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Solar - Geophysical Data

NO. 507 NOVEMBER 1986

Part II (Comprehensive Reports)

DATA FOR
MAY 1986

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NATIONAL GEOPHYSICAL DATA CENTER
BOULDER, COLORADO

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NUMBER 507

(Issued in Two Parts)

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C O N T E N T S

PART I (PROMPT REPORTS)

PART II (COMPREHENSIVE REPORTS)

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C O N T E N T S

Comprehensive Reports DATA FOR MAY 1986 Number 507 Part II

C A R T E S Y N O P T I Q U E
A C T I V E R E G I O N S
CARRINGTON ROTATION 1775

(3 MAY to 30 MAY 1986)

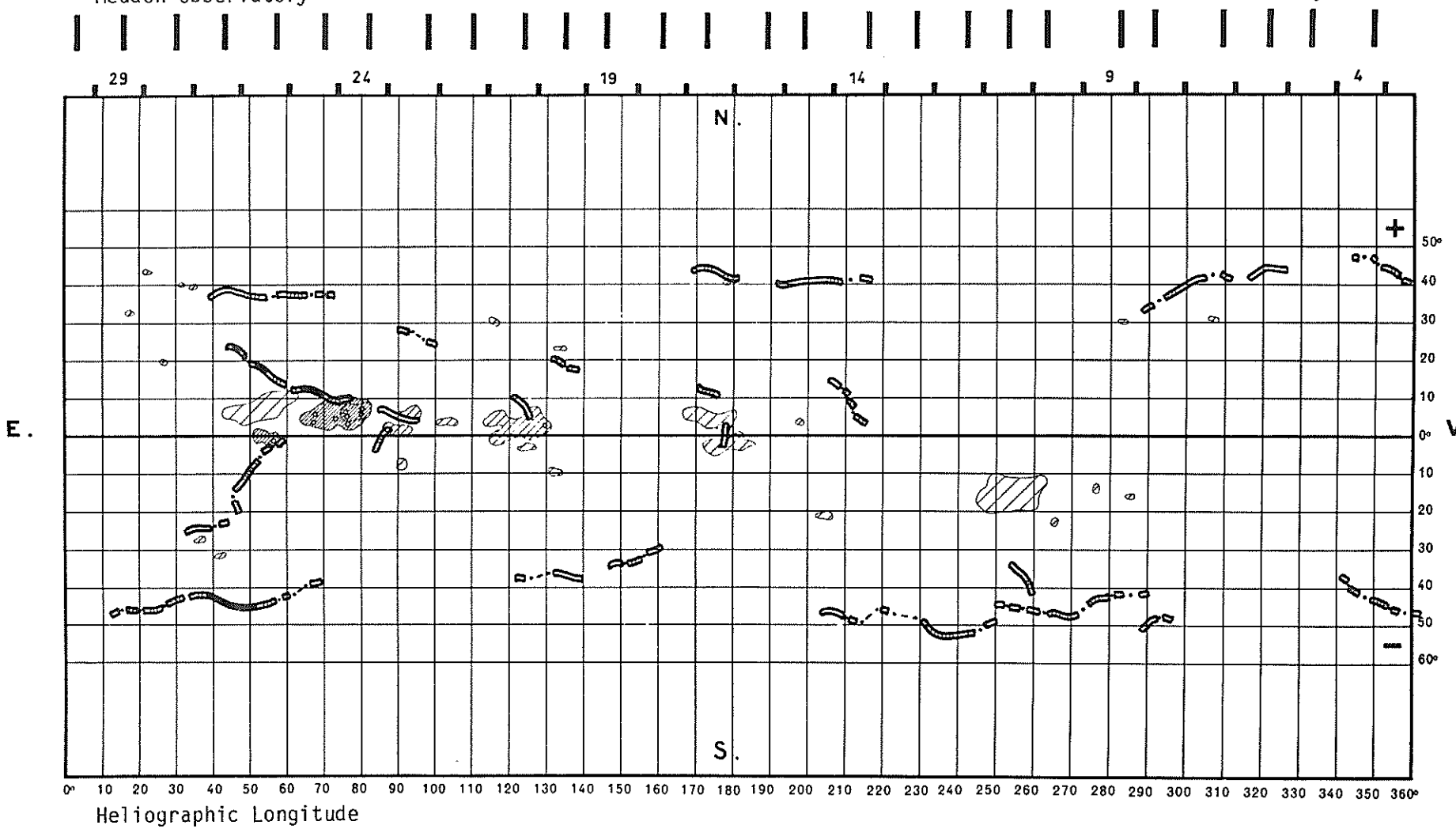
Region No.	Coordinates Lat.	Long.	Imp	Age at CMP (Days)	Spotless Region	Region No. in Rotation 1774	Activity at West Limb
1	02°S	179	1	>6	x	6	dispersed
2	05°N	174	1	>6	x	6	dispersed
3	10°S	132	1	+4	x		disappeared
4	03°S	125	1	+3	x		dispersed
5	03°N	123	2	>6		7	decreasing
6	30°N	116	1	+3	x		disappeared
7	04°N	103	1	-5	x		disappeared
8	06°N	93	1	>6	x	8	dispersed
9	08°N	91	1	+4	x		disappeared
10	01°N	90	1	>6	x	8	dispersed
11	07°N	78	3	+1			decreasing
12	06°N	73	3	>6			decreasing
13	00	54	2	+1			decreasing
14	31°S	42	1	-3	x		disappeared

CARTE SYNOPTIQUE

CARRINGTON ROTATION NUMBER 1775
(3 May to 30 May 1986)

Meudon Observatory

May 1986



5 May 86

H - ALPHA SOLAR FLARES

MAY 1986

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
0001		01	0523*	0529*	0549	N07	W55	4727	04	27.2	26	1	N			C		116	2.9	EFJTZ
	ABST	01	0523	0529	0555	N09	W55	4727	04	27.2	32	1	N			C	0529	157	2.6	F
	URUM	01	0525	0530	0540	N07	W53	4727	04	27.3	15	1	N			C		201	3.7	
	LEAR	01	0527	0530	0542	N07	W54	4727	04	27.3	15	S	F		3	C		42		
	YUNN	01	0542E	0542U	0615D	N07	W55	4727	04	27.2	33D	S	N			P	0542	28	.6	
	TACH	01	0550	0608U	0610D	N08	W56	4727	04	27.1	20D	1	N			C	0608	255	4.6	EJTZ
	LEAR	01	0552	0556	0600	N06	W56	4727	04	27.1	8	S	F		3	C		16		F
0002	KHAR	01	0818E		0830D	N06	W56	4727	04	27.2	12D	S	N			V	0818			L
0003	KHAR	01	0945E	0950U	1008D	N05	W58	4727	04	27.2	23D	S	N			V	0950			L
		01	1016		1017	No Flare Patrol														
0004	URUM	02	0217	0227	0237	N08	W63	4727	04	27.5	20	S	B			C		45		
0005	TACH	02	0451E		0552D	N09	W70	4727	04	27.0	61D	1	F			C	0514	221		E
0006		02	0820E	0820	0915D	N06	W70	4727	04	27.2	55D	S	B					28		
	CATA	02	0820E	0820	0840D	N06	W70	4727	04	27.2	20D	S	B		2	P	0820	28		
	YUNN	02	0847E	0849U	0915D	N05	W71	4727	04	27.1	28D	S	N			P	0849			
0007		02	1058	1121*	1144	N04	W65	4727	04	27.7	46	S	N					28		K
	RAMY	02	1058	1121	1144	N04	W65	4727	04	27.7	46	S	F		3	C		25		K
	RAMY	02	1058	1131	1144	N04	W65	4727	04	27.7	46	S	N		3	C		31		K
		02	1119		1154	No Flare Patrol														
		02	1206		1218	No Flare Patrol														
		02	1228		1238	No Flare Patrol														
		02	1316		1755	No Flare Patrol														
0008	HOLL	02	1350	1400	1417	N06	W66	4727	04	27.7	27	S	F		3	C		68		
0009		02	15241	1528	1536	N06	W70	4727	04	27.5	12	S	N					31		
	RAMY	02	1524	1528	1538	N07	W72	4727	04	27.3	14	S	N		3	C		32		
	HOLL	02	1525	1528	1535	N06	W67	4727	04	27.7	10	S	N		3	C		30		
		02	1825		1841	No Flare Patrol														
		02	1936		2024	No Flare Patrol														
		02	2030		2126	No Flare Patrol														
0010	RAMY	03	1546	1555	1602	N09	W79	4727	04	27.8	16	S	F		3	C		55		
0011	RAMY	03	1630	1632	1642	N07	W61	4728	04	29.2	12	S	F		3	C		22		
0012	RAMY	03	1711	1713	1715D	N07	W61	4728	04	29.2	4D	S	F		3	C		30		
0013	PALE	03	1954	1955	2009	N05	W68	4728	04	28.8	15	S	N		3	C		27		
0014	HOLL	03	2133	2134	2138	N08	W76	4728	04	28.3	5	S	F		4	C		29		F
		04	2301		2304	No Flare Patrol														
		05	0234		0257	No Flare Patrol														
		05	0311		0318	No Flare Patrol														
		10	0718		0724	No Flare Patrol														
		10	0856		0904	No Flare Patrol														
		10	0911		0924	No Flare Patrol														
		10	0951		1033	No Flare Patrol														
		11	0228		0236	No Flare Patrol														
		12	0000		0007	No Flare Patrol														
		12	1905		1941	No Flare Patrol														
0015	HTPR	13	0755	0806	0813	N02	E03		05	13.5	18	S	F			C	0806	20	.2	E
		15	2100		2259	No Flare Patrol														
0016		16	0921	0915	0931	S32	W18		05	15.0	10	S	N					68	.9	D
	CATA	16	0915E	0915	0930	S32	W19		05	14.9	15D	S	N		2	P	0915	68	.9	
	KHAR	16	0921	-	0932	S32	W18		05	15.0	11	S	F		2	V	0921			D

H - ALPHA S O L A R F L A R E S

MAY 1986

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
0017	KHAR	16	1058		1107	N03	E66	4729	05	21.4	9	SF		2	V	1102			DL
		16	2137		2214	No Flare Patrol													
0018		17	07369	0738*	0810	N04	E56	4729	05	21.5	34	SF					10	.2	DH
	KHAR	17	0736	0738	0755	N04	E54	4729	05	21.3	19	SF		2	V	0738			DH
	HTPR	17	0745	0811	0824	N05	E57	4729	05	21.6	39	SF			C	0811	10	.2	
0019	KHAR	17	0932	0934	0942	N05	E48	4729	05	21.0	10	SN		2	V	0934			DH
0020	KHAR	17	0946	0949	0958	N05	E46	4729	05	20.8	12	SF		2	V	0949			EH
0021	KHAR	17	1039	1042	1050	N04	E54	4729	05	21.5	11	SF		2	V	1042			D
0022	HTPR	17	1428	1536	1548	N04	E55	4729	05	21.7	80	SF			C	1536	20	.3	E
		18	1113		1212	No Flare Patrol													
		19	0221		0230	No Flare Patrol													
		19	0251		0253	No Flare Patrol													
		19	1309		1314	No Flare Patrol													
		19	1338		1342	No Flare Patrol													
0023	HOLL	19	1854	1900	1902	N05	E72	4731	05	25.2	8	SF		3	C		11		
0024	HOLL	19	1914	1919	1932	N05	E72	4731	05	25.2	18	SF		3	C		14		H
0025		20	10123	10137	1028	N04	E09	4729	05	21.1	16	SF					20	.2	D
	HTPR	20	1012	1013	1030	N05	E10	4729	05	21.2	18	SF			C	1013	20	.2	
	KHAR	20	1015	1020	1025	N03	E08	4729	05	21.0	10	SF		2	V	1020			D
0026		20	17148	1723	1728	N06	E58	4731	05	25.0	14	SF					21		
	RAMY	20	1714	1723	1728	N06	E55	4731	05	24.8	14	SF		3	C		25		
	HOLL	20	1722	1723	1728	N07	E62	4731	05	25.4	6	SF		3	C		17		
0027		20	19121	19151	1920	N05	E53	4731	05	24.8	8	SN					39		
	PALE	20	1912	1916	1921	N06	E53	4731	05	24.8	9	SN		3	C		27		
	HOLL	20	1913	1915	1919	N05	E53	4731	05	24.8	6	SN		3	C		28		
	RAMY	20	1913	1915	1920	N05	E53	4731	05	24.8	7	SN		3	C		63		
0028	PALE	20	1952	1953	2006	N07	E59	4731	05	25.2	14	SF		3	C		19		
0029	HOLL	20	2059	2059	2104	N05	E52	4731	05	24.8	5	SF		3	C		17		
0030	PALE	21	0144	0145	0149	N06	E49	4731	05	24.7	5	SF		2	C		30		
0031	HTPR	21	1639	1641	1704	N02	E25	4730	05	23.6	25	SF			C	1641	10	.1	
0032		22	02082	0210	0214	N08	E41	4731	05	25.2	6	SF					40		F
	PALE	22	0208	0210	0215	N09	E41	4731	05	25.2	7	SF		3	C		41		F
	LEAR	22	0210	0210	0214	N08	E41	4731	05	25.2	4	SF		3	C		38		F
0033		22	0631*	0633*	0644	N05	E36	4731	05	25.0	13	SF							D
	KHAR	22	0631	0633	0642	N06	E36	4731	05	25.0	11	SF		2	V	0633			D
	KHAR	22	0642	0644	0646	N04	E35	4731	05	24.9	4	SF		2	V	0644			D
		22	1839		1900	No Flare Patrol													
		22	1910		1926	No Flare Patrol													
		22	2011		2057	No Flare Patrol													
		22	2106		2152	No Flare Patrol													
		22	2240		2312	No Flare Patrol													
		22	2320		2324	No Flare Patrol													
		23	1408		1423	No Flare Patrol													
0034	HTPR	23	1434	1441	1442	N06	E22	4731	05	25.2	8	SF			C	1441	30	.3	E
		23	1534		1536	No Flare Patrol													
		23	2003		2007	No Flare Patrol													
		23	2021		2042	No Flare Patrol													

