U.S. DEPARTMENT OF COMMERCE
Robert A. Mosbacher, Secretary

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
William E. Evans, Under Secretary for Oceans and Atmosphere

NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
Thomas N. Pyke, Jr., Assistant Administrator

JUNE 1989 NUMBER 538 - Part II

Solar-Geophysical Data comprehensive reports

Data for December 1988

International Standard Serial Number: 0038-0911
Library of Congress Catalog Number: 79-640375 //r81

NATIONAL GEOPHYSICAL DATA CENTER
Michael A. Chinnery, Director
Boulder, Colorado

Subscription information is on the inside back cover.

S O L A R - G E O P H Y S I C A L D A T A

NUMBER 538

(Issued in Two Parts)

Editor: Helen E. Coffey

Chief: Joe H. Allen
Solar-Terrestrial Physics Division

Staff: Daniel C. Wilkinson
Carol Weathers
John A. McKinnon

C O N T E N T S

PART I (PROMPT REPORTS)

PART II (COMPREHENSIVE REPORTS)

DETAILED INDEX OF OBSERVATIONS PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

CODE	KIND OF OBSERVATION	OCT 88	NOV	DEC	JAN 89	FEB	MAR	APR	MAY
A.	SOLAR AND INTERPLANETARY EVENTS								
A.1	Sunspot Drawings	532A 48	533A 48	534A 60	535A 48	536A 61	537A 43	538A 55	
A.2aa	Internat. Provisional Sunspot Numbers	531A 13	532A 13	533A 13	534A 13	535A 13	536A 13	537A 11	538A 13
A.2c	American Sunspot Numbers	531A 13	532A 13	533A 13	534A 13	535A 13	536A 13	537A 11	538A 13
A.3a	Mt. Wilson Magnetograms	532A 48	533A 48	534A 60	535A 48	536A 61	537A 43	538A 55	
A.3b	Mt. Wilson Sunspot Magnetic Class	532A 79	533A 78	534A 91	535A 79	536A 89	537A 74	538A 85	
A.3c	Kitt Peak Magnetograms	532A 48	533A 48	534A 60	535A 48	536A 61	537A 43	538A 55	
A.3d	Mean Solar Magnetic Field (Stanford)	531A 43	532A 37	533A 37	534A 41	535A 37	536A 51	537A 33	538A 44
A.3e	Stanford Magnetograms	532A 48	533A 48	534A 60	535A 48	536A 61	537A 43	538A 55	
A.4	H-alpha Filtergrams	532A 48	533A 48	534A 60	535A 48	536A 61	537A 43	538A 55	
A.5	Calcium Plage Photographs/Drawings	Oct 87 in 525A154							
A.5a	Calcium Plage Regions	Aug-Oct 87 in 525A138							
A.5b	Daily Calcium Plage Indices	Aug-Oct 87 in 525A141							
A.6	H-alpha Synoptic Charts	535A133	535A134	536A146	537A142	537A144	538A138	538A 46	
A.6b	Active Region Carte Synoptique (Paris)	538B 96							
A.6c	Stanford Solar Mag Field Synoptic Maps	532A 42	533A 42	534A 46	535A 42	536A 55	537A 37	538A 48	
A.6d	Kitt Peak " Mag Field Synoptic Maps	532A 41	533A 41	534A 58	535A 41	536A 60	537A 42	538A 47	
A.6e	Mass Ejections from the Sun	536B 65	537B 70	538B 82					
A.6f	Active Prominences and Filaments	536B 67	537B 72	538B 83					
A.6g	Sac Peak Coronal Line Synoptic Maps	532A 44	533A 44	534A 50	535A 44	536A 56	537A 38	538A 50	
A.7h	Coronal Line Emission (Sac Peak)	532A 48	533A 48	534A 60	535A 48	536A 61	537A 43	538A 55	
A.8aa	2800 MHz - Solar Flux (Ottawa)	531A 13	532A 13	533A 13	534A 13	535A 13	536A 13	537A 11	538A 13
A.8ac	2800 MHz - Adj. Solar Flux (Ottawa)	531A 13	532A 13	533A 13	534A 13	535A 13	536A 13	537A 11	538A 13
A.8g	Adjusted Daily Solar Fluxes (Sagamore)	531A 13	532A 13	533A 13	534A 13	535A 13	536A 13	537A 11	538A 13
A.10a	Interferometric Chart (164 MHz) Nancay	531A 35	532A 32	533A 32	534A 34	535A 31	536A 35	538A140	
A.10c	East-West Scans - 21 cm - Fleurs	531A 33	532A 30	533A 31	534A 33	535A 29	536A 33	537A 27	538A 33
A.10d	East-West Scans - 43 cm - Fleurs	531A 34	532A 31	533A 31	534A 33	535A 30	536A 34	537A 28	538A 34
A.10e	East-West Scans - 10 cm - Ottawa	531A 32	532A 29	533A 30	534A 32	535A 28	536A 32	537A 26	538A 32
A.10f	East-West Scans - 3 cm - Toyokawa	531A 31	532A 28	533A 29	534A 31	535A 27	536A 31	537A 25	538A 31
A.11g	Solar X-ray GOES (graphs/event table)	536B 56	537B 62	538B 72					
A.11k	Solar UV NOAA-9	May-Dec 86 in 529B 74							
A.12e	Solar Particles (IMP H & J)	Sep 85-May 86 in 525B 60							
A.13e	Solar Plasma (IMP H & J)	Feb-Nov 88 in 535B 64; Dec 88-Feb 89 in 538B 98							
A.13f	Solar Wind (Pioneer 12)	Feb 84-Dec 87 in 525A114; Jan-Dec 88 in 536A153							
A.16a	SMM Solar Irradiance	Feb 80-Oct 87 in 530B 64							
A.16b	NIMBUS Solar Irradiance	Nov 78-Feb 87 in 523B 49							
A.16c	ERBS Solar Irradiance	1984-88 in 538B101							
A.17	Interplanetary Mag Field (Pioneer 12)	Jan-Jun 88 in 533A130; Jul 88 in 536A152							
A.17c	Inferred Interplanetary Mag Field	Mar 88 in 524A 40							
B.	IONOSPHERIC RADIO PROPAGATION								
B.52	Field Strength Graphs-North Atlantic	532A128	533A126	534A152	535A128	536A142	537A138	538A134	
B.53	Quality Indices on Paths to Germany	532A130	533A128	534A154	535A130	536A144	537A140	538A136	
C.	SOLAR FLARE-ASSOCIATED EVENTS								
C.1a	H-alpha Flares	531A 18	532A 17	533A 16	534A 16	535A 16	536A 16	537A 15	538A 16
C.1ba	H-alpha Flare Groups	536B 4	537B 4	538B 4					
C.1d	Flare Patrol Observations	531A 30	532A 27	533A 28	534A 30	535A 26	536A 30	537A 24	538A 30
C.1d	Flare Patrol Observations	536B 24	537B 28	538B 31					
C.3	Radio Bursts Fixed Freq.	536B 26	537B 30	538B 33					
C.3	Radio Bursts Fixed Freq. Selected	531A 36	532A 33	533A 33	534A 35	535A 32	536A 36	537A 30	538A 36
C.4d	Radio Bursts Spectral (Culgoora)	532AA09	534A157	534A129					
C.4e	Radio Bursts Spectral (Weissenau)	532A109	533A108	534A129	535A111	536A124	537A111	538A116	
C.4f	Radio Bursts Spectral (Sagamore Hill)	532A109	533A108	534A129	535A111	536A124	537A111	538A116	
C.4k	Radio Bursts Spectral (Learmonth)	532A109	533A108	534A129	535A111	536A124	537A111	538A116	
C.4l	Radio Bursts Spectral (Palehua)	532A109	533A108	534A129	535A111	536A124	537A111	538A116	
C.6	Sudden Ionospheric Disturbances	532A105	533A108	534A129	535A104	536A117	537A102	538A111	
D.	GEOMAGNETIC & MAGNETOSPHERIC EVENTS								
D.1a	Geomagnetic Indices	532A123	533A121	534A147	535A122	536A137	537A132	538A129	
D.1ba	27-day Chart of Kp Indices	532A125	533A123	534A149	535A124	536A139	537A134	538A131	
D.1cb	Monthly Mean aa Indices	532A126	533A124	534A150	535A125	536A140	537A135	538A132	
D.1d	Principal Magnetic Storms	532A127	533A125	534A151	535A126	536A141	537A136	538A133	
D.1f	Sudden Commencements/Flare Effects	533A145	534A162	535A138	536A151	538A143			
D.1g	Equatorial Indices Dst	Jul 87 in 519A 99; Aug-Dec 87 in 534A163							
F	COSMIC RAYS								
F.1a	Cosmic Ray Neutron Cts (Deep River)	532A120	533A120	534A146	535A119	536A136	537A127	538A123	
F.1b	Cosmic Ray Neutron Cts (Climax)	532A120	533A120	534A146	535A119	536A136	538A141	538A123	
F.1h	Cosmic Ray Neutron Cts (Thule)	532A120	533A120	535A136	535A119	536A136	537A127	538A123	
F.1i	Cosmic Ray Neutron Cts (Kiel)	532A120	533A120	534A146	535A119	536A136	537A127	538A123	
F.1j	Cosmic Ray Neutron Cts (Tokyo)	532A120	533A120	534A146	535A119	536A136	537A127	538A123	
F.1l	Cosmic Ray Neutron Cts (Huancayo)	533A139	533A120	534A146	535A119	536A136	538A141	538A123	
H.	MISCELLANEOUS								
H.60	IUWDS Alert Periods	531A 5	532A 5	533A 4	534A 4	535A 4	536A 4	537A 4	538A 4

The entry "532A 48" under Oct 1988, for example, means that the sunspot drawings for Oct 1988 appear in SOLAR-GEOPHYSICAL DATA No. 532, Part I, and that they begin on page 48. "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

C O N T E N T S

Comprehensive Reports DATA FOR **DECEMBER 1988** Number 538 Part II

Hα SOLAR FLARES

DECEMBER 1988

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	LEAR	01	0338	0339U	0351	N18	E07	5260	12	1.7	13	SF	C	2.6	3	E		29		
0002		01	0750	07534	0804	N16	E54	5261	12	5.4	14	SN	C	1.3				65	1.1	E
	KAND	01	0750	0753	0804	N15	E54	5261	12	5.4	14	SN				P	0753	62	1.1	E
	LEAR	01	0750	0757	0804	N17	E53	5261	12	5.3	14	SF	C	1.3	3	E		68		
0003	KAND	01	0833	0835	0840	S14	W01	5254	12	1.3	7	SN				P	0835	21	0.2	D
		01	1036		1252	No Flare Patrol														
0004	RAMY	01	1336E	1353U	1412D	S15	E30	5262	12	3.8	36D	SF			2	E		56		
0005		01	1635	16351	1644	S14	E27	5262	12	3.7	9	SF	C	1.6				36		
	RAMY	01	1635	1635	1645	S15	E27	5262	12	3.7	10	SF	C	1.6	4	E		38		
	HOLL	01	1635	1636	1642	S14	E27	5262	12	3.7	7	SF			3	E		34		
0006	HOLL	01	1638	1643	1647	N19	E50	5261	12	5.5	9	SF			3	E		20		
0007		01	18222	1825	1834	N19	E49	5261	12	5.5	12	SF	C	1.3				36		H
	RAMY	01	1822	1825	1835	N19	E51	5261	12	5.6	13	SF			3	E		51		
	HOLL	01	1824	1825	1834	N19	E47	5261	12	5.3	10	SF	C	1.3	4	E		20		H
0008		01	18331	1836	1846	S15	E26	5262	12	3.7	13	SF						20		
	RAMY	01	1833	1836	1845	S15	E26	5262	12	3.7	12	SF			3	E		19		
	HOLL	01	1834	1836	1848	S15	E25	5262	12	3.7	14	SF			4	E		20		
0009		01	1905	1907	1914	N20	E47	5261	12	5.4	9	SN	C	2.2				65		H
	RAMY	01	1905	1907	1914	N19	E48	5261	12	5.4	9	SF	C	2.2	4	E		57		H
	HOLL	01	1905	1907	1914	N20	E46	5261	12	5.3	9	SN	C	2.2	4	E		73		
0010		01	20425	20471	2058	S15	E24	5262	12	3.7	16	SF	C	1.2				18		F
	HOLL	01	2042	2048	2058	S15	E24	5262	12	3.7	16	SF	C	1.2	3	E		20		F
	RAMY	01	2047	2047	2057	S15	E25	5262	12	3.7	10	SF	C	1.2	3	E		16		F
0011	HOLL	01	2114	2116	2131	N19	E45	5261	12	5.3	17	SF	C	1.0	3	E		37		
0012	VORO	01	2341	2344	2355	S17	W10	5254	12	1.2	14	SF				C	2344	99	1.1	DIJT
0013		02	00359	00441	0105	S14	E20	5262	12	3.5	30	SF	C	2.1				76	1.5	EIT
	VORO	02	0035	0045	0106	S13	E20	5262	12	3.5	31	SF				C	0045	134	1.5	EIT
	LEAR	02	0044	0044	0104	S15	E21	5262	12	3.6	20	SF	C	2.1	3	E		17		
0014	MITK	02	0437	0455	0536	S19	E17	5262	12	3.5	59	SN				C	0455			E
		02	0651		0758	No Flare Patrol														
0015	KHAR	02	0944U		0949U	N24	W60	5256	11	27.9	5U	SF			2	V	0944			
		02	0951		1001	No Flare Patrol														
0016	KHAR	02	1015	1015	1020U	N21	W60	5256	11	27.9	5U	SF			2	V	1016			D
0017	KHAR	02	1034		1047	N18	E40	5261	12	5.5	13	SF			2	V	1034			H
		02	1052		1114	No Flare Patrol														
0018	RAMY	02	1143	1145	1151	N19	E43	5261	12	5.8	8	SF			1	E		23		
0019	RAMY	02	1245	1246	1259	S19	W15	5254	12	1.4	14	SF			3	E		10		
0020	RAMY	02	1339	1340	1415	N19	E42	5261	12	5.8	36	SF	C	5.3	3	E		35		
0021	RAMY	02	1409	1414	1421	N22	W58	5256	11	28.2	12	SF			3	E		44		H
0022	RAMY	02	1421	1422	1448	S19	W18	5254	12	1.2	27	SF	C	1.7	3	E		23		F
0023	RAMY	02	1446	1449	1458	N18	E39	5261	12	5.6	12	SF	C	3.0	3	E		40		F
0024	RAMY	02	1502	1503	1507	N23	W62	5256	11	27.9	5	SF			3	E		39		

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0025		02	1536	15478	1626	N19	E40	5261	12	5.7	50	SF					35		F
	RAMY	02	1536	1547	1622	N19	E40	5261	12	5.7	46	SF		4	E		21		F
	HOLL	02	1549E	1555	1631	N19	E39	5261	12	5.6	42D	SF		4	E		49		F
0026	RAMY	02	1710	1714	1727	N19	W15	5260	12	1.6	17	SF		4	E		17		F
0027	RAMY	02	1720	1720	1726	N23	W58	5256	11	28.3	6	SF		4	E		11		
0028		02	1750	1753	1810	N18	E38	5261	12	5.6	20	SF	C 1.8				61		F
	RAMY	02	1750	1753	1810	N18	E38	5261	12	5.6	20	SF	C 1.8	4	E		73		F
	PALE	02	1759E	1810U	1836D	N19	E39	5261	12	5.7	37D	SF		3	E		49		
		02	1930		1934	No Flare Patrol													
		02	1945		2005	No Flare Patrol													
0029	HOLL	02	2008E	2018U	2024	S16	E09	5262	12	3.5	16D	SF		3	E		33		F
		02	2049		2056	No Flare Patrol													
		02	2102		2112	No Flare Patrol													
		02	2203		2214	No Flare Patrol													
		02	2220		2246	No Flare Patrol													
0030		02	2327	23301	2340	N18	E35	5261	12	5.6	13	SF	C 1.2				24		F
	PALE	02	2327	2330	2342D	N19	E36	5261	12	5.7	15D	SF	C 1.2	3	E		17		F
	LEAR	02	2327	2331	2339	N18	E35	5261	12	5.6	12	SF	C 1.2	4	E		19		F
	HOLL	02	2328E	2330	2342	N18	E35	5261	12	5.6	14D	SN	C 1.2	2	E		36		F
0031		03	00064	00084	0021	N19	E35	5261	12	5.7	15	SF					58	1.9	EFIJT
	PALE	03	0006	0009	0018	N19	E35	5261	12	5.7	12	SF		3	E		17		F
	LEAR	03	0008	0008	0024	N18	E34	5261	12	5.6	16	SF		3	E		13		F
	VORO	03	0010	0012	0021	N20	E35	5261	12	5.7	11	SF			C	0012	143	1.9	EIJT
0032		03	01413	01452	0154	N18	E34	5261	12	5.6	13	SF	C 2.0				54	1.0	DFIT
	PALE	03	0141	0145	0152	N18	E33	5261	12	5.6	11	SF	C 2.0	3	E		36		F
	VORO	03	0144	0147	0157	N19	E36	5261	12	5.8	13	SF			C	0147	72	1.0	DIT
0033	PALE	03	0149	0153	0202	S18	W26	5254	12	1.1	13	SF		3	E		32		F
0034	VORO	03	0151	0154	0208	S18	E22	5262	12	4.7	17	1F			C	0154	179	2.1	EIJT
0035		03	0649	0651	0657	N24	W68	5256	11	28.1	8	SN					54		D
	TACH	03	0647E		0655D	N25	W70	5256	11	27.9	8D	SN			C	0649	75		D
	LEAR	03	0649	0651	0657	N24	W67	5256	11	28.2	8	SF		3	E		32		
0036	KHAR	03	1030U		1040D	N17	E33	5261	12	5.9	10U	SN		1	V	1032			H
0037		03	13052	1307	1314	S15	W00	5262	12	3.5	9	SF					20	0.3	E
	HTPR	03	1305	1307	1314	S15	W01	5262	12	3.5	9	SF			C	1307	30	0.3	E
	RAMY	03	1307	1307	1313	S15	E00	5262	12	3.5	6	SF		3	E		11		
		03	1339		1340	No Flare Patrol													
		03	1346		1350	No Flare Patrol													
0038	HOLL	03	1705	1707	1713	N13	E03	5258	12	3.9	8	SF	C 1.6	4	E		23		
0039	HOLL	03	1800	1802	1810	N24	E90	5265	12	10.7	10	SF		4	E		36		
0040		03	20474	20475	2102	S15	W04	5262	12	3.6	15	SF					14		
	PALE	03	2047	2047	2109	S15	W05	5262	12	3.5	22	SF		3	E		17		
	HOLL	03	2047	2048	2058	S14	W04	5262	12	3.6	11	SF		4	E		13		
	RAMY	03	2051	2052	2059	S15	W04	5262	12	3.6	8	SF		3	E		12		
0041		03	2106E	2107	2113	N24	E90	5265	12	10.8	7D	SN	C 4.0				54		
	HOLL	03	2106E	2107	2113	N25	E90	5265	12	10.8	7D	SN	C 4.0	4	E		93		
	PALE	03	2107E	2107U	2111D	N24	E90	5265	12	10.8	4D	SF	C 4.0	3	E		14		
0042		03	21492	2152	2202	S15	W06	5262	12	3.4	13	SF	C 2.0				31		EF
	HOLL	03	2149	2152	2205	S15	W06	5262	12	3.4	16	SF	C 2.0	4	E		40		FE
	PALE	03	2151	2152	2158	S15	W06	5262	12	3.4	7	SF	C 2.0	3	E		22		F

Hα SOLAR FLARES

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Opt	Imp	Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0043	HOLL	03	2258	2301	2308	S15	W05	5262	12	3.6	10	SF			4	E		27		
0044	KHAR	04	0808U	0816	0830	S20	E90	5266	12	11.2	22U	SF			2	V	0816			
0045	KHAR	04	1037	1037	1045	S20	E90	5266	12	11.3	8	SF			2	V	1037			D
0046	CATA	04	1136	1136	1136D	S17	E90	5266	12	11.3	8D	1B			2	P	1136	45		
		04	1137		1150	No Flare Patrol														
		04	1158		1233	No Flare Patrol														
		04	1241		1404	No Flare Patrol														
0047		05	0151	0151	0200	N17	E72	5265	12	10.5	9	SF	C	2.3				18		
	LEAR	05	0151	0151	0156	N17	E73	5265	12	10.6	5	SF	C	2.3	3	E		15		
	PALE	05	0151	0151	0204	N17	E72	5265	12	10.5	13	SF	C	2.3	3	E		20		
		05	0655		0701	No Flare Patrol														
0048	LEAR	05	0819	0822	0828	N17	E67	5265	12	10.4	9	SF			4	E		21		
0049	SVTO	05	1133	1134	1150	N20	E67	5265	12	10.6	17	SF	C	1.1	3	E		54		
0050	RAMY	05	1448	1448	1459	N19	W01	5261	12	5.5	11	SF			3	E		12		F
0051	HOLL	05	1821	1822	1835	S15	W30	5262	12	3.5	14	SF			3	E		17		
0052		05	1909	1915	1941	N21	E64	5265	12	10.7	32	SN	C	1.3				66		EF
	HOLL	05	1909	1915	1941	N18	E60	5265	12	10.4	32	SN	C	1.3	3	E		98		FE
	RAMY	05	1915E	1924U	1936D	N24	E69	5265	12	11.1	21D	SF			2	E		33		
0053	HOLL	05	2052	2053	2059	S25	E46	5263	12	9.4	7	SF			4	E		13		
		05	2127		2148	No Flare Patrol														
0054	YUNN	06	0616	0628	0653	N18	W09	5261	12	5.6	37	SF				C		24	0.3	
0055	YUNN	06	0628E	0628U	0640	N13	W30	5258	12	4.0	12D	SB				P	0628	47	0.6	
0056		06	0729	0732	0742	N18	E54	5265	12	10.4	13	SF						41	0.6	F
	SVTO	06	0729	0732	0739	N19	E56	5265	12	10.6	10	SF			2	E		44		
	LEAR	06	0729	0732	0742	N17	E53	5265	12	10.3	13	SF			4	E		48		F
	YUNN	06	0732E	0734U	0744	N18	E54	5265	12	10.4	12D	SN				P	0734	31	0.6	
0057		06	0725*	07482	0822	N25	E49	5264	12	10.1	57	1N	C	1.7				133	3.1	EF
	TACH	06	0725	0749	0800D	N25	E52	5264	12	10.3	35D	1B				C	0749	160	2.5	E
	YUNN	06	0744	0748	0815D	N25	E50	5264	12	10.2	31D	1B				P		173	3.1	
	CATA	06	0746	0750	0805D	N26	E48	5264	12	10.0	19D	1B			2	C	0750	225	3.8	
	LEAR	06	0748	0750	0819	N25	E47	5264	12	10.0	31	SF	C	1.7	4	E		49		F
	SVTO	06	0755E	0758U	0824	N26	E49	5264	12	10.1	29D	SF	C	1.7	2	E		57		F
0058		06	10516	10526	1101	S35	E64	5267	12	11.6	10	SF	C	1.0				29	0.6	EF
	SVTO	06	1051	1052	1102	S35	E66	5267	12	11.7	11	SF	C	1.0	3	E		28		F
	HTPR	06	1057	1058	1100	S35	E62	5267	12	11.4	3	SF				C	1058	30	0.6	E
0059		06	11054	11108	1143	N13	W31	5258	12	4.1	38	SB	C	3.3				98	1.8	EFH
	HTPR	06	1105	1110	1225	N13	W33	5258	12	4.0	80	SB				C	1110	120	1.5	E
	SVTO	06	1107	1111	1128	N13	W28	5258	12	4.3	21	SB	C	3.3	3	E		56		FH
	CATA	06	1109	1111	1131	N12	W32	5258	12	4.0	22	1B			2	C	1111	169	2.1	H
	RAMY	06	1114E	1118	1129	N14	W30	5258	12	4.2	15D	SF	C	3.3	2	E		46		H
0060		06	1303	13041	1312	N17	E54	5265	12	10.6	9	SF						19	0.3	E
	HTPR	06	1303	1304	1310	N17	E50	5265	12	10.3	7	SF				C	1304	20	0.3	E
	RAMY	06	1303	1305	1312	N18	E54	5265	12	10.6	9	SF			3	E		18		
	KANZ	06	1309E	1309U	1314	N17	E57	5265	12	10.9	5D	SF				C				
0061		06	1354*	13579	1408	S35	E66	5267	12	11.8	14	SF						29		
	RAMY	06	1354	1357	1402	S35	E67	5267	12	11.9	8	SF			3	E		38		
	RAMY	06	1406	1406	1415	S35	E66	5267	12	11.9	9	SF			3	E		20		

DECEMBER 1988

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
0062		06	1503	15051	1519	N18	E52	5265	12	10.6	16	SN						45		
	RAMY	06	1503	1505	1518	N18	E52	5265	12	10.6	15	SF			4	E		43		
	HOLL	06	1503	1506	1520	N18	E51	5265	12	10.5	17	SN			4	E		47		
0063		06	1505	1506	1521	S35	E65	5267	12	11.8	16	SF	C	2.0				37		
	RAMY	06	1505	1506	1518	S35	E65	5267	12	11.8	13	SF	C	2.0	4	E		34		
	HOLL	06	1505	1506	1524	S35	E65	5267	12	11.8	19	SF	C	2.0	4	E		40		
0064		06	1611	1612	1622	N18	E52	5265	12	10.6	11	SF	C	1.7				36		
	RAMY	06	1611	1612	1622	N17	E53	5265	12	10.7	11	SF	C	1.7	4	E		35		
	HOLL	06	1611	1612	1623	N18	E52	5265	12	10.6	12	SF	C	1.7	3	E		36		
0065	HOLL	06	1715	1716	1727	S20	W73	5254	12	1.1	12	SF			4	E		11		
0066		06	18281	1831	1846	N29	E84	5269	12	13.3	18	SF	C	2.1				40		
	HOLL	06	1828	1831	1847	N29	E79	5269	12	13.0	19	SF			4	E		39		
	RAMY	06	1829	1831	1844	N29	E88	5269	12	13.7	15	SF	C	2.1	4	E		40		
0067		06	2013	20264	2055	N20	E50	5265	12	10.7	42	SF	C	3.0				84		F
	RAMY	06	2013	2026	2056	N18	E49	5265	12	10.6	43	SF	C	3.0	3	E		88		F
	HOLL	06	2013	2030	2054	N23	E51	5265	12	10.8	41	SF	C	3.0	4	E		79		F
0068		06	20306	20376	2132	N18	W14	5261	12	5.8	62	SF						44		F
	HOLL	06	2030	2037	2146	N18	W14	5261	12	5.8	76	SF			4	E		57		F
	RAMY	06	2036	2043	2118	N19	W15	5261	12	5.7	42	SF			3	E		30		F
0069	HOLL	06	2201	2205	2215	N29	E77	5269	12	12.9	14	SN	C	1.9	3	E		85		
0070	HOLL	06	2230	2231	2247	N26	E35	5264	12	9.6	17	SF			3	E		22		
0071	HOLL	06	2253	2314	2335	N18	W16	5261	12	5.7	42	SF	C	2.3	3	E		56		
0072	YUNN	07	0224E	0224	0241	S20	W84	5254	11	30.7	17D	1N				P		16		
0073	LEAR	07	0412	0413	0418	S21	W80	5254	12	1.0	6	SF	C	3.2	3	E		31		
0074	ABST	07	0521	0526	0535	N27	E34	5264	12	9.9	14	SF				C	0526	87	1.2	D
0075	LEAR	07	0714	0714	0720	S21	W84	5254	11	30.9	6	SF	C	6.3	3	E		16		
0076	BUCA	07	0905	0906	0920	N15	W42	5258	12	4.2	15	SF				C	0906	54	1.0	E
0077	BUCA	07	0906	0907	0915	S22	W85	5254	11	30.8	9	SF				C	0907	32		D
		07	1035		1147	No Flare Patrol														
		07	1153		1204	No Flare Patrol														
		07	1213		1224	No Flare Patrol														
		07	1245		1306	No Flare Patrol														
		07	1322		1344	No Flare Patrol														
		07	1356		1404	No Flare Patrol														
0078	RAMY	07	1411	1412	1420	S16	W59	5262	12	3.1	9	SF			2	E		24		
0079	RAMY	07	1420E	1423	1428	N19	E36	5265	12	10.3	8D	SF			3	E		18		H
		07	1432		1439	No Flare Patrol														
0080	RAMY	07	1441	1441	1457D	S15	W55	5262	12	3.4	16D	SF			2	E		20		
		07	1527		1645	No Flare Patrol														
0081	RAMY	07	1704E	1709U	1755D	N18	E37	5265	12	10.5	51D	SF	C	3.5	2	E		29		
0082	RAMY	07	1712E	1715U	1736D	S34	E50	5267	12	11.7	24D	SF			2	E		16		
		07	1907		2142	No Flare Patrol														
		07	2154		2330	No Flare Patrol														

Hα SOLAR FLARES

DECEMBER 1988

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
0083		07	2328	2329	2332	N16	E82	5271	12	14.2	4	SF	C	1.6				49		
	LEAR	07	2328	2329	2332	N16	E84	5271	12	14.3	4	SF	C	1.6	4	E		24		
	PALE	07	2328E	2330U	2336D	N15	E81	5271	12	14.1	8D	SF	C	1.6	2	E		74		
0084	LEAR	08	0321	0322	0325	N16	E81	5271	12	14.3	4	SF	C	1.4	4	E		17		
0085	ABST	08	0617	0621	0643	S23	E04	5263	12	8.6	26	SF				C	0621	87	1.0	DH
0086	KANZ	08	0738E	0738U	0739D	N21	E32	5265	12	10.8	1D	SF				C				
0087	KHAR	08	1020E		1040	S34	E88	5273	12	15.4	20D	SN			2	V	1022			H
0088	KHAR	08	1039	1040	1046D	N20	W90	5260	12	1.6	7D	SN			2	V	1040			H
0089	HTPR	08	1250	1257	1310	S15	W64	5262	12	3.7	20	SF				C	1257	60	1.3	
0090		08	1408	1412	1424	N18	E27	5265	12	10.6	16	SN						42	0.7	EF
	RAMY	08	1408E	1410U	1424	N18	E26	5265	12	10.6	16D	SF			1	E		25		F
	HTPR	08	1408	1412	1425	N17	E28	5265	12	10.7	17	SN				C	1412	60	0.7	E
		08	1636		1716	No Flare Patrol														
0091	PALE	08	1956	2005	2016	N19	E20	5265	12	10.3	20	SF	C	5.3	3	E		85		F
		08	2055		2104	No Flare Patrol														
0092	LEAR	09	0107	0110	0118	N21	E21	5265	12	10.6	11	SF	C	2.9	3	E		19		F
0093	LEAR	09	0232	0234	0246	N21	E20	5265	12	10.6	14	SF	C	2.7	3	E		18		
0094		09	03163	03174	0333	N21	E20	5265	12	10.7	17	1N	M	2.2				86		
	LEAR	09	0316	0317	0333	N21	E20	5265	12	10.7	17	1N	M	2.2	3	E		107		
	PALE	09	0319	0321	0332D	N21	E20	5265	12	10.7	13D	SN			2	E		65		
0095	LEAR	09	0434	0437	0504	N18	E70	5271	12	14.5	30	SF	C	1.8	3	E		75		
0096		09	06001	06023	0616	N20	E16	5265	12	10.5	16	1N	C	3.0				216	4.4	EF
	TACH	09	0600	0605	0617	N19	E18	5265	12	10.6	17	1N				C	0605	388	4.4	E
	LEAR	09	0601	0602	0614	N20	E14	5265	12	10.3	13	SF	C	3.0	3	E		45		F
0097		09	0732	07341	0754	N20	E13	5265	12	10.3	22	1N	M	3.8				297	4.6	EFZ
	ABST	09	0732	0734	0755	N22	E12	5265	12	10.2	23	1B				C	0734	261	2.9	E
	LEAR	09	0732	0735	0751	N20	E13	5265	12	10.3	19	SN	M	3.8	3	E		78		ZF
	TACH	09	0734E		0757	N19	E15	5265	12	10.4	23D	2F				C	0734	551	6.3	E
		09	1021		1024	No Flare Patrol														
		09	1041		1047	No Flare Patrol														
		09	1120		1159	No Flare Patrol														
		09	1209		1621	No Flare Patrol														
		09	1623		2200	No Flare Patrol														
0098	RAMY	09	1645E	1645U	1651	N20	E07	5265	12	10.2	6D	SF			2	E		19		
0099	RAMY	09	1833E	1834U	1850	N19	E06	5265	12	10.2	17D	SF	C	2.4	2	E		71		
0100	PALE	09	2117E	2120U	2125D	N21	E09	5265	12	10.6	8D	1N	M	2.6	3	E		155		FU
0101	LEAR	09	2316	2317	2326	N19	E04	5265	12	10.3	10	SF	C	1.7	3	E		14		F
0102	LEAR	10	0232	0236	0243	N21	E06	5265	12	10.6	11	SF	C	1.2	3	E		24		
0103	LEAR	10	0445	0456	0511	N25	W06	5264	12	9.7	26	SF			4	E		30		F
0104	LEAR	10	0453	0455	0510	N20	E02	5265	12	10.3	17	SN	C	9.4	4	E		86		F
0105	TACH	10	0507E		0534D	N26	W14	5264	12	9.1	27D	SN				C	0507	165	1.9	B
0106	LEAR	10	0651	0657	0700	N31	E56	5274	12	14.7	9	SF			3	E		21		F

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
0107	ABST	10	0722	0726	0729	S27	E70	5273	12	15.8	7	1N			C	0726	87		D
0108		10	07271	07302	0744	N22	E07	5266A	12	10.8	17	SN	C 2.2				54	1.1	F
	YUNN	10	0727	0730	0753	N22	E08	5266A	12	10.9	26	SN			C		94	1.1	F
	LEAR	10	0728	0732	0735	N21	E06	5266A	12	10.8	7	SF	C 2.2	3	E		13		F
0109	ABST	10	0751	0755	0822	S31	E51	5273	12	14.3	31	1N			P	0755	175	3.0	DK
0110	ABST	10	0806	0812	0816	S32	E20	5267	12	11.9	10	1N			C	0812	87		D
0111	LEAR	10	1010	1012	1022	S11	E61	5272	12	15.0	12	SF	C 2.0	3	E		52		F
		10	1042		1148	No Flare Patrol													
0112	RAMY	10	1221E	1224U	1252	S31	E63	5273	12	15.5	31D	SF		2	E		39		
0113	RAMY	10	1224	1228	1247	N32	E57	5274	12	15.0	23	SF		2	E		26		
0114	RAMY	10	1343	1344	1356	N31	E55	5274	12	14.9	13	SF		4	E		23		
0115	RAMY	10	1426	1431	1442	N20	W04	5265	12	10.3	16	SF		4	E		13		
		10	1504		1856	No Flare Patrol													
		10	1916		2201	No Flare Patrol													
0116	LEAR	10	2259	2300	2304	S34	E73	5275	12	16.8	5	SF	M 1.8	3	E		55		
0117		11	00559	01053	0120	S34	E74	5275	12	16.9	25	1N	C 5.0				71		D
	PEKG	11	0055	0108	0126	S33	E75	5275	12	17.0	31	1N			P	0108	84		D
	LEAR	11	0104	0105	0113	S34	E72	5275	12	16.8	9	SF	C 5.0	3	E		58		
0118	LEAR	11	0152	0153	0158	S33	E57	5273	12	15.6	6	SF	C 5.2	3	E		12		
0119	LEAR	11	0202	0206	0255	S33	E71	5275	12	16.7	53	SF		3	E		40		
0120	LEAR	11	0300	0333	0351	S33	E71	5275	12	16.8	51	SF		3	E		26		
0121	LEAR	11	0428	0429	0432	S30	E65	5275	12	16.3	4	SF		3	E		18		
0122	LEAR	11	0627	0627	0631	S34	E70	5275	12	16.8	4	SF	C 2.7	3	E		25		
0123	LEAR	11	0649	0650	0657	S33	E69	5275	12	16.8	8	SF	C 2.2	3	E		28		
0124	LEAR	11	0720	0725	0731	S34	E69	5275	12	16.8	11	SF	C 9.2	3	E		95		
0125	LEAR	11	0753	0801	0818	S29	E47	5273	12	15.0	25	SF		3	E		16		
0126		11	08051	08064	0816	S32	E68	5275	12	16.7	11	1N					50		
	CATA	11	0805	0810	0818	S31	E68	5275	12	16.7	13	1B		2	C	0810	84		
	LEAR	11	0806	0806	0814	S34	E68	5275	12	16.7	8	SF		3	E		15		
0127	KANZ	11	0858	0903	0910	S34	E00	5267	12	11.4	12	SF			C				
0128		11	09165	0925*	0944	S34	E70	5275	12	17.0	28	1N					197		
	KANZ	11	0916	0925	0936	S35	E69	5275	12	16.9	20	SF			V				
	CATA	11	0921	0937	0953	S32	E70	5275	12	16.9	32	1B		2	C	0937	197		
0129		11	10091	1013	1021	S33	E49	5273	12	15.3	12	SF	C 2.9				45		
	KANZ	11	1009	1013	1035D	S34	E50	5273	12	15.4	26D	SF			V				
	LEAR	11	1010	1013	1021	S32	E48	5273	12	15.2	11	SF	C 2.9	3	E		45		
0130		11	0902*	10209	1036	S33	E67	5275	12	16.7	94	SN	M 1.0				78		R
	SVTO	11	0902	1029	1043	S32	E67	5275	12	16.7	101	1N	M 1.0	3	E		104		R
	LEAR	11	1012	1026	1030	S34	E65	5275	12	16.6	18	SF		2	E		51		
	KANZ	11	1013	1020	1035D	S34	E68	5275	12	16.8	22D	SN			V				
0131	CATA	11	1121	1126	1139	N18	W16	5265	12	10.2	18	SN		2	C	1126	84	1.0	
0132	CATA	11	1126	1126	1130	S30	E46	5273	12	15.1	4	SB		2	C	1126	56	1.0	

Hα SOLAR FLARES

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
0133		11	1144*	1146*	1226	S31	E65	5275	12	16.6	42	1N	C 6.9				106		FHR
	SVTO	11	1144	1229	1246	S32	E67	5275	12	16.8	62	1N	C 6.9	3	E		114		FR
	CATA	11	1146	1146	1152	S31	E66	5275	12	16.7	6	SB		2	C	1146	56		
	RAMY	11	1148E	1150U	1159	S32	E62	5275	12	16.4	11D	SF		1	E		35		FH
	RAMY	11	1213	1229	1307	S29	E61	5275	12	16.3	54	1N		3	E		129		
	CATA	11	1225	1231	1241D	S32	E67	5275	12	16.8	16D	1B		2	P	1231	197		
0134		11	1335	13383	1421	N16	E38	5271	12	14.4	46	SF					48		
	RAMY	11	1335	1338	1421	N16	E38	5271	12	14.4	46	SF		3	E		48		
	KANZ	11	1335	1341	1349D	N16	E38	5271	12	14.4	14D	SF			V				
0135	RAMY	11	1402	1407	1413	S23	W04	5268	12	11.3	11	SF		3	E		12		
0136		11	1353*	1424*	1458	S33	E64	5275	12	16.7	65	SF					30		
	RAMY	11	1353	1424	1455	S32	E65	5275	12	16.7	62	SF		3	E		41		
	HOLL	11	1411E	1415U	1455	S35	E65	5275	12	16.8	44D	SF		2	E		30		
	RAMY	11	1456	1456	1504	S31	E61	5275	12	16.4	8	SF		3	E		19		
0137	RAMY	11	1451	1451	1457	N31	E40	5274	12	14.8	6	SF		3	E		13		
0138	RAMY	11	1509	1513	1527	S32	E60	5275	12	16.4	18	SF		3	E		25		
0139	RAMY	11	1543	1547	1556	S28	E59	5275	12	16.3	13	SF		3	E		22		
0140	RAMY	11	1603	1603	1613	N22	W10	5266A	12	10.9	10	SF		3	E		11		F
0141	RAMY	11	1615	1620	1639	S32	E64	5275	12	16.7	24	SF		3	E		72		
0142	HOLL	11	1743	1750	1756	S40	E01	5267	12	11.8	13	SF		3	E		17		
0143		11	18085	1816	1828	S32	E62	5275	12	16.7	20	SN	C 3.6				64		
	HOLL	11	1808	1816	1830	S32	E61	5275	12	16.6	22	SN	C 3.6	3	E		78		
	RAMY	11	1813	1816	1826	S32	E63	5275	12	16.7	13	SF		3	E		51		
0144	HOLL	11	1907	1908	1913	S32	E58	5275	12	16.4	6	SF		3	E		11		
0145		11	19211	19271	1938	N19	W20	5265	12	10.3	17	SF					20		H
	HOLL	11	1921	1928	1937	N19	W20	5265	12	10.3	16	SF		4	E		22		H
	RAMY	11	1922	1927	1938	N19	W19	5265	12	10.3	16	SF		3	E		19		
0146		11	2020*	20351	2056	S32	E60	5275	12	16.6	36	SF					44		
	RAMY	11	2020	2036	2050	S32	E60	5275	12	16.6	30	SF		2	E		46		
	HOLL	11	2032	2035	2103	S32	E60	5275	12	16.6	31	SF		4	E		43		
0147	HOLL	11	2131	2131	2216	S19	W10	5266	12	11.1	45	SF		3	E		27		F
0148	HOLL	11	2215	2219	2242	N16	E33	5271	12	14.4	27	SF		3	E		21		
0149	HOLL	11	2245	2247	2252	S32	E60	5275	12	16.7	7	SF		3	E		38		
0150		12	0247	03165	0412	N32	E15	5269	12	13.3	85	1B					231	2.9	E
	MITK	12	0247	0316	0438	N32	E15	5269	12	13.3	111	SB			C	0316			E
	PEKG	12	0321E	0321	0345	N32	E15	5269	12	13.3	24D	1N			P	0321	231	2.9	
0151		12	0350	03541	0408	S33	E40	5273	12	15.3	18	SN					30	0.6	D
	LEAR	12	0350	0354	0412	S33	E40	5273	12	15.3	22	SF		4	E		19		
	PEKG	12	0355E	0355	0404	S33	E40	5273	12	15.3	9D	SN			P	0355	42	0.6	D
0152	PEKG	12	0500	0505	0510	N31	E26	5274	12	14.2	10	SN			P	0505	84	1.1	D
0153	TACH	12	0507E		0538	N20	W03	5281	12	12.0	31D	SB			C	0507	170	1.8	E
0154	TACH	12	0628	0652	0704D	N31	E27	5274	12	14.4	36D	1B			C	0652	200	3.2	ET
0155	TACH	12	0724	0728	0809D	N22	E07	5281	12	12.8	45D	1B			C	0728	220	3.0	TU

DECEMBER 1988

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
0156		12	0736	0740*	0830	N32	E12	5269	12	13.3	54	1N	C	7.8				275	5.1	F
	YUNN	12	0735E	0743U	0743D	N33	E13	5269	12	13.3	8D	2N				P	0743	472	6.0	F
	SVTO	12	0736	0739U	0837	N32	E12	5269	12	13.3	61	1N	C	7.8	3	E		174		
	LEAR	12	0736	0740	0823	N32	E12	5269	12	13.3	47	1N	C	7.8	3	E		115		F
	CATA	12	0803E	0803	0919D	N33	E10	5269	12	13.1	76D	1B			2	P	0803	338	4.2	
0157	SVTO	12	0808	0809	0815	N16	E28	5271B	12	14.5	7	SF			3	E		15		H
0158	CATA	12	0809	0809	0823	N12	E24	5271	12	14.1	14	SB			2	C	0809	84	1.0	
0159		12	08433	08433	0853	N16	E27	5271B	12	14.4	10	SF						12		
	SVTO	12	0843	0843	0855	N16	E27	5271B	12	14.4	12	SF			3	E		10		
	LEAR	12	0846	0846	0851	N15	E27	5271B	12	14.4	5	SF			3	E		13		
0160		12	09393	09437	1003	S13	E36	5272	12	15.1	24	1N	C	4.3				204	3.0	EFL
	KAND	12	0939	0943	0956	S13	E37	5272	12	15.2	17	1B				P	0943	312	4.1	FL
	SVTO	12	0940	0943	1015	S14	E35	5272	12	15.0	35	1B	C	4.3	3	E		177		
	LEAR	12	0941	0944	0957	S14	E36	5272	12	15.1	16	1F	C	4.3	2	E		134		
	KHAR	12	0942	0944	1005	S16	E34	5272	12	15.0	23	1N			2	P	0952	200	2.5	
	CATA	12	0950E	0950	0950D	S12	E37	5272	12	15.2	23D	1B			2	P	0950	225	3.0	
	ABST	12	0956E	0956U	0957D	S11	E37	5272	12	15.2	1D	1N				P	0956	175	2.2	E
0161	KHAR	12	0958U		1005	N20	E85	5278	12	18.9	7U	SF			2	V	0958			D
0162	KHAR	12	1018	1019	1048	N20	E85	5278	12	18.9	30	SF			2	V	1019			DH
0163	KHAR	12	1028	1029	1035	N20	E22	5271B	12	14.1	7	SF			2	V	1029			D
0164	SVTO	12	1420	1420	1423	S31	E51	5275	12	16.6	3	SF			2	E		21		
0165	RAMY	12	1546	1547	1555	N20	W24	5265	12	10.8	9	SF	C	2.9	3	E		25		
0166	RAMY	12	1609	1615	1622	N16	E24	5271B	12	14.5	13	SF			3	E		34		F
		12	1817		1825	No Flare Patrol														
		12	1845		1914	No Flare Patrol														
		12	1932		1940	No Flare Patrol														
0167	HOLL	12	2148	2149	2206	S33	E50	5275	12	16.9	18	SN	C	3.9	3	E		43		
0168	HOLL	12	2238	2242	2250	S33	E49	5275	12	16.8	12	SF			3	E		13		
		12	2351		2400	No Flare Patrol														
		13	0000		0007	No Flare Patrol														
		13	0015		0020	No Flare Patrol														
		13	0028		0034	No Flare Patrol														
0169	PALE	13	0155E	0212	0220	N21	E73	5278	12	18.7	25D	SF			3	E		36		F
0170	CATA	13	1001E	1001	1005	N32	E90	5280	12	20.5	4D	1F			2	P	1001	56		
0171		13	10293	10293	1046	N20	W40	5265	12	10.4	17	1B	C	7.6				208	3.3	
	SVTO	13	1028E	1030U	1030D	N20	W37	5265	12	10.6	2D	1B	C	7.6	2	E		191		
	KANZ	13	1029	1029	1046	N20	W41	5265	12	10.3	17	1N				V				
	CATA	13	1032	1032	1047	N19	W42	5265	12	10.2	15	1B			2	C	1032	225	3.3	
0172	CATA	13	1206E	1206	1206D	N23	E73	5278	12	19.1	15D	1N			2	P	1206	84		
		13	1212		1218	No Flare Patrol														
0173	CATA	13	1228E	1228	1240D	N23	E71	5278	12	19.0	12D	SB			2	P	1228	56		
		13	1257		1303	No Flare Patrol														
0174		13	1405	14166	1442	N32	W04	5269	12	13.3	37	1F	C	6.5				107		F
	RAMY	13	1405	1416	1432	N32	W06	5269	12	13.1	27	SF	C	6.5	4	E		89		F
	HOLL	13	1415E	1422	1451	N31	W03	5269	12	13.3	36D	1F	C	6.5	3	E		125		F
		13	1941		1954	No Flare Patrol														
		13	2018		2031	No Flare Patrol														

Hα SOLAR FLARES

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
		13	2051		2057	No Flare Patrol													
0175	HOLL	13	2059	2117	2152	S41	W29	5267	12	11.5	53	SF		4	E		45		F
0176	HOLL	13	2129	2129	2148	S31	E13	5273	12	14.9	19	SF		4	E		16		F
0177	MITK	14	0033	0039	0110	N21	E20	5271B	12	15.5	37	SB			C	0039			EGH
0178	LEAR	14	0217	0220	0223	S33	E31	5275	12	16.5	6	SF		3	E		13		
0179	LEAR	14	0219	0219	0222	N21	E38	5279	12	17.0	3	SF		3	E		16		
0180		14	06153	06215	0636	S20	W22	5281A	12	12.6	21	SN					24		EFG
	MITK	14	0615	0626	0641	S19	W21	5281A	12	12.6	26	SN			C	0626			EG
	LEAR	14	0618	0621	0630	S20	W22	5281A	12	12.6	12	SF		3	E		24		F
0181		14	06311	06351	0646	N18	E31	5279A	12	16.6	15	SN	C 5.9				123	1.9	DF
	MITK	14	0631	0635	0644D	N18	E31	5279A	12	16.6	13D	1N			C	0635	170	2.2	
	PEKG	14	0632	0635	0642	N18	E31	5279A	12	16.6	10	SN			P	0635	126	1.6	D
	LEAR	14	0632	0636	0649	N18	E31	5279A	12	16.6	17	SF	C 5.9	3	E		74		F
0182	HTPR	14	0840	0843	0923	S32	E20	5275	12	15.9	43	SN			C	0843	70	0.8	E
0183	HTPR	14	0840	0846	0900	N23	E30	5279	12	16.7	20	1B			C	0846	200	2.2	E
0184		14	08428	08446	0858	N18	E30	5279A	12	16.6	16	SN	C 7.4				112	2.1	F
	KANZ	14	0841E	0844	0859	N17	E30	5279A	12	16.6	18D	SF			C				
	LEAR	14	0842	0845	0856	N17	E30	5279A	12	16.6	14	SF	C 7.4	3	E		55		F
	CATA	14	0850	0850	0857D	N19	E29	5279A	12	16.6	7D	1B		2	P	0850	169	2.1	
0185	HTPR	14	0850	0851	0854	N17	E01	5271B	12	14.4	4	SF			C	0851	30	0.3	E
0186		14	1011	10112	1016	N31	E59	5278	12	19.1	5	SN					59	1.3	V
	HTPR	14	1011	1011	1018	N29	E60	5278	12	19.1	7	SN			C	1011	70	1.4	V
	HTPR	14	1011	1012	1015	N33	E51	5278	12	18.5	4	SN			C	1012	80	1.2	
	CATA	14	1013E	1013	1013D	N30	E65	5278	12	19.5	4D	SB		2	P	1013	28		
0187	HTPR	14	1020	1039	1120	S35	W32	5267	12	11.9	60	SF			C	1039	50	0.6	E
0188		14	10443	10443	1055	S31	E15	5273	12	15.6	11	SB	C 7.2				119	1.7	EF
	KANZ	14	1044	1044	1054	S31	E14	5273	12	15.5	10	SN			V				
	HTPR	14	1044	1045	1050	S33	E14	5273	12	15.5	6	SB			C	1045	180	2.0	E
	SVTO	14	1044E	1046U	1055	S30	E16	5273	12	15.7	11D	SN	C 7.2	1	E		64		F
	CATA	14	1047	1047	1100	S31	E15	5273	12	15.6	13	SB		2	C	1047	112	1.4	
0189		14	1124	11291	1140	N26	E80	5280	12	20.7	16	SN					29		
	HTPR	14	1124	1130	1140	N25	E80	5280	12	20.7	16	SF			C	1130	30		
	CATA	14	1129E	1129	1129D	N27	E80	5280	12	20.7	16D	SN		2	P	1129	28		
0190		14	1124	11294	1215	N16	W08	5271B	12	13.9	51	SN					174	1.8	EIS
	HTPR	14	1124	1133	1215	N18	W10	5271B	12	13.7	51	SF			C	1133	180	1.8	EIS
	CATA	14	1129E	1129	1129D	N15	W07	5271B	12	13.9	51D	SN		2	P	1129	169	1.9	
0191	HTPR	14	1200	1205	1222	S26	W01	5273	12	14.4	22	SF			C	1205	130	1.4	E
0192	HTPR	14	1211	1214	1220	S31	E11	5273	12	15.4	9	SF			C	1214	40	0.4	
0193		14	1249	1249	1309	S31	E13	5273	12	15.5	20	SN					86	0.9	E
	KANZ	14	1249	1249	1307	S31	E14	5273	12	15.6	18	SN			V				
	HTPR	14	1255E		1305	S31	E10	5273	12	15.3	10D	SN			C	1255	80	0.9	E
	RAMY	14	1255E	1256U	1314	S31	E14	5273	12	15.6	19D	SN		2	E		91		
0194		14	1253	1253	1306	N24	E78	5280	12	20.6	13	SF					83		
	KANZ	14	1253	1253	1307	N24	E81	5280	12	20.8	14	SF			V				
	RAMY	14	1255E	1255U	1305	N25	E74	5280	12	20.3	10D	SF		2	E		83		

Hα SOLAR FLARES

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0195		14	13373	13373	1349	N30	E59	5278	12	19.2	12	1N	M 2.1				131	2.0	EFHV
	RAMY	14	1337	1337	1354	N30	E63	5278	12	19.5	17	1B	M 2.1	3	E		136		FH
	HTPR	14	1337	1338	1341	N33	E50	5278	12	18.5	4	SN			C	1338	100	1.6	EV
	HTPR	14	1337	1338	1347	N29	E60	5278	12	19.3	10	1B			C	1338	120	2.4	EV
	SVTO	14	1338E	1338U	1353	N30	E60	5278	12	19.3	15D	1N	M 2.1	1	E		169		
	KANZ	14	1340	1340	1348	N28	E61	5278	12	19.3	8	SF			V				
0196		14	13398	13502	1426	N19	E28	5279A	12	16.7	47	SF					74		FH
	RAMY	14	1339	1350	1426	N20	E31	5279A	12	16.9	47	SF		3	E		62		FH
	KANZ	14	1340	1352	1355D	N18	E26	5279A	12	16.5	15D	SF			V				
	SVTO	14	1347	1350	1412D	N19	E27	5279A	12	16.6	25D	SN		2	E		86		F
0197	HTPR	14	1345		1356D	N22	E23	5279	12	16.3	11D	SF			C	1348	80	0.9	E
0198		14	1607	1607	1615	S32	E08	5273	12	15.3	8	SF					22		F
	RAMY	14	1607	1607	1615	S32	E09	5273	12	15.4	8	SF		3	E		18		F
	HOLL	14	1607	1607	1615	S32	E08	5273	12	15.3	8	SF		4	E		26		
0199	HOLL	14	1617	1617	1622	N34	W14	5269B	12	13.6	5	SF		4	E		14		
		14	1636		1641	No Flare Patrol													
		14	1708		1759	No Flare Patrol													
0200	HOLL	14	1729	1743	1821	N27	E62	5278	12	19.5	52	SN	M 1.3	3	E		43		
0201		14	1757E	1759U	1843	S33	E12	5273	12	15.7	46D	1F					148		FH
	HOLL	14	1757E	1759U	1843	S33	E14	5273	12	15.9	46D	1F		3	E		193		FH
	RAMY	14	1800E	1806U	1825D	S33	E09	5273	12	15.5	25D	1F		1	E		104		F
		14	1826		1840	No Flare Patrol													
		14	1858		2019	No Flare Patrol													
0202		14	19094	19096	1921	S31	E11	5273	12	15.7	12	SF	C 4.3				32		
	HOLL	14	1909	1909	1913	S31	E12	5273	12	15.7	4	SF	C 4.3	3	E		12		
	HOLL	14	1913	1915	1929	S31	E10	5273	12	15.6	16	SF	C 4.3	3	E		53		
0203	HOLL	14	1943	1944U	2040D	N24	E70	5280	12	20.2	57D	1N		3	E		170		
0204		14	2035E	2040	2110	S33	E10	5273	12	15.6	35D	1N	M 1.0				114		F
	RAMY	14	2035E	2037U	2058D	S33	E08	5273	12	15.5	23D	SF	M 1.0	1	E		69		F
	HOLL	14	2039E	2040	2110	S33	E12	5273	12	15.8	31D	1N	M 1.0	3	E		158		F
		14	2122		2152	No Flare Patrol													
0205	HOLL	14	2127	2141	2156	N15	W09	5271	12	14.2	29	SF		3	E		38		
		14	2156		2228	No Flare Patrol													
0206	HOLL	14	2216	2216	2223	N29	E57	5278	12	19.4	7	SF		3	E		22		
		14	2232		2358	No Flare Patrol													
0207	HOLL	14	2321E	2323	2348D	N20	E25	5279A	12	16.9	27D	SF		2	E		38		
0208	HOLL	14	2325	2325	2333	N28	E56	5278	12	19.3	8	SF	C 2.6	2	E		24		
0209	PALE	15	0047E	0050U	0130D	N26	E58	5278	12	19.5	43D	SF	C 6.3	3	E		56		F
0210	MITK	15	0352	0359	0414	N28	E59	5278	12	19.8	22	1N			C	0359	110	2.6	
0211	LEAR	15	0433	0435	0440	N21	E23	5279	12	16.9	7	SF		3	E		36		F
0212	LEAR	15	0437	0438	0443	N11	W15	5271	12	14.1	6	SF		3	E		13		F
0213	MITK	15	0448	0456	0513	N21	E22	5279	12	16.9	25	1N			C	0456	360	4.3	E
0214		15	0446*	0501	0508	N28	E64	5280	12	20.2	22	1N	X 1.1				56		F
	LEAR	15	0446	0501U	0501D	N31	E66	5280	12	20.4	15D	1N	X 1.1	3	E		96		
	LEAR	15	0501	0501	0508	N24	E61	5280	12	19.9	7	SF		3	E		15		F

Hα SOLAR FLARES

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0215		15	04451	05029	0536	N27	E58	5278	12	19.7	51	2B	X 1.1				350	8.2	EF
	PEKG	15	0445	0506	0520	N28	E58	5278	12	19.7	35	2B			C	0506	526	9.4	E
	MITK	15	0446E	0502	0532	N27	E58	5278	12	19.7	46D	2B			C	0502	310	7.0	F
	LEAR	15	0446	0511	0555	N27	E59	5278	12	19.8	69	1N	X 1.1	2	E		214		F
0216	YUNN	15	0651E	0652U	0653D	N22	E24	5279	12	17.1	2D	SN			P	0652	24	0.3	E
0217	TACH	15	0723	0737	0747D	N23	E24	5279	12	17.1	24D	1N			C	0737	214	2.7	E
		15	0751		0808	No Flare Patrol													
		15	0935		0936	No Flare Patrol													
0218	KANZ	15	1210	1213	1231	N21	E21	5279	12	17.1	21	SF			V				E
0219	RAMY	15	1338	1347	1354	S31	W02	5273	12	15.4	16	SF		3	E		33		F
0220	RAMY	15	1357E	1410	1420D	S30	W04	5273	12	15.3	23D	SF	C 5.9	3	E		51		F
0221	RAMY	15	1402	1406	1420D	N18	E14	5279A	12	16.6	18D	SN		3	E		72		F
		15	1421		1540	No Flare Patrol													
		15	1607		1629	No Flare Patrol													
		15	1639		1659	No Flare Patrol													
0222	RAMY	15	1751	1758	1832	N23	E19	5279	12	17.2	41	SF	C 5.3	3	E		35		F
0223	RAMY	15	1817	1821	1854D	S29	W08	5273	12	15.1	37D	1F		3	E		146		F
		15	1843		1907	No Flare Patrol													
0224	HOLL	15	1925E	1927U	1944	N22	E17	5279	12	17.1	19D	SF	C 3.6	3	E		35		F
0225		15	2002	2008	2026	N22	E16	5279	12	17.1	24	SF	C 3.8				30		F
	HOLL	15	2002	2008	2033	N21	E15	5279	12	17.0	31	SF	C 3.8	3	E		38		F
	RAMY	15	2004E	2008U	2018	N22	E16	5279	12	17.1	14D	SF	C 3.8	3	E		21		
0226	RAMY	15	2016	2024U	2024D	S31	W07	5273	12	15.3	8D	SF		3	E		43		
0227		15	2037*	2043*	2115	N21	E16	5279	12	17.1	38	SF	C 3.1				37		F
	HOLL	15	2037	2043	2110	N21	E15	5279	12	17.0	33	SF		3	E		47		F
	PALE	15	2054E	2102	2111D	N21	E17	5279	12	17.2	17D	SF	C 3.1	3	E		23		
	HOLL	15	2115	2116	2120	N22	E16	5279	12	17.1	5	SF		3	E		42		
0228	HOLL	15	2123	2131	2206	N20	E14	5279A	12	17.0	43	1B	M 1.5	3	E		144		EF
0229	HOLL	15	2135	2137	2150	S14	W12	5272	12	15.0	15	SF		3	E		18		F
0230	HOLL	15	2252	2254	2259D	N25	E56	5280	12	20.3	7D	SF		3	E		49		
		15	2300		2316	No Flare Patrol													
0231	MITK	15	2317E	2319	2341	S33	W08	5273	12	15.3	24D	SN			C	2319			E
0232		16	0123*	0139*	0344	N34	W34		12	13.3	141	2N					395	9.4	FGU
	MITK	16	0123	0158	0448	N34	W33		12	13.4	205	2N			C	0158	650	10.0	FG
	PALE	16	0124	0139	0202D	N33	W35		12	13.3	38D	SF		3	E		92		F
	PEKG	16	0200E	0208	0255	N34	W34		12	13.4	55D	2B			P	0208	589	8.9	U
	LEAR	16	0205	0228	0329	N34	W33		12	13.4	84	2F		3	E		249		
0233	MITK	16	0156	0158	0208	N18	E08	5279A	12	16.7	12	SF			C	0158			E
0234	LEAR	16	0223	0237	0248	N18	E10	5279A	12	16.9	25	SF		3	E		59		
0235	LEAR	16	0236	0238	0241	S33	W04	5273	12	15.8	5	SF		3	E		18		
0236	LEAR	16	0242	0247	0302	N27	E33	5278	12	18.7	20	SF		3	E		50		
0237	LEAR	16	0243	0244	0249	S30	W12	5273	12	15.2	6	SF		3	E		33		

Hα SOLAR FLARES

DECEMBER 1988

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
0238		16	0251*	03026	0318	N22	E12	5279	12	17.0	27	SN						76		E
	LEAR	16	0251	0302	0320	N22	E12	5279	12	17.0	29	SF			3	E		76		
	MITK	16	0307	0308	0317	N22	E11	5279	12	17.0	10	SN				C	0308			E
0239	MITK	16	0438	0440	0443	N24	E33	5278	12	18.7	5	1N				C	0440	190	2.6	
0240	MITK	16	0501	0507	0532	N24	E10	5279	12	17.0	31	SN				C	0507			
0241		16	0518	0526	0607	S32	W12	5273	12	15.3	49	1N						116	1.4	E
	MITK	16	0518	0526	0607	S32	W12	5273	12	15.3	49	1N				C	0526	200	2.5	E
	YUNN	16	0537E	0537U	0542D	S31	W11	5273	12	15.4	5D	SF				P	0537	31	0.4	E
0242	YUNN	16	0537E	0537U	0542D	N29	E46	5278	12	19.8	5D	SN				P	0537	31	0.5	E
0243		16	0545	0554	0605	N19	E06	5279A	12	16.7	20	SF						108	1.7	BE
	MITK	16	0545	0554	0611	N18	E06	5279A	12	16.7	26	1N				C	0554	200	2.2	E
	LEAR	16	0554E	0554U	0559	N18	E07	5279A	12	16.8	5D	SF			2	E		20		
	ABST	16	0557E	0557U	0604D	N20	E05	5279A	12	16.6	7D	SF				P	0557	105	1.2	BE
0244		16	05545	06014	0620	N24	E09	5279	12	16.9	26	SN						52	0.6	DE
	MITK	16	0554	0605	0620	N24	E08	5279	12	16.9	26	SF				C	0605			E
	ABST	16	0559	0601	0620	N25	E10	5279	12	17.0	21	SN				C	0601	52	0.6	D
0245	MITK	16	0645	0652	0700D	N24	E36	5278	12	19.1	15D	SN				C	0652			
		16	0701		0721	No Flare Patrol														
0246		16	0826*	0833*	0928	N27	E33	5278	12	18.9	62	2B	X	4.7				553	8.5	EFIJKU
	YUNN	16	0826	0833	0836	N27	E33	5278	12	18.9	10	2B				P		707	9.8	F
	ABST	16	0828	0839	1002D	N25	E32	5278	12	18.8	94D	2B				P	0839	611	8.3	FIJK
	LEAR	16	0838	0841	0850D	N26	E37	5278	12	19.2	12D	1B	X	4.7	3	E		210		UE
	HTPR	16	0848E		1020	N27	E33	5278	12	18.9	92D	2B				C	0852	450	5.0	EI
	CATA	16	0917E	0917	0940D	N28	E30	5278	12	18.7	23D	2B			2	P	0917	787	10.8	
0247	HTPR	16	1005	1009	1016	N32	W42		12	13.1	11	SF				C	1009	30	0.4	E
0248	HTPR	16	1016	1022	1031	S30	W13	5273	12	15.4	15	SF				C	1022	20	0.2	E
		16	1048		1055	No Flare Patrol														
		16	1115		1118	No Flare Patrol														
0249		16	1209	1211	1216	N26	E50	5280	12	20.4	7	SF						52		F
	RAMY	16	1209	1211	1216	N26	E48	5280	12	20.2	7	SF			4	E		52		F
	KANZ	16	1210E	1210U	1216D	N27	E51	5280	12	20.5	6D	SF				C				
0250	RAMY	16	1222	1230	1244	N22	E06	5279	12	17.0	22	SF			4	E		36		F
0251	RAMY	16	1227	1227	1240	S11	W24	5272	12	14.7	13	SF			4	E		20		F
0252	RAMY	16	1355	1357	1405	N23	E08	5279	12	17.2	10	SF			4	E		21		
0253	RAMY	16	1401	1402	1418	N26	E47	5280	12	20.2	17	SF			3	E		31		F
0254		16	14319	14329	1456	S12	W24	5272	12	14.8	25	SF						30		F
	RAMY	16	1431	1432	1502	S11	W25	5272	12	14.7	31	SF			3	E		27		
	HOLL	16	1440	1441	1451	S12	W24	5272	12	14.8	11	SF			3	E		34		F
0255		16	14473	15021	1512	N26	E47	5280	12	20.3	25	SF						46		F
	RAMY	16	1447	1503	1510	N26	E47	5280	12	20.3	23	SF			3	E		27		F
	HOLL	16	1450	1502	1515	N26	E47	5280	12	20.3	25	SF			4	E		64		F
0256	RAMY	16	1452	1456	1509	S31	W15	5273	12	15.4	17	SF			3	E		24		F
0257	RAMY	16	1456	1500	1510	N22	E05	5279	12	17.0	14	SF			3	E		28		
0258	HOLL	16	1520	1539	1604D	N25	E47	5280	12	20.3	44D	SN			4	E		36		
0259		16	1539	15395	1550	N30	E34	5278	12	19.3	11	SF						22		
	RAMY	16	1539	1539	1550	N30	E35	5278	12	19.4	11	SF			4	E		18		
	HOLL	16	1539	1544	1604D	N30	E33	5278	12	19.2	25D	SF			4	E		25		

