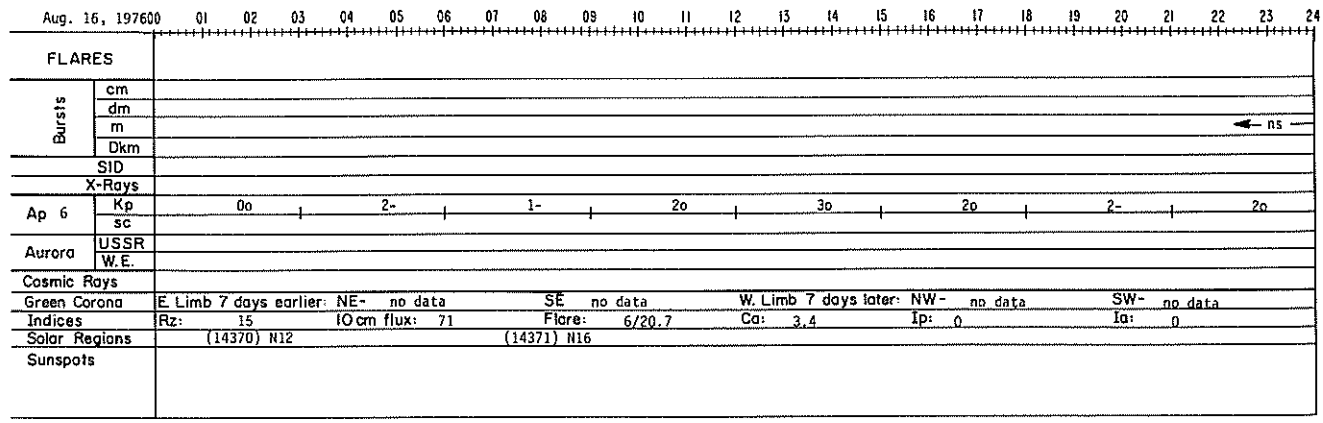

Aug. 11, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 5 Q10
Kp
sc
2o 2- 2+ 2- 1- 1- 1o 0o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- SW-
Indices
Rz: 23 10cm flux: 78 Flare: 0/23.6 Ca: 9.0 Ip: 0 Ia: 1
Solar Regions
14359 N28 (14354) N40 14358 N25 (14355) N24
Sunspots
(19708) N28 (αp)3 19707 N23 (β)3

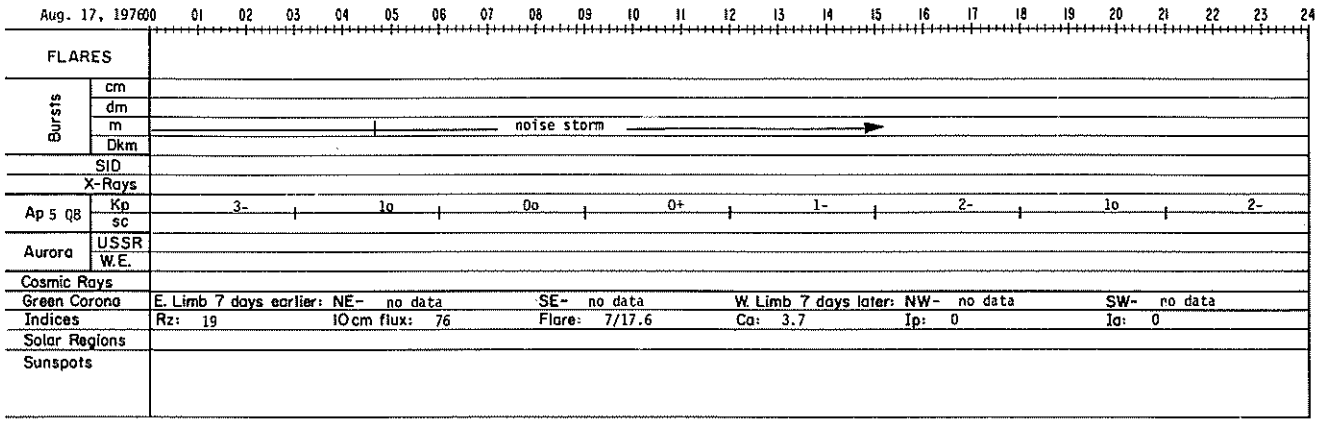

Aug. 12, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
SID
X-Rays
Ap 3 Q3
Kp
sc
1- 0+ 0o 1- 1o 1o 2- 1+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- SW-
Indices
Rz: 28 10cm flux: 78 Flare: 0/24.0 Ca: 7.3 Ip: 0 Ia: 0
Solar Regions
(14365) N21 (14357) S23 14356 S04
Sunspots
(19705) S22 (β)3 (19706) S04 (αp)4

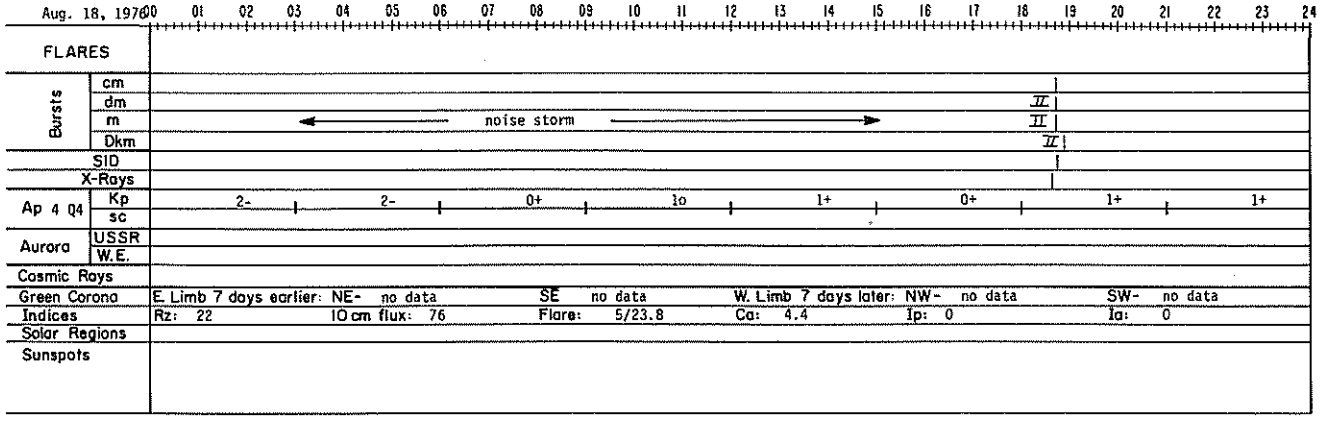

Aug. 13, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
noise storm
noise storm
SID
X-Rays
Ap 3 Q2
Kp
sc
0+ 1- 0+ 2o 0+ 1- 1- 1-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 26 10cm flux: 77 Flare: 11/19.4 Ca: 5.0 Ip: 0 Ia: 0
Solar Regions
14361 N06
Sunspots
19709 N07 CMP Aug. 12