H - ALPHA S O L A R F L A R E S

MAY 1986

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Corr (Sq Deg)	Remarks
		23	2112		2122	No Flare Patrol														
0035	PEKG	24	0205	0240	0310	N08	E16	4731	05	25.3	65	SN				C	0240	21	.2	D
0036	HTPR	24	0802	0808	0814	N10	E13	4731	05	25.3	12	SF				C	0808	10	.1	
0037	HTPR	24	1100	1107	1113	N06	E02	4731	05	24.6	13	SF				C	1107	10	.1	
0038	HTPR	24	1138	1142	1152	N06	E02	4731	05	24.6	14	SF				C	1142	10	.1	E
0039	HTPR	24	1211	1220	1230	N07	E01	4731	05	24.6	19	SF				C	1220	10	.1	
		24	2002		2045	No Flare Patrol														
		24	2059		2131	No Flare Patrol														
0040		25	08173	08212	0828	N08	W07	4731	05	24.8	11	SN						34	.4	DG
	URUM	25	0817	0823	0827	N07	W07	4731	05	24.8	10	SN				C		45	.4	DG
	KANZ	25	0819	0822	0830	N09	W08	4731	05	24.7	11	SN			2					
	LEAR	25	0820	0821	0828	N08	W06	4731	05	24.9	8	SN			3	C		24		
0041		25	15171	15171	1530	N08	W09	4731	05	25.0	13	SN						49		F
	RAMY	25	1517	1517	1531	N07	W08	4731	05	25.0	14	SN			3	C		49		F
	KANZ	25	1518	1518	1530	N09	W10	4731	05	24.9	12	SN			2					
0042	KANZ	25	1534	1534	1600	N09	W10	4731	05	24.9	26	SN			2					
		25	2053		2059	No Flare Patrol														
0043		25	2155	2159	2206	N08	W12	4731	05	25.0	11	SN						96	1.2	DT
	VORO	25	2155	2158U	2201	N09	W14	4731	05	24.9	6	SN				C	2158	116	1.2	DT
	HOLL	25	2155	2159	2211	N06	W11	4731	05	25.1	16	SF			3	C		77		
0044	HOLL	25	2214	2216	2235	N06	W11	4731	05	25.1	21	SF			3	C		23		F
0045	HOLL	25	2303	2317	2327D	N06	W11	4731	05	25.1	24D	SF			3	C		47		
0046	LEAR	25	2359E	2359	2402	N09	W13	4731	05	25.0	3D	SF			2	C		25		F
0047		26	00169	00253	0044	N08	W17	4731	05	24.7	28	SN						44	.7	EF
	PEKG	26	0016	0025	0053	N07	W16	4731	05	24.8	37	SN				P	0027	63	.7	E
	LEAR	26	0025	0028	0034	N09	W18	4731	05	24.7	9	SF			3	C		24		F
0048		26	02496	02562	0312	N08	W18	4731	05	24.8	23	SN						108	1.6	EFG
	URUM	26	0249	0258	0310	N07	W18	4731	05	24.8	21	SN				C		147	1.6	EG
	LEAR	26	0255	0256	0313	N08	W17	4731	05	24.8	18	SN			3	C		68		F
0049		26	07463	07491	0804	N09	W17	4731	05	25.0	18	SN						67	.9	F
	LEAR	26	0746	0749	0805	N08	W18	4731	05	25.0	19	SF			3	C		50		F
	KANZ	26	0749	0749	0804	N10	W17	4731	05	25.0	15	SF			2					
	CATA	26	0750E	0750	0815D	N08	W16	4731	05	25.1	25D	SB			2	P	0750	84	.9	
0050	KHAR	26	0907		0912	N05	W38		05	23.5	5	SF			2	V	0907			DH
0051	KHAR	26	0943		0948	N08	W21	4731	05	24.8	5	SF			2	V	0943			D
0052		26	16367	16412	1651	N08	W24	4731	05	24.9	15	SF						40		F
	RAMY	26	1636	1641	1646D	N06	W23	4731	05	25.0	10D	SF			3	C		40		F
	KANZ	26	1643	1643	1651	N09	W26	4731	05	24.7	8	SF			2					
0053		26	1823	18301	1844	N08	W26	4731	05	24.8	21	SF						72		F
	HOLL	26	1823	1831	1847	N08	W26	4731	05	24.8	24	SF			3	C		85		F
	PALE	26	1824E	1830	1840	N07	W27	4731	05	24.7	16D	SF			3	C		60		
		26	2230		2237	No Flare Patrol														
		26	2300		2311	No Flare Patrol														
0054	PEKG	27	0313E	0313	0329	S01	W03	4732	05	26.9	16D	SN				P	0313	8	.1	D

H - ALPHA S O L A R F L A R E S

MAY 1986

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
0055		27	0352E	0352U	0430D	N08	W33	4731	05	24.7	38D	SF						162	2.0	EJK
	TACH	27	0352E	0352U	0430D	N08	W33	4731	05	24.7	38D	SF				C	0352	162	2.0	EJK
	TACH	27	0352E	0409U	0430D	N08	W33	4731	05	24.7	38D	SF				C				
0056	KHAR	27	0700		0718	N07	W36	4731	05	24.6	18	SF			2	V	0703			DL
0057	HTPR	27	1155		1204D	N07	W33	4731	05	25.0	9D	SF				C	1203	20	.2	E
0058	HTPR	27	1616E		1630	S02	W10	4732	05	26.9	14D	SF				C	1620	20	.2	E
		27	1750		1826	No Flare Patrol														
		27	1835		1836	No Flare Patrol														
		27	1847		1850	No Flare Patrol														
		27	1903		1908	No Flare Patrol														
		27	2004		2026	No Flare Patrol														
		27	2031		2045	No Flare Patrol														
		27	2111		2142	No Flare Patrol														
		27	2153		2325	No Flare Patrol														
0059	HTPR	28	1358	1359	1407	N08	W59	4731	05	24.1	9	SN				C	1359	80	1.6	E
0060	HTPR	29	1217	1223	1236	S20	E02		05	29.7	19	SF				C	1223	10	.1	
		29	2025		2035	No Flare Patrol														
		29	2114		2117	No Flare Patrol														
0061	HTPR	31	0633	0642	0705	S02	W60	4732	05	26.8	32	SF				C	0642	20	.4	E
0062	HTPR	31	0902	0905	0923	S02	W61	4732	05	26.8	21	SF				C	0905	20	.4	E
0063	HTPR	31	1407	1409	1415	S01	W63	4732	05	26.9	8	SF				C	1409	10	.2	
0064	HTPR	31	1558	1602	1617	S01	W64	4732	05	26.9	19	SF				C	1602	20	.4	
		31	2103		2119	No Flare Patrol														
		31	2137		2139	No Flare Patrol														

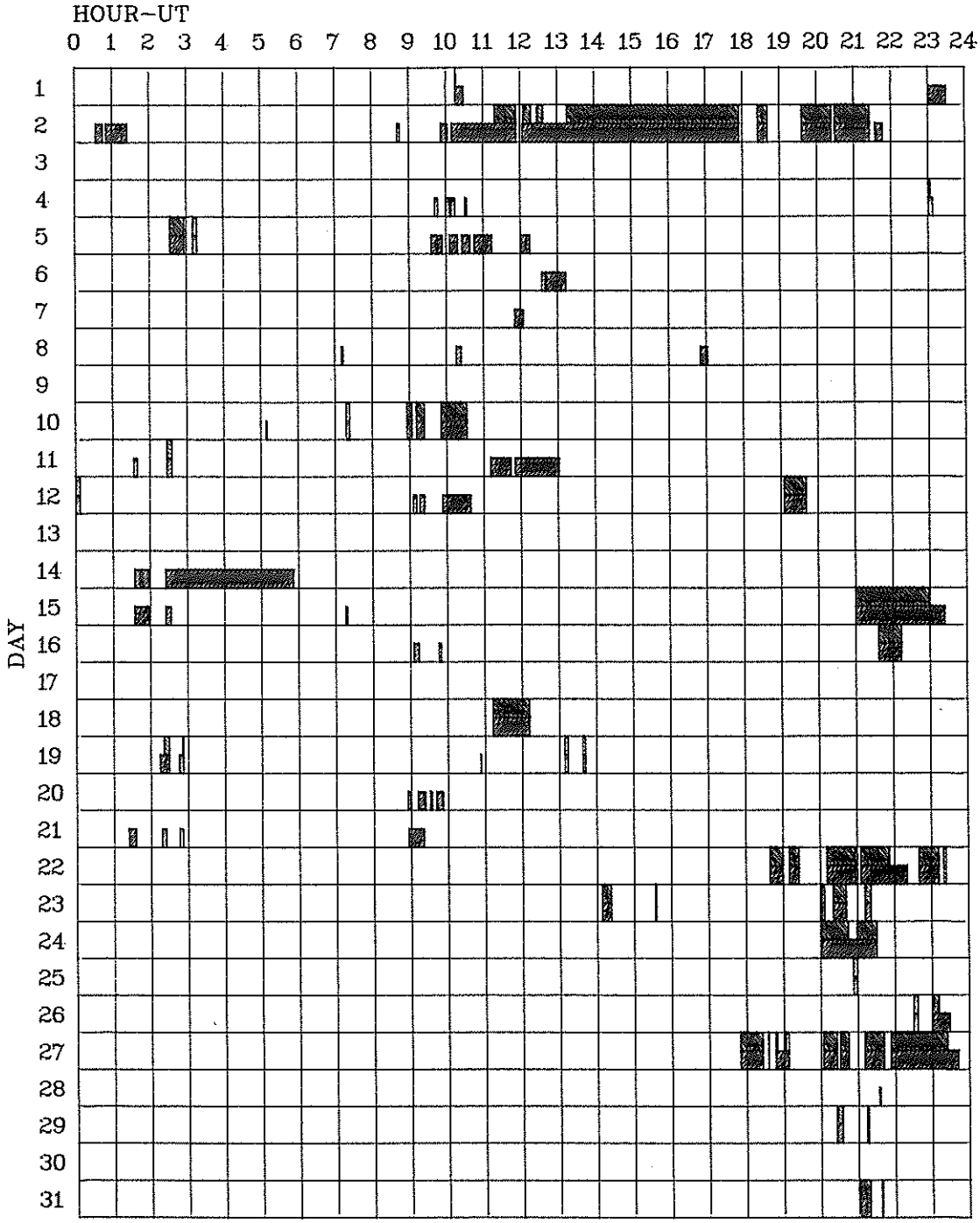
"Remarks":

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 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 H and K lines of Ca II.
P = Flare shows helium D3 in emission.
Q = Flare shows Balmer continuum in emission.
R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
S = Brightness follows disappearance of filament in same position.
T = Region active all day.
U = Two bright branches, parallel or converging.
V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide H-alpha line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

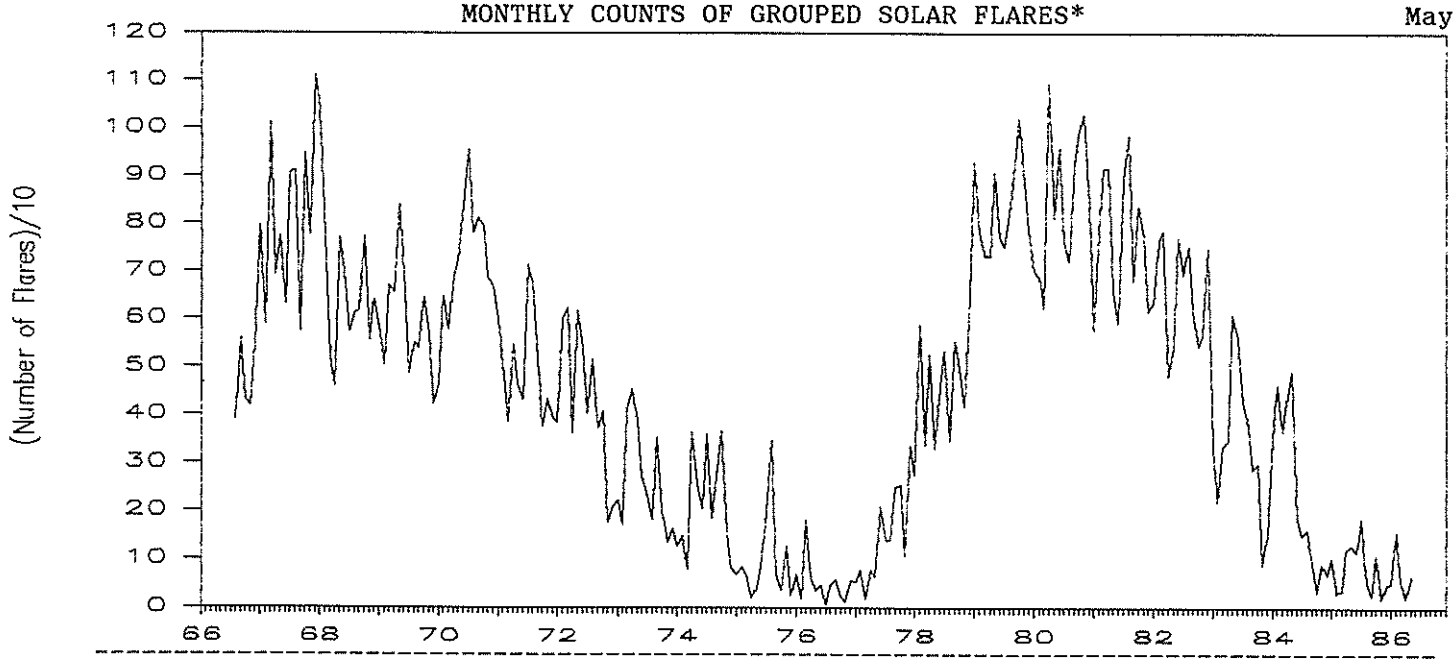
MAY 1986



Times of no flare patrol, shown here as shaded areas, combine reports from the observatories listed below. Portions of a panel completely shaded mark dates and times of no patrol of any kind, that is, of neither visual nor cinematographic; portions of a panel with only the bottom half shaded mark times of strictly visual patrol.