Hα SOLAR FLARES

DECEMBER 1988

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
		16	1553		1718	No Flare Patrol														
		16	1723		1724	No Flare Patrol														
0260	RAMY	16	1751	1801	1810	S33	W11	5275	12	15.9	19	SF	C	3.9	3	E		10		
0261		16	1754	18031	1812	N27	E48	5280	12	20.5	18	1F						72		F
	RAMY	16	1754	1804	1812	N27	E48	5280	12	20.5	18	SF			4	E		25		F
	HOLL	16	1759E	1803	1853D	N27	E47	5280	12	20.4	54D	1F			4	E		120		F
0262	RAMY	16	1828	1834	1845	N17	E89	5283	12	23.5	17	SF			4	E		20		
0263	RAMY	16	1853	1905U	1930D	N17	E86	5283	12	23.3	37D	SF			3	E		37		
0264	RAMY	16	1909E	1928U	1930D	S32	W18	5273	12	15.4	21D	SF			3	E		14		
		16	1915		1926	No Flare Patrol														
		16	1931		1956	No Flare Patrol														
0265	HOLL	16	1957E	2013	2043	N17	E83	5283	12	23.1	46D	SN	C	2.9	3	E		56		
0266	HOLL	16	1957E	2004	2024	N22	E02	5279	12	17.0	27D	SF			3	E		44		F
0267	HOLL	16	2116	2120	2208	N17	E90	5283	12	23.7	52	SF	C	3.2	3	E		27		
0268	HOLL	16	2202	2204	2212	N33	W26	5274	12	14.8	10	SF			3	E		25		
0269	HOLL	16	2220	2233	2250	N17	E83	5283	12	23.2	30	SF			3	E		36		
0270	HOLL	16	2225	2233	2313	N23	E02	5279	12	17.1	48	1N			3	E		109		F
		16	2238		2247	No Flare Patrol														
		16	2252		2258	No Flare Patrol														
		16	2322		2338	No Flare Patrol														
0271	MITK	16	2341	2351	2455	S33	W12	5275	12	16.0	74	2N				C	2351	490	6.1	F
		17	0103		0114	No Flare Patrol														
0272	MITK	17	0151	0152	0156	N23	W01	5279	12	17.0	5	SF				C	0152			E
0273	MITK	17	0244	0248	0319	N23	W02	5279	12	16.9	35	SN				C	0248			E
0274		17	0247	02585	0337	S30	W22	5273	12	15.4	50	SN						147	1.9	DE
	MITK	17	0247	0258	0337	S29	W21	5273	12	15.5	50	SN				C	0258			E
	PEKG	17	0258E	0303	0318D	S30	W22	5273	12	15.4	20D	SN				P	0303	147	1.9	D
0275	MITK	17	0341	0344	0402	N23	W03	5279	12	16.9	21	1F				C	0344	240	2.7	
0276	MITK	17	0343	0346	0454	S30	W22	5273	12	15.4	71	1N				C	0346	300	3.8	E
0277	MITK	17	0430	0436	0440	N17	E90	5283	12	24.0	10	1N				C	0436	200		
0278		17	04517	0452*	0522	N29	E28	5278	12	19.4	31	SN	M	3.2				135	2.2	EFZ
	MITK	17	0451	0452	0512	N28	E23	5278	12	19.0	21	SN				C	0452			
	MITK	17	0455	0459	0529	N29	E28	5278	12	19.4	34	1N				C	0459	220	3.0	
	LEAR	17	0458	0500	0553D	N28	E30	5278	12	19.5	55D	SF	M	3.2	2	E		51		ZF
	YUNN	17	0502E	0502U	0532	N29	E30	5278	12	19.6	30D	SB				P	0502	79	1.1	
	PEKG	17	0502E	0506	0517	N29	E29	5278	12	19.5	15D	1N				P	0506	189	2.6	E
0279		17	0457	0505	0532	N26	E42	5280	12	20.5	35	SN						34	0.7	F
	LEAR	17	0457	0505	0526D	N27	E42	5280	12	20.5	29D	SF			2	E		22		F
	YUNN	17	0502E	0502U	0532	N26	E42	5280	12	20.5	30D	SN				P	0502	47	0.7	
0280		17	05041	05052	0513	N23	W04	5279	12	16.9	9	SN						31	0.5	
	MITK	17	0504	0506	0516	N23	W04	5279	12	16.9	12	SN				C	0506			
	YUNN	17	0504	0507	0513	N23	W04	5279	12	16.9	9	SN				C		47	0.5	
	LEAR	17	0505	0505	0511	N22	W04	5279	12	16.9	6	SF			2	E		15		
0281	YUNN	17	0506	0510	0518	S12	W31	5272	12	14.9	12	SF				C		31	0.4	

Hα SOLAR FLARES

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
0282	YUNN	17	0510	0513	0525	S35	W16	5275	12	15.9	15	SN			C		47	0.6	
0283		17	0530	05423	0602	N28	E28	5278	12	19.4	32	SN	M 2.7				94	1.6	DEFJZ
	MITK	17	0530	0542	0600D	N28	E28	5278	12	19.4	30D	SN			C	0542			
	YUNN	17	0537E	0544	0606	N27	E30	5278	12	19.6	29D	SN			P		79	1.1	
	ABST	17	0540E	0543U	0600	N27	E31	5278	12	19.6	20D	SF			P	0543	52	0.8	D
	ABST	17	0540E	0545	0600	N29	E27	5278	12	19.3	20D	1N			P	0545	218	3.0	EJ
	LEAR	17	0543E	0543	0553D	N27	E26	5278	12	19.3	10D	SF	M 2.7	2	E		25		ZF
0284	ABST	17	0713	0714	0720	N22	E85	5283	12	23.8	7	1F			C	0714	87		DV
0285	YUNN	17	0818	0824	0855	S12	W31	5272	12	15.0	37	SN			C		63	0.8	E
0286		17	0849E	0902	0901	N25	E40	5280	12	20.5	12D	SN					16	0.2	D
	YUNN	17	0849E	0849U	0856	N28	E42	5280	12	20.6	7D	SN			P	0849	16	0.3	D
	YUNN	17	0900E	0902	0906	N22	E38	5280	12	20.3	6D	SN			P		16	0.2	D
0287	HTPR	17	1105	1107	1132	N13	W46	5271	12	14.0	27	SF			C	1107	60	0.8	E
0288		17	11321	1136	1144	N28	E26	5278	12	19.5	12	SN					70	0.8	E
	HTPR	17	1132	1136	1145	N28	E25	5278	12	19.4	13	SN			C	1136	70	0.8	E
	KANZ	17	1133	1136	1144	N28	E27	5278	12	19.6	11	SF			V				
0289		17	12122	12146	1226	N16	E83	5283	12	23.8	14	SF					29		
	RAMY	17	1212	1220	1228	N15	E79	5283	12	23.5	16	SF		3	E		29		
	KANZ	17	1214	1214	1225	N16	E87	5283	12	24.1	11	SF			V				
0290		17	1249*	13122	1328	N14	E76	5283	12	23.3	39	SF					15		
	RAMY	17	1249	1312	1333	N15	E70	5283	12	22.8	44	SF		3	E		15		
	KANZ	17	1310	1314	1322	N14	E83	5283	12	23.8	12	SF			V				
0291		17	13126	13172	1338	S13	W34	5272	12	15.0	26	SF					60	1.0	E
	HTPR	17	1312	1317	1335	S13	W36	5272	12	14.8	23	SN			C	1317	80	1.0	E
	RAMY	17	1315	1319	1350	S13	W34	5272	12	15.0	35	SF		3	E		40		
	KANZ	17	1318	1318	1329	S13	W33	5272	12	15.1	11	SF			V				
0292	RAMY	17	1511	1514	1527	N16	E79	5283	12	23.6	16	SF		3	E		41		
0293	RAMY	17	1512	1515	1539	N21	E34	5280	12	20.2	27	SF		3	E		28		
0294	RAMY	17	1630	1632	1643	N28	E22	5278	12	19.4	13	SF	C 5.1	3	E		58		
		17	1714		1724	No Flare Patrol													
0295		17	1732E	1736	2011	S14	W35	5272	12	15.1	159D	1B	M 1.5				176		FUZ
	HOLL	17	1732E	1736	2011	S15	W35	5272	12	15.1	159D	1B	M 1.5	3	E		196		ZU
	PALE	17	1735E	1738U	1738D	S14	W33	5272	12	15.2	3D	1B	M 1.5	2	E		102		
	RAMY	17	1749E	1749U	1925D	S13	W38	5272	12	14.9	96D	1N		2	E		231		UF
0296	RAMY	17	1759	1800	1816	N15	E78	5283	12	23.6	17	SF		3	E		14		
0297	HOLL	17	1943	2006	2111	S30	W30	5273	12	15.5	88	SF		3	E		68		
0298		17	20298	20432	2052	N14	E76	5283	12	23.6	23	SF					28		
	PALE	17	2029	2045	2055	N14	E75	5283	12	23.5	26	SF		3	E		32		
	HOLL	17	2037	2043	2050	N14	E76	5283	12	23.6	13	SF		3	E		24		
0299	HOLL	17	2105	2114	2129	S23	E34	5282	12	20.5	24	SF		3	E		22		
		17	2300		2304	No Flare Patrol													
0300	LEAR	18	0034	0035	0040	N24	W11	5279	12	17.2	6	SF	C 3.2	3	E		20		F
0301	YUNN	18	0101E	0103U	0126	N23	E12	5278	12	19.0	25D	SF			P	0103	31	0.4	
0302		18	0128	0132	0145	N28	E10	5278	12	18.8	17	SF					93	1.9	F
	YUNN	18	0128	0132	0145	N28	E10	5278	12	18.8	17	SF			C		157	1.9	
	PALE	18	0130E	0132U	0213D	N28	E11	5278	12	18.9	43D	SF		3	E		29		F

Hα SOLAR FLARES

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0303		18	0217	0220	0241	N32	W43	5274	12	14.7	24	SN	C 5.5				74	1.9	F
	YUNN	18	0128E	0220	0220D	N33	W44	5274	12	14.6	52D	SN			P		110	1.9	
	LEAR	18	0217	0220	0241	N32	W42	5274	12	14.8	24	SF	C 5.5	2	E		38		F
0304		18	0358	0402	0430	N22	E16	5278	12	19.4	32	SN					47	0.6	E
	MITK	18	0358	0402	0429	N22	E17	5278	12	19.5	31	SN			C	0402			E
	YUNN	18	0400E	0400U	0431	N23	E15	5278	12	19.3	31D	SF			P	0400	47	0.6	
0305		18	04524	04562	0513	N23	E15	5278	12	19.3	21	SF	C 3.9				70	1.3	EF
	MITK	18	0452	0457	0518	N22	E18	5278	12	19.6	26	SN			C	0457			E
	YUNN	18	0452	0458	0519	N25	E16	5278	12	19.4	27	SF			P		110	1.3	
	LEAR	18	0456	0456	0502	N23	E12	5278	12	19.1	6	SF	C 3.9	2	E		29		F
0306		18	06001	06044	0623	N21	E90	5285	12	25.1	23	1N					190		HY
	YUNN	18	0600	0608	0612D	N21	E89	5285	12	25.1	12D				P				Y
	MITK	18	0601	0604	0623	N21	E90	5285	12	25.1	22	1N			C	0604	190		H
0307	LEAR	18	0831	0832	0838	S23	E26	5282	12	20.3	7	SF		3	E		27		F
0308		18	09022	09041	0909	S21	E23	5282	12	20.1	7	SF					20		F
	SVTO	18	0902	0904	0911	S20	E24	5282	12	20.2	9	SF		3	E		26		
	LEAR	18	0904	0905	0907	S22	E22	5282	12	20.1	3	SF		3	E		13		F
0309		18	0913	09151	0946	N24	E09	5278	12	19.1	33	SN	M 1.0				62	1.2	F
	SVTO	18	0913	0915	0946	N22	E07	5278	12	18.9	33	SN	M 1.0	3	E		45		F
	LEAR	18	0913	0916	0946	N28	E13	5278	12	19.4	33	SF		3	E		31		F
	YUNN	18	0931E	0931U	0931D	N21	E07	5278	12	18.9	33D	SN			P	0931	110	1.2	
0310		18	1020	1022	1033	S22	E22	5282	12	20.1	13	SF	C 2.5				12		F
	KANZ	18	1018E	1022	1037	S22	E22	5282	12	20.1	19D	SF			C				
	LEAR	18	1020	1022	1029	S22	E21	5282	12	20.0	9	SF	C 2.5	3	E		12		F
0311		18	1024*	1026*	1052	S26	W40	5273	12	15.3	28	SN					65		
	SVTO	18	1024	1026	1102	S24	W39	5273	12	15.4	38	SN		3	E		65		
	KANZ	18	1037	1037	1041	S29	W40	5273	12	15.3	4	SF			C				
0312	SVTO	18	1112	1113	1123	N24	E07	5278	12	19.0	11	SF	C 6.3	3	E		29		H
0313	KANZ	18	1116	1116	1131	N22	W15	5279	12	17.3	15	SF			V				
0314		18	12277	1240	1304	S20	E22	5282	12	20.2	37	SN	C 6.2				59		
	SVTO	18	1227	1240	1305	S20	E22	5282	12	20.2	38	SN	C 6.2	3	E		68		
	RAMY	18	1234	1240	1302	S21	E21	5282	12	20.1	28	SN	C 6.2	3	E		50		
0315	RAMY	18	1423	1428	1436	S24	E22	5282	12	20.3	13	SF		3	E		13		
0316		18	16351	16383	1700	S22	E19	5282	12	20.1	25	1B	M 1.4				125		E
	HOLL	18	1635	1641	1658	S22	E19	5282	12	20.1	23	1B	M 1.4	3	E		111		
	RAMY	18	1636	1638	1701	S21	E19	5282	12	20.1	25	1N	M 1.4	3	E		139		E
0317		18	1651	17144	1851	S30	W40	5273	12	15.5	120	2N	X 1.1				478		FUZ
	HOLL	18	1651	1714	1845	S31	W40	5273	12	15.5	114	3B	X 1.1	3	E		643		ZU
	RAMY	18	1651	1718	1910	S30	W41	5273	12	15.5	139	3B	X 1.1	3	E		709		UF
	PALE	18	1805E	1805U	1837	S30	W40	5273	12	15.6	32D	SF		3	E		81		F
0318		18	17001	1702	1727	N22	E04	5278	12	19.0	27	SF					44		
	HOLL	18	1700	1702	1727	N21	E04	5278	12	19.0	27	SF		3	E		43		
	RAMY	18	1701	1702	1727	N22	E04	5278	12	19.0	26	SF		3	E		44		
0319	RAMY	18	1716	1717	1723	N16	E60	5283	12	23.3	7	SF		3	E		13		
0320	RAMY	18	1904	1905	1909	N34	W64	5274	12	13.7	5	SF		3	E		22		
0321	RAMY	18	2035E	2035U	2049D	S21	E16	5282	12	20.1	14D	SF		1	E		31		
		18	2111		2149	No Flare Patrol													
		18	2159		2203	No Flare Patrol													
0322	PALE	18	2208E	2211U	2219D	N22	W25	5279	12	17.0	11D	1N	C 7.4	3	E		118		F

Hα S O L A R F L A R E S

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
		18	2220		2244	No Flare Patrol														
0323	LEAR	18	2334	2342	2349	N11	W67	5271	12	13.9	15	SF			3	E		28		
0324	YUNN	19	0102E	0106	0152	N21	W28	5279	12	16.9	50D	1N				P		393	5.0	F
0325	YUNN	19	0123E	0124	0130	N30	E04	5278	12	19.4	7D	SN				P		24	0.3	
0326	YUNN	19	0124	0129	0135	N21	E89	5285	12	25.9	11	SN				C		39		
0327	YUNN	19	0152	0153	0200	N31	E04	5278	12	19.4	8	SN				C		16	0.2	
0328		19	02104	0218	0250	S21	E14	5282	12	20.2	40	SN	C	8.4				58	0.9	
	YUNN	19	0210	0218	0255	S21	E13	5282	12	20.1	45	SB				C		79	0.9	
	LEAR	19	0214	0218	0245	S21	E14	5282	12	20.2	31	SF	C	8.4	3	E		37		
0329	YUNN	19	0302	0304	0304D	N27	W01	5278	12	19.0	2D	SN				P		24	0.3	D
0330	YUNN	19	0302	0311	0328D	S30	W40	5273	12	16.0	26D	SN				P		47	0.7	
0331	YUNN	19	0304	0311	0317	S20	E13	5282	12	20.1	13	SN				P		47	0.5	
0332	YUNN	19	0440	0444	0519D	S20	E13	5282	12	20.2	39D	SN				P		24	0.3	
0333	SVTO	19	0708	0709U	0727D	S31	W46	5273	12	15.7	19D	SF			2	E		45		
0334	YUNN	19	0745	0746	0757	S20	E10	5282	12	20.1	12	SN				C		24	0.3	
0335	YUNN	19	0808	0820	0851	S20	E10	5282	12	20.1	43	SN				C		24	0.3	
0336		19	0935*	09415	0956	S16	W59	5272	12	14.9	21	1N	C	4.3				117	2.9	F
	LEAR	19	0935	0946	0956	S15	W60	5272	12	14.8	21	SF	C	4.3	3	E		80		F
	CATA	19	0941E	0941	0952	S16	W59	5272	12	14.9	11D	1B			2	P	0941	141	2.9	
	SVTO	19	0945	0945	1001	S16	W59	5272	12	14.9	16	1N	C	4.3	3	E		130		
0337		19	0952*	09598	1010	S21	E09	5282	12	20.1	18	SF						12		
	SVTO	19	0952	0959	1012	S21	E10	5282	12	20.2	20	SF			3	E		15		
	LEAR	19	1005	1007	1009	S21	E08	5282	12	20.0	4	SF			3	E		10		
0338		19	1100	1100	1124	N24	W03	5278	12	19.2	24	SF						14		F
	SVTO	19	1100	1100	1124	N24	W03	5278	12	19.2	24	SF			3	E		13		F
	RAMY	19	1112E	1112U	1150D	N23	W03	5278	12	19.2	38D	SF			2	E		15		
0339	RAMY	19	1138E	1138U	1146	N24	W13	5278	12	18.5	8D	SN			1	E		95		FH
0340		19	1140*	11495	1216	S21	E09	5282	12	20.2	36	SF	C	7.7				48		
	SVTO	19	1140	1149	1203	S21	E09	5282	12	20.2	23	SF	C	7.7	3	E		35		
	KANZ	19	1151E	1151U	1212	S20	E08	5282	12	20.1	21D	SF				C				
	RAMY	19	1152	1154	1233	S21	E09	5282	12	20.2	41	SF			3	E		60		
0341		19	12125	12211	1228	S29	W54	5273	12	15.3	16	SF						34		
	RAMY	19	1212	1222	1224	S29	W54	5273	12	15.3	12	SF			3	E		34		
	KANZ	19	1217	1221	1232	S29	W54	5273	12	15.3	15	SF				V				
0342	RAMY	19	1406	1410	1423	S21	E10	5282	12	20.3	17	SF			3	E		33		
0343	RAMY	19	1438	1441	1501	S31	W46	5273	12	16.0	23	SF			3	E		20		
0344	HOLL	19	1516E	1523	1600D	S30	W56	5273	12	15.2	44D	SF			3	E		34		
0345	HOLL	19	1521	1522	1600D	S21	E05	5282	12	20.0	39D	SF			3	E		27		F
		19	1534		1737	No Flare Patrol														
0346	RAMY	19	1828	1829	1836	S21	E03	5282	12	20.0	8	SF			4	E		22		F
0347	RAMY	19	1830	1831	1836D	N17	E52	5283	12	23.7	6D	SF			3	E		17		
		19	1837		2032	No Flare Patrol														

Hα SOLAR FLARES

DECEMBER 1988

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
0348	HOLL	19	1843	1848	1908	N21	E67	5285	12	24.9	25	SN	M 1.2	3	E		86		EF
0349	HOLL	19	1911	1911	1929	N20	E69	5285	12	25.1	18	SF		3	E		14		F
0350	HOLL	19	2032	2034	2047	N29	W05	5278	12	19.5	15	SF	C 3.7	3	E		34		F
		19	2102		2111	No Flare Patrol													
		19	2139		2156	No Flare Patrol													
0351	HOLL	19	2240	2241	2246	N19	W42	5279A	12	16.7	6	SF		3	E		35		
0352		20	0043	0102	0118	N24	W10	5278	12	19.2	35	SN	C 5.8				92	1.8	F
	LEAR	20	0043	0102	0116	N24	W10	5278	12	19.2	33	SF	C 5.8	4	E		26		F
	YUNN	20	0058E	0058U	0121	N24	W09	5278	12	19.3	23D	SB			P	0058	157	1.8	
0353		20	0127*	01461	0156	S20	W00	5282	12	20.1	29	SN					92	1.7	F
	YUNN	20	0127	0146	0158	S20	W01	5282	12	20.0	31	SB			C		157	1.7	F
	LEAR	20	0145	0147	0153	S20	E00	5282	12	20.1	8	SF		4	E		26		F
0354		20	01502	01576	0300	S31	W52	5273	12	16.0	70	2B	M 1.9				268	5.1	EF
	YUNN	20	0150	0157	0214D	S31	W51	5273	12	16.0	24D	2B			P		346	6.5	F
	LEAR	20	0152	0200	0308	S31	W53	5273	12	15.9	76	2N	M 1.9	4	E		274		F
	MITK	20	0155E	0203	0253	S32	W53	5273	12	15.9	58D	1B			C	0203	190	3.7	E
	PALE	20	0159E	0159U	0201D	S29	W53	5273	12	15.9	2D	2N	M 1.9	3	E		261		F
0355	LEAR	20	0234	0242	0303	N22	W41	5279	12	16.9	29	1F		3	E		107		F
0356	LEAR	20	0522	0522	0527	N23	W44	5279	12	16.8	5	SF		3	E		19		
0357	LEAR	20	0539	0540	0552	N20	W46	5279A	12	16.7	13	SF	C 4.5	3	E		72		
0358	LEAR	20	0621	0623	0629	N26	W14	5278	12	19.2	8	SF		3	E		35		
0359	LEAR	20	0721	0723	0729	N22	E60	5285	12	24.9	8	SF		3	E		12		
0360		20	08517	08594	0914	N22	E59	5285	12	24.9	23	1N	M 1.0				173	4.8	EF
	SVTO	20	0851	0859U	0902D	N24	E57	5285	12	24.8	11D	1N		1	E		198		
	LEAR	20	0856	0858U	0858	N21	E58	5285	12	24.8	2	SF		3	E		99		
	LEAR	20	0856	0903	0923	N21	E58	5285	12	24.8	27	1F	M 1.0	3	E		127		F
	ABST	20	0857	0859	0904D	N24	E60	5285	12	25.0	7D	2N			P	0859	236	6.5	E
	CATA	20	0858	0900	0900D	N24	E57	5285	12	24.8	2D	1B		2	P	0900	197	4.2	
	KANZ	20	0904E		0908D	N23	E63	5285	12	25.2	4D	1F			C				
	HTPR	20	0905E		0920	N21	E61	5285	12	25.0	15D	1N			C	0906	180	3.6	E
		20	1101		1137	No Flare Patrol													
		20	1153		1159	No Flare Patrol													
0361	RAMY	20	1209	1213	1222	N25	W03	5280	12	20.3	13	SF		3	E		18		F
		20	1250		1254	No Flare Patrol													
0362	HTPR	20	1255E		1309	S30	W60	5273	12	15.8	14D	1B			C	1255	110	2.2	F
0363		20	1324	1331U	1354	N24	W02	5280	12	20.4	30	SN					70	0.6	EF
	RAMY	20	1321E	1331U	1354	N25	W03	5280	12	20.3	33D	SF		2	E		80		F
	HTPR	20	1324		1329D	N23	W02	5280	12	20.4	5D	SN			C	1329	60	0.6	E
0364		20	1301	1326U	1336	S18	E90		12	27.4	35	1B					80		E
	HTPR	20	1301		1329D	S20	E90		12	27.4	28D	1B			C	1316	80		E
	RAMY	20	1326E	1326U	1336	S17	E90		12	27.4	10D	1N		2	E				
0365	RAMY	20	1401E	1406	1431D	S30	W63	5273	12	15.6	30D	SF		2	E		69		F
0366	RAMY	20	1407E	1407	1417	N17	W08	5287	12	20.0	10D	SF		3	E		20		F
0367	RAMY	20	1509	1511	1516	N17	W07	5287	12	20.1	7	SF		4	E		28		
0368	RAMY	20	1528	1530U	1530D	N27	W15	5278	12	19.5	2D	SF		2	E		15		

Hα SOLAR FLARES

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0369	HOLL	20	1543	1543	1545	S30	W64	5273	12	15.6	2	SF		3	E		15		
0370		20	1823	1827	1852	S34	W58	5275	12	16.1	29	SF					26		
	HOLL	20	1823	1827	1852	S34	W58	5275	12	16.1	29	SF		3	E		22		
	RAMY	20	1833E	1836U	1904D	S35	W58	5275	12	16.1	31D	SF		2	E		30		
0371	HOLL	20	1829	1831	1839	N17	W09	5287	12	20.1	10	SF		3	E		16		
0372	HOLL	20	1831	1835	1850	N27	W17	5278	12	19.4	19	SF		3	E		19		F
0373	HOLL	20	2114	2114	2121	N20	E57	5285	12	25.2	7	SF		4	E		10		
0374	HOLL	20	2146	2149	2201	N20	E55	5285	12	25.1	15	SF	C 4.5	4	E		33		F
0375	HOLL	20	2210	2210	2227	S20	W13	5282	12	19.9	17	SF		3	E		46		
0376		20	2259	23001	2313	N22	E52	5285	12	24.9	14	SF	C 4.2				43		F
	LEAR	20	2259	2300	2316	N23	E51	5285	12	24.9	17	SF	C 4.2	4	E		43		F
	HOLL	20	2259	2301	2310	N20	E54	5285	12	25.1	11	SF	C 4.2	3	E		43		
0377	LEAR	21	0112	0113	0117	S31	W68	5273	12	15.7	5	SF		4	E		12		F
0378	LEAR	21	0200	0202	0209	S34	W72	5273	12	15.3	9	SF	C 5.9	4	E		61		
0379	LEAR	21	0309	0311	0316	N18	W64	5279A	12	16.2	7	SF		3	E		39		
0380	LEAR	21	0448	0451	0456	N21	E49	5285	12	24.9	8	SF		3	E		16		
0381		21	06102	06112	0624	N28	W25	5278	12	19.3	14	SN	C 5.2				28	0.4	F
	YUNN	21	0610	0611	0626	N30	W23	5278	12	19.4	16	SN			P		31	0.4	
	LEAR	21	0612	0613	0623	N27	W27	5278	12	19.1	11	SF	C 5.2	4	E		25		F
0382		21	0608*	0611*	0646	N21	E49	5285	12	25.0	38	SF					33	1.1	
	YUNN	21	0608	0611	0645	N23	E49	5285	12	25.0	37	SN			P		63	1.1	
	LEAR	21	0632	0632	0641	N20	E49	5285	12	25.0	9	SF		3	E		20		
	LEAR	21	0642	0647	0652	N21	E49	5285	12	25.0	10	SF		4	E		16		
0383		21	0656	0658	0704	N18	W66	5279A	12	16.3	8	1N					76		E
	LEAR	21	0656	0658	0702	N17	W66	5279A	12	16.3	6	SF		4	E		20		
	ABST	21	0700E	0700U	0705	N19	W66	5279A	12	16.2	5D	1N			P	0700	131		E
0384	ABST	21	0848E	0849U	0857D	N19	W66	5279A	12	16.3	9D	1F			P	0849	87		DV
0385	KANZ	21	1112	1112	1116	N23	W60	5279	12	16.8	4	SF			V				
0386	HTPR	21	1118	1120	1125	S20	E90	5300A	12	28.3	7	SN			C	1120	30		
0387	KANZ	21	1122	1126	1137	N28	W24	5278	12	19.6	15	SF			V				
0388	KANZ	21	1157	1201	1208	N24	W48	5279	12	17.8	11	SF			V				
0389	HTPR	21	1201	1202	1213	N21	E90	5290B	12	28.4	12	SN			C	1202	30		
0390	KANZ	21	1235	1235	1238	N22	E44	5285	12	24.9	3	SF			V				
0391	HTPR	21	1301	1303	1335	N28	W20	5280	12	20.0	34	SN			C	1303	70	0.8	EF
0392	KANZ	21	1303	1307	1318	N28	W25	5278	12	19.6	15	SN			V				
0393	HTPR	21	1506	1507	1510	S20	E90	5300A	12	28.5	4	SB			C	1507	40		A
0394	HOLL	21	1506	1522	1636	N27	W17	5280	12	20.3	90	SF		3	E		80		
0395	HOLL	21	1553	1558	1605	S32	W67	5275	12	16.3	12	SF	M 1.5	3	E		25		
0396	RAMY	21	1608	1611	1621	N27	W28	5278	12	19.5	13	SF		2	E		25		
0397	HOLL	21	1802	1805	1814	N30	W28	5278	12	19.5	12	SF		3	E		18		F

Hα SOLAR FLARES

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
0398	PALE	21	1842	1855	1915	N28	W36	5278	12	19.0	33	SF		3	E		37		
0399		21	1852*	19052	1924	N23	W52	5279	12	17.8	32	SF					21		
	PALE	21	1852	1907	1924	N24	W52	5279	12	17.8	32	SF		3	E		23		
	HOLL	21	1903	1905	1923	N22	W52	5279	12	17.8	20	SF		3	E		19		
0400	HOLL	21	2024	2027	2100	N19	E43	5285	12	25.1	36	SF		3	E		16		
0401		21	2147*	22051	2224	N19	E42	5285	12	25.1	37	SF					36		F
	PALE	21	2147	2206	2227	N19	E42	5285	12	25.1	40	SF		3	E		38		F
	HOLL	21	2158	2205	2221	N19	E41	5285	12	25.0	23	SF		3	E		33		
0402		21	2232*	22387	2255	N23	W68	5279	12	16.7	23	SF					15		
	HOLL	21	2232	2238	2257	N22	W67	5279	12	16.8	25	SF		3	E		16		
	PALE	21	2234	2238	2243	N23	W69	5279	12	16.6	9	SF		3	E		16		
	PALE	21	2245	2245	2304	N23	W69	5279	12	16.6	19	SF		3	E		12		
0403	LEAR	22	0018	0021	0030	N21	E70	5290	12	27.4	12	SF	C 3.8	3	E		19		
0404	YUNN	22	0150	0157	0212	N17	E20	5283	12	23.6	22	SN			C		24	0.3	
0405	YUNN	22	0237	0240	0246	N30	E12	5284	12	23.0	9	SN			C		31	0.4	
0406	YUNN	22	0253E	0253U	0256	N20	E32	5285	12	24.6	3D	SN			P	0253	24	0.3	
0407	YUNN	22	0330E	0330	0335	S33	W66	5275	12	16.9	5D	SN			P		24		
0408		22	04043	04153	0444	N20	E40	5285	12	25.2	40	SN					44	0.7	
	LEAR	22	0404	0418	0441	N19	E39	5285	12	25.1	37	SF		3	E		41		
	YUNN	22	0407	0415	0446	N21	E40	5285	12	25.2	39	SN			C		47	0.7	
0409	LEAR	22	0617	0622	0629	S35	W80	5273	12	15.9	12	SF	M 1.0	3	E		25		
0410		22	09054	09102	0921	S33	W68	5275	12	17.0	16	SF					41	0.8	
	YUNN	22	0905	0911	0919	S33	W70	5275	12	16.8	14	SN			C		16		
	HTPR	22	0907	0912	0920	S30	W62	5275	12	17.5	13	SF			C	0912	40	0.8	
	LEAR	22	0908	0910	0921	S34	W69	5275	12	16.9	13	SF		2	E		27		
	SVTO	22	0909	0910	0925	S36	W69	5275	12	16.8	16	SF		3	E		81		
0411		22	09413	09413	0950	N27	W42	5278	12	19.1	9	SF	C 3.0				23		
	SVTO	22	0941	0941	0951	N26	W43	5278	12	19.1	10	SF	C 3.0	3	E		23		
	KANZ	22	0944	0944	0948	N28	W42	5278	12	19.1	4	SF			C				
0412	KANZ	22	1004	1004	1004	N21	E31	5285	12	24.8	4	SF			C				
0413	HTPR	22	1040	1040	1043	N26	W40	5278	12	19.3	3	SF			C	1040	20	0.3	
0414		22	10526	1055*	1126	N27	W42	5278	12	19.2	34	1B	C 9.4				98	1.2	EI
	SVTO	22	1052	1109	1145	N28	W42	5278	12	19.2	53	1B	C 9.4	3	E		114		
	HTPR	22	1053	1055	1102	N26	W40	5278	12	19.3	9	SN			C	1055	20	0.3	
	HTPR	22	1058	1106	1130	N28	W43	5278	12	19.1	32	1B			C	1106	160	2.2	EI
0415	SVTO	22	1117	1118	1125	N22	W68	5279	12	17.2	8	SF		3	E		38		
0416	HTPR	22	1142	1148	1200	N16	E18	5283	12	23.8	18	SN			C	1148	50	0.5	E
0417		22	12102	12122	1220	N22	W65	5279	12	17.5	10	SF					24	0.5	
	HTPR	22	1210	1214	1220	N24	W64	5279	12	17.6	10	SF			C	1214	20	0.5	
	SVTO	22	1212	1212	1219	N20	W66	5279	12	17.5	7	SF		3	E		28		
0418	SVTO	22	1243	1243	1251	N26	W43	5278	12	19.2	8	SF		3	E		10		
0419	SVTO	22	1247	1247	1251	N20	W68	5279	12	17.3	4	SF		3	E		19		
0420	HTPR	22	1258	1300	1306	S30	W90	5273	12	15.5	8	SN			C	1300	10		
0421	SVTO	22	1333	1336	1345	N15	W34	5287	12	20.0	12	SF		3	E		17		F
0422	SVTO	22	1404	1405	1416	N19	E32	5285	12	25.0	12	SF		3	E		15		

Hα SOLAR FLARES

DECEMBER 1988

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
0423	HOLL	22	1555	1559	1612	S31	W69	5275	12	17.2	17	SF	M 1.0	3	E		44		
0424	HOLL	22	1633	1645	1653	N23	W41	5278A	12	19.5	20	SF		3	E		21		
0425		22	1645	1656	1754	N18	E10	5283	12	23.4	69	SF					46		
	HOLL	22	1645	1656	1754	N17	E10	5283	12	23.4	69	SF		3	E		45		
	RAMY	22	1732E	1739U	1804D	N18	E11	5283	12	23.6	32D	SF		2	E		46		
0426	HOLL	22	1713	1717	1720	S31	W69	5275	12	17.3	7	SF		3	E		24		
0427		22	1743	1747	1759	S33	W74	5275	12	16.9	16	SF					26		
	HOLL	22	1743	1747	1759	S33	W74	5275	12	16.9	16	SF		3	E		30		
	RAMY	22	1745E	1748U	1809D	S33	W74	5275	12	16.9	24D	SF		2	E		23		
0428	HOLL	22	1814	1821	1836	N20	E70	5290B	12	28.1	22	SF		3	E		34		
0429	HOLL	22	2153	2154	2204	N25	W45	5278	12	19.4	11	SF	C 3.4	3	E		34		
0430		22	2250	2257	2304	N21	E28	5285	12	25.1	14	SF					38		
	HOLL	22	2250	2257	2304	N22	E28	5285	12	25.1	14	SF		3	E		50		
	PALE	22	2257E	2258U	2304D	N20	E28	5285	12	25.1	7D	SF		3	E		26		
0431		22	23072	2310	2354D	N26	W39	5280	12	19.9	47D	1N	M 5.3				120		EF
	HOLL	22	2307	2310	2354D	N26	W42	5280	12	19.7	47D	1N	M 5.3	4	E		124		FE
	LEAR	22	2309	2318U	2318D	N27	W36	5280	12	20.1	9D	1F		3	E		107		
	PALE	22	2310E	2310U	2315D	N26	W39	5280	12	19.9	5D	1N		3	E		129		F
0432		22	2309	23261	2605	N28	W44	5278	12	19.5	176	2F					309	8.6	F
	LEAR	22	2309	2326	2326D	N28	W43	5278	12	19.6	17D	2F		3	E		216		
	LEAR	22	2309	2327	2330D	N28	W43	5278	12	19.6	21D	2F		3	E		211		
	MITK	22	2339E		2605	N28	W45	5278	12	19.5	146D	2F			C	2339	500	8.6	F
0433		22	23036	23101	2318	S32	W80	5275	12	16.6	15	SN					34		
	HOLL	22	2303	2311	2321	S33	W82	5275	12	16.4	18	SN		4	E		46		
	LEAR	22	2309	2310	2316	S31	W78	5275	12	16.8	7	SF		3	E		21		
0434		23	00161	00181	0036	N20	E64	5290B	12	27.9	20	SF					46		
	PALE	23	0016	0018	0034	N20	E62	5290B	12	27.7	18	SF		3	E		49		
	LEAR	23	0017	0019	0039	N20	E65	5290B	12	28.0	22	SF		3	E		44		
0435		23	0100	0109	0141	N27	W41	5278	12	19.8	41	SB					55	0.8	
	YUNN	23	0028E	0047U	0150	N27	W41	5278	12	19.8	82D	SB			P	0047	63	1.0	
	YUNN	23	0100	0109	0132	N27	W41	5278	12	19.8	32	SN			C		47	0.7	
0436		23	01571	0200	0209	N20	E64	5290B	12	28.0	12	SF					23		
	LEAR	23	0157	0200	0210	N20	E65	5290B	12	28.0	13	SF		3	E		26		
	PALE	23	0158	0200	0208	N19	E64	5290B	12	28.0	10	SF		3	E		20		
0437	LEAR	23	0257	0258	0304	N20	E64	5290B	12	28.0	7	SF		3	E		34		
0438		23	0848	0853	0906	S33	W88	5275	12	16.4	18	SF	M 1.6				29		
	LEAR	23	0848	0853	0902	S32	W89	5275	12	16.3	14	SF	M 1.6	3	E		38		
	SVTO	23	0854E	0856U	0910	S34	W86	5275	12	16.5	16D	SF	M 1.6	2	E		20		
0439		23	1001	10011	1007	N25	W57	5278	12	19.0	6	SN					60	1.8	
	CATA	23	1001	1001	1007	N25	W56	5278	12	19.1	6	SB		2	C	1001	84	1.8	
	SVTO	23	1001	1002	1007	N25	W58	5278	12	18.9	6	SF		3	E		35		
0440	HTPR	23	1251	1253	1257	S30	W90	5275	12	16.4	6	SF			C	1253	30		
0441	HOLL	23	1711	1711	1719	N20	W46	5294	12	20.2	8	SF		2	E		21		
0442		23	1919	1929	2028	S16	E63	5296A	12	28.6	69	SF	C 7.0				71		F
	HOLL	23	1919	1929	2026	S16	E65	5296A	12	28.7	67	1F		2	E		109		F
	PALE	23	1930E	1942U	2030	S16	E63	5296A	12	28.6	60D	SF	C 7.0	3	E		54		F
	RAMY	23	1941E	1941U	1943D	S15	E62	5296A	12	28.5	2D	SF	C 7.0	1	E		51		F
0443		23	20182	2020	2032	N30	W57	5278	12	19.4	14	SF					41		
	PALE	23	2018	2019U	2033	N31	W58	5278	12	19.3	15	SF		4	E		38		
	HOLL	23	2020	2020	2030	N29	W56	5278	12	19.4	10	SF		3	E		44		

Hα SOLAR FLARES

DECEMBER 1988

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
0444	HOLL	23	2038	2040	2107	S16	E65	5292	12	28.8	29	SF		3	E		40		
0445	HOLL	23	2326	2328	2352D	N17	E48	5290B	12	27.6	26D	SF		2	E		33		
0446	MITK	24	0136	0138	0144	S17	E60	5292	12	28.6	8	1N			C	0138	120	2.4	E
0447	LEAR	24	0538	0542	0547	N16	W54	5287	12	20.1	9	SF		3	E		38		
0448	ABST	24	0636	0659	0708	S14	E55	5296A	12	28.4	32	SF			C	0659	87	1.7	D
0449	CATA	24	0848	0848	0851D	S39	W90	5275	12	17.1	3D	1N		2	P	0848	56		
0450	KANZ	24	1138	1138	1138	N20	E00	5285	12	24.5	3	SF			V				
0451	HTPR	24	1312	1315	1350	S20	E50	5292	12	28.4	38	SF			C	1320	30	0.5	ES
0452	HTPR	24	1358	1403	1420	S17	E56	5292	12	28.8	22	SF			C	1403	60	1.1	E
0453	HOLL	24	1550	1554	1601	N22	E39	5290	12	27.6	11	SF		3	E		42		
0454	HOLL	24	1556	1558	1622	N17	W16	5283	12	23.4	26	SF		3	E		34		F
0455	HOLL	24	1656E	1701	1728	S17	E54	5292	12	28.8	32D	SN	M 1.1	3	E		71		
0456	HOLL	24	1745	1746	1750	S34	W89	5288	12	17.6	5	SF		3	E		36		
0457		24	18521	18561	1908	N18	W16	5283	12	23.6	16	SF					18		F
	PALE	24	1852	1856	1914	N19	W17	5283	12	23.5	22	SF		3	E		14		F
	HOLL	24	1853	1857	1901	N17	W16	5283	12	23.6	8	SF		3	E		21		
0458		24	1937	1938	1950	N20	E02	5285	12	25.0	13	SF					32		F
	PALE	24	1937	1938	1949	N21	E03	5285	12	25.0	12	SF		3	E		26		F
	HOLL	24	1937	1938	1951	N20	E02	5285	12	25.0	14	SF		3	E		39		
0459	PALE	25	0135	0140	0215	S19	E45	5292	12	28.5	40	SF		3	E		34		F
0460	SVTO	25	0700E	0702U	0740D	S17	E43	5292	12	28.5	40D	SF		2	E		46		F
		25	1034		1117	No Flare Patrol													
		25	1131		1243	No Flare Patrol													
0461	RAMY	25	1244E	1250U	1323D	N21	E25	5290	12	27.4	39D	SF		2	E		59		F
		25	1301		1308	No Flare Patrol													
0462	RAMY	25	1321E	1354U	1430D	S16	E39	5292	12	28.5	69D	SF		2	E		92		F
		25	1324		1332	No Flare Patrol													
0463	HOLL	25	1458	1503	1522	S16	E37	5292	12	28.4	24	SF		3	E		64		F
0464		25	1904	19052	1921	N26	W88	5278	12	18.9	17	SF	C 6.3				36		
	PALE	25	1904	1905	1921	N27	W87	5278	12	19.0	17	SF	C 6.3	3	E		35		
	RAMY	25	1904	1907	1932D	N25	W88	5278	12	19.0	28D	SF	C 6.3	3	E		38		
0465	PALE	25	2202	2203	2229	S18	E66	5297	12	30.9	27	SF		3	E		17		
0466		25	22263	2236*	2315	S17	E35	5292	12	28.6	49	1N	C 8.2				185		F
	PALE	25	2226	2236	2326	S17	E36	5292	12	28.7	60	SN		3	E		85		F
	LEAR	25	2229	2300	2304	S17	E34	5292	12	28.5	35	2F	C 8.2	3	E		285		F
0467	PALE	26	0037	0038	0046	S16	E29	5292	12	28.2	9	SF		3	E		17		
0468	PALE	26	0055	0055	0104	N36	W32	5284	12	23.5	9	SF		3	E		12		
0469		26	09512	09521	1002	S16	E28	5292	12	28.5	11	SF	C 2.6				29		EF
	SVTO	26	0951	0952	1004	S16	E29	5292	12	28.6	13	SF	C 2.6	3	E		29		F
	KANZ	26	0953	0953	1000	S17	E26	5292	12	28.4	7	SF			V				E

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
0470		26	1040*	1046*	1207	S16	E29	5292	12	28.6	87	1F	C 3.3				90		FU
	SVTO	26	1040	1049	1225	S16	E29	5292	12	28.6	105	1F	C 3.3	3	E		102		UF
	KANZ	26	1042	1046	1108	S17	E27	5292	12	28.5	26	1F			V				F
	RAMY	26	1134E	1134U	1225	S16	E30	5292	12	28.7	51D	SF		2	E		78		
	KANZ	26	1141	1145	1231	S17	E29	5292	12	28.7	50	SF			V				
0471		26	1130	11312	1144	N18	E30	5296	12	28.8	14	SF					11		F
	SVTO	26	1130	1131	1141	N19	E30	5296	12	28.8	11	SF		3	E		11		F
	KANZ	26	1130	1133	1148	N17	E31	5296	12	28.8	18	SF			V				
0472	RAMY	26	1222	1226	1236	N18	E30	5296	12	28.8	14	SF		3	E		16		
0473		26	1228	12301	1246	N16	W41	5283	12	23.4	18	SF					17		F
	RAMY	26	1228	1230	1251	N16	W41	5283	12	23.4	23	SF		4	E		21		
	SVTO	26	1228	1231	1242	N15	W41	5283	12	23.4	14	SF		3	E		13		F
	KANZ	26	1228	1231	1246	N16	W42	5283	12	23.3	18	SF			V				
0474		26	12256	12525	1327	S18	E25	5292	12	28.4	62	1N	C 8.9				146		F
	RAMY	26	1225	1257	1327	S18	E27	5292	12	28.6	62	1N	C 8.9	4	E		175		F
	SVTO	26	1230	1252	1324	S17	E24	5292	12	28.3	54	1N	C 8.9	3	E		116		F
	KANZ	26	1231	1254	1330	S19	E23	5292	12	28.3	59	1N			V				F
0475		26	13101	13102	1315	N27	W90	5278	12	19.5	5	SF					43		
	KANZ	26	1310	1310	1314	N28	W90	5278	12	19.5	4	SF			V				
	SVTO	26	1310E	1311	1316	N25	W90	5278	12	19.6	6D	SF		3	E				
	RAMY	26	1311	1312	1315	N28	W89	5278	12	19.6	4	SF		4	E		43		
0476		26	14047	14141	1428	S19	E24	5292	12	28.4	24	SF	C 4.4				49		F
	SVTO	26	1404	1415	1427	S19	E24	5292	12	28.4	23	SF	C 4.4	3	E		45		F
	RAMY	26	1411	1414	1430	S19	E23	5292	12	28.3	19	SF	C 4.4	4	E		53		F
0477	RAMY	26	1416	1416	1429	N19	E13	5290B	12	27.6	13	SF		4	E		19		F
0478	RAMY	26	1639	1651	1654	S19	E22	5292	12	28.4	15	SF		3	E		21		F
0479	RAMY	26	1658	1706	1715	S18	E22	5292	12	28.4	17	SF		3	E		25		F
0480		26	1734*	1751*	1826	S20	E21	5292	12	28.3	52	SF					30		F
	RAMY	26	1734	1800	1826	S20	E21	5292	12	28.3	52	SF		3	E		69		F
	PALE	26	1750	1751	1819	S18	E24	5292	12	28.6	29	SF		3	E		12		
	RAMY	26	1829	1830	1834	S21	E18	5292	12	28.1	5	SF		3	E		10		F
0481	RAMY	26	1854	1856	1917D	S18	E20	5292	12	28.3	23D	SF		3	E		28		F
0482		26	20171	20426	2114	S20	E20	5292	12	28.4	57	1B	M 6.1				197		EFU
	PALE	26	2017	2048	2126D	S20	E20	5292	12	28.4	69D	1N	M 6.1	3	E		211		UF
	RAMY	26	2018	2042	2114	S20	E20	5292	12	28.4	56	1B	M 6.1	3	E		183		FE
		26	2213		2227	No Flare Patrol													
0483		27	0029	0053	0118	N20	E04	5290	12	27.3	49	SN	C 7.4				32		F
	LEAR	27	0029	0053	0114	N21	E04	5290	12	27.3	45	SF	C 7.4	3	E		28		F
	PALE	27	0042E	0042U	0121	N20	E05	5290	12	27.4	39D	SN		3	E		37		F
0484		27	0145	0148	0207	S16	E18	5292A	12	28.4	22	SF					48		F
	PALE	27	0120E	0148	0206D	S14	E17	5292A	12	28.3	46D	SF		3	E		55		F
	LEAR	27	0145	0148	0207	S18	E19	5292A	12	28.5	22	SF		4	E		42		F
0485		27	05203	05223	0544	S17	E17	5292	12	28.5	24	SF					86	1.6	EF
	PEKG	27	0520	0522	0541	S16	E18	5292	12	28.6	21	SF			P	0524	147	1.6	E
	MITK	27	0522	0525	0547D	S18	E17	5292	12	28.5	25D	SN			C	0525			E
	LEAR	27	0523	0523	0546	S18	E17	5292	12	28.5	23	SF		4	E		25		F
0486		27	05273	05284	0542	N21	W36	5285	12	24.5	15	SN	M 1.3				180	4.0	D
	PEKG	27	0527	0528	0541	N21	W37	5285	12	24.4	14	1N			P	0530	294	4.0	D
	LEAR	27	0530	0531	0542	N20	W35	5285	12	24.5	12	SF	M 1.3	4	E		65		
	MITK	27	0530	0532	0544	N21	W35	5285	12	24.5	14	SN			C	0532			

Hα SOLAR FLARES

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0487		27	0747	0755	0819	N20	W02	5290B	12	27.2	32	SF					24		F
	KANZ	27	0747	0755	0814	N20	W01	5290B	12	27.2	27	SF			C				
	SVTO	27	0753E	0753U	0824	N20	W03	5290B	12	27.1	31D	SF		2	E		24		F
0488		27	08246	08321	0855	S16	E18	5296A	12	28.7	31	SN					34		F
	SVTO	27	0824	0832	0914	S15	E20	5296A	12	28.9	50	SN		2	E		54		F
	KANZ	27	0825	0832	0848	S16	E18	5296A	12	28.7	23	SN			V				
	LEAR	27	0830	0833	0842	S17	E17	5296A	12	28.6	12	SF		3	E		13		
0489		27	08401	0841	0858	N20	W38	5285	12	24.4	18	SN					31		F
	SVTO	27	0840	0841	0859	N20	W39	5285	12	24.4	19	SN		2	E		31		F
	KANZ	27	0841	0841	0856	N21	W36	5285	12	24.6	15	SN			V				
0490	KANZ	27	1035	1039	1043	N23	W37	5285	12	24.6	8	SF			V				
0491		27	1039	1043	1219	N24	E02	5290	12	27.6	100	SF					49		
	KANZ	27	1039	1043	1218	N24	E05	5290	12	27.8	99	SF			V				
	RAMY	27	1117E	1117U	1220	N24	E00	5290	12	27.5	63D	SF		1	E		49		
0492		27	10512	10521	1112	S19	E12	5292	12	28.4	21	SB	C 7.5				44		F
	SVTO	27	1051	1052	1111	S19	E13	5292	12	28.4	20	SB	C 7.5	2	E		44		F
	KANZ	27	1053	1053	1113	S19	E12	5292	12	28.4	20	SN			V				
0493		27	11323	11341	1143	S22	E11	5292	12	28.3	11	SN	C 5.5				29		
	SVTO	27	1132	1134	1144	S22	E11	5292	12	28.3	12	SN	C 5.5	2	E		29		
	KANZ	27	1135	1135	1142	S23	E11	5292	12	28.3	7	SN			V				
0494	KANZ	27	1146	1146	1202	N22	W38	5285	12	24.6	16	SF			V				
0495	KANZ	27	1321	1321	1332	N23	W34	5285	12	24.9	11	SN			V				
0496	KANZ	27	1344	1344	1347	N31	W71		12	22.0	3	SF			V				
0497		27	1351	1355	1412	N20	W40	5285	12	24.5	21	SN	C 4.9				48		F
	KANZ	27	1351	1355	1359D	N21	W41	5285	12	24.4	8D	SN			V				
	RAMY	27	1358E	1359U	1412	N20	W39	5285	12	24.6	14D	SF	C 4.9	2	E		48		F
		27	1400		1418	No Flare Patrol													
0498	RAMY	27	1422	1428	1443	N24	E02	5290	12	27.7	21	SF		3	E		16		F
		27	1541		1555	No Flare Patrol													
0499	RAMY	27	1550	1551	1555	N30	W70		12	22.1	5	SF		3	E		16		
0500	RAMY	27	1649	1653	1656	S22	E07	5292	12	28.2	7	SF		3	E		12		
0501	RAMY	27	1714	1715	1726	S22	E09	5292	12	28.4	12	SF		3	E		31		
		27	1714		1750	No Flare Patrol													
0502	HOLL	27	1816	1817	1855D	N20	W35	5285	12	25.1	39D	SF		3	E		48		
0503	HOLL	27	1824	1902	1912	S19	E09	5292	12	28.4	48	SF		3	E		39		F
0504	HOLL	27	1833	1835	1839	N29	W70		12	22.3	6	SF		3	E		45		
0505	HOLL	27	2031	2031	2040	N15	W60	5283	12	23.3	9	SF		3	E		12		
0506	HOLL	27	2229	2229	2236	S17	E11	5292	12	28.8	7	SF		3	E		18		
0507	HOLL	27	2309	2313	2325	N22	W40	5285	12	24.9	16	SF		3	E		52		EF
0508	HOLL	27	2328	2330	2333	S19	E06	5292	12	28.4	5	SF		3	E		15		
0509		28	0024	0038*	0215	S16	E09	5292	12	28.7	111	1N	M 2.1				385	4.8	EFU
	MITK	28	0024	0038	0224	S16	E08	5292	12	28.6	120	1N			C	0038	200	2.1	E
	LEAR	28	0027E	0055	0206	S17	E10	5292	12	28.8	99D	1F	M 2.1	2	E		247		UF
	YUNN	28	0037E	0038U	0055D	S16	E09	5292	12	28.7	18D	2N			P	0038	707	7.6	F

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0510	LEAR	28	0049	0103	0127	N20	W40	5285	12	25.0	38	SF		3	E		24		
0511	MITK	28	0101	0121	0231	N20	W16	5290B	12	26.8	90	SN			C	0121			E
0512	LEAR	28	0109	0113	0132	N20	W09	5290	12	27.3	23	SF		3	E		25		F
0513	PALE	28	0144E	0146U	0221	S19	E06	5292	12	28.5	37D	SF		3	E		52		F
0514	LEAR	28	0426	0426	0442	N20	W42	5285	12	25.0	16	SF		3	E		22		F
0515	LEAR	28	0533	0544	0613	N20	W48	5285	12	24.5	40	SF	C 6.6	3	E		35		F
0516	LEAR	28	0536	0544	0609	S16	E31	5297	12	30.6	33	SF		3	E		30		F
0517		28	0726	0730	0804	N20	W42	5285	12	25.1	38	SN	C 8.8				78	1.7	EFZ
	YUNN	28	0721E	0736U	0754D	N20	W42	5285	12	25.1	33D	SN			P	0736	47	0.7	
	LEAR	28	0726	0730	0802	N19	W41	5285	12	25.2	36	SF	C 8.8	3	E		44		ZF
	KAND	28	0732E		0805	N18	W45	5285	12	24.9	33D	1B			P	0733	166	2.7	EF
	SVTO	28	0741E	0741U	0803D	N23	W41	5285	12	25.2	22D	SF		2	E		57		
0518		28	08257	0833*	0916	S16	E30	5297	12	30.6	51	SN	M 1.2				92	1.2	EF
	LEAR	28	0825	0843U	0915	S16	E29	5297	12	30.5	50	1F	M 1.2	3	E		106		F
	SVTO	28	0832E	0832U	0903D	S18	E33	5297	12	30.9	31D	SN	M 1.2	2	E		40		F
	KAND	28	0832	0833	0910	S15	E30	5297	12	30.6	38	SB			P	0833	145	1.7	EF
	YUNN	28	0835E	0849	0909D	S15	E29	5297	12	30.5	34D	SB			P		141	1.7	
	HTPR	28	0902E		0922	S17	E30	5297	12	30.6	20D	SF			C	0902	30	0.3	
0519	HTPR	28	0957	0959	1005	N24	W50	5285	12	24.5	8	SF			C	0959	40	0.6	E
0520	HTPR	28	1006	1010	1020	S15	W38	5295	12	25.5	14	SF			C	1010	40	0.5	E
0521		28	0956*	10183	1040	S20	W03	5292	12	28.2	44	SN					80	1.2	EFI
	HTPR	28	0956	1021	1100	S20	W06	5292	12	27.9	64	SN			C	1021	100	1.0	EFI
	KAND	28	1010	1018	1035	S22	W01	5292	12	28.3	25	SN			P	1018	125	1.3	E
	KANZ	28	1019	1019	1038	S20	W02	5292	12	28.3	19	SF			C				
	LEAR	28	1019	1021	1029	S20	W03	5292	12	28.2	10	SF		3	E		16		
0522		28	12153	12211	1240	N20	W52	5285	12	24.5	25	1B	M 2.2				148	2.6	EFIV
	HTPR	28	1215	1221	1240	N21	W53	5285	12	24.4	25	1B			C	1221	140	2.2	EIV
	RAMY	28	1218	1221	1314D	N20	W50	5285	12	24.7	56D	1B	M 2.2	3	E		135		F
	CATA	28	1222E	1222	1240D	N20	W52	5285	12	24.5	18D	1B		2	P	1222	169	3.1	
0523		28	13512	13531	1409	S21	W06	5292	12	28.1	18	SF					28	0.4	EF
	HTPR	28	1351	1354	1415	S21	W06	5292	12	28.1	24	SF			C	1354	40	0.4	E
	RAMY	28	1353	1353	1403	S21	W05	5292	12	28.2	10	SF		3	E		15		F
0524	HTPR	28	1422	1423	1433	N18	W18	5290B	12	27.2	11	SF			C	1423	30	0.3	E
0525		28	1422	1430U	1503	S17	E28	5297	12	30.7	41	SN	M 1.3				78	1.4	EF
	HTPR	28	1422		1454D	S17	E28	5297	12	30.7	32D	SB			C	1428	120	1.4	E
	RAMY	28	1425E	1430U	1500D	S17	E29	5297	12	30.8	35D	SN	M 1.3	2	E		58		FE
	HOLL	28	1425E	1431U	1503	S17	E27	5297	12	30.6	38D	SN	M 1.3	2	E		56		FE
0526	HOLL	28	1622	1623	1629	N23	W52	5285	12	24.7	7	SF		3	E		36		
0527	RAMY	28	1648	1655U	1714	S16	E24	5297	12	30.5	26	SF		3	E		14		F
0528		28	17401	17405	1750	N18	W20	5290B	12	27.2	10	SF					17		U
	RAMY	28	1740	1740	1750	N18	W21	5290B	12	27.1	10	SF		3	E		12		
	HOLL	28	1741	1745	1751	N18	W20	5290B	12	27.2	10	SF		3	E		22		U
0529		28	17551	17572	1822	N22	W50	5285	12	24.9	27	SF					33		F
	RAMY	28	1755	1759	1822	N22	W50	5285	12	24.9	27	SF		4	E		41		F
	HOLL	28	1756	1757	1822	N21	W49	5285	12	25.0	26	SF		3	E		25		F
0530		28	18199	1835	1854	S20	W04	5292	12	28.4	35	SF					20		F
	HOLL	28	1819	1835	1854	S19	W04	5292	12	28.4	35	SF		3	E		29		F
	RAMY	28	1828	1830U	1830D	S22	W04	5292	12	28.5	2D	SF		2	E		11		F

Hα SOLAR FLARES

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0531		28	1819*	1847	1938	S16	E25	5297	12	30.6	79	1N	M 1.4				121		EF
	RAMY	28	1819	1909U	1914D	S16	E26	5297	12	30.7	55D	SF		1	E		90		
	PALE	28	1843	1846U	1846D	S17	E24	5297	12	30.6	3D	1N	M 1.4	3	E		127		
	HOLL	28	1844	1847	1938	S16	E25	5297	12	30.7	54	1N	M 1.4	3	E		147		FE
0532	HOLL	28	1959	2005	2017	S21	W04	5292	12	28.5	18	SF		3	E		17		
0533		28	20511	20565	2138	S21	W05	5292	12	28.5	47	SN	C 4.3				59		EF
	RAMY	28	2051	2056	2111D	S22	W05	5292	12	28.5	20D	SN	C 4.3	3	E		75		
	HOLL	28	2052	2101	2157	S19	W05	5292	12	28.5	65	SN	C 4.3	3	E		65		FE
	PALE	28	2053E	2056U	2120	S21	W06	5292	12	28.4	27D	SN	C 4.3	3	E		38		F
0534	RAMY	28	2054	2055	2100	S17	E24	5297	12	30.7	6	SF		3	E		12		F
0535	HOLL	28	2128	2129	2133	S15	E23	5297	12	30.6	5	SF		3	E		11		
0536		28	23131	23131	2328	S22	W06	5292	12	28.5	15	SF	C 2.4				28		F
	HOLL	28	2313	2313	2334	S22	W06	5292	12	28.5	21	SF	C 2.4	3	E		39		F
	PALE	28	2314	2314	2323	S21	W07	5292	12	28.4	9	SF	C 2.4	3	E		17		
0537	HOLL	28	2322	2324	2344	N24	W16	5290	12	27.7	22	SF		3	E		22		F
0538		28	2342	23431	2405	N20	W54	5285	12	24.8	23	1B	M 3.6				200	6.1	FH
	HOLL	28	2342	2343	2358D	N21	W58	5285	12	24.5	16D	1B	M 3.6	3	E		235		F
	MITK	28	2342E	2344	2406	N19	W58	5285	12	24.6	24D	2B			C	2344	280	6.1	FH
	PALE	28	2343E	2345U	2404	N22	W51	5285	12	25.1	21D	SB	M 3.6	3	E		86		FH
	LEAR	28	2347E		2349D	N20	W51	5285	12	25.1	2D	SF	M 3.6	1	E				
0539	YUNN	29	0148E	0150	0207	S20	W10	5292	12	28.3	19D	SN			P		79	0.9	
0540	LEAR	29	0415	0416	0423	N24	W60	5285	12	24.5	8	SF	C 5.6	3	E		60		
0541		29	11541	11582	1447	S21	W16	5292	12	28.3	173	1N	M 2.2				140		F
	KANZ	29	1154	1158	1358D	S22	W15	5292	12	28.3	124D	1B			C				
	SVTO	29	1155	1200	1447	S21	W17	5292	12	28.2	172	1B	M 2.2	3	E		138		F
	RAMY	29	1235E	1236U	1426D	S21	W17	5292	12	28.2	111D	1F		2	E		141		F
0542		29	1405	1406	1420	S16	E15	5297	12	30.7	15	SF					48		F
	SVTO	29	1405	1406	1420	S16	E15	5297	12	30.7	15	SF		3	E		47		F
	RAMY	29	1407E	1409U	1426D	S16	E15	5297	12	30.7	19D	SF		2	E		50		
0543	HOLL	29	1421E	1423U	1509	S17	W21	5292	12	28.0	48D	SF		2	E		85		F
0544		29	1637	1639	1652	S42	W19	5300	12	28.1	15	1B	C 7.5				90		EF
	HOLL	29	1637	1639	1652	S42	W19	5300	12	28.1	15	1B	C 7.5	3	E		123		E
	RAMY	29	1642E	1643U	1644D	S42	W19	5300	12	28.1	2D	SN	C 7.5	1	E		57		F
0545	HOLL	29	1651	1652	1700	N20	W67	5285	12	24.6	9	SF		3	E		13		
0546		29	17123	1718	1732	N20	W68	5285	12	24.5	20	SF					46		
	HOLL	29	1712	1718	1740	N20	W67	5285	12	24.6	28	SF		3	E		47		
	RAMY	29	1715	1718	1724	N21	W69	5285	12	24.4	9	SF		2	E		44		
0547		29	1752	1805	1831	S18	W13	5292	12	28.7	39	1F					94		F
	HOLL	29	1752	1805	1835	S18	W13	5292	12	28.7	43	1F		3	E		110		F
	RAMY	29	1804E	1805U	1827	S17	W13	5292	12	28.8	23D	SF		2	E		77		F
0548		29	1817	1826	1842	N20	W68	5285	12	24.6	25	1N	C 4.4				124		E
	HOLL	29	1817	1826	1844	N20	W68	5285	12	24.6	27	1N	C 4.4	3	E		103		E
	RAMY	29	1819E	1826	1839	N21	W69	5285	12	24.5	20D	1N	C 4.4	3	E		145		E
0549		29	1902	19021	1916	S20	W18	5292	12	28.4	14	SF					13		F
	HOLL	29	1902	1902	1918	S19	W17	5292	12	28.5	16	SF		3	E		14		
	RAMY	29	1903E	1903	1913	S21	W18	5292	12	28.4	10D	SF		3	E		12		F
0550	HOLL	29	1920	1923	1927	S16	E11	5297	12	30.6	7	SF		3	E		11		
0551		29	2017	2018	2024	S20	W23	5292	12	28.1	7	SF					26		
	PALE	29	2017	2018	2024	S20	W23	5292	12	28.1	7	SF		3	E		18		
	HOLL	29	2017	2018	2024	S21	W23	5292	12	28.1	7	SF		3	E		35		