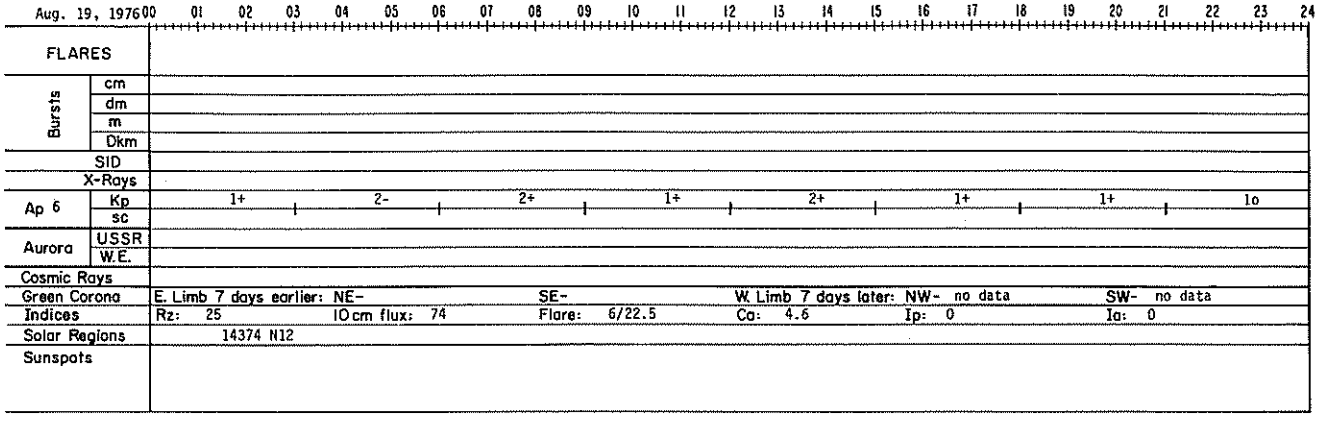

Aug. 14, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
ns
ns
SID
X-Rays
Ap 4 Q6
Kp
sc
1- 1o 0+ 2+ 2+ 1- 0+ 1-
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 15 10cm flux: 72 Flare: 0/16.6 Ca: 2.0 Ip: 0 Ia: 0
Solar Regions
(14364) N22 (14363) N00
Sunspots

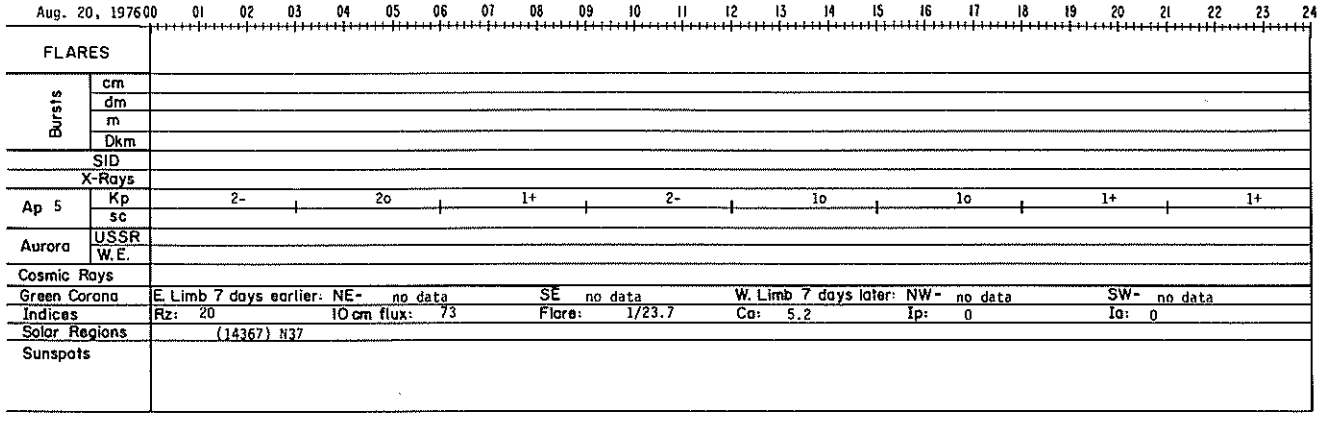

Aug. 15, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
ns
noise storm
SID
X-Rays
Ap 2 Q1
Kp
sc
0o 0o 0o 1- 1o 1- 1o 1o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 8 10cm flux: 71 Flare: 11/23.3 Ca: 3.2 Ip: 0 Ia: 0
Solar Regions
(14362) S01 14366 S02 (14368) N07 (14360) N19
Sunspots
19710 S02 (Bf)3


Aug. 16, 1976
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FLARES
Bursts
cm
dm
m
Dkm
ns
SID
X-Rays
Ap 6
Kp
sc
0o 2- 1- 2o 3o 2o 2- 2o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 15 10cm flux: 71 Flare: 6/20.7 Ca: 3.4 Ip: 0 Ia: 0
Solar Regions
(14370) N12 (14371) N16
Sunspots


Aug. 17, 1976
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 5 Q8
Kp
sc
3- 1o 0o 0+ 1- 2- 1o 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: 19
10cm flux: 76
Flare: 7/17.6
Ca: 3.7
Ip: 0
Ia: 0
Solar Regions
Sunspots


Aug. 18, 1976
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
II
II
II
SID
X-Rays
Ap 4 Q4
Kp
sc
2- 2- 0+ 1o 1+ 0+ 1+ 1+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data
W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 22
10cm flux: 76
Flare: 5/23.8
Ca: 4.4
Ip: 0
Ia: 0
Solar Regions
Sunspots


Aug. 19, 1976
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+ 2- 2+ 1+ 2+ 1+ 1+ 1o
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE-
SE-
W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 25
10cm flux: 74
Flare: 6/22.5
Ca: 4.6
Ip: 0
Ia: 0
Solar Regions
14374 N12
Sunspots


Aug. 20, 1976
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 5
Kp
sc
2- 2o 1+ 2- 1o 1o 1+ 1+
Aurora
USSR
W.E.
Cosmic Rays
Green Corona
E. Limb 7 days earlier: NE- no data SE no data
W. Limb 7 days later: NW- no data SW- no data
Indices
Rz: 20
10cm flux: 73
Flare: 1/23.7
Ca: 5.2
Ip: 0
Ia: 0
Solar Regions
(14367) N37
Sunspots

Aug. 21, 1976 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 8	Kp	1- 1- 3- 2+ 1+ 2o 3- 3-
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices		Rz: 17 10cm flux: 72 Flare: 3/23.0 Ca: 5.6 Ip: 0 Ia: 1
Solar Regions		(14380) N28
Sunspots		

Aug. 22, 1976 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	IV
SID		
X-Rays		
Ap 5	Kp	3- 1+ 0+ 2- 1+ 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- no data SW- no data
Indices		Rz: 8 10cm flux: 71 Flare: 9/23.1 Ca: 5.7 Ip: 0 Ia: 1
Solar Regions		(14377) N07
Sunspots		

Aug. 23, 1976 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		
Ap30 D1	Kp	2- 2o 4o 4+ 4+ 5o 4- 6-
	sc	
Aurora	USSR	ϕ = 61° 1700-1800 (R_1B_2)
	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: 9 10cm flux: 69 Flare: 0/22.5 Ca: 5.7 Ip: - Ia: 0
Solar Regions		(14392) S13
Sunspots		

Aug. 24, 1976 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 25 D3	Kp	4o 4- 3+ 6- 4- 4- 3o 2o
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- no data SW- no data
Indices		Rz: 15 10cm flux: 69 Flare: 0/21.7 Ca: 6.4 Ip: - Ia: 5
Solar Regions		(14385) N26
Sunspots		

Aug. 25, 1976 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		
Ap24 D2	Kp	4+ 4o 4o 4o 4- 4- 4- 3o
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE- W. Limb 7 days later: NW- SW-no data 180°-250°
Indices		Rz: 10 10cm flux: 69 Flare: 5/23.8 Ca: 4.1 Ip: - Ia: 5
Solar Regions		14375 S12
Sunspots		19711 S12 (αp)3 CMP Aug. 24

