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Solar - Geophysical Data

NO. 384 AUGUST 1976

Part II (Comprehensive Reports)

DATA FOR
FEBRUARY 1976
JANUARY 1976
& MISCELLANEA

**NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO**

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SOLAR - GEOPHYSICAL DATA

No. 384

Issued in two parts

Hope I. Leighton, Editor

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Solar - Terrestrial Data Services Division

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FEBRUARY 1976 DATA

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Feb 76

H α SOLAR FLARES

FEBRUARY 1976

OBSERVATORY	OBSERVED UT				LOCATION				DURATION MIN.	IMPOR- TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE FEB	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	McMATH FLARE REGION			CNR DAY	COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk		CORR AREA Sq. Deg.
					LAT.	MER. DIST.											
149 ABST	01	0348	0418	NO FLARE	PATROL												
	01	0820E	0821	0825D	S02 W65	.906	14047	27.5	50	-F	P	0821	87	1.9	D		
	01	1509	1644	NO FLARE	PATROL												
	01	1657	1704	NO FLARE	PATROL												
	01	1712	1716	NO FLARE	PATROL												
	01	1719	1731	NO FLARE	PATROL												
	01	1747	1803	NO FLARE	PATROL												
	01	1809	1829	NO FLARE	PATROL												
	01	1917	2114	NO FLARE	PATROL												
	01	2221	2248	NO FLARE	PATROL												
	02	2310	2350	NO FLARE	PATROL												
02	0020	0048	NO FLARE	PATROL													
150 HCMA	02	1334	1340	1348	S04 W88	.999	14047	27.0	14	-F	C	1340			D		
	02	2015	2035	NO FLARE	PATROL												
	02	2134	2151	NO FLARE	PATROL												
	02	2229	2315	NO FLARE	PATROL												
	03	1628	1631	NO FLARE	PATROL												
	03	1635	1645	NO FLARE	PATROL												
	03	2020	2027	NO FLARE	PATROL												
	03	2123	2128	NO FLARE	PATROL												
	03	2129	2144	NO FLARE	PATROL												
	03	2201	2210	NO FLARE	PATROL												
	03	2238	2248	NO FLARE	PATROL												
	04	0515	0529	NO FLARE	PATROL												
	04	0925	0930	NO FLARE	PATROL												
	04	1718	1730	NO FLARE	PATROL												
	04	1753	1818	NO FLARE	PATROL												
	04	1908	2028	NO FLARE	PATROL												
	04	2032	2057	NO FLARE	PATROL												
	04	2101	2315	NO FLARE	PATROL												
	05	0830	0910	NO FLARE	PATROL												
	05	0915	0925	NO FLARE	PATROL												
	05	2205	2210	NO FLARE	PATROL												
	06	0451	0504	NO FLARE	PATROL												
	06	0511	0530	NO FLARE	PATROL												
	06	0602	0605	NO FLARE	PATROL												
	07	0332	0339	NO FLARE	PATROL												
	07	0623	0638	NO FLARE	PATROL												
	07	1856	1902	NO FLARE	PATROL												
	07	1914	1920	NO FLARE	PATROL												
	07	1924	1928	NO FLARE	PATROL												
	08	0337	0349	NO FLARE	PATROL												
	08	0355	0422	NO FLARE	PATROL												
	08	0424	0454	NO FLARE	PATROL												
	08	0456	0500	NO FLARE	PATROL												
	08	2213	2225	NO FLARE	PATROL												
09	0907	1002	NO FLARE	PATROL													
09	1300	1305	NO FLARE	PATROL													
09	1749	1954	NO FLARE	PATROL													
09	2213	2354	NO FLARE	PATROL													
10	0004	0010	NO FLARE	PATROL													
10	0058	0135	NO FLARE	PATROL													
10	0210	0225	NO FLARE	PATROL													
10	0445	0500	NO FLARE	PATROL													
10	0609	0617	NO FLARE	PATROL													
151 HTPR	10	1111	1114	1120	N25 W30	.682	14078	8.2	9	-N	C	1114	60	.8	E		
	10	1312	1327	NO FLARE	PATROL												
	10	1336	1346	NO FLARE	PATROL												
	10	1509	1519	NO FLARE	PATROL												
	10	1528	1535	NO FLARE	PATROL												
	10	1545	1633	NO FLARE	PATROL												
	11	1442	1510	NO FLARE	PATROL												
	11	1544	1545	NO FLARE	PATROL												
	11	2100	2300	NO FLARE	PATROL												
	12	1301	1323	NO FLARE	PATROL												
	12	1326	1405	NO FLARE	PATROL												
	12	1530	1600	NO FLARE	PATROL												
	12	1727	1757	NO FLARE	PATROL												
	152 BOUL	12	2141	2145	2158	S12 E13	.240	14079	13.9	17	-F	2 C	2145	32	.3		

H α SOLAR FLARES

FEBRUARY 1976

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IMPORTANCE	OBS. CORR TYPE	MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	McMATH FLARE REGION	CMR DAY				TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq Deg	
	FEB				LAT.	MER. DIST.										
	12	2320	0000	NO FLARE PATROL												
153 ABST	13	0832E	0834	0842D	S12	E06	.138	14079	13.8	100	-F	P	0834	87	.9	EJ
154 CATA	13	1000	1000	1005	S12	E06	.138	14079	13.9	5	-N	1	1000	56	.4	
	13	1232	1250	NO FLARE PATROL												
	14	0200	0215	NO FLARE PATROL												
155 ABST	14	0846E	0847	0850D	S15	W04	.158	14079	14.1	40	-F	P	0847	44	.4	D
	14	2024	2033	NO FLARE PATROL												
	14	2350	0035	NO FLARE PATROL												
	15	0045	0115	NO FLARE PATROL												
	15	0200	0210	NO FLARE PATROL												
156 ABST	15	0617	0621	0625	S15	W16	.304	14079	14.1	8	-F	C	0621	87	.9	OJK
	15	2203	2255	NO FLARE PATROL												
157 ABST	16	0710	0712	0720D	S10	W33	.541	14079	13.8	100	-F	P	0712	37	1.0	DK
158 KHAR	16	1140E IMP 1 NO	1211 CATA2	1222D RAMY2	S03 HUA2	E90 HTPR2	1.060	14098	23.2	420	? F	C				
	16	1826	1847	NO FLARE PATROL												
	16	1913	1915	NO FLARE PATROL												
	16	1919	1925	NO FLARE PATROL												
	16	1933	1936	NO FLARE PATROL												
	16	2030	2031	NO FLARE PATROL												
	16	2058	2128	NO FLARE PATROL												
	16	2229	2245	NO FLARE PATROL												
159 ABST	17	0801E	0803	0808D	S11	W47	.726	14079	13.8	70	-F	P	0803	79	1.2	DK
	17	1557	1610	NO FLARE PATROL												
	17	1623	1711	NO FLARE PATROL												
	17	1726	1746	NO FLARE PATROL												
	17	1833	1908	NO FLARE PATROL												
	17	2327	2329	NO FLARE PATROL												
	17	2357	0015	NO FLARE PATROL												
	18	1608	1641	NO FLARE PATROL												
	18	1927	1929	NO FLARE PATROL												
	19	1905	2246	NO FLARE PATROL												
160 ABST	20	0638E	0640	0646D	S04	E37	.601	14098	23.1	80	-F	P	0640	79	.8	D
161 MONT	20	0940	0943	0959	S02	E34	.563	14098	23.0	19	-F	C	0943	40		
162 MONT	20	1025	1035	1046	S02	E34	.563	14098	23.0	21	-F	C	1035	60		E
	20	2120	2137	NO FLARE PATROL												
163 MONT	21	0859	0903	0914	S03	E21	.363	14098	22.9	15	-F	C	0903	40		E
	21	1753	1758	NO FLARE PATROL												
	21	1810	1813	NO FLARE PATROL												
	21	2242	2250	NO FLARE PATROL												
	22	1329	1340	NO FLARE PATROL												
	22	1351	1512	NO FLARE PATROL												
	22	1520	1525	NO FLARE PATROL												
	23	2147	2159	NO FLARE PATROL												
	24	1354	1412	NO FLARE PATROL												
	24	1822	1838	NO FLARE PATROL												
	25	1518	1559	NO FLARE PATROL												
164 HTPR	25	1600	1601	1612	S10	E15	.261	14104	26.8	12	-F	C	1601	30	.3	
	25	1630	1641	NO FLARE PATROL												
	25	1644	1655	NO FLARE PATROL												
	25	1822	1831	NO FLARE PATROL												
	25	2013	2155	NO FLARE PATROL												
	25	2204	2216	NO FLARE PATROL												
GRP63165	26	1044+2	1052	1111	N05	E84	.996	14109	1.7	27	-F					06
			1102													
HTPR	26	1044	1102	1112	N05	E86	.998	14109	3.9	28	-N	C	1102	30		
MONT	26	1046	1052	1109	N05	E83	.994	14109	3.7	23	-F	C	1052	20		06

H α SOLAR FLARES

FEBRUARY 1976

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IMPOR- TANCE	OBS. COND. TYPE	MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	McMATH PLAGE REGION	CMR DAY				TIME UT	MEAS. AREA	CORR AREA	
	FEB				LAT.	MER. DIST.								Mill. of Disk	Sq. Deg.	
166 HTPR	26	1156	1203	1212	N05	E85	.997	14109	3.9	16	-F	C	1203	30		
	26	1849	1911		NO FLARE PATROL											
	26	1912	1923		NO FLARE PATROL											
	26	1924	1947		NO FLARE PATROL											
	26	1950	1955		NO FLARE PATROL											
	26	2010	2029		NO FLARE PATROL											
	27	1721	1730		NO FLARE PATROL											
	27	1732	1739		NO FLARE PATROL											
	27	2144	2158		NO FLARE PATROL											
	28	2030	2115		NO FLARE PATROL											
	28	2129	2139		NO FLARE PATROL											
	28	2207	2210		NO FLARE PATROL											
	29	1628	1641		NO FLARE PATROL											
	29	1649	1700		NO FLARE PATROL											
	29	2215	2230		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.