Hα SOLAR FLARES

DECEMBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
0552		29	2044	20441	2050	S42	W22	5300	12	28.0	6	SF	C 6.5				18		
	HOLL	29	2044	2044	2049	S43	W22	5300	12	28.0	5	SF	C 6.5	3	E		16		
	PALE	29	2044	2045	2051	S41	W23	5300	12	28.0	7	SF	C 6.5	3	E		21		
0553		29	20415	20415	2051	N20	W71	5285	12	24.4	10	SF					12		
	PALE	29	2041	2041	2050	N22	W73	5285	12	24.2	9	SF		3	E		11		
	HOLL	29	2046	2046	2052	N19	W69	5285	12	24.6	6	SF		3	E		12		
		29	2355		2400	No Flare Patrol													
		30	0000		0004	No Flare Patrol													
0554		30	0227	0233	0244	S42	W24	5300	12	28.1	17	SN	C 2.2				72	1.1	F
	PALE	30	0227	0233	0243	S42	W25	5300	12	28.0	16	SF	C 2.2	3	E		65		F
	YUNN	30	0230E	0233U	0245	S42	W24	5300	12	28.1	15D	SB			P	0233	79	1.1	
0555		30	0229	0229	0248	N20	W34	5290	12	27.5	19	SN					44	0.9	
	PALE	30	0229	0229	0246	N21	W34	5290	12	27.5	17	SF		3	E		24		
	YUNN	30	0230E	0233U	0249	N19	W35	5290	12	27.4	19D	SN			P	0233	63	0.9	
0556	YUNN	30	0230	0233U	0249	N15	W18	5296	12	28.7	19	SN			P	0233	47	0.5	
0557		30	0312	0324	0342D	N22	W34	5290	12	27.5	30D	SN	C 3.5				70	1.5	F
	PALE	30	0312	0324	0342D	N23	W34	5290	12	27.5	30D	SF	C 3.5	3	E		30		F
	YUNN	30	0323E	0323U	0340D	N20	W35	5290	12	27.5	17D	SN			P	0323	110	1.5	F
0558	LEAR	30	0630E	0631U	0650D	S17	E06	5297	12	30.7	20D	SF	C 3.2	2	E		62		
0559		30	0853	0855	0902	N24	W34	5290	12	27.7	9	SB					79	1.1	
	KANZ	30	0853	0855	0900	N24	W34	5290	12	27.7	7	SN			V				
	YUNN	30	0853	0855	0904	N24	W34	5290	12	27.7	11	SB			C		79	1.1	
0560		30	0911	09141	0928	S22	W25	5292	12	28.5	17	SF	C 2.4				16		
	LEAR	30	0911	0914	0928	S22	W25	5292	12	28.5	17	SF	C 2.4	3	E		16		
	KANZ	30	0911	0915	0929	S22	W25	5292	12	28.5	18	SF			V				
0561		30	09592	09592	1003	N24	W78	5285	12	24.4	4	1N					56		
	KANZ	30	0959	0959	1003	N23	W75	5285	12	24.6	4	SF			V				
	CATA	30	1001	1001	1001D	N25	W80	5285	12	24.2	4D	1N		2	P	1001	56		
0562	KANZ	30	1100	1104	1118	N21	W76	5285	12	24.6	18	SF			V				
0563	KANZ	30	1114	1118	1153	S15	W21	5296A	12	28.9	39	SF			V				
0564	KANZ	30	1243	1247	1302	N21	W78	5285	12	24.5	19	SF			V				
0565	KANZ	30	1306	1306	1336	S22	W26	5292	12	28.5	30	SF			V				
0566	KANZ	30	1343	1346	1401D	N20	W80	5285	12	24.4	18D	SF			V				
		30	1402		1419	No Flare Patrol													
0567	RAMY	30	1649E	1650U	1655	N21	W81	5285	12	24.5	6D	SF	C 1.5	2	E		18		
0568		30	1713	1715	1749	S16	W02	5297	12	30.6	36	SF	C 2.6				28		F
	HOLL	30	1713	1715	1749	S16	W01	5297	12	30.6	36	SF	C 2.6	3	E		35		F
	RAMY	30	1713E	1715U	1750D	S17	W02	5297	12	30.6	37D	SF	C 2.6	2	E		22		F
0569		30	17252	1816	1935	S20	W31	5292	12	28.3	130	3B	X 1.4				629		FUYZ
	HOLL	30	1725	1816	1948	S19	W30	5292	12	28.4	143	3B	X 1.4	3	E		788		ZU
	RAMY	30	1727	1821U	1927D	S20	W33	5292	12	28.2	120D	3B	X 1.4	2	E		711		UY
	PALE	30	1806E	1814U	1922	S20	W30	5292	12	28.4	76D	2B	X 1.4	3	E		389		F
0570	HOLL	30	2009	2011	2014	S19	W34	5292	12	28.2	5	SF		2	E		19		
0571	HOLL	30	2009	2016	2031	N16	W26	5296	12	28.9	22	SF		2	E		22		
0572	HOLL	30	2137	2149	2207	S20	W31	5292	12	28.5	30	SF		3	E		26		
0573	HOLL	30	2224	2224	2242	S16	W05	5297	12	30.5	18	SF		3	E		12		

Hα SOLAR FLARES

DECEMBER 1988

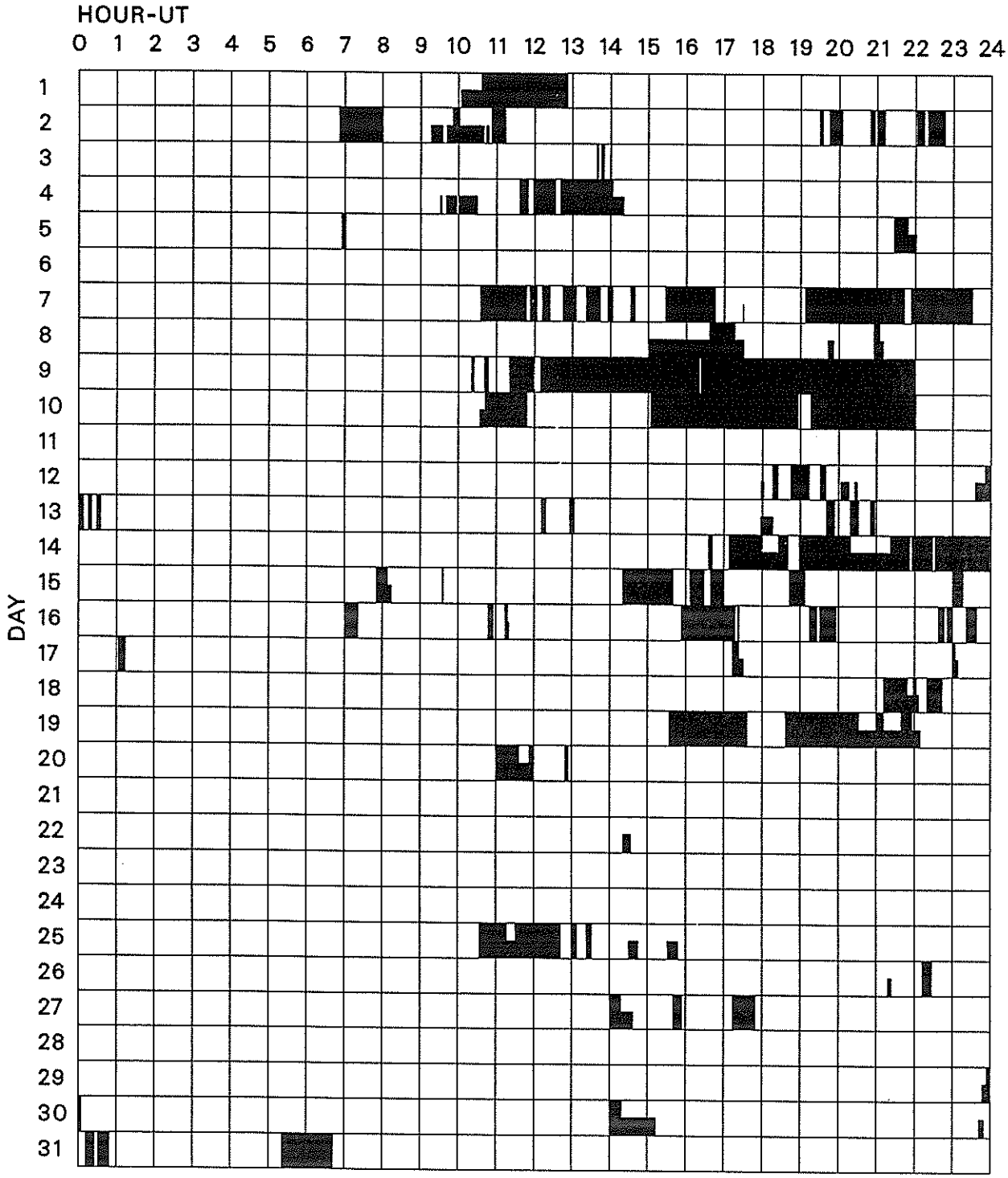
Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0574	HOLL	30	2255	2301	2359D	S21	W34	5292	12	28.3	64D	SF	C 3.2	3	E		40		F
		31	0011		0025	No Flare Patrol													
		31	0031		0049	No Flare Patrol													
		31	0521		0642	No Flare Patrol													
0575		31	08152	08152	0828	N16	W32	5296	12	28.9	13	SN	C 3.1				92	2.2	F
	CATA	31	0815E	0815	0820D	N17	W32	5296	12	28.9	5D	1B		2	P	0815	169	2.2	
	LEAR	31	0815	0815U	0822D	N16	W33	5296	12	28.8	7D	SF	C 3.1	3	E		15		F
	KANZ	31	0817	0817	0828	N16	W32	5296	12	28.9	11	SF			C				
0576	KANZ	31	0946	0946	0954	S18	E06	5303	12	31.9	8	SF			V				
0577	KAND	31	1030	1030	1040	S18	E05	5303	12	31.8	10	SN			P	1030	42	0.4	D
0578		31	1214	12175	1230	S16	W42	5292	12	28.3	16	SF					46		FH
	RAMY	31	1136E	1217	1232	S16	W42	5292	12	28.3	56D	SF		3	E		46		FH
	KANZ	31	1214	1222	1229	S16	W42	5292	12	28.3	15	SF			V				
0579		31	13041	13051	1326	N21	W51	5290	12	27.6	22	SF	C 3.5				28		F
	SVTO	31	1304	1305	1329	N21	W51	5290	12	27.6	25	SF	C 3.5	3	E		14		
	RAMY	31	1304	1306	1327D	N21	W51	5290	12	27.6	23D	SF	C 3.5	3	E		42		F
	KANZ	31	1305	1305	1324	N21	W51	5290	12	27.6	19	SF			V				
0580		31	13501	1351	1356	N24	W51	5290	12	27.6	6	SF					29		
	RAMY	31	1350	1351	1356	N24	W51	5290	12	27.6	6	SF		3	E		29		
	KANZ	31	1351	1351	1355	N24	W51	5290	12	27.6	4	SF			V				
0581		31	13572	1400	1424	N16	W36	5296	12	28.8	27	SN	C 6.0				65		EF
	RAMY	31	1357	1400	1424	N16	W36	5296	12	28.8	27	SF	C 6.0	4	E		65		FE
	KANZ	31	1359		1359D	N17	W37	5296	12	28.8	27D	SN			V				
0582		31	1635	16451	1709	N16	W38	5296	12	28.8	34	SF					14		F
	RAMY	31	1635	1645	1647D	N16	W38	5296	12	28.8	12D	SF		2	E		17		
	HOLL	31	1635	1646	1709	N15	W38	5296	12	28.8	34	SF		3	E		12		F
0583	HOLL	31	2114	2117	2122	S19	W01	5303	12	31.8	8	SF	C 5.0	3	E		24		H
0584	PALE	31	2353	2408	2431	N22	W60	5290	12	27.4	38	SF	C 8.1	3	E		65		

"Remarks"

A = Eruptive prominence whose base is less than 90 degrees 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

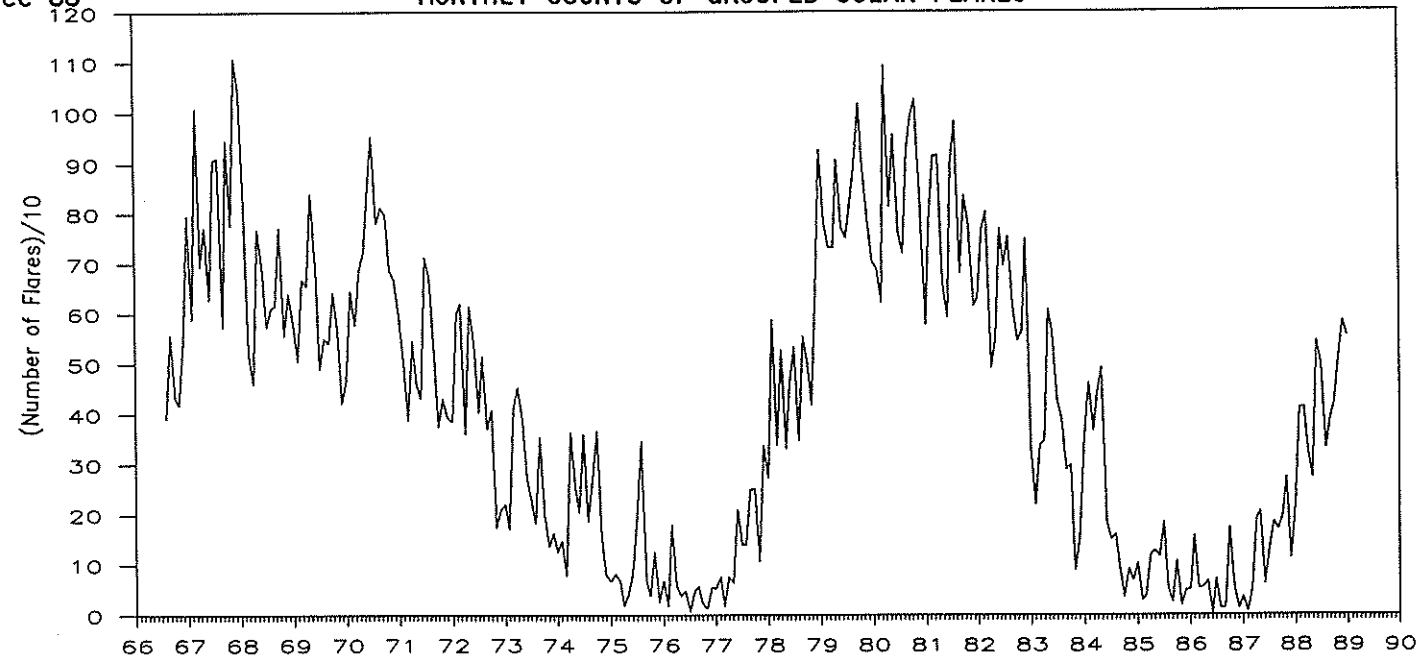
DECEMBER 1988



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	Mitaka	San Vito
Bucharest	Holloman	Kharkov	Palehua	Tashkent
Catania	Kandilli	Learmonth	Peking	Voroshilov
			Ramey	Yunnan

MONTHLY COUNTS OF GROUPED SOLAR FLARES*



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	766	803	490	553	769	696	753	615	544	564	748	7932
1983	332	220	337	346	609	561	427	389	289	298	88	152	4048
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	56	68	3	71	12	14	174	56	13	730
1987	36	7	52	192	205	61	132	185	171	198	273	114	1626
1988	217	412	412	328	272	544	499	331	390	421	508	584	4918
1989	555												555

*Flare counts are preliminary from July 1982 to present. In particular, the monthly totals for the last 6 months may change significantly, as more sites submit their reports. The term "grouped" means that observations of the same event by different stations have been lumped together and counted as one.

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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	245	PALE	44	NS	0000.0E	0003.0	191.0D	40.0			QL=1 ST=2 TYP=1
	430	KRAK	44	NS	0800.0E	1142.1		11.0			
	430	KRAK	44	NS	0800.0E	0839.3	360.0D	10.0			
	430	KRAK	44	NS	0800.0E	0942.6		7.0			
	260	ONDR	44	NS	0830.0E	1029.0	290.0D	45.0			
	127	TORN	44	NS	1300.0E		120.0D		1.0		V=1
	200	HIRA	44	NS	2130.0E	0513.0	590.0D	7.0	2.0		WR
	245	LEAR	44	NS	2304.0E	0058.0	692.0D	68.0			QL=1 ST=2 TYP=1
	9300	KISV	22	GRF	0600.0	0744.5		10.0			
	9300	KISV	22	GRF	0600.0	0713.6	360.0	12.0			
	9300	KISV	22	GRF	0600.0	0834.9		11.0			
	500	HIRA	4	S/F	0614.5	0615.0	1.0	7.0			O
	234	POTS	4	S/F	0731.5	0731.7	0.7	145.0	30.0		
	204	IZMI	5	S	0731.7	0732.0	1.0	72.0	35.0		
	9300	KISV	2	S/F	0749.4	0750.0	2.3	15.0			
	15000	KISV	2	S/F	0749.4	0750.0	2.6	8.0			
	9100	GORK	2	S/F	0749.4	0749.9	3.4	12.8			
	5900	KISV	2	S/F	0749.5	0750.0	2.2	10.0			
	1470	POTS	1	S	0749.5	0750.0	1.0	4.0			
	9500	POTS	3	S	0749.5	0749.8	1.5	11.0			
	1470	POTS	8	S	0752.0	0752.2	0.7	17.0			
	15000	KISV	45	C	0752.0	0752.4	0.7	8.0			
	5900	KISV	45	C	0752.2	0752.3	0.6	3.0			
	9300	KISV	45	C	0752.2	0752.3	0.5	4.0			
	810	KRAK	8	S	0839.5	0839.5	0.1	7.0			
	536	ONDR	8	S	0918.2	0918.4	1.3	23.0			
	5900	KISV	2	S/F	0922.1	0922.5	1.4	1.0			
	9100	GORK	22	GRF	0932.1	0941.2	13.0	4.4			
	5900	KISV	20	GRF	0953.1	1011.6	50.0	6.0			
	5900	KISV	2	S/F	1152.9	1155.1	2.8	3.0			
02	204	IZMI	43	NS	0700.0		300.0	10.0			
	127	TORN	44	NS	0800.0E		380.0D		10.0		V=0
	260	ONDR	44	NS	0820.0E	0833.8	300.0D	81.0			
	430	KRAK	44	NS	0830.0E	0947.5	150.0D	110.0			
	245	SGMR	43	NS	1220.0	1331.0	506.0D	64.0			QL=1 ST=2 TYP=1
	410	SVTO	43	NS	1327.0	1331.0	92.0D	22.0			QL=1 ST=2 TYP=1
	245	SVTO	43	NS	1327.0	1336.0	92.0D	47.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2132.0E	2310.0	330.0D	6.0	4.0		WR
	500	HIRA	4	S/F	0326.5	0327.0	1.2	13.0			O
	15000	KISV	20	GRF	0734.0	1033.0	236.0	19.0			
	9300	KISV	22	GRF	0738.5	1032.4	237.5	9.0			
	9300	KISV	22	GRF	0738.5	0854.5		7.0			
	5900	KISV	2	S/F	0843.4	0844.5	4.6	1.0			
	5900	KISV	21	GRF	0858.6	0904.0	26.5	3.0			
	5900	KISV	22	GRF	0938.5	0947.3	17.0	2.0			
	1470	POTS	42	SER	0947.0	0947.5	6.0	5.0			
	3100	CRIM	1	S	1031.5	1032.0	1.5	4.0	1.0		
	810	KRAK	8	S	1031.5	1031.5	0.5	17.0			
	5900	KISV	21	GRF	1031.5	1032.5	81.0	3.0			
	536	ONDR	41	F	1108.0	1110.5	13.5	81.0			
	536	ONDR	41	F	1150.0	1153.0	11.0	34.0			
	430	KRAK	40	F	1304.5	1306.0	14.5	16.0	2.0		
	810	KRAK	41	F	1309.2	1325.8	26.5	20.0	5.0		
	430	KRAK	45	C	1319.0	1325.5	21.0	26.0	9.0		
	1470	POTS	4	S/F	1322.5	1323.3	2.0	10.0			
03	260	ONDR	44	NS	0830.0E	1111.0	290.0D	116.0			
	410	SGMR	43	NS	1221.0	1334.0	505.0D	17.0			QL=1 ST=2 TYP=1
	245	SGMR	43	NS	1221.0	1943.0	505.0D	150.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	1933.0E	1943.0	478.0D	110.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2130.0E	0020.0	590.0D	6.0	3.0		WR
	410	LEAR	4	S/F	0551.0E	0552.0	3.0D	30.0			QL=1 ST=2 TYP=3
	610	LEAR	8	S	0551.0E	0551.0	1.0D	35.0			QL=1 ST=2 TYP=3
	500	HIRA	41	F	0551.2	0552.2	1.2	65.0			O
	15000	KISV	2	S/F	0629.2	0630.0	0.9	3.0			
	5900	KISV	22	GRF	0629.4	0712.0	78.0	2.0			
	9300	KISV	22	GRF	0712.2	0734.4	33.5	4.0			
	9300	KISV	22	GRF	0752.5	0758.1	58.0	4.0			

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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
03	9300	KISV	22	GRF	0752.5	0820.2		3.0			
	9100	GORK	20	GRF	0752.8	0934.7	208.0	10.0			
	5900	KISV	22	GRF	0754.0	0815.8	78.0	4.0			
	430	KRAK	42	SER	0816.5	1315.5	328.5	11.0			
┌	5900	KISV	22	GRF	0816.8	0820.2	22.0	2.0			
└	5900	KISV	22	GRF	0816.8	0828.9		2.0			
	5900	KISV	22	GRF	0915.5	0948.0	78.5	6.0			
┌	5900	KISV	2	S/F	0930.6	0934.7	10.0	4.0			
└	9300	KISV	2	S/F	0934.3	0934.7	1.6	4.0			
┌	9300	KISV	21	GRF	0954.0	0956.0	17.3	3.0			
└	5900	KISV	2	S/F	0955.7	0956.2	4.0	2.0			
	536	ONDR	41	F	1115.0	1117.0	10.8	71.0			
	5900	KISV	20	GRF	1124.0	1136.2	28.5	2.0			
	810	KRAK	8	S	1305.0	1305.4	0.5	110.0			
┌	245	SGMR	49	GB	1707.0E	1707.0	U	820.0			QL=1 ST=3 TYP=6
└	410	SGMR	8	S	1707.0E	1707.0	U	120.0			QL=1 ST=3 TYP=3
	245	PALE	8	S	1846.0E	1846.0	1.0D	110.0			QL=1 ST=2 TYP=3
04	204	IZMI	43	NS	0700.0		300.0	10.0			
├	127	TORN	43	NS	0728.0		266.0		3.0		V=1
├	260	ONDR	44	NS	0830.0E	1020.5	290.0D	34.0			
└	245	SGMR	44	NS	1222.0E	1401.0	503.0D	19.0			QL=1 ST=2 TYP=1
	245	LEAR	8	S	0411.0E	0412.0	1.0D	63.0			QL=1 ST=2 TYP=3
	9100	GORK	20	GRF	0743.0	0746.4	16.4	5.0			
	127	TORN	4	S/F	0743.3	0743.7	2.0	1200.0	600.0		
	9300	KISV	22	GRF	0842.0	0918.6	86.4	3.0			
	9300	KISV	22	GRF	0842.0	0935.7		3.0			
┌	9300	KISV	22	GRF	0842.0	1004.8		3.0			
├	15000	KISV	2	S/F	0959.9	1001.3	4.0	9.0			
├	5900	KISV	2	S/F	1000.3	1001.2	4.0	6.0			
├	9300	KISV	2	S/F	1000.5	1001.2	3.7	6.0			
├	9100	GORK	1	S	1000.5	1001.4	5.6	3.5			
├	15000	KISV	20	GRF	1004.3	1004.6	15.4	5.0			
┌	5900	KISV	25	R	1004.4	1038.1	115.6	2.0			
└	5900	KISV	25	R	1004.4	1004.7		2.0			
┌	9300	KISV	25	R	1017.6	1020.4		7.0			
├	9300	KISV	25	R	1017.6	1147.4	102.5	22.0			
├	5900	KISV	45	C	1019.7	1020.3	2.5	2.0			
├	15000	KISV	2	S/F	1019.7	1020.8	3.2	9.0			
└	5900	KISV	45	C	1019.7	1021.8		1.0			
	5900	KISV	20	GRF	1141.0	1146.1	13.0	3.0			
┌	9300	KISV	2	S/F	1151.1	1151.3	0.5	3.0			
└	5900	KISV	2	S/F	1151.1	1151.3	0.6	2.0			
05	200	HIRA	43	NS	0153.0	0542.0	340.0D	4.0	2.0		WR
├	204	IZMI	43	NS	0700.0		300.0	10.0			
├	245	SVTO	44	NS	0719.0E	0802.0	84.0D	33.0			QL=1 ST=2 TYP=1
├	260	ONDR	44	NS	0830.0E	1056.6	290.0D	149.0			
├	127	TORN	43	NS	0956.0		204.0		4.0		V=0
└	245	SGMR	44	NS	1223.0E	1356.0	502.0D	54.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2130.0E	2245.0	210.0D	7.0	4.0		WR
	9300	KISV	20	GRF	0740.2	0751.0	15.5	3.0			
	9100	GORK	22	GRF	0814.3	0937.5	205.0D	11.7			
	536	ONDR	41	F	1125.5	1128.0	3.2	7.0			
	8800	SVTO	8	S	1154.0E	1155.0	2.0D	90.0			QL=1 ST=2 TYP=3
	810	KRAK	2	S/F	1250.2	1250.3	1.0	10.0	1.0		
	237	TRST	27	RF	1350.0	1357.1	15.0	89.0			10L
	2800	OTTA	20	GRF	1442.0	1515.0	240.0	4.4	2.0		
06	204	IZMI	43	NS	0700.0		300.0	20.0			
├	127	TORN	43	NS	0800.0		320.0		6.0		V=1
├	260	ONDR	44	NS	0830.0E	1105.9	290.0D	149.0			
└	245	SVTO	44	NS	0942.0E	1005.0	99.0D	48.0			QL=1 ST=2 TYP=1
	245	LEAR	43	NS	2310.0	0019.0	142.0	29.0			QL=1 ST=2 TYP=1
┌	100	GORK	46	C	0625.7	0628.2	6.7	280.0			
└	200	HIRA	42	SER	0625.7	0627.5	6.1	170.0			WR
├	100	GORK	46	C	0625.7	0628.6		170.0			
├	100	HIRA	46	C	0625.7	0627.7	4.3	910.0			
├	200	GORK	41	F	0626.5	0628.1	5.9	20.0			

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
06	200	GORK	41	F	0626.5	0631.5		5.0			
	2695	LEAR	8	S	0627.0E	0628.0	1.0D	15.0			QL=1 ST=2 TYP=3
	3100	CRIM	1	S	0627.5	0628.0	1.5	4.7	1.5		
	245	LEAR	8	S	0628.0E	0628.0	U	25.0			QL=1 ST=2 TYP=3
	2950	GORK	23	GRF	0737.1	0833.0	188.0	7.9			
	3100	CRIM	21	GRF	0745.0	0748.0	54.0	4.0	1.5		
	3100	CRIM	1	S	0746.2	0746.9	1.5	2.8	1.0		
	2950	GORK	1	S	0746.5	0746.9	1.2	4.9	2.0		
	430	KRAK	42	SER	0916.0	0957.0	129.5	14.0			
	430	KRAK	42	SER	0916.0	1123.8		11.0			
	536	ONDR	40	F	0946.9	0947.2	1.0	75.0			
	5900	KISV	2	S/F	1051.0	1052.2	2.5	3.0			
	127	TORN	45	C	1105.8	1109.4	5.7	900.0	90.0		
	245	SVTO	8	S	1106.0E	1106.0	U	300.0			QL=1 ST=2 TYP=3
	204	IZMI	41	F	1106.0	1109.1	6.0	1020.0			
	237	TRST	47	GB	1106.0	1106.2	0.2	877.0			4R Var. Pol.
	200	GORK	3	S	1106.0	1109.5	4.5	60.0			
	9300	KISV	23	GRF	1106.9	1110.1	16.0	6.0			
	5900	KISV	23	GRF	1107.3	1110.0	16.5	7.0			
	3100	CRIM	42	SER	1108.2	1110.1		5.5	2.0		
	3100	CRIM	42	SER	1108.2	1108.3	3.5	3.0			
	245	SVTO	8	S	1109.0E	1109.0	U	140.0			QL=1 ST=2 TYP=3
	237	TRST	47	GB	1109.0	1109.1	1.7	548.0			1L Var. Pol.
	5900	KISV	2	S/F	1124.9	1126.5	3.0	6.0			
	810	KRAK	8	S	1125.5	1125.7	0.2	7.0			
	200	HIRA	27	RF	2255.4	2351.1	141.0	35.0	8.0		MR
07	100	GORK	44	NS	0615.0E		315.0D		10.0		
	204	IZMI	43	NS	0700.0		300.0	20.0			
	127	TORN	43	NS	0720.0		420.0		12.0		V=1
	260	ONDR	44	NS	0830.0E	0931.7	290.0D	45.0			
	245	SGMR	43	NS	1225.0	1618.0	500.0D	60.0			QL=1 ST=2 TYP=1
	200	HIRA	42	SER	0410.0	0411.0	2.0	140.0			O
	100	HIRA	8	S	0410.7	0410.9	0.6	59.0			O
	2950	GORK	23	GRF	0702.0	0716.4	208.0	7.6			
	9100	GORK	21	GRF	0712.0	0715.8	184.0	7.0			
	410	LEAR	4	S/F	0713.0E	0714.0	3.0D	39.0			QL=1 ST=2 TYP=3
	245	LEAR	4	S/F	0713.0E	0714.0	3.0D	110.0			QL=1 ST=2 TYP=3
	200	GORK	41	F	0713.5	0718.0		9.0			
	204	IZMI	5	S	0713.5	0714.0	1.5	500.0	250.0		
	200	GORK	41	F	0713.5	0716.2	5.3	19.0			
	200	GORK	41	F	0713.5	0717.4		9.0			
	9300	KISV	2	S/F	0713.7	0714.3	1.5	24.0			
	2950	GORK	1	S	0713.8	0714.2	1.1				
	5900	KISV	2	S/F	0713.8	0714.3	2.0	13.0			
	950	GORK	29	PBI	0713.9	0715.0	36.7	3.4			
	950	GORK	1	S	0713.9	0714.2	1.0	9.5			
	15000	KISV	2	S/F	0713.9	0714.3	1.0	19.0			
	15400	LEAR	8	S	0714.0E	0714.0	U	20.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0714.0E	0714.0	U	9.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0714.0E	0714.0	U	20.0			QL=1 ST=2 TYP=3
	245	SVTO	8	S	0714.0E	0714.0	U	120.0			QL=1 ST=2 TYP=3
	3100	CRIM	1	S	0714.0	0714.2	1.0	5.6	2.0		
	9100	GORK	1	S	0714.0	0714.3	0.9	22.0	10.0		
	650	GORK	2	S/F	0714.0	0714.4	1.6	6.0			
	650	GORK	29	PBI	0714.0	0715.6	23.8	2.0			
	234	POTS	42	SER	0723.1	0726.2	3.9	150.0			
	430	KRAK	42	SER	0835.8	0836.3	3.5	32.0			
	408	TRST	46	C	0836.3	0836.5	0.4	97.0			6R
	430	KRAK	42	SER	0850.7	0852.2	2.5	8.0			
	237	TRST	46	C	0850.9	0851.1	0.5	105.0			2L
	650	GORK	2	S/F	0851.8	0852.8	1.7	5.0			
	237	TRST	45	C	0851.9	0851.9	0.2	52.0			3L
	950	GORK	1	S	0852.4	0852.5	0.3	8.5			
	810	KRAK	8	S	0852.9	0852.9	0.1	3.0			
	430	KRAK	8	S	0923.9	0924.0	0.2	34.0			
	245	LEAR	8	S	0931.0E	0931.0	1.0D	92.0			QL=1 ST=2 TYP=3
	245	SVTO	8	S	0931.0E	0931.0	1.0D	100.0			QL=1 ST=3 TYP=3
	430	KRAK	8	S	0931.4	0931.6	0.4	5.0			

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
07	234	POTS	8	S	0931.4	0931.6	1.0	150.0	50.0		
	327	TRST	46	C	0931.4	0931.7	0.5	67.0			7R
	237	TRST	46	C	0931.4	0931.7	0.5	382.0			6L
	127	TORN	7	C	1001.8	1002.3	1.7	400.0	130.0		
	245	SVTO	8	S	1021.0E	1021.0	1.0D	66.0			QL=1 ST=2 TYP=3
	536	ONDR	42	SER	1103.0	1108.4	8.5	38.0			
	430	KRAK	8	S	1244.3	1244.3	0.1	110.0			
	810	KRAK	8	S	1244.6	1244.6	0.1	17.0			
	810	KRAK	42	SER	1259.2	1300.0	1.0	9.0			
	2800	OTTA	20	GRF	1400.0E	1543.0	360.0D	7.5	4.0		
	2800	OTTA	1	S	1748.0	1749.0	9.0	28.1	11.0		
08	127	TORN	43	NS	0800.0		356.0		3.0		V=0
	260	ONDR	44	NS	0830.0E	1246.0	280.0D	29.0			
	245	SGMR	44	NS	1226.0E	1449.0	694.0D	62.0			QL=1 ST=1 TYP=1
	2950	GORK	20	GRF	0750.7	0848.0	90.0	5.4			
	5900	KISV	1	S	0805.9	0807.1	6.0	4.0			
	15000	KISV	45	C	0806.2	0807.0		2.0			
	15000	KISV	45	C	0806.2	0806.7	1.3	2.0			
	200	GORK	41	F	0826.5	0831.5		19.0			
	200	GORK	41	F	0826.5	0826.8	6.0	18.0			
	2950	GORK	20	GRF	0927.0	0945.0	33.0	4.2			
	2950	GORK	20	GRF	1000.5	1010.0	44.0	4.0			
	430	KRAK	1	S	1149.5	1150.0	1.2	4.0	2.0		
	536	ONDR	42	SER	1208.0	1209.8	8.4	30.0			
	8800	SGMR	8	S	1833.0E	1835.0	2.0D	120.0			QL=1 ST=2 TYP=3
	610	PALE	4	S/F	2000.0E	2002.0	9.0D	220.0			QL=1 ST=3 TYP=5
	245	PALE	4	S/F	2000.0E	2000.0	3.0D	390.0			QL=1 ST=2 TYP=5
	410	PALE	4	S/F	2000.0E	2000.0	9.0D	150.0			QL=1 ST=3 TYP=5
	245	SGMR	49	GB	2000.0E	2000.0	3.0D	610.0			QL=1 ST=2 TYP=6
	410	SGMR	8	S	2000.0E	2000.0	1.0D	150.0			QL=1 ST=2 TYP=3
	610	PALE	4	S/F	2002.0E	2002.0	4.0D	220.0			QL=1 ST=2 TYP=3
	410	SGMR	8	S	2005.0E	2005.0	1.0D	170.0			QL=1 ST=2 TYP=3
	610	SGMR	8	S	2005.0E	2005.0	1.0D	240.0			QL=1 ST=2 TYP=3
	610	SGMR	8	S	2007.0E	2008.0	1.0D	120.0			QL=1 ST=3 TYP=3
	410	SGMR	8	S	2008.0E	2008.0	U	67.0			QL=1 ST=3 TYP=3
	500	HIRA	41	F	2327.0	2509.5	200.0	253.0			WR
09	200	GORK	44	NS	0609.0E		180.0D		5.0		
	100	GORK	44	NS	0610.0E		320.0D		5.0		
	204	IZMI	43	NS	0700.0		300.0	15.0			
	127	TORN	43	NS	0722.0		414.0		4.0		V=1
	260	ONDR	44	NS	0830.0E	1110.2	290.0D	109.0			
	245	SVTO	43	NS	1050.0	1349.0	248.0D	56.0			QL=1 ST=2 TYP=1
	245	SVTO	43	NS	1059.0	1349.0	239.0D	56.0			QL=1 ST=2 TYP=1
	536	ONDR	43	NS	1131.3	1137.5	7.1	82.0			
	245	SGMR	43	NS	1227.0	1930.0	498.0D	220.0			QL=1 ST=2 TYP=1
	410	SGMR	43	NS	1518.0	1933.0	327.0D	150.0			QL=1 ST=2 TYP=1
	610	SGMR	43	NS	1519.0	1933.0	326.0D	68.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2140.0E	0428.0	580.0D	33.0	11.0		MR
	200	HIRA	41	F	0033.0	0109.6	67.0	1500.0			O
	100	HIRA	41	F	0100.0		15.2	1000.0D			
	245	PALE	49	GB	0104.0E	0109.0	6.0D	1200.0			QL=1 ST=2 TYP=7
	410	LEAR	4	S/F	0106.0E	0109.0	4.0D	290.0			QL=1 ST=2 TYP=3
	245	LEAR	49	GB	0106.0E	0109.0	4.0D	890.0			QL=1 ST=2 TYP=6
	2695	LEAR	4	S/F	0106.0E	0108.0	4.0D	22.0			QL=1 ST=2 TYP=3
	15400	LEAR	4	S/F	0106.0E	0109.0	5.0D	63.0			QL=1 ST=2 TYP=3
	610	LEAR	4	S/F	0106.0E	0109.0	4.0D	92.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0108.0E	0109.0	2.0D	69.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0108.0E	0109.0	1.0D	84.0			QL=1 ST=2 TYP=3
	410	PALE	8	S	0109.0E	0109.0	1.0D	340.0			QL=1 ST=2 TYP=3
	610	PALE	8	S	0109.0E	0109.0	U	76.0			QL=1 ST=2 TYP=3
	100	HIRA	41	F	0226.6	0231.0	19.1	870.0			
	200	HIRA	41	F	0228.1	0230.4	17.2	80.0			MR
	410	LEAR	8	S	0231.0E	0231.0	U	24.0			QL=1 ST=2 TYP=3
	610	LEAR	8	S	0231.0E	0232.0	1.0D	22.0			QL=1 ST=2 TYP=3
	15400	LEAR	8	S	0232.0E	0234.0	2.0D	15.0			QL=1 ST=2 TYP=3
	245	LEAR	4	S/F	0234.0E	0236.0	4.0D	140.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0236.0E	0236.0	U	14.0			QL=1 ST=2 TYP=3

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
09	100	HIRA	46	C	0314.5	0316.6	5.2	885.0			
	500	HIRA	46	C	0314.8	0318.2	11.5	1400.0	110.0		SR
	15400	LEAR	4	S/F	0316.0E	0316.0	8.0D	340.0			QL=1 ST=2 TYP=3
	610	LEAR	49	GB	0316.0E	0318.0	6.0D	1500.0			QL=1 ST=2 TYP=6
	245	LEAR	8	S	0316.0E	0316.0	1.0D	250.0			QL=1 ST=2 TYP=3
	410	LEAR	4	S/F	0316.0E	0318.0	9.0D	270.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0316.0E	0316.0	3.0D	190.0			QL=1 ST=2 TYP=3
	8800	PALE	4	S/F	0316.0E	0316.0	5.0D	170.0			QL=1 ST=2 TYP=3
	4995	PALE	8	S	0316.0E	0316.0	1.0D	97.0			QL=1 ST=2 TYP=3
	15400	PALE	4	S/F	0316.0E	0316.0	5.0D	260.0			QL=1 ST=2 TYP=3
	245	PALE	4	S/F	0316.0E	0316.0	5.0D	290.0			QL=1 ST=2 TYP=3
	610	PALE	49	GB	0316.0E	0318.0	3.0D	910.0			QL=1 ST=2 TYP=6
	200	HIRA	46	C	0316.1	0316.5	4.0	820.0			MR
	410	PALE	8	S	0318.0E	0318.0	2.0D	240.0			QL=1 ST=2 TYP=3
	200	HIRA	46	C	0446.2	0446.9	1.8	64.0			O
	200	HIRA	41	F	0507.0	0602.8	86.0	270.0			MR
	610	LEAR	4	S/F	0600.0E	0603.0	5.0D	120.0			QL=1 ST=2 TYP=3
	9300	KISV	4	S/F	0600.5	0603.0	5.0	29.0			
	650	GORK	46	C	0600.5	0603.1		190.0			
	650	GORK	46	C	0600.5	0601.2U	5.3	50.0D			
	650	GORK	46	C	0600.5	0602.3		245.0			
	9300	KISV	29	PBI	0600.5	0605.6	11.5	8.0			
	5900	KISV	4	S/F	0600.6	0603.1	5.5	52.0			
	5900	KISV	29	PBI	0600.6	0606.2	13.0	8.0			
	245	LEAR	4	S/F	0601.0E	0602.0	4.0D	230.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0601.0E	0603.0	4.0D	30.0			QL=1 ST=2 TYP=3
	410	LEAR	4	S/F	0602.0E	0602.0	3.0D	110.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0602.0E	0603.0	3.0D	41.0			QL=1 ST=2 TYP=3
	9100	GORK	2	S/F	0602.7	0603.2	1.5	15.5			
	2950	GORK	1	S	0603.0	0603.1	0.4	7.2			
	950	GORK	4	S/F	0606.0	0608.2	3.4	26.0			
	2950	GORK	21	GRF	0647.8	0948.0	300.0	13.2			
	100	GORK	8	S	0726.8	0727.1	0.4	450.0			
	5900	KISV	29	PBI	0730.2	0739.0	17.5	10.0			
	5900	KISV	46	C	0730.2	0733.2	9.0	142.0			
	5900	KISV	46	C	0730.2	0734.4		84.0			
	5900	KISV	46	C	0730.2	0735.6		67.0			
	2695	LEAR	4	S/F	0731.0E	0733.0	5.0D	62.0			QL=1 ST=2 TYP=3
	100	GORK	47	GB	0731.1	0732.6	2.5	21000.0			
	200	GORK	47	GB	0731.1	0736.7		9600.0			
	200	GORK	47	GB	0731.1	0734.7	7.7	5200.0			
	2950	GORK	45	C	0731.4	0733.1	15.8	154.0			
	2950	GORK	45	C	0731.4	0745.2		1.8			
	9100	GORK	46	C	0731.4	0733.2		118.0			
	950	GORK	46	C	0731.4	0733.2	17.6	76.0			
	950	GORK	46	C	0731.4	0738.3		110.0			
	650	GORK	46	C	0731.4	0738.3		80.0			
	650	GORK	46	C	0731.4	0734.4		410.0			
	9100	GORK	46	C	0731.4	0734.5		60.0			
	950	GORK	46	C	0731.4	0734.5		63.0			
	2950	GORK	45	C	0731.4	0742.5		7.3			
	2950	GORK	45	C	0731.4	0734.5		21.0			
	650	GORK	46	C	0731.4	0733.5	14.0	870.0			
	9100	GORK	46	C	0731.4	0735.6		50.0			
	9100	GORK	30	PBI	0731.4	0737.6	187.0	20.0			
	9100	GORK	46	C	0731.4	0732.7	6.1	187.0			
	2950	GORK	45	C	0731.4	0735.8		21.0			
	3100	CRIM	45	C	0731.5	0733.3		4.0			
	3100	CRIM	45	C	0731.5	0734.5					
	3100	CRIM	45	C	0731.5	0732.6	7.6	32.5	11.0		
	3100	CRIM	45	C	0731.5	0735.8					
	30	POTS	42	SER	0731.5	0732.8	11.0	3600.0			
	9300	KISV	29	PBI	0731.6	0739.3	12.5	15.0			
	9300	KISV	46	C	0731.6	0733.4	7.5	120.0D			
	9300	KISV	46	C	0731.6	0734.4		75.0			
	9300	KISV	46	C	0731.6	0735.6		67.0			
	204	IZMI	41	F	0732.0	0733.0	7.0	350.0			
	3013	IZMI	5	S	0732.0	0733.0	3.0	38.0	30.0		
	15400	LEAR	4	S/F	0732.0E	0732.0	5.0D	92.0			QL=1 ST=2 TYP=3

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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
09	610	LEAR	49	GB	0732.0E	0733.0	6.0D	760.0			QL=1 ST=2 TYP=6
	8800	LEAR	4	S/F	0732.0E	0732.0	6.0D	160.0			QL=1 ST=2 TYP=3
	245	LEAR	4	S/F	0732.0E	0736.0	11.0D	250.0			QL=1 ST=2 TYP=3
	410	LEAR	49	GB	0732.0E	0734.0	14.0D	680.0			QL=1 ST=2 TYP=7
	234	POTS	42	SER	0732.0	0736.8	18.0	360.0			
	15000	KISV	29	PBI	0732.1	0737.0	13.5	25.0			
	15000	KISV	4	S/F	0732.1	0732.6	5.5	103.0			
	950	GORK	29	PBI	0740.0	0749.1	10.7	2.6			
	3100	CRIM	42	SER	0740.8	0746.2		5.0			
	3100	CRIM	42	SER	0740.8	0742.6	5.0	8.5	3.0		
	9300	KISV	2	S/F	0741.8	0742.6	2.5	12.0			
	5900	KISV	4	S/F	0741.8	0742.6	4.5	19.0			
	9100	GORK	1	S	0742.2	0742.7	1.9	1.9			
	410	LEAR	8	S	0748.0E	0749.0	1.0D	110.0			QL=1 ST=2 TYP=3
	408	TRST	27	RF	0748.3	0749.1	1.2	214.0			73R Fine Struct
	327	TRST	27	RF	0748.3	0748.8	1.0	161.0			78R Fine Struct
	237	TRST	27	RF	0748.3	0748.9	1.0	74.0			74R Fine Struct
	100	GORK	8	S	0754.5	0754.7	0.4	110.0			
	650	GORK	23	GRF	0843.4	0853.0	16.6	1.4			
	950	GORK	22	GRF	0848.6	0850.9	8.0	8.5			
	650	GORK	4	S/F	0848.9	0850.8	4.1	8.0			
	810	KRAK	42	SER	0849.0	0851.0	3.5	32.0			
	2950	GORK	1	S	0849.5	0851.0	3.6	3.6	3.0		
	430	KRAK	2	S/F	0849.5	0851.0	2.0	38.0	6.0		
	327	TRST	27	RF	0850.3	0851.0	2.5	124.0			70R Spikes
	237	TRST	27	RF	0850.3	0851.8	2.6	108.0			83R Spikes
	408	TRST	27	RF	0850.3	0850.9	2.6	64.0			46R
	430	KRAK	41	F	0851.5	0852.5	1.5	6.0	2.0		
	1470	POTS	20	GRF	0930.0	0944.0	31.0	9.0			
	100	GORK	41	F	0931.3	0931.7	19.0	900.0			
	100	GORK	41	F	0931.7	0942.2		700.0			
	100	GORK	41	F	0931.7	0950.2		200.0			
	100	GORK	41	F	0931.7	0947.4		300.0			
	100	GORK	41	F	0931.7	0940.9		350.0			
	3100	CRIM	20	GRF	0935.7	0942.4	18.0	6.0	2.0		
	2950	GORK	3	S	0936.5	0942.0	11.5	9.6			
	127	TORN	4	S/F	0938.0	0941.7	6.0	440.0	220.0		
	1470	POTS	4	S/F	1010.5	1016.2	12.0	44.0			
	430	KRAK	42	SER	1017.3	1017.6	12.5	32.0			
	327	TRST	41	F	1109.8	1110.3	1.1	186.0			74R Spikes
	237	TRST	41	F	1109.8	1110.4	1.2	333.0			91R Spikes
	100	GORK	41	F	1117.1	1120.1		1000.0			
	100	GORK	41	F	1117.1	1117.5	3.0	2100.0			
	204	IZMI	8	S	1120.0	1120.1	0.1	220.0	200.0		
	30	POTS	4	S/F	1120.0	1120.1	0.4	4000.0	1500.0		
	234	POTS	8	S	1120.0	1120.1	0.4	275.0	90.0		
	430	KRAK	42	SER	1120.0	1131.8	33.5	54.0			
	430	KRAK	42	SER	1247.0	1343.5	67.0	14.0			
	327	TRST	46	C	1330.2	1330.4	0.5	176.0			4R
	408	TRST	46	C	1330.4	1330.5	0.3	96.0			3R
	237	TRST	46	C	1330.4	1330.6	0.4	114.0			2R
	245	SGMR	8	S	1438.0E	1439.0	1.0D	130.0			QL=1 ST=2 TYP=3
	245	SVTO	8	S	1438.0E	1439.0	1.0D	97.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1514.0E	1514.0	1.0D	140.0			QL=1 ST=2 TYP=3
	410	SGMR	8	S	1514.0E	1514.0	U	100.0			QL=1 ST=2 TYP=3
	410	SGMR	8	S	1555.0E	1557.0	2.0D	140.0			QL=1 ST=2 TYP=3
	245	SGMR	4	S/F	1559.0E	1601.0	3.0D	420.0			QL=1 ST=2 TYP=5
	410	SGMR	8	S	1619.0E	1619.0	U	440.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1619.0E	1619.0	U	200.0			QL=1 ST=2 TYP=3
	410	SGMR	4	S/F	1641.0E	1641.0	5.0D	200.0			QL=1 ST=2 TYP=3
	610	SGMR	8	S	1641.0E	1643.0	2.0D	140.0			QL=1 ST=2 TYP=5
	245	SGMR	49	GB	1641.0E	1643.0	5.0D	960.0			QL=1 ST=2 TYP=6
	245	SGMR	4	S/F	1654.0E	1655.0	5.0D	340.0			QL=1 ST=2 TYP=3
	245	PALE	49	GB	1817.0E	1819.0	7.0D	1500.0			QL=1 ST=2 TYP=6
	245	SGMR	49	GB	1817.0E	1819.0	6.0D	1800.0			QL=1 ST=2 TYP=6
	410	PALE	8	S	1818.0E	1819.0	2.0D	100.0			QL=1 ST=2 TYP=3
	410	SGMR	8	S	1818.0E	1819.0	1.0D	110.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1823.0E	1824.0	1.0D	83.0			QL=1 ST=2 TYP=3
	410	PALE	4	S/F	1824.0E	1824.0	3.0D	470.0			QL=1 ST=2 TYP=3

S O L A R R A D I O E M I S S I O N

Outstanding Occurrences

DECEMBER 1988

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
09	610	PALE	4	S/F	1824.0E	1825.0	3.0D	120.0			QL=1 ST=2 TYP=3
	410	SGMR	49	GB	1824.0E	1825.0	3.0D	670.0			QL=1 ST=2 TYP=6
	610	SGMR	8	S	1824.0E	1825.0	2.0D	130.0			QL=1 ST=2 TYP=3
	610	SGMR	8	S	1855.0E	1855.0	U	80.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1855.0E	1855.0	U	170.0			QL=1 ST=2 TYP=3
	410	SGMR	8	S	1855.0E	1855.0	U	440.0			QL=1 ST=2 TYP=3
	610	PALE	4	S/F	1928.0E	1930.0	3.0D	75.0			QL=1 ST=2 TYP=3
	410	PALE	8	S	1929.0E	1929.0	1.0D	88.0			QL=1 ST=2 TYP=3
	245	PALE	8	S	1929.0E	1930.0	1.0D	370.0			QL=1 ST=2 TYP=3
	410	SGMR	8	S	1929.0E	1930.0	1.0D	110.0			QL=1 ST=2 TYP=3
	610	SGMR	8	S	1929.0E	1930.0	1.0D	110.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1930.0E	1930.0	U	440.0			QL=1 ST=2 TYP=3
	1415	PALE	8	S	1934.0E	1934.0	1.0D	130.0			QL=1 ST=2 TYP=3
	245	PALE	8	S	1934.0E	1935.0	1.0D	69.0			QL=1 ST=2 TYP=3
	245	PALE	8	S	1944.0E	1944.0	1.0D	300.0			QL=1 ST=2 TYP=3
	245	PALE	49	GB	1957.0E	2000.0	9.0D	1200.0			QL=1 ST=2 TYP=6
	2695	PENT	2	S/F	1959.0	2000.5	11.0	60.3	18.0		
	410	PALE	49	GB	1959.0E	2000.0	3.0D	580.0			QL=1 ST=2 TYP=6
	610	PALE	49	GB	1959.0E	2000.0	3.0D	860.0			QL=1 ST=2 TYP=6
	1415	PALE	49	GB	1959.0E	2002.0	4.0D	530.0			QL=1 ST=2 TYP=6
	4995	PALE	8	S	1959.0E	2000.0	1.0D	55.0			QL=1 ST=2 TYP=3
	410	SGMR	49	GB	1959.0E	2000.0	2.0D	790.0			QL=1 ST=2 TYP=6
	245	SGMR	49	GB	1959.0E	2000.0	6.0D	1600.0			QL=1 ST=2 TYP=6
	2695	PALE	4	S/F	1959.0E	2000.0	241.0D	44.0			QL=1 ST=1 TYP=3
	1415	SGMR	49	GB	2000.0E	2002.0	2.0D	530.0			QL=1 ST=2 TYP=6
	410	PALE	8	S	2006.0E	2007.0	1.0D	200.0			QL=1 ST=2 TYP=3
	610	PALE	8	S	2007.0E	2007.0	U	82.0			QL=1 ST=2 TYP=3
	245	SGMR	4	S/F	2011.0E	2011.0	3.0D	480.0			QL=1 ST=2 TYP=3
	245	PALE	8	S	2012.0E	2013.0	2.0D	250.0			QL=1 ST=2 TYP=3
	245	PALE	49	GB	2031.0E	2034.0	7.0D	2200.0			QL=1 ST=2 TYP=6
	410	PALE	4	S/F	2031.0E	2035.0	5.0D	410.0			QL=1 ST=2 TYP=5
	245	SGMR	49	GB	2031.0E	2034.0	8.0D	2500.0			QL=1 ST=2 TYP=6
	610	PALE	8	S	2034.0E	2035.0	2.0D	290.0			QL=1 ST=2 TYP=3
	410	SGMR	8	S	2034.0E	2035.0	2.0D	500.0			QL=1 ST=2 TYP=3
	610	SGMR	8	S	2035.0E	2035.0	U	250.0			QL=1 ST=2 TYP=3
	2695	PENT	28	PRE	2101.5	2109.7	8.2	4.0	2.0		
	245	PALE	49	GB	2108.0E	2126.0	22.0D	10000.0			QL=1 ST=2 TYP=7
	2695	PENT	4	S/F	2109.7	2111.0	23.0	102.5	30.0		
	4995	PALE	4	S/F	2110.0E	2111.0	3.0D	55.0			QL=1 ST=2 TYP=3
	2695	PALE	8	S	2110.0E	2110.0	2.0D	62.0			QL=1 ST=2 TYP=3
	1415	PALE	4	S/F	2110.0E	2113.0	4.0D	83.0			QL=1 ST=2 TYP=3
	610	PALE	49	GB	2110.0E	2114.0	16.0D	820.0			QL=1 ST=2 TYP=6
	410	PALE	49	GB	2110.0E	2122.0	17.0D	1300.0			QL=1 ST=2 TYP=7
	2695	PENT	4	S/F	2124.5	2126.7	3.3	64.8	22.0		
	245	PALE	8	S	2201.0E	2203.0	2.0D	95.0			QL=1 ST=2 TYP=3
	245	LEAR	8	S	2202.0E	2203.0	2.0D	88.0			QL=1 ST=2 TYP=3
	500	HIRA	42	SER	2231.5	2313.8	154.0	420.0			SR
	245	LEAR	8	S	2305.0E	2307.0	2.0D	53.0			QL=1 ST=2 TYP=3
	100	HIRA	48	C	2310.9		10.6	1000.0D			
	410	LEAR	49	GB	2311.0E	2313.0	6.0D	630.0			QL=1 ST=2 TYP=7
	245	LEAR	49	GB	2312.0E	2316.0	9.0D	1300.0			QL=1 ST=2 TYP=6
	200	HIRA	48	C	2312.5	2321.3		240.0			MR
	200	HIRA	48	C	2312.5	2314.4	11.9	4500.0	136.0		WR
	610	LEAR	4	S/F	2313.0E	2313.0	4.0D	150.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	2315.0E	2316.0	2.0D	43.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	2316.0E	2316.0	1.0D	46.0			QL=1 ST=2 TYP=3
	15400	LEAR	8	S	2316.0E	2316.0	1.0D	33.0			QL=1 ST=2 TYP=3
	410	LEAR	8	S	2326.0E	2326.0	U	57.0			QL=1 ST=2 TYP=3
	245	LEAR	8	S	2326.0E	2326.0	U	33.0			QL=1 ST=2 TYP=3
10	245	LEAR	44	NS	0000.0E	0110.0	642.0D	63.0			QL=1 ST=2 TYP=1
	100	GORK	44	NS	0618.0E		312.0D		5.0		
	204	IZMI	43	NS	0700.0		300.0	30.0			
	200	GORK	44	NS	0718.0E		120.0D		5.0		
	127	TORN	43	NS	0720.0		420.0		40.0		V=1
	260	ONDR	44	NS	0840.0E	1237.0	280.0D				
	245	SVTO	44	NS	0859.0E	0921.0	41.0D	31.0			QL=1 ST=2 TYP=1
	245	SGMR	44	NS	1228.0E	1504.0	497.0D	71.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2140.0E	2243.0	580.0D	18.0	9.0		MR

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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	100	HIRA	44	NS	2140.0E	0540.0	580.0D	120.0	70.0		
	100	HIRA	42	SER	0005.9	0008.8	11.2	490.0			
	245	LEAR	8	S	0007.0E	0009.0	2.0D	170.0			QL=1 ST=2 TYP=3
	200	HIRA	42	SER	0009.2E	0009.2	16.5D	170.0			MR
	245	LEAR	8	S	0014.0E	0015.0	1.0D	280.0			QL=1 ST=2 TYP=3
	100	HIRA	46	C	0047.0	0051.9	6.1	920.0	230.0		
	200	HIRA	46	C	0048.2	0051.6	5.3	2100.0			MR
	410	LEAR	4	S/F	0049.0E	0052.0	4.0D	320.0			QL=1 ST=2 TYP=3
	245	LEAR	49	GB	0049.0E	0052.0	4.0D	1600.0			QL=1 ST=2 TYP=6
	610	LEAR	8	S	0051.0E	0052.0	1.0D	100.0			QL=1 ST=2 TYP=3
	100	HIRA	42	SER	0125.0	0232.0	68.0	940.0			
	500	HIRA	46	C	0152.8	0200.5	13.0	604.0	65.0		SR
	245	LEAR	49	GB	0154.0E	0156.0	8.0D	840.0			QL=1 ST=2 TYP=7
	200	HIRA	42	SER	0154.8	0200.0	46.2	510.0			SR
	410	LEAR	49	GB	0157.0E	0200.0	4.0D	1800.0			QL=1 ST=2 TYP=6
	610	LEAR	8	S	0159.0E	0200.0	1.0D	87.0			QL=1 ST=2 TYP=3
	245	LEAR	4	S/F	0224.0E	0232.0	9.0D	380.0			QL=1 ST=2 TYP=5
	610	LEAR	4	S/F	0226.0E	0229.0	3.0D	75.0			QL=1 ST=2 TYP=5
	410	LEAR	4	S/F	0226.0E	0227.0	3.0D	94.0			QL=1 ST=2 TYP=5
	410	LEAR	8	S	0235.0E	0235.0	U	70.0			QL=1 ST=2 TYP=3
	245	LEAR	4	S/F	0235.0E	0238.0	6.0D	480.0			QL=1 ST=2 TYP=3
	610	LEAR	8	S	0241.0E	0241.0	1.0D	63.0			QL=1 ST=2 TYP=3
	245	LEAR	4	S/F	0302.0E	0302.0	4.0D	170.0			QL=1 ST=2 TYP=3
	410	LEAR	8	S	0302.0E	0302.0	1.0D	110.0			QL=1 ST=2 TYP=3
	610	LEAR	8	S	0302.0E	0302.0	U	35.0			QL=1 ST=2 TYP=3
	500	HIRA	2	S/F	0405.7	0406.3	1.5	31.0			MR
	245	LEAR	8	S	0423.0E	0424.0	1.0D	230.0			QL=1 ST=2 TYP=3
	500	HIRA	46	C	0426.9	0429.5	5.5	63.0			SR
	245	LEAR	4	S/F	0427.0E	0429.0	4.0D	420.0			QL=1 ST=2 TYP=3
	100	HIRA	42	SER	0427.7	0453.5U	75.0	1000.0D			
	410	LEAR	8	S	0428.0E	0429.0	2.0D	180.0			QL=1 ST=2 TYP=3
	610	LEAR	8	S	0429.0E	0429.0	U	47.0			QL=1 ST=2 TYP=3
	245	LEAR	49	GB	0451.0E	0454.0	13.0D	2600.0			QL=1 ST=2 TYP=6
	500	HIRA	46	C	0451.2	0454.5	15.0	260.0	46.0		SR
	200	HIRA	46	C	0451.2	0453.9	12.1	1500.0	220.0		SR
	410	LEAR	4	S/F	0452.0E	0454.0	14.0D	430.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0453.0E	0454.0	2.0D	73.0			QL=1 ST=2 TYP=3
	610	LEAR	8	S	0453.0E	0454.0	2.0D	140.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0453.0E	0454.0	2.0D	99.0			QL=1 ST=2 TYP=3
	15400	LEAR	8	S	0454.0E	0454.0	1.0D	30.0			QL=1 ST=2 TYP=3
	100	GORK	41	F	0724.9	0725.1	1.5	80.0			
	100	GORK	41	F	0724.9	0726.2		190.0			
	2950	GORK	20	GRF	0725.3	0824.8	118.0	6.9			
	430	KRAK	42	SER	0821.3	0823.5	23.0	17.0			
	2950	GORK	21	GRF	0925.0	1055.5	108.0	9.6	9.6		
	237	TRST	27	RF	0937.7	0938.6	1.0	107.0			85R
	327	TRST	27	RF	0937.8	0938.6	0.9	170.0			78R
	100	GORK	8	S	0938.0	0938.2	0.9	160.0			
	408	TRST	27	RF	0938.0	0938.6	0.7	88.0			58R
	9100	GORK	22	GRF	1008.0	1020.6	22.9	6.0			
	2950	GORK	1	S	1009.7	1010.0	1.3	5.4			
	3100	CRIM	1	S	1009.8	1010.0	1.0	6.0	2.0		
	430	KRAK	42	SER	1024.0	1024.0	20.5	4.0			
	430	KRAK	8	S	1057.0	1057.3	0.5	12.0			
	430	KRAK	42	SER	1157.5	1205.5	26.5	8.0			
	33	UPIC	46	C	1208.2	1209.3U	4.5				
	40	POTS	42	SER	1215.0	1227.8	15.0	3400.0			
	234	POTS	42	SER	1221.0	1228.0	17.0	500.0			
	33	UPIC	3	S	1223.5	1223.6	0.5				
	536	ONDR	41	F	1224.2	1227.8	7.5	17.0			
	33	UPIC	45	C	1226.1	1227.3	2.7				
	327	TRST	27	RF	1226.7	1227.9	3.3	124.0			55R Spikes
	237	TRST	27	RF	1226.7	1227.9	3.3	1011.0			61R Spikes
	408	TRST	27	RF	1226.7	1228.9	3.3	80.0			50R Spikes
	430	KRAK	4	S/F	1227.0	1229.6	3.7	23.0	8.0		
	430	KRAK	2	S/F	1230.7	1231.3	1.0	14.0	3.0		
	2800	OTTA	3	S	1420.0	1436.0	34.5	158.8	79.0		
	3200	BERN	46	C	1421.0	1433.0	30.0	288.0			
	5200	BERN	46	C	1421.0	1430.3	30.0	456.0			