Aug. 26, 1976 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

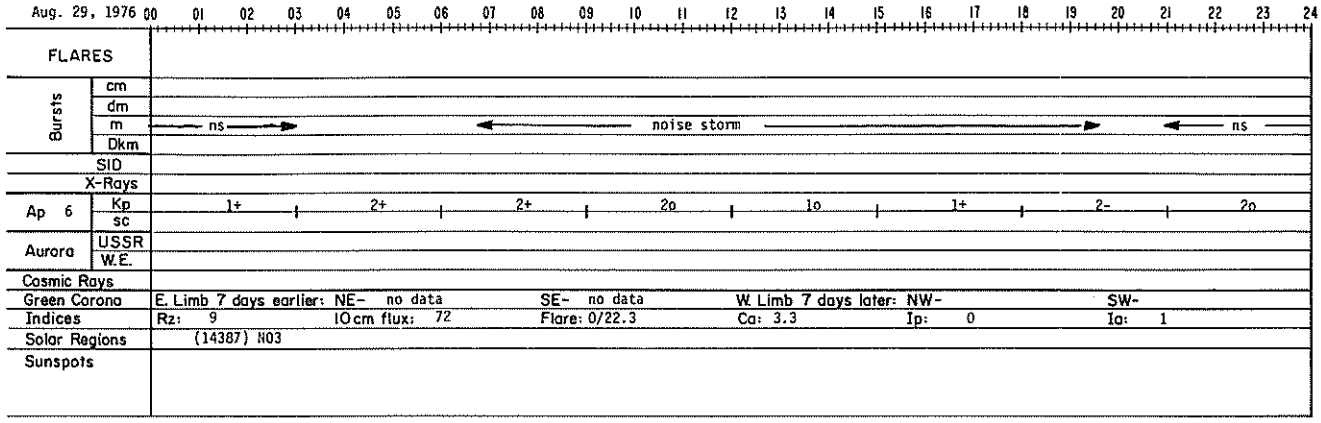
FLARES		
Bursts	cm	
	dm	
	m	
	Dkm	
SID		
X-Rays		
Ap18 D4*	Kp	4- 4o 4o 3o 3o 2+ 3o 3o
	sc	
Aurora	USSR	
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- SE W. Limb 7 days later: NW- no data 280° SW-
Indices		Rz: 14 10cm flux: 69 Flare: 0/20.4 Ca: 3.4 Ip: 0 Ia: 5
Solar Regions		(14388) N08
Sunspots		

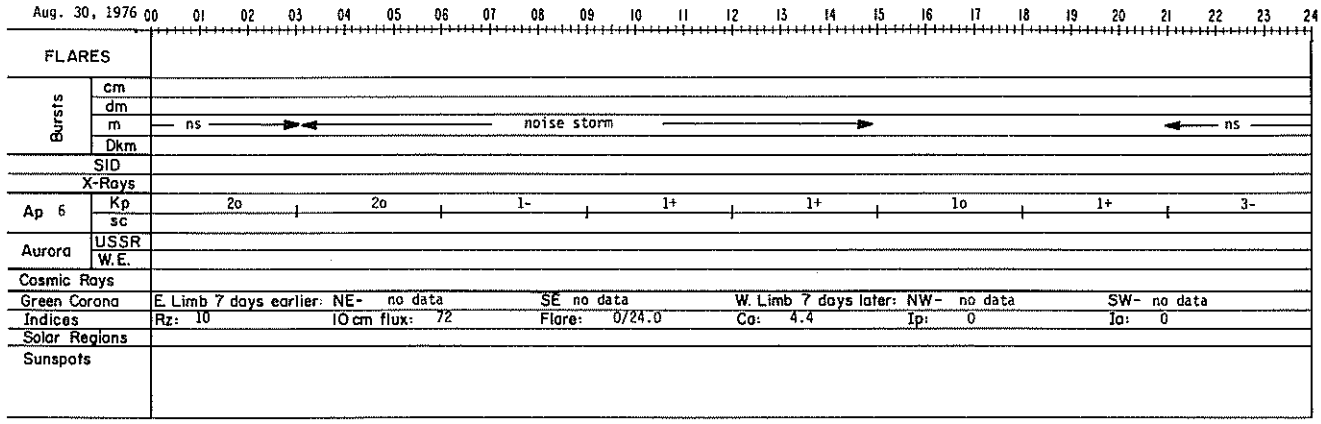
Aug. 27, 1976 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

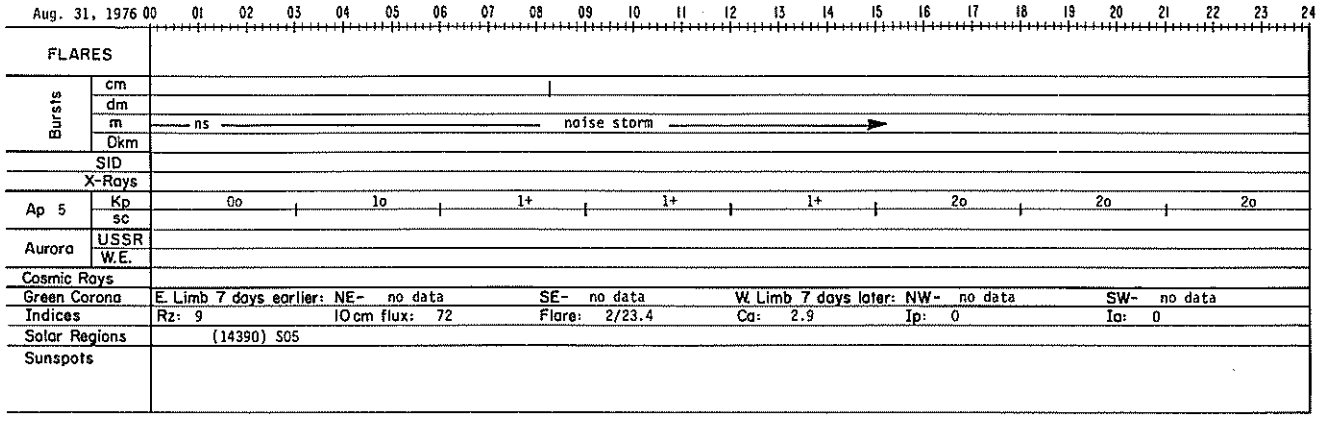
FLARES		
Bursts	cm	
	dm	
	m	← noise storm → ns
	Dkm	
SID		
X-Rays		
Ap13 D5*	Kp	3o 2- 2- 4+ 2- 2o 3+ 3-
	sc	
Aurora	USSR	ϕ = 59° 1700 (HA)
	W.E.	
Cosmic Rays		
Green Corona		E. Limb 7 days earlier: NE- no data SE- no data W. Limb 7 days later: NW- no data SW- no data
Indices		Rz: 7 10cm flux: 70 Flare: 0/24.0 Ca: 3.6 Ip: 0 Ia: 3
Solar Regions		(14386) N18 (14381) N28 (14403) N18 14389 S08
Sunspots		(19714) N19 (βp)3 19712 S07 (αp)2

Aug. 28, 1976 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	ns → ← noise storm → ← ns
	Dkm	
SID		
X-Rays		
Ap 10	Kp	2+ 2o 2+ 2+ 3- 3+ 3+ 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: 8 10cm flux: 71 Flare: 0/23.7 Ca: 3.6 Ip: 0 Ia: 2
Solar Regions		(14382) N02 (14393) S33
Sunspots		







REGIONAL FLARE INDEX

INCLUDES ALL FLARES

MC MATH PLAGE NO.	LAT	CMP DATE	DATE FIRST FLARE	DATE LAST FLARE	FLARE-INDEX SUM	FLARE-INDEX MEAN	TOTAL NO. OF FLARES
14345	N 6	76/08/04.0	76/08/05	76/08/05	3.43	3.43	1
14352	N18	76/08/07.8	76/08/01	76/08/10	53.23	5.32	18
14358	N26	76/08/11.7	76/08/13	76/08/13	12.56	12.56	2
14356	S 4	76/08/12.9	76/08/18	76/08/18	.84	.84	1
14366	S 3	76/08/15.8	76/08/15	76/08/22	36.48	4.56	16
14375	S12	76/08/25.2	76/08/18	76/08/25	15.05	1.88	8
14403	N18	76/09/27.8	76/08/31	76/09/04	15.71	3.14	17

Note:
Because of differences in method of calculation, the dates of Central Meridian Passage for the McMath Plage Regions vary somewhat from those given elsewhere. Any region not listed here produced no flares during its disk passage.