Abastumani	Haute Provence	Kanzelhoehe	Manila	Ramey
Athens	Holloman	Kharkov	Mitaka	Tashkent
Bucharest	Hurbanovo	Learmonth	Palehua	Urumqi
Catania	Istanbul	Lvov	Peking	Voroshilov
			Purple Mt.	Yunnan

MONTHLY COUNTS OF GROUPED SOLAR FLARES* May 86



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1966								391	558	432	417	543	2341
1967	796	589	1009	694	771	629	907	911	573	946	775	1109	9709
1968	1037	773	519	460	768	697	573	611	616	772	556	640	8022
1969	581	504	669	655	839	694	489	551	540	643	566	422	7153
1970	466	646	578	688	722	836	954	780	811	797	687	667	8632
1971	598	505	387	546	461	430	713	673	518	375	431	394	6031
1972	384	599	621	361	614	541	404	515	371	408	175	210	5203
1973	221	171	410	453	388	270	232	182	353	201	136	163	3180
1974	127	148	79	364	255	204	360	187	270	366	153	81	2594
1975	68	82	69	19	42	85	196	346	68	38	127	25	1165
1976	69	18	180	60	38	48	6	47	57	23	13	55	614
1977	54	77	18	76	64	210	140	140	250	252	107	336	1724
1978	274	588	338	526	330	460	533	346	554	499	418	648	5514
1979	926	781	731	731	907	772	750	821	901	1018	888	786	10012
1980	703	689	621	1092	811	956	763	720	924	988	1027	838	10132
1981	578	782	914	915	658	592	893	982	680	836	773	615	9218
1982	631	763	783	480	540	769	696	753	616	545	565	749	7890
1983	332	220	337	346	609	561	427	395	289	298	88	152	4054
1984	353	461	366	440	492	185	151	161	95	36	92	69	2901
1985	104	29	38	119	129	116	185	53	25	108	19	50	975
1986	51	158	54	21	64								348

*Flare counts are preliminary from July 1982 to present.

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

MAY 1986

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
01	200	GORK	44	NS	0301.0E		391.0D		5.0		
	260	ONDR	44	NS	0627.0E	1322.5	453.0D	19.0			
	245	PALE	43	NS	1619.0	1719.0	738.0D	19.0			QL=6 ST=3 TYP=1
	2000	TYKW	32	ABS	0050.0	0130.0	240.0	-1.5	-0.7		
	3750	TYKW	32	ABS	0050.0	0135.0	240.0	-1.0	-0.5		
	9400	TYKW	32	ABS	0050.0	0210.0	240.0	-2.0	-1.0		
	810	KRAK	8	S	1051.4	1051.6	.2	4.0			
	430	KRAK	8	S	1051.7	1052.0	.4	25.0			
02	245	LEAR	43	NS	0432.5	0510.1	111.5	36.0			QL=6 ST=2 TYP=1
	200	GORK	43	NS	0440.0		258.0		5.0		
	260	ONDR	44	NS	0648.0E		442.0D	5.0			
	930	BORD	46	C	0707.2	0708.0	.9	30.0	4.0		
	430	KRAK	4	S/F	0823.5	0825.0	4.7	100.0	15.0		
	930	BORD	46	C	1210.6	1211.0	.7	286.0	6.0		
	930	BORD	41	F	1535.3	1535.9	.7	31.0	3.0		
	2800	OTTA	20	GRF	1540.0	1600.0	70.0	1.0	.6		
03	200	GORK	43	NS	0451.0		281.0D		5.0		
	260	ONDR	44	NS	0550.0E		512.0D	6.0			
	204	IZMI	43	NS	0600.0		360.0	20.0			
	430	KRAK	40	F	0859.0	0942.5	52.0	17.0	.1		
	1470	POTS	23	GRF	0935.0	1002.0	148.0	4.0			
	930	BORD	42	SER	0938.0	0941.2	9.0	39.0	2.0		
	930	BORD	40	F	0944.0	1018.6	46.0	24.0	7.0		
	2800	OTTA	20	GRF	1100.0	1110.0	130.0D	3.8			
	810	KRAK	8	S	1110.5	1110.7	.6	27.0			
	430	KRAK	8	S	1110.8	1111.2	.8	26.0			
	2800	OTTA	20	GRF	2015.0	2020.0	30.0	1.6	.6		
04	260	ONDR	8	S	0815.5	0815.5	.1				
	260	ONDR	46	C	0945.0		48.0		8.0		
	536	ONDR	46	C	0945.0U		40.0U				
	260	ONDR			0945.0	0947.0		5.0			
	536	ONDR			0945.0U	0954.5		23.0			
	260	ONDR			0945.0	0955.0		15.0			
	260	ONDR			0945.0	1005.5		24.0			
	260	ONDR			0945.0	1018.0		8.0			
	536	ONDR			0945.0U	1023.3		20.0			
	234	POTS	23	GRF	0945.3	0956.4	52.0	20.0			
	204	IZMI	27	RF	0946.0	0956.6	44.0	17.0	6.0		
	3100	CRIM	45	C	0948.0	0954.2	41.0	16.0	6.0		
	3100	CRIM			0948.0	1011.1		15.0			
	1470	POTS	45	C	0948.5	0954.0	39.0	14.0			
	30	POTS	49	GB	0948.5	0956.5	46.0	35000.0			
	113	POTS	45	C	0948.6	0952.4	39.0	55.0			
	33	UPIC	49	GB	0948.7		19.8				
	3000	POTS	45	C	0951.0	0954.0	39.0	17.0			
	9500	POTS	20	GRF	0951.0	1012.5	39.0	14.0			
	3150	IZMI	27	RF	0951.2	0954.6	33.6	11.0	5.0		
	29	UPIC	49	GB	0952.0	0954.3	16.6				
	33	UPIC	29	PBI	1008.5	1028.6	26.0U				
	29	UPIC	29	PBI	1008.5	1030.8	28.3U				
	810	KRAK	41	F	1013.4	1020.7	11.2	20.0	6.0		
	808	ONDR	46	C	1017.5	1020.5	8.0				
	2800	OTTA	1	S	1630.0	1632.0	8.0	2.0	.7		
	33	UPIC	48	C	1637.6	1638.3	5.2				
	29	UPIC	46	C	1638.0	1639.4	3.8				
06	808	ONDR	46	C	0608.7	0608.7	1.5				
	260	ONDR	8	S	0841.5	0841.5	.1	3.0			
	260	ONDR	8	S	0859.5	0859.5	.1	3.0			
	260	ONDR	8	S	0930.0	0930.0	.1	5.0			
	808	ONDR	8	S	1003.0	1003.2	.5				
07	536	ONDR	8	S	0933.5	0933.7	1.2	14.0			
	808	ONDR	1	S	0933.8	0934.0	.6				
	930	BORD	41	F	1153.7	1154.0	.6	172.0	3.0		
08	29	UPIC	46	C	1343.6	1344.5	4.1				
	33	UPIC	46	C	1343.7	1344.4	4.7				

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

MAY 1986

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
10	810	KRAK	8	S	0851.5	0851.6	.7	14.0			
	810	KRAK	8	S	0917.2	0917.2	.5	8.0			
	33	UPIC	42	SER	1154.2		60.7				
	29	UPIC	42	SER	1154.5	1227.0	60.8				
	536	ONDR	4	S/F	1220.0	1220.5	1.0	4.0			
	536	ONDR	8	S	1226.0	1226.5	1.0	9.0			
11	33	UPIC	3	S	0647.1	0647.5	.8				
	33	UPIC	46	C	0930.0	0930.5	5.0				
	29	UPIC	45	C	0930.1	0930.5	4.9				
	810	KRAK	8	S	1052.5	1052.7	.2	15.0			
	430	KRAK	8	S	1052.7	1053.0	.5	51.0			
	33	UPIC	45	C	1231.3	1231.9	2.0				
	29	UPIC	45	C	1231.5	1232.3	1.8				
	430	KRAK	8	S	1239.0	1239.2	.5	31.0			
	810	KRAK	8	S	1239.0	1239.2	.2	8.0			
13	536	ONDR	1	S	1055.5	1055.8	1.0	3.0			
16	536	ONDR	8	S	1102.5	1102.6	.3	35.0			
17	8800	ATHN	4	S/F	0720.0	0724.0	10.0	42.0			QL=6 ST=2 TYP=3
18	3100	CRIM	24	R	0546.0	0708.0		4.0			
	536	ONDR	4	S/F	1208.0	1209.0	2.0	4.0			
	260	ONDR	46	C	1208.2		5.0		2.0		
	260	ONDR			1208.2	1209.5		3.0			
	260	ONDR			1208.2	1211.8		2.0			
19	221	ABST	44	NS	0643.8E	0654.2	137.0D	8.0			
	810	KRAK	8	S	1026.8	1027.1	.4	16.0			
	430	KRAK	2	S/F	1027.0	1027.5	1.0	50.0	3.0		
	536	ONDR	8	S	1116.0	1116.0	.2	12.0			
20	221	ABST	43	NS	0510.0	0630.0	95.0	9.0			
	2800	OTTA	32	ABS	2100.0	2112.0	30.0	-1.0	-0.5		
21	245	LEAR	4	S/F	0143.0	0143.1	2.1	13.0			QL=2 ST=2 TYP=3
	204	IZMI	4	S/F	0603.5	0603.8	.5	78.0	40.0		
	536	ONDR	8	S	1136.5	1137.8	1.3	8.0			
22	3750	TYKW	20	GRF	0207.0	0209.0	35.0	1.0	.5		
23	1000	TYKW	32	ABS	0040.0	0140.0	200.0	-1.0	-0.5		
	2000	TYKW	32	ABS	0040.0	0140.0	210.0	-1.5	-0.7		
	3750	TYKW	32	ABS	0040.0	0140.0	210.0	-1.5	-0.7		
	9400	TYKW	32	ABS	0040.0	0220.0	210.0	-3.0	-1.5		
	2800	OTTA	20	GRF	1430.0	1434.0	15.0	.8	.3		
24	2800	OTTA	20	GRF	2000.0	2030.0	60.0	1.2	.6		
25	245	LEAR	8	S	0800.8	0801.0	.3	24.0			QL=6 ST=2 TYP=3
	410	LEAR	8	S	0800.8	0801.0	.3	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1510.0	1514.0	45.0	2.0	1.0		
	2800	OTTA	21	GRF	2156.0	2220.0	50.0	1.6	.8		
	2000	TYKW	5	S	2157.5	2158.6	3.5	6.0	1.5		
	3750	TYKW	5	S	2157.7	2158.3	2.5	7.0	2.0		
	2800	OTTA	2	S/F	2157.9	2158.5	2.0	6.0	3.0		
	9400	TYKW	5	S	2158.0	2158.4	1.0U	13.0	4.0U		
	1000	TYKW	45	C	2158.0	2158.6	1.0	17.0	1.5		
	500	HIRA	8	S	2158.0	2158.0	.7	47.0			WR
	2000	TYKW	20	GRF	2210.0	2220.0	30.0	1.5	.7		
	2000	TYKW	20	GRF	2302.0	2305.0	40.0	1.0	.5		
	3750	TYKW	20	GRF	2302.0	2315.0	40.0	1.0	.5		
	500	HIRA	8	S	2329.8	2330.1	.5	3.0			0
	2000	TYKW	21	GRF	2350.0	0001.0	120.0	2.0	1.0		
	3750	TYKW	21	GRF	2354.0	0005.0	130.0	1.0	.5		
	9400	TYKW	20	GRF	2355.0	0040.0	120.0	2.0	1.0		
26	3750	TYKW	20	GRF	0020.0	0035.0	85.0	1.0	.5		
	2000	TYKW	20	GRF	0024.0	0025.0	30.0	1.0	.5		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