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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	8400	BERN	46	C	1421.0	1430.3	30.0	136.0			
	4995	SGMR	20	GRF	1423.0E	1430.0	20.0D	250.0			QL=1 ST=2 TYP=2
	245	SGMR	4	S/F	1424.0E	1428.0	7.0D	280.0			QL=1 ST=2 TYP=3
	2695	SGMR	20	GRF	1425.0E	1435.0	16.0D	160.0			QL=1 ST=2 TYP=2
	8800	SGMR	20	GRF	1426.0E	1430.0	13.0D	130.0			QL=1 ST=2 TYP=2
	410	SGMR	8	S	1428.0E	1429.0	1.0D	220.0			QL=1 ST=2 TYP=3
	245	SGMR	49	GB	1514.0E	1514.0	1.0D	590.0			QL=1 ST=2 TYP=6
	245	SGMR	8	S	1609.0E	1609.0	U	220.0			QL=1 ST=2 TYP=3
	245	SGMR	49	GB	1648.0E	1649.0	9.0D	1000.0			QL=1 ST=2 TYP=6
	1415	SGMR	8	S	1649.0E	1649.0	1.0D	220.0			QL=1 ST=2 TYP=3
	610	SGMR	4	S/F	1649.0E	1650.0	8.0D	410.0			QL=1 ST=2 TYP=3
	410	SGMR	4	S/F	1649.0E	1652.0	8.0D	420.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1732.0E	1732.0	U	150.0			QL=1 ST=2 TYP=3
	245	SGMR	49	GB	1832.0E	1832.0	1.0D	4000.0			QL=1 ST=2 TYP=6
	410	SGMR	49	GB	1835.0E	1835.0	U	1400.0			QL=1 ST=2 TYP=6
	245	SGMR	8	S	1849.0E	1849.0	1.0D	100.0			QL=1 ST=2 TYP=3
	500	HIRA	42	SER	2300.0	2317.5	19.5	1050.0			WR
	610	LEAR	4	S/F	2301.0E	2302.0	4.0D	290.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	2301.0E	2304.0	6.0D	160.0			QL=1 ST=2 TYP=3
	410	LEAR	4	S/F	2301.0E	2303.0	6.0D	290.0			QL=1 ST=2 TYP=3
	15400	LEAR	4	S/F	2302.0E	2304.0	9.0D	53.0			QL=1 ST=2 TYP=3
	245	LEAR	49	GB	2303.0E	2303.0	2.0D	2900.0			QL=1 ST=2 TYP=6
	8800	LEAR	8	S	2303.0E	2304.0	1.0D	80.0			QL=1 ST=2 TYP=3
	200	HIRA	42	SER	2303.0	2303.6	15.3	1200.0			O
	100	HIRA	42	SER	2303.0	2303.8	15.8	680.0			
	610	LEAR	8	S	2314.0E	2315.0	1.0D	21.0			QL=1 ST=2 TYP=3
	245	LEAR	4	S/F	2315.0E	2317.0	3.0D	420.0			QL=1 ST=2 TYP=3
	410	LEAR	4	S/F	2315.0E	2317.0	3.0D	370.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	2317.0E	2317.0	U	16.0			QL=1 ST=2 TYP=3
11	100	GORK	44	NS	0615.0E		285.0D		5.0		
	245	SVTO	44	NS	0626.0E	0854.0	512.0D	63.0			QL=1 ST=2 TYP=1
	204	IZMI	43	NS	0700.0		300.0	20.0			
	100	GORK	44	NS	0715.0E		120.0D		5.0		
	127	TORN	43	NS	0720.0		420.0		60.0		V=1
	260	ONDR	44	NS	0840.0E	1124.0U	280.0D				
	245	SGMR	44	NS	1228.0E	1726.0	497.0D	180.0			QL=1 ST=2 TYP=1
	100	HIRA	44	NS	2140.0E	0140.0	580.0D	140.0	94.0		
	100	HIRA	42	SER	0317.8	0343.2	36.0	630.0			
	500	HIRA	42	SER	0340.4	0357.5	26.0	370.0			O
	610	LEAR	8	S	0427.0E	0428.0	1.0D	370.0			QL=1 ST=2 TYP=3
	500	HIRA	2	S/F	0427.9	0428.2	0.8	250.0			O
	410	LEAR	49	GB	0428.0E	0428.0	1.0D	1100.0			QL=1 ST=2 TYP=6
	500	HIRA	42	SER	0506.8	0517.5	14.0	2400.0			O
	245	LEAR	8	S	0515.0E	0516.0	1.0D	120.0			QL=1 ST=2 TYP=3
	610	LEAR	49	GB	0516.0E	0517.0	2.0D	1600.0			QL=1 ST=2 TYP=6
	410	LEAR	8	S	0517.0E	0518.0	1.0D	280.0			QL=1 ST=2 TYP=3
	610	LEAR	4	S/F	0623.0E	0626.0	5.0D	86.0			QL=1 ST=2 TYP=3
	245	LEAR	4	S/F	0623.0E	0627.0	5.0D	21.0			QL=1 ST=2 TYP=3
	410	LEAR	49	GB	0623.0E	0626.0	5.0D	1000.0			QL=1 ST=2 TYP=6
	245	SVTO	49	GB	0624.0E	0626.0	3.0D	650.0			QL=1 ST=2 TYP=6
	410	SVTO	49	GB	0624.0E	0626.0	1323.0D	650.0			QL=1 ST=3 TYP=7
	650	GORK	46	C	0624.5	0627.1U		13.0D			
	650	GORK	46	C	0624.5	0626.8U		13.0D			
	650	GORK	46	C	0624.5	0624.9	2.6	8.0			
	950	GORK	45	C	0626.0	0626.1	1.0	6.0			
	950	GORK	45	C	0626.0	0626.7		3.5			
	245	SVTO	8	S	0630.0E	0630.0	1.0D	89.0			QL=1 ST=2 TYP=3
	245	LEAR	8	S	0638.0E	0640.0	2.0D	280.0			QL=1 ST=2 TYP=5
	950	GORK	2	S/F	0650.1	0650.5	1.1	10.0			
	410	LEAR	8	S	0652.0E	0653.0	2.0D	320.0			QL=1 ST=2 TYP=3
	650	GORK	46	C	0652.8	0654.2		7.0			
	650	GORK	46	C	0652.8	0653.4	1.8	5.6			
	245	LEAR	8	S	0653.0E	0653.0	U	31.0			QL=1 ST=2 TYP=3
	410	SVTO	8	S	0653.0E	0653.0	U	380.0			QL=1 ST=2 TYP=3
	950	GORK	2	S/F	0653.2	0654.0	1.4	13.0			
	2950	GORK	21	GRF	0709.0	1033.0	240.0D	9.7			
	650	GORK	41	F	0716.3	0716.8	1.2	11.0			
	245	LEAR	49	GB	0721.0E	0724.0	4.0D	1300.0			QL=1 ST=2 TYP=7

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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
11	410	LEAR	49	GB	0721.0E	0723.0	3.0D	840.0			QL=1 ST=2 TYP=7
	610	LEAR	4	S/F	0721.0E	0721.0	7.0D	480.0			QL=1 ST=2 TYP=5
	650	GORK	41	F	0721.2	0727.2		330.0			
	650	GORK	41	F	0721.2	0724.3		250.0			
	650	GORK	41	F	0721.2	0722.3		80.0			
	950	GORK	4	S/F	0721.2	0721.4	0.6	34.0			
	650	GORK	41	F	0721.2	0721.5	7.3	480.0			
	204	IZMI	41	F	0723.0	0725.0	3.0	350.0			
	245	SVTO	49	GB	0723.0E	0723.0	2.0D	1400.0			QL=1 ST=2 TYP=6
	410	SVTO	49	GB	0723.0E	0723.0	1.0D	800.0			QL=1 ST=2 TYP=6
	2695	LEAR	4	S/F	0723.0E	0724.0	997.0D	130.0			QL=1 ST=1 TYP=3
	950	GORK	3	S	0723.2	0724.3	4.5	735.0			
	234	POTS	4	S/F	0723.2	0723.7	2.7	2200.0	200.0		
	9100	GORK	3	S	0723.7	0724.4	3.7	39.0			
	15000	KISV	2	S/F	0723.8	0724.3	1.6	11.0			
	15000	KISV	20	GRF	0723.8	0738.6	21.8	7.0			
	3100	CRIM	3	S	0723.9	0724.2	3.0	77.0	20.0		
	2950	GORK	3	S	0723.9	0724.3	4.0	36.0D			
	8800	LEAR	8	S	0724.0E	0724.0	U	26.0			QL=1 ST=2 TYP=3
	9300	KISV	4	S/F	0724.0	0724.3	3.5	42.0			
	3013	IZMI	5	S	0724.0	0724.5	2.0	70.0	40.0		
	5900	KISV	4	S/F	0724.0	0724.5	3.5	38.0			
	100	GORK	45	C	0726.8	0727.5		220.0			
	100	GORK	45	C	0726.8	0726.9	1.7	1360.0			
	650	GORK	4	S/F	0737.9	0738.3	2.0	12.5			
	650	GORK	1	S	0754.4	0754.7	0.5	6.7			
	950	GORK	41	F	0810.1	0812.6		13.5			
	950	GORK	41	F	0810.1	0810.7	2.8	28.0			
	650	GORK	1	S	0810.4	0810.7	0.4	1.1			
	650	GORK	4	S/F	0811.7	0812.1	2.4	48.0			
	9100	GORK	1	S	0831.6	0832.3	1.2	5.3			
	9300	KISV	2	S/F	0835.1	0835.6	1.5	3.0			
	5900	KISV	2	S/F	0835.2	0835.7	1.5	2.0			
	430	KRAK	42	SER	0859.7	0900.0	3.2	32.0			
	650	GORK	4	S/F	0900.2	0901.8	2.0	9.5			
	810	KRAK	8	S	0912.8	0913.0	0.4	20.0			
	650	GORK	4	S/F	0912.9	0913.0	0.3	7.5			
	1470	POTS	8	S	0920.5	0920.9	0.8	11.0			
	245	LEAR	8	S	0926.0E	0927.0	1.0D	61.0			QL=1 ST=2 TYP=3
	234	POTS	4	S/F	0926.0	0927.4	1.6	115.0	5.0		
	1470	POTS	40	F	0926.0	0926.5	2.0	8.0			
	204	IZMI	41	F	0926.3	0927.0	1.8	180.0			
	430	KRAK	4	S/F	0926.5	0927.2	1.5	65.0	4.0		
	950	GORK	4	S/F	0926.9	0927.4	0.9	19.5			
	810	KRAK	8	S	0927.0	0927.2	0.5	22.0			
	2950	GORK	1	S	0927.1	0927.5	0.8	3.7			
	650	GORK	4	S/F	0927.1	0927.5	0.8	7.5			
	5900	KISV	45	C	0942.7	0947.1	7.0	6.0			
	5900	KISV	45	C	0942.7	0948.1		4.0			
	9100	GORK	2	S/F	0943.0	0947.1	7.7	5.3			
	30	POTS	41	F	0944.4	0947.1	5.6	26000.0			
	245	LEAR	49	GB	0945.0E	0949.0	4.0D	640.0			QL=1 ST=2 TYP=6
	9300	KISV	2	S/F	0946.0	0947.0	4.7	5.0			
	410	LEAR	4	S/F	0946.0E	0948.0	3.0D	150.0			QL=1 ST=2 TYP=3
	245	SVTO	49	GB	0946.0E	0949.0	3.0D	1100.0			QL=1 ST=2 TYP=6
	950	GORK	46	C	0946.5	0947.0	2.7	10.5			
	430	KRAK	42	SER	0946.5	0949.0		200.0D			
	430	KRAK	42	SER	0946.5	0948.0	2.7	140.0			
	3100	CRIM	45	C	0946.5	0947.1	2.5	6.2	2.0		
	3100	CRIM	45	C	0946.5	0948.1		6.2			
	204	IZMI	41	F	0946.5	0949.2	3.0	1400.0			
	1470	POTS	40	F	0946.5	0947.2	2.5	21.0			
	950	GORK	46	C	0946.5	0947.8		13.5			
	234	POTS	41	F	0946.6	0949.0	3.0	3400.0			
	2950	GORK	45	C	0946.6	0948.1		8.6			
	2950	GORK	45	C	0946.6	0947.2	2.2	10.4			
	650	GORK	41	F	0946.7	0949.1		16.0			
	650	GORK	41	F	0946.7	0946.8	2.6	2.9			
	650	GORK	41	F	0946.7	0947.9		17.0			

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
11	810	KRAK	42	SER	0946.7	0946.9	2.3	104.0			
	410	SVTO	8	S	0947.0E	0948.0	2.0D	110.0			QL=1 ST=2 TYP=3
	3013	IZMI	5	S	0947.0	0947.5	1.1	11.0	6.0		
	610	LEAR	4	S/F	0952.0E	0953.0	3.0D	43.0			QL=1 ST=2 TYP=3
	950	GORK	1	S	0953.1	0953.2	1.0	5.7			
	650	GORK	8	S	0953.1	0953.3	0.5	94.0			
	650	GORK	8	S	1007.5	1007.5	0.3	45.0			
	650	GORK	3	S	1013.2	1013.3	0.1	7.5			
	204	IZMI	42	SER	1018.0	1027.5	22.0	700.0			
	9100	GORK	22	GRF	1018.6	1030.7	13.0	9.3			
	100	GORK	41	F	1019.8	1020.0	11.0	1400.0			
	100	GORK	41	F	1019.8	1030.6		900.0			
	100	GORK	41	F	1019.8	1027.7		4400.0			
	100	GORK	41	F	1019.8	1026.8		3500.0			
	3013	IZMI	41	F	1025.0	1029.5	6.0	19.0			
	5900	KISV	45	C	1025.4	1027.0	8.0	7.0			
	5900	KISV	45	C	1025.4	1030.7		7.0			
	536	ONDR	41	F	1025.5	1029.9	7.0				
	200	GORK	41	F	1025.7	1030.4		300.0			
	200	GORK	41	F	1025.7	1027.7		300.0			
	9300	KISV	2	S/F	1025.7	1026.7	2.1	7.0			
	200	GORK	41	F	1025.7	1026.9	7.0	300.0			
	610	LEAR	4	S/F	1026.0E	1029.0	6.0D	220.0			QL=1 ST=2 TYP=3
	245	LEAR	8	S	1026.0E	1027.0	1.0D	170.0			QL=1 ST=2 TYP=3
	1470	POTS	4	S/F	1026.0	1026.5	1.5	32.0			
	3100	CRIM	42	SER	1026.2	1029.1		8.2	3.0		
	950	GORK	41	F	1026.2	1026.4	5.3	108.0			
	3100	CRIM	42	SER	1026.2	1026.6	6.0	4.1			
	950	GORK	41	F	1026.2	1028.7		45.0			
	3100	CRIM	42	SER	1026.2	1030.9		3.1			
	950	GORK	41	F	1026.2	1030.9		6.4			
	650	GORK	41	F	1026.3	1029.0		170.0			
	650	GORK	41	F	1026.3	1031.4		110.0			
	2950	GORK	1	S	1026.3	1026.8	1.7	6.1			
	650	GORK	41	F	1026.3	1026.8	5.8	240.0			
	234	POTS	41	F	1026.6	1027.8	5.9	385.0			
	40	POTS	41	F	1026.8	1026.9	5.0	2300.0			
	2950	GORK	4	S/F	1028.6	1029.1	0.9	22.0			
	410	LEAR	8	S	1030.0E	1031.0	1.0D	24.0			QL=1 ST=2 TYP=3
	15000	KISV	2	S/F	1030.4	1030.6	1.8	6.0			
	2950	GORK	1	S	1030.4	1030.7	1.2	3.6			
	9300	KISV	2	S/F	1030.4	1030.7	3.1	10.0			
	9500	POTS	3	S	1030.5	1030.7	1.0	12.0			
	30	POTS	41	F	1115.5	1131.1	17.0	1100.0			
	204	IZMI	42	SER	1120.0	1136.0	16.0	1800.0			
	234	POTS	41	F	1120.0	1131.0	14.0	4200.0			
	430	KRAK	42	SER	1120.0	1138.2		22.0			
	3013	IZMI	5	S	1120.0	1120.5	1.2	5.0	3.0		
	3100	CRIM	1	S	1120.1	1120.5	0.5	2.1	0.6		
	5900	KISV	2	S/F	1120.3	1120.6	3.0	5.0			
	1470	POTS	8	S	1120.4	1120.5	0.6	11.0			
	9300	KISV	2	S/F	1120.4	1120.7	1.8	4.0			
	430	KRAK	42	SER	1120.5	1122.5	20.3	94.0			
	810	KRAK	8	S	1121.5	1121.6	0.2	5.0			
	245	SVTO	8	S	1125.0E	1125.0	1.0D	440.0			QL=1 ST=2 TYP=3
	536	ONDR	41	F	1136.9	1138.0	9.6	46.0			
	810	KRAK	41	F	1137.5	1138.4	1.2	9.0	3.0		
	9500	POTS	3	S	1225.3	1226.5	2.9	13.0			
	810	KRAK	2	S/F	1225.7	1226.0	1.5	32.0	2.0		
	430	KRAK	4	S/F	1226.0	1226.1	1.2	88.0	5.0		
	1470	POTS	3	S	1226.0	1226.8	2.3	7.0			
	245	SVTO	4	S/F	1245.0E	1247.0	3.0D	200.0			QL=1 ST=2 TYP=3
	234	POTS	41	F	1245.3	1247.1	2.8	550.0			
	245	SGMR	4	S/F	1246.0E	1248.0	3.0D	300.0			QL=1 ST=2 TYP=3
	40	POTS	41	F	1246.1	1247.4	3.9	6000.0			
	1470	POTS	3	S	1305.0	1305.7	1.4	11.0			
	810	KRAK	8	S	1331.0	1331.0	0.1	5.0			
	40	POTS	4	S/F	1337.7	1339.0	2.1	300.0			
	234	POTS	4	S/F	1337.7	1338.1	0.8	150.0			

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
11	234	POTS	4	S/F	1346.7	1347.1	0.9	125.0			
	40	POTS	4	S/F	1347.0	1347.1	0.6	160.0			
	245	SVTO	8	S	1357.0E	1358.0	1.0D	250.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1358.0E	1359.0	1.0D	420.0			QL=1 ST=2 TYP=3
	410	SGMR	8	S	1409.0E	1409.0	U	50.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1409.0E	1409.0	U	110.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1658.0E	1658.0	1.0D	340.0			QL=1 ST=3 TYP=3
	410	SGMR	8	S	1816.0E	1816.0	U	170.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1816.0E	1816.0	U	200.0			QL=1 ST=2 TYP=3
	610	SGMR	8	S	1818.0E	1818.0	1.0D	95.0			QL=1 ST=2 TYP=3
	410	PALE	8	S	2000.0E	2000.0	U	150.0			QL=1 ST=2 TYP=3
	245	PALE	8	S	2000.0E	2000.0	U	140.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	2001.0E	2001.0	1.0D	240.0			QL=1 ST=2 TYP=3
	200	HIRA	24	R	2140.0E	2450.0	580.0D	8.0	6.0		WR
	500	HIRA	42	SER	2244.9	2247.1	4.0	850.0			O
	245	LEAR	4	S/F	2245.0E	2245.0	3.0D	83.0			QL=1 ST=2 TYP=3
	410	LEAR	49	GB	2247.0E	2247.0	1.0D	690.0			QL=1 ST=2 TYP=6
	410	PALE	49	GB	2247.0E	2247.0	1.0D	850.0			QL=1 ST=2 TYP=6
12	200	GORK	44	NS	0615.0E		120.0D		5.0		
	127	TORN	44	NS	0720.0E		420.0D		50.0		V=1
	260	ONDR	44	NS	0910.0E	1227.4	250.0D	116.0			
	245	SGMR	44	NS	1229.0E	1602.0	368.0D	270.0			QL=1 ST=1 TYP=1
	245	LEAR	44	NS	2216.0E	2245.0	748.0D	49.0			QL=1 ST=2 TYP=1
	245	LEAR	8	S	0439.0E	0441.0	2.0D	76.0			QL=1 ST=2 TYP=3
	245	LEAR	8	S	0533.0E	0534.0	1.0D	100.0			QL=1 ST=2 TYP=3
	15000	KISV	22	GRF	0534.2	0536.8	44.4	16.0			
	15000	KISV	46	C	0552.7	0558.1		24.0			
	15000	KISV	46	C	0552.7	0616.4	26.0	26.0			
	15000	KISV	46	C	0552.7	0553.9		16.0			
	9100	GORK	21	GRF	0703.0	0804.2	255.0	20.0			
	15000	KISV	45	C	0720.2	0720.7	1.5	5.0			
	2950	GORK	21	GRF	0727.5	0754.0	210.0	10.0			
	3100	CRIM	20	GRF	0735.0	0736.7	63.0	8.0	4.0		
	2950	GORK	2	S/F	0735.1	0736.5	3.2	4.7			
	950	GORK	1	S	0736.5	0737.8	2.3	2.0			
	204	IZMI	41	F	0803.0	0806.0	3.0	100.0			
	650	GORK	20	GRF	0846.1	0853.4	11.5	4.0			
	650	GORK	1	S	0905.6	0906.1	1.0	1.5			
	15000	KISV	2	S/F	0912.8	0913.4	0.8	5.0			
	650	GORK	1	S	0924.5	0924.9	1.7	1.2			
	430	KRAK	42	SER	0929.7	0930.7	2.7	23.0			
	204	IZMI	42	SER	0930.0	0939.0	10.0	200.0			
	650	GORK	2	S/F	0930.4	0930.8	1.0	1.7			
	234	POTS	42	SER	0930.5	0930.6	9.5	150.0			
	40	POTS	42	SER	0930.5	0930.7	9.5	2300.0			
	100	GORK	41	F	0930.6	0931.5	8.3	220.0			
	100	GORK	41	F	0930.6	0938.6		280.0			
	245	SVTO	8	S	0938.0E	0938.0	1.0D	61.0			QL=1 ST=2 TYP=3
	5900	KISV	23	GRF	0940.6	0946.4	23.0	6.0			
	3100	CRIM	1	S	0940.8	0942.0	2.0	5.0	2.0		
	15000	KISV	20	GRF	0940.8	0945.6	9.3	7.0			
	9300	KISV	23	GRF	0940.9	0946.8	17.0	9.0			
	1470	POTS	4	S/F	0941.0	0941.5	3.0	10.0			
	950	GORK	1	S	0941.3	0942.6	2.1	2.0			
	2950	GORK	1	S	0941.4	0942.0	2.0	4.0			
	9100	GORK	1	S	1030.7	1031.3	1.1	5.8			
	536	ONDR	41	F	1031.4	1050.3	19.0	16.0			
	3013	IZMI	22	GRF	1036.0	1046.0	11.0	543.0	150.0		
	200	GORK	4	S/F	1039.0	1040.4		300.0			
	430	KRAK	41	F	1039.8	1041.0	4.0	23.0	5.0		
	430	KRAK	41	F	1039.8	1043.2		13.0			
	204	IZMI	41	F	1040.0	1041.0	2.0	300.0			
	234	POTS	42	SER	1040.2	1041.0	3.8	470.0			
	40	POTS	42	SER	1040.3	1043.4	3.5	1100.0			
	810	KRAK	8	S	1043.0	1043.0	0.1	11.0			
	650	GORK	1	S	1043.1	1043.2	0.2	7.0			
	950	GORK	3	S	1043.2	1043.3	0.2	16.0			
	204	IZMI	5	S	1118.5	1119.0	0.5	66.0	55.0		

S O L A R R A D I O E M I S S I O N

Outstanding Occurrences

DECEMBER 1988

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
12	430	KRAK	8	S	1118.5	1118.5	0.3	9.0			
	430	KRAK	8	S	1227.1	1227.6	0.5	11.0			
	234	POTS	42	SER	1227.3	1235.4	40.0	330.0			
	245	SGMR	8	S	1236.0E	1236.0	2.0D	280.0			QL=1 ST=2 TYP=3
	536	ONDR	40	F	1238.2	1238.6	1.0	80.0			
	430	KRAK	8	S	1255.5	1256.0	0.7	16.0			
	810	KRAK	8	S	1255.8	1256.2	0.5	12.0			
	245	SVTO	8	S	1301.0E	1301.0	1.0D	86.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1302.0E	1302.0	1.0D	150.0			QL=1 ST=2 TYP=3
	245	SVTO	8	S	1405.0E	1405.0	1.0D	55.0			QL=1 ST=2 TYP=3
	245	SGMR	49	GB	1420.0E	1421.0	2.0D	1200.0			QL=1 ST=2 TYP=6
	245	SVTO	49	GB	1420.0E	1420.0	1.0D	650.0			QL=1 ST=3 TYP=6
	410	PALE	49	GB	1752.0E	1752.0	U	690.0			QL=1 ST=2 TYP=6
	245	PALE	49	GB	1752.0E	1752.0	U	7700.0			QL=1 ST=2 TYP=6
	410	SGMR	49	GB	1753.0E	1753.0	U	730.0			QL=1 ST=2 TYP=6
	245	SGMR	49	GB	1753.0E	1753.0	1.0D	11000.0			QL=1 ST=2 TYP=6
	245	PALE	49	GB	2116.0E	2116.0	1.0D	1300.0			QL=1 ST=2 TYP=6
	610	PALE	8	S	2116.0E	2116.0	1.0D	73.0			QL=1 ST=2 TYP=3
	200	HIRA	24	R	2140.0E		580.0D		7.0		
	245	PALE	8	S	2147.0E	2149.0	2.0D	430.0			QL=1 ST=2 TYP=3
	410	PALE	49	GB	2148.0E	2148.0	1.0D	630.0			QL=1 ST=2 TYP=6
	410	LEAR	49	GB	2224.0E	2225.0	1.0D	670.0			QL=1 ST=2 TYP=6
	610	LEAR	8	S	2224.0E	2225.0	1.0D	160.0			QL=1 ST=2 TYP=3
	245	LEAR	49	GB	2225.0E	2225.0	U	540.0			QL=1 ST=2 TYP=6
	200	HIRA	42	SER	2225.1	2225.2	16.5	1100.0			O
	245	LEAR	8	S	2238.0E	2238.0	2.0D	65.0			QL=1 ST=2 TYP=3
	245	LEAR	8	S	2242.0E	2243.0	1.0D	93.0			QL=1 ST=2 TYP=3
13	100	GORK	44	NS	0612.0E		138.0D		10.0		
	127	TORN	43	NS	0732.0		408.0		40.0		V=1
	260	ONDR	44	NS	0840.0E	1028.7	280.0D	49.0			
	200	HIRA	44	NS	2140.0E	0100.0	580.0D	19.0	11.0		MR
	500	HIRA	46	C	0204.0	0211.6	11.5	8.0			O
	15400	LEAR	20	GRF	0205.0E	0211.0	18.0D	120.0			QL=1 ST=2 TYP=2
	8800	LEAR	4	S/F	0205.0E	0211.0	14.0D	200.0			QL=1 ST=2 TYP=5
	2695	LEAR	20	GRF	0205.0E	0211.0	11.0D	94.0			QL=1 ST=2 TYP=2
	8800	PALE	4	S/F	0207.0E	0211.0	5.0D	150.0			QL=1 ST=2 TYP=5
	4995	PALE	4	S/F	0207.0E	0211.0	7.0D	140.0			QL=1 ST=2 TYP=5
	2695	PALE	4	S/F	0207.0E	0211.0	6.0D	86.0			QL=1 ST=2 TYP=5
	15400	PALE	8	S	0208.0E	0208.0	1.0D	67.0			QL=1 ST=2 TYP=3
	245	LEAR	8	S	0211.0E	0211.0	U	75.0			QL=1 ST=2 TYP=3
	245	PALE	8	S	0211.0E	0211.0	U	80.0			QL=1 ST=2 TYP=3
	410	LEAR	8	S	0217.0E	0217.0	U	47.0			QL=1 ST=2 TYP=3
	245	LEAR	8	S	0424.0E	0424.0	1.0D	170.0			QL=1 ST=2 TYP=3
	2950	GORK	21	GRF	0654.5	0930.0	274.0	13.0			
	9100	GORK	21	GRF	0730.6	1033.3	227.0	18.6			
	3100	CRIM	3	S	1026.8	1028.0	3.0	103.0	34.0		
	8800	LEAR	8	S	1027.0E	1028.0	2.0D	220.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	1027.0E	1028.0	2.0D	160.0			QL=1 ST=2 TYP=3
	15400	LEAR	4	S/F	1027.0E	1028.0	5.0D	97.0			QL=1 ST=2 TYP=3
	245	SVTO	4	S/F	1027.0E	1027.0	3.0D	160.0			QL=1 ST=2 TYP=3
	15400	SVTO	8	S	1027.0E	1028.0	1.0D	99.0			QL=1 ST=2 TYP=3
	4995	SVTO	8	S	1027.0E	1028.0	2.0D	310.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1027.0E	1028.0	2.0D	160.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	1027.0E	1028.0	2.0D	260.0			QL=1 ST=2 TYP=3
	950	GORK	4	S/F	1027.0	1028.1	5.0	13.0			
	1470	POTS	4	S/F	1027.0	1028.1	3.5	50.0			
	3013	IZMI	5	S	1027.0	1028.5	3.0	98.0	55.0		
	100	GORK	41	F	1027.0	1027.6	7.5	20000.0			
	100	GORK	41	F	1027.0	1032.7		1100.0			
	810	KRAK	2	S/F	1027.0	1027.9	1.7	11.0	3.0		
	40	POTS	42	SER	1027.1	1029.0	8.2	28000.0			
	2950	GORK	3	S	1027.1	1028.2U	3.7	130.0			
	234	POTS	42	SER	1027.1	1028.6	8.0	80.0			
	5900	KISV	47	GB	1027.2	1028.0	3.0	437.0			
	5900	KISV	29	PBI	1027.2	1030.3	13.0	15.0			
	9100	GORK	3	S	1027.3	1028.0	3.4	250.0			
	9300	KISV	4	S/F	1027.3	1028.2	3.5	195.0			
	9300	KISV	29	PBI	1027.3	1030.9	12.0	11.0			

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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
13	650	GORK	4	S/F	1027.4	1028.5	2.2	14.0			
	204	IZMI	41	F	1027.5	1028.0	8.0	2300.0			
	9500	POTS	4	S/F	1027.5	1028.1	4.5	195.0			
	15000	KISV	4	S/F	1027.5	1028.3	2.0	82.0			
	430	KRAK	2	S/F	1027.5	1028.3	2.0	8.0	4.0		
	237	TRST	47	GB	1027.5	1027.6	0.1	1779.0			16R
	15000	KISV	29	PBI	1027.5	1029.6	13.0	17.0			
	536	ONDR	40	F	1027.6	1028.3	2.5	142.0			
	237	TRST	46	C	1027.9	1028.2	2.1	246.0			33R Spikes
	327	TRST	46	C	1027.9	1028.6	1.2	89.0			29R
	1470	POTS	1	S	1032.5	1033.0	2.0	5.0			
	536	ONDR	8	S	1124.2	1124.3	0.8	49.0			
	5900	KISV	2	S/F	1145.1	1146.2	3.5	5.0			
	9300	KISV	45	C	1145.2	1146.2		2.0			
	9300	KISV	45	C	1145.2	1148.4	3.5	8.0			
	1470	POTS	40	F	1211.5	1219.0	16.0	16.0			
	810	KRAK	1	S	1212.0	1212.6	1.0	4.0	1.0		
	100	HIRA	46	C	2351.9	2352.9	2.6	1000.0D			
	200	HIRA	46	C	2352.1	2353.5	2.1	820.0			O
	410	LEAR	8	S	2353.0E	2354.0	1.0D	26.0			QL=1 ST=2 TYP=3
	245	LEAR	49	GB	2353.0E	2353.0	2.0D	710.0			QL=1 ST=2 TYP=6
	245	PALE	49	GB	2353.0E	2353.0	1.0D	940.0			QL=1 ST=2 TYP=6
14	200	GORK	44	NS	0609.0E		180.0D		5.0		
	100	GORK	44	NS	0609.0E		325.0D		5.0		
	204	IZMI	43	NS	0700.0		300.0	15.0			
	260	ONDR	44	NS	0840.0E	1010.3	280.0D	53.0			
	200	HIRA	24	R	0140.0E	0609.0	580.0D	19.0	16.0		WR
	500	HIRA	42	SER	0216.8	0217.0	12.5	140.0			O
	100	HIRA	46	C	0357.8	0358.2	1.3	430.0			
	8800	LEAR	8	S	0509.0E	0511.0	2.0D	17.0			QL=1 ST=2 TYP=3
	610	LEAR	8	S	0509.0E	0510.0	2.0D	35.0			QL=1 ST=2 TYP=3
	500	HIRA	46	C	0509.5	0511.0	2.6	120.0			WR
	2695	LEAR	8	S	0510.0E	0511.0	1.0D	73.0			QL=1 ST=2 TYP=3
	100	GORK	8	S	0609.0	0610.5	2.0	550.0			
	950	GORK	23	GRF	0624.0E	0642.7	46.5D	9.5			
	5900	KISV	23	GRF	0627.6	0633.8	29.0	20.0			
	9300	KISV	23	GRF	0630.8	0633.9	215.0	15.0			
	9100	GORK	23	GRF	0630.9	0848.6	300.0D	23.0			
	3100	CRIM	45	C	0632.0	0634.1		15.0	5.0		
	3100	CRIM	45	C	0632.0	0633.8	4.8	10.0			
	2695	LEAR	8	S	0633.0E	0634.0	1.0D	25.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0633.0E	0633.0	1.0D	18.0			QL=1 ST=2 TYP=3
	410	LEAR	8	S	0633.0E	0634.0	1.0D	340.0			QL=1 ST=2 TYP=3
	950	GORK	2	S/F	0633.6	0634.4	1.4	5.5			
	650	GORK	4	S/F	0633.8	0634.1	0.4	16.0			
	2950	GORK	1	S	0633.8	0634.1	0.5	12.6			
	610	LEAR	8	S	0634.0E	0634.0	U	58.0			QL=1 ST=2 TYP=3
	650	GORK	45	C	0638.0	0638.4	2.4	2.2			
	650	GORK	45	C	0638.0	0639.9		3.5			
	3100	CRIM	42	SER	0638.3	0638.5	2.0	6.0	2.0		
	3100	CRIM	42	SER	0638.3	0638.5	2.0	6.0	2.0		
	3100	CRIM	42	SER	0638.3	0639.9		6.0			
	3100	CRIM	42	SER	0638.3	0639.9		6.0			
	950	GORK	2	S/F	0639.0	0639.8	1.5	6.0			
	2950	GORK	1	S	0639.4	0639.8	0.7	7.8			
	15000	KISV	2	S/F	0648.0	0648.7	2.5	8.0			
	2950	GORK	21	GRF	0654.7	0927.0	270.0D	18.0			
	5900	KISV	2	S/F	0711.7	0713.1	3.0	4.0			
	9300	KISV	2	S/F	0712.0	0712.0	2.0	5.0			
	9300	KISV	29	PBI	0759.5	0803.3	4.0	5.0			
	9300	KISV	4	S/F	0759.5	0800.9	4.0	42.0			
	5900	KISV	29	PBI	0759.7	0803.0	5.0	4.0			
	650	GORK	4	S/F	0759.7	0800.4	2.2	85.0			
	9100	GORK	2	S/F	0759.7	0800.9	2.1	33.0			
	5900	KISV	4	S/F	0759.7	0800.9	4.0	35.0			
	950	GORK	4	S/F	0759.8	0800.8	2.5	16.0			
	3013	IZMI	5	S	0800.0	0801.0	1.8	18.0	9.0		
	810	KRAK	8	S	0800.0	0801.0	1.2	14.0			

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
14	8800	LEAR	8	S	0800.0E	0800.0	1.0D	24.0			QL=1 ST=2 TYP=3
	610	LEAR	8	S	0800.0E	0800.0	U	88.0			QL=1 ST=2 TYP=3
	2950	GORK	4	S/F	0800.0	0800.7	2.3	25.0			
	15000	KISV	2	S/F	0800.1	0801.0	2.0	12.0			
	430	KRAK	8	S	0800.2	0801.0	1.0	131.0			
	3100	CRIM	1	S	0800.3	0800.9	1.0	15.0	5.0		
	408	TRST	46	C	0800.7	0800.9	0.3	115.0			2R
	15000	KISV	2	S/F	0818.5	0820.0	1.5	12.0			
	950	GORK	21	GRF	0835.3	0850.6	19.2	2.5			
	9300	KISV	29	PBI	0841.2	0848.2	17.0	8.0			
	9300	KISV	4	S/F	0841.2	0845.7	7.0	50.0			
	5900	KISV	29	PBI	0841.4	0848.3	17.5	15.0			
	5900	KISV	4	S/F	0841.4	0845.8	7.0	59.0			
	430	KRAK	42	SER	0842.0	0845.6	3.7	32.0			
	650	GORK	41	F	0842.2	0846.2		170.0			
	650	GORK	41	F	0842.2	0843.6		12.0			
	650	GORK	41	F	0842.2	0842.7	4.3	10.0			
	650	GORK	41	F	0842.2	0844.8		10.0			
	2950	GORK	4	S/F	0842.7	0845.7	4.8	23.0			
	9500	POTS	4	S/F	0843.0	0845.6	7.0	30.0			
	1470	POTS	4	S/F	0843.0	0845.7	4.5	11.0			
	9100	GORK	46	C	0843.4	0845.1	3.9	29.0			
	9100	GORK	46	C	0843.4	0845.6		34.0			
	15000	KISV	46	C	0843.6	0845.2		16.0			
	15000	KISV	45	C	0843.6	0845.6	7.5	19.0			
	100	GORK	46	C	0844.3	0845.3	3.2	170.0			
	100	GORK	46	C	0844.3	0846.6		280.0			
	950	GORK	2	S/F	0844.4	0846.3	2.4	11.0			
	810	KRAK	42	SER	0844.5	0845.8	2.7	38.0			
	2695	LEAR	8	S	0845.0E	0845.0	1.0D	29.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0845.0E	0845.0	U	18.0			QL=1 ST=2 TYP=3
	410	SVTO	8	S	0845.0E	0845.0	U	88.0			QL=1 ST=3 TYP=3
	408	TRST	46	C	0845.4	0845.5	0.3	175.0			0R
	327	TRST	46	C	0845.4	0845.5	0.3	248.0			8R
	610	SVTO	8	S	0846.0E	0846.0	U	170.0			QL=1 ST=3 TYP=3
	610	TRST	47	GB	0846.0	0846.1	0.4	691.0			8R
	245	SVTO	8	S	0847.0E	0848.0	1.0D	140.0			QL=1 ST=2 TYP=3
	15000	KISV	2	S/F	0908.7	0909.8	3.1	9.0			
	430	KRAK	41	F	1001.1	1001.5	4.0	4.0	1.0		
	5900	KISV	4	S/F	1008.2	1010.5	4.5	207.0			
	5900	KISV	29	PBI	1008.2	1012.8	9.0	6.0			
	650	GORK	29	PBI	1008.3	1012.0	6.7U	12.0			
	650	GORK	46	C	1008.3	1011.2		225.0			
	650	GORK	46	C	1008.3	1010.6	3.7	50.0			
	650	GORK	46	C	1008.3	1010.9		250.0			
	9300	KISV	29	PBI	1008.7	1013.1	10.0	7.0			
	9300	KISV	4	S/F	1008.7	1010.5U	45.0	93.0D			
	1470	POTS	4	S/F	1009.0	1010.4	11.0	85.0			
	536	ONDR	41	F	1009.5	1044.2	36.0	135.0			
	9500	POTS	4	S/F	1009.5	1010.5	11.0	251.0			
	3100	CRIM	3	S	1009.6	1010.4	2.0	63.0	11.0		
	9100	GORK	4	S/F	1009.6	1010.4	5.0	300.0			
	950	GORK	4	S/F	1009.6	1010.5	3.2	170.0			
	430	KRAK	4	S/F	1009.8	1010.1	2.7	152.0	15.0		
	2950	GORK	3	S	1009.8	1010.4	3.0	38.0			
	810	KRAK	4	S/F	1009.8	1010.5U	6.0	148.0D	11.0		
	15000	KISV	4	S/F	1009.9	1010.4	3.0	255.0			
	3013	IZMI	5	S	1010.0	1011.0	4.0	81.0	50.0		
	1415	SVTO	8	S	1010.0E	1010.0	U	93.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	1010.0E	1013.0	3.0D	280.0			QL=1 ST=2 TYP=3
	610	SVTO	8	S	1010.0E	1011.0	2.0D	210.0			QL=1 ST=2 TYP=3
	15400	SVTO	8	S	1010.0E	1010.0	2.0D	240.0			QL=1 ST=2 TYP=3
	4995	SVTO	8	S	1010.0E	1010.0	1.0D	160.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1010.0E	1010.0	U	100.0			QL=1 ST=2 TYP=3
	408	TRST	46	C	1010.2	1010.2	0.4	249.0			1R
	610	TRST	46	C	1010.2	1010.3	0.3	313.0			3R Var. Pol.
	237	TRST	27	RF	1010.2	1010.4	0.7	35.0			10R
	327	TRST	47	GB	1010.2	1010.4	0.5	669.0			1L
	610	TRST	47	GB	1011.0	1011.2	0.6	697.0			4R

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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
14	430	KRAK	42	SER	1013.0	1013.5	32.5	6.0			
	15000	KISV	3	S	1042.0	1042.7	8.0	57.0			
	9100	GORK	3	S	1042.2	1042.9	2.5	84.0	40.0		
	5900	KISV	23	GRF	1115.1	1132.8	36.0	9.0			
	9500	POTS	1	S	1116.0	1116.5	1.5	10.0			
	15000	KISV	2	S/F	1116.1	1116.5	1.5	7.0			
	430	KRAK	42	SER	1130.2	1154.7	25.0	9.0			
	204	IZMI	42	SER	1135.0	1138.5	11.0	96.0			
	15000	KISV	2	S/F	1136.9	1137.2	2.0	12.0			
	9500	POTS	3	S	1143.5	1144.0	1.5	12.0			
	9300	KISV	1	S	1143.5	1143.9	2.0	20.0			
	15000	KISV	2	S/F	1143.7	1143.8	1.0	13.0			
	1470	POTS	4	S/F	1145.0	1145.1	1.0	51.0			
	1470	POTS	4	S/F	1152.0	1154.0	3.0	12.0			
	810	KRAK	42	SER	1152.2	1154.5	2.8	118.0			
	9300	KISV	2	S/F	1152.5	1154.6	3.5	20.0			
	5900	KISV	4	S/F	1152.6	1154.5	3.0	18.0			
	9500	POTS	4	S/F	1153.5	1154.5	2.5	15.0			
	15000	KISV	45	C	1153.7	1154.5	1.5	8.0			
	536	ONDR	41	F	1154.5	1204.5	26.4	58.0			
	33	UPIC	4	S/F	1158.0	1158.7	1.6				
	234	POTS	41	F	1335.5	1341.4	6.7	2600.0			
	8800	SGMR	8	S	1336.0E	1337.0	2.0D	440.0			QL=1 ST=2 TYP=3
	15400	SGMR	49	GB	1336.0E	1337.0	3.0D	680.0			QL=1 ST=2 TYP=6
	4995	SGMR	8	S	1336.0E	1337.0	2.0D	160.0			QL=1 ST=2 TYP=3
	2695	SGMR	8	S	1336.0E	1337.0	2.0D	170.0			QL=1 ST=2 TYP=3
	610	SGMR	8	S	1336.0E	1337.0	1.0D	160.0			QL=1 ST=2 TYP=3
	4995	SVTO	8	S	1336.0E	1337.0	2.0D	180.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1336.0E	1337.0	2.0D	160.0			QL=1 ST=2 TYP=3
	1415	SVTO	8	S	1336.0E	1337.0	2.0D	110.0			QL=1 ST=2 TYP=3
	15400	SVTO	49	GB	1336.0E	1337.0	2.0D	660.0			QL=1 ST=2 TYP=6
	8800	SVTO	8	S	1336.0E	1337.0	2.0D	410.0			QL=1 ST=2 TYP=3
	610	SVTO	4	S/F	1336.0E	1337.0	5.0D	380.0			QL=1 ST=2 TYP=3
	1470	POTS	4	S/F	1336.0	1337.2	7.5	129.0			
	810	KRAK	4	S/F	1336.0	1337.5	4.5	194.0	13.0		
	9500	POTS	4	S/F	1336.0	1337.5	6.5	370.0			
	610	TRST	46	C	1336.4	1336.5	0.3	213.0			1R
	610	TRST	46	C	1336.8	1336.9	0.4	359.0			1R
	245	SGMR	49	GB	1337.0E	1341.0	4.0D	2800.0			QL=1 ST=2 TYP=7
	1415	SGMR	8	S	1337.0E	1337.0	1.0D	110.0			QL=1 ST=2 TYP=3
	410	SGMR	49	GB	1337.0E	1337.0	U	800.0			QL=1 ST=2 TYP=6
	245	SVTO	49	GB	1337.0E	1341.0	4.0D	1900.0			QL=1 ST=2 TYP=7
	410	SVTO	49	GB	1337.0E	1339.0	2.0D	670.0			QL=1 ST=2 TYP=6
	430	KRAK	8	S	1337.0	1337.5	1.0	202.0D			
	610	TRST	47	GB	1337.3	1337.6	0.6	610.0			0L Spikes
	408	TRST	47	GB	1337.4	1337.6	0.5	1740.0			0R
	327	TRST	47	GB	1337.5	1337.6	0.4	2486.0			0L
	237	TRST	46	C	1337.5	1337.7	0.5	139.0			11L Var. Pol.
	327	TRST	47	GB	1338.9	1339.6	1.3	4999.0			1L Spikes
	237	TRST	47	GB	1339.2	1341.4	2.6	3851.0			2L Fine Struct.
	245	SGMR	4	S/F	1724.0E	1731.0	8.0D	78.0			QL=1 ST=2 TYP=3
	2800	OTTA	4	S/F	1724.6	1731.7	15.1	153.6	61.0		
	410	SGMR	4	S/F	1729.0E	1733.0	9.0D	55.0			QL=1 ST=2 TYP=3
	4995	PALE	4	S/F	1729.0E	1734.0	11.0D	200.0			QL=1 ST=2 TYP=5
	8800	PALE	4	S/F	1730.0E	1733.0	6.0D	170.0			QL=1 ST=2 TYP=5
	2695	PALE	4	S/F	1730.0E	1731.0	6.0D	120.0			QL=1 ST=2 TYP=3
	2695	SGMR	4	S/F	1730.0E	1731.0	5.0D	140.0			QL=1 ST=2 TYP=3
	4995	SGMR	4	S/F	1730.0E	1731.0	6.0D	180.0			QL=1 ST=2 TYP=3
	1415	PALE	8	S	1731.0E	1733.0	2.0D	58.0			QL=1 ST=2 TYP=3
	245	PALE	8	S	1733.0E	1733.0	2.0D	70.0			QL=1 ST=3 TYP=3
	1415	SGMR	8	S	1733.0E	1733.0	1.0D	73.0			QL=1 ST=2 TYP=3
	15400	SGMR	8	S	1733.0E	1733.0	1.0D	66.0			QL=1 ST=2 TYP=3
	610	SGMR	8	S	1733.0E	1733.0	U	65.0			QL=1 ST=2 TYP=3
	2800	OTTA	29	PBI	1739.7	1739.7	160.0D	15.4	8.0		
	610	PALE	8	S	1827.0E	1827.0	U	300.0			QL=1 ST=2 TYP=3
	4995	PALE	8	S	1944.0E	1944.0	U	84.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	1944.0E	1944.0	1.0D	77.0			QL=1 ST=2 TYP=3
	4995	SGMR	8	S	1944.0E	1944.0	1.0D	90.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1944.0E	1944.0	U	70.0			QL=1 ST=2 TYP=3

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
14	500	HIRA	2	S/F	2215.3	2215.5	0.7	70.0			O
15	200	GORK	44	NS	0606.0E		180.0D		5.0		
	100	GORK	43	NS	0609.0		291.0		5.0		
	204	IZMI	43	NS	0700.0		300.0	10.0			
	127	TORN	44	NS	0750.0E		390.0D		30.0		V=0
	260	ONDR	44	NS	0840.0E	1007.6	280.0D	23.0			
	245	SGMR	43	NS	1451.0	1716.0	354.0D	71.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2140.0E	0600.0	580.0D	15.0	9.0		O
	200	HIRA	41	F	0117.5	0124.0	6.9	125.0			O
	15400	LEAR	8	S	0304.0E	0304.0	1.0D	79.0			QL=1 ST=2 TYP=3
	100	HIRA	46	C	0430.7	0435.5	7.3	490.0			
	200	HIRA	46	C	0431.0	0435.2	6.5	25.0			WR
	8800	LEAR	4	S/F	0458.0E	0503.0	16.0D	400.0			QL=1 ST=2 TYP=3
	15400	LEAR	4	S/F	0500.0E	0503.0	14.0D	240.0			QL=1 ST=2 TYP=3
	500	HIRA	46	C	0500.0	0503.0	56.5	240.0	8.0		O
	2695	LEAR	4	S/F	0501.0E	0504.0	9.0D	370.0			QL=1 ST=2 TYP=3
	610	LEAR	4	S/F	0501.0E	0503.0	9.0D	110.0			QL=1 ST=2 TYP=3
	410	LEAR	4	S/F	0502.0E	0503.0	4.0D	210.0			QL=1 ST=2 TYP=3
	200	HIRA	46	C	0502.6	0504.0	52.1	2400.0	55.0		O
	200	HIRA	46	C	0502.6	0518.5		42.0			O
	100	HIRA	48	C	0502.8		18.8	1000.0D	510.0D		
	245	LEAR	49	GB	0503.0E	0503.0	2.0D	5000.0			QL=1 ST=2 TYP=6
	245	LEAR	4	S/F	0516.0E	0517.0	23.0D	35.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0516.0E	0517.0	36.0D	18.0			QL=1 ST=2 TYP=3
	100	HIRA	27	RF	0522.2	0531.7	73.0D	130.0	50.0		SUNSET
	15400	LEAR	4	S/F	0523.0E	0531.0	28.0D	110.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0523.0E	0528.0	28.0D	51.0			QL=1 ST=2 TYP=5
	410	LEAR	8	S	0542.0E	0542.0	U	15.0			QL=1 ST=2 TYP=3
	9100	GORK	46	C	0544.0E	0555.7	21.5D	138.0			
	9100	GORK	46	C	0554.0E	0600.7		85.0			
	9100	GORK	46	C	0554.0E	0607.7		50.0			
	2950	GORK	4	S/F	0555.6E	0556.7	5.1D	91.0			
	2950	GORK	20	GRF	0600.7	0755.0	330.0D	27.0			
	100	GORK	46	C	0604.5	0606.0	5.1	400.0			
	100	GORK	46	C	0604.5	0607.5		160.0			
	9100	GORK	22	GRF	0626.7	0734.5	290.0	40.0			
	5900	KISV	23	GRF	0705.1	0738.2		13.0			
	5900	KISV	23	GRF	0705.1	0725.4	76.0	14.0			
	5900	KISV	23	GRF	0705.1	0707.5		7.0			
	3100	CRIM	1	S	0714.2	0714.9	2.0	6.0	2.0		
	9300	KISV	23	GRF	0722.8	0739.1	34.5	14.0			
	9300	KISV	23	GRF	0722.8	0723.4		11.0			
	15000	KISV	23	GRF	0722.9	0739.1		12.0			
	15000	KISV	23	GRF	0722.9	0731.5	29.0	14.0			
	15000	KISV	22	GRF	0835.0	1041.9	205.0	24.0			
	536	ONDR	40	F	1016.3	1017.0	0.8	44.0			
	15000	KISV	32	ABS	1110.0	1110.6	5.8	5.0			
	237	TRST	46	C	1111.1	1111.1	0.2	90.0			2R
	9300	KISV	45	C	1136.0	1136.5	12.5	16.0			
	15000	KISV	23	GRF	1136.0	1138.6		12.0			
	15000	KISV	23	GRF	1136.0	1136.6	10.5	41.0			
	9500	POTS	29	PBI	1136.0	1136.7	14.0	19.0			
	9300	KISV	45	C	1136.0	1139.9		14.0			
	15000	KISV	2	S/F	1140.5	1140.7	0.6	5.0			
	5900	KISV	40	F	1143.1	1143.3	0.9	3.0			
	810	KRAK	8	S	1143.4	1143.4	0.1	35.0			
	9500	POTS	3	S	1301.0	1301.4	2.3	14.0			
	810	KRAK	8	S	1401.0	1401.0	0.1	4.0			
	234	POTS	41	F	1401.6	1402.5	1.2	365.0			
	810	KRAK	8	S	1406.5	1406.5	0.1	5.0			
	8800	SGMR	4	S/F	1602.0E	1605.0	17.0D	91.0			QL=1 ST=2 TYP=3
	4995	SGMR	4	S/F	1602.0E	1605.0	17.0D	64.0			QL=1 ST=2 TYP=3
16	245	LEAR	44	NS	0527.0E	0658.0	319.0D	34.0			QL=1 ST=2 TYP=1
	100	GORK	44	NS	0606.0E		333.0D		20.0		
	200	GORK	44	NS	0609.0E		180.0D		5.0		
	260	ONDR	44	NS	0840.0E		280.0D				
	127	TORN	44	NS	0900.0E		300.0D		130.0		V=0

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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
16	245	SVTO	43	NS	1027.0	1120.0	272.0D	230.0			QL=1 ST=2 TYP=1
	410	SVTO	43	NS	1027.0	1120.0	272.0D	120.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2140.0E	0250.0	380.0D	24.0	11.0		ML
	100	HIRA	44	NS	2140.0E	0302.0	580.0D	70.0	34.0		
	245	LEAR	8	S	0121.0E	0121.0	1.0D	58.0			QL=1 ST=2 TYP=3
	500	HIRA	42	SER	0136.7	0220.5	60.0	4.0			O
	245	LEAR	8	S	0458.0E	0458.0	U	100.0			QL=1 ST=2 TYP=3
	950	GORK	23	GRF	0624.0E		300.0D				
	650	GORK	23	GRF	0627.0E		311.0D	20.0			
	5900	KISV	46	C	0648.6	0659.0		36.0			
	9300	KISV	46	C	0648.6	0651.1	27.0	84.0			
	5900	KISV	46	C	0648.6	0658.3		38.0			
	5900	KISV	46	C	0648.6	0656.3		24.0			
	9300	KISV	46	C	0648.6	0701.6		62.0			
	5900	KISV	46	C	0648.6	0701.6	15.0	40.0			
	5900	KISV	46	C	0648.6	0651.7		23.0			
	5900	KISV	29	PBI	0648.6	0703.7	20.5	29.0			
	9300	KISV	46	C	0648.6	0658.9		68.0			
	9100	GORK	46	C	0649.1	0658.0		38.0			
	9100	GORK	46	C	0649.1	0651.3	15.8	69.0			
	9100	GORK	46	C	0649.1	0701.7		40.0			
	15000	KISV	46	C	0649.5	0658.0		39.0			
	15000	KISV	46	C	0649.5	0651.2	13.0	129.0			
	15000	KISV	46	C	0649.5	0701.6		44.0			
	15000	KISV	46	C	0649.5	0650.7		96.0			
	15400	LEAR	8	S	0650.0E	0651.0	2.0D	120.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0650.0E	0651.0	2.0D	61.0			QL=1 ST=2 TYP=3
	100	GORK	46	C	0651.7	0653.2		115.0			
	100	GORK	46	C	0651.7	0652.4	2.5	115.0			
	3100	CRIM	42	SER	0656.2	0701.5		4.2			
	3100	CRIM	42	SER	0656.2	0656.5	7.0	4.9	2.0		
	3100	CRIM	42	SER	0656.2	0658.5		4.2			
	950	GORK	4	S/F	0700.1	0701.5	4.2	17.0			
	15000	KISV	29	PBI	0701.6	0702.6	10.2	18.0			
	3100	CRIM	1	S	0720.0	0720.5	1.0	4.9	2.0		
	9100	GORK	21	GRF	0751.5		210.0				
	9300	KISV	46	C	0751.8	0803.0	19.5	31.0			
	5900	KISV	46	C	0751.8	0803.0	21.0	31.0			
	5900	KISV	46	C	0751.8	0754.3		14.0			
	9300	KISV	46	C	0751.8	0754.3		15.0			
	9300	KISV	28	PRE	0751.8	0816.5	31.2	8.0			
	9300	KISV	46	C	0751.8	0801.8		28.0			
	5900	KISV	46	C	0751.8	0801.8		26.0			
	2950	GORK	45	C	0752.6	0803.1		34.0			
	2950	GORK	45	C	0752.6	0801.7	14.7	46.0			
	15000	KISV	46	C	0752.8	0803.0	18.0	24.0			
	15000	KISV	46	C	0752.8	0759.4		14.0			
	15000	KISV	46	C	0752.8	0801.7		22.0			
	3100	CRIM	1	S	0752.9	0753.1	1.5	6.8	2.0		
	650	GORK	46	C	0757.5	0803.2		56.0			
	650	GORK	46	C	0757.5	0759.5	6.2	15.0			
	650	GORK	46	C	0757.5	0801.6		9.0			
	2695	LEAR	4	S/F	0759.0E	0801.0	4.0D	53.0			QL=1 ST=2 TYP=3
	15400	LEAR	8	S	0801.0E	0803.0	2.0D	26.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0801.0E	0803.0	2.0D	25.0			QL=1 ST=2 TYP=3
	3100	CRIM	45	C	0801.0	0803.2		19.3			
	3013	IZMI	41	F	0801.0	0802.5	3.0	14.0			
	3100	CRIM	45	C	0801.0	0801.8	3.5	24.0	8.0		
	9100	GORK	2	S/F	0801.2	0803.1	3.4	20.0			
	610	LEAR	8	S	0803.0E	0803.0	U	31.0			QL=1 ST=2 TYP=3
	650	GORK	49	GB	0815.4	0919.0U		11000.0D			
	650	GORK	49	GB	0815.4	0936.1		720.0			
	650	GORK	49	GB	0815.4	0855.1		1350.0			
	650	GORK	49	GB	0815.4	0956.2		570.0			
	650	GORK	49	GB	0815.4	0834.5U	118.0	11000.0D			
	650	GORK	49	GB	0815.4	1000.9		920.0			
	650	GORK	49	GB	0815.4	0905.9		6700.0			
	234	POTS	47	GB	0820.0	0842.5	232.0	15000.0	1150.0		
	5900	KISV	47	GB	0821.8	0834.2	22.8	8117.0			

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
16	5900	KISV	29 PBI	0821.8	0844.7	213.0	660.0			
	9300	KISV	29 PBI	0823.1	0845.5	230.5	56.0			
	9300	KISV	47 GB	0823.1	0833.9	22.0	11746.0			
	1470	POTS	47 GB	0825.0	0937.0		252.0			
	610	LEAR	49 GB	0825.0E	0833.0	45.0D				QL=1 ST=2 TYP=7
	1470	POTS	47 GB	0825.0	0840.0	140.0	3360.0D			
	9500	POTS	47 GB	0825.0	0837.0U	135.0	6800.0D			
	9500	POTS	47 GB	0825.0	0849.1		253.0			
	1470	POTS	47 GB	0825.0	0856.4		2450.0			
	9500	POTS	47 GB	0825.0	0919.4		1210.0			
	1470	POTS	47 GB	0825.0	0919.4		3360.0D			
	9500	POTS	47 GB	0825.0	0905.5		427.0			
	1470	POTS	47 GB	0825.0	0909.5		775.0			
	1470	POTS	47 GB	0825.0	1001.6		2390.0			
	9500	POTS	47 GB	0825.0	0855.7		783.0			
	3100	CRIM	47 GB	0825.5	0834.0	63.0	657.0	220.0		
	3100	CRIM	30 PBI	0825.5	0930.0	70.0	14.5	5.0		
	3100	CRIM	47 GB	0825.5	0919.3		206.0			
	3100	CRIM	47 GB	0825.5	0855.5		108.0			
	9100	GORK	49 GB	0825.7	0834.0	70.0	13180.0			
	2950	GORK	47 GB	0825.7	0833.3	180.0	3770.0			
	15000	KISV	47 GB	0825.9	0834.2	17.5	16679.0			
	15000	KISV	29 PBI	0825.9	0843.5	196.5	230.0			
	8800	LEAR	49 GB	0826.0E	0834.0	24.0D	14000.0			QL=1 ST=2 TYP=7
	2695	LEAR	49 GB	0826.0E	0833.0	52.0D	3200.0			QL=1 ST=2 TYP=7
	8800	SVTO	49 GB	0826.0E	0833.0	81.0D	11000.0			QL=1 ST=2 TYP=7
	4995	SVTO	49 GB	0826.0E	0834.0	102.0D	4000.0			QL=1 ST=2 TYP=7
	2695	SVTO	49 GB	0826.0E	0833.0	111.0D	3100.0			QL=1 ST=2 TYP=7
	3013	IZMI	47 GB	0827.0	0834.0	18.0	2057.0	1600.0		
	204	IZMI	47 GB	0827.0	0839.0	35.0	5000.0	2500.0		
	15400	LEAR	49 GB	0827.0E	0833.0	33.0D	28000.0			QL=1 ST=2 TYP=7
	8400	BERN	47 GB	0827.0	0833.0	65.0	10800.0			
	3200	BERN	47 GB	0827.0	0833.0	65.0	640.0			
	19600	BERN	47 GB	0827.0	0833.0	65.0	5950.0			
	5200	BERN	47 GB	0827.0	0833.0	65.0	760.0			
	11800	BERN	47 GB	0827.0	0833.0	65.0	7120.0			
	245	SVTO	49 GB	0827.0	0912.0	61.0	1900.0			QL=1 ST=2 TYP=7
	610	SVTO	49 GB	0827.0E	0833.0	117.0D	45000.0			QL=1 ST=2 TYP=7
	410	SVTO	49 GB	0827.0E	0832.0	117.0D	18000.0			QL=1 ST=2 TYP=7
	1415	SVTO	49 GB	0827.0E	0833.0	114.0D	2200.0			QL=1 ST=2 TYP=7
	410	LEAR	49 GB	0827.0E	0837.0	139.0D	32000.0			QL=1 ST=3 TYP=7
	15400	SVTO	49 GB	0827.0E	0833.0	933.0D	33000.0			QL=1 ST=1 TYP=7
	810	KRAK	49 GB	0827.7	0937.0		659.0			
	430	KRAK	49 GB	0827.7	1002.0		940.0			
	430	KRAK	49 GB	0827.7	0832.0	216.8	202.0D	200.0D		
	810	KRAK	49 GB	0827.7	0832.0U	206.8	196.0D	110.0D		
	430	KRAK	49 GB	0827.7	1109.4		550.0			
	810	KRAK	49 GB	0827.7	1000.5		762.0D			
	810	KRAK	49 GB	0827.7	1109.6		53.0			
	610	TRST	49 GB	0827.9	0855.0	210.0	2580.0			33R
	408	TRST	49 GB	0827.9	1002.0	217.0	3550.0			57R
	408	TRST	49 GB	0827.9	0855.0	217.0	4600.0			65L
	610	TRST	49 GB	0827.9	0833.0	210.0	223000.0			24R Var. Pol.
	408	TRST	49 GB	0827.9	0905.3	217.0	4070.0			11L
	408	TRST	49 GB	0827.9	0835.5	217.0	35400.0			5R
	408	TRST	49 GB	0827.9	1110.7	217.0	895.0			48R
	408	TRST	49 GB	0827.9	0832.8	217.0	20660.0			12R Var. Pol.
	610	TRST	49 GB	0827.9	0918.9	210.0	32750.0			36L
	610	TRST	49 GB	0827.9	1000.9	210.0	2300.0			45R
	610	TRST	49 GB	0827.9	0905.9	210.0	9800.0			17L
	245	SVTO	49 GB	0828.0E	0832.0	116.0D	4200.0			QL=1 ST=2 TYP=7
	245	LEAR	49 GB	0828.0E	0830.0	138.0D	8200.0			QL=1 ST=3 TYP=7
	950	GORK	49 GB	0828.1	1001.0		208.0			
	950	GORK	49 GB	0828.1	0937.2		280.0			
	950	GORK	49 GB	0828.1	0905.3		2300.0			
	950	GORK	49 GB	0828.1	0832.3	186.0	14200.0			
	950	GORK	49 GB	0828.1	0855.4		1300.0			
	950	GORK	49 GB	0828.1	0919.4		7760.0			
	950	GORK	49 GB	0828.1	0838.5		3600.0			

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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
16	327	TRST	49	GB	0828.4	1002.0	217.0	5950.0			56R
	237	TRST	49	GB	0828.4	0912.0	217.0	2500.0			60R
	237	TRST	49	GB	0828.4	1127.1	217.0	960.0			43R
	237	TRST	49	GB	0828.4	0842.1	217.0	11100.0			40R Var. Pol.
	327	TRST	49	GB	0828.4	1127.1	217.0	810.0			45R
	237	TRST	49	GB	0828.4	1006.3	217.0	5200.0			53R
	327	TRST	49	GB	0828.4	0836.4	217.0	14200.0			7R
	327	TRST	49	GB	0828.4	0855.6	217.0	2550.0			53L
	327	TRST	49	GB	0828.4	0907.7	217.0	3885.0			26R
	237	TRST	49	GB	0828.4	1032.7	217.0	1175.0			61R
	327	TRST	49	GB	0828.4	1036.8	217.0	1060.0			59R
	327	TRST	49	GB	0828.4	0832.9	217.0	7770.0			2R Var. Pol.
	200	GORK	47	GB	0828.5	0839.2	180.0	5400.0			
	100	GORK	49	GB	0829.4	0834.6	140.0	34000.0			
	30	POTS	45	C	0834.0	0835.0U	26.0U	8000.0D			
	33	UPIC	48	C	0834.0	0835.5U	7.5				
	9300	KISV	4	S/F	0845.8	0849.0	5.0	265.0			
	5900	KISV	47	GB	0846.7	0848.0	3.3	699.0			
	15000	KISV	4	S/F	0848.1	0849.1	2.2	129.0			
	15000	KISV	47	GB	0854.5	0855.7	4.5	1528.0			
	5900	KISV	47	GB	0854.5	0855.8	4.6	1942.0			
	9300	KISV	4	S/F	0854.5	0854.9	7.5	580.0			
	204	IZMI	48	C	0858.0	1006.5	124.0	2500.0			
	536	ONDR	49	GB	0902.0E	0908.0U	15.0D				
	9300	KISV	47	GB	0902.5	0919.2U	30.5	1520.0U			
	9300	KISV	47	GB	0902.5	0905.5		321.0			
	5900	KISV	4	S/F	0902.5	0905.9	10.1	215.0			
	15000	KISV	4	S/F	0903.1	0905.3	8.5	254.0			
	5900	KISV	29	PBI	0910.0	0912.6	4.1	21.0			
	15000	KISV	29	PBI	0910.0	0911.7	3.4	8.0			
	536	ONDR	49	GB	0916.0E	0921.0U	15.3D				
	5900	KISV	47	GB	0916.7	0919.2	13.6	1092.0			
	15000	KISV	47	GB	0916.8	0919.2	16.0	866.0			
	3013	IZMI	48	C	0917.0	0919.0	16.0	302.0	150.0		
	536	ONDR	49	GB	0926.6	0936.6	10.5				
	5900	KISV	29	PBI	0930.0	0930.3	3.9	18.0			
	536	ONDR	49	GB	0950.0	1002.0U	31.0				
	3100	CRIM	20	GRF	0950.0	1005.8	24.0	25.0	8.0		
	5900	KISV	45	C	0952.6	1005.2	22.5	43.0			
	5900	KISV	45	C	0952.6	0956.4		24.0			
	536	ONDR	49	GB	1018.0	1019.3	3.7				
	650	GORK	46	C	1018.0U	1019.5	4.9D	36.0			
	650	GORK	46	C	1018.0U	1020.9		23.0			
	536	ONDR	49	GB	1032.5	1036.2	16.0				
	650	GORK	4	S/F	1032.8	1037.1	135.5	54.0			
	5900	KISV	2	S/F	1054.9	1055.8	2.0	8.0			
	536	ONDR	49	GB	1100.0	1108.1	17.0				
	9500	POTS	3	S	1100.0	1109.5	35.0	50.0			
	950	GORK	46	C	1100.5	1109.5		343.0			
	950	GORK	46	C	1100.5	1106.6	16.0	300.0			
	1470	POTS	46	C	1101.0	1109.5	59.0	520.0			
	650	GORK	46	C	1101.1	1109.7		350.0			
	650	GORK	46	C	1101.1	1105.9	15.0	290.0			
	3100	CRIM	20	GRF	1102.0	1111.0	20.0	64.0	21.0		
	5900	KISV	4	S/F	1102.6	1109.4	18.9	85.0			
	9300	KISV	4	S/F	1103.0	1109.7	18.5	71.0			
	15000	KISV	23	GRF	1103.5	1109.4	18.0	34.0			
	9100	GORK	24	R	1104.0	1109.6	12.8	59.0			
	15000	KISV	2	S/F	1117.3	1117.6	0.6	5.0			
	536	ONDR	49	GB	1118.5	1125.4	14.5				
	204	IZMI	20	GRF	1120.0	1127.0	21.0	100.0	50.0		
	15000	KISV	2	S/F	1120.3	1121.0	1.3	9.0			
	9300	KISV	2	S/F	1208.5	1209.8	3.7	6.0			
	810	KRAK	1	S	1254.2	1254.4	0.4	3.0	1.0		
	610	SGMR	8	S	1538.0E	1538.0	U	87.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1538.0E	1538.0	U	490.0			QL=1 ST=2 TYP=3
	410	SGMR	8	S	1538.0E	1539.0	2.0D	150.0			QL=1 ST=2 TYP=3
	100	HIRA	46	C	2217.0	2217.3	1.2	740.0			
	100	HIRA	42	SER	2244.9	2245.5U	7.5	1000.0D			