Miscellaneous Data

Contents

EAST-WEST SOLAR SCANS

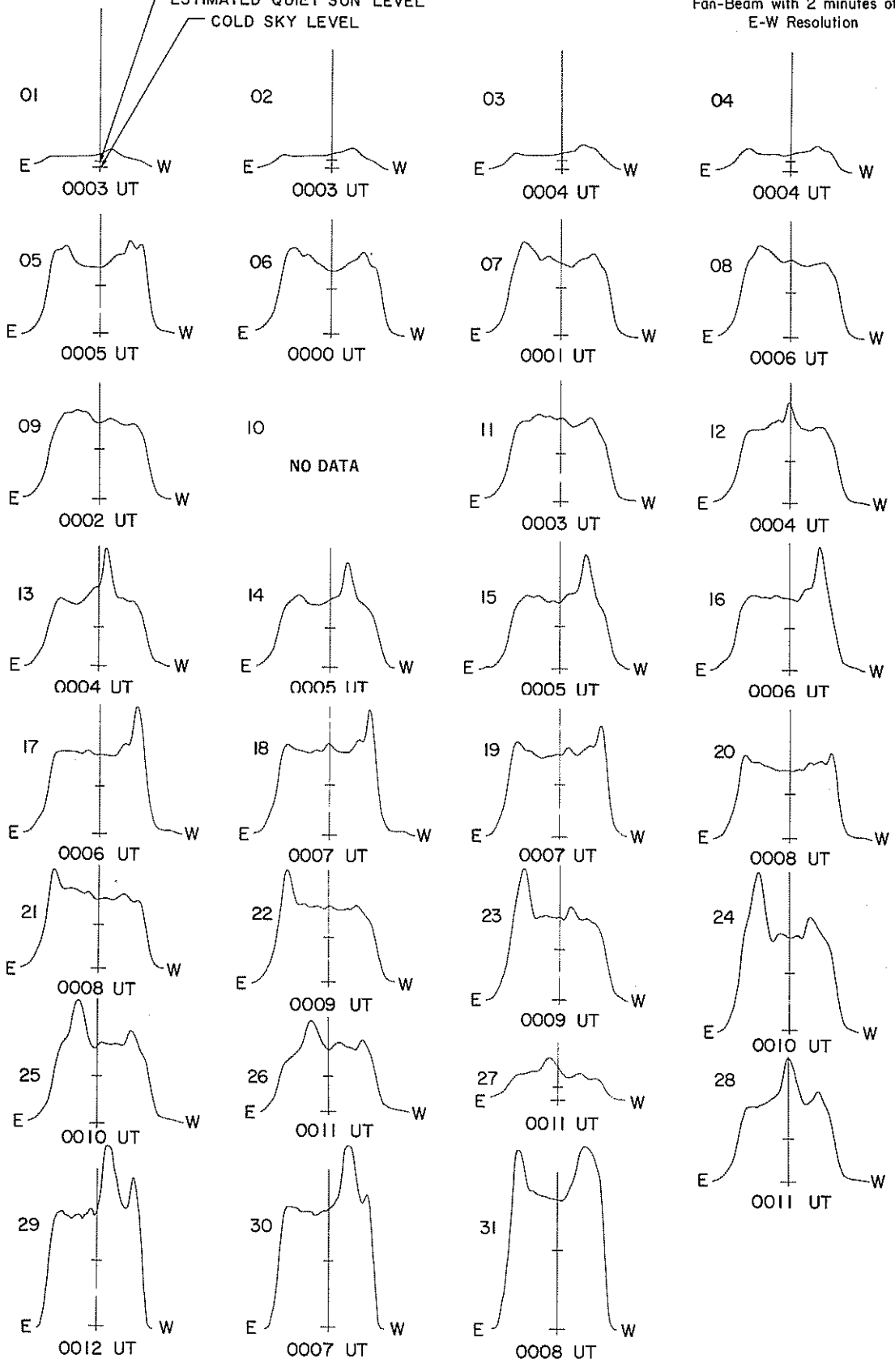
JANUARY 1977

Fleurs, Australia

ESTIMATED QUIET SUN LEVEL

COLD SKY LEVEL

21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution



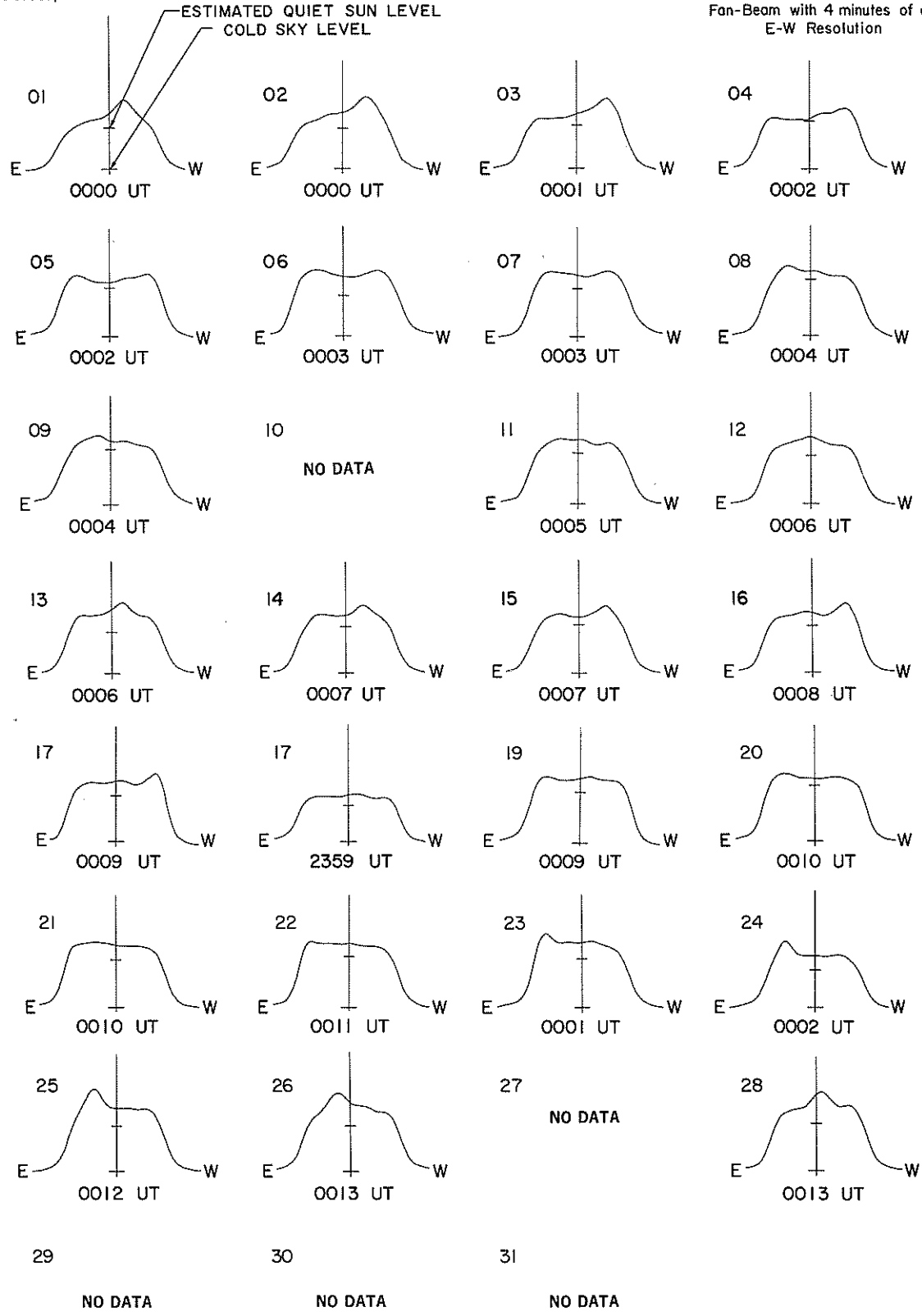
EAST-WEST SOLAR SCANS

JANUARY 1977

Fleurs, Australia

ESTIMATED QUIET SUN LEVEL
COLD SKY LEVEL

43 cm
Fan-Beam with 4 minutes of arc
E-W Resolution



SELECTED SOLAR EVENTS

NOVEMBER 1976

Culgoora

UT Date 1976 NOVEMBER	HELIOGRAPH EVENT							Spectral Type	REMARKS
	Start (UT)	End (UT)	Freq. (MHz)	Positions: Central Dist. ($R_\odot$)	Positions: Position Angle (Deg.)	Polarization	Intensity (1-3)		
17/18	2300	0500	80 160	1.0	85	ℓ	1	I	Type I emission from this region continued until 26th, with accompanying type III activity
19	0052	0053	80 160	1.0	90	-	2 3	IIIG, U	*
23	0213		43.25 80 160	.5 .4 .3	0		3 2 1	IIIB	*
26	0126	0128	43.25	1.1 1.0	270 250		3		
			80	1.1 1.0	270 250	-	2	IIIG	
			160	1.1	270		2		

Days without Heliograph observations: Nil

* Other type III's observed at same position during the day.