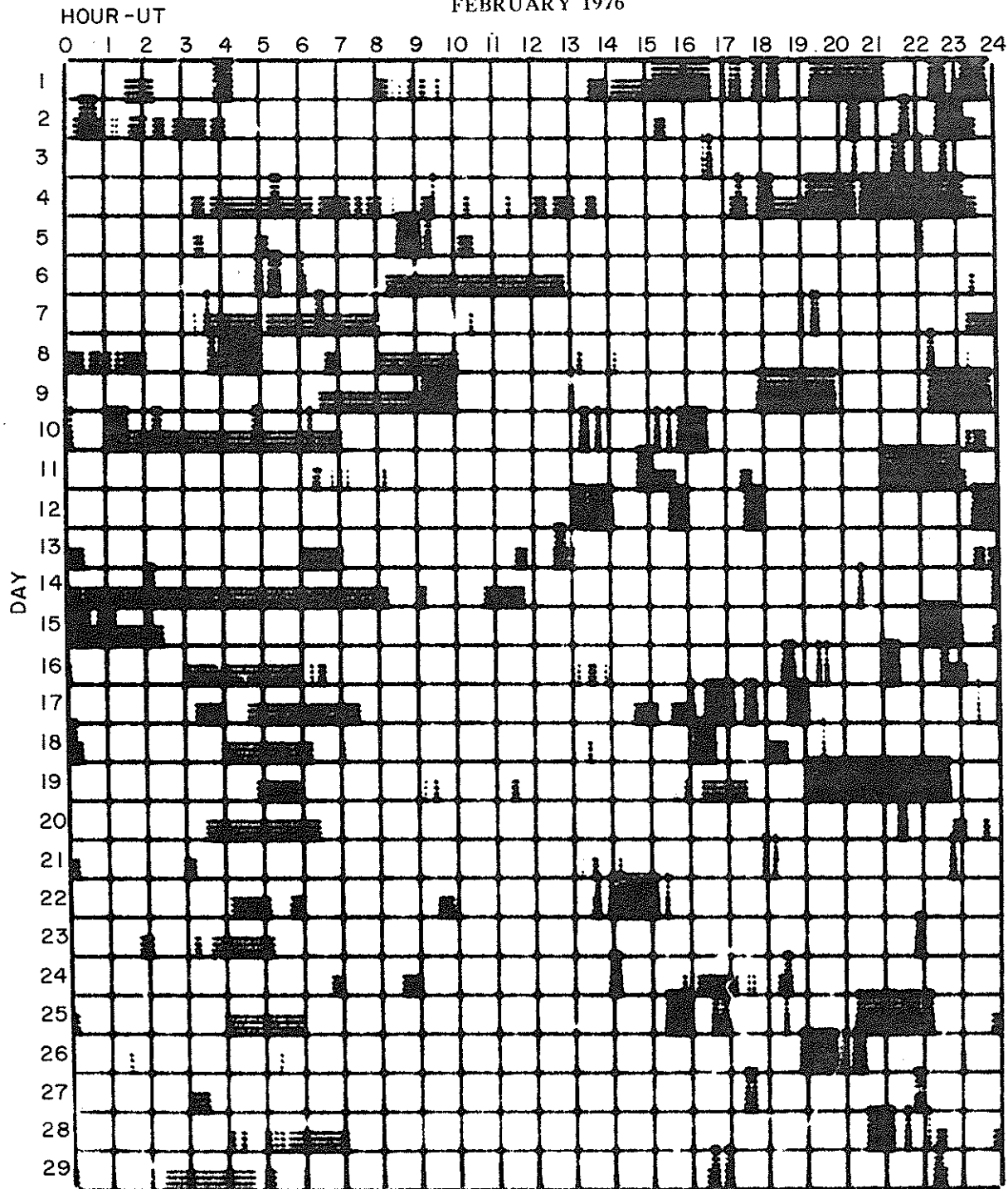
- N = Continuous spectrum shows effects of polarization.
- O = Observations have been made in the calcium II lines H and K.
- P = Flare shows helium D₃ in emission.
- Q = Flare shows the Balmer continuum in emission.
- R = Marked asymmetry in H α line suggests ejection of high velocity material.
- S = 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 H α line.
- Y = System of loop-type prominences.
- Z = Major sunspot umbra covered by flare.

DAILY FLARE INDICES
Includes all Flares

Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.
760201	1.08	17.9	760211	0.00	21.5	760221	5.28	23.7
760202	.88	22.2	760212	5.57	21.3	760222	0.00	22.4
760203	0.00	23.0	760213	10.61	23.7	760223	0.00	23.8
760204	0.00	19.1	760214	5.50	22.9	760224	0.00	23.4
760205	0.00	23.1	760215	5.54	22.5	760225	5.75	20.9
760206	0.00	23.4	760216	3.47	22.7	760226	1.69	22.7
760207	0.00	23.4	760217	2.04	21.7	760227	0.00	23.5
760208	0.00	22.6	760218	0.00	23.4	760228	0.00	23.0
760209	0.00	19.2	760219	0.00	20.3	760229	0.00	23.4
760210	2.02	21.2	760220	10.20	23.7			

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

INTERVALS OF NO FLARE PATROL OBSERVATION
FOR PRECEDING SOLAR FLARE TABLE
FEBRUARY 1976



Observatories included in total patrol:

Abastumani	Catania	Hurbanovo	Manila	Palehua	Upice
Arcetri	Culgoora	Kharkov	McMath-Hulbert	Ramey	Voroshilov
Athens	Haute Provence	Kodaikanal	Mitaka	Tachkent	Wendelstein
Boulder	Herstmonceux	Locarno	Monte Mario	Tehran	Zürich
Bucharest	Huancayo	Lvov			

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).

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Feb 76

SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

FEBRUARY 1976

FEB 1976	FREQUENCY STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY $10^{-22} \text{ Wm}^{-2} \text{ Hz}^{-1}$		INT	POLARIZATION OR REMARKS
			UT	UT	MINUTES	PEAK	MEAN		
2	1420 ARCE	8	1137.7	1137.9	0.5				
	260 ONDR	8 S	1346.6	1346.6	1.5	14	3.2		
5	3100 GRIM	24 R	0850	0910		3			
6	930 BORD	45 C	0922.4	0922.4	0.1	14	2		
	18 MCMA	6	1434	1436	3			1	
	18 MCMA	6	1532	1533	3			1	
10	3100 GRIM	24 R	0833	1149		3			
	260 ONDR	3 S	1002	1002	0.3	16			
	260 ONDR	8 S	1413.7	1413.7	0.2	7			
	9240 ARCE	1	1430.7	1430.9	0.7				
11	2400 OTTA	20 GRF	1323	1332	35 0	1.8	0.9		
12	2700 PENT	20 GRF	2135	2148	50	1.8	0.9		
13	200 GORK	43 NS	0558 E		50		20		
	3100 GRIM	24 R	0648	1122		7			
	260 ONDR	43 NS	0920		301 0	15			
	200 GORK	44 NS	0943		137 0		5		
	245 SGMR	43 NS	1353.5	2006.8	493.50	25.9			
14	221 ABST	44 NS	0500	0806.5	180	8			
	200 GORK	44 NS	0540 E		170		5		
	260 ONDR	44 NS	0750 E		230	22			
15	9240 ARCE	20	1007	1132.5	132				
	260 ONDR	45 C	1049.5	1049.5	15	24	9		
	260 ONDR	4 S/F	1108	1108.2	2	35	12		
16	260 ONDR	44 NS	0800 E		400 0	10			
	550 KIEV	1 S	1228.1	1228.5	0.5	2			
	550 KIEV	2 S/F	1231	1231.6	2.2	9			
	1420 ARCE	8	1519.3	1519.4	0.4				
17	260 ONDR	8 S	1017.3	1017.3	0.2	12			
19	260 ONDR	8 S	1132.2	1132.2	0.2	11			
21	127 TORN	5 S	1255	1256	5	15 U	4		
22	3100 GRIM	26 FAL	1025	1038		2			
26	221 ABST	42 SER	0830.8	0838.8	13	58	26		
27	550 KIEV	44 NS	0706 E	1035	415 0	26	24		
29	550 KIEV	27 RF	0942.5	0951	19.5	6	27		
	260 ONDR	8 S	1035.8	1035.8	0.3	26			
	550 KIEV	27 RF	1035		31 U	23	25		
	550 KIEV	6 S	1352	1353	1.7	20			

Reports received from the following observatories:

ABST = Abastumani
ARCE = Arcetri
BERL = Berlin-Adlershof
BORD = Bordeaux
BOUL = Boulder
CRIM = Simferopol
ATHN = Athens

DWIN = Dwingeloo
GORK = Gorky
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk

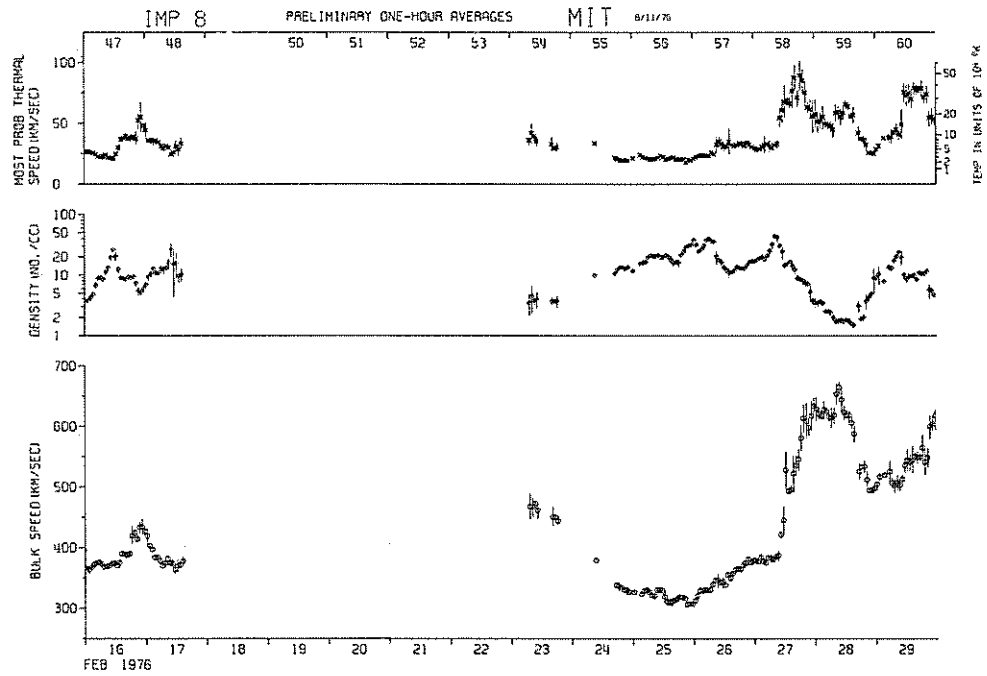
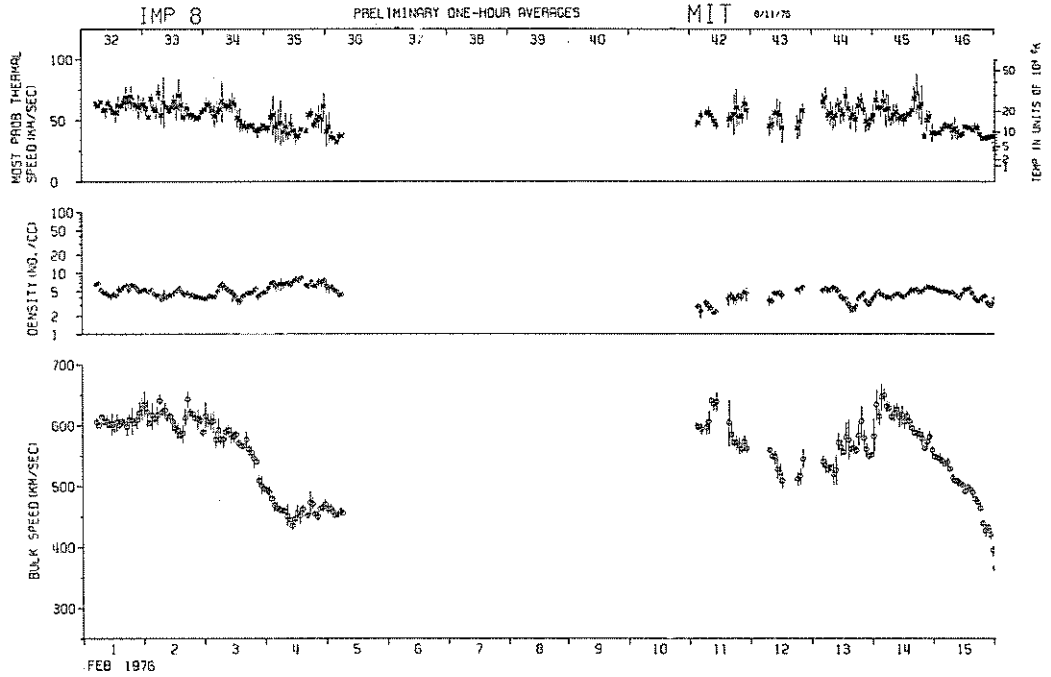
KIEV = Kiev
KISV = Kislovodsk
MANI = Manila
MCMA = McMath-Hulbert
ONDR = Ondrejov