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
16	245	LEAR	4	S/F	2245.0E	2246.0	8.0D	230.0			QL=1 ST=2 TYP=3
	245	PALE	8	S	2245.0E	2246.0	2.0D	310.0			QL=1 ST=2 TYP=3
	610	LEAR	49	GB	2245.0E	2247.0	11.0D	690.0			QL=1 ST=2 TYP=6
	410	LEAR	49	GB	2245.0E	2247.0	11.0D	1700.0			QL=1 ST=2 TYP=6
	200	HIRA	42	SER	2245.5	2245.8	8.6	910.0			O
	500	HIRA	48	C	2245.8	2250.0		810.0			SL
	500	HIRA	48	C	2245.8	2247.5	14.3	3400.0	235.0		ML
	8800	LEAR	4	S/F	2246.0E	2246.0	4.0D	100.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	2246.0E	2246.0	3.0D	130.0			QL=1 ST=2 TYP=3
	2695	PALE	8	S	2246.0E	2246.0	1.0D	130.0			QL=1 ST=2 TYP=3
	1415	PALE	8	S	2246.0E	2246.0	1.0D	110.0			QL=1 ST=2 TYP=3
	410	PALE	49	GB	2246.0E	2247.0	9.0D	1500.0			QL=1 ST=2 TYP=6
	4995	PALE	8	S	2246.0E	2246.0	1.0D	130.0			QL=1 ST=2 TYP=3
	610	PALE	49	GB	2246.0E	2247.0	4.0D	580.0			QL=1 ST=2 TYP=6
	8800	PALE	8	S	2246.0E	2246.0	1.0D	100.0			QL=1 ST=2 TYP=3
	15400	LEAR	4	S/F	2246.0E	2246.0	10.0D	56.0			QL=1 ST=2 TYP=3
17	100	GORK	44	NS	0611.0E		319.0D		10.0		
	200	GORK	44	NS	0612.0E		180.0D		5.0		
	260	ONDR	44	NS	0840.0E	0912.0	280.0D	112.0			
	127	TORN	44	NS	0900.0E		300.0D		50.0		V=0
	245	SGMR	44	NS	1233.0E	1553.0	493.0D	170.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2140.0E	2322.0	580.0D	18.0	11.0		WL
	410	LEAR	44	NS	2154.0E	2311.0	773.0D	21.0			QL=1 ST=2 TYP=1
	245	LEAR	44	NS	2154.0E	0432.0	773.0D	46.0			QL=1 ST=2 TYP=1
	8800	LEAR	4	S/F	0345.0E	0346.0	3.0D	140.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0345.0E	0346.0	2.0D	90.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0450.0E	0451.0	2.0D	40.0			QL=1 ST=2 TYP=3
	15400	LEAR	4	S/F	0450.0E	0451.0	3.0D	170.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0457.0E	0500.0	16.0D	280.0			QL=1 ST=2 TYP=3
	15400	LEAR	4	S/F	0457.0E	0459.0	25.0D	280.0			QL=1 ST=2 TYP=5
	8800	LEAR	4	S/F	0457.0E	0504.0	29.0D	250.0			QL=1 ST=2 TYP=5
	245	LEAR	49	GB	0458.0E	0500.0	7.0D	1500.0			QL=1 ST=2 TYP=7
	410	LEAR	49	GB	0458.0E	0500.0	39.0D	6800.0			QL=1 ST=2 TYP=7
	610	LEAR	49	GB	0458.0E	0515.0	30.0D	1800.0			QL=1 ST=2 TYP=7
	100	HIRA	42	SER	0458.0	0458.9U	5.6	1000.0D			
	200	HIRA	46	C	0458.1	0520.0		18.0			WR
	200	HIRA	46	C	0458.1	0501.3	139.0D	1600.0	17.0		O
	500	HIRA	49	GB	0458.4	0515.3	48.5	5500.0	320.0		SL
	500	HIRA	49	GB	0458.4	0459.8		3100.0			SL
	100	HIRA	27	RF	0506.0	0523.0	37.0	45.0	16.0		
	5900	KISV	22	GRF	0600.0	0623.1	360.0	7.0			
	9300	KISV	22	GRF	0600.0	0845.1	360.0	21.0			
	9300	KISV	29	PBI	0602.5	0605.2	12.3	7.0			
	9300	KISV	2	S/F	0602.5	0603.5	2.6	21.0			
	15000	KISV	2	S/F	0602.9	0603.4	2.4	29.0			
	15000	KISV	2	S/F	0610.5	0611.0	0.9	3.0			
	100	HIRA	27	RF	0618.4		53.0D		30.0U		SUNSET
	100	HIRA	46	C	0621.8	0622.6	2.2	290.0			
	100	GORK	46	C	0622.5	0622.7	2.2	570.0			
	100	GORK	46	C	0622.5	0623.9		340.0			
	15000	KISV	2	S/F	0640.0	0640.3	0.6	9.0			
	9300	KISV	2	S/F	0715.1	0718.1	9.1	10.0			
	15000	KISV	46	C	0716.4	0718.3		4.0			
	15000	KISV	46	C	0716.4	0716.7		3.0			
	15000	KISV	46	C	0716.4	0717.8	4.0	4.0			
	15000	KISV	2	S/F	0746.8	0747.2	2.8	12.0			
	15000	KISV	45	C	0755.4	0756.0		2.0			
	15000	KISV	45	C	0755.4	0755.6	6.8	4.0			
	430	KRAK	42	SER	0802.0E	1229.1		19.0			
	430	KRAK	42	SER	0802.0E	1308.2		16.0			
	430	KRAK	42	SER	0802.0E	0859.5	378.0D	10.0			
	5900	KISV	22	GRF	0809.0	0817.7	54.0	14.0			
	9100	GORK	22	GRF	0815.7	0824.6	58.0	8.5			
	15000	KISV	45	C	0822.6	0823.0	1.6	4.0			
	5900	KISV	2	S/F	0824.1	0824.9	2.1	4.0			
	327	TRST	46	C	0833.7	0833.7	0.2	213.0			2R
	237	TRST	2	S/F	0833.7	0833.8	0.1	182.0			5R
	15000	KISV	2	S/F	0843.0	0843.4	0.6	3.0			

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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
17	5900	KISV	1	S	0844.0	0844.4	0.7	7.0			
	5900	KISV	2	S/F	0857.3	0858.8	2.6	6.0			
	810	KRAK	8	S	0857.7	0858.0	0.5	6.0			
	408	TRST	46	C	0859.2	0859.4	0.4	139.0			34R Spikes
	15000	KISV	45	C	0905.4	0906.7	4.3	5.0			
	15000	KISV	45	C	0905.4	0907.8		4.0			
	9300	KISV	2	S/F	0906.1	0906.4	1.1	5.0			
	15000	KISV	45	C	0915.5	0915.9	0.8	4.0			
	408	TRST	2	S/F	0915.7	0915.7	0.1	158.0			5R
	327	TRST	47	GB	0915.7	0915.7	0.2	4856.0			0L
	15000	KISV	2	S/F	0922.9	0923.3	0.8	6.0			
	327	TRST	41	F	0935.9	0936.7	0.9	136.0			64R Spikes
	9300	KISV	20	GRF	0940.8	0949.8	11.9	8.0			
	15000	KISV	22	GRF	0941.0	1014.4	102.0	6.0			
	5900	KISV	2	S/F	0947.9	0948.8	3.9	4.0			
	15000	KISV	2	S/F	1004.5	1005.0	17.0	16.0			
	9100	GORK	2	S/F	1010.6	1012.5	3.0	12.8			
	9500	POTS	42	SER	1012.0	1023.5	13.0	17.0			
	15000	KISV	2	S/F	1012.2	1012.6	1.0	22.0			
	9300	KISV	2	S/F	1012.3	1012.6	0.7	11.0			
	5900	KISV	2	S/F	1012.4	1012.6	0.8	6.0			
	15000	KISV	2	S/F	1013.2	1013.5	0.6	2.0			
	9300	KISV	20	GRF	1027.3	1027.6	8.6	7.0			
	327	TRST	47	GB	1028.4	1028.5	0.2	861.0			5R
	408	TRST	42	SER	1029.6	1029.6	0.1	199.0			11R
	536	ONDR	8	S	1030.3	1030.4	0.3	20.0			
	15000	KISV	46	C	1037.6	1038.6	2.0	4.0			
	15000	KISV	46	C	1049.6	1050.6	2.2	3.0			
	5900	KISV	45	C	1050.3	1051.0	1.5	3.0			
	5900	KISV	2	S/F	1109.8	1111.7	2.2	5.0			
	5900	KISV	22	GRF	1120.5	1129.2	25.0	7.0			
	5900	KISV	2	S/F	1129.5	1129.7	0.3	3.0			
	5900	KISV	40	F	1135.5	1136.5		3.0			
	5900	KISV	40	F	1135.5	1135.7	1.4	4.0			
	15000	KISV	1	S	1136.4	1136.5	0.2	24.0			
	9300	KISV	2	S/F	1141.5	1141.7	0.6	5.0			
	9300	KISV	1	S	1142.4	1142.5	0.2	14.0			
	9500	POTS	3	S	1245.0	1245.4	2.0	19.0			
	810	KRAK	4	S/F	1307.0	1308.6	4.0	18.0	5.0		
	245	SGMR	8	S	1520.0E	1520.0	U	87.0			QL=1 ST=2 TYP=3
	245	SGMR	49	GB	1629.0E	1630.0	3.0D	1900.0			QL=1 ST=2 TYP=6
	410	SGMR	49	GB	1629.0E	1630.0	2.0D	3100.0			QL=1 ST=2 TYP=6
	2800	OTTA	3	S	1629.4	1630.7	5.6	97.4	39.0		
	4995	SGMR	8	S	1630.0E	1630.0	1.0D	72.0			QL=1 ST=2 TYP=3
	610	SGMR	49	GB	1630.0E	1630.0	1.0D	990.0			QL=1 ST=2 TYP=6
	2695	SGMR	8	S	1630.0E	1630.0	1.0D	83.0			QL=1 ST=2 TYP=3
	1415	SGMR	8	S	1630.0E	1630.0	1.0D	280.0			QL=1 ST=2 TYP=3
18	200	GORK	44	NS	0612.0E		180.0D		5.0		
	100	GORK	44	NS	0615.0E		315.0D		5.0		
	204	IZMI	43	NS	0700.0		300.0	15.0			
	245	SVTO	44	NS	0703.0E	0818.0	476.0D	53.0			QL=1 ST=2 TYP=1
	410	SVTO	44	NS	0717.0E	1308.0	361.0D	43.0			QL=1 ST=2 TYP=1
	260	ONDR	44	NS	0840.0E	0913.0	280.0D				
	127	TORN	44	NS	0900.0E		300.0D		30.0		V=1
	245	SGMR	43	NS	1234.0	1635.0	492.0D	170.0			QL=1 ST=2 TYP=1
	410	SGMR	43	NS	1717.0	1858.0	209.0D	110.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	1723.0E	1733.0	159.0D	130.0			QL=1 ST=2 TYP=1
	610	SGMR	43	NS	1729.0	1910.0	197.0D	340.0			QL=1 ST=2 TYP=1
	410	PALE	44	NS	1827.0E	1940.0	178.0D	76.0			QL=1 ST=2 TYP=1
	610	PALE	44	NS	1827.0E	1912.0	178.0D	410.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2140.0E		580.0D		18.0		
	100	HIRA	44	NS	2140.0E		580.0D		30.0		
	610	LEAR	44	NS	2154.0E	2242.0	773.0D	43.0			QL=1 ST=2 TYP=1
	245	LEAR	44	NS	2154.0E	2257.0	773.0D	130.0			QL=1 ST=2 TYP=1
	410	LEAR	44	NS	2154.0E	2319.0	773.0D	60.0			QL=1 ST=2 TYP=1
	410	PALE	44	NS	2312.0E	0027.0	264.0D	60.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	2312.0E	2333.0	264.0D	83.0			QL=1 ST=2 TYP=1
	5900	KISV	22	GRF	0600.0	1033.2	366.0	12.0			

S O L A R R A D I O E M I S S I O N

Outstanding Occurrences

DECEMBER 1988

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
18	15000	KISV	22	GRF	0600.0	0811.4	248.0	11.0			
	9300	KISV	25	R	0620.6	0625.1		8.0			
	9300	KISV	25	R	0620.6	0622.1		6.0			
	9300	KISV	25	R	0620.6	0621.1		7.0			
	9300	KISV	25	R	0620.6	0624.2		7.0			
	9300	KISV	25	R	0620.6	0623.3		6.0			
	9300	KISV	25	R	0620.6	0622.6		5.0			
	9300	KISV	25	R	0620.6	0809.6	345.4	13.0			
	9300	KISV	46	C	0633.9	0635.4		3.0			
	9300	KISV	46	C	0633.9	0634.6		6.0			
	9300	KISV	46	C	0633.9	0635.8	5.5	7.0			
	5900	KISV	45	C	0634.4	0635.5	1.8	9.0U			
	5900	KISV	45	C	0634.4	0634.6		3.0U			
	15000	KISV	1	S	0644.5	0644.6	0.5	9.0			
	650	GORK	21	GRF	0723.7	0758.5	207.0	9.0			
	15000	KISV	2	S/F	0753.1	0753.3	0.3	3.0			
	430	KRAK	42	SER	0802.0E	0837.0		21.0			
	430	KRAK	42	SER	0802.0E	0812.0	347.0D	20.0			
	430	KRAK	42	SER	0802.0E	1154.7		48.0			
	430	KRAK	42	SER	0802.0E	1306.8		11.0			
	9100	GORK	1	S	0820.4	0821.0	1.4	6.0			
	5900	KISV	2	S/F	0820.4	0820.9	1.7	5.0			
	9300	KISV	2	S/F	0820.6	0820.9	1.4	6.0			
	15000	KISV	2	S/F	0836.7	0836.9	0.6	3.0			
	950	GORK	21	GRF	0838.3	0949.7	142.0	7.7			
	15000	KISV	2	S/F	0843.0	0843.1	0.5	5.0			
	1470	POTS	42	SER	0901.0	0914.5	24.0	29.0			
	950	GORK	41	F	0902.2	0903.0	2.0	7.0			
	950	GORK	41	F	0902.2	0903.8		5.4			
	100	GORK	46	C	0903.3	0904.0		1300.0			
	100	GORK	46	C	0903.3	0903.7	1.3	1000.0			
	9500	POTS	42	SER	0907.7	0914.4	23.0	59.0			
	5900	KISV	28	PRE	0907.8	0911.1	3.6	3.0			
	15000	KISV	28	PRE	0908.4	0911.9	3.5	1.0			
	9300	KISV	46	C	0909.8	0918.2		32.0			
	9300	KISV	46	C	0909.8	0913.3		65.0			
	9300	KISV	22	GRF	0909.8	0935.3		6.0			
	9300	KISV	46	C	0909.8	0914.3	12.3	71.0			
	9300	KISV	46	C	0909.8	0917.5		15.0			
	9300	KISV	22	GRF	0909.8	0923.5	31.3	7.0			
	9300	KISV	46	C	0909.8	0918.8		21.0			
	8800	SVTO	4	S/F	0911.0E	0913.0	5.0D	60.0			QL=1 ST=2 TYP=3
	5900	KISV	29	PBI	0911.5	0920.0	22.4	7.0			
	5900	KISV	46	C	0911.5	0918.2		35.0			
	5900	KISV	46	C	0911.5	0913.3	8.6	84.0			
	5900	KISV	46	C	0911.5	0914.3		49.0			
	5900	KISV	46	C	0911.5	0917.5		14.0			
	5900	KISV	46	C	0911.5	0918.9		23.0			
	15000	KISV	46	C	0911.9	0914.3	9.1	78.0			
	15000	KISV	46	C	0911.9	0918.3		15.0			
	15000	KISV	46	C	0911.9	0913.3		67.0			
	245	SVTO	8	S	0912.0E	0913.0	2.0D	300.0			QL=1 ST=2 TYP=3
	610	SVTO	4	S/F	0912.0E	0914.0	3.0D	130.0			QL=1 ST=2 TYP=3
	15400	SVTO	4	S/F	0912.0E	0914.0	3.0D	60.0			QL=1 ST=3 TYP=3
	2695	SVTO	4	S/F	0912.0E	0913.0	3.0D	70.0			QL=1 ST=2 TYP=3
	9100	GORK	21	GRF	0912.0	0925.1	103.0	10.0			
	11800	BERN	4	S/F	0912.0	0914.3	9.0	74.0			
	8400	BERN	4	S/F	0912.0	0914.3	9.0	62.0			
	5200	BERN	4	S/F	0912.0	0913.4	9.0	60.0			
	430	KRAK	4	S/F	0912.0	0913.8		232.0D			
	430	KRAK	4	S/F	0912.0	0912.9	3.7	232.0D	17.0		
	2950	GORK	29	PBI	0912.1	0915.0	46.0	11.7			
	2950	GORK	3	S	0912.1	0913.5	2.9	75.0			
	9100	GORK	46	C	0912.2	0918.3		25.0			
	3200	BERN	4	S/F	0912.2	0913.4	9.0	54.0			
	9100	GORK	46	C	0912.2	0914.5		59.0			
	9100	GORK	46	C	0912.2	0913.5	7.7	59.0			
	536	ONDR	47	GB	0912.3E	0919.0	12.0D	149.0			
	650	GORK	46	C	0912.3	0914.3	12.8	170.0			

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
18	650	GORK	46	C	0912.3	0918.4		670.0			
	650	GORK	46	C	0912.3	0917.6		180.0			
	810	KRAK	7	C	0912.5	0913.1	3.4	43.0	12.0		
	810	KRAK	7	C	0912.5	0914.4		52.0			
	234	POTS	42	SER	0912.5	0913.5	7.5	330.0			
	950	GORK	4	S/F	0912.8	0914.5	2.5	119.0			
	3013	IZMI	5	S	0913.0	0914.0	7.0	49.0	35.0		
	410	SVTO	8	S	0913.0E	0913.0	1.0D	170.0			QL=1 ST=2 TYP=3
	4995	SVTO	8	S	0913.0E	0913.0	2.0D	80.0			QL=1 ST=2 TYP=3
	204	IZMI	41	F	0913.0	0918.5	13.0	420.0			
	100	GORK	41	F	0913.5	0924.0		170.0			
	100	GORK	41	F	0913.5	0913.7	10.5	220.0			
	100	GORK	41	F	0913.5	0921.8		220.0			
	3100	CRIM	30	PBI	0913.7	0917.0	13.0	3.0	1.0		
	3100	CRIM	3	S	0913.7	0913.8	3.0	42.0	14.0		
	810	KRAK	45	C	0916.0	0918.0	8.2	260.0D	47.0		
	810	KRAK	45	C	0916.0	0918.9		260.0D			
	245	SVTO	8	S	0917.0E	0918.0	1.0D	83.0			QL=1 ST=2 TYP=3
	430	KRAK	4	S/F	0917.0	0921.4		162.0			
	430	KRAK	4	S/F	0917.0	0918.6	7.0	131.0	34.0		
	950	GORK	4	S/F	0917.4	0919.1	2.7	135.0			
	3100	CRIM	1	S	0918.2	0918.3	2.0	4.0	1.3		
	410	SVTO	8	S	0919.0E	0920.0	1.0D	57.0			QL=1 ST=2 TYP=3
	5900	KISV	45	C	0922.1	0923.8	2.3	4.0			
	5900	KISV	2	S/F	0931.6	0931.9	0.6	3.0			
	9300	KISV	2	S/F	0946.9	0948.1	3.5	6.0			
	5900	KISV	46	C	0947.6	0948.4	1.7	3.0			
	9300	KISV	23	GRF	0951.4	0957.1	67.4	13.0			
	5900	KISV	2	S/F	0955.8	0957.0	2.0	12.0			
	5900	KISV	29	PBI	0955.8	0957.8	5.3	4.0			
	9500	POTS	3	S	0956.5	0957.1	3.5	12.0			
	204	IZMI	8	S	1003.0	1003.2	0.2	114.0	95.0		
	1470	POTS	4	S/F	1017.5	1019.2	4.5	15.0			
	810	KRAK	7	C	1017.5	1018.5	4.0	16.0	4.0		
	650	GORK	46	C	1017.6	1020.3		14.0			
	650	GORK	46	C	1017.6	1018.5	3.4	21.0			
	950	GORK	4	S/F	1017.8	1020.0	2.6	17.5			
	430	KRAK	7	C	1020.0	1020.3	0.8	22.0	10.0		
	2950	GORK	22	GRF	1024.5	1036.1	34.0	26.0			
	5900	KISV	45	C	1024.6	1025.0		4.0			
	5900	KISV	45	C	1024.6	1025.9	2.1	9.0			
	5900	KISV	28	PRE	1034.5	1035.6	1.1	1.0			
	9300	KISV	28	PRE	1034.6	1035.6	1.9	1.0			
	9300	KISV	29	PBI	1035.1	1037.1	6.0	5.0			
	9300	KISV	4	S/F	1035.6	1036.1	1.5	77.0			
	9100	GORK	3	S	1035.6	1036.2	1.6	60.0			
	5900	KISV	29	PBI	1035.6	1037.2	4.8	10.0			
	5900	KISV	4	S/F	1035.6	1036.2	1.6	67.0			
	15000	KISV	2	S/F	1035.7	1036.2	0.7	18.0			
	15000	KISV	29	PBI	1035.7	1036.4	2.4	5.0			
	3100	CRIM	1	S	1035.9	1036.2	1.0	8.3	3.0		
	9500	POTS	3	S	1035.9	1036.2	3.1	48.0			
	3013	IZMI	5	S	1036.0	1036.5	1.2	15.0	10.0		
	5900	KISV	26	FAL	1050.0	1050.3	2.4	5.0			
	5900	KISV	45	C	1112.0	1119.4		13.0			
	5900	KISV	45	C	1112.0	1123.8	12.8	17.0			
	9500	POTS	20	GRF	1114.0	1121.0	46.0	12.0			
	9300	KISV	22	GRF	1118.7	1123.7	28.3	9.0			
	1470	POTS	4	S/F	1232.5	1235.7	9.5	29.0			
	9500	POTS	20	GRF	1233.5	1243.2	27.0	17.0			
	430	KRAK	4	S/F	1233.7	1235.5	5.0	91.0	32.0		
	810	KRAK	4	S/F	1233.8	1235.5	3.4	45.0	19.0		
	410	SVTO	8	S	1234.0E	1235.0	2.0D	50.0			QL=1 ST=2 TYP=3
	536	ONDR	45	C	1236.4	1238.2	4.5	124.0			
	9500	POTS	3	S	1346.7	1347.5	17.0	23.0			
	410	SGMR	49	GB	1634.0E	1636.0	5.0D	35000.0			QL=1 ST=2 TYP=6
	2800	OTTA	4	S/F	1635.0	1636.4	8.0	132.3	66.0		
	8800	SGMR	4	S/F	1635.0E	1636.0	3.0D	220.0			QL=1 ST=2 TYP=3
	2695	SGMR	4	S/F	1635.0E	1636.0	5.0D	120.0			QL=1 ST=2 TYP=3

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
18	4995	SGMR	4	S/F	1635.0E	1636.0	5.0D	160.0			QL=1 ST=2 TYP=3
	245	SGMR	49	GB	1635.0E	1636.0	5.0D	7400.0			QL=1 ST=2 TYP=6
	15400	SGMR	8	S	1635.0E	1636.0	2.0D	99.0			QL=1 ST=2 TYP=3
	610	SGMR	4	S/F	1635.0E	1636.0	4.0D	220.0			QL=1 ST=2 TYP=3
	1415	SGMR	4	S/F	1635.0E	1637.0	3.0D	110.0			QL=1 ST=2 TYP=3
	2800	OTTA	4	S/F	1707.0	1712.3	94.0	353.0	105.0		
	1415	SGMR	4	S/F	1707.0E	1717.0	10.0D	440.0			QL=1 ST=2 TYP=5
	610	SGMR	49	GB	1708.0E	1709.0	21.0D	550.0			QL=1 ST=2 TYP=6
	4995	SGMR	4	S/F	1709.0E	1712.0	9.0D	440.0			QL=1 ST=2 TYP=3
	2695	SGMR	4	S/F	1709.0E	1712.0	8.0D	370.0			QL=1 ST=2 TYP=3
	8800	SGMR	4	S/F	1709.0E	1712.0	37.0D	290.0			QL=1 ST=2 TYP=3
	410	SGMR	4	S/F	1710.0E	1711.0	7.0D	390.0			QL=1 ST=2 TYP=3
	245	SGMR	49	GB	1710.0E	1716.0	22.0D	580.0			QL=1 ST=2 TYP=7
	15400	SGMR	4	S/F	1710.0E	1712.0	31.0D	140.0			QL=1 ST=2 TYP=3
	245	PALE	4	S/F	1723.0E	1725.0	6.0D	240.0			QL=1 ST=2 TYP=3
	410	PALE	8	S	1723.0E	1725.0	2.0D	78.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1748.0E	1749.0	1.0D	54.0			QL=1 ST=2 TYP=3
	1415	SGMR	8	S	1759.0E	1759.0	1.0D	130.0			QL=1 ST=2 TYP=3
	1415	SGMR	8	S	1805.0E	1805.0	U	170.0			QL=1 ST=2 TYP=3
	610	SGMR	20	GRF	1805.0E	1817.0	14.0D	170.0			QL=1 ST=2 TYP=2
	410	SGMR	20	GRF	1810.0E	1817.0	9.0D	78.0			QL=1 ST=2 TYP=2
	610	PALE	20	GRF	1810.0E	1819.0	16.0D	140.0			QL=1 ST=2 TYP=2
	410	PALE	8	S	1817.0E	1817.0	U	52.0			QL=1 ST=2 TYP=3
	200	HIRA	27	RF	2212.0	2300.0	318.0	126.0	38.0		WL
	100	HIRA	27	RF	2238.0	2603.0	390.0	310.0	91.0		
	500	HIRA	27	RF	2239.0	2257.5	360.0	30.0	14.0		WL
	100	HIRA	46	C	2241.0	2242.9	5.3	740.0			
19	200	GORK	44	NS	0606.0E		180.0D		5.0		
	100	GORK	44	NS	0606.0E		324.0D		5.0		
	245	SVTO	44	NS	0632.0E	1358.0	508.0D	140.0			QL=1 ST=2 TYP=1
	204	IZMI	43	NS	0700.0		300.0	15.0			
	260	ONDR	44	NS	0840.0E	1056.0	280.0D	39.0			
	127	TORN	44	NS	0900.0E		300.0D		50.0		V=1
	410	SVTO	44	NS	1150.0E	1334.0	190.0D	19.0			QL=1 ST=2 TYP=1
	245	SGMR	43	NS	1234.0	1416.0	493.0D	130.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2140.0E	0330.0	580.0D	11.0	8.0		O
	500	HIRA	42	SER	0015.5	0046.5	64.0	80.0			ML
	410	LEAR	4	S/F	0041.0E	0046.0	14.0D	100.0			QL=1 ST=2 TYP=3
	610	LEAR	4	S/F	0042.0E	0047.0	10.0D	46.0			QL=1 ST=2 TYP=3
	200	HIRA	46	C	0045.1	0046.9	6.0	240.0	75.0		WR
	245	LEAR	4	S/F	0046.0E	0047.0	6.0D	97.0			QL=1 ST=2 TYP=3
	245	PALE	4	S/F	0046.0E	0047.0	3.0D	84.0			QL=1 ST=2 TYP=3
	610	PALE	8	S	0047.0E	0047.0	U	57.0			QL=1 ST=2 TYP=3
	245	PALE	8	S	0047.0E	0047.0	1.0D	130.0			QL=1 ST=2 TYP=3
	610	LEAR	8	S	0215.0E	0217.0	2.0D	290.0			QL=1 ST=2 TYP=3
	500	HIRA	46	C	0215.4	0217.0	5.5	145.0			O
	410	LEAR	8	S	0216.0E	0217.0	1.0D	40.0			QL=1 ST=2 TYP=3
	610	PALE	8	S	0216.0E	0217.0	1.0D	190.0			QL=1 ST=2 TYP=3
	9300	KISV	25	R	0630.6	0730.0		15.0			
	9300	KISV	25	R	0630.6	1103.0	342.4	17.0			
	9300	KISV	25	R	0630.6	0638.2		7.0			
	5900	KISV	25	R	0630.7	1026.0	334.3	21.0			
	5900	KISV	25	R	0630.7	0631.7		3.0			
	15000	KISV	25	R	0631.2	1038.1	328.8	15.0			
	15000	KISV	25	R	0631.2	0631.6		3.0			
	15000	KISV	45	C	0730.9	0731.2		1.0			
	15000	KISV	45	C	0730.9	0730.9	0.6	2.0			
	5900	KISV	45	C	0731.3	0732.2	1.1	2.0			
	5900	KISV	45	C	0731.3	0731.9		1.0			
	204	IZMI	8	S	0803.5	0803.6	0.2	180.0	170.0		
	9300	KISV	2	S/F	0836.1	0836.4	1.6	4.0			
	15000	KISV	2	S/F	0845.7	0847.0	2.2	2.0			
	15000	KISV	2	S/F	0853.3	0853.8	1.0	3.0			
	9300	KISV	2	S/F	0903.8	0903.9	0.3	33.0			
	9300	KISV	20	GRF	0942.0	0952.5	16.4	4.0			
	430	KRAK	42	SER	0942.2	1215.5	213.0	92.0			
	650	GORK	1	S	0942.4	0942.7	0.5	2.5			
	15000	KISV	1	S	1010.2	1014.1	5.8	4.0			

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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
19	5900	KISV	45	C	1012.0	1014.5	3.8	11.0			
	5900	KISV	45	C	1012.0	1013.5		11.0			
	2950	GORK	1	S	1012.1	1013.6	4.2	8.4			
	9300	KISV	2	S/F	1012.2	1014.4	3.6	11.0			
	3100	CRIM	1	S	1012.6	1013.5	2.0	4.3	1.5		
	5900	KISV	45	C	1022.0	1023.3	1.5	2.0			
	5900	KISV	45	C	1022.0	1022.8		2.0			
	5900	KISV	22	GRF	1054.0	1100.7	28.0	7.0			
	536	ONDR	42	SER	1058.8	1059.0	12.0	61.0			
	100	GORK	8	S	1117.3	1117.3	0.4	1150.0			
	5900	KISV	25	R	1139.0	1201.0	26.0	9.0			
	9300	KISV	23	GRF	1147.9	1159.9	24.7	12.0			
	410	SGMR	8	S	1743.0E	1743.0	U	77.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1959.0E	1959.0	1.0D	110.0			QL=1 ST=2 TYP=3
20	100	GORK	44	NS	0614.0E		316.0D		5.0		
	200	GORK	44	NS	0615.0E		180.0D		5.0		
	410	SVTO	44	NS	0633.0E	1245.0	507.0D	72.0			QL=1 ST=2 TYP=1
	245	SVTO	44	NS	0633.0E	0949.0	507.0D	57.0			QL=1 ST=2 TYP=1
	204	IZMI	43	NS	0700.0		300.0	15.0			
	260	ONDR	44	NS	0850.0E	1222.0U	270.0D				
	127	TORN	44	NS	0900.0E		120.0D		45.0		V=1
	245	SGMR	43	NS	1551.0	1753.0	296.0D	120.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	1724.0E	1753.0	613.0D	130.0			QL=1 ST=2 TYP=1
	100	HIRA	44	NS	2145.0E	0245.0	580.0D	85.0	48.0		
	200	HIRA	44	NS	2145.0E	0546.0	580.0D	43.0	31.0		O
	410	LEAR	44	NS	2155.0E	0721.0	670.0D	18.0			QL=1 ST=2 TYP=1
	245	LEAR	43	NS	2155.0	0009.0	773.0	110.0			QL=1 ST=2 TYP=1
	500	HIRA	42	SER	0150.0	0201.5	31.0	14.0			O
	2695	LEAR	4	S/F	0155.0E	0202.0	9.0D	97.0			QL=1 ST=2 TYP=5
	200	HIRA	42	SER	0155.4	0217.2	27.0	28.0			O
	610	LEAR	4	S/F	0159.0E	0159.0	3.0D	30.0			QL=1 ST=2 TYP=3
	245	LEAR	4	S/F	0159.0E	0200.0	4.0D	21.0			QL=1 ST=2 TYP=3
	410	LEAR	4	S/F	0159.0E	0202.0	4.0D	29.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0159.0E	0202.0	8.0D	85.0			QL=1 ST=2 TYP=3
	15400	LEAR	4	S/F	0200.0E	0202.0	8.0D	59.0			QL=1 ST=2 TYP=3
	100	HIRA	42	SER	0200.0U	0202.0	24.4D	720.0			
	8800	LEAR	4	S/F	0214.0E	0217.0	6.0D	56.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0214.0E	0217.0	6.0D	94.0			QL=1 ST=2 TYP=3
	410	LEAR	4	S/F	0215.0E	0217.0	4.0D	32.0			QL=1 ST=2 TYP=3
	245	LEAR	4	S/F	0215.0E	0217.0	4.0D	130.0			QL=1 ST=2 TYP=3
	610	LEAR	4	S/F	0215.0E	0217.0	5.0D	15.0			QL=1 ST=2 TYP=3
	245	PALE	8	S	0216.0E	0217.0	2.0D	150.0			QL=1 ST=2 TYP=3
	1415	PALE	8	S	0216.0E	0216.0	1.0D	80.0			QL=1 ST=2 TYP=3
	4995	PALE	8	S	0216.0E	0217.0	2.0D	120.0			QL=1 ST=2 TYP=3
	2695	PALE	8	S	0217.0E	0217.0	1.0D	97.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0217.0E	0217.0	U	69.0			QL=1 ST=2 TYP=3
	2950	GORK	20	GRF	0734.5	0743.5	55.0	11.5			
	650	GORK	4	S/F	0749.8	0750.2	0.8	38.0			
	950	GORK	4	S/F	0749.8	0750.3	1.1	51.0			
	950	GORK	1	S	0843.4	0843.9	4.1	4.8			
	650	GORK	2	S/F	0849.1	0850.5	4.3	6.0			
	2950	GORK	20	GRF	0854.1	0930.0	140.0	18.5			
	5900	KISV	23	GRF	0854.2	0856.6	65.0	20.0			
	5900	KISV	23	GRF	0854.2	0914.7		14.0			
	3100	CRIM	20	GRF	0854.6	0855.9	5.0	7.5	2.4		
	9300	KISV	23	GRF	0854.7	0855.6	37.0	15.0			
	9300	KISV	23	GRF	0854.7	0914.7		11.0			
	9100	GORK	20	GRF	0854.8	0855.6	143.0	14.0			
	245	SVTO	8	S	0905.0E	0905.0	1.0D	61.0			QL=1 ST=2 TYP=3
	810	KRAK	2	S/F	0914.4	0914.4	0.5	18.0	3.0		
	810	KRAK	8	S	0946.9	0947.0	0.3	7.0			
	9300	KISV	22	GRF	0947.8	0950.7	9.5	11.0			
	950	GORK	4	S/F	0948.0	0949.9	5.9	14.0			
	1470	POTS	4	S/F	0948.3	0950.3	6.7	22.0			
	5900	KISV	2	S/F	0948.5	0950.6	5.0	7.0			
	3100	CRIM	20	GRF	0949.1	0950.4	4.0	6.2	2.0		
	100	GORK	41	F	0949.7	0952.6		60.0			
	100	GORK	41	F	0949.7	0949.9	3.6	500.0			

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
20	810	KRAK	8	S	1051.7	1052.0	0.5	7.0			
	5900	KISV	45	C	1122.0	1127.1		14.0			
	5900	KISV	45	C	1122.0	1124.6	18.5	39.0			
	9300	KISV	45	C	1122.3	1127.1		13.0			
	9300	KISV	45	C	1122.3	1124.6	19.0	27.0			
	1470	POTS	1	S	1123.0	1124.5	3.5	5.0			
	9500	POTS	29	PBI	1123.6	1124.5	16.0	21.0			
	2950	GORK	3	S	1123.9	1124.3	2.0	16.8			
	9100	GORK	1	S	1123.9	1124.5	3.3	27.0			
	3013	IZMI	5	S	1124.0	1124.5	3.0	20.0	10.0		
	3100	CRIM	28	PRE	1206.5	1209.0	11.0	8.6	3.0		
	2695	SVTO	49	GB	1207.0E	1218.0	713.0D	690.0			QL=1 ST=1 TYP=6
	610	TRST	47	GB	1216.3	1219.7	9.1	953.0			4R Fine Struct.
	327	TRST	46	C	1216.5	1221.2	9.9	367.0			2L
	408	TRST	46	C	1216.5	1220.4	9.9	482.0			0R
	237	TRST	49	GB	1216.5	1224.6	9.9	3978.0			5L
	237	TRST	49	GB	1216.5	1220.8	9.9	4551.0			1L Fine Struct.
	1415	SVTO	49	GB	1217.0E	1218.0	26.0D	800.0			QL=1 ST=2 TYP=7
	410	SVTO	49	GB	1217.0E	1220.0	33.0D	410.0			QL=1 ST=2 TYP=7
	2695	SVTO	49	GB	1217.0E	1218.0	31.0D	690.0			QL=1 ST=2 TYP=7
	8800	SVTO	49	GB	1217.0E	1228.0	35.0D	2500.0			QL=1 ST=2 TYP=7
	4995	SVTO	49	GB	1217.0E	1228.0	36.0D	1900.0			QL=1 ST=2 TYP=7
	536	ONDR	47	GB	1217.0	1220.0	60.0D				
	430	KRAK	49	GB	1217.0	1301.0U		204.0D			
	430	KRAK	49	GB	1217.0	1317.0U		204.0D			
	430	KRAK	49	GB	1217.0	1221.0U	92.8	204.0D	110.0D		
	810	KRAK	49	GB	1217.0	1221.0U	97.0	152.0D	65.0D		
	3100	CRIM	45	C	1217.0	1229.2		279.0			
	810	KRAK	49	GB	1217.0	1239.3		152.0D			
	3100	CRIM	45	C	1217.0	1218.3	30.0D	253.0			
	810	KRAK	49	GB	1217.0	1316.4		92.0			
	3100	CRIM	45	C	1217.0	1232.5		281.0			
	810	KRAK	49	GB	1217.0	1301.5U		152.0D			
	430	KRAK	49	GB	1217.0	1337.7		98.0			
	810	KRAK	49	GB	1217.0	1337.8		122.0			
	15400	SVTO	49	GB	1218.0E	1225.0	35.0D	3200.0			QL=1 ST=2 TYP=7
	245	SVTO	49	GB	1219.0E	1224.0	16.0D	2100.0			QL=1 ST=2 TYP=7
	610	SVTO	49	GB	1219.0E	1220.0	31.0D	540.0			QL=1 ST=2 TYP=7
	1415	SGMR	4	S/F	1235.0E	1236.0	7.0D	74.0			QL=1 ST=3 TYP=3
	2695	SGMR	20	GRF	1235.0E	1239.0	12.0D	220.0			QL=1 ST=3 TYP=2
	610	SGMR	20	GRF	1235.0E	1242.0	14.0D	210.0			QL=1 ST=3 TYP=2
	410	SGMR	20	GRF	1235.0E	1248.0	14.0D	120.0			QL=1 ST=3 TYP=2
	4995	SGMR	49	GB	1235.0E	1237.0	685.0D	850.0			QL=1 ST=3 TYP=6
	8800	SGMR	49	GB	1235.0E	1237.0	685.0D	1300.0			QL=1 ST=3 TYP=6
	610	SGMR	4	S/F	1235.0E	1239.0	685.0D	150.0			QL=1 ST=3 TYP=3
	15400	SGMR	4	S/F	1243.0E	1244.0	3.0D	280.0			QL=1 ST=2 TYP=3
	2695	SVTO	4	S/F	1253.0E	1301.0	22.0D	290.0			QL=1 ST=2 TYP=3
	8800	SVTO	49	GB	1253.0E	1301.0	22.0D	500.0			QL=1 ST=2 TYP=6
	4995	SVTO	49	GB	1253.0E	1301.0	22.0D	750.0			QL=1 ST=2 TYP=6
	15400	SVTO	4	S/F	1253.0E	1305.0	22.0D	440.0			QL=1 ST=2 TYP=3
	610	SVTO	4	S/F	1253.0E	1301.0	22.0D	420.0			QL=1 ST=2 TYP=3
	2695	SGMR	20	GRF	1254.0E	1301.0	16.0D	270.0			QL=1 ST=2 TYP=2
	8800	SGMR	49	GB	1254.0E	1306.0	42.0D	720.0			QL=1 ST=2 TYP=6
	4995	SGMR	49	GB	1254.0E	1302.0	42.0D	820.0			QL=1 ST=2 TYP=7
	610	SGMR	4	S/F	1254.0E	1300.0	666.0D	430.0			QL=1 ST=3 TYP=3
	15400	SGMR	20	GRF	1257.0E	1307.0	39.0D	400.0			QL=1 ST=2 TYP=2
	1415	SGMR	4	S/F	1300.0E	1301.0	3.0D	58.0			QL=1 ST=2 TYP=3
	610	SVTO	4	S/F	1316.0E	1316.0	5.0D	300.0			QL=1 ST=2 TYP=3
	410	SVTO	4	S/F	1316.0E	1316.0	10.0D	350.0			QL=1 ST=2 TYP=3
	2695	SVTO	4	S/F	1316.0E	1321.0	13.0D	170.0			QL=1 ST=2 TYP=5
	15400	SVTO	4	S/F	1316.0E	1316.0	30.0D	190.0			QL=1 ST=2 TYP=3
	4995	SVTO	4	S/F	1316.0E	1319.0	34.0D	410.0			QL=1 ST=2 TYP=5
	11800	BERN	47	GB	1317.0	1330.0	90.0	2150.0			
	3200	BERN	47	GB	1317.0	1330.0	90.0	430.0			
	19600	BERN	47	GB	1317.0	1330.0	90.0	2840.0			
	8400	BERN	47	GB	1317.0	1330.0	90.0	1630.0			
	5200	BERN	47	GB	1317.0	1330.0	90.0	1850.0			
	2800	OTTA	4	S/F	1320.0E	1320.0	43.5D	168.0	84.0		
	610	SGMR	4	S/F	1336.0E	1338.0	8.0D	180.0			QL=1 ST=2 TYP=3

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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
20	4995	SGMR	4	S/F	1336.0E	1339.0	14.0D	260.0			QL=1 ST=2 TYP=3
	8800	SGMR	20	GRF	1336.0E	1338.0	13.0D	190.0			QL=1 ST=2 TYP=2
	2800	OTTA	3	S	1337.0	1340.0	21.0	117.6	59.0		
	2695	SGMR	20	GRF	1337.0E	1339.0	8.0D	130.0			QL=1 ST=2 TYP=2
	410	SGMR	8	S	1337.0E	1337.0	2.0D	82.0			QL=1 ST=2 TYP=3
	15400	SGMR	8	S	1338.0E	1338.0	2.0D	91.0			QL=1 ST=2 TYP=3
21	200	GORK	44	NS	0618.0E		180.0D		5.0		
	100	GORK	44	NS	0618.0E		312.0D		10.0		
	245	SVTO	44	NS	0633.0E	0833.0	508.0D	74.0			QL=1 ST=2 TYP=1
	410	SVTO	44	NS	0633.0E	0833.0	508.0D	45.0			QL=1 ST=2 TYP=1
	200	GORK	43	NS	0657.7	0658.1	0.7	260.0			
	204	IZMI	43	NS	0700.0		300.0	50.0			
	127	TORN	44	NS	0850.0E		370.0D		100.0		V=1
	260	ONDR	44	NS	0850.0E	1038.5	270.0D	23.0			
	245	SGMR	43	NS	1235.0	1456.0	493.0D	300.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	1724.0E	1816.0	613.0D	140.0			QL=1 ST=2 TYP=1
	100	HIRA	44	NS	2145.0E	2212.0	440.0D	140.0	37.0		
	200	HIRA	44	NS	2145.0E	2338.0	580.0D	45.0	23.0		MR
	245	LEAR	43	NS	2156.0	0915.0	773.0	110.0			QL=1 ST=2 TYP=1
	410	LEAR	8	S	0308.0E	0309.0	1.0D	39.0			QL=1 ST=2 TYP=3
	245	LEAR	8	S	0310.0E	0310.0	U	91.0			QL=1 ST=2 TYP=3
	5900	KISV	2	S/F	0608.6	0611.9	6.5	15.0			
	500	HIRA	46	C	0611.0	0611.5	2.0	11.0			O
	245	LEAR	8	S	0657.0E	0658.0	1.0D	290.0			QL=1 ST=2 TYP=3
	410	LEAR	8	S	0657.0E	0658.0	1.0D	65.0			QL=1 ST=2 TYP=3
	245	SVTO	8	S	0657.0E	0657.0	1.0D	290.0			QL=1 ST=2 TYP=3
	100	GORK	8	S	0658.0	0658.1	0.6	115.0			
	9100	GORK	22	GRF	0758.3	0837.2	138.0	7.7			
	2950	GORK	20	GRF	0915.7	0930.0	32.0	14.8			
	536	ONDR	40	F	0925.4	0925.7	1.3	15.0			
	5900	KISV	23	GRF	1000.0	1003.1		5.0			
	2950	GORK	20	GRF	1003.6	1012.0	17.6	7.4			
	5900	KISV	23	GRF	1004.5	1021.6	31.5	10.0			
	950	GORK	4	S/F	1005.9	1006.1	1.1	16.0			
	650	GORK	2	S/F	1006.4	1007.4	1.4	4.0			
	9300	KISV	2	S/F	1021.2	1021.7	2.3	7.0			
	5900	KISV	22	GRF	1052.2	1054.3	10.5	5.0			
	9300	KISV	22	GRF	1053.0	1054.3	9.0	7.0			
	15000	KISV	45	C	1053.5	1054.2	2.3	4.0			
	430	KRAK	8	S	1112.5	1112.7	0.4	17.0			
	8400	BERN	4	S/F	1259.3	1301.4	6.0	57.0			
	5200	BERN	4	S/F	1259.3	1301.4	6.0	27.0			
	11800	BERN	4	S/F	1259.3	1301.4	6.0	77.0			
	19600	BERN	4	S/F	1259.3	1301.4	6.0	33.0			
	9500	POTS	4	S/F	1300.0	1301.7	6.0	50.0			
	810	KRAK	8	S	1300.9	1301.0	0.3	44.0			
	8800	SVTO	8	S	1301.0E	1301.0	U	57.0			QL=1 ST=2 TYP=3
	245	SVTO	4	S/F	1455.0E	1455.0	4.0D	220.0			QL=1 ST=2 TYP=5
	610	SGMR	8	S	1521.0E	1521.0	U	280.0			QL=1 ST=2 TYP=3
22	200	GORK	44	NS	0612.0E		180.0D		5.0		
	100	GORK	44	NS	0612.0E		318.0D		5.0		
	245	SVTO	44	NS	0634.0E	0949.0	507.0D	93.0			QL=1 ST=2 TYP=1
	410	SVTO	44	NS	0634.0E	0651.0	1046.0D	21.0			QL=1 ST=1 TYP=1
	204	IZMI	43	NS	0700.0		300.0	20.0			
	127	TORN	43	NS	0736.0		384.0		20.0		V=1
	260	ONDR	44	NS	0900.0E	0943.3	260.0D				
	245	SGMR	44	NS	1236.0E	1615.0	492.0D	140.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	1753.0E	0255.0	585.0D	180.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2145.0E	0300.0	580.0D	19.0	10.0		MR
	245	LEAR	44	NS	2156.0E	0255.0	773.0D	130.0			QL=1 ST=2 TYP=1
	9100	GORK	23	GRF	0657.3		270.0				
	2950	GORK	21	GRF	0701.5	0803.5	279.0D	22.0			
	950	GORK	22	GRF	0728.3	0742.4	21.0	2.0			
	9300	KISV	23	GRF	0733.1	0810.6	45.0	12.0			
	9300	KISV	23	GRF	0733.1	0733.9		10.0			
	9100	GORK	1	S	0733.3	0733.7	11.0	11.7			
	5900	KISV	23	GRF	0733.5	0734.4		8.0			

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
22	5900	KISV	23	GRF	0733.5	0740.8	51.0	9.0			
	650	GORK	20	GRF	0735.2	0742.6	15.2	3.4			
	810	KRAK	8	S	0810.8	0810.9	0.3	7.0			
	430	KRAK	8	S	0842.2	0842.5	0.8	68.0			
	9300	KISV	2	S/F	0849.9	0850.3	1.4	8.0			
	5900	KISV	2	S/F	0849.9	0850.4	4.0	4.0			
	9300	KISV	29	PBI	0939.2	0942.0	10.9	7.0			
	9300	KISV	2	S/F	0939.2	0940.8	2.8	14.0			
	9500	POTS	3	S	0939.5	0941.0	3.0	14.0			
	9100	GORK	1	S	0940.3	0940.8	1.5	7.9			
	15000	KISV	23	GRF	0940.5	0940.9	17.8	13.0			
	430	KRAK	41	F	0954.0	0954.7	1.0	16.0	2.0		
	9300	KISV	23	GRF	1009.8	1011.2		8.0			
	9300	KISV	23	GRF	1009.8	1012.4		9.0			
	9300	KISV	23	GRF	1009.8	1025.8	33.5	10.0			
	5900	KISV	23	GRF	1010.6	1034.1		12.0			
	15000	KISV	23	GRF	1010.6	1011.1		7.0			
	5900	KISV	23	GRF	1010.6	1017.2		9.0			
	15000	KISV	23	GRF	1010.6	1032.6	23.0	18.0			
	5900	KISV	23	GRF	1010.6	1032.6	33.0	13.0			
	15000	KISV	23	GRF	1010.6	1025.7		9.0			
	5900	KISV	23	GRF	1010.6	1012.8		9.0			
	5900	KISV	23	GRF	1010.6	1025.9		9.0			
	9300	KISV	2	S/F	1032.2	1032.6	3.7	25.0			
	9500	POTS	3	S	1032.5	1032.7	2.0	19.0			
	810	KRAK	8	S	1041.0	1041.1	1.1	13.0			
	810	KRAK	8	S	1046.1	1046.1	0.3	4.0			
	9100	GORK	2	S/F	1051.2	1052.7	4.7	11.0			
	5900	KISV	29	PBI	1057.4	1111.0	18.5	20.0			
	5900	KISV	45	C	1057.4	1106.5		152.0			
	5900	KISV	45	C	1057.4	1105.6	13.5	146.0			
	9300	KISV	4	S/F	1058.5	1105.1U	12.0	122.0D			
	9300	KISV	29	PBI	1058.5	1110.6	28.0	22.0			
	650	GORK	4	S/F	1100.3	1105.4	6.7	21.0			
	3013	IZMI	5	S	1102.0	1106.0	7.0	43.0	35.0		
	1470	POTS	4	S/F	1102.0	1105.0	8.0	62.0			
	1415	SVTO	4	S/F	1102.0E	1104.0	8.0D	95.0			QL=1 ST=2 TYP=3
	8400	BERN	46	C	1102.0	1105.1	8.0	195.0			
	5200	BERN	46	C	1102.0	1105.1	8.0	100.0			
	3200	BERN	46	C	1102.0	1105.1	8.0	39.0			
	19600	BERN	46	C	1102.0	1105.1	8.0	60.0			
	11800	BERN	46	C	1102.0	1105.1	8.0	205.0			
	9500	POTS	4	S/F	1102.0	1105.6	28.0	175.0			
	3100	CRIM	45	C	1102.3	1105.0	5.6	23.0			
	9100	GORK	46	C	1102.3	1104.1	6.7	137.0			
	9100	GORK	46	C	1102.3	1105.6		170.0			
	3100	CRIM	45	C	1102.3	1106.8		31.0			
	9100	GORK	46	C	1102.3	1104.8		149.0			
	3100	CRIM	45	C	1102.3	1105.9		31.0	10.0		
	15000	KISV	29	PBI	1102.5	1109.3	14.0	17.0			
	15000	KISV	46	C	1102.5	1105.6	7.0	143.0			
	15000	KISV	46	C	1102.5	1104.9		123.0			
	4995	SVTO	4	S/F	1103.0E	1105.0	4.0D	120.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	1103.0E	1105.0	4.0D	190.0			QL=1 ST=2 TYP=3
	950	GORK	4	S/F	1103.2E	1104.9	45.0D	19.0			
	2950	GORK	4	S/F	1104.0	1106.6	5.7	40.0			
	536	ONDR	40	F	1104.4	1104.8	2.5	54.0			
	408	TRST	46	C	1105.2	1105.2	0.1	221.0			3R
	3100	CRIM	29	PBI	1106.8	1108.0	2.0	13.0	4.0		
	245	SGMR	8	S	1601.0E	1602.0	1.0D	130.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1605.0E	1606.0	1.0D	120.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1632.0E	1632.0	U	230.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1640.0E	1641.0	1.0D	130.0			QL=1 ST=2 TYP=3
	500	HIRA	46	C	2253.7	2309.3	35.0	650.0	15.0		O
	2695	LEAR	4	S/F	2305.0E	2325.0	30.0D	170.0			QL=1 ST=2 TYP=5
	8800	LEAR	49	GB	2305.0E	2309.0	30.0D	500.0			QL=1 ST=2 TYP=7
	610	LEAR	4	S/F	2306.0E	2309.0	7.0D	440.0			QL=1 ST=2 TYP=3
	4995	PALE	4	S/F	2306.0E	2309.0	18.0D	310.0			QL=1 ST=2 TYP=3
	8800	PALE	49	GB	2306.0E	2309.0	18.0D	570.0			QL=1 ST=2 TYP=6

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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
22	15400	LEAR	4	S/F	2306.0E	2309.0	29.0D	460.0			QL=1 ST=2 TYP=3
	15400	PALE	4	S/F	2307.0E	2309.0	8.0D	400.0			QL=1 ST=2 TYP=3
	200	HIRA	42	SER	2307.9	2325.4	45.0	51.0			MR
	245	LEAR	4	S/F	2308.0E	2309.0	6.0D	48.0			QL=1 ST=2 TYP=3
	410	LEAR	4	S/F	2308.0E	2309.0	6.0D	420.0			QL=1 ST=2 TYP=3
	2695	PALE	4	S/F	2308.0E	2309.0	9.0D	140.0			QL=1 ST=2 TYP=3
	1415	PALE	4	S/F	2308.0E	2309.0	52.0D	78.0			QL=1 ST=1 TYP=3
	610	PALE	8	S	2309.0E	2309.0	1.0D	290.0			QL=1 ST=2 TYP=3
	410	PALE	8	S	2309.0E	2309.0	U	290.0			QL=1 ST=2 TYP=3
	100	HIRA	46	C	2320.7	2323.9	41.6	890.0	67.0		
	2695	PALE	4	S/F	2324.0E	2325.0	6.0D	170.0			QL=1 ST=2 TYP=3
	15400	PALE	8	S	2324.0E	2325.0	2.0D	63.0			QL=1 ST=2 TYP=3
	1415	PALE	8	S	2324.0E	2324.0	2.0D	58.0			QL=1 ST=2 TYP=3
	4995	PALE	4	S/F	2324.0E	2325.0	37.0D	170.0			QL=1 ST=2 TYP=3
	8800	PALE	4	S/F	2324.0E	2325.0	33.0D	140.0			QL=1 ST=2 TYP=3
23	100	HIRA	43	NS	0037.0	0355.0	410.0D	65.0	21.0		
	200	GORK	44	NS	0615.0E		180.0D		5.0		
	100	GORK	44	NS	0615.0E		315.0D		5.0		
	245	SVTO	43	NS	0634.0	1017.0	508.0D	79.0			QL=1 ST=1 TYP=1
	204	IZMI	43	NS	0700.0		300.0	25.0			
	127	TORN	43	NS	0736.0		380.0		14.0		V=0
	260	ONDR	44	NS	0850.0E	1105.3	270.0D	70.0			
	245	SGMR	44	NS	1236.0E	1615.0	684.0D	140.0			QL=1 ST=3 TYP=1
	200	HIRA	44	NS	2145.0E	0009.0	580.0D	32.0	13.0		MR
	245	LEAR	44	NS	2157.0E	2253.0	773.0D	270.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	2200.0E	2253.0	338.0D	200.0			QL=1 ST=2 TYP=1
	200	HIRA	46	C	0349.5	0349.7	1.7	210.0			SR
	9300	KISV	2	S/F	0643.8	0644.3	68.0	24.0			
	5900	KISV	2	S/F	0643.9	0644.3	7.1	9.0			
	9100	GORK	1	S	0644.0	0644.3	0.9	17.0	8.0		
	9100	GORK	2	S/F	0714.2	0715.1	7.0	6.8			
	2950	GORK	20	GRF	0752.8	0800.0	20.7	11.8			
	430	KRAK	42	SER	0831.5	0956.0	315.5	20.0			
	430	KRAK	42	SER	0831.5	1239.5		28.0			
	5900	KISV	23	GRF	0841.0	0922.0	115.0	25.0			
	2950	GORK	21	GRF	0842.0	0930.0	121.0	18.6			
	650	GORK	22	GRF	0842.0	0849.7	12.6	4.0			
	15000	KISV	25	R	0843.6	0926.5	196.4	16.0			
	15000	KISV	25	R	0843.6	0849.6		7.0			
	15000	KISV	25	R	0843.6	0852.7		11.0			
	9300	KISV	23	GRF	0844.0	0922.0	109.5	18.0			
	950	GORK	22	GRF	0846.9	0849.0	20.9	4.9			
	2950	GORK	2	S/F	0847.4	0848.0	2.8	14.2			
	9100	GORK	21	GRF	0847.6	0852.6	122.0	18.0			
	1470	POTS	3	S	0850.5	0852.5	7.0	10.0			
	5900	KISV	2	S/F	0850.7	0852.5	8.1	20.0			
	3013	IZMI	5	S	0851.0	0853.0	4.0	18.0	9.0		
	2695	LEAR	4	S/F	0851.0E	0852.0	4.0D	37.0			QL=1 ST=2 TYP=3
	2950	GORK	3	S	0851.4	0852.4	3.6	28.0			
	9300	KISV	2	S/F	0851.5	0852.8	6.2	11.0			
	9300	KISV	2	S/F	0926.8	0928.8	5.4	6.0			
	9100	GORK	1	S	0927.9	0928.9	1.8	6.8			
	15000	KISV	23	GRF	0928.5	0929.1	20.5	6.0			
	3100	CRIM	45	C	0947.3	0952.2		22.0	7.0		
	3100	CRIM	45	C	0947.3	0948.9	11.6	13.0			
	5900	KISV	2	S/F	0958.2	1000.9	7.8	15.0			
	536	ONDR	8	S	1037.2	1037.6	2.5	40.0			
	245	PALE	8	S	2059.0E	2100.0	1.0D	82.0			QL=1 ST=2 TYP=3
24	200	GORK	44	NS	0630.0E		180.0D		5.0		
	245	SVTO	43	NS	0634.0	1455.0	508.0D	100.0			QL=1 ST=2 TYP=1
	204	IZMI	43	NS	0700.0		300.0	30.0			
	245	SGMR	43	NS	1237.0	1724.0	492.0D	360.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	1726.0E	1728.0	576.0D	190.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2145.0E	2310.0	580.0D	37.0	12.0		WR
	245	LEAR	44	NS	2157.0E	0004.0	773.0D	130.0			QL=1 ST=2 TYP=1
	200	HIRA	8	S	0441.9	0442.6	0.8	120.0			MR
	5900	KISV	2	S/F	0640.3	0641.4	6.0	5.0			

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
24	9300	KISV	2	S/F	0640.4	0641.2	1.6	5.0			
	15000	KISV	2	S/F	0640.5	0641.1	3.2	7.0			
	9300	KISV	2	S/F	0651.0	0653.7	5.2	10.0			
	9100	GORK	2	S/F	0651.4	0653.7	6.0	9.5			
	5900	KISV	2	S/F	0651.4	0653.7	4.8	6.0			
	9300	KISV	2	S/F	0912.0	0912.5	2.1	7.0			
	9100	GORK	20	GRF	0912.6	1013.8	107.0	13.5			
	5900	KISV	22	GRF	1113.2	1118.6	12.8	6.0			
	9300	KISV	22	GRF	1113.4	1118.5	16.3	10.0			
	15000	KISV	46	C	1113.5	1118.2		6.0			
	15000	KISV	46	C	1113.5	1118.7	14.0	8.0			
	234	POTS	41	F	1255.7	1256.2	1.7	150.0U			
	40	POTS	8	S	1256.4	1256.4	0.6	300.0	100.0		
	430	KRAK	42	SER	1259.4	1325.9	53.5	20.0			
	245	SVTO	8	S	1320.0E	1320.0	U	150.0			QL=1 ST=2 TYP=3
	245	PALE	8	S	1726.0E	1727.0	2.0D	240.0			QL=1 ST=2 TYP=3
25	200	GORK	44	NS	0630.0E		150.0D		5.0		
	245	SVTO	43	NS	0635.0	1453.0	508.0D	67.0			QL=1 ST=2 TYP=1
	204	IZMI	43	NS	0700.0		300.0	15.0			
	100	GORK	44	NS	0715.0E		264.0D		5.0		
	127	TORN	43	NS	0742.0		378.0		25.0		V=1
	245	SGMR	43	NS	1237.0	1356.0	493.0D	350.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	1837.0E	2155.0	542.0D	110.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2145.0E		580.0D		17.0		
	245	LEAR	44	NS	2158.0E	0034.0	773.0D	150.0			QL=1 ST=2 TYP=1
	1415	PALE	8	S	0134.0E	0135.0	1.0D	240.0			QL=1 ST=2 TYP=3
	500	HIRA	20	GRF	0338.0	0426.5	95.0	25.0	7.0		O
	610	LEAR	20	GRF	0417.0E	0429.0	17.0D	32.0			QL=1 ST=2 TYP=2
	500	HIRA	27	RF	0555.0	0605.5	52.0	20.0	18.0		WR
	650	GORK	23	GRF	0628.5	0632.3	17.1	11.0			
	410	LEAR	20	GRF	0634.0E	0642.0	10.0D	52.0			QL=1 ST=2 TYP=2
	650	GORK	1	S	0642.8	0643.2	0.8	4.0			
	9100	GORK	21	GRF	0716.1	0920.9	203.0	11.0			
	9300	KISV	2	S/F	0757.6	0758.4	3.2	6.0			
	5900	KISV	2	S/F	0758.0	0758.4	3.3	3.0			
	15000	KISV	2	S/F	0758.0	0758.4	1.2	3.0			
	650	GORK	23	GRF	0832.0	0930.7	189.0D	50.0			
	9300	KISV	2	S/F	0845.2	0846.4	6.1	5.0			
	5900	KISV	2	S/F	0845.6	0846.4	6.0	7.0			
	410	SVTO	20	GRF	0851.0E	1016.0	129.0D	190.0			QL=1 ST=2 TYP=2
	650	GORK	4	S/F	0853.0	0854.1	5.7	20.0			
	9300	KISV	1	S	0853.0	0853.4	1.6	20.0			
	5900	KISV	1	S	0853.0	0853.7	2.0	13.0			
	9500	POTS	3	S	0853.0	0853.7	1.5	22.0			
	950	GORK	2	S/F	0853.2	0855.1	5.5	9.8			
	9100	GORK	1	S	0853.4	0853.7	0.7	20.0	10.0		
	15000	KISV	1	S	0853.5	0853.9	2.0	24.0			
	410	LEAR	4	S/F	0858.0E	0902.0	9.0D	36.0			QL=1 ST=2 TYP=3
	9500	POTS	42	SER	0915.0	0920.8	7.0	11.0			
	5900	KISV	1	S	0915.1	0915.4	1.9	6.0			
	9100	GORK	1	S	0915.2	0915.4	0.8	11.0	5.0		
	9300	KISV	2	S/F	0915.2	0915.5	2.4	12.0			
	15000	KISV	2	S/F	0915.6	0915.8	3.4	11.0			
	650	GORK	4	S/F	0942.0	0957.1	26.2	86.0			
	610	LEAR	4	S/F	0946.0E	0957.0	20.0D	71.0			QL=1 ST=2 TYP=5
	410	LEAR	20	GRF	0953.0E	1018.0	46.0D	140.0			QL=1 ST=2 TYP=2
	15400	LEAR	8	S	0958.0E	0958.0	U	37.0			QL=1 ST=2 TYP=3
	9500	POTS	3	S	1111.0	1112.4	2.0	50.0			
	9100	GORK	3	S	1111.2	1112.3	2.0	48.0			
	5900	KISV	2	S/F	1111.3	1112.2	8.5	26.0			
	15000	KISV	2	S/F	1111.5	1112.2	8.5	44.0			
	9300	KISV	4	S/F	1111.5	1112.2	8.5	55.0			
	650	GORK	4	S/F	1117.2	1131.5	21.3	70.0			
	9300	KISV	2	S/F	1148.0	1149.4	6.2	6.0			
	5900	KISV	2	S/F	1148.2	1149.4	4.0	11.0			
	245	SVTO	8	S	1246.0E	1246.0	U	81.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	1329.0E	1329.0	1.0D	210.0			QL=1 ST=2 TYP=3
	245	SVTO	8	S	1329.0E	1329.0	U	130.0			QL=1 ST=2 TYP=3