MAY 1986

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
26	500	HIRA	8	S	0106.5	0106.6	.4	4.0			0
	3750	TYKW	20	GRF	0253.0U	0305.0	115.0U	2.0	1.0		
	2000	TYKW	21	GRF	0254.0U	0302.0	100.0U	1.5	.7		
	2000	TYKW	5	S	0254.5	0255.3	3.5	3.0	1.0		
	1000	TYKW	5	S	0255.0	0255.4	2.0	1.0	.3		
	536	ONDR	8	S	0704.0	0705.0	1.0	8.0			
	3000	POTS	2	S/F	0745.0	0746.0	2.0	4.0U			
	3100	CRIM	1	S	0745.0	0746.0	3.0	3.0	1.0		
	1470	POTS	2	S/F	0745.0	0746.1	2.6	2.0			
	2950	GORK	45	C	0745.1	0746.0	1.7	3.3			
	2950	GORK			0745.1	0746.7		2.6			
	2000	TYKW	45	C	0745.5	0746.1	1.5	4.0	2.0		
	2000	TYKW	29	PBI	0747.0		15.0	1.0	.5		
	5900	KISV	1	S	0939.6	0940.0	.5	4.0			
	3100	CRIM	1	S	0940.5	0940.9	1.0	6.0	2.0		
	950	GORK	1	S	0940.7	0941.0	.6	.8			
	3000	POTS	1	S	0940.8	0941.2	1.0	6.0U			
	1470	POTS	1	S	0940.8	0941.2	1.0	3.0			
	5900	KISV	1	S	0940.9	0941.2	1.5	7.0			
	9100	GORK	1	S	0940.9	0941.2	1.1	5.2	2.5		
	650	GORK	1	S	0941.0	0941.1	.3	2.0			
	9500	POTS	1	S	0941.0	0941.2	1.0	5.0			
	9300	KISV	1	S	0941.0	0941.3	1.0	5.0			
	2950	GORK	3	S	0943.7	0944.0	1.2	5.2	2.5		
	2800	OTTA	1	S	1124.0	1125.0	3.0	2.2	.8		
	2950	GORK	4	S/F	1124.6	1125.0	1.3	1.8	.9		
	3000	POTS	1	S	1125.0	1125.3	1.0	2.0U			
	5900	KISV	1	S	1125.0	1125.5	2.0	3.0			
	260	ONDR	8	S	1135.0	1135.0	.3	12.0			
	2800	OTTA	20	GRF	1820.0	1825.0	30.0	1.2	.6		
	245	SGMR	47	GB	1948.0	1951.3	10.6	490.0			QL=1 ST=3 TYP=5
27	5900	KISV	2	S/F	1115.2	1115.6	2.5	5.0			
	536	ONDR	8	S	1337.0	1337.3	.7	7.0			
28	2800	OTTA	20	GRF	1805.0	1810.0	30.0	.6	.3		
30	810	KRAK	8	S	1009.5	1010.0	.8	77.0			
	810	KRAK	8	S	1101.2	1101.3	.5	33.0			

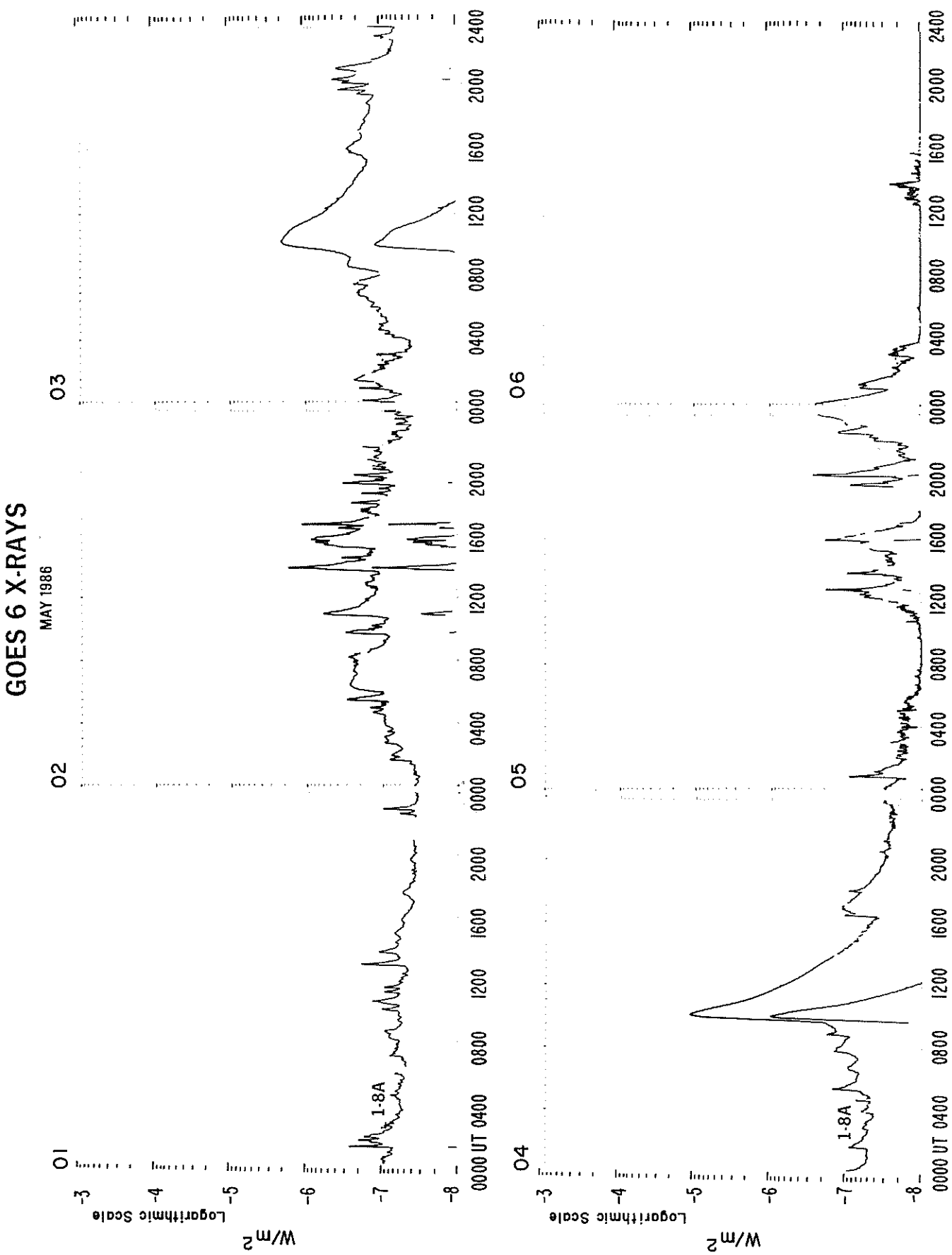
Reports are received routinely from the following observatories:

ATHN = Athens
BERN = Berne
BORD = Bordeaux
CRIM = Crimea
GORK = Gorky
HIRA = Hiraiso
HUAN = Huancayo
IZMI = IZMIRAN
KISV = Kislovodsk
KRAK = Krakow
LEAR = Learmonth
MANI = Manila
NOBE = Nobeyama
ONDR = Ondrejov
OTTA = Ottawa
PALE = Palehua
PEKG = Peking
PENT = Penticton
POTS = Potsdam
SAOP = Sao Paulo
SGMR = Sagamore Hill
SVTO = San Vito
SVTO = San Vito
SYDN = Sydney
TORN = Torun
TYKW = Toyokawa
TRST = Trieste
UPIC = Upice
VORO = Voroshilov

Explanation of Type Code:

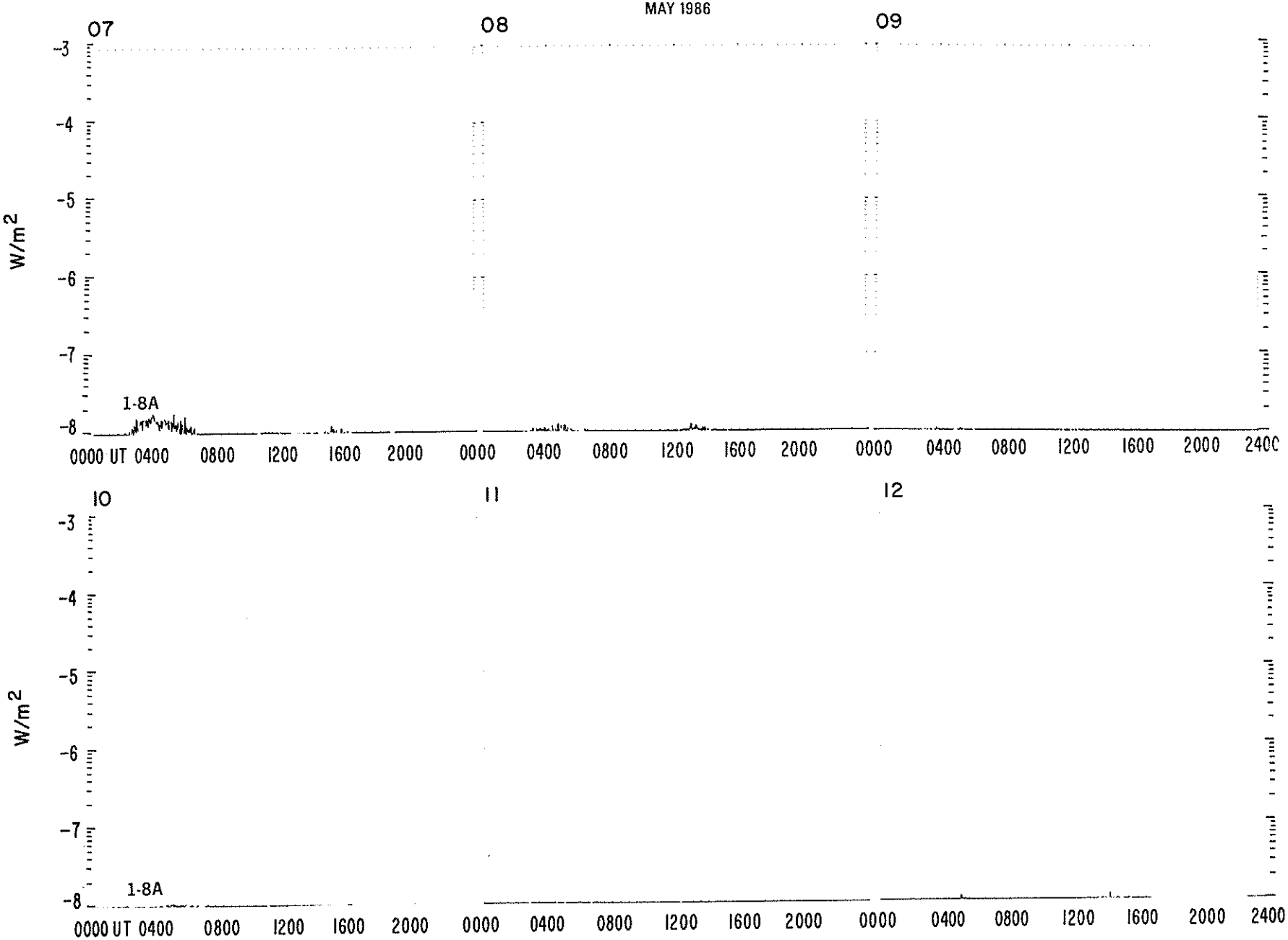
1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
33 Absorption
40 Fluctuation
41 Group of 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

1A Simple 1A
3A Simple 2A
21A Simple 3A GRF
2A Simple 1AF
4A Simple 2AF
240 Rise only
240F Rise only F
24P Post Rise
24PF Post Rise F
16A Fall A
260 Fall Only
26F Fall F
27F Rise and Fall F
27AF Rise and Fall AF
31A Post Burst Decrease A
32A Absorption A
46F Complex F


GOES 6 X-RAYS
MAY 1986
01
02
03
04
05
06
1-8A
W/m2
Logarithmic Scale
-3
-4
-5
-6
-7
-8
0000 UT 0400 0800 1200 1600 2000 0000 0400 0800 1200 1600 2000 0000 0400 0800 1200 1600 2000 2400