SELECTED SOLAR EVENTS

Culgoora

DECEMBER 1976

UT Date 1976 DECEMBER	HELIOGRAPH EVENT							Spectral Type	REMARKS
	Start (UT)	End (UT)	Freq. (MHz)	Positions: Central Dist. (R_o)	Positions: Position Angle (Deg.)	Polarization	Intensity (1-3)		
9	0203	0210	80 160	.9	80 85	-	3	II	Small noise storm at 160 MHz only from this same region.
9/10	2300	0500	80 160	.9	60	r	2 1	I	Type I activity persisted until Dec. 12, from this region
12	0010	0230	80	1.2	115	o	1	I	
13	2316	2318	43.25 80 160	.75	310		2 2 1	IIIG	
14/15	2300	0500	160	.6	210	ℓ	1	I	Weak noise storm persisted until Dec. 17.
17/18	2300	0500	80 160	.9 .8	55 60	ℓ	2 1	I	Type I activity from this region from 17 to 26th December. Type III activity also from this region.
18/19	2255	2310	43.25 80	1.1	300		2 1	IV	Type II 2152 - 2206 before start of observations.
19	0102	0107	43.25 80 160	.8	60	-	3 3 2	IIICG	*
21	0007.5	0008	80	1.0	330	-	2	IIIG	*
23	0255	0256	43.25 80	1.5 1.1	310	-	2 2	IIIG	*
24/25	2300	0500	160	1.2	120	ℓ	1	I	Type I persisted until December 31
28	0025	0028	43.25 80 160	1.1 1.0 .9	290	-	3 2 2	IIIG	*

Days without Heliograph observations: Nil

* Other type III's observed at same position during the day.

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1976

	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	0000	0800	CULG										
	2130	2400	CULG				2130	2400	1				IS
02	0000	0705	CULG										
	2015	2154	CULG										
03	0453	0721	CULG										
	2040	2400	CULG				2047		1				IIIB
04	0000	0658	CULG				0441.5		1				IIIB
	2134	2233	CULG										
05	2050	2400	CULG										
06	0000	0721	CULG										
	2021	2400	CULG										
07	0000	0659	CULG										
	2024	2400	CULG										
08	0000	0724	CULG										
	2024	2400	CULG	2306	2308		2306	2308					IIIG,W
09	0000	0725	CULG	0202	0203	1							FASTDRIFT
			CULG	0203	0208	2	0203	0218	2				II, HB
	2025	2400	CULG	2100	2400		2100	2400					IS,W
			CULG	2235	2236		2235	2236					IIIG,W
			CULG	2322	2322.5	1							FASTDRIFT
			CULG	2351	2351.5	1	2351	2351.5	1				IIIG
10	0000	0725	CULG	0000	0100		0000	0100					IS,W
			CULG	0017	0025	1	0017	0025	1				IIIN
			CULG	0150	0151	1	0150	0151	1				IIIG,U
			CULG	0707	0709	1							IIIG
	2025	2400	CULG				2118	2119	1				IIIG,V,U
			CULG	2337	2337.5	1	2337	2337.5	1				IIIG
11	0000	0725	CULG										
	2025	2400	CULG				2128	2130	1	2129	2131	1	IIIG,V,U
12	0000	0712	CULG										
	2026	2400	CULG										
13	0000	0726	CULG										
	2026	2400	CULG				2159.5		1				IIIB
			CULG				2314.5	2319		2316	2319	1	IIIG
14	0000	0727	CULG				0157	0157.5	1	0157.5	0158	1	IIIG
	2027	2400	CULG	2027	2400	1	2027	2400	1				IS
			CULG				2031						IIIB,W
			CULG	2220	2221		2220	2221					IIIG,W
15	0000	0727	CULG	0000	0727		0000	0727					IS,W
			CULG	0645	0646	1	0645	0646	1				IIIG
	2028	2400	CULG				2121	2124	1				IIIG
			CULG				2151	2153	1				IIIG
			CULG				2157	2159.5	2				IIIG
			CULG	2209	2210	1	2209	2210	2	2209	2209.5	1	IIIG
			CULG				2352	2352.5	1				IIIG
16	0000	0727	CULG										
	2028	2400	CULG	2028	2400	1	2028	2400	1				IS
			CULG				2122	2126	1				IIIG
			CULG				2156	2206	1				IIIN
			CULG				2312.5	2313	1				IIIG,U
17			CULG				0000	0712	1				IIIN
	0000	0712	CULG	0000	0130		0000	0130					IS,W
			CULG				0605	0625					IS,W
			CULG	0610	0625								IS,W

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1976

	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	
17			CULG				2029	2400	1				IIIS
	2029	2400	CULG				2029	2400	1				IS
			CULG				2034	2036	2				IIIG
			CULG	2255	2400								IS,W
18			CULG				0000	0729	1				IIIN
	0000	0729	CULG	0000	0030		0000	0340					IS,W
			CULG				0003.5	0004.5	1				IIIG
	2029	2400	CULG				2029	2400	1				IIIN
			CULG				2152	2206	2				II
			CULG				2155	2305	1				IV
			CULG				2240	2241	1				IIIG
			CULG	2255	2400	1	2255	2400	1				IS
			CULG				2306.5	2309	2	2306.5	2308	1	IIIGG
19	0000	0730	CULG	0000	0025	1	0000	0730	1				IS
			CULG				0000	0730	1				IIIN
			CULG				0103	0107	2				IIIGG
			CULG				0239	0240	2				IIIG
			CULG				0249		1	0249		1	IIIB
			CULG				0611	0612	2	0611	0611.5	1	IIIG
	2030	2400	CULG				2030	2400	1	2030	2400	1	IIIN
			CULG	2054	2055	2	2054	2055	2	2054	2055	2	IIIG
			CULG				2115.5		2				IIIB
			CULG	2123	2124	1	2123	2124	2	2123	2124	1	IIIG
20	0000	0730	CULG				0000	0730	1				IIIS
			CULG							0000	0730	1	IIIN
	2030	2400	CULG				2303.5	2304.5	2	2304	2304.5	1	IIIG
21	0000	0730	CULG				0000	0730	1				IIIN
			CULG				0007.5	0008	1	0008	0008.5	1	IIIG
			CULG				0015	0015.5	1	0015	0015.5	1	IIIG
			CULG				0304.5	0305	1	0304.5	0305	1	IIIG
			CULG	0458	0458.5	1	0458	0459	2	0458	0459	2	IIIG
	2030	2400	CULG				2030	2400	1				IIIN
22	0000	0716	CULG				0000	0716	1				IIIN
	2030	2400	CULG				2030	2400	1				IIIN
23	0000	0731	CULG				0000	0731	1				IIIN
			CULG	0235.5	0236	1	0235.5	0236	1				IIIG,U
			CULG				0255	0255.5	2	0255.5	0256	2	IIIG
			CULG				0307	0307.5	2	0307	0307.5	1	IIIG
			CULG	0719	0726	1	0718	0726	2				IIIGG,V
	2030	2400	CULG				2030	2400	1				IIIN
24	0000	0731	CULG				0000	0731	1				IIIN
			CULG	0050.5		1	0050.5		2				IIIB
			CULG	0253	0254	1	0253	0254	1				IIIG
	2031	2400	CULG										
25	0000	0732	CULG	0104	0104.5	1	0101	0107.5	2				IIIG
			CULG				0111.5	0112.5					IIIG,W
			CULG				0210	0211	1				IIIG
			CULG				0229	0230	1				IIIG
			CULG				0635.5						IIIB,W
			CULG				0709	0710	1				IIIG,U
	2032	2400	CULG	2032	2400	1	2032	2400	1				IS
			CULG	2049.5		1	2049.5		1				IIIB
26	0000	0732	CULG	0000	0040	1	0000	0230	1				IS
			CULG				0017	0017.5	1				IIIG
			CULG				0219.5						IIIB,W
			CULG				0220.5	0221.5	1				IIIG,U
			CULG				0346.5	0347.5					IIIG,W
			CULG				0559.5	0601	1				IIIG
	2033	2400	CULG				2140	2400	1				IS
			CULG				2315	2315.5					IIIG,W
27	0000	0733	CULG				0000	0530					IS,W