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
25	234	POTS	8	S	1329.5	1329.6	0.5	115.0	40.0		
	245	SVTO	4	S/F	1355.0E	1356.0	5.0D	220.0			QL=1 ST=2 TYP=5
	234	POTS	4	S/F	1355.8	1356.1	0.7	130.0	15.0		
	245	SVTO	8	S	1446.0E	1446.0	U	87.0			QL=1 ST=2 TYP=3
	500	HIRA	46	C	2304.8	2306.3	5.0	17.0			O
26	200	GORK	44	NS	0630.0E		160.0D		5.0		
	245	SVTO	43	NS	0635.0	1432.0	508.0D	110.0			QL=1 ST=2 TYP=1
	204	IZMI	43	NS	0700.0		300.0	15.0			
	127	TORN	43	NS	0845.0		315.0		9.0		V=0
	245	SGMR	43	NS	1237.0	1450.0	494.0D	230.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	1726.0E	1751.0	394.0D	89.0			QL=1 ST=3 TYP=1
	410	SGMR	43	NS	1745.0	1820.0	186.0D	37.0			QL=1 ST=2 TYP=1
	245	LEAR	44	NS	2159.0E	0248.0	772.0D	130.0			QL=1 ST=2 TYP=1
	245	LEAR	4	S/F	0204.0E	0205.0	3.0D	62.0			QL=1 ST=2 TYP=3
	410	LEAR	8	S	0205.0E	0205.0	2.0D	41.0			QL=1 ST=2 TYP=3
	100	HIRA	8	S	0205.3	0205.3	0.8	290.0			
	200	HIRA	8	S	0205.3	0205.5	0.7	305.0			O
	100	HIRA	41	F	0503.2	0503.2	2.1	320.0			
	3100	CRIM	29	PBI	0639.4	0641.3	18.7	6.0	2.0		
	3100	CRIM	1	S	0639.4	0640.6	2.0	9.0	3.0		
	9300	KISV	2	S/F	0655.0	0658.3	6.2	34.0			
	9100	GORK	2	S/F	0657.0	0658.3	3.4	29.0			
	5900	KISV	2	S/F	0657.0	0657.9	9.0	11.0U			
	100	GORK	8	S	0747.2	0747.5	0.3	170.0			
	430	KRAK	42	SER	0803.5	0805.0	63.0	18.0			
	430	KRAK	42	SER	0803.5	0912.5		31.0			
	430	KRAK	42	SER	0803.5	0951.8		28.0			
	9100	GORK	20	GRF	0823.3	1113.1	186.0	24.0			
	234	POTS	8	S	0843.1	0843.1	0.2	275.0	90.0		
	430	KRAK	41	F	1024.2	1024.3	2.0	9.0			
	15400	LEAR	8	S	1029.0E	1029.0	2.0D	57.0			QL=1 ST=2 TYP=3
	100	GORK	8	S	1030.9	1031.2	0.8	920.0			
	3100	CRIM	20	GRF	1039.6	1045.0	45.0	5.0	2.0		
	2695	LEAR	4	S/F	1048.0E	1049.0	3.0D	80.0			QL=1 ST=2 TYP=3
	15400	LEAR	8	S	1049.0E	1049.0	2.0D	90.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	1049.0E	1049.0	1.0D	46.0			QL=1 ST=2 TYP=3
	245	LEAR	8	S	1050.0E	1050.0	1.0D	47.0			QL=1 ST=2 TYP=3
	810	KRAK	8	S	1056.5	1057.0	0.5	14.0			
	430	KRAK	8	S	1056.7	1057.0	0.5	26.0			
	810	KRAK	8	S	1143.0	1143.0	0.1	9.0			
	430	KRAK	8	S	1156.3	1156.5	0.3	9.0			
	245	SVTO	8	S	1220.0E	1220.0	U	67.0			QL=1 ST=2 TYP=3
	810	KRAK	8	S	1240.4	1240.5	0.2	9.0			
	430	KRAK	8	S	1242.2	1242.7	0.7	99.0			
	15400	SGMR	8	S	1413.0E	1414.0	1.0D	210.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1413.0E	1414.0	1.0D	73.0			QL=1 ST=2 TYP=3
	15400	PALE	8	S	2040.0E	2041.0	1.0D	110.0			QL=1 ST=2 TYP=3
	200	HIRA	27	RF	2223.0	2240.0	92.0	18.0	13.0		O
27	200	GORK	44	NS	0624.0E		150.0D		5.0		
	204	IZMI	43	NS	0700.0		300.0	15.0			
	100	GORK	43	NS	0718.0		252.0D		5.0		
	127	TORN	44	NS	0720.0E		400.0D		145.0		V=1
	260	ONDR	44	NS	0850.0E	1142.3	270.0D				
	410	SVTO	43	NS	1013.0	1121.0	291.0D	39.0			QL=1 ST=2 TYP=1
	245	SVTO	43	NS	1028.0	1316.0	276.0D	71.0			QL=1 ST=2 TYP=1
	245	SGMR	43	NS	1238.0	1807.0	493.0D	180.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2145.0E		580.0D		22.0		
	410	LEAR	44	NS	2159.0E	0245.0	773.0D	110.0			QL=1 ST=2 TYP=1
	245	LEAR	44	NS	2159.0E	0242.0	773.0D	420.0			QL=1 ST=2 TYP=1
	500	HIRA	22	GRF	0004.0	0051.0	84.0	6.0	4.0		O
	200	HIRA	27	RF	0042.0	0048.8	58.0	9.0	3.0		WR
	500	HIRA	46	C	0144.1	0145.7	4.5	13.0	6.0		O
	200	HIRA	46	C	0237.0	0258.2	47.5	47.0	5.0		WR
	500	HIRA	27	RF	0245.0	0250.5	50.0	8.0	3.0		O
	100	HIRA	42	SER	0520.9	0529.0U	11.9	1000.0D			
	2695	LEAR	8	S	0521.0E	0522.0	2.0D	26.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0521.0E	0522.0	4.0D	96.0			QL=1 ST=2 TYP=3

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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
27	500	HIRA	41	F	0521.0	0523.5	5.5	60.0			SL
	200	HIRA	42	SER	0521.1	0529.0	12.5	980.0			O
	15400	LEAR	8	S	0522.0E	0522.0	2.0D	44.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0528.0E	0529.0	5.0D	93.0			QL=1 ST=2 TYP=3
	500	HIRA	46	C	0528.6	0529.0	4.5	310.0			O
	245	LEAR	4	S/F	0529.0E	0531.0	3.0D	220.0			QL=1 ST=2 TYP=5
	410	LEAR	8	S	0529.0E	0530.0	2.0D	110.0			QL=1 ST=2 TYP=3
	610	LEAR	8	S	0529.0E	0529.0	1.0D	140.0			QL=1 ST=2 TYP=3
	15400	LEAR	8	S	0529.0E	0529.0	U	14.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0529.0E	0529.0	8.0D	28.0			QL=1 ST=2 TYP=3
	500	HIRA	42	SER	0610.7	0612.8	2.7	26.0			O
	200	GORK	4	S/F	0631.3	0631.4	1.7	26.0			
	245	LEAR	8	S	0632.0E	0632.0	U	59.0			QL=1 ST=2 TYP=3
	200	GORK	41	F	0642.0	0650.0		24.0D			
	200	GORK	41	F	0642.0	0647.1	17.2	24.0D			
	950	GORK	2	S/F	0649.5	0650.6	1.3	2.0			
	650	GORK	2	S/F	0649.6	0650.2	1.6	4.0			
	200	GORK	41	F	0650.0	0656.1		15.0			
	200	GORK	41	F	0650.0	0651.8		24.0D			
	9100	GORK	21	GRF	0703.5	0843.7	266.0	21.0			
	3100	CRIM	45	C	0704.6	0709.4	30.0	41.0	14.0		
	3100	CRIM	45	C	0704.6	0720.5		31.0			
	3100	CRIM	45	C	0704.6	0726.5		19.5			
	5900	KISV	46	C	0705.5	0718.0		52.0			
	5900	KISV	46	C	0705.5	0709.1	29.5	79.0			
	5900	KISV	46	C	0705.5	0720.3		60.0			
	9300	KISV	46	C	0706.0	0718.0		25.0			
	2695	LEAR	4	S/F	0706.0E	0709.0	23.0D	66.0			QL=1 ST=2 TYP=3
	9300	KISV	46	C	0706.0	0720.3		36.0			
	9300	KISV	46	C	0706.0	0708.7	27.5	67.0			
	950	GORK	4	S/F	0706.3	0711.0	6.0	292.0			
	950	GORK	29	PBI	0706.3	0712.3	18.5	37.0			
	650	GORK	21	GRF	0706.4	0804.9	110.6	7.0			
	15000	KISV	23	GRF	0706.6	0708.6	26.0	11.0			
	15000	KISV	23	GRF	0706.6	0720.7		7.0			
	8800	LEAR	8	S	0708.0E	0708.0	2.0D	48.0			QL=1 ST=2 TYP=3
	15400	LEAR	8	S	0708.0E	0708.0	U	19.0			QL=1 ST=2 TYP=3
	2695	SVTO	4	S/F	0708.0E	0709.0	3.0D	64.0			QL=1 ST=2 TYP=3
	4995	SVTO	8	S	0708.0E	0709.0	2.0D	74.0			QL=1 ST=2 TYP=3
	650	GORK	46	C	0708.6	0712.0		66.0			
	650	GORK	46	C	0708.6	0711.0	24.4	92.0			
	650	GORK	46	C	0708.6	0715.4		43.0			
	650	GORK	46	C	0708.6	0726.7		37.0			
	610	LEAR	4	S/F	0709.0E	0711.0	10.0D	55.0			QL=1 ST=2 TYP=3
	200	GORK	41	F	0709.6	0715.1		100.0			
	200	GORK	41	F	0709.6	0718.3		100.0			
	200	GORK	41	F	0709.6	0714.3		60.0			
	200	GORK	41	F	0709.6	0717.4		75.0			
	200	GORK	41	F	0709.6	0710.6	23.0	24.0D			
	200	GORK	41	F	0709.6	0711.8		24.0D			
	200	HIRA	46	C	0710.0		12.0D				O SUNSET
	100	HIRA	48	C	0710.0		12.0D	1000.0D			SUNSET
	245	LEAR	8	S	0710.0E	0710.0	U	55.0			QL=1 ST=2 TYP=3
	100	GORK	41	F	0710.2	0710.4	8.0	140.0			
	100	GORK	41	F	0710.2	0713.5		460.0			
	100	GORK	41	F	0710.2	0715.9		1270.0			
	245	SVTO	4	S/F	0713.0E	0718.0	6.0D	93.0			QL=1 ST=2 TYP=3
	9100	GORK	2	S/F	0716.9	0720.4	6.0	20.0			
	410	LEAR	8	S	0717.0E	0718.0	1.0D	17.0			QL=1 ST=2 TYP=3
	4995	SVTO	4	S/F	0717.0E	0720.0	8.0D	71.0			QL=1 ST=2 TYP=3
	2695	SVTO	4	S/F	0719.0E	0720.0	6.0D	54.0			QL=1 ST=2 TYP=3
	1415	SVTO	4	S/F	0721.0E	0721.0	7.0D	78.0			QL=1 ST=2 TYP=3
	234	POTS	41	F	0733.1	0734.5	3.0	165.0			
	15000	KISV	20	GRF	0742.3	0751.4	18.0	36.0			
	950	GORK	22	GRF	0743.6	0754.0	26.0	23.0			
	650	GORK	4	S/F	0745.3	0747.3	5.6	30.0			
	9300	KISV	4	S/F	0745.4	0751.7	20.0	145.0			
	3100	CRIM	3	S	0745.5	0751.4	59.0	109.0	36.0		
	2695	LEAR	4	S/F	0746.0E	0751.0	26.0D	160.0			QL=1 ST=2 TYP=3

SOLAR RADIO EMISSION
Outstanding Occurrences

DECEMBER 1988

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
27	9100	GORK	20	GRF	0746.4	0750.9	292.0	116.0			
	8800	LEAR	4	S/F	0747.0E	0751.0	16.0D	110.0			QL=1 ST=2 TYP=3
	2695	SVTO	20	GRF	0747.0E	0752.0	16.0D	150.0			QL=1 ST=2 TYP=2
	4995	SVTO	20	GRF	0747.0E	0751.0	16.0D	190.0			QL=1 ST=2 TYP=2
	15400	LEAR	20	GRF	0747.0E	0755.0	20.0D	64.0			QL=1 ST=2 TYP=2
	8800	SVTO	4	S/F	0748.0E	0751.0	13.0D	110.0			QL=1 ST=2 TYP=3
	5900	KISV	3	S	0748.6	0751.2	21.0	184.0			
	5900	KISV	29	PBI	0748.6	0803.5	26.0	53.0			
	1415	SVTO	20	GRF	0750.0E	0751.0	4.0D	55.0			QL=1 ST=2 TYP=2
	9300	KISV	29	PBI	0751.7	0805.5	19.7	37.0			
	200	GORK	41	F	0813.1	0830.3		23.0D			
	200	GORK	41	F	0813.1	0819.5		23.0D			
	200	GORK	41	F	0813.1	0813.8	18.0	23.0D			
	430	KRAK	41	F	0829.7	0830.2	3.3	8.0	2.0		
	810	KRAK	8	S	0830.2	0830.2	0.3	22.0			
	650	GORK	8	S	0830.3	0830.4	0.2	12.0			
	950	GORK	1	S	0830.3	0830.5	0.5	11.0			
	5900	KISV	46	C	0833.2	0857.0		17.0			
	5900	KISV	46	C	0833.2	0835.5		11.0			
	5900	KISV	46	C	0833.2	0833.7	6.0	17.0			
	5900	KISV	46	C	0833.2	0837.8		13.0			
	100	GORK	41	F	0837.3	0843.2		1100.0			
	100	GORK	41	F	0837.3	0839.7		1600.0			
	100	GORK	41	F	0837.3	0837.7	8.0	400.0			
	3013	IZMI	41	F	0839.0	0840.0	6.0	39.0			
	204	IZMI	41	F	0839.0	0844.0	6.0	280.0			
	2695	LEAR	8	S	0839.0E	0839.0	1.0D	38.0			QL=1 ST=2 TYP=3
	245	LEAR	8	S	0839.0E	0839.0	1.0D	330.0			QL=1 ST=2 TYP=3
	430	KRAK	2	S/F	0839.0	0839.6	1.3	18.0	4.0		
	3100	CRIM	1	S	0839.2	0839.8	1.5	28.0	9.0		
	950	GORK	41	F	0839.3	0840.2	5.4	6.0			
	327	TRST	46	C	0839.3	0839.4	1.3	271.0			3R
	40	POTS	4	S/F	0839.3	0839.5	1.7	750.0	75.0		
	237	TRST	47	GB	0839.3	0839.5	1.3	900.0			3L
	9300	KISV	23	GRF	0839.3	0841.7		11.0			
	408	TRST	46	C	0839.3	0839.8	1.2	75.0			4R
	950	GORK	41	F	0839.3	0843.9		3.0			
	9300	KISV	23	GRF	0839.3	0839.9		9.0			
	9300	KISV	23	GRF	0839.3	0856.9	26.0	17.0			
	650	GORK	4	S/F	0839.4	0839.5	1.2	62.0			
	234	POTS	4	S/F	0839.4	0839.6	1.2	150.0	20.0		
	810	KRAK	2	S/F	0839.5	0839.6	1.0	10.0	4.0		
	1470	POTS	3	S	0839.5	0839.8	3.0U	10.0			
	245	SVTO	8	S	0843.0E	0843.0	1.0D	90.0			QL=1 ST=2 TYP=3
	430	KRAK	2	S/F	0843.0	0843.5	1.5	25.0	2.0		
	3100	CRIM	1	S	0843.1	0843.9	1.0	6.0	2.0		
	650	GORK	4	S/F	0843.4	0843.8	1.0	13.0			
	5900	KISV	45	C	0853.0	0901.2	15.5	11.0			
	430	KRAK	42	SER	0853.6	0921.1	32.5	16.0			
	9100	GORK	1	S	0856.4	0857.0	1.2	10.0			
	9500	POTS	3	S	0856.5	0857.2	2.5	15.0			
	810	KRAK	8	S	0857.5	0857.5	0.1	10.0			
	9100	GORK	1	S	0900.5	0901.2	1.2	7.6			
	810	KRAK	8	S	0922.4	0922.4	0.1	24.0			
	234	POTS	8	S	0943.1	0943.4	0.8	165.0	55.0		
	237	TRST	2	S/F	0943.4	0943.4	0.1	605.0			6L
	430	KRAK	8	S	0954.9	0955.0	0.5	23.0			
	650	GORK	23	GRF	1000.0E	1112.0	75.0D	22.0			
	950	GORK	23	GRF	1003.5	1109.5	80.5	6.0			
	245	LEAR	8	S	1014.0E	1014.0	U	170.0			QL=1 ST=2 TYP=3
	245	SVTO	8	S	1014.0E	1014.0	U	190.0			QL=1 ST=2 TYP=3
	234	POTS	4	S/F	1014.0	1014.4	1.5	275.0	40.0		
	237	TRST	47	GB	1014.4	1014.4	0.3	1059.0			1R
	40	POTS	8	S	1014.5	1014.8	1.0	225.0	75.0		
	430	KRAK	8	S	1017.5	1017.5	0.1	24.0			
	327	TRST	47	GB	1033.0	1033.0	0.1	851.0			6R
	237	TRST	2	S/F	1033.0	1033.1	0.1	52.0			8R
	536	ONDR	47	GB	1040.0	1122.2	60.0	11.0			
	950	GORK	41	F	1045.4	1050.0		11.5			

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
27	950	GORK	41	F	1045.4	1053.2		9.4			
	950	GORK	41	F	1045.4	1101.3		6.5			
	950	GORK	41	F	1045.4	1046.7	18.0	14.5			
	650	GORK	46	C	1046.2	1053.2		10.0			
	650	GORK	46	C	1046.2	1046.4	8.3	10.0			
	650	GORK	46	C	1046.2	1049.8		15.0			
	9300	KISV	4	S/F	1049.6	1051.9	7.0	272.0			
	5900	KISV	4	S/F	1050.1	1052.0U	7.8	77.0D			
	9100	GORK	3	S	1050.2	1051.8	4.9	210.0			
	3100	CRIM	1	S	1051.2	1052.0	2.3	6.0	2.0		
	3013	IZMI	5	S	1051.5	1052.5	4.0	13.0	7.0		
	15000	KISV	4	S/F	1053.3	1057.8	9.0	158.0			
	100	GORK	8	S	1102.2	1102.5	0.7	220.0			
	1470	POTS	3	S	1132.2	1133.3	2.8	7.0			
	15000	KISV	23	GRF	1132.4	1133.0		8.0			
	15000	KISV	23	GRF	1132.4	1147.2	23.0	9.0			
	9500	POTS	1	S	1132.5	1133.0	1.0	9.0			
	3100	CRIM	1	S	1132.6	1133.2	1.0	11.0	4.0		
	5900	KISV	2	S/F	1132.7	1133.0	1.0	14.0			
	9300	KISV	2	S/F	1132.7	1133.1	2.0	8.0			
	234	POTS	4	S/F	1141.7	1141.9	0.9	330.0	40.0		
	327	TRST	46	C	1141.8	1142.1	0.6	235.0			6R
	237	TRST	47	GB	1141.8	1142.2	0.6	1102.0			3R
	408	TRST	46	C	1142.1	1142.2	0.2	107.0			10R
	3013	IZMI	5	S	1145.0	1147.0	4.0	59.0	27.0		
	9500	POTS	3	S	1145.0	1147.0	5.0	23.0			
	3100	CRIM	1	S	1145.3	1147.0	4.7	28.0	9.0		
	5900	KISV	4	S/F	1145.5	1147.1	4.5	40.0			
	1470	POTS	3	S	1145.5	1146.8	4.0	15.0			
	9300	KISV	4	S/F	1145.7	1146.8	4.0	28.0			
	245	SVTO	8	S	1146.0E	1147.0	1.0D	63.0			QL=1 ST=2 TYP=3
	4995	SVTO	8	S	1146.0E	1146.0	1.0D	57.0			QL=1 ST=2 TYP=3
	237	TRST	46	C	1219.6	1219.7	0.4	477.0			2R
	430	KRAK	42	SER	1308.0	1311.0	6.5	64.0			
	810	KRAK	42	SER	1308.5	1308.8	1.2	12.0			
	237	TRST	2	S/F	1316.5	1316.6	0.1	409.0			6R
	2800	OTTA	4	S/F	1350.2	1351.5	6.5	97.5	39.0		
	1470	POTS	3	S	1350.2	1351.6	2.3	17.0			
	9500	POTS	3	S	1350.3	1351.4	2.9	53.0			
	430	KRAK	2	S/F	1350.6	1350.8	1.5	20.0	6.0		
	810	KRAK	1	S	1350.8	1351.5	1.3	8.0	4.0		
	2695	SVTO	8	S	1351.0E	1351.0	U	80.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	1351.0E	1351.0	1.0D	62.0			QL=1 ST=3 TYP=3
	4995	SVTO	8	S	1351.0E	1351.0	U	140.0			QL=1 ST=2 TYP=3
	245	SVTO	8	S	1351.0E	1351.0	U	110.0			QL=1 ST=2 TYP=3
	327	TRST	27	RF	1351.0	1351.6	0.9	151.0			50R Spikes
	408	TRST	27	RF	1351.0	1351.6	0.8	89.0			36R Spikes
	237	TRST	47	GB	1351.1	1351.4	0.9	1406.0			21R
	430	KRAK	2	S/F	1353.0	1354.0	2.2	16.0	4.0		
	810	KRAK	1	S	1353.2	1354.5	1.5	3.0	2.0		
	430	KRAK	8	S	1358.0	1358.4	0.8	65.0			
	810	KRAK	8	S	1358.4	1358.4	0.4	8.0			
28	200	GORK	44	NS	0612.0E		180.0D		5.0		
	245	SVTO	44	NS	0636.0E	0931.0	509.0D	320.0			QL=1 ST=2 TYP=1
	410	SVTO	44	NS	0636.0E	0710.0	509.0D	72.0			QL=1 ST=2 TYP=1
	204	IZMI	43	NS	0700.0		300.0	50.0			
	100	GORK	43	NS	0724.0		246.0		5.0		
	430	KRAK	44	NS	0802.5E	0937.7	360.0D	62.0	7.0		
	127	TORN	43	NS	0811.0	1221.4	349.0	4900.0	25.0		V=1
	260	ONDR	44	NS	0850.0E	1221.3	270.0D				
	245	SGMR	43	NS	1238.0	1528.0	494.0D	350.0			QL=1 ST=2 TYP=1
	410	PALE	44	NS	1727.0E	1735.0	223.0D	48.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	1727.0E	1742.0	283.0D	170.0			QL=1 ST=2 TYP=1
	500	HIRA	49	GB	0018.5	0056.3		350.0			
	500	HIRA	49	GB	0018.5	0030.8		120.0			
	500	HIRA	49	GB	0018.5	0146.9	175.0	3500.0	360.0		
	100	HIRA	48	C	0023.0	0137.0	106.0	830.0	153.0		
	245	PALE	4	S/F	0023.0E	0028.0U	6.0D	54.0			QL=1 ST=3 TYP=5

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
28	100	HIRA	48	C	0023.0	0120.5		560.0			
	100	HIRA	48	C	0023.0	0034.5		550.0			
	200	HIRA	48	C	0023.8	0154.1	202.0	1500.0	260.0		ML
	200	HIRA	48	C	0023.8	0055.4		610.0			WR
	200	HIRA	48	C	0023.8	0120.5		350.0			O
	610	LEAR	4	S/F	0024.0E	0028.0	11.0D	240.0			QL=1 ST=2 TYP=3
	410	LEAR	4	S/F	0024.0E	0028.0	11.0D	65.0			QL=1 ST=2 TYP=5
	245	LEAR	4	S/F	0024.0E	0028.0	11.0D	67.0			QL=1 ST=2 TYP=5
	2695	LEAR	4	S/F	0024.0E	0028.0	14.0D	140.0			QL=1 ST=2 TYP=3
	610	PALE	4	S/F	0025.0E	0028.0U	8.0D	180.0			QL=1 ST=3 TYP=3
	2695	PALE	4	S/F	0027.0E	0031.0U	7.0D	57.0			QL=1 ST=3 TYP=3
	8800	LEAR	20	GRF	0028.0E	0036.0	8.0D	20.0			QL=1 ST=2 TYP=2
	245	LEAR	49	GB	0043.0E	0056.0	20.0D	620.0			QL=1 ST=2 TYP=7
	2695	LEAR	4	S/F	0044.0E	0047.0	5.0D	38.0			QL=1 ST=2 TYP=3
	610	LEAR	4	S/F	0044.0E	0054.0	14.0D	410.0			QL=1 ST=2 TYP=5
	410	LEAR	4	S/F	0044.0E	0056.0	15.0D	300.0			QL=1 ST=2 TYP=5
	15400	LEAR	8	S	0051.0E	0052.0	1.0D	21.0			QL=1 ST=2 TYP=3
	15400	LEAR	8	S	0111.0E	0112.0	1.0D	27.0			QL=1 ST=2 TYP=3
	410	LEAR	49	GB	0111.0E	0141.0	81.0D	3200.0			QL=1 ST=2 TYP=7
	610	LEAR	49	GB	0111.0E	0146.0	81.0D	3100.0			QL=1 ST=2 TYP=7
	2695	LEAR	4	S/F	0119.0E	0123.0	21.0D	110.0			QL=1 ST=2 TYP=3
	610	PALE	49	GB	0119.0E	0146.0	54.0D	2000.0			QL=1 ST=3 TYP=6
	410	PALE	49	GB	0119.0E	0148.0	85.0D	2900.0			QL=1 ST=3 TYP=6
	1415	PALE	49	GB	0120.0E	0149.0	35.0D	850.0			QL=1 ST=3 TYP=6
	245	PALE	49	GB	0120.0E	0154.0	84.0D	4200.0			QL=1 ST=3 TYP=6
	8800	LEAR	8	S	0122.0E	0122.0	U	17.0			QL=1 ST=2 TYP=3
	15400	PALE	4	S/F	0158.0E	0158.0	1322.0D	160.0			QL=1 ST=1 TYP=3
	200	HIRA	46	C	0533.0	0539.6	8.6	84.0			WR
	100	HIRA	41	F	0535.2	0538.3	6.2	230.0			
	2695	LEAR	4	S/F	0536.0E	0540.0	6.0D	62.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0536.0E	0540.0	8.0D	270.0			QL=1 ST=2 TYP=3
	15400	LEAR	4	S/F	0537.0E	0540.0	7.0D	150.0			QL=1 ST=2 TYP=3
	100	GORK	8	S	0611.3	0612.1	1.0	220.0			
	650	GORK	22	GRF	0649.3	0731.8	287.0D	20.0			
	5900	KISV	22	GRF	0724.1	0730.2	23.5	17.0			
	9100	GORK	20	GRF	0725.1	0855.7	245.0	23.0			
	100	GORK	41	F	0734.5	0735.2	38.0	30.0			
	100	GORK	41	F	0734.5	0812.4		160.0			
	100	GORK	41	F	0734.5	0752.4		110.0			
	200	GORK	41	F	0746.8	0806.3		130.0			
	200	GORK	41	F	0746.8	0752.7	32.0	230.0			
	200	GORK	41	F	0746.8	0756.9		180.0			
	5900	KISV	23	GRF	0825.4	0828.3		9.0			
	5900	KISV	23	GRF	0825.4	0845.7	36.0	16.0			
	950	GORK	46	C	0825.6	0827.5	3.1	165.0			
	950	GORK	46	C	0825.6	0827.9		14.0			
	810	KRAK	1	S	0827.0	0827.5	1.3	6.0	2.0		
	950	GORK	46	C	0840.5	0844.4		4.0			
	950	GORK	46	C	0840.5	0843.8	7.0	5.0			
	100	GORK	41	F	0953.1	0958.2		660.0			
	100	GORK	41	F	0956.1	0956.2	2.6	660.0			
	33	UPIC	46	C	0956.3	0956.4	3.7				
	810	KRAK	8	S	0959.2	0959.5	0.4	6.0			
	5900	KISV	2	S/F	1039.4	1041.5	5.0	9.0			
	536	ONDR	47	GB	1212.0	1221.5	45.0	38.0			
	33	UPIC	41	F	1214.3	1214.4	9.2				
	1470	POTS	45	C	1217.0	1221.3	18.0	62.0			
	1470	POTS		C	1217.0	1227.7		15.0			
	2695	SVTO	4	S/F	1218.0E	1221.0	10.0D	130.0			QL=1 ST=2 TYP=3
	4995	SVTO	49	GB	1218.0E	1221.0	13.0D	520.0			QL=1 ST=2 TYP=6
	9500	POTS	45	C	1218.0	1221.2	27.0	1165.0			
	3100	CRIM	45	C	1218.4	1220.2	9.0	74.0			
	3100	CRIM	45	C	1218.4	1221.4		123.0	41.0		
	15400	SVTO	49	GB	1219.0E	1221.0	8.0D	1500.0			QL=1 ST=2 TYP=6
	8800	SVTO	49	GB	1219.0E	1221.0	11.0D	1400.0			QL=1 ST=2 TYP=6
	810	KRAK	3	S	1219.0	1221.5	6.0	26.0	10.0		
	200	HIRA	48	C	2340.4	2343.2	11.2	21000.0	1760.0		O
	500	HIRA	46	C	2340.7	2342.3	54.5	114.0	6.0		O
	100	HIRA	46	C	2341.0		16.5	1000.0D	370.0D		

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
28	2695	LEAR	49	GB	2341.0E	2343.0	5.0D	390.0			QL=1 ST=2 TYP=7
	245	LEAR	49	GB	2341.0E	2344.0	7.0D	2900.0			QL=1 ST=2 TYP=7
	410	LEAR	49	GB	2341.0E	2342.0	2.0D	1100.0			QL=1 ST=2 TYP=7
	610	LEAR	49	GB	2341.0E	2342.0	4.0D	82.0			QL=1 ST=2 TYP=7
	4995	PALE	49	GB	2341.0E	2343.0	19.0D	680.0			QL=1 ST=1 TYP=6
	8800	LEAR	49	GB	2342.0E	2343.0	7.0D	1600.0			QL=1 ST=2 TYP=7
	15400	LEAR	49	GB	2342.0E	2342.0	5.0D	980.0			QL=1 ST=2 TYP=7
	8800	PALE	49	GB	2342.0E	2343.0	18.0D	1500.0			QL=1 ST=1 TYP=6
	15400	PALE	49	GB	2342.0E	2343.0	18.0D	1000.0			QL=1 ST=1 TYP=6
	200	HIRA	29	PBI	2351.2	2408.0	92.0	16.0	4.0		O
29	245	LEAR	43	NS	0010.0	0015.0	147.0	58.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	0010.0E	0015.0	188.0D	98.0			QL=1 ST=2 TYP=1
	245	SVTO	43	NS	0636.0	0751.0U	510.0D	53.0			QL=1 ST=2 TYP=1
	260	ONDR	44	NS	0850.0E	1239.0	270.0D	100.0			
	127	TORN	43	NS	1126.0		154.0		12.0		V=1
	245	SGMR	44	NS	1238.0E	1531.0	233.0D	160.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	1728.0E	2032.0	614.0D	190.0			QL=1 ST=2 TYP=1
	200	HIRA	44	NS	2145.0E	2312.0	440.0D	140.0	22.0		O
	245	LEAR	44	NS	2200.0E	2249.0	249.0D	90.0			QL=1 ST=3 TYP=1
	100	HIRA	46	C	0414.3	0414.8	2.3	270.0			
	245	LEAR	8	S	0638.0E	0638.0	U	74.0			QL=1 ST=2 TYP=3
	5900	KISV	2	S/F	0846.7	0849.2	3.7	4.0			
	245	LEAR	8	S	0849.0E	0849.0	U	63.0			QL=1 ST=2 TYP=3
	9300	KISV	20	GRF	0930.3	1008.7	59.5	5.0			
	5900	KISV	45	C	0930.4	0937.2	19.0	4.0			
	5900	KISV	45	C	0930.4	0936.3		6.0			
	5900	KISV	23	GRF	0953.0	0957.0	28.9	6.0			
	410	LEAR	8	S	1017.0E	1017.0	1.0D	110.0			QL=1 ST=2 TYP=3
	15000	KISV	26	FAL	1132.4	1142.3	55.3	10.0			
	204	IZMI	41	F	1137.0	1138.0	1.5	260.0			
	15000	KISV	29	PBI	1151.8	1201.3	42.7	26.0			
	15000	KISV	45	C	1151.8	1159.4	9.5	67.0			
	15000	KISV	45	C	1151.8	1159.9		66.0			
	5900	KISV	46	C	1153.3	1159.2		112.0			
	5900	KISV	46	C	1153.3	1158.5		82.0			
	5900	KISV	29	PBI	1153.3	1201.6	16.5	23.0			
	5900	KISV	46	C	1153.3	1156.8		67.0			
	5900	KISV	46	C	1153.3	1157.8		65.0			
	5900	KISV	46	C	1153.3	1159.9	8.2	118.0			
	9300	KISV	29	PBI	1153.5	1202.2	52.0	22.0			
	9300	KISV	46	C	1153.5	1159.3	8.6	114.0			
	9300	KISV	46	C	1153.5	1158.4		68.0			
	9300	KISV	46	C	1153.5	1156.6		46.0			
	9300	KISV	46	C	1153.5	1157.8		52.0			
	9300	KISV	46	C	1153.5	1159.9		113.0			
	9500	POTS	4	S/F	1154.0	1159.3	16.0	88.0			
	3100	CRIM	3	S	1154.5	1159.4	15.5	25.0	8.0		
	1470	POTS	4	S/F	1157.5	1158.4	5.5	10.0			
	4995	SVTO	4	S/F	1158.0E	1159.0	3.0D	72.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	1158.0E	1159.0	3.0D	89.0			QL=1 ST=2 TYP=3
	15400	SVTO	4	S/F	1159.0E	1159.0	5.0D	54.0			QL=1 ST=2 TYP=3
	9300	KISV	4	S/F	1231.0	1232.0	3.1	56.0			
	4995	SVTO	8	S	1231.0E	1232.0	1.0D	55.0			QL=1 ST=2 TYP=3
	9300	KISV	29	PBI	1231.0	1234.2	12.1	7.0			
	15000	KISV	2	S/F	1231.1	1232.0	3.0	31.0			
	9500	POTS	3	S	1231.3	1232.0	3.7	49.0			
	1470	POTS	2	S/F	1231.4	1232.4	1.1	5.0			
	536	ONDR	45	C	1250.0	1300.0	12.5	41.0			
	430	KRAK	4	S/F	1257.5	1258.7	3.0	31.0	8.0		
	810	KRAK	8	S	1258.0	1259.0	3.0	14.0	7.0		
	1470	POTS	4	S/F	1258.0	1300.0	6.0	33.0			
	2695	SVTO	8	S	1258.0E	1259.0	2.0D	67.0			QL=1 ST=2 TYP=3
	9500	POTS	4	S/F	1258.5	1301.0	6.5	27.0			
	4995	SVTO	8	S	1259.0E	1259.0	1.0D	77.0			QL=1 ST=2 TYP=3
	1470	POTS	20	GRF	1320.0	1335.5	40.0D	19.0			
	245	SGMR	4	S/F	1642.0E	1647.0	14.0D	90.0			QL=1 ST=2 TYP=3
	245	SGMR	49	GB	1819.0E	1819.0	U	3800.0			QL=1 ST=3 TYP=6
	245	PALE	8	S	1912.0E	1912.0	U	93.0			QL=1 ST=2 TYP=3

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
29	245	SGMR	8	S	1912.0E	1912.0	U	100.0			QL=1 ST=2 TYP=3
	245	PALE	8	S	1915.0E	1916.0	1.0D	200.0			QL=1 ST=3 TYP=3
	610	SGMR	49	GB	1919.0E	1919.0	281.0D	710.0			QL=1 ST=1 TYP=6
	245	SGMR	8	S	2027.0E	2027.0	U	160.0			QL=1 ST=3 TYP=3
	245	SGMR	8	S	2032.0E	2032.0	U	190.0			QL=1 ST=2 TYP=3
	410	PALE	8	S	2040.0E	2041.0	1.0D	290.0			QL=1 ST=2 TYP=3
	610	PALE	8	S	2040.0E	2041.0	1.0D	130.0			QL=1 ST=2 TYP=3
	245	PALE	8	S	2040.0E	2040.0	1.0D	110.0			QL=1 ST=2 TYP=3
	245	SGMR	8	S	2040.0E	2040.0	1.0D	83.0			QL=1 ST=2 TYP=3
	610	SGMR	8	S	2040.0E	2041.0	U	150.0			QL=1 ST=2 TYP=3
	410	SGMR	8	S	2040.0E	2041.0	U	360.0			QL=1 ST=2 TYP=3
30	260	ONDR	44	NS	0850.0E	1129.3	270.0D	146.0			
	9300	KISV	22	GRF	0600.0	0709.5	360.0	18.0			
	5900	KISV	22	GRF	0628.7	0630.7	24.0	14.0			
	9300	KISV	22	GRF	0629.1	0630.7	24.5	8.0			
	204	IZMI	7	C	0831.0	0831.2	1.0	90.0	70.0		
	237	TRST	46	C	0831.4	0831.4	0.3	107.0			2L
	327	TRST	42	SER	0831.4	0831.6	0.3	112.0			3R
	5900	KISV	22	GRF	0908.0	1100.0	175.0	7.0			
	5900	KISV	2	S/F	0908.2	0908.7	0.9	3.0			
	5900	KISV	20	GRF	0908.2	0911.8	27.0	15.0			
	9300	KISV	22	GRF	0909.2	0913.7	26.0	9.0			
	9100	GORK	20	GRF	0910.5	0913.4	23.5	5.0			
	237	TRST	46	C	0921.6	0921.7	1.1	241.0			3L
	327	TRST	46	C	0922.4	0922.7	0.5	116.0			2R Spike
	5900	KISV	20	GRF	0948.7	0949.2	9.9	2.0			
	9300	KISV	22	GRF	1011.8	1100.0	52.0	5.0			
	9300	KISV	22	GRF	1011.8	1022.3		4.0			
	9100	GORK	22	GRF	1028.3	1038.1	11.8	8.5			
	9500	POTS	1	S	1031.0	1033.0	4.0	8.0			
	5900	KISV	45	C	1035.9	1038.2	9.5	9.0			
	5900	KISV	45	C	1035.9	1036.8		5.0			
	9300	KISV	45	C	1036.2	1038.1	4.2	9.0			
	9300	KISV	45	C	1036.2	1036.6		5.0			
	15000	KISV	1	S	1036.4	1038.3	6.9	4.0			
	5900	KISV	2	S/F	1043.4	1043.8	0.7	2.0			
	9300	KISV	2	S/F	1046.2	1046.9	1.4	5.0			
	5900	KISV	22	GRF	1104.5	1113.1	57.5	6.0			
	1470	POTS	29	PBI	1110.8	1111.2	35.0	4.0			
	245	SVTO	8	S	1128.0E	1128.0	U	280.0			QL=1 ST=2 TYP=3
	5900	KISV	45	C	1128.0	1130.2	2.7	50.0			
	327	TRST	46	C	1128.0	1128.2	0.9	463.0			1L Spike
	9500	POTS	1	S	1128.0	1128.3	1.5	7.0			
	237	TRST	46	C	1128.0	1128.4	1.0	442.0			5L
	5900	KISV	45	C	1128.0	1128.5		22.0			
	5900	KISV	29	PBI	1128.0	1130.7	4.8	6.0			
	9300	KISV	45	C	1128.1	1130.2	3.6	55.0			
	234	POTS	4	S/F	1128.1	1128.3	1.5	150.0	30.0		
	9300	KISV	45	C	1128.1	1128.5		8.0			
	204	IZMI	7	C	1129.0	1129.6	1.6	150.0	100.0		
	15000	KISV	2	S/F	1129.9	1130.2	1.0	17.0			
	9500	POTS	3	S	1130.0	1130.3	0.9	38.0			
	536	ONDR	42	SER	1202.5	1224.4	26.4	119.0			
	245	SVTO	8	S	1208.0E	1208.0	1.0D	80.0			QL=1 ST=3 TYP=3
	234	POTS	4	S/F	1208.6	1209.1	1.4	110.0	30.0		
	237	TRST	46	C	1208.9	1209.0	0.4	356.0			4L
	810	KRAK	8	S	1341.8	1342.5	0.7	8.0			
	2800	OTTA	4	S/F	1803.0	1807.3	12.5	277.2	83.0		
	2695	SGMR	4	S/F	1805.0E	1807.0	5.0D	220.0			QL=1 ST=2 TYP=3
	15400	SGMR	8	S	1805.0E	1807.0	2.0D	210.0			QL=1 ST=2 TYP=3
	4995	PALE	49	GB	1805.0E	1806.0	16.0D	600.0			QL=1 ST=2 TYP=6
	4995	SGMR	49	GB	1805.0E	1806.0	20.0D	580.0			QL=1 ST=2 TYP=6
	8800	SGMR	49	GB	1805.0E	1806.0	39.0D	590.0			QL=1 ST=2 TYP=6
	8800	PALE	49	GB	1805.0E	1806.0	355.0D	580.0			QL=1 ST=1 TYP=6
	2695	PALE	4	S/F	1806.0E	1807.0	3.0D	210.0			QL=1 ST=2 TYP=3
	15400	PALE	8	S	1806.0E	1806.0	2.0D	250.0			QL=1 ST=2 TYP=3
	2800	OTTA	29	PBI	1815.5	1815.5	105.0	36.8	18.0		
	410	SGMR	8	S	1926.0E	1926.0	U	75.0			QL=1 ST=2 TYP=3

S O L A R R A D I O E M I S S I O N
Outstanding Occurrences

DECEMBER 1988

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
31	127	TORN	43	NS	1156.0		124.0		12.0		V=0
	100	HIRA	44	NS	2145.0E	0200.0	580.0D	65.0	15.0		
	200	HIRA	44	NS	2145.0E	0415.0	580.0D	25.0	9.0		MR
	245	LEAR	43	NS	2201.0	0629.0	772.0D	54.0			QL=1 ST=2 TYP=1
	5900	KISV	22	GRF	0600.0	0751.6	360.0	8.0			
	5900	KISV	20	GRF	0800.6	0806.7	33.6	3.0			
	5900	KISV	2	S/F	0813.3	0814.8	6.0	9.0			
	3100	CRIM	1	S	0813.6	0815.0	2.0	4.8	1.6		
	9300	KISV	20	GRF	0813.8	0815.9	9.8	3.0			
	5900	KISV	2	S/F	0815.7	0815.9	0.4	1.0			
	5900	KISV	2	S/F	0837.5	0838.2	1.5	7.0			
	5900	KISV	29	PBI	0837.5	0838.9	4.7	3.0			
	5900	KISV	25	R	1006.4	1134.5	113.6	10.0			
	5900	KISV	25	R	1006.4	1008.6		9.0			
	9100	GORK	20	GRF	1006.5	1008.3	10.7	6.0			
	9300	KISV	25	R	1006.5	1110.7	113.5	9.0			
	15000	KISV	26	FAL	1129.9	1131.3	45.0	8.0			
	810	KRAK	41	F	1139.4	1139.4	2.0	56.0	10.0		
	810	KRAK	41	F	1146.2	1146.4	3.0	5.0	1.0		
	810	KRAK	8	S	1317.5	1317.6	0.3	8.0			
	810	KRAK	8	S	1318.5	1318.6	0.8	28.0			
	810	KRAK	8	S	1333.0	1333.0	0.5	8.0			

Reports are received routinely from the following observatories:

BERN = Berne	IZMI = IZMIRAN	ONDR = Ondrejov	SVTO = San Vito
CRIM = Crimea	KISK = Kislovodsk	OTTA = Ottawa	SYDN = Sydney
GORK = Gorky	KRAK = Krakow	PALE = Palehua	TORN = Torun
HIRA = Hiraiso	LEAR = Learmonth	PENT = Penticton	TRST = Trieste
HUAN = Huancayo	NOBE = Nobeyama	POTS = Potsdam	TYKW = Toyokawa
		SGMR = Sagamore Hill	UPIC = Upice

Explanation of Type Code:

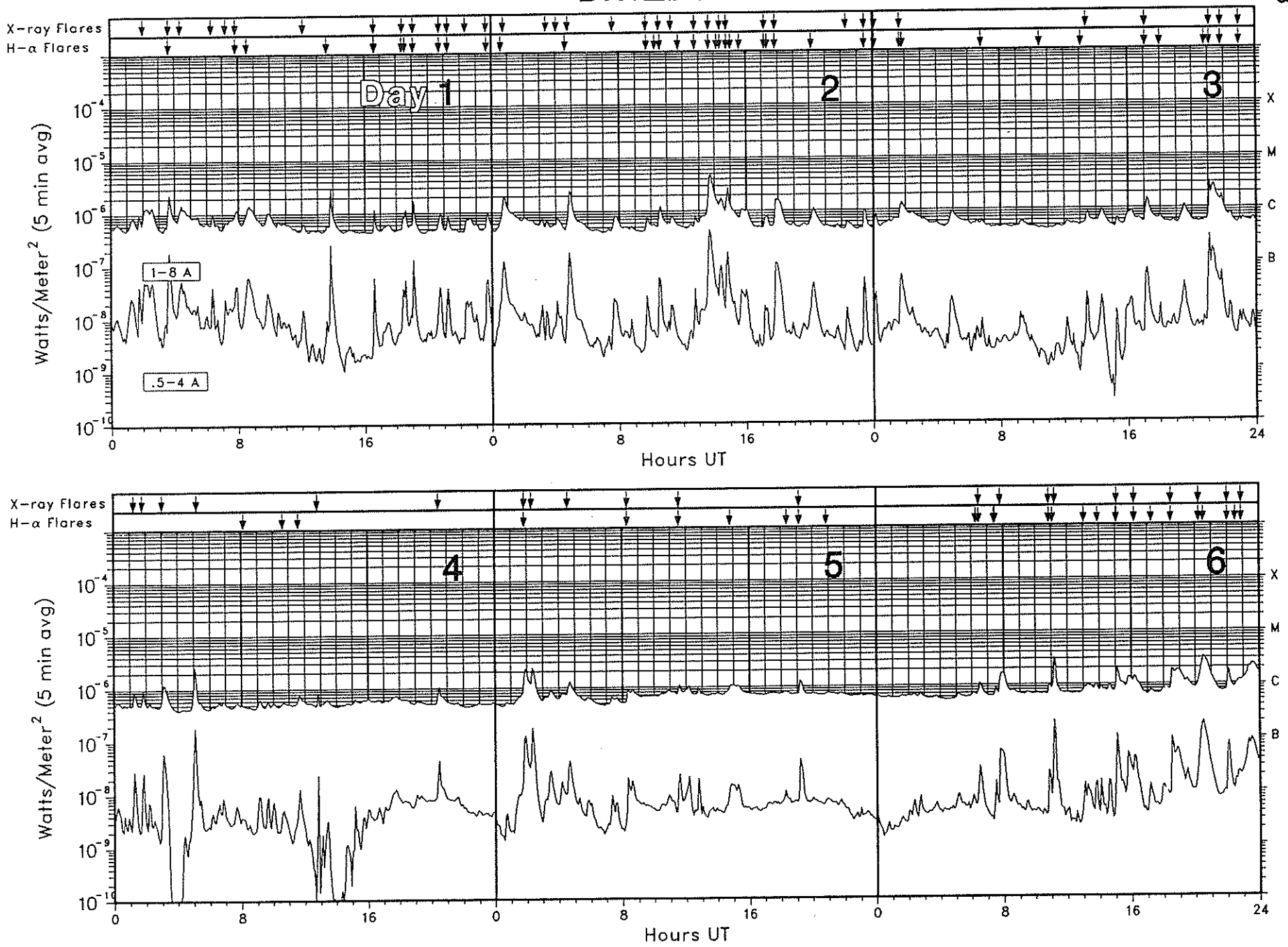
1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset of Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	33 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple 3F	28 Precusor	41 Group of Bursts	47 Great Burst
6 Minor	23 Simple 3AF	29 Post Burst Increase	42 Series of Bursts	48 Major

1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A

RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Ottawa, Canada 2800 MHz; Hiraiso, Japan 500 and 200 MHz; and Toyokawa, Japan 9400, 3750, 2000 and 1000 MHz.

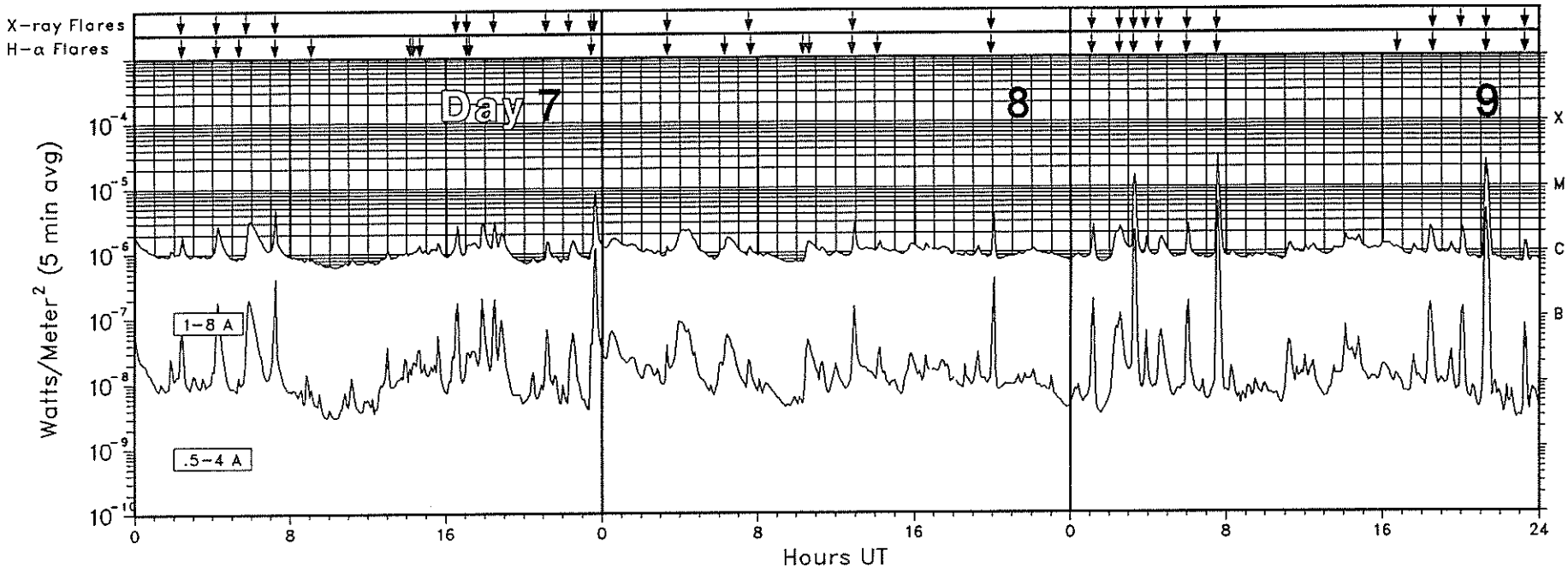
GOES-7 X-RAY DETECTOR

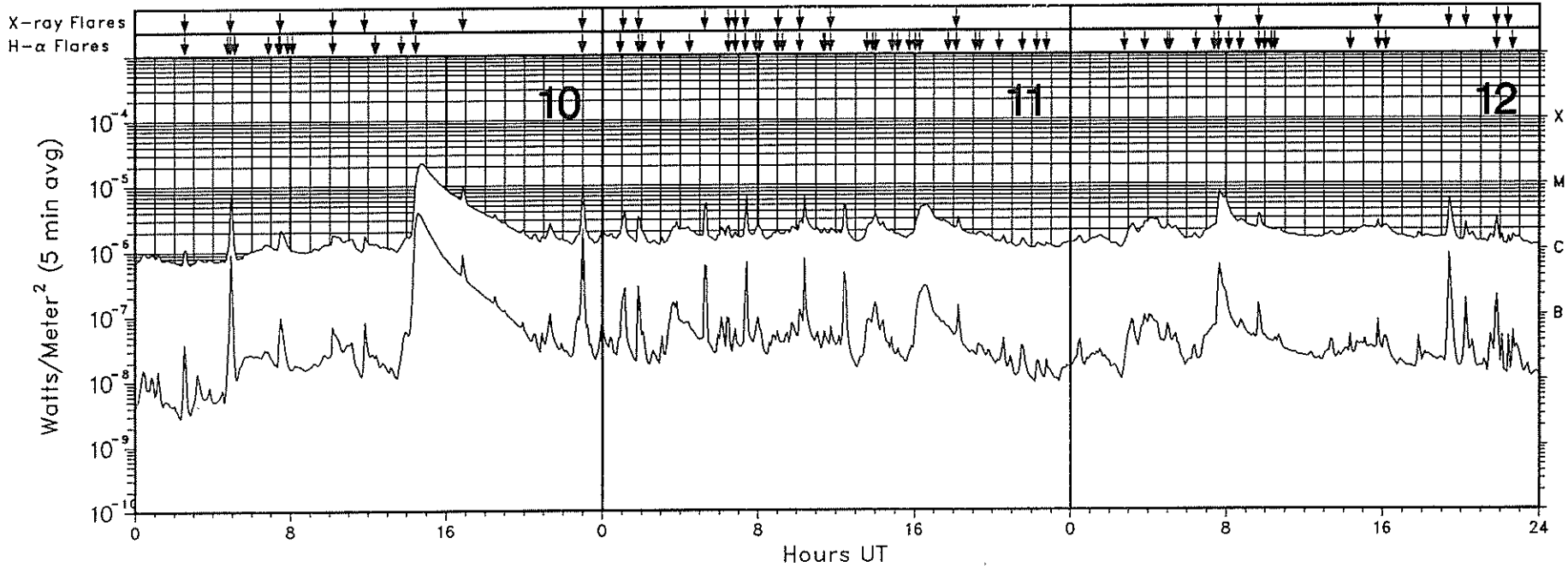
December 1988



GOES-7 X-RAY DETECTOR

December 1988

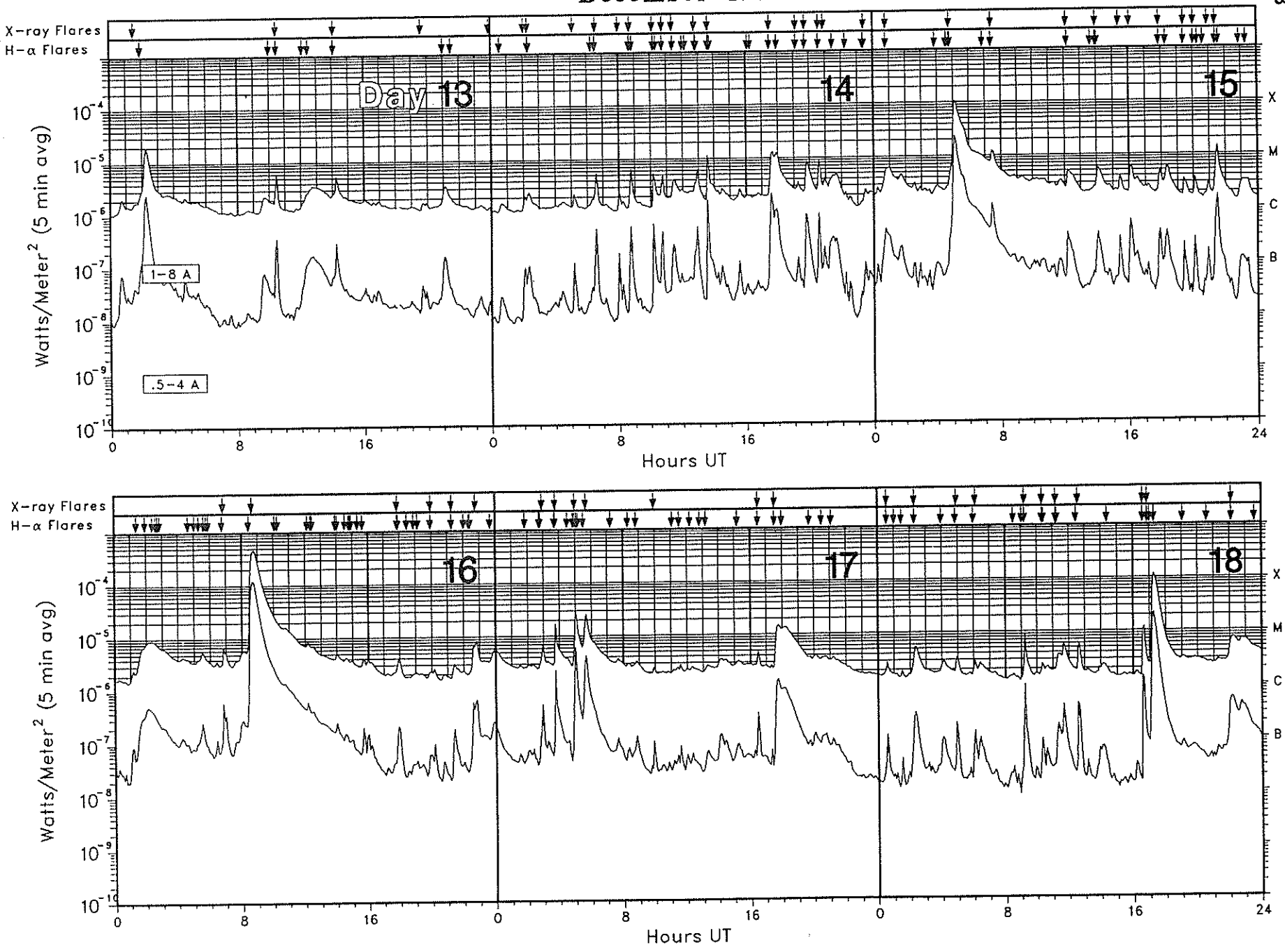




73
Dec 88

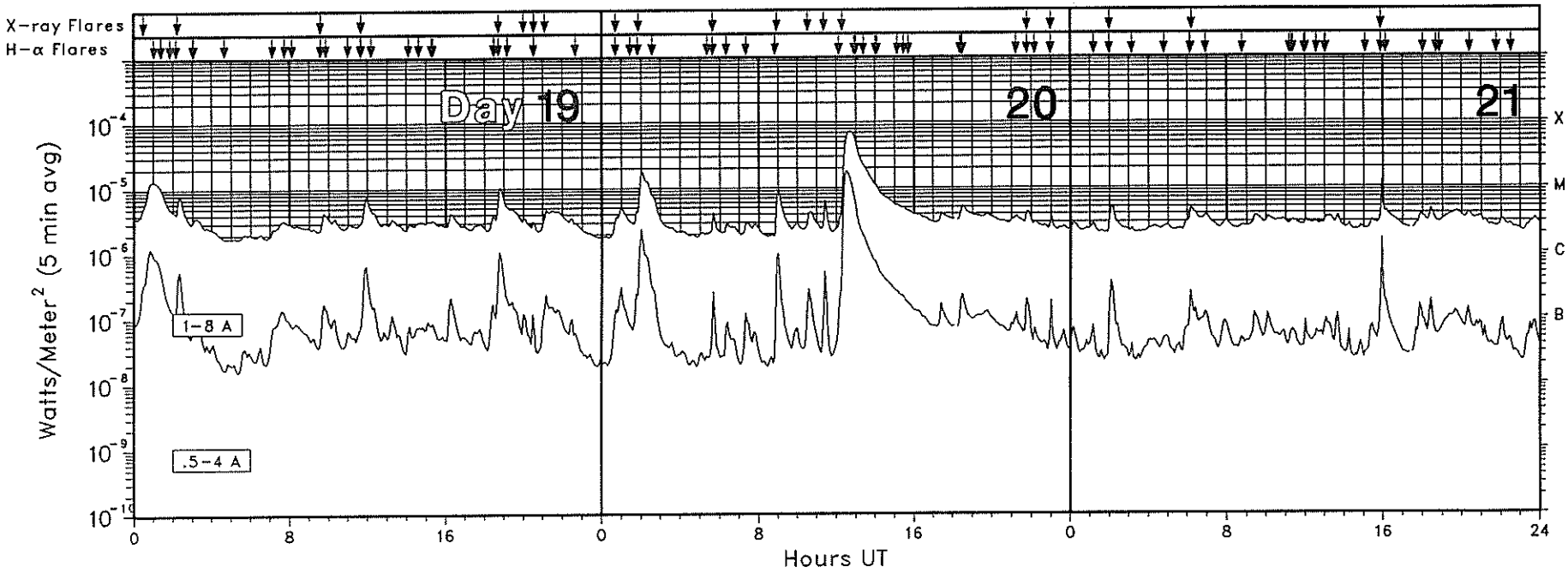
GOES-7 X-RAY DETECTOR

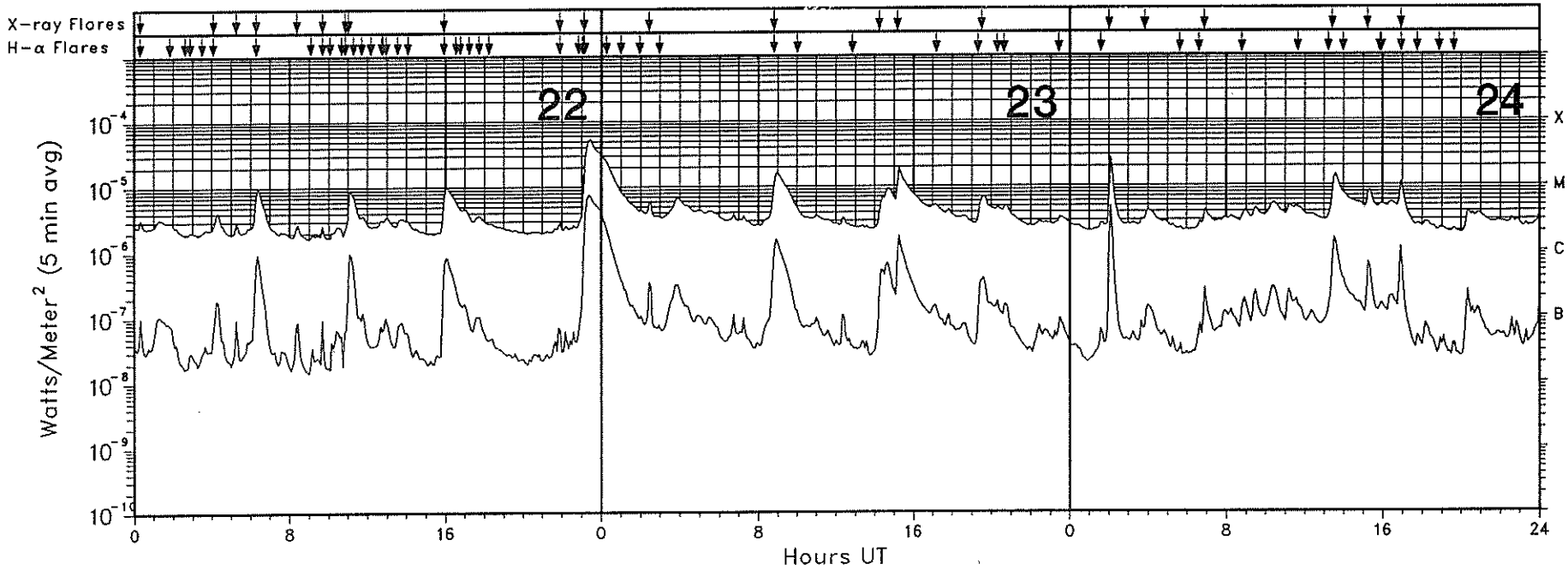
December 1988



GOES-7 X-RAY DETECTOR

December 1988

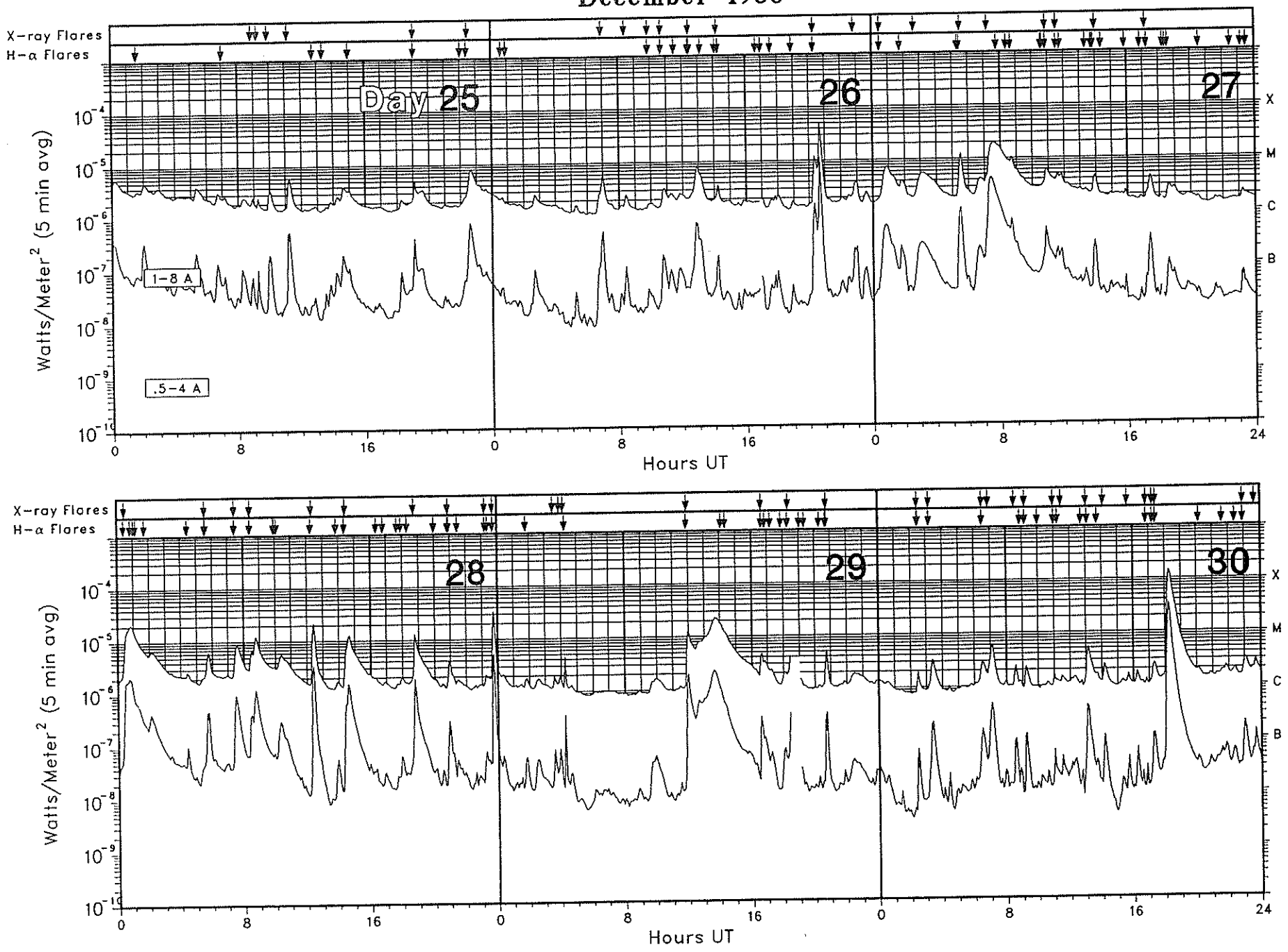




75
Dec 88

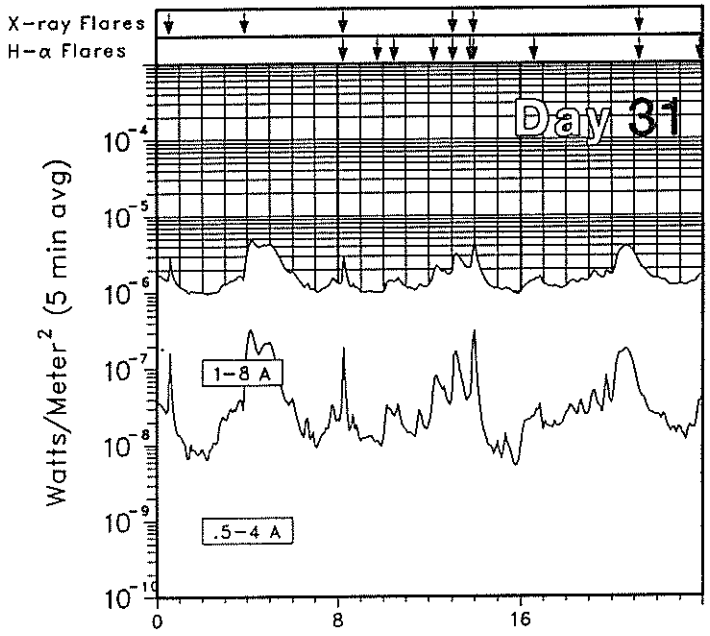
GOES-7 X-RAY DETECTOR

December 1988



GOES-7 X-RAY DETECTOR

December 1988



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

December 1988

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Opt	Imp	Xray	NOAA/ USAF Region
01	0201	0239	0242					C1.5	
01	0338E	0339U	0351D	N18	E07	SF		C2.6	5260
01	0422	0426	0430					C1.6	
01	0619	0625	0629					C1.1	
01	0712	0715	0717					C1.0	
01	0750E	0757	0804D	N17	E53	SF		C1.3	5261
01	1207	1210	1212					B7.7	
01	1635E	1635	1645D	S15	E27	SF		C1.6	5262
01	1824E	1825	1834D	N19	E47	SF		C1.3	5261
01	1905E	1907	1914D	N20	E46	SN		C2.2	5261
01	2042E	2048	2058D	S15	E24	SF		C1.2	5262
01	2114E	2116	2131D	N19	E45	SF		C1.0	5261
01	2221	2225	2248					B8.5	
01	2340	2346	2353					C1.0	
02	0044E	0044	0104D	S15	E21	SF		C2.1	5262
02	0325	0331	0334					B7.7	
02	0403	0407	0414					B8.4	
02	0446	0455	0503					C2.6	
02	0737	0745	0802					B8.4	
02	0942E	0946	0955D					B8.0	
02	1030E	1035	1042D					C1.5	
02	1116	1120	1127					B8.8	
02	1245E	1246	1259D	S19	W15	SF		B8.5	5254
02	1339E	1340	1415D	N19	E42	SF		C5.3	5261
02	1421E	1422	1448D	S19	W18	SF		C1.7	5254
02	1446E	1449	1458D	N18	E39	SF		C3.0	5261
02	1710E	1714	1727D	N19	W15	SF		B8.6	5260
02	1750E	1753	1810D	N18	E38	SF		C1.8	5261
02	2218	2221	2224					B6.9	
02	2327E	2331	2339D	N18	E35	SF		C1.2	5261
03	0006E	0009	0018D	N19	E35	SF		B9.0	5261
03	0141E	0145	0152D	N18	E33	SF		C2.0	5261
03	1325	1330	1335					B9.4	
03	1705E	1707	1713D	N13	E03	SF		C1.6	5258
03	2106	2107	2113D	N25	E90	SN		C4.0	5265
03	2149E	2152	2205D	S15	W06	SF		C2.0	5262
03	2258E	2301	2308D	S15	W05	SF		B8.7	5262
04	0115	0119	0123					C1.1	
04	0147	0151	0154					C1.1	
04	0302	0310	0319					C1.3	
04	0512E	0522	0541D	S19	E90	SF		C2.9	5266
04	1248	1253	1255					B9.8	
04	2028	2032	2035					C1.1	
05	0151E	0151	0204D	N17	E72	SF		C2.3	5265
05	0218	0223	0230					C2.4	
05	0433	0442	0500					C1.3	
05	0819E	0822	0828D	N17	E67	SF		B9.2	5265
05	1133E	1134	1150D	N20	E67	SF		C1.1	5265
05	1909E	1915	1941D	N18	E60	SN		C1.3	5265
06	0627	0633	0640					C1.0	
06	0748E	0750	0819D	N25	E47	SF		C1.7	5264
06	1051E	1052	1102D	S35	E66	SF		C1.0	5267
06	1114E	1118	1129D	N14	W30	SF		C3.3	5258
06	1505E	1506	1518D	S35	E65	SF		C2.0	5267
06	1611E	1612	1622D	N17	E53	SF		C1.7	5265
06	1829E	1831	1844D	N30	E88	SF		C2.1	5269
06	2013	2030	2054	N23	E51	SF		C3.0	5265
06	2201E	2205	2215D	N29	E77	SN		C1.9	5269
06	2253E	2314	2335D	N18	W16	SF		C2.3	5261
07	0222	0226	0230					C2.1	
07	0412E	0413	0418D	S21	W80	SF		C3.2	5254
07	0544	0555	0618					C3.3	
07	0714E	0714	0720D	S21	W84	SF		C6.3	5254
07	1631	1636	1640					C3.0	
07	1704	1709U	1755	N18	E37	SF		C3.5	5265
07	1826	1831	1834					C3.7	
07	2108	2115	2121					C1.6	
07	2218E	2225	2245D	N29	E68	SF		C1.6	
07	2328E	2329	2332D	N16	E84	SF		C1.6	5271
07	2335E	2340	2400	S17	W90	SF		M1.0	5254
08	0321E	0322	0325D	N16	E81	SF		C1.4	5271
08	0732	0735	0740					C1.3	
08	1252	1257	1303					C2.9	
08	1956E	2005	2016D	N19	E20	SF		C5.3	5265
09	0107E	0110	0118D	N21	E21	SF		C2.9	5265
09	0232E	0234	0246D	N21	E20	SF		C2.7	5265
09	0316E	0317	0333D	N21	E20	1N		M2.2	5265
09	0353	0357	0401					C1.7	
09	0434E	0437	0504D	N18	E70	SF		C1.8	5271
09	0601E	0602	0614D	N20	E14	SF		C3.0	5265
09	0732E	0735	0751D	N20	E13	SN		M3.8	5265
09	1833	1834U	1850D	N19	E06	SF		C2.4	5265
09	1959	2007	2013					C2.4	
09	2117	2120U	2125	N21	E09	1N		M2.6	5265
09	2316E	2317	2326D	N19	E04	SF		C1.7	5265
10	0232E	0236	0243D	N21	E06	SF		C1.2	5265
10	0453E	0455	0510D	N20	E02	SN		C9.4	5265
10	0728E	0732	0735D	N21	E06	SF		C2.2	5265
10	1010E	1012	1022D	S11	E61	SF		C2.0	5272
10	1148	1152	1159					C1.8	
10	1420	1450	1717					M2.2	
10	1651	1654	1658					M1.1	
10	2259E	2300	2304D	S34	E73	SF		M1.8	5275
11	0104E	0105	0113D	S34	E72	SF		C5.0	5275
11	0152E	0153	0158D	S33	E57	SF		C5.2	5273
11	0515	0520	0524					C8.1	
11	0627E	0627	0631D	S34	E70	SF		C2.7	5275
11	0649E	0650	0657D	S33	E69	SF		C2.2	5275
11	0720E	0725	0731D	S34	E69	SF		C9.2	5275
11	0902E	1029	1043D	S32	E67	1N		M1.0	5275
11	1010E	1013	1021D	S32	E48	SF		C2.9	5273
11	1144E	1229	1246D	S32	E67	1N		C6.9	5275
11	1808E	1816	1830D	S32	E61	SN		C3.6	5275
12	0736E	0740	0823D	N32	E12	1N		C7.8	5269
12	0940D	0943	1015D	S14	E35	1B		C4.3	5272
12	1546E	1547	1555D	N20	W24	SF		C2.9	5265
12	1922	1928	1934					C6.5	
12	2014	2017	2022					C2.6	
12	2148E	2149	2206D	S33	E50	SN		C3.9	5275
12	2224	2227	2231					C1.6	
13	0130E	0137	0215D	N25	E74	1N		M2.0	5278
13	1028	1030U	1030	N20	W37	1B		C7.6	5265
13	1405E	1416	1432D	N32	W06	SF		C6.5	5269
13	1938	1941	2004					C1.7	
13	2352E	2354	0002D	N09	W01	SN		C1.6	5271
14	0202	0207	0215					C2.4	
14	0216	0219	0226					C2.8	
14	0507E	0513	0520D	N20	E33	SF		C2.5	5279
14	0632E	0636	0649D	N18	E31	SF		C5.9	5279
14	0759	0803	0807					C3.0	
14	0842E	0845	0856D	N17	E30	SF		C7.4	5279