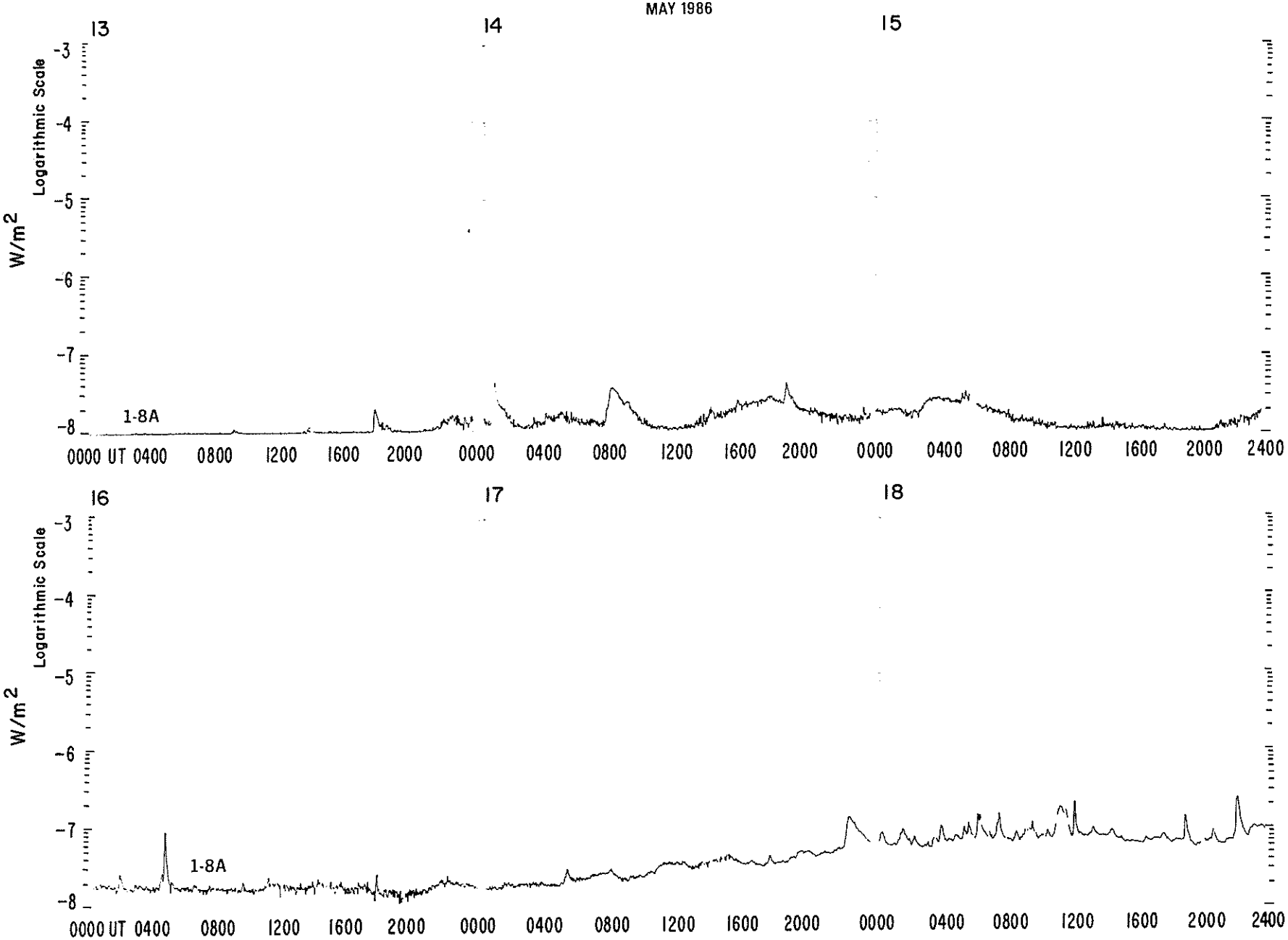
GOES 6 X-RAYS

MAY 1986



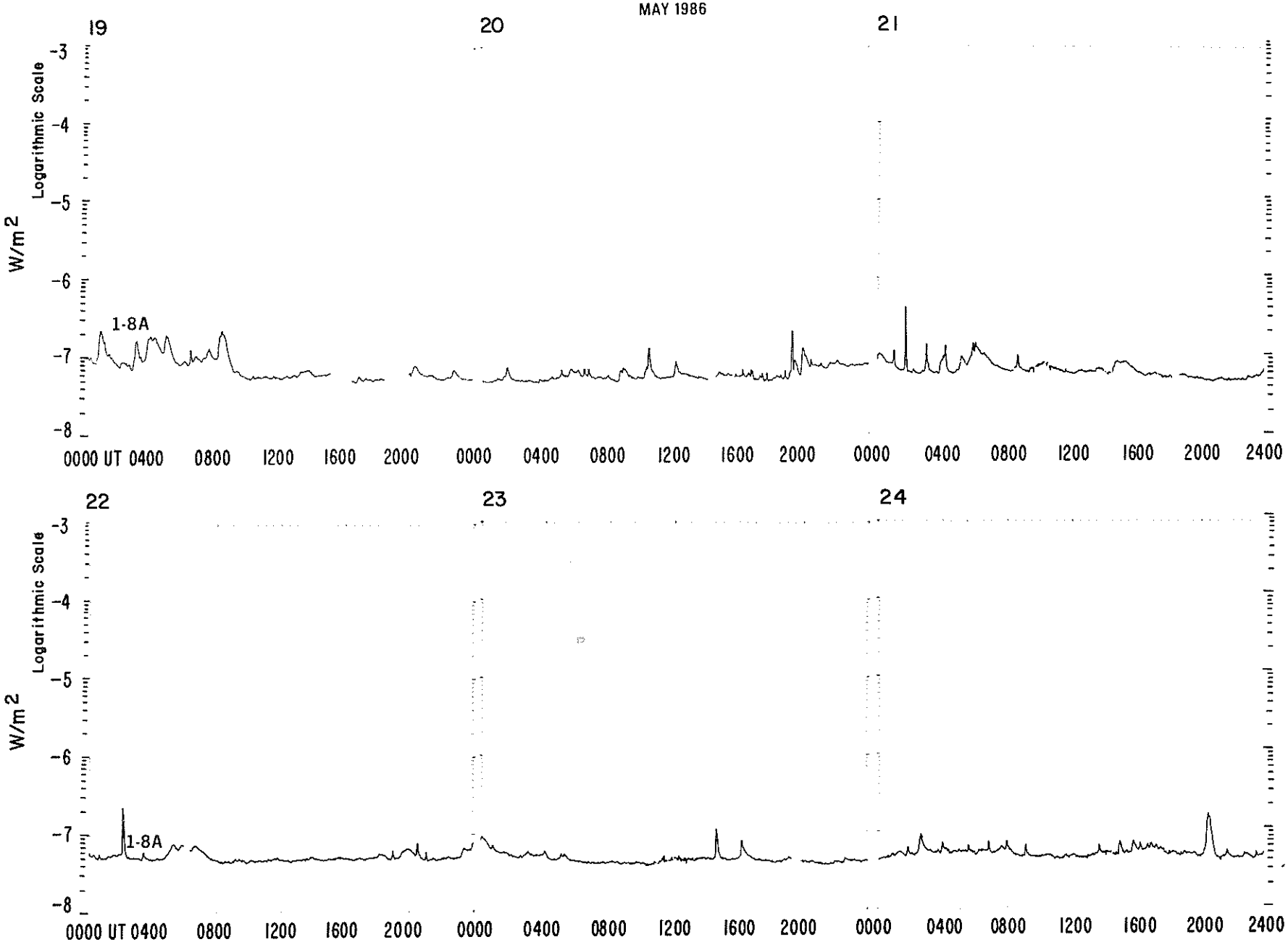
GOES 6 X-RAYS

MAY 1986



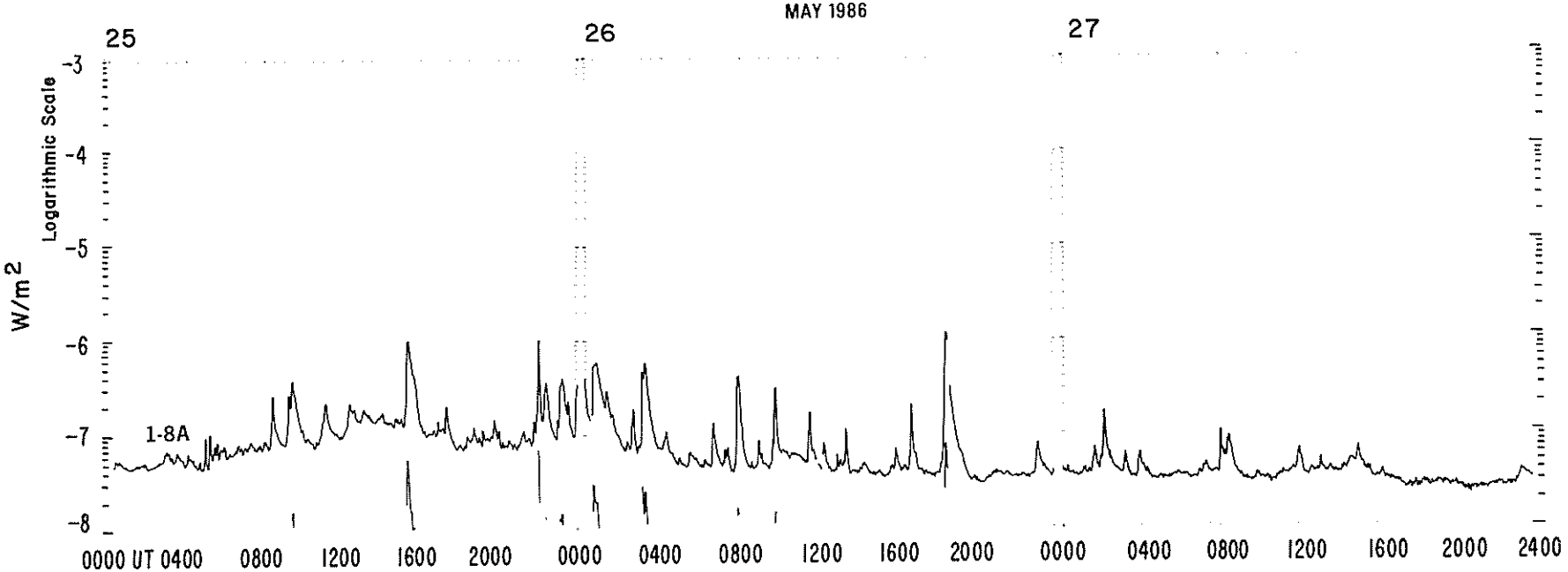
GOES 6 X-RAYS

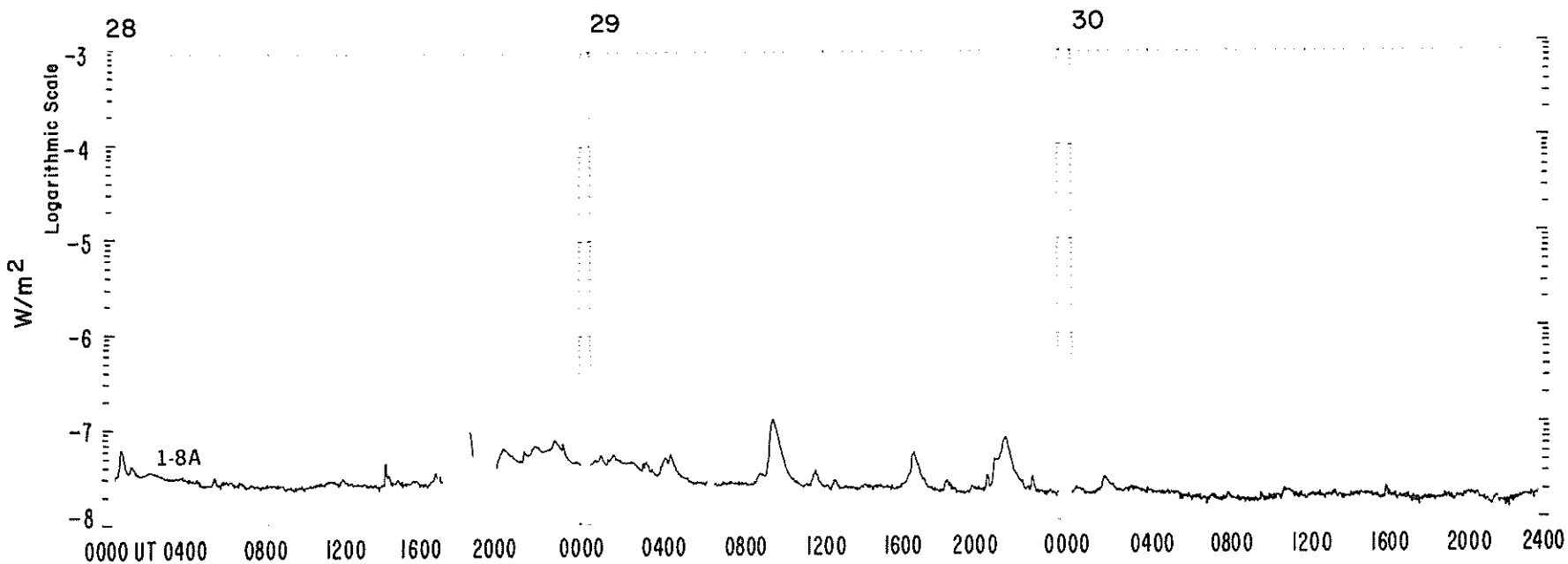
MAY 1986



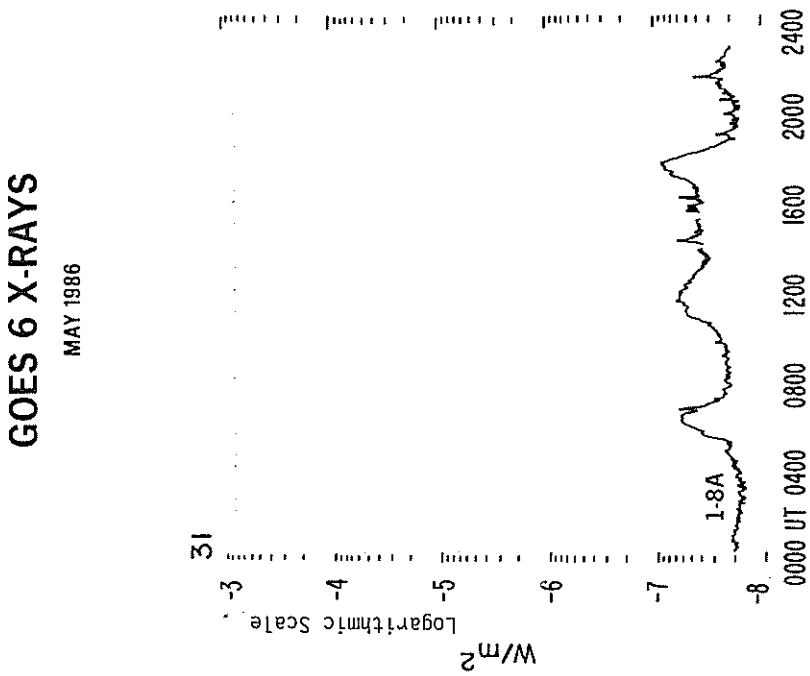
GOES 6 X-RAYS

MAY 1986





19
May 86


GOES 6 X-RAYS
MAY 1986
W/m2
Logarithmic Scale
-3
-4
-5
-6
-7
-8
1-8A
0000 UT 0400 0800 1200 1600 2000 2400
31