OTTA = Ottawa
PENT = Penticton
POTS = Potsdam
SAOP = Sao Paulo
SGMR = Sagamore Hill

SYDN = Sydney
TORN = Torun
TYKW = Toyokawa
TRST = Trieste
VORO = Voroshilov
(Ussurisk)

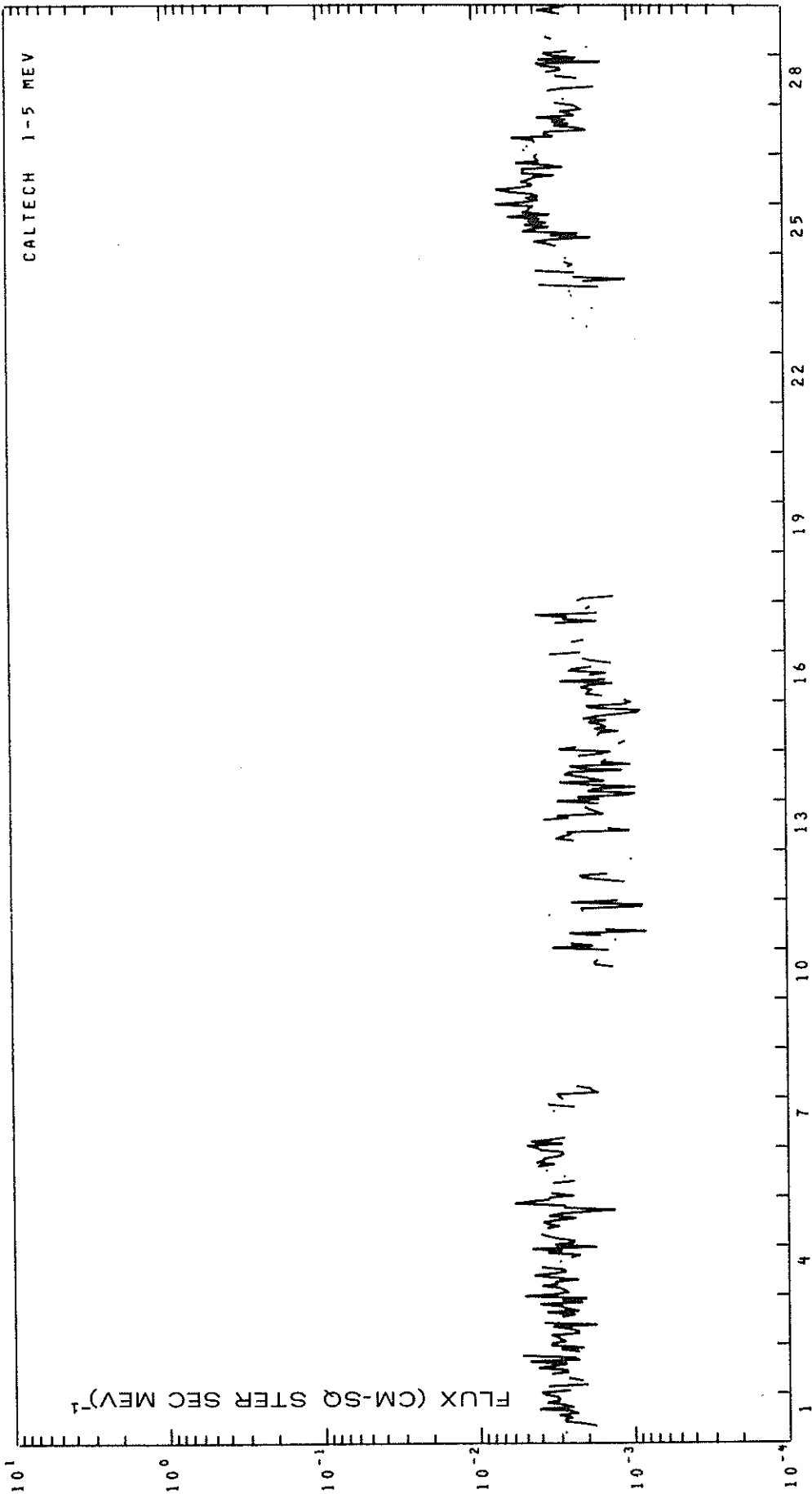
IMP 7 AND 8 SOLAR WIND PLASMA

FEBRUARY 1976



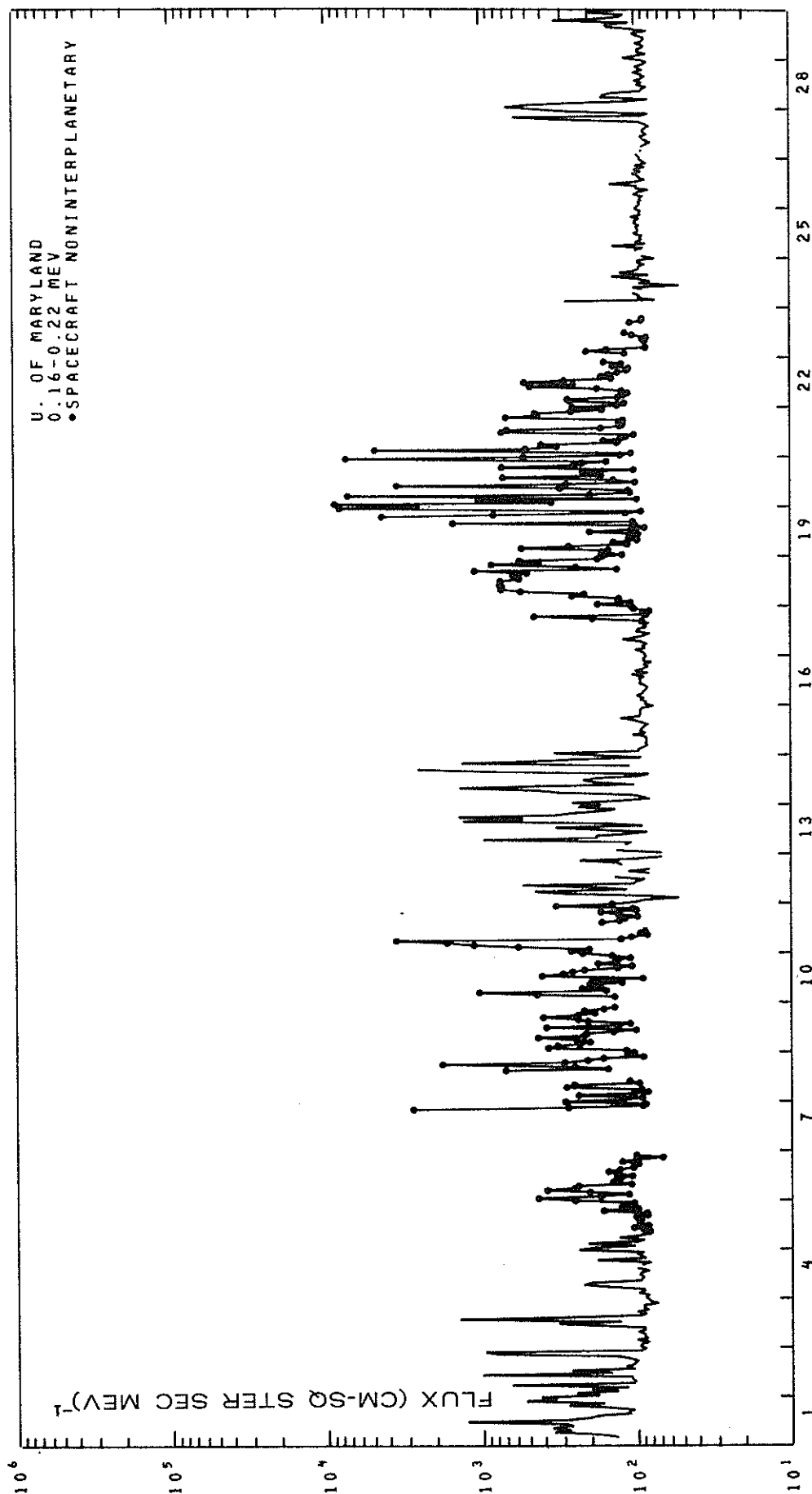
IMP 7 AND 8 ELECTRONS

FEBRUARY 1976



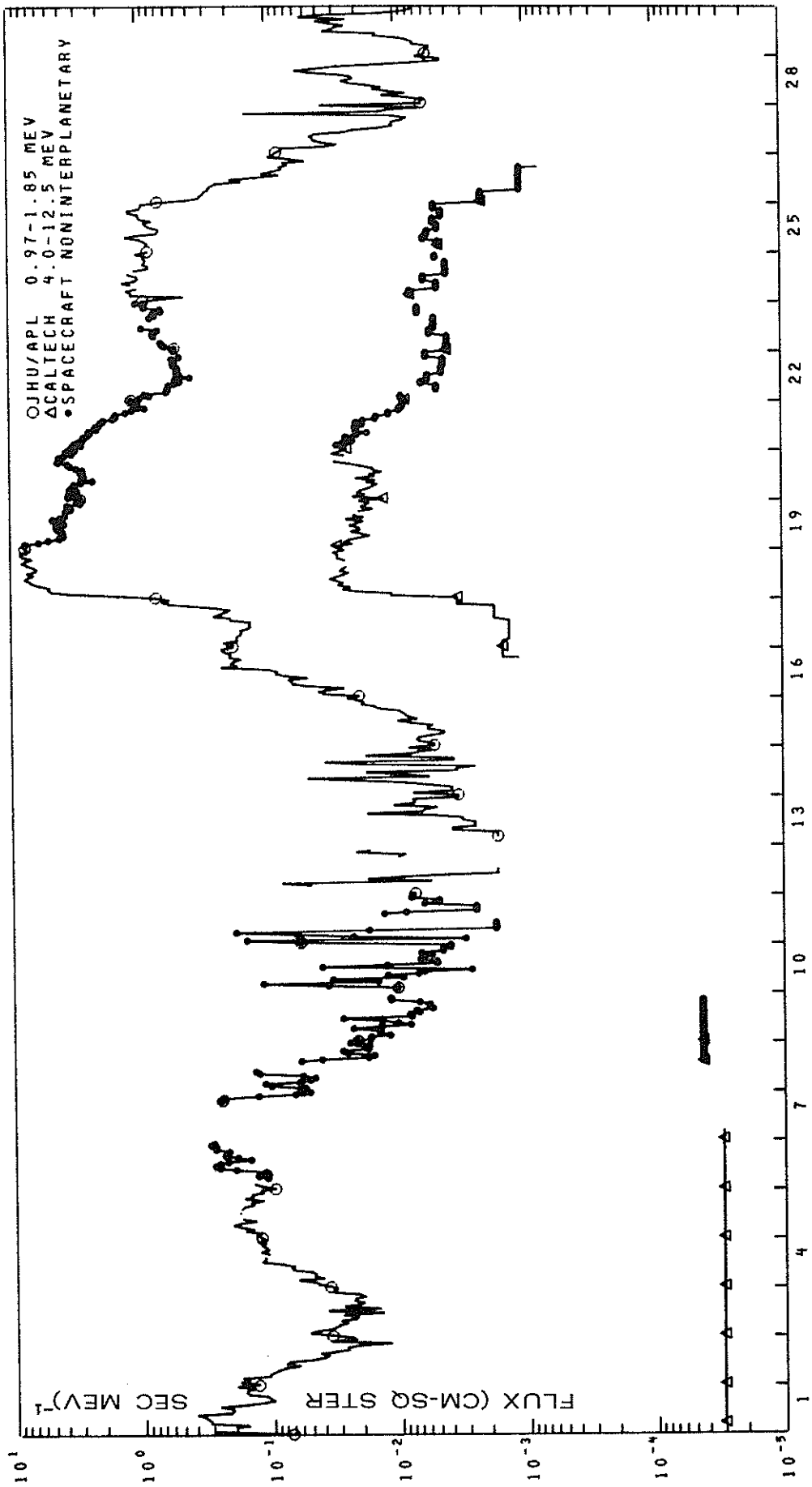
IMP 7 AND 8 LOW ENERGY PROTONS

FEBRUARY 1976



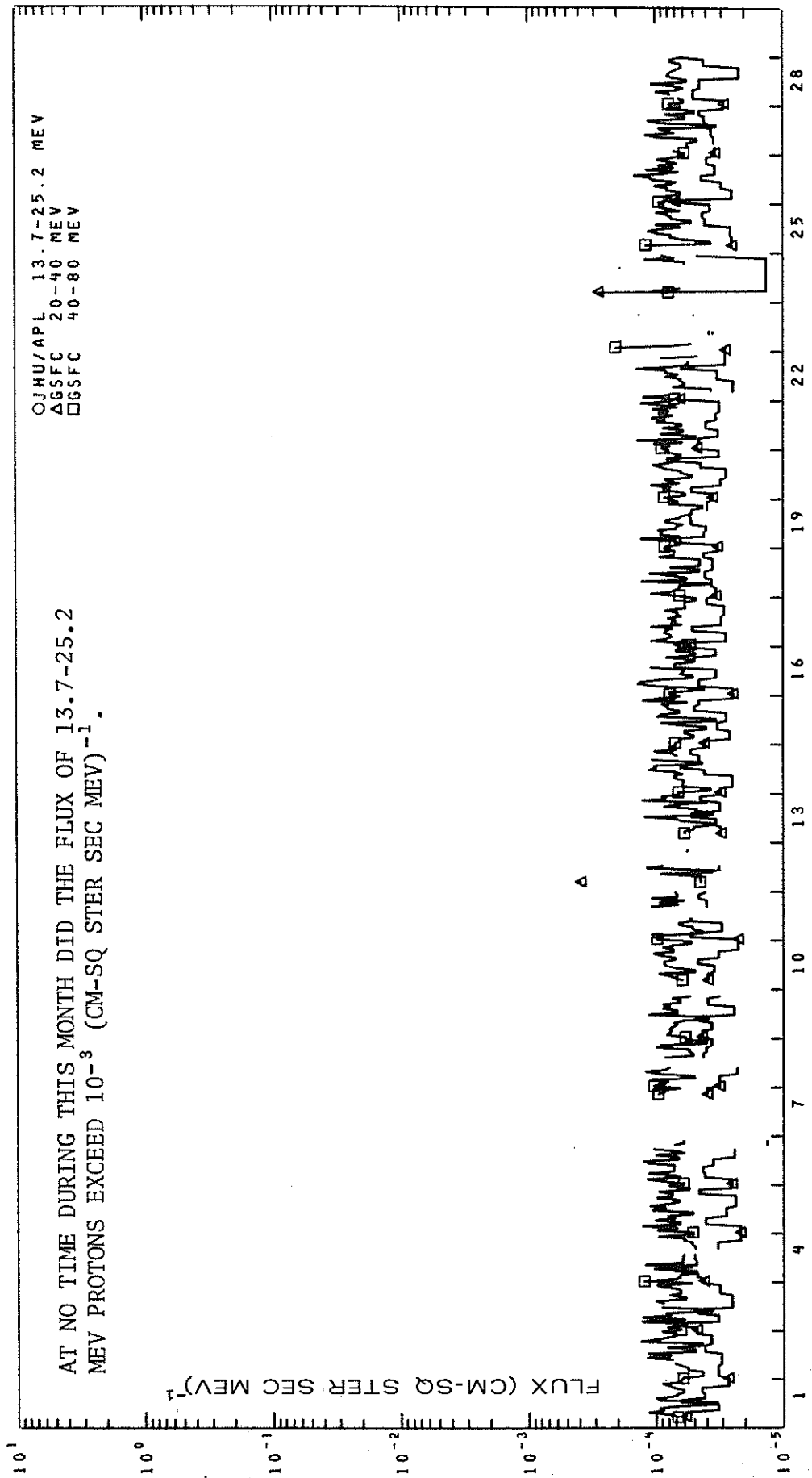
IMP 7 AND 8 INTERMEDIATE ENERGY PROTONS

FEBRUARY 1976



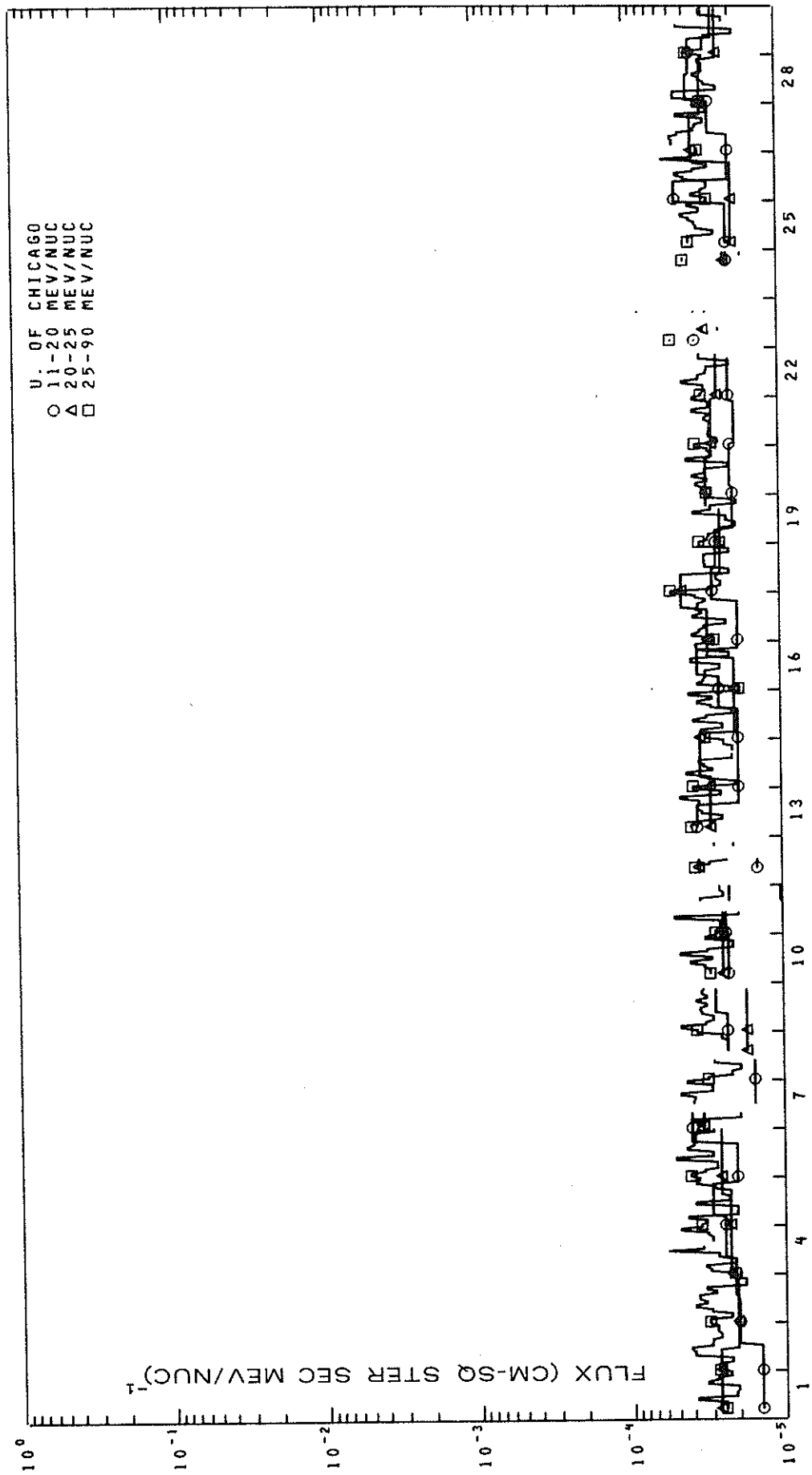
IMP 7 AND 8 HIGH ENERGY PROTONS

FEBRUARY 1976



IMP 7 AND 8 ALPHA PARTICLES

FEBRUARY 1976



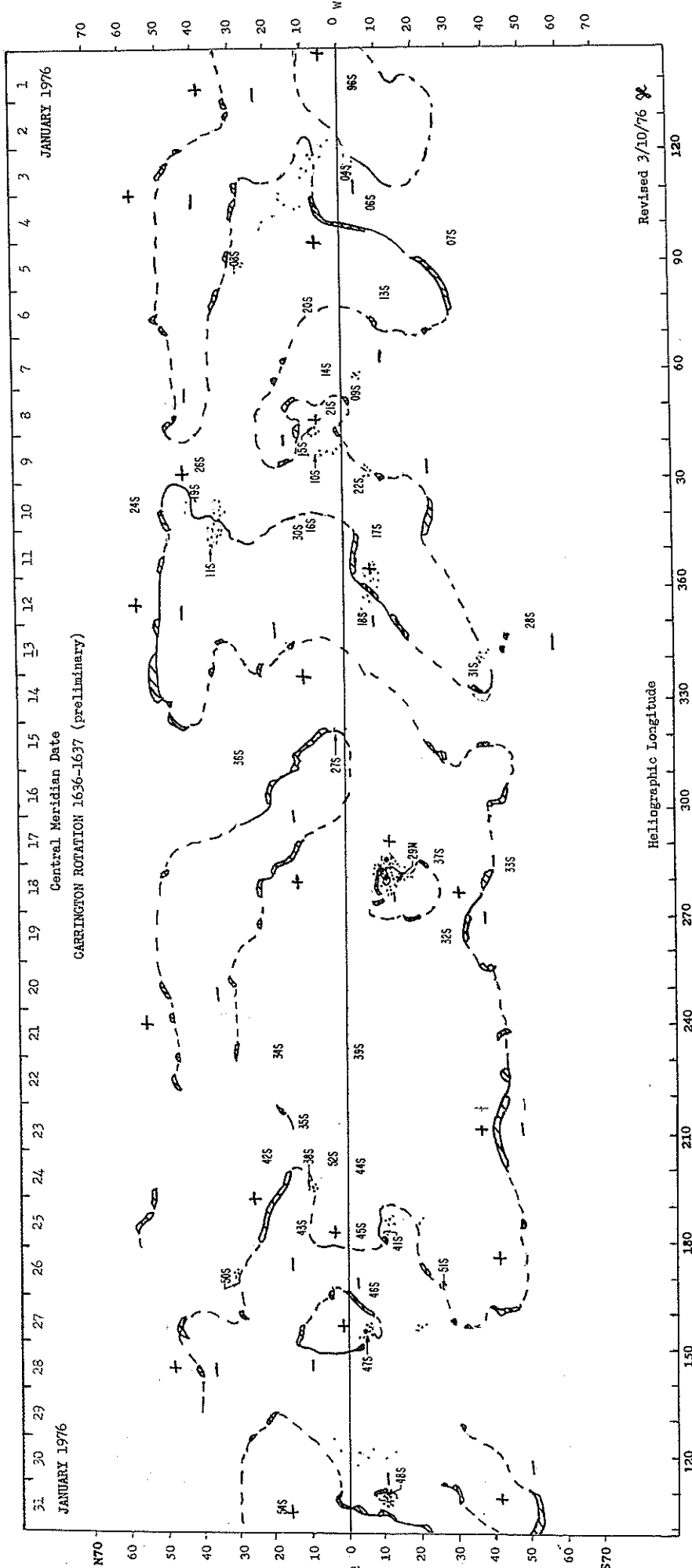
JANUARY 1976 DATA

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ABBREVIATED CALENDAR RECORD H α SYNOPSIS CHART

JANUARY 1976



ABBREVIATED CALENDAR RECORD

Jan. 1, 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 400	Kp	1+				1-					1o				2-												