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

Preliminary Listing

December 1988

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp Opt	Xray	NOAA/ USAF Region
14	1008	1014	1019				C6.3	
14	1044	1046U	1055D	S30	E16	SN	C7.2	5273
14	1121	1131	1140				C4.4	
14	1246	1257	1300				C7.5	
14	1337E	1337	1354D	N30	E63	1B	M2.1	5278
14	1729	1743	1821D	N27	E62	SN	M1.3	5278
14	1909E	1909	1929D	S31	E12	SF	C4.3	5273
14	1943E	1947	2000	N27	E55	SF	C8.6	5278
14	2035	2058U	2110D	S33	E08	SF	M1.0	5273
14	2053	2056	2106				C4.1	
14	2325E	2325	2333D	N28	E56	SF	C2.6	5278
15	0047	0050U	0130	N26	E58	SF	C6.3	5278
15	0446E	0505	0609	N27	E59	1N	X1.1	5278
15	0724	0729	0810				M1.3	
15	1208	1214	1238				C5.1	
15	1357	1410	1420	S30	W04	SF	C5.9	5273
15	1523	1529	1533				C4.4	
15	1602	1609	1618				C6.5	
15	1751E	1758	1832D	N23	E19	SF	C5.3	5279
15	1925	1927U	1944D	N22	E17	SF	C3.6	5279
15	2002E	2008	2033D	N21	E15	SF	C3.8	5279
15	2054	2102	2111	N21	E17	SF	C3.1	5279
15	2123E	2131	2206D	N20	E14	1B	M1.5	5279
16	0649	0653	0655				C9.0	
16	0838E	0841	0850	N26	E37	1B	X4.7	5278
16	1751E	1801	1810D	S33	W11	SF	C3.9	5275
16	1957	2013	2043D	N17	E83	SN	C2.9	5282
16	2116E	2120	2208D	N17	E90	SF	C3.2	5283
16	2246	2251	2305D	N29	E31	SB	C9.3	5278
17	0254E	0257	0306D	S32	W22	SB	C7.1	5273
17	0344E	0346	0406D	S32	W23	SN	M2.8	5273
17	0458E	0500	0553	N28	E30	SF	M3.2	5278
17	0540	0543	0600D	N27	E31	1F	M2.7	5278
17	0956	1000	1002				C3.2	
17	1630E	1632	1632D	N28	E22	SF	C5.1	5278
17	1732	1736	2011D	S15	W35	1B	M1.5	5272
18	0034E	0035	0040D	N24	W11	SF	C3.2	5279
18	0217E	0220	0241D	N32	W42	SF	C5.5	5274
18	0456E	0456	0502D	N23	E12	SF	C3.9	5278
18	0607		0626	N20	E90	1N	C3.0	5285
18	0913E	0915	0946D	N22	E07	SN	M1.0	5278
18	1020E	1022	1029D	S22	E21	SF	C2.5	5282
18	1112E	1113	1123D	N24	E07	SF	C6.3	5278
18	1234	1240	1302D	S21	E21	SN	C6.2	5282
18	1635E	1641	1658D	S22	E19	1B	M1.4	5282
18	1651E	1714	1845D	S31	W40	3B	X1.1	5273
18	2208	2211U	2219	N22	W25	1N	C7.4	5279
19	0030		0047	N24	W27	1B	M1.4	5279
19	0214E	0218	0245D	S21	E14	SF	C8.4	5282
19	0935E	0946	0956D	S15	W60	SF	C4.3	5272
19	1140E	1149	1203D	S21	E09	SF	C7.7	5282
19	1843E	1848	1929D	N21	E68	SN	M1.2	5285
19	2000E	2004	2011D	S31	W47	SF	C4.8	5275
19	2032E	2034	2047D	N29	W05	SF	C3.7	5278
19	2107E	2111	2120D	S31	W47	SB	C5.3	5273
20	0043E	0102	0116D	N24	W10	SF	C5.8	5278
20	0152E	0200	0308D	S31	W53	SN	M1.9	5273
20	0539E	0540	0552D	N20	W46	SF	C4.5	5279
20	0856E	0903	0923D	N21	E58	1F	M1.0	5285
20	1032	1045	1054				C4.3	
20	1122	1128	1133				C7.0	
20	1218	1244	1532				M7.3	
20	2146E	2149	2201D	N20	E55	SF	C4.5	5285
20	2259E	2300	2316D	N23	E51	SF	C4.2	5285
21	0200E	0202	0209D	S34	W72	SF	C5.9	5273
21	0612E	0613	0623D	N27	W27	SF	C5.2	5278
21	1553E	1558	1605D	S32	W67	SF	M1.5	5273
22	0018E	0021	0030D	N21	E70	SF	C3.8	5290
22	0405	0417	0425				C4.2	
22	0515	0519	0523				C3.2	
22	0617E	0622	0629D	S35	W80	SF	M1.0	5273
22	0822	0825	0828				C3.5	
22	0941E	0941	0951D	N26	W43	SF	C3.0	5278
22	1052E	1109	1145D	N28	W42	1B	C9.4	5278
22	1052	1056	1058				C3.1	
22	1101	1108	1126				C9.4	5278
22	1555E	1559	1612D	S31	W69	SF	M1.0	5275
22	2153E	2154	2204D	N25	W45	SF	C3.4	5278
22	2307E	2310	0126D	N26	W41	1N	M5.3	5280
23	0225	0231	0234				C7.1	
23	0848E	0853	0902D	S32	W89	SF	M1.6	5275
23	1414	1443	1509				C9.3	
23	1510	1518	1643	S33	W90		M1.9	5275
23	1930	1942U	2030D	S16	E63	SF	C7.0	5292
24	0201	0207	0225				M2.9	
24	0350	0400	0420				C4.2	
24	0653	0658	0707				C4.4	
24	1325	1336	1501				M1.5	
24	1513	1521	1530				C8.6	
24	1656	1701	1728D	S17	E54	SN	M1.1	5292
25	0852	0856	0858				C3.3	
25	0914	0917	0919				C3.4	
25	0954	1003	1011				C4.1	
25	1110	1115	1123				M1.1	
25	1904E	1905	1921D	N27	W87	SF	C6.3	5278
25	2229E	2300	2304D	S17	E34	2F	C8.2	5292
26	0656	0702	0707				C6.4	
26	0823	0829	0835				C2.5	
26	0951E	0952	1004D	S16	E29	SF	C2.6	5292
26	1040E	1049	1225D	S16	E29	1F	C3.3	5292
26	1225E	1257	1327D	S18	E27	1N	C8.9	5292
26	1411E	1414	1430D	S19	E23	SF	C4.4	5292
26	2018E	2042	2114D	S20	E20	1B	M6.1	5292
26	2250	2302	2305				C4.4	
27	0029E	0053	0114D	N21	E04	SF	C7.4	5290
27	0238	0311	0415				C5.5	
27	0530E	0531	0542D	N20	W35	SF	M1.3	5285
27	0712	0736	0911				M1.9	
27	1051E	1052	1111D	S19	E13	SB	C7.5	5292
27	1132E	1134	1144D	S22	E11	SN	C5.5	5292
27	1358	1359U	1412D	N20	W39	SF	C4.9	5285
27	1709E	1727	1801D	N21	W36	1F	C4.8	5285
28	0027E	0048	0206D	S18	E08	1N	M2.1	5292
28	0533E	0544	0613D	N20	W48	SF	C6.6	5285
28	0726E	0730	0802D	N21	W41	SF	C8.8	5285
28	0825E	0843U	0915D	S17	E31	1F	M1.2	5297
28	1218E	1221	1314	N20	W50	1B	M2.2	5285
28	1425	1431U	1503D	S17	E27	SN	M1.3	5297
28	1843E	1846U	1846	S17	E24	1N	M1.4	5297
28	2052E	2101	2157D	S19	W05	SN	C4.3	5292

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

December 1988

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp Opt	Xray	NOAA/ USAF Region
28	2313E	2313	2334D	S22	W06	SF	C2.4	5292
28	2342E	2343	2358	N21	W58	1B	M3.6	5285
29	0331E	0337	0347D	S18	W13	SN	C2.0	5292
29	0354	0359	0404				C1.9	
29	0410E	0416	0423D	N23	W57	SN	C5.6	5285
29	1155E	1200	1447D	S21	W17	1B	M2.2	5292
29	1637E	1639	1652D	S42	W19	1B	C7.5	5300
29	1819	1826	1839D	N21	W69	1N	C4.4	5285
29	2044E	2044	2049D	S43	W22	SF	C6.5	5300
30	0227E	0233	0243D	S42	W25	SF	C2.2	5300
30	0312E	0324	0342	N23	W34	SF	C3.5	5290
30	0630	0633	0650	S17	E06	SF	C3.2	5297
30	0653	0710	0716				C7.0	
30	0831	0835	0842				C2.9	
30	0911E	0914	0928D	S22	W25	SF	C2.4	5292
30	1058	1102	1105				C1.8	
30	1128	1131	1133				C1.7	
30	1302	1312	1321				C5.3	
30	1407	1415	1420				C2.6	
30	1538	1542	1546				C1.7	
30	1649	1650U	1655D	N21	W81	SF	C1.5	5285
30	1713E	1715	1749D	S16	W01	SF	C2.6	5297
30	1725E	1816	1948D	S19	W30	3B	X1.4	5292
30	2255E	2301	2359	S21	W34	SF	C3.2	5292
30	2338	2343	2349				C3.1	
31	0033	0037	0040				C3.2	
31	0354	0415	0524				C4.8	
31	0815E	0815U	0822	N16	W33	SF	C3.1	5296
31	1304E	1305	1329D	N21	W51	SF	C3.5	5290
31	1357E	1400	1424D	N16	W36	SF	C6.0	5296
31	2114E	2117	2122D	S19	W01	SF	C5.0	5303

Preliminary GOES Satellite Data
Daily Average X-ray Background
January 1988 - December 1988

Day	1988 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	B2.0	B2.5	B1.0	B4.4	B1.9	B7.5	B8.4	B9.4	B6.9	C1.0	B5.7	B4.6
2	B1.4	B2.5	A8.5	B3.5	B2.6	B6.6	B7.1	B9.8	B6.5	C1.2	B6.1	B4.7
3	B4.6	B1.9	B1.1	B3.7	B3.7	B7.1	B9.7	C1.1	B6.9	C1.3	B5.2	B4.4
4	B2.4	B1.5	B1.8	B3.5	B5.1	B9.5	B6.3	B8.6	B6.7	C1.0	B5.0	B4.5
5	B2.3	B1.7	B1.6	B4.2	B4.1	B6.0	B6.4	B8.3	B6.4	B8.7	B4.6	B5.7
6	B2.5	B1.5	B1.4	B4.3	B2.9	B4.8	B6.5	B7.9	B6.1	C1.0	B5.8	B6.2
7	B2.5	B2.4	B1.6	B3.8	B3.1	B5.6	B6.8	B8.2	B6.9	B7.4	B5.5	B6.6
8	B2.7	B1.8	B1.6	B3.9	B2.5	B5.2	B7.0	C1.1	B5.5	B5.3	B5.5	B7.4
9	B2.3	B1.8	B1.6	B3.2	B1.8	B6.4	B7.7	C1.0	B4.8	B5.0	B9.2	B7.8
10	B3.0	B1.5	B1.8	B3.1	B1.6	B4.9	B9.1	C1.0	B3.2	B4.7	B9.8	C1.0
11	B2.1	B1.6	B2.8	B4.5	B1.6	B4.3	B7.7	B6.7	B2.7	B4.9	B9.8	C1.3
12	B3.1	B1.8	B3.4	B5.5	B1.5	B3.7	B4.9	B5.1	B2.8	B5.4	B6.3	C1.2
13	---	B1.8	B3.4	B4.4	B1.4	B3.0	B5.3	B3.9	B2.4	B5.4	B8.9	C1.1
14	B4.0	B1.5	B2.5	B6.0	B1.3	B2.8	B5.0	B3.1	B2.3	B4.7	C1.3	C1.4
15	B3.9	B1.4	B6.0	B7.4	B1.1	B3.3	B4.7	B3.2	B2.6	B5.9	B7.9	C2.1
16	B5.1	B1.2	B6.9	B9.2	B1.3	B3.7	B5.5	B3.0	B3.0	B7.8	C1.4	C1.7
17	B3.6	B1.2	B4.6	B5.3	B2.0	B3.6	B4.8	B3.2	B3.6	C1.2	C1.0	C2.0
18	B2.2	B1.6	B3.0	B3.9	B3.2	B4.0	B6.7	B2.8	B5.3	B8.0	B8.1	C1.3
19	B2.5	B1.4	B3.3	B5.5	B2.9	B2.6	B9.2	B2.7	B4.8	B8.3	B8.4	C1.9
20	B2.3	B1.2	B4.4	B5.1	B3.2	B2.6	B4.5	B2.7	B6.9	B6.8	B6.6	C2.2
21	B2.4	B1.3	B3.8	B4.7	B4.1	B3.5	B6.5	B2.8	B7.2	B7.3	C1.1	C2.3
22	B2.0	A9.9	B3.7	B3.1	B5.8	B4.6	B7.2	B2.7	C1.0	B8.2	B8.3	C1.8
23	B2.0	B1.0	B6.0	B2.2	B8.8	B9.8	B6.1	B7.4	B8.8	B8.0	B5.1	C2.3
24	B3.1	A9.0	B6.8	B2.6	B4.5	C1.2	B6.7	B7.7	B8.1	B6.6	B5.3	C2.1
25	B1.9	A9.0	B6.1	B2.0	B5.3	---	B7.7	B7.3	B8.5	B6.0	B5.7	C1.5
26	B2.2	B9.5	B4.5	B1.5	B3.8	C2.7	B8.0	B7.4	B6.2	B5.3	B7.2	C1.3
27	B4.6	B1.0	B4.0	B1.1	B3.7	C1.1	B8.9	B8.1	B7.3	B6.7	B7.5	C1.9
28	B5.1	B1.2	B3.5	B1.1	B5.0	C1.6	B9.4	B7.3	B6.0	B7.3	B4.2	C1.4
29	B4.4	B2.0	B3.5	B1.1	B7.2	C1.5	B9.9	B9.2	B6.0	B8.4	B4.3	B8.7
30	B2.7		B3.3	B1.6	B8.0	B8.1	B7.8	B9.4	B8.4	B8.0	B4.1	C1.0
31	B2.1		B4.2		B8.5		B9.4	B8.9		B6.7		C1.0

MASS EJECTIONS FROM THE SUN

DECEMBER 1988

Sta	Day	Observed UT Start	Max	End	Location RA^{o}	R/R_{o}	Freq or Wavelength	Kind of Event
KHAR	Dec 02	1003 E		1007	304	0.89	H-alpha	S
KHAR	Dec 02	1013		1028	057-062	0.66-0.65	H-alpha	S
KHAR	Dec 03	1000 E	1007 U	1015 D	113	1.00	H-alpha	S
KHAR	Dec 08	1020 E		1046 D	120	1.00	H-alpha	S
KHAR	Dec 08	1020 E		1046 D	290	1.00	H-alpha	S
WEIS	Dec 09	0936.6		0941.4			46- 30 MHz	II
LEAR	Dec 09	0948.0		0957.0			Meter	II
WEIS	Dec 09	0950.4		0954.8			46- 34 MHz	II
PALE	Dec 09	2109.0		2127.0			Meter	IV
CULG	Dec 10	0010.0		0011.0			Meter	II
LEAR	Dec 10	0042.0		0045.0			Meter	II
SGMR	Dec 10	1422.0		1439.0			Meter	IV
SGMR	Dec 10	1451.0		1454.0			Meter	II
CULG	Dec 11	0338.0		0416.0			Meter	II
LEAR	Dec 11	0347.0		0401.0			Meter	II
CULG	Dec 12	0215.0		0235.0			Meter	II
KHAR	Dec 12	0944 E	0949 U	1015 D	137	0.91	H-alpha	S
KHAR	Dec 12	1018 E		1035 D	067	1.00	H-alpha	S
LEAR	Dec 13	0216.0		0237.0			Meter	II
WEIS	Dec 14	1338.7		1345.3			400-130 MHz	II Herringbone
CULG	Dec 15	0505.0		0643.0			Meter	IV
CULG	Dec 15	0507.0		0537.0			Meter	II
LEAR	Dec 15	0507.0		0537.0			Meter	II
LEAR	Dec 15	0522.0		0822.0			Meter	IV
WEIS	Dec 16	0828		1138			1000- 70 MHz	IV Pulsations
SVTO	Dec 16	0831.0		0901.0			Meter	IV
WEIS	Dec 16	0831.5		0845.2			160- 30 MHz	II Herringbone
LEAR	Dec 16	0845.0		1046.0			Meter	IV
CULG	Dec 17	0500.0		0504.0			Meter	II
CULG	Dec 17	0506.0		0543.0			Meter	IV
ABST	Dec 17	0600 E	0620 U	0900 D	075	1.00	H-alpha	SP
PALE	Dec 18	1716.0		1725.0			Meter	II
SGMR	Dec 18	1716.0		1728.0			Meter	II
SGMR	Dec 20	1024.0		1245.0			Meter	II
WEIS	Dec 20	1218.0		1325			1000-280 MHz	IV Decimeter
SVTO	Dec 20	1219.0		1245.0			Meter	IV
WEIS	Dec 20	1220.5		1241.8			270- 30 MHz	II Herringbone
SGMR	Dec 22	1602.0		1607.0			Meter	II
LEAR	Dec 22	2318.0		2328.0			Meter	II
CULG	Dec 22	2319.0		2323.0			Meter	II
CULG	Dec 22	2323.0		2340.0			Meter	II
PALE	Dec 22	2325.0		2341.0			Meter	IV
LEAR	Dec 22	2328.0		2508.0			Meter	IV
SGMR	Dec 23	1525.0		1526.0			Meter	II
LEAR	Dec 27	0538.0		0545.0			Meter	II
CULG	Dec 27	0714.0		0730.0			Meter	II
LEAR	Dec 28	0032.0		0032.0			Meter	II
PALE	Dec 28	0040.0		0042.0			Meter	II
CULG	Dec 28	0113.0		0216.0			Meter	IV
LEAR	Dec 28	0123.0		0224.0			Meter	IV
CULG	Dec 28	0216.0		0315.0			Meter	IV
LEAR	Dec 28	2344.0		2351.0			Meter	II

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1988

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	APR	0020	0249D	N20	W90	11	24.2	1				V	VORO		
01	APR	0030	0249D	N41	W90	11	23.8	1				V	VORO		
01	AFS	0129E	0315D	S15	E35	12	3.7		02	9	9	E	PALE		
01	AFS	0519E	1035D	N21	W37	11	28.5		03	9	9	E	LEAR	5256	
01	DSD	1348E	1912D	N17	W08	12	1.0		05	9	9	E	RAMY	5260	
01	ADF	1420E	2113D	S12	W04	12	1.3	1	07	9	9	E	RAMY	5254	
01	ADF	1420E	2113D	S18	E01	12	1.7	1	09	9	9	E	RAMY	5254	
01	ADF	1448E	1900D	N19	E04	12	1.9	1	05	9	9	E	HOLL	5260	
01	AFS	1448E	1915D	N17	W03	12	1.4		02	6	6	E	HOLL	5260	
01	DSD	1448E	1915D	N17	W06	12	1.2		04	9	9	E	HOLL	5260	
01	AFS	1456E	2326D	S14	E26	12	3.6		03	9	9	E	HOLL	5262	
01	ADF	1503E	2326D	S20	W02	12	1.5	1	07	9	9	E	HOLL	5254	
01	SSB	1505		265	W17	12	6.6			0	0	E	HOLL		
01	ADF	1511E	1830D	N21	E57	12	6.0	2	05	9	9	E	HOLL	5261	
01	SDF	1511E	1830D	N21	E57	12	6.0		05	9	9	E	HOLL	5261	
01	ADF	1511E	2326D	N18	E50	12	5.4	2	06	9	9	E	HOLL	5261	
01	DSD	1720E	1912D	N14	E00	12	1.7		05	9	9	E	RAMY	5260	
01	AFS	1720E	2113D	N17	E01	12	1.8		03	9	9	E	RAMY	5260	
01	AFS	1730E	2113D	N19	E52	12	5.7		03	9	9	E	RAMY	5261	
01	AFS	1750E	2113D	S15	E24	12	3.5		02	9	9	E	RAMY	5262	
01	DSD	1824	1959	N19	E46	12	5.3		03	9	9	E	HOLL	5261	Flare Associated
01	BSD	1905	1915	N19	E46	12	5.3		04	9	9	E	HOLL	5261	Flare Associated
01	DSD	1910E	1955D	N20	E48	12	5.5		05	9	9	E	RAMY	5261	Flare Associated
01	ADF	2145E	0156D	S11	W05	12	1.5	1	09	9	9	E	PALE	5254	
01	AFS	2200E	0903D	N18	W06	12	1.4		02	9	9	E	LEAR	5260	
01	ADF	2205E	0903D	S12	W13	11	30.9	2	08	9	9	E	LEAR	5254	
01	SDF	2218E	2338D	N15	E46	12	5.4		05	0	0	E	PALE	5261	
01	AFS	2300E	0903D	S14	E20	12	3.5		03	9	9	E	LEAR	5262	
02	APR	0027	0300D	N19	E90	12	8.9	1				V	VORO		
02	APR	0027	0300D	N45	W90	11	24.6	1				V	VORO		
02	EPL	0036	0107	S20	E90	12	8.9	1				V	VORO		
02	APR	0046	0300D	S26	E90	12	9.0	1				V	VORO		
02	APR	0102	0300D	N27	W90	11	25.1	1				V	VORO		
02	APR	0102	0300D	S50	W90	11	24.5	1				V	VORO		
02	AFS	0139E	0156D	N18	E48	12	5.7		02	9	9	E	PALE	5261	
02	AFS	0139E	0156D	S15	E21	12	3.6		03	9	9	E	PALE	5262	
02	ADF	0846E	0950D	N18	E35	12	5.0	1				V	KHAR		
02	ADF	0925E	0936D	N10	E21	12	4.0	1				V	KHAR		
02	DSD	1003E	1007	N31	W60	11	27.8	1				V	KHAR		
02	DSD	1013	1028	N21	E37	12	5.3	1				V	KHAR		
02	AFS	1124E	1944D	N18	W12	12	1.6		03	9	9	E	RAMY	5260	
02	ADF	1145E	1944D	S11	W17	12	1.2	1	09	9	9	E	RAMY	5254	
02	BSL	1234	1239D	N76	E90	12	10.8	1-				C	CATA		
02	DSD	1341E	1344D	S17	W18	12	1.2		02	9	9	E	SVTO	5254	
02	DSD	1418E	1550D	N22	W58	11	28.2		02	9	9	E	RAMY	5256	Flare Associated
02	AFS	1623E	2346D	N17	W15	12	1.5		04	9	9	E	HOLL	5230	
02	AFS	1730E	1944D	N19	E40	12	5.8		02	9	9	E	RAMY	5261	
02	AFS	1736E	1944D	S15	E10	12	3.5		02	8	8	E	RAMY	5262	
02	DSD	1736E	1944D	S17	E10	12	3.5		04	9	9	E	RAMY	5262	
02	ASR	1740E	1944D	S22	E90	12	9.6			9	8	E	RAMY		
02	AFS	1807E	0318D	N18	E17	12	4.0		03	9	9	E	PALE	5260	
02	AFS	1808E	0318D	S15	E12	12	3.7		02	9	9	E	PALE	5261	
02	AFS	1808E	0318D	S15	E12	12	3.7		03	9	9	E	PALE	5262	
02	SSB	1918		265	W33	12	8.0			0	0	E	HOLL		
02	ASR	1924E	2120D	S24	E90	12	9.8			9	9	E	HOLL		
02	DSD	2116E	2346D	N16	E04	12	3.2		04	8	8	E	HOLL	5262	
02	SDF	2346E	1405D	N39	W21	12	1.3		13	0	0	E	HOLL		
03	APR	0008E	0209D	S55	W90	11	25.3	1				V	VORO		
03	APR	0019	0209D	N23	W90	11	26.2	1				V	VORO		
03	AFS	0541E	1030D	N18	E13	12	4.2		02	9	9	E	LEAR	5258	
03	AFS	0850E	1030D	N33	W26	12	1.3		02	7	8	E	LEAR	5262	
03	AFS	0850E	1030D	N33	W26	12	1.3		02	9	9	E	LEAR	5255	
03	BSL	1000E	1015D	S23	E90	12	10.3	1				V	KHAR		
03	AFS	1024E	1218D	S15	E01	12	3.5		02	7	9	E	SVTO	5262	
03	DSD	1026E	1218D	N15	E08	12	4.0		03	9	9	E	SVTO	5258	
03	ADF	1030E	1040D	N15	E32	12	5.9	1				V	KHAR		
03	DSD	1042E	1218D	S22	W27	12	1.4		01	9	9	E	SVTO	5254	
03	ADF	1118E	2111D	S12	W32	12	1.1	1	07	9	9	E	RAMY	5254	

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1988

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
03	AFS	1200E	2111D	N18	W29	12	1.3		02	7	7	E	RAMY	5260	
03	ASR	1200E	2111D	N24	W90	11	26.6			9	9	E	RAMY		
03	ASR	1419E	2111D	N25	E90	12	10.6			9	9	E	RAMY		
03	APR	1429E	1927D	N25	E90	12	10.6	1		9	9	E	HOLL		
03	ADF	1431E	2348D	S18	W29	12	1.4	1	04	9	9	E	HOLL	5254	
03	SSB	1434		267	W45	12	9.2			0	0	E	HOLL		
03	ADF	1458E	2111D	N17	W29	12	1.4	1	07	8	8	E	RAMY	5260	
03	ADF	1458E	2111D	N20	W21	12	2.0	1	12	9	9	E	RAMY	5260	
03	ADF	1458E	2111D	N21	E24	12	5.5	1	15	5	7	E	RAMY	5261	
03	DSD	1720E	2348D	N13	E03	12	3.9		05	9	9	E	HOLL	5258	
03	DSD	1724E	2111D	N13	E03	12	3.9		02	9	9	E	RAMY	5258	
03	AFS	1735E	2111D	S15	W03	12	3.5		02	8	6	E	RAMY	5262	
03	DSD	1815E	2101D	S22	W33	12	1.2		03	9	9	E	HOLL	5254	
03	ASR	1845E	2348D	N24	E90	12	10.7			9	9	E	HOLL	5265	
03	ASR	1859E	0143D	N22	E90	12	10.7			9	9	E	PALE		
03	AFS	2335E	0930D	S14	W05	12	3.6		02	9	9	E	LEAR	5262	
04	ADF	0025E	0930D	S17	W38	12	1.1		02	7	9	E	LEAR	5254	
04	ASR	0521E	0930D	S19	E87	12	10.9			9	9	E	LEAR		
04	ADF	0828E	0850	N43	E48	12	8.3	1				V	KHAR		
04	BSL	0911	0916D	S34	E90	12	11.5	1-				C	CATA		
04	BSL	0934E	0939D	N01	W90	11	27.8	1				C	CATA		
04	ADF	1023E	1050D	S32	W50	11	30.5	1				V	KHAR		
04	BSL	1117	1125	S32	W90	11	27.4	1-				C	CATA		
04	BSL	1117	1136D	N20	W90	11	27.7	1-				C	CATA		
04	BSL	1125	1130	N26	W90	11	27.6	1-				C	CATA		
04	SSB	1430		265	W57	12	10.3			0	0	E	HOLL		
04	DSD	1431E	1852D	S17	W43	12	1.3		02	9	9	E	HOLL	5254	
04	ADF	1431E	2348D	S12	W45	12	1.2	1	08	9	9	E	HOLL	5254	
04	ASR	1444E	1530D	S26	E90	12	11.6			9	9	E	HOLL		
04	AFS	1449E	2348D	N26	E66	12	9.7		02	9	8	E	HOLL	5264	
04	ASR	1452E	2113D	S25	E90	12	11.6			9	9	E	RAMY		
04	ADF	1510E	2113D	N18	E14	12	5.7	1	08	9	9	E	RAMY	5261	
04	DSD	1530E	1645D	S15	W18	12	3.3		03	9	9	E	HOLL	5262	
04	ASR	1607E	2113D	N21	W90	11	27.9			9	9	E	RAMY	5256	
04	AFS	1607E	2113D	N26	E68	12	9.9		02	9	9	E	RAMY	5264	
04	ASR	1634E	1954D	S33	E90	12	11.8			9	9	E	RAMY		
04	ADF	1709E	2113D	S17	W47	12	1.1	2	04	9	9	E	RAMY	5254	
04	ASR	1734E	1954D	S18	E90	12	11.6			9	9	E	RAMY	5266	
04	ASR	1940E	2240D	S25	E89	12	11.7			9	9	E	HOLL		
04	ASR	2044E	2158D	N26	E90	12	11.8			9	9	E	HOLL		
04	AFS	2132E	0332D	N26	E63	12	9.8		01	9	9	E	PALE	5264	
04	AFS	2200E	2348D	N15	E19	12	6.3		02	9	9	E	HOLL	5262	
04	AFS	2211E	0332D	S15	E19	12	6.4		02	9	9	E	PALE	5262	
04	ADF	2320E	2348D	S27	E53	12	9.1	1	06	9	9	E	HOLL	5263	
04	AFS	2335E	1030D	N25	E61	12	9.7		03	9	9	E	LEAR	5264	
04	AFS	2340E	1030D	S14	W19	12	3.5		02	9	7	E	LEAR	5261	
05	AFS	0848E	1356D	S14	W25	12	3.5		02	9	9	E	SVTO	5262	
05	SDF	0855E	2216D	S33	W52	12	1.2		28	0	0	E	LEAR		
05	ADF	0856E	1356D	N21	E71	12	10.8	1	04	9	9	E	SVTO	5265	
05	SDF	1019E	2216D	N63	E10	12	6.3		51	0	0	E	LEAR		
05	ADF	1026E	1356D	N28	E70	12	10.9	1	05	9	9	E	SVTO		
05	AFS	1200E	2027D	S15	W26	12	3.5		02	9	9	E	RAMY	5262	
05	AFS	1210E	2027D	N26	E55	12	9.8		02	9	9	E	RAMY	5264	
05	ASR	1225E	1432D	N19	W90	11	28.7			9	9	E	RAMY	5256	
05	CAP	1225E	2027D	N23	W07	12	5.0		02	9	9	E	RAMY	5256	
05	ADF	1243E	2027D	N18	E70	12	10.9	1	05	9	9	E	RAMY	5265	
05	ADF	1243E	2027D	N23	W49	12	1.7	1	03	9	9	E	RAMY	5260	
05	ADF	1243E	2027D	N26	E68	12	10.8	1	05	9	9	E	RAMY	5265	
05	SDF	1356E	0706D	N60	E11	12	6.5		52	0	0	E	SVTO		
05	SDF	1356E	0706D	N60	E11	12	6.5		52	0	0	E	SVTO		
05	ADF	1517E	2027	N21	W03	12	5.4	2	09	9	9	E	RAMY	5261	Flare Associated
05	ADF	1828E	2324D	N62	W28	12	3.3	1	40	7	9	E	HOLL		
05	SDF	1828E	2326D	N62	W28	12	3.3		40	0	0	E	HOLL		
05	APR	1936E	2317D	N20	W90	11	29.0			8	8	E	HOLL		
05	SSB	2014		268	W76	12	12.1			0	0	E	HOLL		
05	AFS	2325E	1038D	S25	E71	12	11.5		01	9	9	E	LEAR	5268	
06	AFS	0027E	1038D	N19	E62	12	10.7		03	9	9	E	LEAR	5265	

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1988

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
06	SDF	0031E	0026D	N40	E24	12	8.0		21	0	0	E	LEAR		
06	ASR	0210E	0700D	S26	W90	11	29.2			9	7	E	LEAR		
06	AFS	1038E	1437D	S17	W38	12	3.5		02	9	8	E	SVTO	5262	
06	ASR	1039E	1437D	N32	E90	12	13.6			9	9	E	SVTO		
06	DSD	1116	1156D	N13	W32	12	4.0		05	9	9	E	RAMY	5258	Flare Associated
06	DSD	1117	1130	N11	W33	12	4.0		05	9	9	E	SVTO	5258	
06	DSD	1122	1131	N12	W35	12	3.8	1				C	CATA		
06	ADF	1140E	2105D	N32	E61	12	11.3	1	05	9	9	E	RAMY	5265	
06	ADF	1140E	2136D	N17	E52	12	10.4	1	04	9	9	E	RAMY	5265	
06	ASR	1140E	2136D	N30	E86	12	13.2			9	9	E	RAMY		
06	BSL	1145E	1150D	S70	W90	11	28.4	1-				C	CATA		
06	APR	1219E	1437D	N37	E90	12	13.8	1		9	9	E	SVTO		
06	DSD	1300E	2105D	S14	W44	12	3.2		03	9	9	E	RAMY	5262	
06	AFS	1440E	2136D	N14	W34	12	4.0		02	9	9	E	RAMY	5258	
06	APR	1455E	2059D	N22	E90	12	13.5			8	8	E	HOLL		
06	APR	1455E	2258D	N35	E90	12	13.8			8	8	E	HOLL		
06	ADF	1456E	2059D	N38	E44	12	10.2	2	37	9	9	E	HOLL		
06	AFS	1500E	1750D	S15	W38	12	3.7		03	9	9	E	HOLL	5262	
06	BSD	1506E	1740D	S23	W71	12	1.1		08	9	9	E	HOLL	5254	
06	AFS	1518E	2301D	N13	W34	12	4.1		03	7	8	E	HOLL	5258	
06	ASR	1550E	2348D	N30	E80	12	12.9			9	9	E	HOLL		
06	AFS	1600E	2105D	S15	W40	12	3.6		02	9	9	E	RAMY	5262	
06	DSD	1615E	2000D	S18	W72	12	1.2		02	9	9	E	RAMY	5254	
06	ASR	1725E	1815D	N35	E90	12	13.9			9	9	E	RAMY		
06	SDF	2027E	1114D	N63	W04	12	6.5		12	0	0	E	RAMY		
06	SDF	2027E	1114D	N64	W20	12	5.1		43	0	0	E	RAMY		
06	ADF	2030E	2233D	N18	W13	12	5.9	2	18	9	9	E	HOLL	5261	
06	SDF	2030E	2233D	N19	W18	12	5.5		10	0	0	E	HOLL	5261	
06	ASR	2202E	0129D	N29	E76	12	12.9			9	9	E	LEAR		
07	APR	0017E	0950D	N34	E90	12	14.2			9	9	E	LEAR		
07	ASR	0414	1034D	S21	W80	12	1.0			9	9	E	LEAR	5254	
07	SDF	0502	0516	S28	E36	12	10.0		11	0	0	E	LEAR		
07	BSL	0718E	0750D	N40	E90	12	14.6	1				C	ABST		
07	BSL	0718E	0856D	N13	W90	11	30.5	1				C	ABST		
07	BSL	0718E	0856D	N51	W90	11	29.7	1				C	ABST		
07	BSL	0718E	0856D	S13	W90	11	30.5	1				C	ABST		
07	BSL	0718E	0856D	S34	E90	12	14.5	1				C	ABST		
07	ASR	1240E	1349D	N18	W84	12	1.1			9	9	E	RAMY	5260	
07	ASR	1317E	1822D	N15	E90	12	14.4			9	9	E	RAMY		
07	ASR	1349E	1822D	N16	W85	12	1.1			9	9	E	RAMY	5260	
07	ADF	1420E	1822D	N18	W23	12	5.8	1	12	9	9	E	RAMY	5261	
07	DSD	1420E	1822D	N19	E36	12	10.3		03	9	9	E	RAMY	5265	Flare Associated
07	ADF	1440E	1822D	S25	E18	12	9.0	1	06	9	9	E	RAMY	5263	
07	AFS	1448E	1822D	S17	E46	12	11.1		02	9	9	E	RAMY	5266	
07	ADF	1800E	0332D	N18	W46	12	4.2	1	07	9	9	E	PALE	5258	
07	ASR	1803E	0332D	N13	E85	12	14.2			8	8	E	PALE		
07	ASR	1825E	0332D	S21	W90	11	30.9			9	9	E	PALE	5254	
07	ASR	2340	2359	S19	W90	12	1.1			9	9	E	LEAR	5254	
08	BSL	0631E	0756D	S20	W90	12	1.4	1				C	ABST		
08	ADF	0722E	1421D	N19	W42	12	5.1	1	08	9	9	E	SVTO	5261	
08	AFS	0827E	1421D	N21	E30	12	10.6		03	9	9	E	SVTO	5265	
08	AFS	0836E	1421D	N34	E64	12	13.4		03	9	9	E	SVTO	5269	
08	BSL	1020E	1046D	N20	W90	12	1.5	1				V	KHAR		
08	BSL	1020E	1046D	S34	E90	12	15.6	1				V	KHAR		
08	ASR	1406E	1843D	N14	E85	12	15.0			9	9	E	RAMY	5271	
08	AFS	1436E	2113D	N30	E20	12	10.2		02	9	9	E	RAMY	5265	
08	AFS	1436E	2113D	S14	W70	12	3.3		02	9	9	E	RAMY	5262	
08	AFS	1740E	0332D	S16	W66	12	3.7		03	9	9	E	PALE	5262	
08	ADF	1800E	0332D	N18	W46	12	5.2	1	07	9	9	E	PALE	5258	
08	ASR	1803E	0332D	N13	E85	12	15.2			8	8	E	PALE		
08	ASR	1825E	0332D	S21	W90	12	1.9			9	9	E	PALE	5254	
08	ASR	2030E	0332D	N18	W90	12	2.0			8	9	E	PALE	5260	
09	DSD	0320E	0355D	N20	E16	12	10.4		02	9	9	E	LEAR	5265	
09	BSD	0355E	0410	S15	W79	12	3.2		04	9	9	E	LEAR	5262	
09	DSD	0617E	0650D	N22	E16	12	10.5		03	9	9	E	LEAR	5265	Flare Associated
09	BSL	0644E	0852D	S20	W90	12	2.4	1				C	ABST		
09	DSD	0807E	0845D	N20	E17	12	10.6		02	9	9	E	LEAR	5265	Flare Associated

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1988

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
09	ADF	1843E	1951D	N17	W52	12	5.8	1	13	9	9	E	RAMY	5261	
09	ASR	1850E	1951D	S17	W90	12	2.9			8	9	E	RAMY	5262	
09	DSD	1859E	1951D	N18	E06	12	10.2		02	9	9	E	RAMY	5265	
09	AFS	1910E	1951D	N32	E44	12	13.3		02	8	8	E	RAMY	5269	
09	AFS	1915E	1951D	N16	E59	12	14.3		03	9	9	E	RAMY	5271	
09	ADF	1925E	1951D	N33	E63	12	14.8	1	05	9	9	E	RAMY		
09	ASR	1925E	1951D	S31	E90	12	16.9			9	9	E	RAMY		
09	ASR	2210E	1041D	S32	E77	12	16.0			9	9	E	LEAR	5273	
09	ASR	2220E	1041D	S14	W81	12	3.8			9	9	E	LEAR	5262	
10	APR	0500E	1041D	N25	E90	12	17.2	2		8	6	E	LEAR		
10	SDF	1021E	2215D	S43	E01	12	10.5		37	0	0	E	LEAR		
10	ADF	1350E	1915D	N18	W63	12	5.8	1	12	9	9	E	RAMY	5261	
10	ASR	1353E	1915D	S16	W90	12	3.7			8	9	E	RAMY	5262	
10	ADF	1439E	1915D	N32	E33	12	13.2	2	38	9	9	E	RAMY	5269	
10	DSD	1445E	1915D	N20	W04	12	10.3		03	9	9	E	RAMY	5265	
10	ADF	1450E	1915D	N16	E50	12	14.4	1	07	9	9	E	RAMY	5271	
10	DSD	1458E	1915D	S31	E60	12	15.3		03	9	9	E	RAMY	5273	
10	ASR	1458E	1915D	S35	E90	12	17.8			9	8	E	RAMY	5273	
10	ADF	1501E	1915D	N29	E51	12	14.6	1	07	9	9	E	RAMY		
10	AFS	1501E	1915D	N32	E53	12	14.8		03	9	9	E	RAMY		
10	BSD	2300	0045D	S34	E73	12	16.8		12	9	9	E	LEAR		
10	AFS	2355E	0936D	S13	E15	12	12.1		02	6	6	E	LEAR		
11	BSD	0105	0155D	S34	E72	12	16.8		10	9	9	E	LEAR		
11	BSD	0212E	0840D	S33	E68	12	16.5		03	9	9	E	LEAR		
11	BSL	0735E	0824D	N26	W90	12	4.3	1				C	ABST		
11	BSL	0735E	0824D	S37	E90	12	18.6	1				C	ABST		
11	BSL	0842E	0920D	N30	E90	12	18.4	1				C	ABST		
11	BSD	0927	0950D	S34	E67	12	16.7		09	9	9	E	LEAR		
11	ASR	0955E	1501D	N28	E90	12	18.4			9	9	E	SVTO		
11	BSD	1026	1110	S32	E67	12	16.7		09	9	5	E	SVTO		Flare Associated
11	BSL	1039E	1051	N22	E90	12	18.4	1-				C	CATA		
11	DSD	1126	1301D	S30	E49	12	15.3		06	9	9	E	SVTO	5273	Flare Associated
11	DSD	1126	1301D	S31	E67	12	16.8		05	9	9	E	SVTO		Flare Associated
11	DSD	1148E	1528D	S31	E48	12	15.3		03	9	9	E	RAMY	5273	
11	DSD	1151E	1400D	S32	E62	12	16.4		04	9	9	E	RAMY		Flare Associated
11	BSL	1220	1231	N27	W90	12	4.5	1-				C	CATA		
11	BSL	1220	1241	N68	E90	12	19.6	1-				C	CATA		
11	BSD	1225	1301D	S32	E67	12	16.8		04	9	6	E	SVTO		Flare Associated
11	DSD	1400	1423	S29	E44	12	15.0		04	9	9	E	SVTO	5273	Flare Associated
11	ASR	1503E	2101D	N22	W90	12	4.7			7	9	E	RAMY	5261	
11	ASR	1508E	2101D	S32	E62	12	16.5			5	7	E	RAMY		
11	AFS	1528E	2101D	S31	E46	12	15.3		03	9	9	E	RAMY	5273	
11	ADF	1746E	2213D	N25	E43	12	15.1	1	07	9	9	E	HOLL		
11	ADF	1746E	2350D	N16	E35	12	14.4	1	05	9	9	E	HOLL	5271	
11	ADF	1746E	2350D	N23	E33	12	14.3	2	20	9	9	E	HOLL		
11	ADF	1825E	2101D	N16	E32	12	14.2	1	13	6	9	E	RAMY	5271	
11	ADF	1825E	2101D	N22	E45	12	15.2	1	08	9	9	E	RAMY		
11	ADF	1825E	2101D	N23	E34	12	14.4	1	19	9	9	E	RAMY		
11	ADF	1831E	2101D	S26	E43	12	15.1	1	07	8	9	E	RAMY	5273	
11	ADF	1831E	2101D	S28	E27	12	13.9	1	12	9	9	E	RAMY		
11	ADF	1831E	2101D	S39	E01	12	11.8	1	07	9	9	E	RAMY	5267	
11	ASR	1832E	2350D	N24	E90	12	18.7			9	9	E	HOLL		
11	ASR	1834E	0328D	N24	E90	12	18.7			9	9	E	PALE		
11	AFS	1848E	2101D	S13	W30	12	9.5		02	9	9	E	RAMY		
11	ADF	1926E	0328D	N22	E33	12	14.3	1	17	9	9	E	PALE		
11	DSD	1927	2006D	N20	W20	12	10.3		07	9	9	E	HOLL	5265	Flare Associated
11	AFS	1931E	0328D	S13	W32	12	9.4		02	9	9	E	PALE		
11	AFS	1958E	2350D	S13	W32	12	9.4		06	9	9	E	HOLL	5277	
11	AFS	2335E	1020D	S14	W34	12	9.4		02	9	9	E	LEAR	5277	
11	SDF	2350E	1412D	N54	E48	12	16.1		38	0	0	E	HOLL		
12	AFS	0056E	0328D	S31	E39	12	15.1		02	9	9	E	PALE	5273	
12	ADF	0125E	1020D	N19	E31	12	14.4	2	04	9	9	E	LEAR	5271	
12	ADF	0204E	0405D	S37	W04	12	11.8	2	05	9	9	E	LEAR	5267	
12	APR	0225E	0411D	N26	E90	12	19.1	2		9	9	E	LEAR		
12	ASR	0540E	1020D	N27	E90	12	19.2			7	5	E	LEAR		
12	ADF	0726E	1439D	S40	W05	12	11.9	1	06	9	9	E	SVTO	5267	
12	AFS	0755E	1439D	S30	E40	12	15.5		02	9	9	E	SVTO	5273	

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1988

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
12	DSD	0812E	0849D	N12	E24	12	14.1		05	9	9	E	SVTO	5271	
12	AFS	0825E	1439D	S15	W39	12	9.4		03	9	9	E	SVTO	5277	
12	BSL	0834	0845	N38	E90	12	19.6	1-				C	CATA		
12	ASR	0903E	1350D	N28	E90	12	19.4			9	9	E	SVTO		
12	ADF	0920E	1010	N19	E19	12	13.8	1				V	KHAR		
12	DSD	0944E	1015D	S42	E52	12	16.7	1				V	KHAR		
12	BSL	0949	1006	S68	E90	12	20.5	1-				C	CATA		
12	BSL	1018E	1035D	N23	E90	12	19.4	1				V	KHAR		
12	BSL	1045	1050D	N34	W90	12	5.3	1-				C	CATA		
12	BSL	1109	1117	N40	E90	12	19.8	1-				C	CATA		
12	ASR	1148E	2025D	N25	E90	12	19.5			9	9	E	RAMY	5278	
12	BSL	1235	1240D	N34	W90	12	5.3	1				C	CATA		
12	SDF	1242E	0803D	N48	E40	12	15.9	1				C	CATA		
12	AFS	1243E	1423D	S24	W48	12	8.8		02	9	9	E	RAMY	5263	
12	ASR	1243E	2025D	N20	W88	12	5.8			9	9	E	RAMY	5261	
12	AFS	1243E	2025D	S30	E34	12	15.2		02	9	9	E	RAMY	5273	
12	AFS	1306E	2025D	S14	W40	12	9.5		02	9	9	E	RAMY	5277	
12	ADF	1320E	1439D	N23	E21	12	14.2	1	22	9	9	E	SVTO		
12	ADF	1340E	2025D	N22	E22	12	14.3	2	17	9	9	E	RAMY		
12	DSD	1343E	1356D	N19	W27	12	10.5		03	9	9	E	SVTO	5265	
12	ADF	1415E	2350D	N22	E22	12	14.3	2	17	9	9	E	HOLL		
12	ADF	1432E	2025D	S36	W09	12	11.9	1	05	9	9	E	RAMY	5267	
12	ADF	1435E	2025D	S17	E36	12	15.3	1	04	9	9	E	RAMY	5272	
12	AFS	1721E	0201D	S13	W44	12	9.4		01	9	9	E	PALE	5277	
12	ADF	1721E	0325D	S29	E32	12	15.2	1	12	9	9	E	PALE	5273	
12	AFS	1941E	2350D	N31	E26	12	14.9		02	5	7	E	HOLL	5274	
12	AFS	1950E	2350D	S31	E31	12	15.3		02	7	9	E	HOLL	5273	
12	SDF	2033E	2033D	N31	E28	12	15.1		11	0	0	E	PALE		
12	ADF	2220E	2350D	N24	E76	12	18.8	1	06	9	9	E	HOLL	5278	
12	ASR	2255E	2350D	N27	E80	12	19.2			9	9	E	HOLL	5278	
13	ASR	0008E	0325D	N27	E80	12	19.2			9	9	E	PALE	5278	
13	DSD	0008E	0325D	S33	E29	12	15.3		03	9	7	E	PALE	5273	
13	ASR	0030E	1003D	N22	E90	12	19.9			9	6	E	LEAR	5278	
13	AFS	0110E	0325D	N23	E53	12	17.1		02	9	9	E	PALE		
13	LPS	0243E	0307	N25	E90	12	20.1			9	9	E	PALE	5278	
13	BSL	0901E	0950D	N28	E90	12	20.4	1-				C	CATA		
13	BSL	0929	0950D	N26	E90	12	20.4	1-				C	CATA		
13	EPL	1025	1150D	N35	W90	12	6.2	3				C	CATA		
13	BSL	1036	1044	N84	W90	12	5.0	1-				C	CATA		
13	BSL	1055	1105	N67	W90	12	5.3	1-				C	CATA		
13	BSL	1125E	1136	N84	W90	12	5.1	1-				C	CATA		
13	ASR	1307E	1757D	N26	E80	12	19.8			9	9	E	RAMY	5278	
13	ADF	1307E	1757D	S26	E22	12	15.2	2	12	9	9	E	RAMY	5273	
13	AFS	1307E	1757D	S31	E22	12	15.3		03	9	9	E	RAMY	5273	
13	AFS	1319E	1757D	N21	E45	12	17.0		03	9	9	E	RAMY	5279	
13	ADF	1329E	1757D	S38	W22	12	11.8	1	05	9	9	E	RAMY	5267	
13	AFS	1421E	2350D	S32	E21	12	15.3		02	9	8	E	HOLL	5273	
13	ADF	1436E	1757D	N25	E65	12	18.6	1	12	9	9	E	RAMY	5278	
13	ADF	1438E	2350D	N25	E64	12	18.6	1	19	9	9	E	HOLL	5278	
13	AFS	1545E	2350D	N21	E45	12	17.1		03	9	9	E	HOLL	5279	
13	SDF	1549E	2058D	N10	W08	12	13.0		13	0	0	E	HOLL		
13	ASR	1555E	2058D	N26	E89	12	20.6			9	9	E	HOLL	5758	
13	ADF	1640E	1757D	N09	W06	12	13.2	1	25	9	9	E	RAMY		
13	AFS	1735E	1757D	N19	E40	12	16.8		03	9	9	E	RAMY	5279	
13	ASR	1900E	2249D	N26	E90	12	20.8			9	9	E	PALE	5278	
13	AFS	1900E	2249D	S32	E20	12	15.4		02	9	9	E	PALE	5273	
13	AFS	2008E	2249D	N19	E41	12	17.0		03	9	9	E	PALE	5279	
13	APR	2109E	2350D	S19	W87	12	7.2			6	7	E	HOLL	5270	
13	ADF	2140E	2350D	N18	W04	12	13.6	2	08	9	9	E	HOLL		
13	SDF	2146E	2237D	N18	W02	12	13.7		08	0	0	E	PALE		
13	ADF	2300E	1025D	N17	W07	12	13.4	1	08	9	9	E	LEAR		
13	AFS	2300E	1025D	S33	E16	12	15.2		03	5	3	E	LEAR	5273	
14	SDF	0936E	1300D	N21	W09	12	13.7		21	0	0	E	SVTO		
14	SDF	1015E	0155D	N10	W13	12	13.4		10	0	0	E	LEAR		
14	SDF	1100E	1110D	N14	W18	12	13.1	1				C	CATA		
14	DSD	1337	1450D	N30	E62	12	19.4		03	9	9	E	RAMY	5278	Flare Associated
14	DSD	1350E	1450D	N19	E28	12	16.7		04	9	9	E	RAMY	5279	Flare Associated
14	AFS	1350E	2121D	N23	E32	12	17.0		04	9	9	E	RAMY	5279	

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1988

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
14	AFS	1445E	2121D	N23	E31	12	17.0		03	9	9	E	RAMY	5279	
14	AFS	1445E	2121D	S32	E09	12	15.3		05	8	5	E	RAMY	5273	
14	ADF	1450E	2121D	N25	E52	12	18.6	1	16	9	9	E	RAMY	5278	
14	BSD	1535E	1825D	N26	E75	12	20.5		07	9	9	E	HOLL	5280	
14	DSD	1538E	2348D	S23	W43	12	11.3		03	8	8	E	HOLL	5268	
14	AFS	1538E	2121D	S12	E02	12	14.8		03	9	9	E	RAMY	5272	
14	ADF	1539E	2348D	N31	W18	12	13.2		20	9	9	E	HOLL	5269	
14	ASR	1651E	2121D	N29	E89	12	21.7			9	9	E	RAMY		
14	SDF	1757E	1300D	N20	E07	12	15.3		25	0	0	E	RAMY		
14	DSD	1820E	2348D	S35	E15	12	16.0		04	9	9	E	HOLL	5273	Flare Associated
15	AFS	0146E	0851D	N25	E70	12	20.5		03	8	5	E	LEAR	5280	
15	AFS	0146E	0851D	S12	W02	12	14.9		03	8	5	E	LEAR	5272	
15	SDF	0547E	0217D	S06	W02	12	15.1	3	12	0	0	E	LEAR		
15	AFS	1330E	2024D	N11	W20	12	14.0		03	9	9	E	RAMY	5271	
15	ADF	1335E	2024D	S11	W10	12	14.8	1	06	9	9	E	RAMY	5272	
15	DSD	1335E	2024D	S13	W12	12	14.7		03	9	9	E	RAMY	5272	
15	AFS	1340E	2024D	S31	W04	12	15.2		04	9	9	E	RAMY	5273	
15	ADF	1350E	2024D	S34	E11	12	16.4	1	05	9	9	E	RAMY	5275	
15	DSD	1400E	2024D	N21	E51	12	19.5		04	9	9	E	RAMY	5280	
15	ADF	1400E	2024D	N23	E47	12	19.2	1	06	9	9	E	RAMY	5278	
15	DSD	1400E	2024D	N27	E50	12	19.5		02	9	9	E	RAMY	5278	
15	ADF	1400E	2024D	N27	E53	12	19.7	1	08	9	9	E	RAMY	5280	
15	AFS	1412E	2024D	N18	E14	12	16.6		04	8	7	E	RAMY	5279	
15	AFS	1412E	2024D	N22	E18	12	17.0		03	9	8	E	RAMY	5279	
15	AFS	1743E	2024D	N20	W41	12	12.6		02	9	9	E	RAMY		
15	DSD	2147E	2259D	N21	E16	12	17.1		06	9	9	E	HOLL	5279	Flare Associated
16	AFS	0200E	0202D	N25	E58	12	20.6		02	9	9	E	PALE	5280	
16	AFS	0200E	0202D	N27	E43	12	19.4		03	9	9	E	PALE	5278	
16	ADF	1130E	1930D	N25	E40	12	19.6	1	15	9	9	E	RAMY	5278	
16	AFS	1130E	1930D	S31	W15	12	15.3		03	7	8	E	RAMY	5273	
16	AFS	1520E	2321D	S24	E49	12	20.4		02	9	8	E	HOLL		
16	AFS	1523E	2321D	N19	W53	12	12.6		02	9	9	E	HOLL	5281	
16	ASR	1525E	2321D	N18	E90	12	23.5			9	9	E	HOLL		
17	ASR	0555E	0614D	N15	E90	12	24.1			9	9	E	LEAR	5283	
17	BSL	0600E	0900D	N15	E90	12	24.1	1				C	ABST		
17	BSL	0650E	0900D	N47	E90	12	24.8	1				C	ABST		
17	ASR	1205E	1925D	N17	E79	12	23.5			9	9	E	RAMY	5283	
17	AFS	1307E	1925D	S23	E38	12	20.5		02	9	9	E	RAMY	5282	
17	ADF	1313E	1925D	S12	W37	12	14.8	2	05	9	9	E	RAMY	5272	
17	DSD	1426E	1820D	N23	E09	12	18.3		02	9	9	E	RAMY	5279	
17	ADF	1435E	1925D	S32	W29	12	15.3	1	03	9	9	E	RAMY	5273	
17	DSD	1600E	1925D	N29	E46	12	21.3		03	9	9	E	RAMY	5280	
17	AFS	1820E	1925D	N24	W10	12	17.0		04	9	9	E	RAMY	5279	
17	AFS	1955E	0324D	S23	E32	12	20.3		02	9	9	E	PALE	5282	
17	AFS	2128E	2331D	S26	E33	12	20.4		03	9	9	E	HOLL	5282	
17	ASR	2150E	2331D	N19	E90	12	24.8			9	9	E	HOLL		
17	ASR	2155E	0324D	N19	E90	12	24.8			9	9	E	PALE		
17	AFS	2207E	0324D	N16	E72	12	23.4		03	9	9	E	PALE	5283	
17	ASR	2312E	1046D	N20	E90	12	24.8			9	9	E	LEAR		
18	AFS	0001E	1046D	S24	E31	12	20.4		02	9	9	E	LEAR	5282	
18	SDF	0431E	2247D	S56	W10	12	17.3	2	40	0	0	E	LEAR		
18	APR	0709E	0806D	N35	E90	12	25.5	1				C	ABST		
18	ADF	0847E	1502D	N25	E09	12	19.1	1	08	8	8	E	SVTO	5278	
18	AFS	0900E	1502D	N09	W56	12	14.2		03	9	9	E	SVTO	5271	
18	AFS	0918E	1502D	S21	E23	12	20.1		03	9	9	E	SVTO	5282	
18	ADF	0934E	1502D	S34	W30	12	16.0	1	04	9	9	E	SVTO	5273	
18	DSD	1055E	1140	N24	E07	12	19.0		04	9	9	E	SVTO	5278	Flare Associated
18	ASR	1151E	2108D	N19	E87	12	25.1			9	9	E	RAMY	5285	Flare Associated
18	ADF	1220E	2108D	N25	E12	12	19.4	1	05	9	9	E	RAMY	5278	
18	DSD	1557E	2035D	N31	E05	12	19.0		03	9	9	E	RAMY	5278	
18	ADF	1619E	1930D	S30	W43	12	15.3	1	12	9	9	E	HOLL	5273	
18	AFS	1619E	2208D	N10	W60	12	14.2		04	9	9	E	HOLL	5271	
18	ASR	1619E	2208D	N20	E90	12	25.6			9	9	E	HOLL		
18	AFS	1620E	1936D	S21	E19	12	20.1		04	7	9	E	HOLL	5282	
18	AFS	1900E	2219D	N11	W61	12	14.2		02	9	9	E	PALE	5271	
18	AFS	1900E	2219D	S22	E15	12	19.9		01	9	9	E	PALE	5282	