GOES S O L A R X-RAY F L A R E S

Preliminary Listing

May 1986

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	Opt	Imp Xray
01	0107	0111	0114					B3.4
01	0146	0149	0154					B1.8
01	0552	0556	0600	N06	W56	4727	SF	B3.3
01	0956	1002	1005					B1.1
01	1105	1109	1113					B1.0
01	1123	1128	1131					B1.1
01	1250	1256	1301					B2.0
01	2251	2256	2301					B1.0
02	0240	0306	0313					B1.0
02	0455	0459	0502					B1.4
02	0523	0530	0539					B2.9
02	0939	0946	0956					B3.1
02	1058	1121	1144	N04	W65	4727	SF	B6.0
02	1350	1355	1410	N07	W72	4727	SN	C1.8
02	1431	1434	1436					B3.5
02	1510	1542	1555			4727		B9.4
02	1623	1627	1631					B3.8
02	1636	1641	1644					C1.2
02	1758	1803	1806					B2.6
02	1910	1918	1923					B3.6
02	1942	1950	1952					B2.5
02	2009	2012	2014					B1.4
02	2020	2024	2030					B1.3
02	2135	2138	2140					B1.8
02	2222	2226	2228					B1.0
02	2359	0007	0010					B1.7
03	0050	0054	0056					B2.1
03	0120	0126	0138					B2.3
03	0300	0303	0305					B1.1
03	0434	0437	0455					B1.0
03	0954	1017	1054					C2.1
03	1934	1941	1949					B2.1
03	1954	1955	2009	N05	W68	4728	SN	B3.6
03	2017	2034	2046	N08	W89	4727	1B	B4.3
03	2305	2321	2325					B1.1
03	2354	0001	0009					B1.4
04	0136	0141	0154					B1.0
04	0519	0524	0530					B1.6
04	0745	0749	0808					B1.4
04	0850	0854	0900					B1.9
04	0939	1007	1039			4727		M1.2
04	1628	1701	1744					B1.1
04	1803	1806	1810					B1.0
05	1243	1247	1249					B1.9
05	1345	1350	1352					B1.0
05	1551	1557	1600					B2.3
05	1954	2006	2010					B2.8
05	2213	2250	2304					B1.2
05	2315	0004	0018					B2.5
16	0423	0429	0432					B1.0
17	2221	2233	2257			4729		B1.3
18	0345	0353	0401			4729		B1.0
18	0513	0517	0522			4729		B1.0
18	0529	0534	0538			4729		B1.3
18	0604	0609	0614					B1.5
18	0615	0617	0621					B1.4
18	0723	0727	0730					B1.6
18	0927	0930	0934					B1.6
18	1056	1114	1140					B1.9
18	1202	1208	1212					B2.3
18	1313	1317	1323					B1.1
18	1856	1901	1906					B1.5
18	2205	2214	2222					B2.5
19	0039	0048	0057					B2.3
19	0255	0303	0308					B1.7
19	0338	0355	0423					B2.0
19	0446	0453	0504					B2.1
19	0621	0624	0627					B1.3
19	0722	0733	0741					B1.7
19	0806	0820	0836					B2.3
20	1915	1022	0125					B1.3
20	1608	1611	1613					B1.0
20	1912	1916	1921	N06	E53	4731	SN	B2.3
20	1952	1953	2006	N07	E59	4731	SF	B1.3
20	2022	2025	2027					B1.1
21	0144	0145	0149	N06	E49	4731	SF	B5.3
21	0258	0302	0305					B1.4
21	0410	0413	0415					B1.4
22	0208	0210	0215	N09	E41	4731	SF	B2.5
23	1430	1436	1441					B1.1
24	2014	2022	2033					B1.6
25	0453	0454	0456					B1.1
25	0503	0507	0509					B1.2
25	0820	0821	0828	N08	W06	4731	SN	B2.9
25	0906	0922	0931					B4.0
25	1059	1104	1108					B2.3
25	1212	1219	1236					B2.2
25	1517	1517	1531	N07	W08	4731	SN	C1.0
25	1647	1650	1654					B1.4
25	1710	1716	1719					B2.1
25	1905	1908	1911					B1.1
25	1938	1944	1947					B1.4
25	2142	2145	2148					B1.5
25	2155	2159	2211	N06	W11	4731	SF	C1.1
25	2215	2223	2228					B3.6
25	2303	2317	2327D	N06	W11	4731	SF	B4.0
25	2351	0000	0000					B4.1
26	0000E	0000	0021	N09	W13	4731	SF	B4.1
26	0025	0028	0034	N09	W18	4731	SF	B5.9
26	0104	0107	0111					B3.1
26	0220	0229	0232					B1.8
26	0255	0257	0313	N08	W19	4731	SN	B6.1
26	0629	0634	0640					B1.3
26	0746	0749	0805	N08	W18	4731	SF	B4.2
26	0932	0945	0948					B3.4
26	1123	1130	1133					B1.7
26	1317	1321	1324					B1.1
26	1636	1641	1646D	N06	W23	4731	SF	B2.1
26	1823	1831	1847	N08	W26	4731	SF	C1.2
27	0201	0207	0211					B1.8
27	0757	0802	0805					B1.1
29	0907	0922	0935					B1.3

Preliminary GOES Satellite Data
Daily Average X-ray Background

June 1985 - May 1986

Day	1985 Jun	Jul	Aug	Sep	Oct	Nov	Dec	1986 Jan	Feb	Mar	Apr	May
1	B0.1	B1.1	B0.5	B0.1	B0.0	B0.0	B0.1	B0.0	B0.2	B2.0	<B0.1	B0.5
2	B0.5	B1.0	B0.5	B0.1	B0.0	B0.0	B0.1	B0.0	B0.3	B1.5	<B0.1	B1.0
3	B0.7	B0.9	B0.4	B0.1	B0.0	B0.1	B0.0	B0.0	**	B1.9	<B0.1	B1.4
4	B0.7	B0.8	B0.4	B0.1	B0.0	B0.1	B0.0	B0.0	**	B1.4	<B0.1	B0.5
5	B1.8	B1.0	B0.4	B0.2	B0.0	B0.0	B0.0	B0.0	**	B1.6	<B0.1	B0.2
6	B2.9	B1.1	B0.4	B0.2	B0.0	B0.1	B0.1	B0.0	**	B1.5	<B0.1	<B0.1
7	B1.0	B3.2	B0.6	B0.1	B0.1	B0.2	B0.2	B0.0	B7.2	B1.0	B0.2	<B0.1
8	B1.0	B4.1	B0.6	B0.1	B0.0	B0.6	B0.5	B0.0	B2.5	B0.8	<B0.1	<B0.1
9	B1.0	B3.1	B0.5	B0.0	B0.0	B0.5	B0.2	B0.0	B2.0	B0.9	<B0.1	<B0.1
10	B1.2	B4.1	B0.3	B0.0	B0.0	B0.4	B0.5	B0.0	B2.5	B0.9	<B0.1	<B0.1
11	B1.0	B3.2	B0.2	B0.0	B0.0	B0.5	B1.0	B0.0	B9.8	B0.8	<B0.1	<B0.1
12	B1.0	B3.5	B0.1	B0.1	B0.0	B0.4	B1.0	B0.0	B5.7	B0.7	B0.2	<B0.1
13	B0.9	B3.4	B0.0	B0.5	B0.0	B0.5	B0.6	B0.3	B6.1	B0.5	<B0.1	<B0.1
14	B0.7	B1.5	B0.0	B0.2	B0.3	B0.6	B0.4	B0.4	B0.1	B0.3	<B0.1	<B0.1
15	B0.7	B0.7	B0.0	B0.1	B1.2	B1.3	B0.5	B0.4	B5.7	B0.0	B0.4	<B0.1
16	B0.6	B0.2	B0.0	B0.1	B0.9	B0.7	B0.6	B0.5	B2.1	B0.0	B0.3	B0.2
17	B0.5	B0.2	B0.0	B0.0	B1.0	B0.5	B0.5	B1.0	B2.3	B0.0	B0.3	B0.3
18	B0.3	B0.1	B0.0	B0.0	B0.5	B0.4	B0.5	B0.7	B0.0	B0.0	B0.2	B0.8
19	B0.2	B0.1	B0.0	B0.1	B0.6	B0.4	B0.3	B0.6	B0.0	B0.0	B0.2	B0.6
20	B0.1	B0.1	B0.0	B0.1	B0.7	B0.3	B0.3	B4.7	B0.0	B0.0	B0.2	B0.6
21	B0.1	B0.1	B0.1	B0.3	B0.9	B0.3	B0.2	B9.5	B0.0	B1.9	B0.2	B0.6
22	B0.1	B0.1	B0.1	B0.0	B2.4	B0.2	B0.3	B2.9	B0.0	B0.0	B0.2	B0.5
23	B5.5	B0.1	B0.4	B0.0	B1.8	B0.2	B0.2	B2.7	B0.0	B0.1	B1.2	B0.4
24	B1.3	B0.1	B0.1	B0.0	B3.5	B0.2	B0.2	B1.3	B0.0	B0.1	B2.8	B0.5
25	B0.1	B0.5	B0.1	B0.0	B3.4	B0.2	B0.2	B0.8	B0.1	B0.0	B0.9	B0.8
26	B0.1	B1.0	B0.1	B0.1	B2.3	B0.1	B0.2	B0.6	B0.8	B0.1	B1.1	B0.5
27	B0.2	B1.0	B0.1	B0.0	B1.4	B0.1	B0.2	B0.2	B1.0	B0.1	B1.5	B0.3
28	B0.3	B0.8	B0.1	B0.0	B0.8	B0.0	B0.2	B0.0	B1.3	B0.1	B1.0	B0.3
29	B0.9	B0.8	B0.1	B0.1	B0.7	B0.0	B0.2	B0.0		B0.1	B0.5	B0.2
30	B0.7	B0.8	B0.1	B0.0	B0.1	B0.0	B0.1	B0.0		B0.1	B0.6	B0.2
31		B0.7	B0.5		B0.0		B0.2	B0.0		<B0.1		B0.2

MASS EJECTIONS FROM THE SUN

MAY 1986

Sta	Day	Observed UT Start	Max	End	Location RA°	R/R_o	Freq or Wavelength	Kind of Event
WROC	May 04	0948 E		0955	D 278	1.08	H-alpha	SP
KHAR	May 08	0738 E		0759	D 049	1	H-alpha	S
KHAR	May 17	0743 E		0752	D 086	0.82	H-alpha	S
KHAR	May 17	0748 E		0755	D 082	0.78	H-alpha	S
KHAR	May 17	0936 E		1004	D 084	0.73	H-alpha	S
KHAR	May 18	0812 E		0840	D 083	0.61	H-alpha	S
KHAR	May 18	0845 E		0912	D 083	0.61	H-alpha	S
KHAR	May 18	0915 E		1033	D 083	0.61	H-alpha	S
KHAR	May 18	0930 E		1010	D 084	1	H-alpha	S
KHAR	May 22	0655 E		0705	D 071	0.67	H-alpha	S
KHAR	May 26	0907 E		0935	D 282	0.60	H-alpha	SP

QUALIFIERS ON START, MAX AND END TIMES
- D = event ended after tabulated time
- E = event began before the tabulated time
- U = uncertain time

REPORTING STATIONS
- KHAR = Kharkov
- WROC = Wroclaw

TYPE OF EVENT
- A = eruptive active region prominence
- CB = coronal cloud bubble
- D = coronal depletions
- E = coronal enhancement
- EL = coronal expanding loop
- II = Type II radio burst
- IVm = moving Type IV radio burst
- Q = eruptive quiescent prominence
- R = coronal ray or streamer
- S = flare-surge if there is a known flare association
- SP = flare-spray if there is a known flare association
- * = movement may be caused by ionospheric refraction