	sc																										
Aurora	USSR																										
	W.E.	Auroral reports have been discontinued from Western Europe.																									
Cosmic Rays																											
Green Corona		E. Limb 7 days earlier: NE-						SE-						W. Limb 7 days later: NW-						SW-							
Indices		Rz: 0		IOcm flux: 75		Flare: 3/20.7		Ca: no data		Ip: 0		Ia: 2															
Solar Regions		(13996) S04																									
Sunspots																											

Jan. 2, 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 400	Kp	0o				1+					1o				1o										2o		1+
	sc																										
Aurora	USSR																										
	W.E.																										
Cosmic Rays																											
Green Corona		E. Limb 7 days earlier: NE- no data						SE- no data						W. Limb 7 days later: NW-						SW-							
Indices		Rz: 0		IOcm flux: 74		Flare: 0/22.7		Ca: no data		Ip: 0		Ia: 4															
Solar Regions																											
Sunspots																											

Jan. 3, 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 15	Kp			2o				2o				2+					4-				3-				4o		4o
	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						325-340° SW-							
Indices		Rz: 0		IOcm flux: 74		Flare: 0/23.9		Ca: 2.4		Ip: 0		Ia: 3															
Solar Regions		14004 S02 (2)																									
Sunspots		19651 N00 (α)1																									

Jan. 4, 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 10	Kp			3-				3o				3-				1+				2+				2+			3-		2+
	sc																												
Aurora	USSR	$\phi = 57^\circ$ 1600-2100 (HA1)																											
	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: 0		IOcm flux: 74		Flare: 0/24.0		Ca: 1.5		Ip: 0		Ia: 3																	
Solar Regions		(14006) S09												(14007) S31															
Sunspots																													

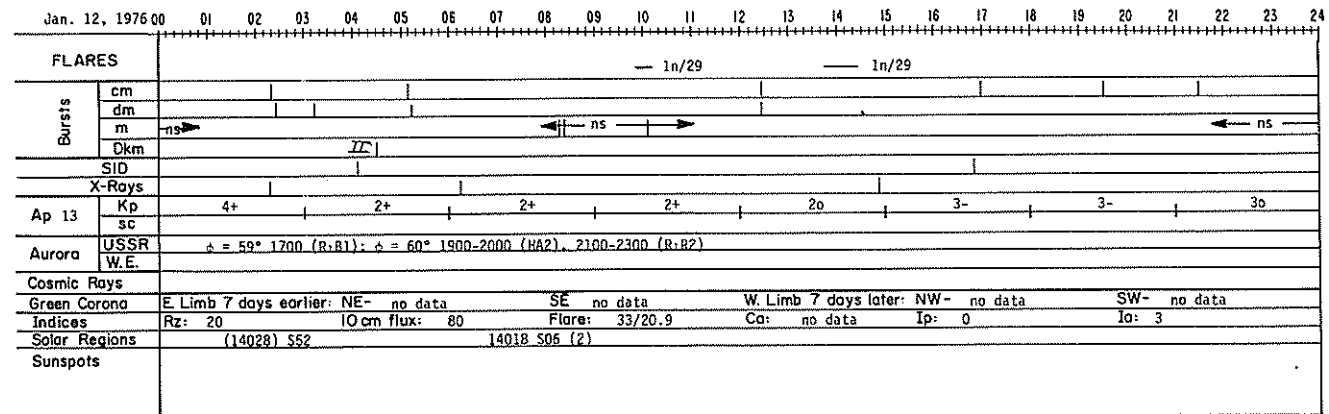
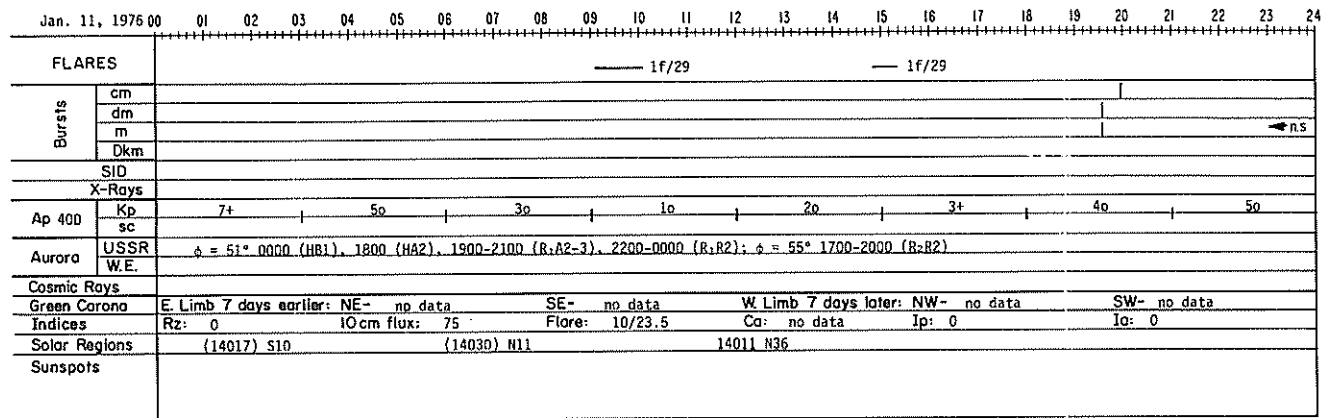
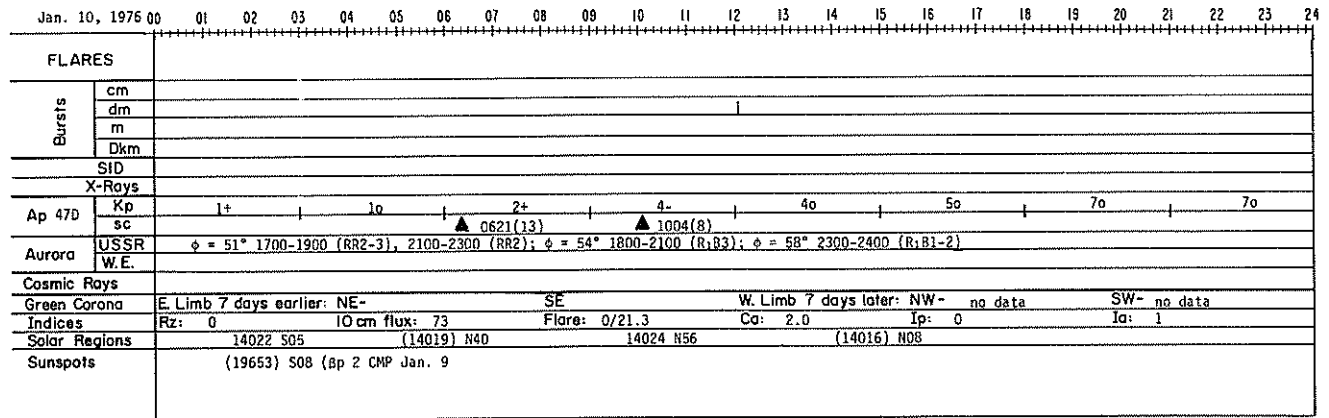
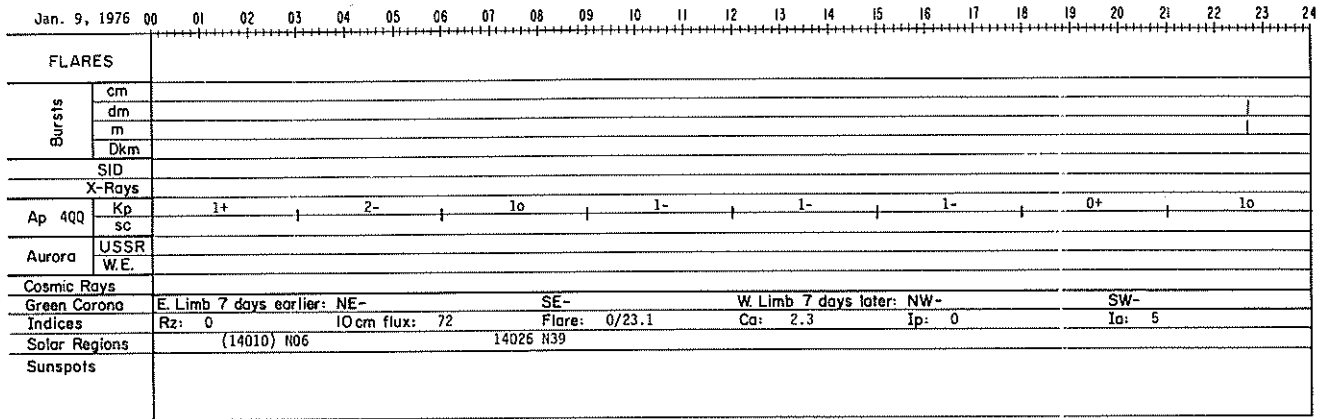
18
Jan 76