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1976

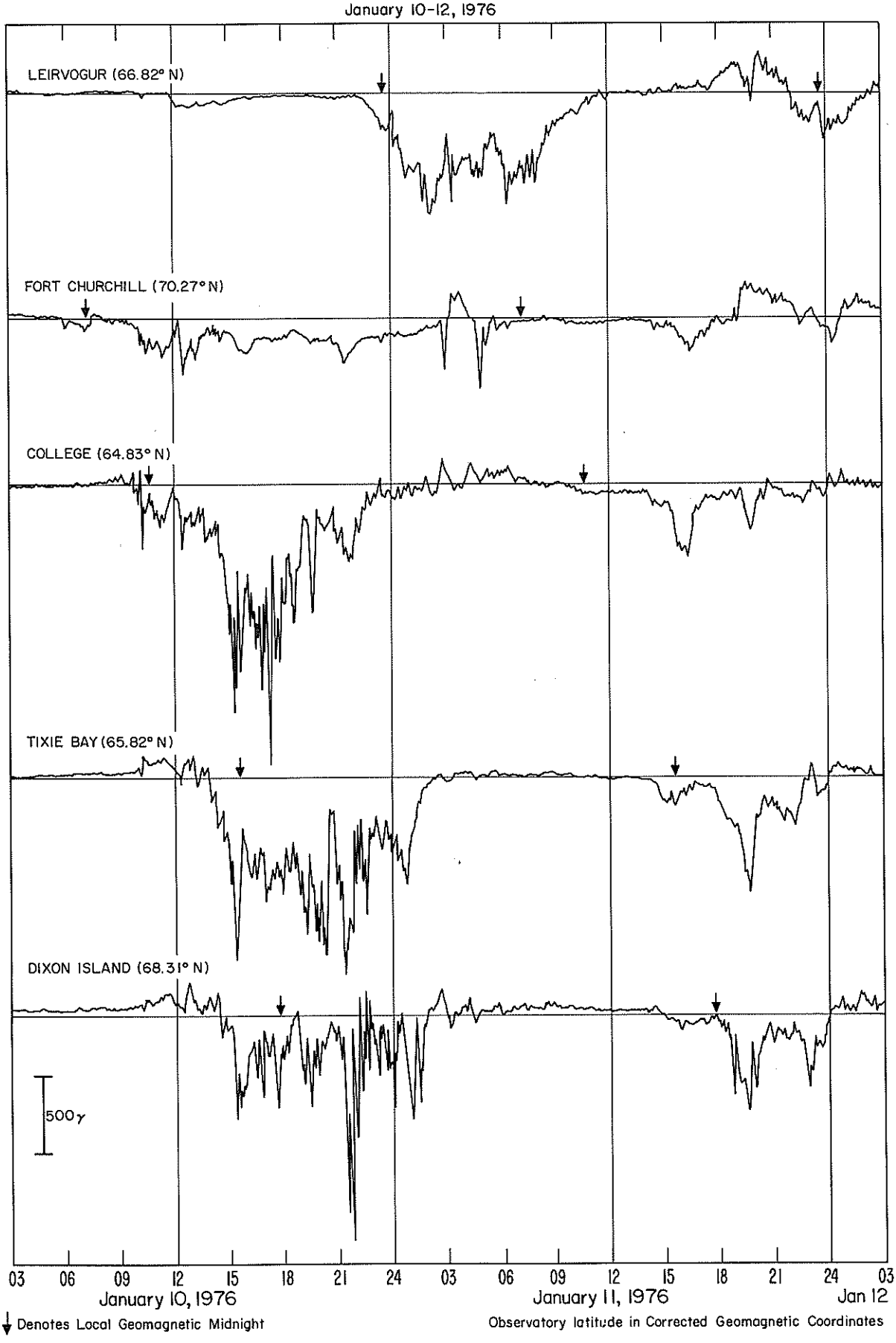
	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
27			CULG				0654	0656	1				IIIG
			CULG				0723	0724	1				UNCLF
			CULG				0728	0728					IIIG,W
	2052	2400	CULG				2100	2400	1				IIIN
28	0000	0733	CULG				0000	0733	1				IIIN
			CULG				0026	0027	1				IIIG
			CULG	0307.5	0308	1	0307.5	0308.5	2	0308	0308.5	1	IIIG
			CULG	0659.5	0701.5	1	0659.5	0701.5	2				IIIG
	2034	2400	CULG				2106		1				IIIB,U
			CULG				2116	2225	1				IS
			CULG				2246						IIIB,W
29	0000	0734	CULG				0004	0005	1				IIIG,U
			CULG	0107	0108	1	0107	0108	1				IIIG
			CULG				0224		1				IIIB
			CULG				0242	0243.5	1				IIIG
			CULG				0703						IIIB,W
			CULG				0722						IIIB,W
			CULG				2034	2400					IIIN,W
	2034	2400	CULG	2034	2235		2034	2400					IS,W
30	0000	0735	CULG				0000	0640					IN,W
			CULG				0221.5	0222.5	2				IIIG
			CULG				0304	0305	1				IIIG
			CULG				0512	0514	1				IIIG,U
			CULG				0640	0735	1				IS
			CULG				0650.5						IIIB,W
			CULG				0715	0715.5	1				IIIG
	2035	2400	CULG				2035	2400	1				IS
			CULG				2035	2400	1				IIIN
			CULG				2143	2143.5	2				IIIG
			CULG				2222		1				IIIB
			CULG				2229.5	2230	1				IIIG
			CULG				2233	2234	2				IIIG
			CULG				2247.5	2248.5	2				IIIG
31			CULG	0000	0345	1	0000	0735	1				IIIN
	0000	0735	CULG				0000	0530	1				IS
			CULG	0130	0556								IN,W
			CULG	0140	0142		0140	0142	2	0140.5	0141.5	1	IIIG,V,U
			CULG				0207.5	0209	2	0207.5	0209	1	IIIG
			CULG	0534	0536	1	0534	0536	2				IIIG
			CULG				0728	0729	2				IIIG
	2035	2218	CULG				2035	2045					IS,W
			CULG				2100						IIIB,W
			CULG				2102.5						IIIB,W
	2240	2400	CULG				2327.5						IIIB,W
			CULG				2332	2333					IIIG,W