ACTIVE PROMINENCES AND FILAMENTS

MAY 1986

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo	CMP Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
01	BSL	0555	0600D	S04	E90	05	8.0	1-				C	CATA		
01	ADF	0818	1030	N07	W57	04	27.2	1				V	KHAR		
02	BSL	0640	0650	N75	E90	05	10.5	1-				C	CATA		
02	BSL	0940	1000	N22	E90	05	9.3	1-				C	CATA		
02	BSL	0945	0955	S68	W90	04	24.4	1-				C	CATA		
03	BSL	0655	0705	N58	E90	05	11.1	1-				C	CATA		
03	BSL	0915	0935	N08	W90	04	26.7	1-				C	CATA		
03	BSL	1010	1025	N08	W90	04	26.8	1-				C	CATA		
03	BSL	1035	1240D	N07	W90	04	26.8	1				C	CATA		
03	BSL	1045	1054	N55	E90	05	11.2	1-				C	CATA		
03	BSL	1110	1240D	N10	W90	04	26.8	1-				C	CATA		
05	BSL	0750E	0750D	N52	W90	04	27.7	1-				C	CATA		
05	BSL	0920	0935D	S50	W90	04	27.9	1-				C	CATA		
05	BSL	1135	1140	S56	W90	04	27.8	1-				C	CATA		
05	BSL	1135	1200D	N03	W90	04	28.8	1-				C	CATA		
07	BSL	0940	0955	N01	W90	04	30.7	1-				C	CATA		
07	BSL	1015	1035	N13	E90	05	14.2	1-				C	CATA		
07	BSL	1145	1150D	N01	W90	04	30.8	1-				C	CATA		
08	BSL	0739	0759	N41	E90	05	15.7	1				V	KHAR		
08	BSL	0910	0925	S52	W90	04	30.7	1-				C	CATA		
08	BSL	0955	1005	S02	W90	05	1.7	1-				C	CATA		
09	BSL	0735	0745	N15	W90	05	2.5	1-				C	CATA		
09	BSL	0935	1005	N11	E90	05	16.2	1-				C	CATA		
09	BSL	0935	1005	S19	E90	05	16.3	1-				C	CATA		
09	BSL	0940	0945	S62	W90	05	1.4	1-				C	CATA		
09	BSL	1015	1020	S47	W90	05	1.9	1-				C	CATA		
09	BSL	1050	1110	N54	W90	05	1.7	1-				C	CATA		
09	BSL	1110	1115	N84	E90	05	17.9	1-				C	CATA		
10	BSL	0620E	0620D	S83	E90	05	18.6	1-				C	CATA		
10	BSL	0800	0810	S83	E90	05	18.7	1-				C	CATA		
10	SDF	1145E	0525D	N41	E58	05	15.2	1				C	CATA		
11	BSL	0900E	0910	S87	E90	05	19.8	1-				C	CATA		
11	BSL	0910	0920D	N12	W90	05	4.6	1-				C	CATA		
11	BSL	1105	1110D	S11	W90	05	4.7	1-				C	CATA		
12	BSL	0850	0900D	S02	W90	05	5.6	1-				C	CATA		
12	BSL	1120	1130	N39	E90	05	19.8	1-				C	CATA		
13	BSL	0650E	0700	N12	E90	05	20.1	1-				C	CATA		
13	BSL	0655	0705D	S32	W90	05	6.2	1-				C	CATA		
13	BSL	0835E	0835D	S72	W90	05	5.1	1-				C	CATA		
13	BSL	0835E	0835D	S77	E90	05	21.7	1-				C	CATA		
13	BSL	0845E	0850D	S80	E90	05	21.7	1-				C	CATA		
13	BSL	0950	1000	S63	W90	05	5.4	1-				C	CATA		
13	BSL	1020	1030	N65	E90	05	21.5	1-				C	CATA		
13	BSL	1030	1040	S16	W90	05	6.6	1-				C	CATA		
13	BSL	1100E	1100D	S33	W90	05	6.3	1-				C	CATA		
13	BSL	1110E	1140D	S33	W90	05	6.3	1-				C	CATA		
14	BSL	0830	0850D	N03	E90	05	21.1	1-				C	CATA		
14	BSL	0955	1015D	S50	E90	05	22.0	1				C	CATA		
14	BSL	1035	1045	N62	W90	05	6.5	1-				C	CATA		
14	BSL	1120	1125	N62	E90	05	22.4	1-				C	CATA		
14	SDF	1150E	0620D	S45	E11	05	15.4	1				C	CATA		
15	BSL	0650	0705D	N04	E90	05	22.0	1-				C	CATA		
15	BSL	0735	0745	N32	E90	05	22.4	1-				C	CATA		
15	BSL	0910	0925	N14	W90	05	8.6	1-				C	CATA		
15	BSL	0955	1000	N84	E90	05	23.8	1-				C	CATA		
15	BSL	1030	1045	N63	E90	05	23.4	1				C	CATA		
16	BSL	1055	1110	S87	E90	05	24.9	1-				C	CATA		
16	ADF	1055	1115	N05	E65	05	21.3	1				V	KHAR		

ACTIVE PROMINENCES AND FILAMENTS

MAY 1986

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo	CMP Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
17	DSD	0748	0752	N03	E57	05	21.6	1				V	KHAR		
17	DSD	0748	0755	N05	E53	05	21.3	1				V	KHAR		
17	ADF	0915	0935	S28	W35	05	14.6	1				V	KHAR		
17	DSD	0936	1004	N04	E47	05	20.9	1				V	KHAR		
18	BSL	0452E	0730D	S34	E90	05	25.4	1				C	ABST		
18	DSD	0812	0840	N03	E38	05	21.2	1				V	KHAR		
18	DSD	0845	0912	N03	E38	05	21.2	1				V	KHAR		
18	DSD	0915	1033	N03	E38	05	21.2	1				V	KHAR		
18	BSL	0930	1010	N06	E90	05	25.1	1				V	KHAR		
19	BSL	0520E	0748D	S06	E90	05	25.9	1				C	ABST		
19	BSL	0544E	0632D	S15	E90	05	26.0	1				C	ABST		
19	BSL	0544E	0748D	S43	E90	05	26.6	1				C	ABST		
19	BSL	0640	0650	N47	E90	05	26.8	1-				C	CATA		
19	BSL	0815	0825D	N74	W90	05	11.1	1-				C	CATA		
20	BSL	0635	0645	N43	E90	05	27.7	1-				C	CATA		
20	BSL	0930E	0935	N75	W90	05	12.1	1-				C	CATA		
21	BSL	0700	0705	S88	E90	05	29.7	1-				C	CATA		
21	ADF	0716	0730	N10	E52	05	25.2	1				V	KHAR		
21	BSL	0720	0730	S71	E90	05	29.5	1-				C	CATA		
21	BSL	1030	1040	N80	E90	05	29.8	1-				C	CATA		
21	BSL	1110E	1130	S71	E90	05	29.7	1-				C	CATA		
21	BSL	1135	1140	S86	W90	05	13.1	1-				C	CATA		
22	DSD	0655	0705	N11	E41	05	25.4	1				V	KHAR		
22	BSL	0850	0905	S73	E90	05	30.6	1-				C	CATA		
23	BSL	0650	0705	S68	W90	05	15.1	1-				C	CATA		
23	BSL	0920	0930	S89	E90	05	31.8	1-				C	CATA		
23	BSL	0920	0935	S78	W90	05	15.1	1-				C	CATA		
23	BSL	0950	0955	N85	E90	05	31.8	1-				C	CATA		
23	BSL	0955	1005	N80	W90	05	15.0	1-				C	CATA		
23	BSL	1110	1120	N62	E90	05	31.4	1-				C	CATA		
23	BSL	1145	1145D	S89	E90	05	31.9	1-				C	CATA		
24	BSL	1040E	1050D	S28	W90	05	17.4	1-				C	CATA		
25	DSD	0211	0300D	N05	W03	05	24.9	1				V	VORO		
25	BSL	0840E	0845	N18	W90	05	18.5	1-				C	CATA		
25	BSL	0945E	0950D	N72	E90	06	2.6	1-				C	CATA		
25	BSL	0945E	0950D	S49	W90	05	17.8	1-				C	CATA		
26	BSL	0810	0815D	S28	E90	06	2.4	1-				C	CATA		
26	BSL	0815	0815D	S88	W90	05	17.9	1-				C	CATA		
26	DSD	0907	0935	N06	W36	05	23.7	2				V	KHAR		
26	BSL	1035	1040	N87	E90	06	3.8	1-				C	CATA		
26	BSL	1035	1050	S73	E90	06	3.7	1-				C	CATA		
26	BSL	1110	1115D	N77	W90	05	18.1	1-				C	CATA		
26	SDF	1140E	0630D	S08	E04	05	26.8	1				C	CATA		
27	ADF	0700	0753	N11	W29	05	25.1	1				V	KHAR		
27	BSL	0755	0805	S01	E90	06	3.0	1-				C	CATA		
27	BSL	0810	0820D	N20	E90	06	3.2	1-				C	CATA		
27	BSL	0815	0820D	S26	E90	06	3.3	1-				C	CATA		
27	BSL	0820	0820D	N39	E90	06	3.6	1-				C	CATA		
27	BSL	0925	0935	N07	W90	05	20.6	1-				C	CATA		
27	BSL	0925	0935	N26	E90	06	3.4	1-				C	CATA		
27	BSL	1105E	1115	N12	E90	06	3.2	1-				C	CATA		
27	BSL	1115	1125	N41	E90	06	3.8	1-				C	CATA		
28	BSL	0640	0650	S13	W90	05	21.5	1-				C	CATA		
28	BSL	0925	0950	S52	W90	05	20.7	1-				C	CATA		
28	BSL	0940	0950	S63	E90	06	5.4	1-				C	CATA		
28	BSL	0945	1005	S60	E90	06	5.3	1-				C	CATA		
29	BSL	0646E	0805D	N10	W90	05	22.5	1				C	ABST		
29	BSL	0646E	0805D	N21	W90	05	22.4	1				C	ABST		
29	BSL	0735	0745	N76	E90	06	6.6	1-				C	CATA		

ACTIVE PROMINENCES AND FILAMENTS

MAY 1986

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo	CMP Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
29	ADF	0815	0824	N12	W52	05	25.4	1				V	KHAR		
29	ADF	0853	0945	N12	W52	05	25.4	1				V	KHAR		
29	ADF	0918	0937	N07	W67	05	24.4	1				V	KHAR		
29	BSL	1007	1105D	S38	W90	05	22.1	1-				C	CATA		
30	BSL	0700	0710	N87	W90	05	21.9	1-				C	CATA		
30	BSL	0725	0740	N07	W90	05	23.6	1-				C	CATA		
30	BSL	0835	0840D	S02	W90	05	23.6	1-				C	CATA		
31	BSL	0605	0709	N16	W90	05	24.4	1				C	ABST		
31	BSL	0910	0910D	N12	W90	05	24.6	1-				C	CATA		
31	EPL	1035E	1055D	N18	W90	05	24.6	1				C	CATA		

ADF = Active Dark Filament
AFS = Arch Filament System
APR = Active Prominence
ASR = Active Surge Region
BSD = Bright Surge on Disk
BSL = Bright Surge on Limb
CAP = CAP Prominence (Tandberg-Hanssen)
CRN = Coronal Rain
DSD = Dark Surge on Disk
EPL = Eruptive Prominence on Limb
LPS = Loops
MDP = Mound Prominence
SDF = Sudden Disappearing Filament
SPY = Spray
SSB = Solar Sector Boundary

For SOLAR SECTOR BOUNDARY REPORTS, the latitude field contains the Carrington longitude of the point where a neutral line crosses the solar equator. The comments field may contain the Carrington longitude and central meridian distance of two more intersection points.

The EXTENT field for limb events is the radial extent above the limb in hundredths of solar radius. For disk events this field contains the heliographic extent in whole degrees.

The remark "Bright Emission 1/3" indicates that bright emission was observed 1/3 of time.
The remark "Normal Emission 1/3" indicates that normal emission was observed 1/3 of time.

Observation Type: C= Cinematographic, E= Electronic, P= Photographic, V= Visual.

C O N T E N T S

International Geophysical Calendar 1987

EXPLANATIONS

This Calendar continues the series begun for the IGY years 1957-58, and is issued annually to recommend dates for solar and geophysical observations which cannot be carried out continuously. Thus, the amount of observational data in existence tends to be larger on Calendar days. The recommendations on data reduction and especially the flow of data to World Data Centers (WDCs) in many instances emphasize Calendar days. The Calendar is prepared by the International Ursigram and World Days Service (IUWDS) with the advice of spokesmen for the various scientific disciplines. For some programs, greater detail concerning recommendations appears from time to time published in IAGA News, IUGG Chronicle, URSI Information Bulletin or other scientific journals or newsletters.

The definitions of the designated days remain as described on previous Calendars. Universal Time (UT) is the standard time for all world days. Regular Geophysical Days (RGD) are each Wednesday. Regular World Days (RWD) are three consecutive days each month (always Tuesday, Wednesday and Thursday near the middle of the month). Priority Regular World Days (PRWD) are the RWD which fall on Wednesdays. Quarterly World Days (QWD) are one day each quarter and are the PRWD which fall in the World Geophysical Intervals (WGI). The WGI are fourteen consecutive days in each season, beginning on Monday of the selected month, and normally shift from year to year. In 1987 the WGI will be February, May, August, and November.