Jan. 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																											
SID																												
X-Rays																												
Ap 9	Kp	2+			3-			2+			3-			1+			2-			2+			2o					
	sc																											
Aurora	USSR	$\phi = 57^\circ$ 1600-2100 (HA1); $\phi = 60^\circ$ 2300-2400 (R ₂ R ₂)																										
	W.E.																											
Cosmic Rays																												
Green Corona	E. Limb 7 days earlier: NE-											SE-					W. Limb 7 days later: NW-					no data						
Indices	Rz: 0	10 cm flux: 74					Flare: 1/22.6					Ca: 2.2					Ip: 0											
Solar Regions	(14008) N28																											
Sunspots																												

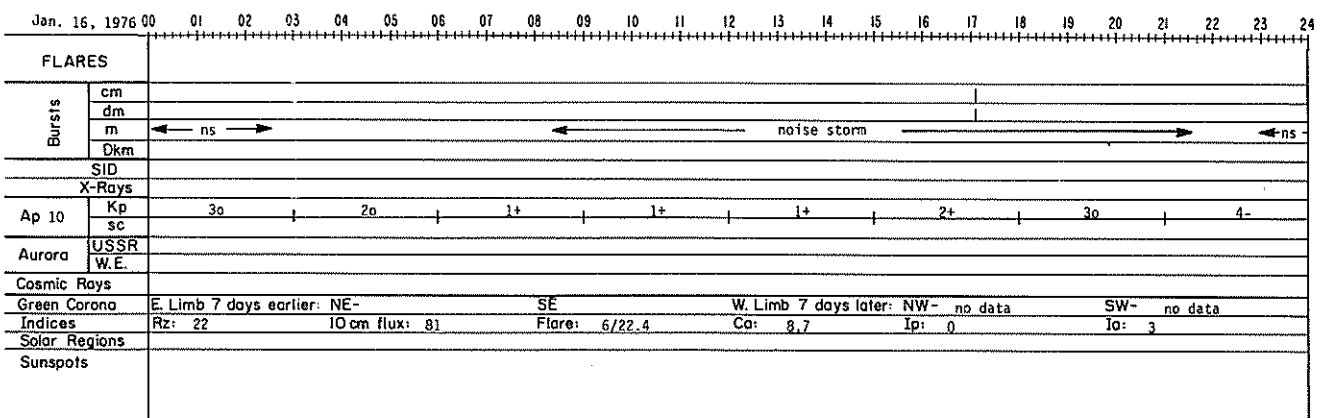
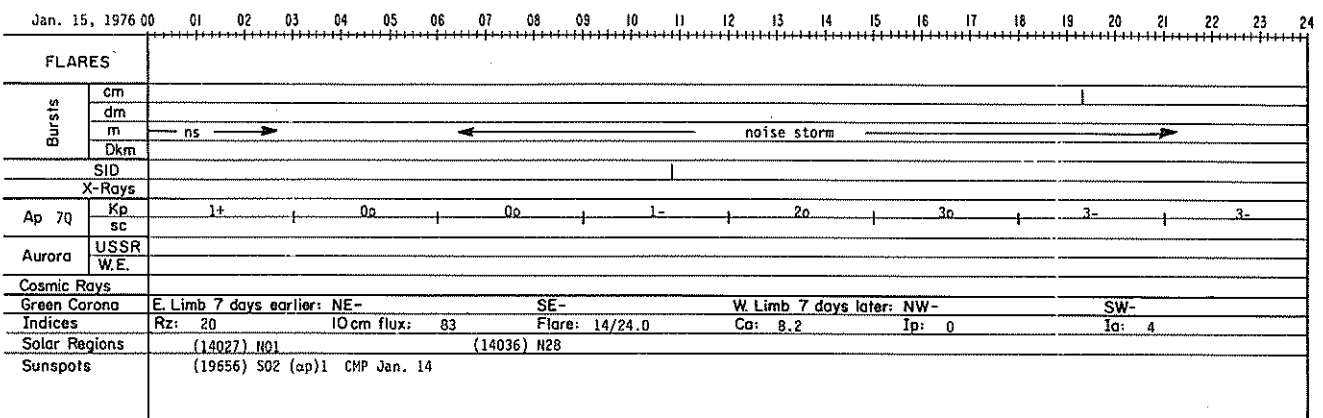
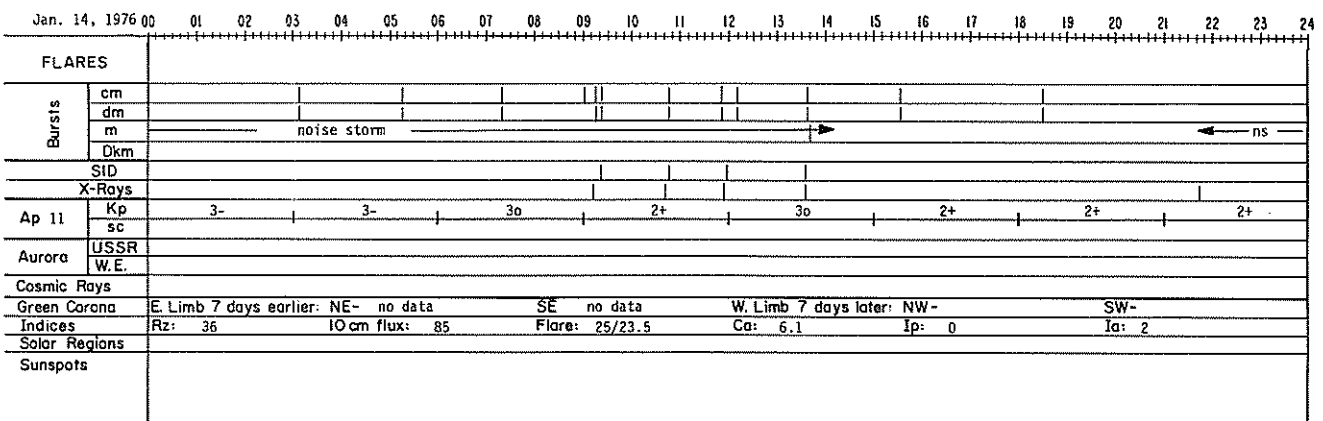
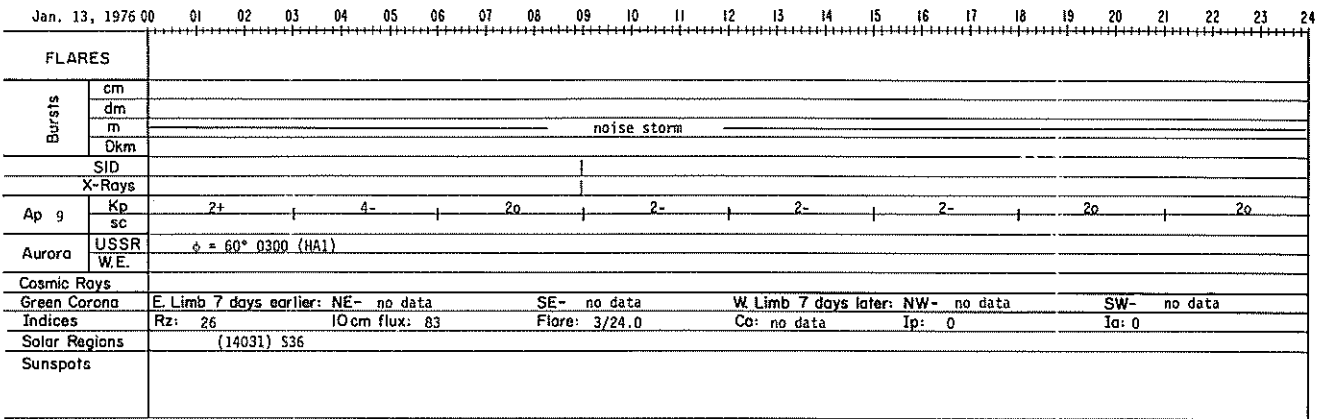
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FLARES																												
Bursts	cm																											
	dm																											
	m																											
	Dkm																											
SID																												
X-Rays																												
Ap 13	Kp	2-			3-			2o			1o			2o			3o			4-			4+					
	sc																											
Aurora	USSR																											
	W.E.																											
Cosmic Rays																												
Green Corona	E. Limb 7 days earlier: NE- no data 30°											SE- no data 95°					W. Limb 7 days later: NW- no data					SW- no data						
Indices	Rz: 0	10 cm flux: 74					Flare: 0/20.7					Ca: 1.4					Ip: 0											
Solar Regions	14013 S12											(14020) N09																
Sunspots																												