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

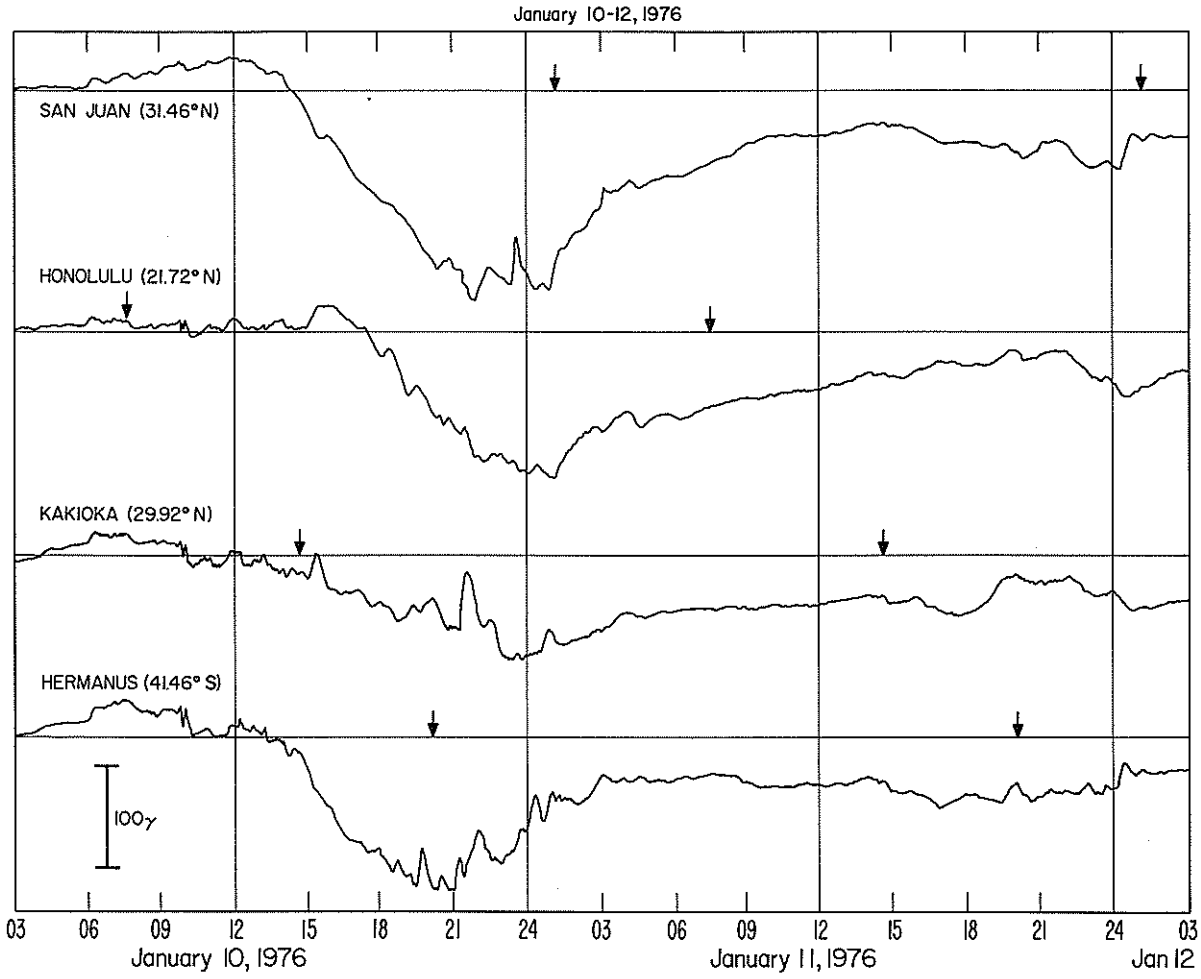
B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of bursts
C = Underlying continuum (particularly with type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III
RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity

H-COMPONENT MAGNETOGRAMS OF GEOMAGNETIC STORMS

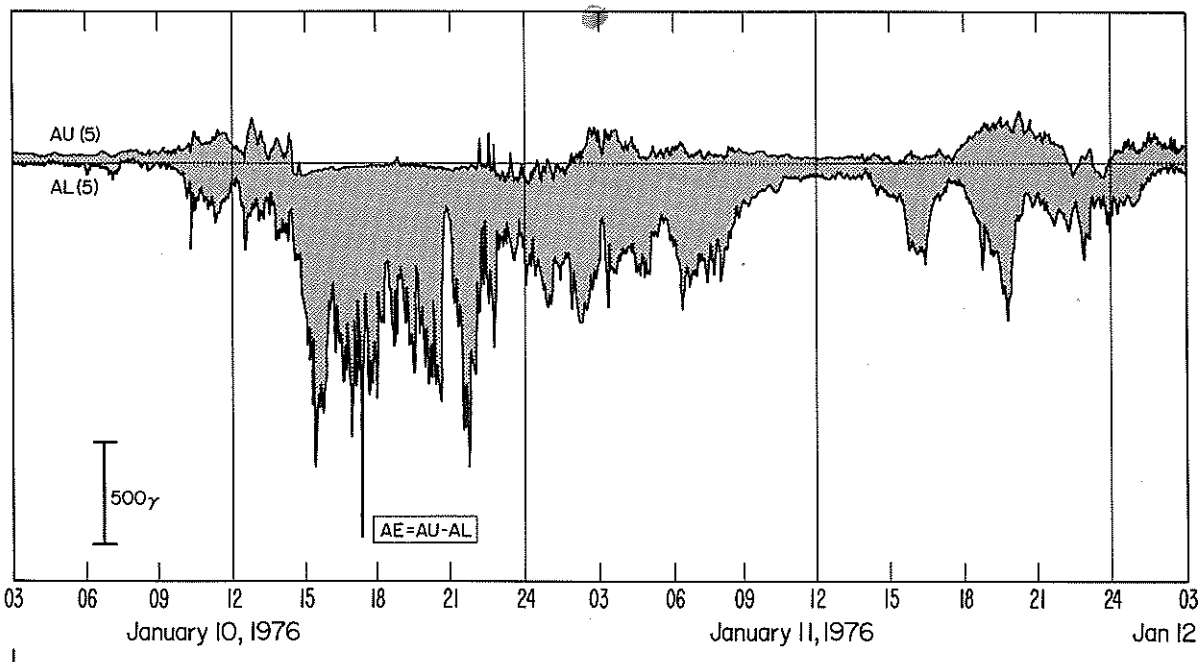
January 10-12, 1976



H-COMPONENT MAGNETOGRAMS OF GEOMAGNETIC STORMS



PRELIMINARY AU (5) AND AL(5) 1-MIN. INDICES

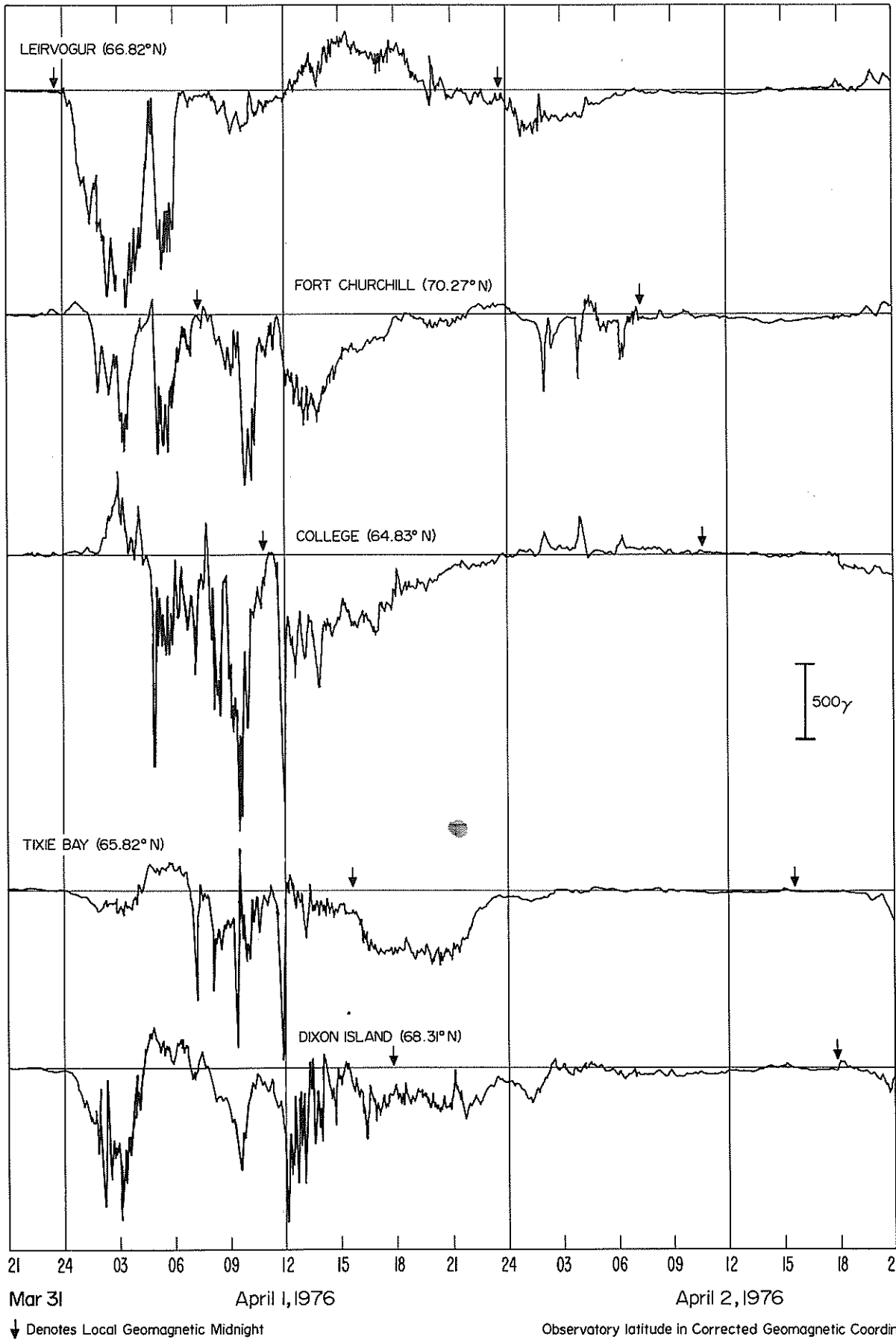


↓ Denotes Local Geomagnetic Midnight

Observatory latitude in Corrected Geomagnetic Coordinates

H-COMPONENT MAGNETOGRAMS OF GEOMAGNETIC STORMS

March 31 - April 2, 1976

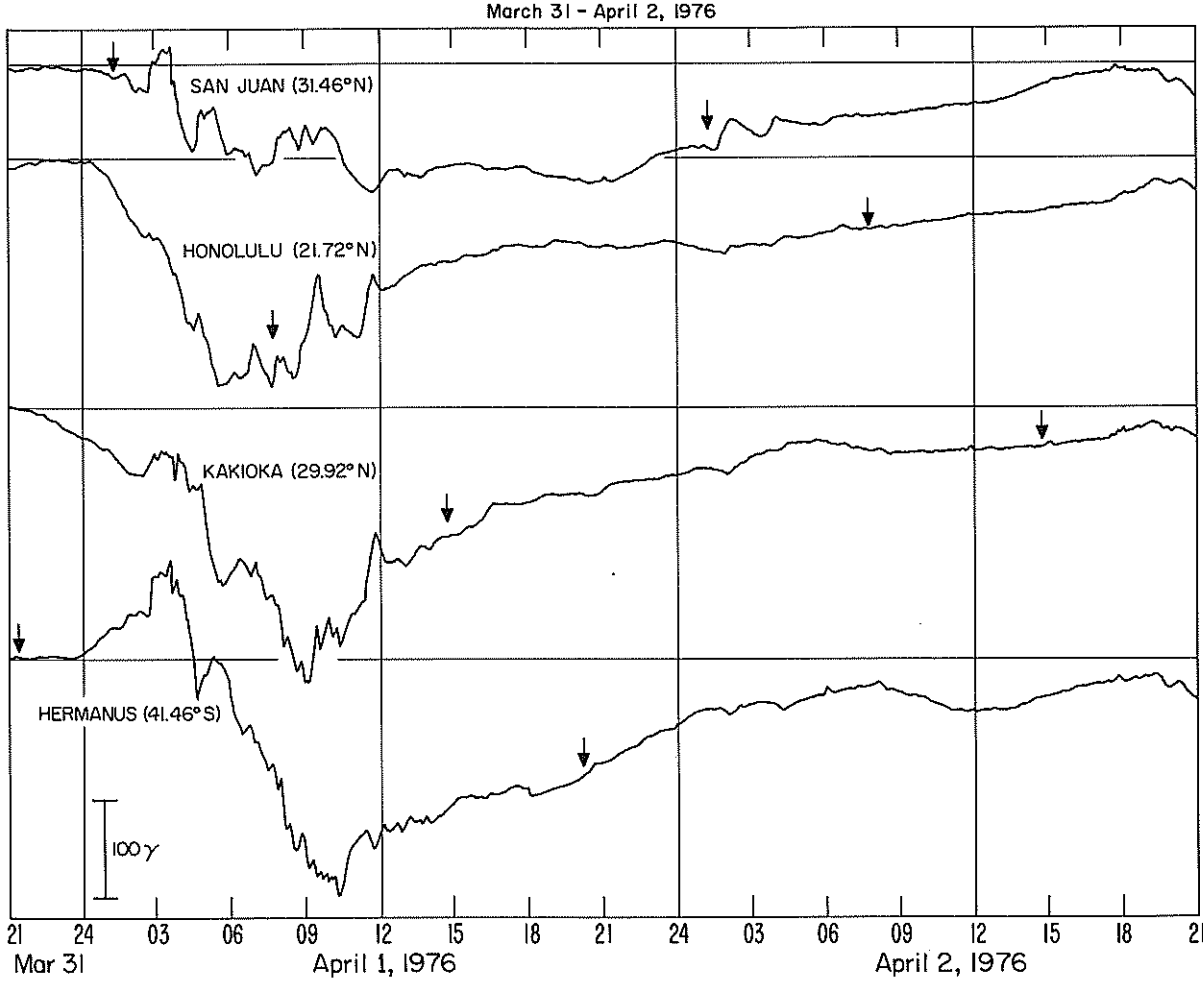


↓ Denotes Local Geomagnetic Midnight

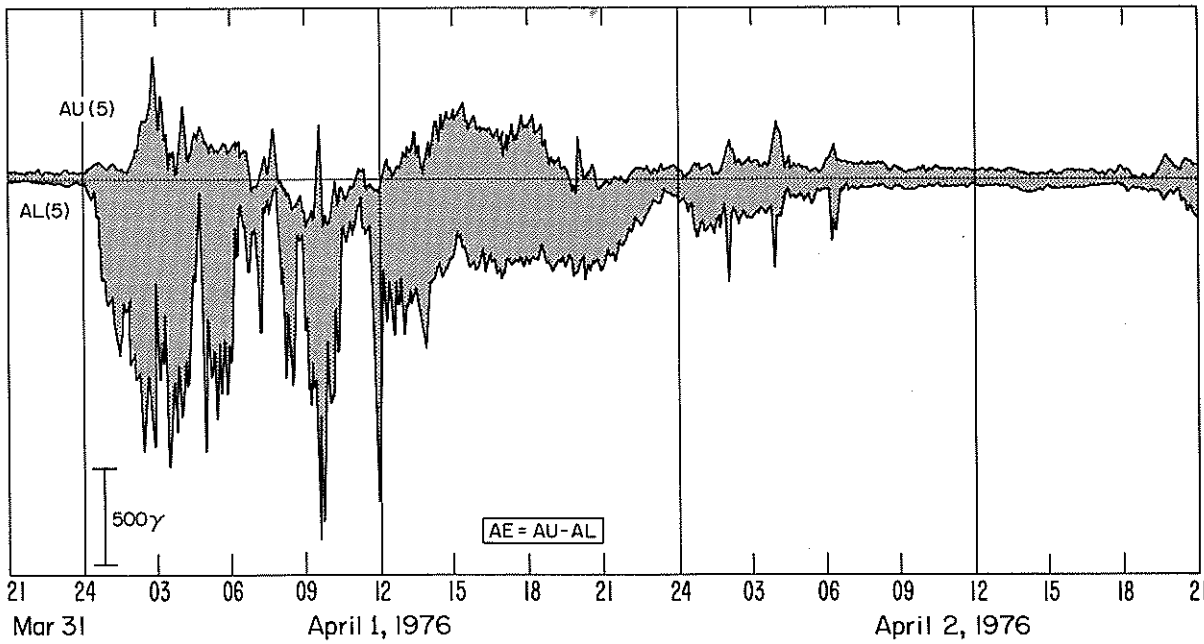
Observatory latitude in Corrected Geomagnetic Coordinates

H-COMPONENT MAGNETOGRAMS OF GEOMAGNETIC STORMS

March 31 - April 2, 1976



PRELIMINARY AU (5) AND AL(5) 1-MIN. INDICES



↓ Denotes Local Geomagnetic Midnight

Observatory latitude in Corrected Geomagnetic Coordinates

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

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