The Solar Eclipses are:

a.) March 29 (annular-total) beginning in the southern part of South America and part of Antarctica, moving across the S. Atlantic Ocean, across Africa except the northwest part, across the extreme southeast section of Europe and the southwest of Asia -- totality lasts only 8 seconds in a path 5 km wide over the S. Atlantic, off the coast of West Africa.

b.) September 23 (annular-partial) beginning in Asia (except the northeast and southwest sections) crossing China, moving across Japan, across the Pacific Ocean, the Philippine Islands, Indonesia (except the southwest section), New Guinea, Northeast Australia and New Zealand (except the extreme south), and ends near Samoa.

Meteor Showers (selected by P.M. Millman, Ottawa) include important visual showers and also unusual showers observable mainly by radio and radar techniques. The dates for Northern Hemisphere meteor showers are: Jan 3, 4; Apr 21-23; May 4-5; Jun 8-12; Jul 28-29; Aug 11-14; Oct 20-23; Nov 2-4, 17-18; Dec 13-16, 22-23, 1987; and Jan 3, 4, 1988. The dates for Southern Hemisphere meteor showers are: May 4-5; Jun 8-12; Jul 27-30; Oct 20-23; Nov 2-4, 17-18; and Dec 5-7, 13-16, 1987. Note that the meteor showers that come in the first week of May and the third week in October are of particular interest (fragments of Halley's comet).

The occurrence of unusual solar or geophysical conditions is announced or forecast by the IUWDS through various types of geophysical "Alerts" (which are widely distributed by telegram and radio broadcast on a current schedule). Stratospheric warmings (STRATWARM) are also designated. The meteorological telecommunications network coordinated by WMO carries these worldwide Alerts once daily soon after 0400 UT. For definitions of Alerts see IUWDS "Synoptic Codes for Solar and Geophysical Data, Third Revised Edition 1973" and its amendments. Retrospective World Intervals are selected and announced by MONSEE and elsewhere to provide additional analyzed data for particular events studied in the ICSU Scientific Committee on Solar-Terrestrial Physics (SCOSTEP) programs.

RECOMMENDED SCIENTIFIC PROGRAMS

(The following material was reviewed in 1986 by spokesmen of IAGA, WMO and URSI as suitable for coordinated geophysical programs in 1987.)

Airglow and Aurora Phenomena. Airglow and auroral observatories operate with their full capacity around the New Moon periods. However, for progress in understanding the mechanism of inter alia, low latitude aurora, the coordinated use of all available techniques, optical and radio, from the ground and in space is required. Thus, for the airglow and aurora 7-day periods on the Calendar, ionosonde, incoherent scatter, special satellite or balloon observations, etc., are especially encouraged. Periods of approximately one weeks' duration centered on the New Moon are proposed for high resolution of ionospheric, auroral and magnetospheric observations at high latitudes during northern winter.

Atmospheric Electricity. Non-continuous measurements and data reduction for continuous measurements of atmospheric electric current density, field, conductivities, space charges, ion number densities, ionosphere potentials, condensation nuclei, etc.; both at ground as well as with radiosondes, aircraft, rockets; should be done with first priority on the RGD each Wednesday, beginning on 7 January 1987 at 0000 UT, 14 January at 0600 UT, 21 January at 1200 UT, 28 January at 1800 UT, etc. (beginning hour shifts six hours each week, but is always on Wednesday). Minimum program is at the same time on PRWD beginning with 21 January at 1200 UT. Data reduction for continuous measurements should be extended, if possible, to cover at least the full RGD including, in addition, at least 6 hours prior to indicated beginning time. Measurements prohibited by bad weather should be done 24 hours later. Results on sferics and ELF are wanted with first priority for the same hours, short-period measurements centered around the minutes 35-50 of the hours indicated. Priority Weeks are the weeks which contain a PRWD; minimum priority weeks are the ones with a QWD. The World Data Centre for Atmospheric Electricity, 7 Karbysheva, Leningrad 194018, USSR, is the collection point for data and information on measurements.

Geomagnetic Phenomena. It has always been a leading principle for geomagnetic observatories that operations should be as continuous as possible and the great majority of stations undertake the same program without regard to the Calendar.

Stations equipped for making magnetic observations, but which cannot carry out such observations and reductions on a continuous schedule are encouraged to carry out such work at least on RWD (and during times of MAGSTORM Alert).

Ionospheric Phenomena. Special attention is continuing on particular events which cannot be forecast in advance with reasonable certainty. These will be identified by Retrospective World Intervals. The importance of obtaining full observational coverage is therefore stressed even if it is possible to analyze the detailed data only for the chosen events. In the case of vertical incidence sounding, the need to obtain quarter-hourly ionograms at as many stations as possible is particularly stressed and takes priority over recommendation (a) below when both are not practical.

For the vertical incidence (VI) sounding program, the summary recommendations are: (a) All stations should make soundings on the hour and every quarter hour; (b) On RWDs, ionogram soundings should be made at least every quarter hour and preferably every five minutes or more frequently, particularly at high latitudes; (c) All stations are encouraged to make f-plots on RWDs; f-plots should be made for high latitude stations, and for so-called "representative" stations at lower latitudes for all days (i.e., including RWDs and WGIs) (Continuous records of ionospheric parameters are acceptable in place of f-plots at temperate and low latitude stations); (d) Copies of hourly ionograms with appropriate scales for QWDs are to be sent to WDCs; (e) Stations in the eclipse zone and its conjugate area should take continuous observations on solar eclipse days and special observations on adjacent days. See also recommendations under Airglow and Aurora Phenomena.

For the incoherent scatter observation program, every effort should be made to obtain measurements at least on the Incoherent Scatter Coordinated Observation Days, and intensive series should be attempted whenever possible in WGIs or the Airglow and Aurora Periods. The need for collateral VI observations with not more than quarter-hourly spacing at least during all observation periods is stressed. Dr. V. Wickwar, SRI International, 333 Ravenswood Ave., Menlo Park, CA 94025 (USA), URSI Working Group G/H.1, is coordinating special programs.

For the ionospheric drift or wind measurement by the various radio techniques, observations are recommended to be concentrated on the weeks including RWDs.

For traveling ionosphere disturbances, propose special periods for coordinated measurements of gravity waves induced by magnetospheric activity, probably on selected PRWD and RWD.

For the ionospheric absorption program half-hourly observations are made at least on all RWDs and half-hourly tabulations sent to WDCs. Observations should be continuous on solar eclipse days for stations in eclipse zone and in its conjugate area. Special efforts should be made to obtain daily absorption measurements at temperate latitude stations during the period of Absorption Winter Anomaly, particularly on days of abnormally high or abnormally low absorption (approximately October-March, Northern Hemisphere; April-September, Southern Hemisphere).

For back-scatter and forward scatter programs, observations should be made and analyzed on all RWDs at least.

For synoptic observations of mesospheric (D region) electron densities, several groups have agreed on using the RGD for the hours around noon.

For ELF noise measurements involving the earth-ionosphere cavity resonances any special effort should be concentrated during the WGIs.

It is recommended that more intensive observations in all programs be considered on days of unusual meteor activity.

Meteorology. Particular efforts should be made to carry out an intensified program on the RGD -- each Wednesday, UT. A desirable goal would be the scheduling of meteorological rocketsondes, ozone sondes and radiometer sondes on these days, together with maximum-altitude rawinsonde ascents at both 0000 and 1200 UT.

During WGI and STRATWARM Alert Intervals, intensified programs are also desirable, preferably by the implementation of RGD-type programs (see above) on Mondays and Fridays, as well as on Wednesdays.

Middle Atmosphere Cooperation (MAC). MAC runs from 1 January 1986 through 1988. Techniques for observing the middle atmosphere should concentrate or center their observations on the RGDs, PRWDs, and QWDs. It is recommended that observing runs for studies of planetary waves and tides be at least 10 days centered on the PRWDs and QWDs. Non-continuous studies of stratospheric warmings and the effects of geomagnetic activity on the middle atmosphere must be initiated by STRATWARM and MAGSTORM alerts, respectively. For more details see the "Recommended Scientific Programs" on the reverse of the Middle Atmosphere Dynamics Calendar for 1987, which is published as a special edition of the IGC for 1987. Contact Dr. T. VanZandt, NOAA R/E/AL3, 325 Broadway, Boulder, Colorado 80303 U.S.A.

Solar Phenomena. Observatories making specialized studies of solar phenomena, particularly using new or complex techniques, such that continuous observation or reporting is impractical, are requested to make special efforts to provide to WDCs data for solar eclipse days, RWDs and during PROTON/FLARE ALERTS. The attention of those recording solar noise spectra, solar magnetic fields and doing specialized optical studies is particularly drawn to this recommendation.

Study of Traveling Interplanetary Phenomena (STIP). STIP Intervals: STIP XV = 12-21 Feb 1984 solar GLE; STIP XVI = 20 Apr - 4 May 1984 Forbush decrease; STIP XVII = 24 April - 30 Jun 1985 alignment of Venus magnetotail with satellites VEGA 1, VEGA 2, MS-T5, PVO, and ICE; STIP XVIII = Sep 1985 Giacobini-Zinner Comet fly-by by ICE; STIP XIX = March 1986 International Halley Watch.

Space Research, Interplanetary Phenomena, Cosmic Rays, Aeronomy. Experimenters should take into account that observational effort in other disciplines tends to be intensified on the days marked on the Calendar, and schedule balloon and rocket experiments accordingly if there are no other geophysical reasons for choice. In particular it is desirable to make rocket measurements of ionospheric characteristics on the same day at as many locations as possible; where feasible, experimenters should endeavor to launch rockets to monitor at least normal conditions on the Quarterly World Days (QWD) or on RWDs, since these are also days when there will be maximum support from ground observations. Also, special efforts should be made to assure recording of telemetry on QWD and Airglow and Aurora Periods of experiments on satellites and of experiments on spacecraft in orbit around the Sun.

For URSI/IAGA Coordinated Tidal Observations Program (CTOP) contact Dr. R.G. Roper (School of Geophysical Sci., Georgia Inst of Tech, Atlanta, GA 30332 USA) for the 1987 calendar.

The International Ursigram and World Days Service (IUWDS) is a permanent scientific service of the International Union of Radio Science (URSI), with the participation of the International Astronomical Union and the International Union Geodesy and Geophysics. IUWDS adheres to the Federation of Astronomical and Geophysical Services (FAGS) of the International Council of Scientific Unions (ICSU). The IUWDS coordinates the international aspects of the world days program and rapid data interchange.

This Calendar for 1987 has been drawn up by H.E. Coffey, of the IUWDS Steering Committee, in association with spokesmen for the various scientific disciplines in SCOSTEP, IAGA and URSI. Similar Calendars are issued annually beginning with the IGY, 1957-58, and are published in various widely available scientific publications.

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Additional copies are available upon request to IUWDS Chairman, Dr. R. Thompson, IPS Radio and Space Services, Department of Science, 162-166 Goulburn Street, Darlinghurst, NSW 2010, Australia, or IUWDS Secretary for World Days, Miss H.E. Coffey, WDC-A for Solar-Terrestrial Physics, NOAA E/GC2, 325 Broadway, Boulder, Colorado 80303, USA.

FOOTNOTES for the Calendar:

1. Days with unusual meteor shower activity are: Northern Hemisphere Jan 3,4; Apr 21-23; May 4-5; Jun 8-12; Jul 28-29; Aug 11-14; Oct 20-23; Nov 2-4, 17-18; Dec 13-16, 22-23, 1987; Jan 3,4, 1988. Southern Hemisphere May 4-5; Jun 8-12; Jul 27-30; Oct 20-23; Nov 2-4, 17-18; Dec 5-7, 13-16, 1987.

2. Middle Atmosphere Cooperation (MAC) began 1 Jan 1986 and runs through 1988.

3. Day intervals that IMP 8 satellite is in the solar wind (begin and end days are generally partial days): 1986 Dec 31-1987 Jan 5; Jan 12-18, Jan 24-30; Feb 6-12; Feb 18-25; Mar 3-10; Mar 16-22; Mar 28-Apr 4; Apr 10-17; Apr 23-30; May 5-12: May 17-25; May 29-Jun 6; Jun 10-19; Jun 23-Jul 2; Jul 6-14; Jul 19-27; Jul 31-Aug 9; Aug 13-21; Aug 25-Sep 2; Sep 6-14; Sep 19-27; Oct 2-9; Oct 15-22; Oct 27-Nov 4; Nov 9-16; Nov 22-29; Dec 4-11; Dec 17-24; Dec 30-6 Jan 1988.
There will not be total IMP 8 data monitoring coverage during these intervals. (Information kindly provided by the WDC-A for Rockets and Satellites, NASA GSFC, Greenbelt, MD 20771 U.S.A.).

4. + Incoherent Scatter programs start at 1600 UT on the first day of the intervals indicated, and end at 1600 UT on the last day of the intervals.

OPERATIONAL EDITION, September 1986

WORLD DATA CENTER A
FOR
SOLAR-TERRESTRIAL PHYSICS

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."