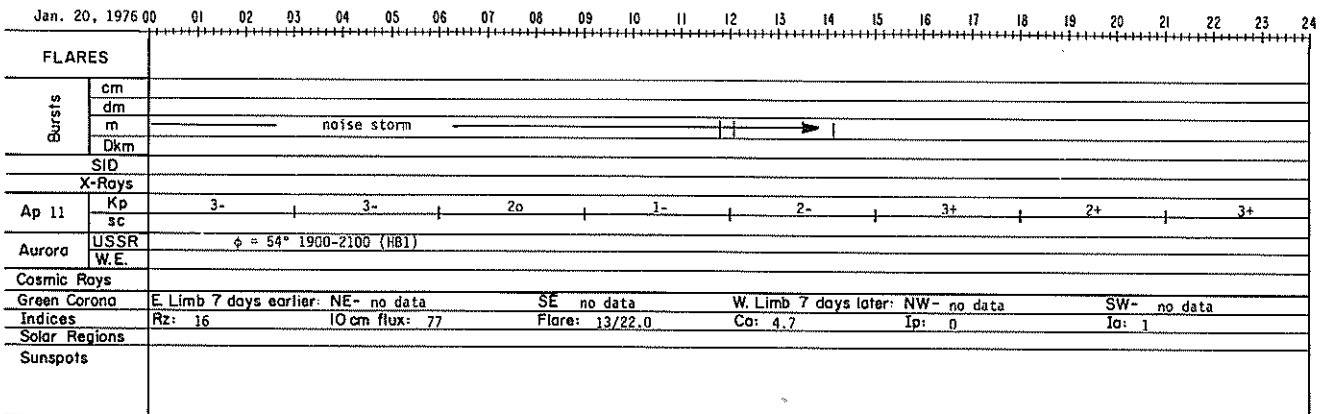
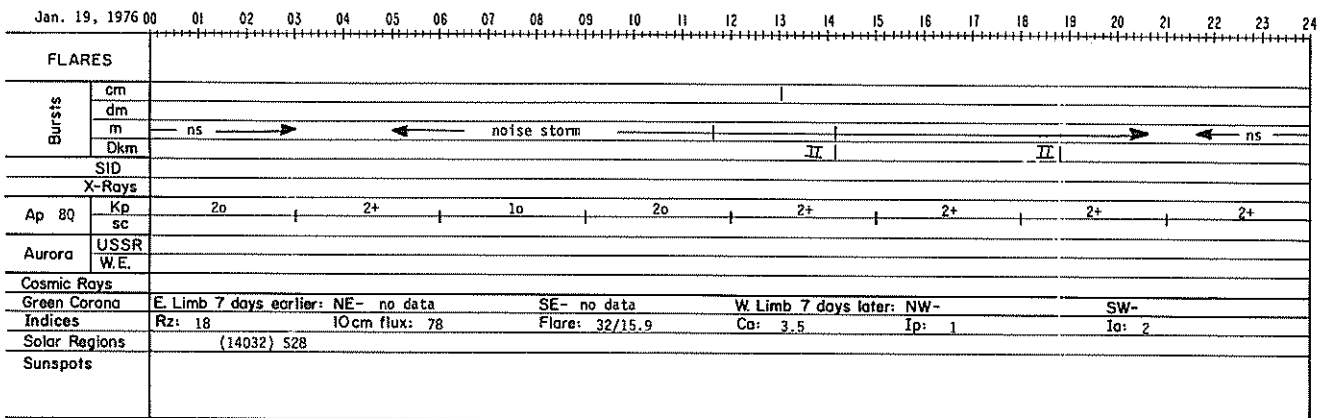
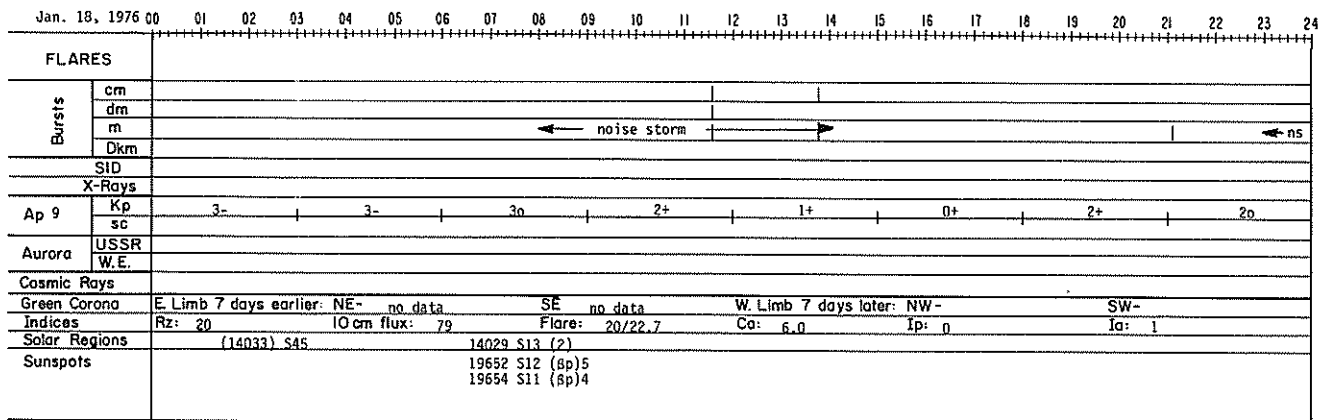
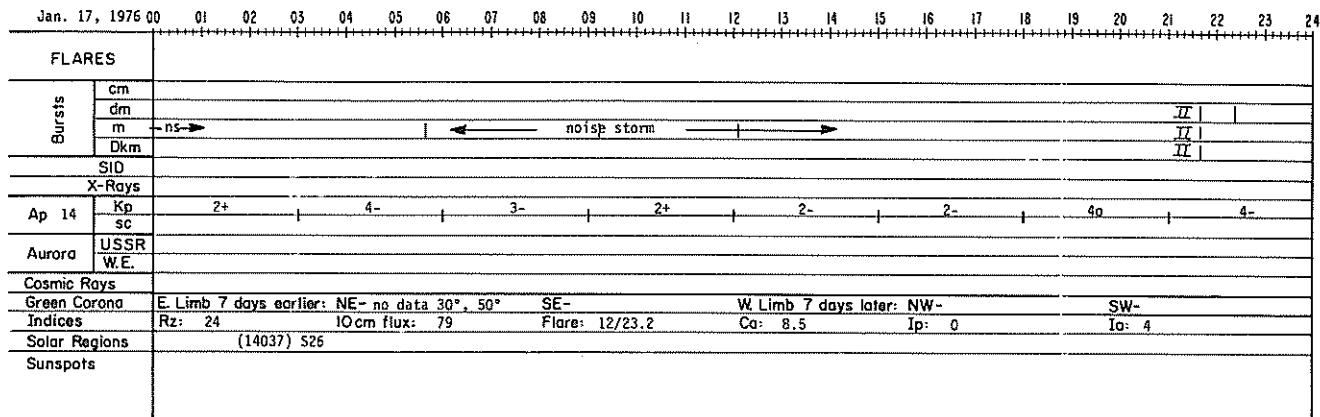
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FLARES																												
Bursts	cm																											
	dm																											
	m																											
	Dkm																											
SID																												
X-Rays																												
Ap 11	Kp	4o			3o			2+			2o			2o			3-			2-			2-					
	sc																											
Aurora	USSR																											
	W.E.																											
Cosmic Rays																												
Green Corona	E. Limb 7 days earlier: NE-											SE-					W. Limb 7 days later: NW-					no data						
Indices	Rz: 0	10 cm flux: 74					Flare: 0/21.3					Ca: 1.6					Ip: 0											
Solar Regions	(14014) N04																											
Sunspots																												

Jan. 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																											
SID																												
X-Rays																												
Ap 5Q	Kp	0+			2-			1o			1+			1+			1+			2o			2+					
	sc																											
Aurora	USSR																											
	W.E.																											
Cosmic Rays																												
Green Corona	E. Limb 7 days earlier: NE-											SE-					W. Limb 7 days later: NW-					no data						
Indices	Rz: 0	10 cm flux: 73					Flare: 0/23.9					Ca: 2.5					Ip: 0											
Solar Regions	(14009) S04											14021 N02					(14015) N07											
Sunspots																												



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Jan. 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 20	Kp	3+		4o		3+		4-		3o		4+		3+		2o										
	sc																									
Aurora	USSR	$\phi = 57^\circ$ 1500-1900 (HA2)																								
	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: 11	IO cm flux: 74					Flare: 2/21.7					Ca: 3.1					Ip: 0					Ia: 4				
Solar Regions	(14034) N19											(14039) S03														
Sunspots																										

Jan. 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																									
SID																										
X-Rays																										
Ap 23D	Kp	3+		5-		2o		2o		4o		4o		4+		4o										
	sc																									
Aurora	USSR	$\phi = 55^\circ$ 1500-1900 (HA2)																								
	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: 10	IO cm flux: 73					Flare: 0/20.7					Ca: 3.6					Ip: 0					Ia: 4				
Solar Regions																										
Sunspots																										

Jan. 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																										
Ap 20	Kp	4+		3o		3+		3+		4o		4o		3-		3-										
	sc																									
Aurora	USSR	$\phi = 49^\circ$ 1600-1900 (HB1); $\phi = 54^\circ$ 1900 (R,B1)																								
	W.E.																									
Cosmic Rays																										
Green Corona	E. Limb 7 days earlier: NE-							SE-							W. Limb 7 days later: NW- no data 355°, 360°							SW-				
Indices	Rz: 10	IO cm flux: 72					Flare: 0/19.4					Ca: no data					Ip: 0					Ia: 4				
Solar Regions	(14035) N11																									
Sunspots	(19657) N10 (B)1																									

Jan. 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 21D	Kp	3-		3+		5-		4-		3o		4-		3o		4o										
	sc																									
Aurora	USSR	$\phi = 57^\circ$ 1800-2200 (HP1)																								
	W.E.																									
Cosmic Rays																										
Green Corona	E. Limb 7 days earlier: NE- no data							SE- no data							W. Limb 7 days later: NW-							SW-				
Indices	Rz: 0	IO cm flux: 71					Flare: 0/21.1					Ca: 0.3					Ip: 0					Ia: 5				
Solar Regions	(14042) N22							(14052) N04							(14044) S03							(14038) N11				
Sunspots	(19658) N09 (ap)1																									

Jan. 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																											
Ap 10	Kp	3a				2a				2a				2a													
	sc																										
Aurora	USSR																										
	W.E.																										
Cosmic Rays																											
Green Corona	E. Limb 7 days earlier:	NE- no data	SE- no data	W. Limb 7 days later:	NW-	SW-																					
Indices	Rz: 0	10cm flux: 70	Flare: 0/20.2	Ca: no data	Ip: 0	Ia: 4																					
Solar Regions	14043 H11		(14045) S03		(14041) S10																						
Sunspots																											

Jan. 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																											
Ap 500	Kp	1-				2+				1a				2-													
	sc																										
Aurora	USSR																										
	W.E.																										
Cosmic Rays																											
Green Corona	E. Limb 7 days earlier:	NE- no data	SE- no data	W. Limb 7 days later:	NW-	SW-																					
Indices	Rz: 0	10cm flux: 70	Flare: 0/17.1	Ca: 0.7	Ip: 0	Ia: 4																					
Solar Regions	(14050) H30		(14051) S26		14046 S07																						
Sunspots																											

Jan. 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																											
	Dkm																											
SID																												
X-Rays																												
Ap 60	Kp	1a				2-				3a				1+														
	sc																											
Aurora	USSR																											
	W.E.																											
Cosmic Rays																												
Green Corona	E. Limb 7 days earlier:	NE- no data	SE- no data	W. Limb 7 days later:	NW-	SW-																						
Indices	Rz: 7	10cm flux: 69	Flare: 0/23.9	Ca: 0.6	Ip: 0	Ia: 3																						
Solar Regions	14047 S05																											
Sunspots	19659 S04 (af)3																											

Jan. 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																										
	Dkm																										
SID																											
X-Rays																											
Ap 500	Kp	1+				1a				1+				2-													
	sc																										
Aurora	USSR																										
	W.E.																										
Cosmic Rays																											
Green Corona	E. Limb 7 days earlier:	NE-	SE	W. Limb 7 days later:	NW-	SW-																					
Indices	Rz: 0	10cm flux: 69	Flare: 3/22.3	Ca: 0.7	Ip: 0	Ia: 4																					
Solar Regions																											
Sunspots																											

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Jan. 29, 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 6Q	Kp	2-				2+																														
	sc																																			
Aurora	USSR																																			
	W.E.																																			
Cosmic Rays																																				
Green Corona	E. Limb 7 days earlier: NE-							SE-							W. Limb 7 days later: NW-							SW-														
Indices	Rz: 14	IOcm flux: 70							Flare: 2/19.1							Ca: 1.3							Ip: 1							Ia: 3						
Solar Regions																																				
Sunspots																																				

Jan. 30, 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 9	Kp	0+				0o				1-				1-							2o															
	sc																																			
Aurora	USSR	$\phi = 57^\circ$ 1400-1500 (HA1)																																		
	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: 8	IOcm flux: 71							Flare: 1/16.9							Ca: 2.6							Ip: 0							Ia: 1						
Solar Regions																																				
Sunspots																																				

Jan. 31, 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 29D	Kp	3-				4+																														
	sc																																			
Aurora	USSR	$\phi = 57^\circ$ 1200-1300 (SB1), 1400 and 1500-1600 (R1B1), 1300-1500 (HB1), 1600-1700 (R1), 1700-2100 (R1R2)																																		
	W.E.																																			
Cosmic Rays																																				
Green Corona	E. Limb 7 days earlier: NE-							SE-							W. Limb 7 days later: NW-							SW-														
Indices	Rz: 0	IOcm flux: 71							Flare: 0/18.7							Ca: 1.5							Ip: 0							Ia: 4						
Solar Regions																																				
Sunspots																																				

REGIONAL FLARE INDEX
INCLUDES ALL FLARES

MC MATH PLAGE NO.	LAT	CHP DATE	DATE FIRST FLARE	DATE LAST FLARE	FLARE-INDEX SUH	FLARE-INDEX MEAN	TOTAL NO. OF FLARES
14009	S 4	76/01/08.0	76/01/01	76/01/01	.96	.96	1
14029	S13	76/01/18.1	76/01/11	76/01/21	166.72	15.16	60
14052	N 4	76/01/24.2	76/01/30	76/01/30	1.18	1.18	1
14047	S 5	76/01/27.8	76/01/29	76/02/02	2.18	.36	3

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.

UAG Series of Reports

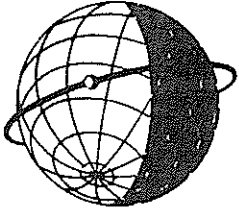
Prepared by World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, Colorado, U.S.A.

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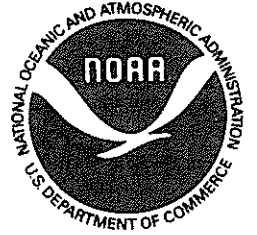
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- UAG-39 "Auroral Electrojet Magnetic Activity Indices AE (11) for 1971", by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Environmental Data Service, February 1975, 144 pages, price \$2.05.
- UAG-40 "H-Alpha Synoptic Charts of Solar Activity For the Period of Skylab Observations, May, 1973-March, 1974", by Patrick S. McIntosh, NOAA Environmental Research Laboratory, February 1975, 32 pages, price 56 cents.
- UAG-41 "H-Alpha Synoptic Charts of Solar Activity During the First Year of Solar Cycle 20, October, 1964 - August, 1965", by Patrick S. McIntosh, NOAA Environmental Research Laboratory, and Jerome T. Nolte, American Science and Engineering, Cambridge, Massachusetts, March 1975, 25 pages, price 48 cents.
- UAG-42 "Observations of Jupiter's Sporadic Radio Emission in the Range 7.6-80 MHz 10 December 1971 through 21 March 1975", by James W. Warwick, George A. Dulk, and Anthony C. Riddle, Department of Astro-Geophysics, University of Colorado, Boulder, Colorado 80302, April 1975, 49 pages, price \$1.15.
- UAG-43 "Catalog of Observation Times of Ground-Based Skylab-Coordinated Solar Observing Programs", compiled by Helen E. Coffey, World Data Center A for Solar-Terrestrial Physics, May 1975, 159 pages, price \$3.00.

- UAG-44 "Synoptic Maps of Solar 9.1 cm Microwave Emission from June 1962 to August 1973", by Werner Graf and Ronald N. Bracewell, Radio Astronomy Institute, Stanford University, Stanford, California 94305, May 1975, 183 pages, price \$2.55.
- UAG-45 "Auroral Electrojet Magnetic Activity Indices AE (11) for 1972", by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Environmental Data Service, May 1975, 144 pages, price \$2.10.
- UAG-46 "Interplanetary Magnetic Field Data 1963-1974", by Joseph H. King, National Space Science Data Center, NASA Goddard Space Flight Center, Greenbelt, Maryland 20771, June 1975, 382 pages, price \$2.95.
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- UAG-48A "Synoptic Observations of the Solar Corona during Carrington Rotations 1580-1596 (11 October 1971 - 15 January 1973)", [Reissue with quality images] by R. A. Howard, M. J. Koomen, D. J. Michels, R. Tousey, C. R. Detwiler, D. E. Roberts, R. T. Seal and J. D. Whitney, E. O. Hulbert Center for Space Research, NRL, Washington, D. C. 20375 and R. T. and S. F. Hansen, C. J. Garcia and E. Yasukawa, High Altitude Observatory, NCAR, Boulder, Colorado 80303, February 1976, 200 pages, price \$4.27.
- UAG-49 "Catalog of Standard Geomagnetic Variation Data", prepared by Environmental Data Service, NOAA, Boulder, Colorado, August 1975, 125 pages, price \$1.85.
- UAG-50 "High-Latitude Supplement to the URSI Handbook on Ionogram Interpretation and Reduction", by W. R. Piggott, British Antarctic Survey, c/o SRC, Appleton Laboratory, Ditton Park, Slough, England, October 1975, 292 pages, price \$4.00.
- UAG-51 "Synoptic Maps of Solar Coronal Hole Boundaries Derived from He II 304Å Spectroheliograms from the Manned Skylab Missions", by J. D. Bohlín and D. M. Rubenstein, E. O. Hulbert Center for Space Research, Naval Research Laboratory, Washington, D. C. 20375 U.S.A., November 1975, 30 pages, price 54 cents.
- UAG-52 "Experimental Comprehensive Solar Flare Indices for Certain Flares, 1970-1974", compiled by Helen W. Dodson and E. Ruth Hedeman, McMath-Hulbert Observatory, The University of Michigan, 895 Lake Angelus Road North, Pontiac, Michigan 48055 U.S.A., November 1975, 27 pages, price 60 cents.
- UAG-53 "Description and Catalog of Ionospheric F-Region Data, Jicamarca Radar Observatory (November 1966 - April 1969)", by W. L. Clark and T. E. Van Zandt, Aeronomy Laboratory, NOAA, Boulder, Colorado 80302 and J. P. McClure, University of Texas at Dallas, Dallas, Texas 75230, April 1976, 10 pages, price 33 cents.
- UAG-54 "Catalog of Ionosphere Vertical Soundings Data", prepared by Environmental Data Service, NOAA, Boulder, Colorado 80302, April 1976, 130 pages, price \$2.10.
- UAG-55 "Equivalent Ionospheric Current Representations by a New Method, Illustrated for 8-9 November 1969 Magnetic Disturbances", by Y. Kamide, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado 80302 and Geophysical Institute, University of Alaska, Fairbanks, Alaska 99701, H. W. Kroehl, Data Studies Division, NOAA/EDS/NGSDC, Boulder, Colorado 80302, M. Kanamitsu, Advanced Study Program, National Center for Atmospheric Research, Boulder, Colorado 80303, J. H. Allen, Data Studies Division, NOAA/EDS/NGSDC, Boulder, Colorado 80302, and S.-I. Akasofu, Geophysical Institute, University of Alaska, Fairbanks, Alaska 99701, April 1976, 91 pages, price \$1.60.
- UAG-56 "Iso-intensity Contours of Ground Magnetic H Perturbations for the December 16-18, 1971 Geomagnetic Storm", by Y. Kamide, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, Colorado 80302 and Geophysical Institute, University of Alaska, Fairbanks, Alaska 99701 (currently Guest worker at Data Studies Division, NOAA/EDS/NGSDC, Boulder, Colorado 80302), April 1976, 37 pages, price \$1.39.
- UAG-57 "Manual on Ionospheric Absorption Measurements", edited by K. Rawer, Institut für Physikalische Weltraumforschung, Freiburg, G.F.R., June 1976, 202 pages, price \$4.27.



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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."