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1988

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
18	ADF	1900E	2219D	S31	W35	12	16.0	2	09	9	9	E	PALE	5273	
18	ASR	1903E	2208D	S37	W90	12	11.5			9	9	E	HOLL	5267	
18	ASR	1914E	2219D	S34	W90	12	11.6			8	8	E	PALE	5267	
18	DSD	1936E	2208D	S22	E15	12	20.0		03	9	9	E	HOLL	5282	
18	ASR	2005E	2219D	N20	W86	12	12.2			9	9	E	PALE	5281	
19	AFS	0115E	1038D	S10	W66	12	14.1		02	9	9	E	LEAR	5271	
19	AFS	0116E	1038D	S22	E16	12	20.3		02	9	6	E	LEAR	5282	
19	ASR	0320E	1038D	N17	W90	12	12.3			9	9	E	LEAR	5281	
19	BSD	0335E	1038D	N20	E77	12	25.0		03	9	9	E	LEAR	5285	
19	AFS	0530E	1038D	N16	E11	12	20.1		03	8	9	E	LEAR		
19	SDF	1014E	2225D	N43	W14	12	18.3	2	08	0	0	E	LEAR		
19	BSL	1052E	1111D	N18	W90	12	12.6	1-				C	CATA		
19	BSL	1052E	1111D	N24	E90	12	26.4	1				C	CATA		
19	ADF	1140E	1500D	N34	E52	12	23.6	1	05	9	9	E	SVTO	5284	
19	ADF	1141E	1500D	S32	W41	12	16.2	1	08	9	9	E	SVTO	5273	
19	AFS	1142E	1500D	N22	E73	12	25.1		05	9	9	E	SVTO	5285	
19	ASR	1215E	2138D	N19	W90	12	12.6			9	9	E	RAMY	5281	
19	ADF	1215E	2138D	N32	E51	12	23.5	1	05	9	9	E	RAMY	5284	
19	AFS	1215E	2138D	S22	E09	12	20.2		02	9	9	E	RAMY	5282	
19	ADF	1215E	2138D	S25	W46	12	15.9	1	08	9	9	E	RAMY	5273	
19	DSD	1215E	2138D	S29	W55	12	15.2		02	9	9	E	RAMY	5273	Flare Associated
19	ADF	1229E	2138D	N26	W03	12	19.3	2	06	9	9	E	RAMY	5278	
19	AFS	1330E	2138D	N17	E08	12	20.2		04	9	9	E	RAMY	5287	
19	ASR	1343E	2138D	N15	E90	12	26.4			9	9	E	RAMY		
19	DSD	1343E	2138D	N20	E69	12	24.8		02	9	9	E	RAMY	5285	
19	AFS	1516E	2352D	N16	E07	12	20.2		04	9	9	E	HOLL		
19	DSD	1839	1928D	S21	E02	12	19.9		03	9	9	E	HOLL	5282	Flare Associated
19	ASR	1926E	1947D	N17	W90	12	13.0			9	9	E	HOLL		
19	AFS	1950E	2352D	N20	E68	12	25.0		02	8	9	E	HOLL	5285	
19	ADF	1957E	2352D	N20	W38	12	16.9	1	03	9	9	E	HOLL	5279	
19	ADF	2014E	2352D	S31	W47	12	16.1	1	03	9	9	E	HOLL	5273	
19	SDF	2021E	1111D	S12	W63	12	15.1		05	0	0	E	RAMY	5272	
19	BSD	2112E	2239D	S34	W56	12	15.4		08	9	9	E	HOLL	5273	Flare Associated
19	AFS	2320E	1042D	N16	E01	12	20.0		03	8	9	E	LEAR	5287	
19	ADF	2320E	1042D	N32	E00	12	20.0	1	08	9	9	E	LEAR	5278	
20	APR	0738E	0843D	S32	E90	12	27.4	1				C	ABST		
20	APR	0738E	0905D	N45	W90	12	12.8	1				C	ABST		
20	ASR	1015E	1042D	N32	W80	12	14.1			9	9	E	LEAR	5274	
20	DSD	1138E	1315D	N24	W13	12	19.5		05	9	9	E	RAMY	5278	Flare Associated
20	ASR	1227	1315D	S09	E90	12	27.3			9	9	E	RAMY		Flare Associated
20	ADF	1355E	2035D	N25	W13	12	19.6	1	15	9	9	E	RAMY	5280	
20	AFS	1400E	1650D	N23	W46	12	17.0		03	8	9	E	RAMY	5279	
20	DSD	1420E	2036D	N18	E55	12	24.8		03	9	9	E	RAMY	5285	
20	ADF	1420E	2132D	N18	E59	12	25.1	1	07	9	9	E	RAMY	5285	
20	AFS	1425E	2132D	N16	W04	12	20.3		06	9	9	E	RAMY	5287	
20	ASR	1430E	2132D	S17	E90	12	27.4			9	9	E	RAMY		
20	AFS	1509E	2259D	N15	W07	12	20.1		02	9	9	E	HOLL	5287	
20	ADF	1516E	2041D	S33	W59	12	15.9	1	03	9	9	E	HOLL	5273	
20	ASR	1520E	1724D	N34	W90	12	13.5			9	9	E	HOLL	5274	
20	ASR	1520E	2353D	S19	E90	12	27.5			9	9	E	HOLL		
20	ADF	1540E	2132D	N31	W18	12	19.2		07	9	9	E	RAMY	5278	
20	ASR	1550E	2132D	N34	W90	12	13.5			9	9	E	RAMY	5274	
20	DSD	1552E	1716D	N31	W03	12	20.4		04	9	9	E	HOLL	5280	
20	SDF	1601E	1145D	S18	E02	12	20.8		13	0	0	E	RAMY		
20	AFS	1720E	2043D	N20	E57	12	25.1		02	9	9	E	HOLL	5285	
20	ASR	1929E	2353D	N36	W90	12	13.6			9	9	E	HOLL	5274	
20	AFS	2008E	2234D	N17	E35	12	23.5		02	6	7	E	HOLL	5283	
20	AFS	2008E	2234D	N28	W02	12	20.7		02	6	7	E	HOLL	5280	
20	ASR	2039E	0313D	N34	W89	12	13.8			9	9	E	PALE	5274	
20	DSD	2051E	2353D	N18	E56	12	25.1		02	9	9	E	HOLL	5285	
20	ASR	2052E	2353D	N19	E90	12	27.7			9	9	E	HOLL		
20	AFS	2052E	0313D	N26	W06	12	20.4		03	9	9	E	PALE	5280	
20	AFS	2115E	0313D	N16	W10	12	20.1		03	9	9	E	PALE	5287	
20	ASR	2230E	0950D	N33	W90	12	13.8			9	9	E	LEAR	5269	
21	BSD	0204E	0225	S34	W71	12	15.4		05	9	9	E	LEAR	5273	Flare Associated
21	DSD	0612	0641	N20	E51	12	25.1		04	9	9	E	LEAR	5285	
21	ASR	0625E	0700D	N11	W90	12	14.5			9	9	E	LEAR		

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1988

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
21	ASR	0630E	1047D	N19	E90	12	28.1			9	9	E	LEAR		
21	BSL	0739E	0855D	N20	E90	12	28.2	1				C	ABST		
21	APR	0739E	0855D	N50	E90	12	28.9	1				C	ABST		
21	BSL	0801E	0855D	S12	W90	12	14.5	1				C	ABST		
21	ASR	0923E	1450D	S14	W90	12	14.6			9	9	E	SVTO	5272	
21	ASR	0937E	1450D	N21	E90	12	28.3			9	9	E	SVTO		
21	AFS	0941E	1500D	N15	W19	12	20.0		05	9	9	E	SVTO	5287	
21	ASR	1214E	1450D	S13	E90	12	28.3			9	9	E	SVTO		
21	DSD	1330E	1725D	N27	W37	12	18.7		04	9	9	E	RAMY	5278	
21	AFS	1425E	2132D	N21	E45	12	25.0	1	03	9	9	E	RAMY	5285	
21	AFS	1432E	2132D	N16	W21	12	20.0	1	04	9	8	E	RAMY	5287	
21	ASR	1440E	2132D	S16	E90	12	28.4			8	8	E	RAMY		
21	AFS	1446E	2132D	S34	W37	12	18.7		02	8	7	E	RAMY		
21	ASR	1605E	2319D	S13	W90	12	14.9			8	9	E	HOLL	5272	
21	ADF	1608E	2319D	N20	E44	12	25.0	1	03	9	9	E	HOLL	5285	
21	ADF	1814E	0339D	N19	E43	12	25.0	1	04	9	9	E	PALE	5285	
21	ASR	1814E	0339D	S18	E90	12	28.6			8	9	E	PALE		
22	ASR	0230E	1043D	N17	E89	12	28.9			9	9	E	LEAR		
22	AFS	0420E	1043D	N20	E38	12	25.1		03	9	9	E	LEAR	5285	
22	AFS	1015E	1507D	N15	W30	12	20.1	1	03	9	9	E	SVTO	5287	
22	ASR	1039E	1323D	N20	E89	12	29.2			9	9	E	SVTO		
22	AFS	1329E	1507D	N22	E71	12	28.0	1	01	9	9	E	SVTO	5290	
22	ADF	1530E	2043D	N25	W40	12	19.5	1	16	9	9	E	RAMY	5280	
22	AFS	1557E	1937D	N20	E30	12	24.9	1	03	9	9	E	HOLL	5285	
22	AFS	1728E	1950D	N17	E09	12	23.4		02	8	6	E	RAMY	5283	
22	ASR	1740E	1950D	N18	E87	12	29.4			9	9	E	RAMY		
22	ASR	1743E	2211D	N16	E83	12	29.0			9	9	E	HOLL		
22	ASR	1759E	2150D	N15	E83	12	29.0			9	9	E	PALE		
22	AFS	1809E	0338D	S32	W54	12	18.5		04	9	9	E	PALE	5288	
22	ASR	1835E	2043D	S33	W90	12	15.6			9	9	E	RAMY	5273	
22	AFS	1938E	2354D	S34	W53	12	18.6	1	03	9	9	E	HOLL	5288	
22	AFS	2038E	2354D	N15	W36	12	20.1	1	03	9	9	E	HOLL	5287	
22	DSD	2040E	2354D	N14	E05	12	23.2		03	9	9	E	HOLL	5283	
22	ASR	2041E	2201D	N21	W88	12	16.1			9	9	E	HOLL	5279	
22	BSD	2311E	2331	S33	W80	12	16.6		09	9	9	E	HOLL	5273	Flare Associated
22	ADF	2311E	2354D	N29	W33	12	20.4	3	23	9	9	E	HOLL	5280	Flare Associated
22	BSD	2322E	2334D	S34	W80	12	16.6		08	9	9	E	PALE	5273	Flare Associated
22	SDF	2354E	1418D	N03	E75	12	28.6		27	0	0	E	HOLL		
22	LPS	2356E	0004D	S34	W80	12	16.6			9	9	E	PALE	5273	
23	ASR	0006E	0338D	S34	W80	12	16.6			9	9	E	PALE	5273	
23	ASR	0530E	1039D	N20	W90	12	16.3			9	9	E	LEAR	5278	
23	ASR	0820E	1501D	S34	W90	12	16.2			9	9	E	SVTO	5275	
23	BSL	0834E	0841	S35	W90	12	16.1	1-				C	CATA		
23	BSL	0834E	0903	S32	W90	12	16.2	2				C	CATA		
23	BSL	0957E	1030D	S32	W90	12	16.3	1				C	CATA		
23	ASR	1008E	1501D	N20	W90	12	16.5			9	9	E	SVTO	5286	
23	LPS	1010E	1109	S33	W90	12	16.3			9	9	E	SVTO	5275	
23	BSL	1041E	1120D	S32	W90	12	16.3	1				C	CATA		
23	BSL	1110	1120D	S35	W90	12	16.3	1-				C	CATA		
23	ASR	1222E	1943D	S33	W90	12	16.4			9	9	E	RAMY	5275	
23	ADF	1300E	1815D	S20	W45	12	20.1	2	04	9	9	E	RAMY	5282	
23	ASR	1320E	1943D	N23	W90	12	16.6			9	9	E	RAMY	5279	
23	SPY	1505	1542	S33	W90	12	16.5			9	9	E	HOLL	5275	
23	SPY	1505	1616	S33	W90	12	16.5			9	9	E	RAMY	5275	
23	ADF	1655E	1943D	N18	E18	12	25.1	2	19	9	9	E	RAMY	5285	
23	DSD	1700E	2005D	N18	E19	12	25.1		08	8	7	E	HOLL	5285	
23	ASR	1702E	2352D	S33	W90	12	16.6			8	8	E	HOLL	5275	
23	AFS	1730E	1943D	N18	W01	12	23.6		02	8	7	E	RAMY	5283	
23	AFS	1810E	1943D	N22	W45	12	20.3		03	9	9	E	RAMY		
23	AFS	1829E	2352D	N22	W44	12	20.4		03	9	9	E	HOLL		
23	ADF	1830E	1943D	S16	E68	12	28.9	1	26	9	9	E	RAMY	5292	
23	BSD	2015E	2030	N29	W55	12	19.5		03	9	9	E	HOLL	5278	
23	ADF	2058E	0248D	S12	E65	12	28.8	2	07	9	9	E	PALE	5292	
23	ADF	2058E	0248D	S23	E63	12	28.7	1	09	9	9	E	PALE	5292	
23	ADF	2230E	1045D	S14	E66	12	28.9	1	09	9	9	E	LEAR	5292	
24	AFS	0017E	0248D	N25	W49	12	20.2		02	9	9	E	PALE		
24	SPY	0352E	0408D	S29	W90	12	17.1			9	9	E	LEAR	5273	

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1988

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
24	ASR	0520E	1045D	S31	W90	12	17.1			9	9	E	LEAR	5275	
24	ASR	0740E	1432D	S34	W90	12	17.1			9	9	E	SVTO	5275	
24	ADF	1009E	1432D	S11	E46	12	27.9	1	07	9	9	E	SVTO	5292	
24	SDF	1028E	2223D	S13	E46	12	27.9	2	09	0	0	E	LEAR	5292	
24	SDF	1028E	2223D	S60	W35	12	21.3	2	17	0	0	E	LEAR		
24	ADF	1250E	1325D	N16	E13	12	25.5	2	07	9	9	E	RAMY	5285	
24	ASR	1250E	1325D	S34	W90	12	17.4			9	9	E	RAMY	5275	
24	ADF	1306E	1325D	N26	E41	12	27.7	1	03	9	9	E	RAMY	5290	
24	ADF	1306E	1325D	S17	E53	12	28.6	2	12	9	9	E	RAMY	5292	
24	SDF	1325E	1244D	S17	E33	12	27.1		12	0	0	E	RAMY	5292	
24	SDF	1432E	1300D	S16	E38	12	27.5		11	0	0	E	SVTO	5292	
24	ASR	1511	1602	S32	W88	12	17.7			9	9	E	HOLL	5288	
24	ASR	1754	2336D	S34	W89	12	17.6			9	9	E	HOLL	5288	
24	ASR	1813E	0333D	S31	W88	12	17.8			9	9	E	PALE	5275	
24	ADF	2117E	0333D	S14	E37	12	27.7	1	07	9	9	E	PALE	5292	
24	SDF	2336E	1424D	N03	E40	12	28.0		11	0	0	E	HOLL		
25	ASR	0004E	1033D	N34	W91	12	17.7			9	9	E	LEAR	5275	
25	ADF	0815E	1452D	S15	E43	12	28.6	1	06	9	9	E	SVTO	5292	
25	ASR	0816E	1452D	S35	W90	12	18.1			9	9	E	SVTO	5288	
25	AFS	0855E	1033D	N25	E33	12	27.9		04	9	8	E	LEAR	5290	
25	ASR	1118E	2019D	N28	W87	12	18.7			9	9	E	RAMY	5278	
25	ASR	1333E	2019D	S33	W90	12	18.4			9	9	E	RAMY	5288	
25	AFS	1407E	2019D	N22	E22	12	27.3		02	9	9	E	RAMY	5290	
25	AFS	1407E	2019D	S14	E02	12	25.7		02	9	9	E	RAMY	5295	
25	ADF	1446E	2130D	S18	E36	12	28.3	2	12	9	9	E	HOLL	5292	
25	AFS	1549E	2130D	N21	E24	12	27.5	1	03	9	9	E	HOLL	5290	
25	ADF	1622E	1658D	S16	E34	12	28.3	2	10	9	9	E	RAMY	5292	
25	AFS	1840E	0339D	S14	W01	12	25.7		02	9	9	E	PALE	5295	
25	ADF	1959E	2019D	S23	E34	12	28.4	1	03	9	9	E	RAMY	5292	
25	ASR	2238E	0339D	N26	W90	12	18.9			9	9	E	PALE	5280	
26	ASR	0507	1035D	N22	W89	12	19.4			9	6	E	LEAR	5294	
26	ASR	0747E	1328D	S32	W90	12	19.2			9	9	E	SVTO		
26	ASR	0747E	1450D	N16	W90	12	19.5			9	9	E	SVTO	5287	
26	AFS	0845E	1450D	N20	E32	12	28.8		02	9	9	E	SVTO	5296	
26	BSL	0924	0951	N22	W90	12	19.5	1-				C	CATA		
26	BSL	1035	1046D	N24	W90	12	19.5	1-				C	CATA		
26	BSL	1040	1046	N28	W90	12	19.4	1-				C	CATA		
26	ADF	1158E	1450D	N25	E14	12	27.6	1	05	9	9	E	SVTO	5290	
26	ASR	1209E	2143D	N25	W90	12	19.5			9	9	E	RAMY	5278	
26	ADF	1213E	1950D	S15	E20	12	28.0	1	09	9	5	E	RAMY	5292	
26	ADF	1213E	2143D	S15	E33	12	29.0	1	07	8	5	E	RAMY	5292	
26	AFS	1244E	1649D	S15	E53	12	30.5		02	9	9	E	RAMY	5297	
26	ASR	1748E	0135D	N22	W86	12	20.1			8	8	E	PALE	5294	
26	AFS	1816E	0300D	N19	E27	12	28.8		02	9	9	E	PALE	5296	
26	AFS	1816E	0300D	S17	E52	12	30.7		02	9	9	E	PALE	5297	
26	AFS	2303E	2322D	S17	E46	12	30.4		03	9	9	E	HOLL	5297	
26	AFS	2335E	1031D	S16	E47	12	30.5		03	9	9	E	LEAR	5297	
27	APR	0138E	0300D	S23	W90	12	20.1	1		9	9	E	PALE	5282	
27	ADF	0144E	0300D	S14	E16	12	28.3	1	08	9	9	E	PALE	5290	
27	AFS	0355E	1031D	N22	E06	12	27.6		03	9	9	E	LEAR	5290	
27	APR	0435E	1031D	S22	W90	12	20.3			8	7	E	LEAR	5282	
27	AFS	0818E	1429D	N22	E03	12	27.6		04	9	9	E	SVTO	5290	
27	AFS	0819E	1429D	S20	E12	12	28.3		05	9	9	E	SVTO	5292	
27	ADF	0839E	1429D	N22	W37	12	24.5	1	03	9	9	E	SVTO	5285	
27	ADF	1025E	1429D	N14	W54	12	23.3	1	06	9	9	E	SVTO	5283	
27	SDF	1358E	1402D	N22	W38	12	24.7		05	0	0	E	RAMY	5285	
27	DSD	1358E	1429D	N24	W40	12	24.5		04	9	9	E	RAMY	5285	
27	DSD	1358E	2013D	N26	W41	12	24.4		08	9	9	E	RAMY	5285	
27	ADF	1358E	2139D	N19	W34	12	25.0	1	13	9	9	E	RAMY	5285	
27	ADF	1444E	2028D	N27	W02	12	27.4	1	09	9	9	E	RAMY	5290	
27	DSD	1502E	2357D	N23	W39	12	24.6		06	9	9	E	HOLL	5285	
27	BSD	1513	1609D	N24	W02	12	27.5		11	9	9	E	HOLL	5290	
27	AFS	1515E	2357D	N17	E14	12	28.7		02	9	9	E	HOLL	5296	
27	ADF	1523E	2357D	S15	W25	12	25.7	1	10	9	9	E	HOLL	5295	
27	AFS	1550E	2139D	S21	E07	12	28.2		04	9	9	E	RAMY	5292	
27	ASR	1551E	1559D	S30	W70	12	22.1			9	9	E	RAMY		Flare Associated
27	ADF	1554E	2139D	N21	W41	12	24.5	1	05	9	9	E	RAMY	5285	

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1988

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
27	AFS	1645E	2139D	N20	E32	12	30.1		02	9	9	E	RAMY		
27	AFS	1830E	2357D	S20	E31	12	30.1		03	9	9	E	HOLL	5298	
27	AFS	1921E	1921D	N20	E31	12	30.2		03	9	9	E	PALE		
28	APR	0138E	0300D	S23	W90	12	21.1	1		9	9	E	PALE	5282	
28	AFS	0202E	0341D	S16	E29	12	30.3		03	9	9	E	PALE	5297	
28	AFS	0214E	0341D	N17	E10	12	28.8		02	5	6	E	PALE	5296	
28	AFS	0555E	0810D	S17	E06	12	28.7		02	7	8	E	LEAR	5292	
28	AFS	0921E	1107D	S13	E27	12	30.4		06	9	9	E	SVTO	5297	
28	ADF	1041E	1107D	S17	E03	12	28.7	1	07	9	9	E	SVTO	5292	
28	ADF	1325E	2111D	S12	E06	12	29.0	2	11	9	9	E	RAMY	5292	
28	AFS	1325E	2111D	S15	E25	12	30.4		03	9	9	E	RAMY	5297	
28	AFS	1428E	2111D	S41	W07	12	28.0		02	9	9	E	RAMY		
28	AFS	1515E	2357D	N17	E14	12	29.7		02	9	9	E	HOLL	5296	
28	ADF	1730E	2111D	N20	W20	12	27.2	1	05	9	9	E	RAMY	5290	
28	AFS	1839E	2223D	S15	E23	12	30.5	1	04	9	9	E	HOLL	5297	
28	AFS	1840E	2358D	S41	W10	12	28.0	1	02	8	8	E	HOLL	5300	
28	DSD	1843E	2358D	N23	W54	12	24.6		04	9	9	E	HOLL	5285	
28	ADF	1844E	2253	S11	W39	12	25.8	1	06	9	9	E	HOLL	5295	
28	AFS	1900E	0338D	S16	E22	12	30.5		02	9	9	E	PALE	5297	
28	SDF	2230E	2253	S11	W39	12	26.0		03	0	0	E	HOLL	5295	
28	DSD	2353	2355D	N24	W56	12	24.7		06	9	9	E	PALE	5285	Flare Associated
29	AFS	0535E	1042D	S40	W16	12	27.9		03	9	9	E	LEAR	5300	
29	BSL	0815E	0815D	S35	W90	12	22.1	1-				C	CATA		
29	BSL	0835E	0835D	S36	W90	12	22.1	1				C	CATA		
29	APR	0849E	1003D	S36	W90	12	22.1			9	9	E	LEAR		
29	BSL	0850E	0950	S36	W90	12	22.1	2				C	CATA		
29	AFS	1000E	1506D	N20	W22	12	27.7		03	9	9	E	SVTO	5290	
29	AFS	1001E	1506D	S23	W12	12	28.5		02	9	9	E	SVTO	5292	
29	AFS	1002E	1506D	N20	W58	12	25.0		04	9	9	E	SVTO	5285	
29	AFS	1003E	1506D	S15	E13	12	30.4		03	9	9	E	SVTO	5297	
29	ADF	1248E	2142D	S17	W14	12	28.5	2	06	9	9	E	RAMY	5292	
29	AFS	1254E	2142D	S41	W20	12	27.9		02	9	9	E	RAMY	5300	
29	DSD	1302E	2142D	N23	W65	12	24.5		03	9	9	E	RAMY	5285	
29	AFS	1315E	2142D	S16	E14	12	30.6		02	9	9	E	RAMY	5297	
29	ADF	1501E	2354D	S17	W09	12	28.9	1	05	9	9	E	HOLL	5292	
29	DSD	1502E	1915D	S27	W21	12	28.0		05	9	9	E	HOLL	5292	
29	ADF	1514E	2354D	N17	W66	12	24.6	1	05	9	9	E	HOLL	5285	
29	AFS	1518E	2354D	S16	E13	12	30.6	1	02	9	9	E	HOLL	5297	
29	AFS	1720E	2142D	S19	W18	12	28.3		04	8	8	E	RAMY	5292	
29	ADF	1915E	0342D	N25	W67	12	24.6	1	10	9	9	E	PALE	5285	
29	AFS	1915E	0342D	S16	E09	12	30.5		02	9	9	E	PALE	5297	
29	AFS	1915E	0342D	S19	W17	12	28.5		03	9	9	E	PALE	5292	
29	AFS	1921E	2354D	S41	W23	12	27.9	1	02	9	9	E	HOLL	5300	
29	AFS	1925E	0342D	S39	W25	12	27.8		03	9	9	E	PALE	5300	
29	DSD	1937E	2225D	N23	W65	12	24.8		10	9	9	E	HOLL	5285	
29	AFS	1950E	2228D	N16	W13	12	28.8	1	03	5	9	E	HOLL	5296	
29	AFS	2005E	2354D	S19	E26	12	31.8		02	9	9	E	HOLL		
29	AFS	2023E	0342D	N16	W14	12	28.8		02	8	9	E	PALE	5296	
29	SDF	2024E	2024D	S29	W24	12	28.0		09	0	0	E	PALE		
29	DSD	2353	0111	N24	W56	12	25.7		06	9	9	E	PALE	5285	Flare Associated
30	BSL	0840E	0840D	N73	W90	12	22.1	1-				C	CATA		
30	BSL	0840E	0840D	N87	E90	01	7.8	1-				C	CATA		
30	BSL	0955	1000D	N26	W90	12	23.4	1-				C	CATA		
30	AFS	0959E	1133D	S20	W27	12	28.3		03	9	9	E	SVTO	5292	
30	AFS	1000E	1133D	S15	E02	12	30.6		02	9	9	E	SVTO	5297	
30	AFS	1001E	1133D	N19	W36	12	27.7		03	9	9	E	SVTO	5290	
30	ADF	1002E	1133D	S18	W25	12	28.5	1	03	9	9	E	SVTO	5292	
30	ASR	1003E	1133D	N17	W90	12	23.6			8	8	E	SVTO	5283	
30	BSD	1004E	1051D	N23	W83	12	24.0		10	9	9	E	SVTO	5285	Flare Associated
30	BSL	1014E	1021D	N27	W90	12	23.4	1-				C	CATA		
30	AFS	1014E	1133D	S17	E37	01	2.2		03	9	9	E	SVTO	5301	
30	AFS	1015E	1133D	S18	E18	12	31.8		02	9	9	E	SVTO		
30	AFS	1016E	1133D	S41	W30	12	28.0		02	9	9	E	SVTO	5300	
30	AFS	1100E	1133D	N15	E36	01	2.2		01	9	9	E	SVTO		
30	SDF	1234E	0742D	S41	W32	12	27.9	1				C	CATA		
30	BSD	1649E	1710D	N21	W82	12	24.4		02	9	9	E	RAMY	5285	Flare Associated
30	AFS	1649E	2126D	S16	W02	12	30.5		02	9	9	E	RAMY	5297	

ACTIVE PROMINENCES AND FILAMENTS

DECEMBER 1988

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
30	AFS	1649E	2126D	S19	E15	12	31.8		01	9	9	E	RAMY		
30	AFS	1735E	2126D	S20	W32	12	28.3		02	9	9	E	RAMY	5292	
30	ASR	1905E	0115D	N24	W86	12	24.1			9	9	E	PALE	5285	
30	LPS	1929E	2118D	S20	W32	12	28.4			9	9	E	RAMY	5292	Flare Associated
30	AFS	2005E	2359D	S18	E13	12	31.8	1	02	7	9	E	HOLL	5303	
30	ASR	2047E	2359D	N19	W86	12	24.3			9	9	E	HOLL	5285	
30	ASR	2244E	1030D	N21	W90	12	24.0			9	9	E	LEAR	5285	
30	AFS	2315E	1030D	S19	E11	12	31.8		02	8	6	E	LEAR	5303	
31	AFS	0500E	1030D	S41	W41	12	27.8		02	9	9	E	LEAR	5300	
31	BSL	0814E	0820D	N24	W90	12	24.4	1				C	CATA		
31	ADF	1053E	1251D	S22	W45	12	28.0	1	04	9	9	E	SVTO	5292	
31	AFS	1100E	1450D	N18	W50	12	27.6		03	7	8	E	SVTO	5290	
31	AFS	1102E	1450D	N16	W38	12	28.6		03	8	8	E	SVTO	5296	
31	AFS	1109E	1450D	S18	E05	12	31.8		02	9	9	E	SVTO	5303	
31	AFS	1113E	1450D	S15	W11	12	30.6		05	7	9	E	SVTO	5297	
31	DSD	1136E	1235D	S16	W42	12	28.3		04	9	9	E	RAMY	5292	Flare Associated
31	AFS	1205E	2019D	N16	W36	12	28.8		02	9	9	E	RAMY	5296	
31	ASR	1212E	2019D	N20	W90	12	24.6			9	9	E	RAMY	5285	
31	AFS	1220E	2019D	S16	W12	12	30.6		04	9	9	E	RAMY	5297	
31	ADF	1236E	2019D	S11	W35	12	28.9	1	18	9	9	E	RAMY	5292	
31	ASR	1645E	2315	N20	W90	12	24.8			9	9	E	HOLL	5285	
31	AFS	1645E	2359D	S19	E01	12	31.8		03	5	6	E	HOLL	5303	
31	DSD	1658E	1818D	S16	W21	12	30.1		03	9	9	E	HOLL	5297	
31	AFS	1658E	2359D	S15	W15	12	30.6		04	9	9	E	HOLL	5297	
31	ADF	1705E	2019D	S28	W47	12	28.0	1	07	9	9	E	RAMY	5292	
31	DSD	1950E	2019D	N15	W41	12	28.7		03	8	9	E	RAMY	5296	
31	DSD	2033E	2241D	N16	W41	12	28.7		04	9	9	E	HOLL	5296	
31	ADF	2116E	2118D	S15	W46	12	28.4	1	08	9	9	E	PALE	5292	
31	DSD	2119	2311D	S18	W01	12	31.8		05	9	9	E	HOLL	5303	Flare Associated
31	AFS	2127E	2128D	S14	W17	12	30.6		01	9	9	E	PALE	5297	
31	ADF	2130E	2359D	S16	W45	12	28.5	1	09	9	9	E	HOLL	5292	
31	ASR	2228E	1031D	N20	W90	12	25.0			8	7	E	LEAR	5285	
31	AFS	2316E	1031D	S15	W17	12	30.7		03	9	9	E	LEAR	5297	
31	AFS	2322E	1031D	S04	W19	12	30.5		04	9	9	E	LEAR	5303	

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

Comprehensive Reports **MISCELLANEOUS DATA** Number 538 Part II

CARTE SYNOPTIQUE
ACTIVE REGIONS
CARRINGTON ROTATION 1808

(19 October to 15 November 1988)

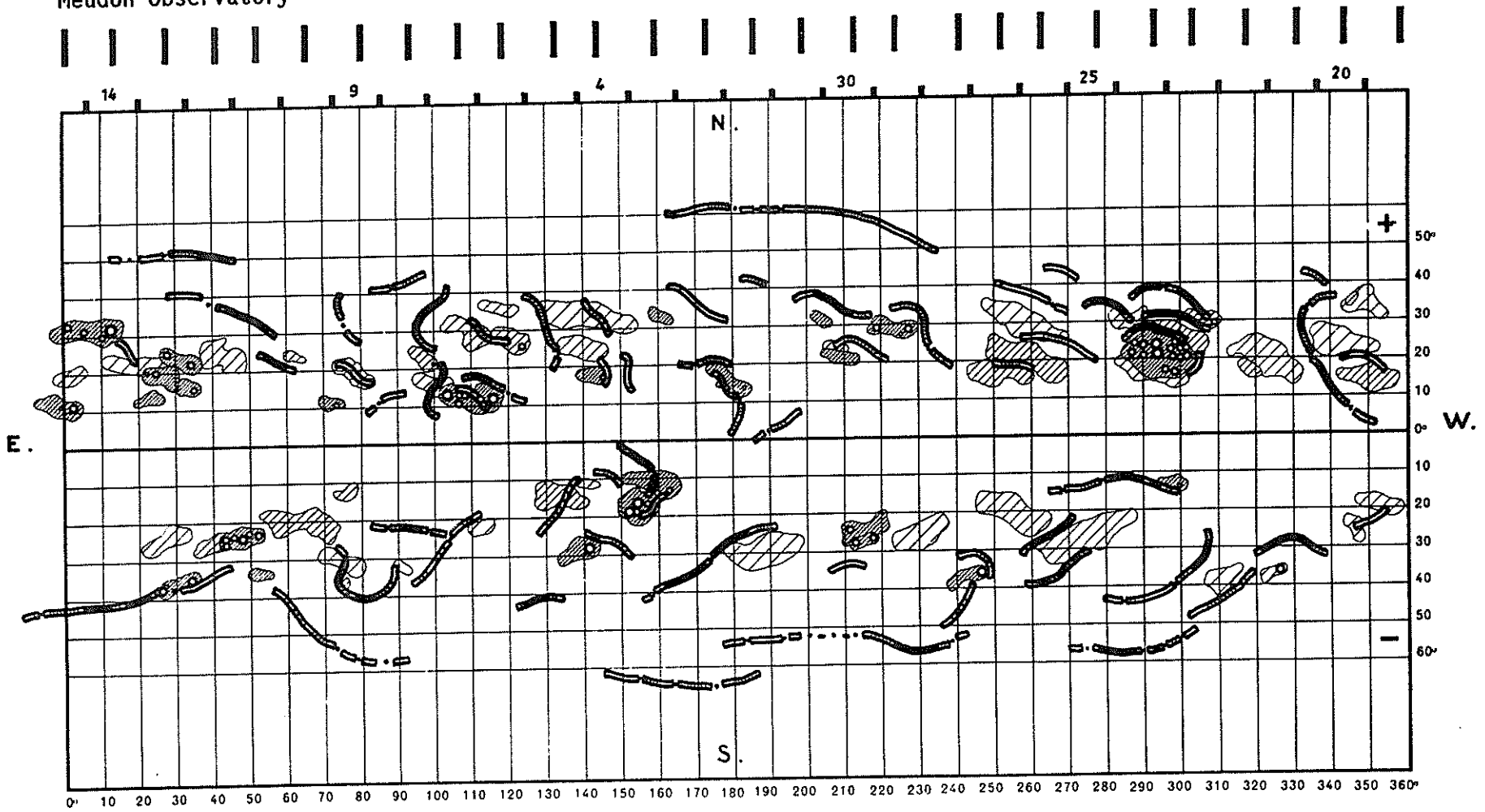
Region No.	Coordinates Lat.	Long.	Imp	Age at CMP (Days)	Spotless Region	Region No. in Rotation 1807	Activity at West Limb
1	18 S	352	1	>6	x	1	decreasing
2	15 N	350	1	>6	x		decreasing
3	22 N	324	1	>6	x	6+8	dispersed
4	36 S	323	3	>6			decreasing
5	18 N	318	1	-4	x		stable
6	31 N	306	2	>6		9	decreasing
7	27 N	300	1	>6	x		decreasing
8	13 S	298	2	+6			decreasing
9	22 N	295	10	>6			decreasing
10	18 N	292	1	>6	x		dispersed
11	30 N	286	1	>6	x	12	dispersed
12	26 S	275	1	>6	x	15	decreasing
13	21 N	259	1	>6	x	19	decreasing
14	20 S	255	1	>6	x		dispersed
15	17 N	252	1	>6	x	20+22	decreasing
16	36 S	242	3	>6			decreasing
17	29 N	223	3	+2			decreasing
18	24 S	215	2	>6			decreasing
19	27 S	215	3	-1			decreasing
20	22 N	209	1	+5	x		decreasing
21	25 N	208	1	-1	x		decreasing
22	32 N	204	1	-3	x		increasing
23	16 N	179	2	>6			decreasing
24	33 N	161	1	-3	x		stable
25	11 S	159	2	>6			decreasing
26	17 S	155	5	>6		32	stable
27	18 N	143	2	+6			decreasing
28	25 N	140	1	>6	x		disappeared
29	28 S	139	3	>6			decreasing
30	14 S	133	1	>6	x		disappeared
31	28 N	120	2	>6			decreasing
32	36 N	117	1	>6	x		disappeared
33	12 N	110	4	>6			decreasing
34	30 N	110	1	>6	x	40	dispersed
35	16 N	100	1	>6	x	43	decreasing
36	23 N	97	2	>6			disappeared
37	32 S	91	1	0	x		disappeared
38	19 N	78	1	>6	x		dispersed
39	13 S	76	1	0	x		dispersed
40	11 N	73	2	-1			decreasing
41	20 S	64	1	>6	x	49+50	dispersed
42	24 N	62	1	-1	x		stable
43	33 S	53	1	+5	x		disappeared
44	24 S	47	4	0			increasing
45	24 N	43	1	>6	x		decreasing
46	26 S	40	2	>6			decreasing
47	16 N	34	2	0			decreasing
48	23 N	32	3	-3			stable
49	36 S	30	3	-2			increasing
50	20 N	27	2	>6			decreasing
51	24 S	27	1	>6	x		dispersed
52	13 N	23	1	+5	x		disappeared
53	32 N	8	4	>6			decreasing
54	20 N	2	1	>6	x		disappeared
55	12 N	0	3	>6			decreasing

CARTE SYNOPTIQUE

CARRINGTON ROTATION NUMBER 1808
(19 October to 15 November 1988)

Meudon Observatory

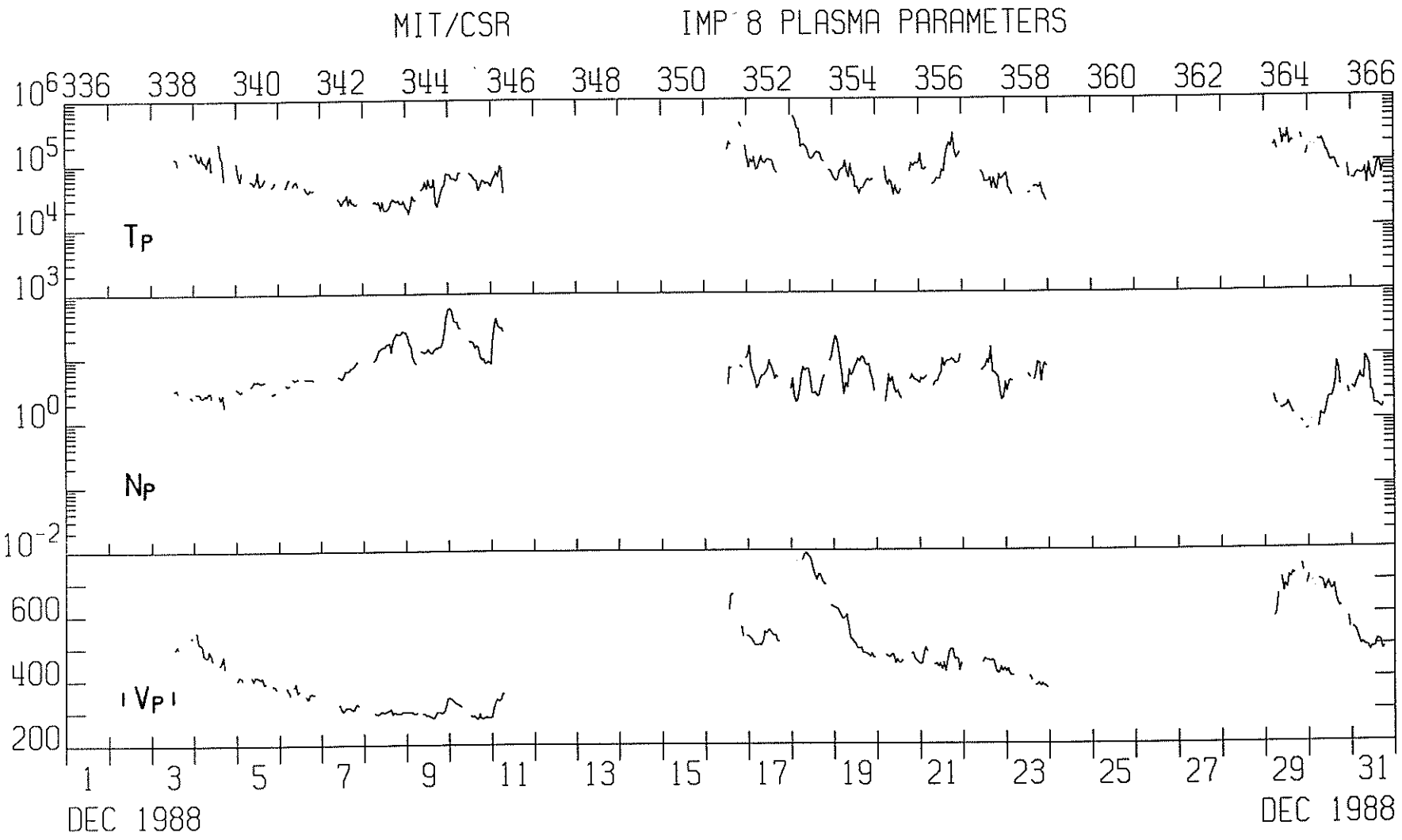
October 1988



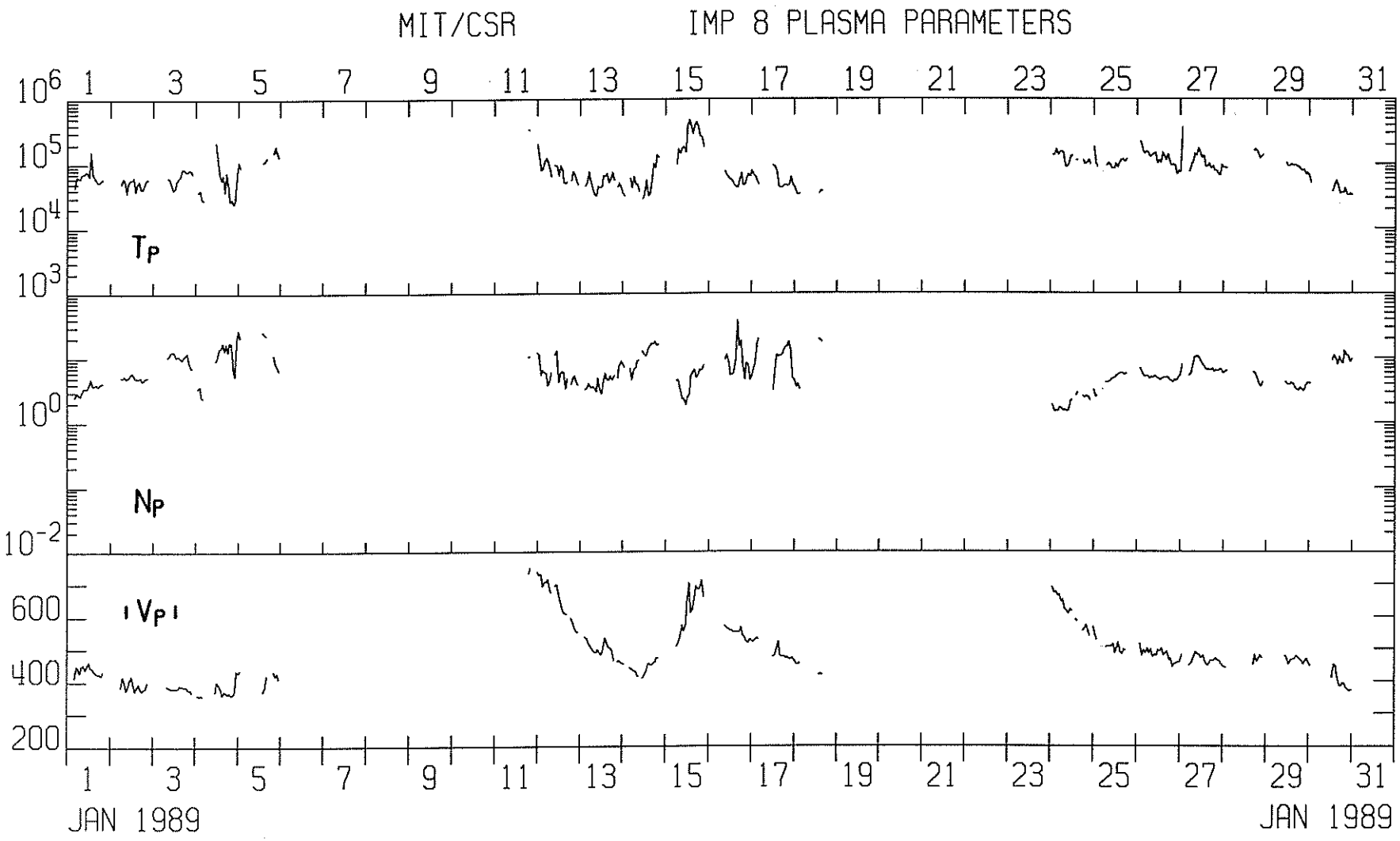
Heliographic Longitude

97
Late
Oct 88

IMP 8 SOLAR WIND PLASMA
DECEMBER 1988



IMP 8 SOLAR WIND PLASMA
JANUARY 1989

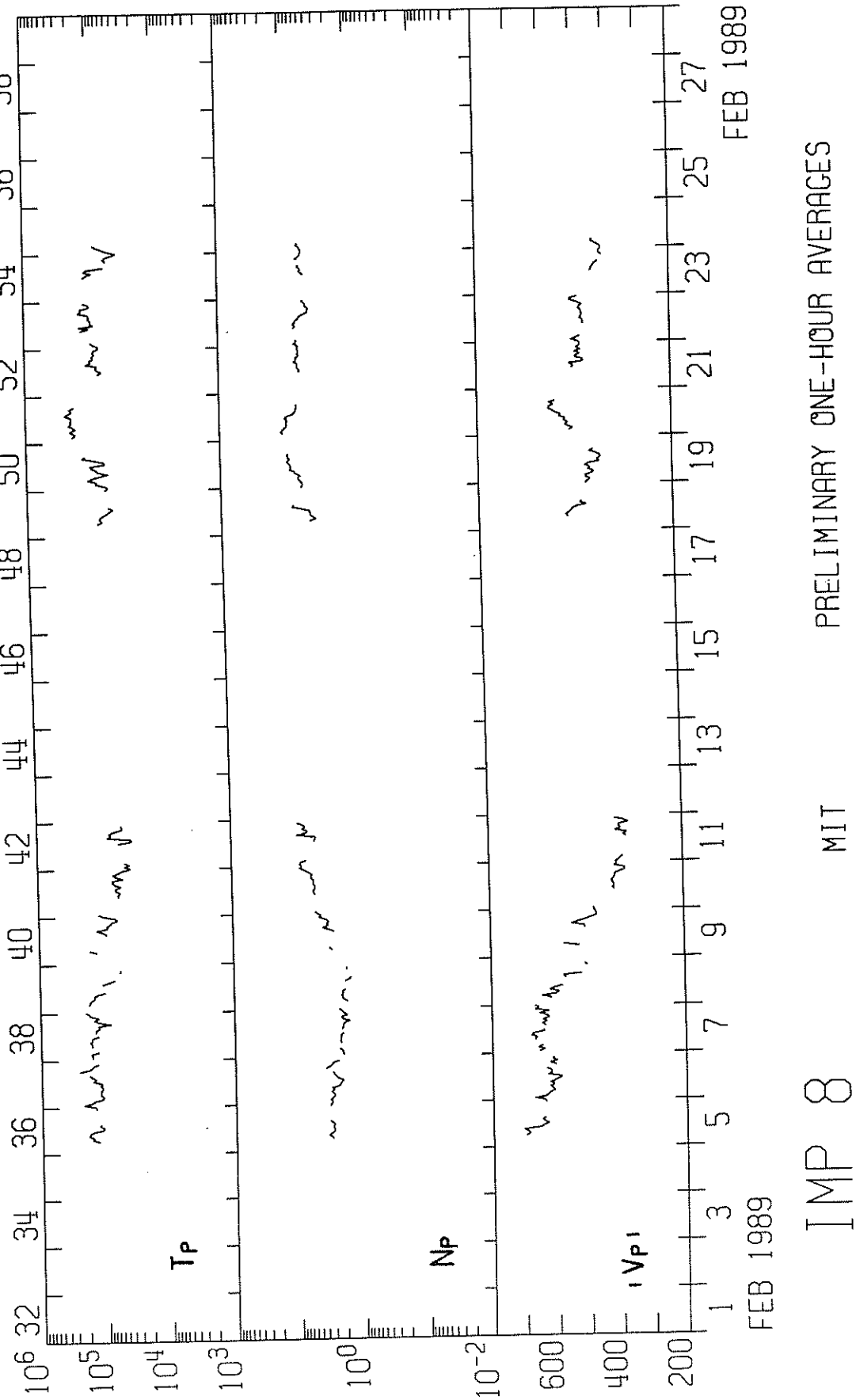


IMP 8 MIT PRELIMINARY ONE-HOUR AVERAGES

99
Misc
Jan 89

100
Misc
Feb 89

IMP 8 SOLAR WIND PLASMA
FEBRUARY 1989



Earth Radiation Budget Experiment (ERBE) Solar Irradiance Values

We present listings of the 1984-1988 total solar irradiance time series which were obtained from the three Earth Radiation Budget Experiment ERBE solar monitors. The ERBE solar monitors, active-cavity radiometers, are the most recent pyrheliometers to be placed into orbit to continuously measure the solar irradiance. They are recent versions of the three active cavity radiometer irradiance monitors (ACRIM) which are located on the NASA Solar Maximum Mission spacecraft. The ERBE solar monitors were placed into orbit aboard the NASA Earth Radiation Budget Satellite (ERBS) and the National Oceanic and Atmospheric Administration NOAA 9 and NOAA 10 spacecraft on 5 October 1984, 12 December 1984, and 17 September 1986, respectively.

The following individual total solar irradiance values represent instantaneous ones. They are cosine corrected and normalized to the mean Earth/Sun distance of one astronomical unit. Once every 2 weeks, the Sun is observed by each of the three monitors, almost simultaneously, for several 64-second measurement intervals. Each interval is separated into two 32-second periods. During the first period, the unocculted Sun drifts across the 13.7 degree fields of view, and its radiation field is measured. During the second period, a low-emittance shutter, representative of a near-zero irradiance source, is cycled into the field of view, and its radiation field is measured. The resulting measurements from the two different periods are used to define the irradiance, using the model which is described in Reference 1. Typically, two to eight values of the irradiance are determined during an orbit. Considering that these irradiance values are derived only during a single orbit for a few minutes, the averaged irradiance value represents an instantaneous one and not a daily average. The cosine correction accounts for the variations in the solar monitor's response when the Sun is observed off the optical axis.

As shown in the figure, the ERBS solar monitor time series covers the period 25 October 1984 through 21 December 1988. The NOAA 9 spacecraft time series covers 23 January 1985 through 21 December 1988. The NOAA 10 spacecraft time series is considerably shorter — 22 October 1986 through 1 April 1987. On 1 April 1987 the shutter mechanism on the NOAA 10 solar monitor failed. The error bars in the attached figure represent the measurement precision for each solar monitor. The absolute accuracy of a single irradiance value is estimated to be 0.2 percent.

The ERBE data reduction model is described in considerable detail in Reference 1. Analyses of the time series are in References 2 and 3. Intercomparisons of the ERBE time series with those of the ACRIM and the Nimbus 7 Earth Radiation Budget (ERB) Channel 10C pyrheliometers are in References 4 and 5. Intercomparisons among the Nimbus 6 ERB, Mariner VI, Mariner VII, SpaceLab I, ERBS, NOAA 9 and NOAA 10 pyrheliometers are also presented in Reference 4.

The data are available in two different tabulated forms. One form consists of listings of the irradiance (W/m2) with the associated Universal Time (year/month/day, hour:minute:second) and rms deviation from mean value. The other form, given here, consists of charts which list the irradiance values according to month and day for each year and each solar monitor.

Any questions should be referred to Dr. Robert B. Lee, III, Senior Research Scientist, Atmospheric Sciences Division, NASA Langley Research Center 420, Hampton, VA 23665-5225 U.S.A. Phone number: (804)864-5679

REFERENCES

1. R.B. Lee III, B.R. Barkstrom, and R.D. Cess, Characteristics of the Earth Radiation Budget Experiment Solar Monitor, Applied Optics, Vol. 26, No. 15, pp 3090-3096, 1987.

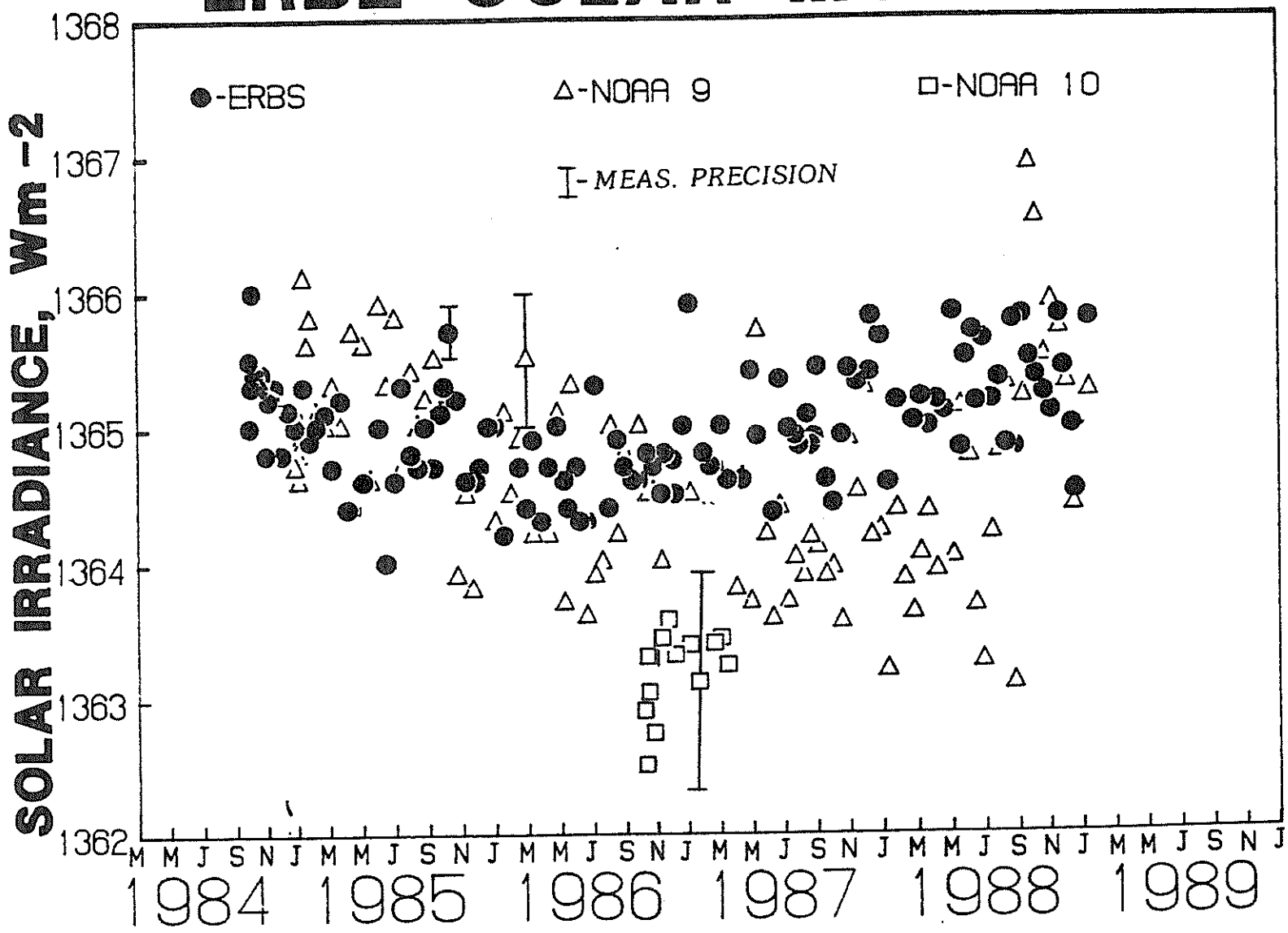
2. R.B. Lee III, B.R. Barkstrom, E.F. Harrison, M.A. Gibson, S.N. Natarajan, W.L. Edmonds, A.T. Mecherikunnel, and H.L. Kyle, Advances in Space Research, Vol.8, No. 7, pp 11-13, 1988.

3. R.B. Lee III, M.A. Gibson, and S.N. Natarajan, Total Solar Irradiance Values Determined Using Earth Radiation Budget Experiment (ERBE) Radiometers, New Developments and Applications in Optical Radiometry (N.P. Fox and D.H. Nettleton, editors), Institute of Physics Conference Series No. 92, Bristol, England, pp 129-132, 1989.

4. R.B. Lee III, B.R. Barkstrom, M.R. Luther, and R.D. Cess, Solar Irradiance Measurements Using the Earth Radiation Budget Experiment Solar Monitors, Proceedings Sixth Conference on Atmospheric Radiation, American Meteorological Society, pp J5-J8, 1986.

5. A.T. Mecherikunnel, R.B. Lee III, H.L. Kyle, and E.R. Major, Intercomparisons of Solar Total Irradiance Data from Recent Spacecraft Measurements, Journal of Geophysical Research, Vol. 93, No. D8, pp 9503-9509, 1988.

ERBE SOLAR MONITORS



SOLAR IRRADIANCE INSTANTANEOUS VALUES
EARTH RADIATION BUDGET EXPERIMENT
NASA LANGLEY RESEARCH CENTER
WATTS/m^2
1984 - ERBS

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT.	NOV.	DEC.
01											1366.0	
02												1365.2
03												
04											1365.4	
05												
06												
07												
08												
09												1365.2
10												
11											1365.3	
12												
13												
14												
15												
16												1365.3
17												
18												
19											1365.4	
20												
21												
22												
23												
24										1365.0		
25										1365.5	1364.8	
26												
27												1364.8
28										1365.3		
29												
30												
31												

SOLAR IRRADIANCE INSTANTANEOUS VALUES
EARTH RADIATION BUDGET EXPERIMENT
NASA LANGLEY RESEARCH CENTER
WATTS/m^2
1985 - ERBS

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT.	NOV.	DEC.
01					1364.4							
02										1364.7		
03				1364.7								
04									1364.7			
05												
06		1365.3	1365.0									
07								1365.3				
08					1364.4							
09	1365.1											
10							1364.0					
11												
12												
13											1365.2	
14												
15												
16										1365.1		
17				1365.2								
18						1364.84			1365.0			1364.6
19												
20		1364.9	1365.1									
21								1364.8		1365.3		
22												
23	1365.0											
24							1364.6					
25												1364.7
26						1365.0						
27											1364.6	
28												
29					1364.6							
30												
31										1365.7		

SOLAR IRRADIANCE INSTANTANEOUS VALUES
EARTH RADIATION BUDGET EXPERIMENT
NASA LANGLEY RESEARCH CENTER
WATTS/m^2
1986 - ERBS

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT.	NOV.	DEC.
01										1364.6		
02				1364.9								
03									1364.9			
04						1364.4						1364.8
05		1364.2	1364.7									
06												
07												
08	1365.0											
09							1364.3					
10												
11												
12											1364.7	
13												
14					1365.0							
15		1364.5								1364.6		
16				1364.3								
17								1364.4	1364.7			
18												1364.48
19			1364.4			1364.7						
20												
21												
22	1365.0											
23							1365.3					
24												1364.5
25						1364.3						
26		1364.3									1364.5	
27												
28					1364.6			1364.3				
29										1364.8		
30				1364.7								
31												

SOLAR IRRADIANCE INSTANTANEOUS VALUES
EARTH RADIATION BUDGET EXPERIMENT
NASA LANGLEY RESEARCH CENTER
WATTS/m^2
1987 - ERBS

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT.	NOV.	DEC.
01				1364.6								
02									1364.9			
03						1364.9						
04			1364.7									
05								1364.9				
06												
07	1365.0											
08							1365.3					
09									1364.9			
10												
11											1365.4	
12								1364.8				
13					1365.4							
14										1364.4		
15		1364.8										
16									1365.4			
17												
18			1365.0			1364.9						1365.4
19												
20												
21	1365.9											
22							1365.0					
23												1365.8
24						1364.4						
25											1365.3	
26		1364.7										
27					1364.9							
28								1365.1		1364.9		
29				1364.6								
30									1364.6			
31												

SOLAR IRRADIANCE INSTANTANEOUS VALUES
EARTH RADIATION BUDGET EXPERIMENT
NASA LANGLEY RESEARCH CENTER
WATTS/m^2
1988 - ERBS

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT.	NOV.	DEC.
01												
02						1365.4						1365.4
03		1365.2	1365.0					1365.4				
04												
05												
06	1365.7						1365.7					
07												
08												
09											1365.2	
10												
11					1365.8							
12										1365.5		
13				1365.2								
14									1365.9			
15								1365.0				
16			1365.2									1365.1
17						1365.8						
18												
19												
20	1364.6						1365.3					
21												1364.5
22						1365.2						
23											1365.7	
24												
25					1364.8							
26								1365.7		1365.2		
27				1365.1								
28									1365.5			
29			1365.00									
30												
31								1364.8				

SOLAR IRRADIANCE INSTANTANEOUS VALUES
EARTH RADIATION BUDGET EXPERIMENT
NASA LANGLEY RESEARCH CENTER
WATTS/m^2
1985 - NOAA 9

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT.	NOV.	DEC.
01												
02		1364.9								1365.5		
03				1365.3								
04									1365.0			
05												
06		1366.1	1365.1									
07								1364.7				
08					1365.7							
09												
10							1365.3					
11												1363.8
12						1364.6						
13		1365.6									1363.9	
14												
15												
16										1365.1		
17				1365.0								
18									1365.2			
19												
20		1365.8	1365.0									
21								1365.4				
22												
23	1364.7											
24							1365.8					
25	1365.1											
26						1365.9						
27	1364.8										1364.5	
28												
29					1365.6							
30	1364.6									1365.2		
31												

SOLAR IRRADIANCE INSTANTANEOUS VALUES
EARTH RADIATION BUDGET EXPERIMENT
NASA LANGLEY RESEARCH CENTER
WATTS/m^2
1986 - NOAA 9

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT.	NOV.	DEC.
01												
02				1364.2								
03									1364.2			
04												
05		1365.1	1364.9									
06								1364.0				
07												
08												
09							1363.6					
10												
11						1365.3						
12											1364.5	
13					1365.1							
14												
15										1365.0		
16												
17									1364.8			
18												
19		1364.5	1365.5									
20								1365.0				
21												
22	1364.3											
23							1363.9					
24												
25												
26											1364.0	
27					1363.7							
28												
29										1364.5		
30				1364.2								
31												

SOLAR IRRADIANCE INSTANTANEOUS VALUES
EARTH RADIATION BUDGET EXPERIMENT
NASA LANGLEY RESEARCH CENTER
WATTS/m^2
1987 - NOAA 9

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT.	NOV.	DEC.
01												
02									1364.2			
03												
04												
05								1364.0				
06												
07												
08							1364.4					
09												1365.3
10						1364.2						
11											1364.9	
12												
13					1363.7							
14										1364.0		
15				1364.0								
16									1364.1			
17												
18												
19								1363.9				
20												
21	1364.5											
22							1363.7					
23												1364.2
24						1363.6						
25											1364.5	
26												
27					1365.7							
28										1363.6		
29				1364.6								
30									1363.9			
31												

SOLAR IRRADIANCE INSTANTANEOUS VALUES
EARTH RADIATION BUDGET EXPERIMENT
NASA LANGLEY RESEARCH CENTER
WATTS/m^2
1988 - NOAA 9

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT.	NOV.	DEC.
01												
02			1363.6									
03		1364.4						1364.8				
04												
05												
06	1364.1						1363.3					
07												1365.3
08						1364.4						
09											1365.9	
10												
11					1364.0							
12										1366.5		
13				1363.9								
14									1365.2			
15												
16			1364.1					1365.3				
17		1363.9										
18												
19												
20	1363.2						1364.2					
21												1364.4
22						1363.7						
23											1365.7	
24												
25					1365.1							
26										1365.5		
27												
28									1366.9			
29												
30			1364.4									
31								1363.1				

SOLAR IRRADIANCE INSTANTANEOUS VALUES
EARTH RADIATION BUDGET EXPERIMENT
NASA LANGLEY RESEARCH CENTER
WATTS/m^2
1986 - NOAA 10

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT.	NOV.	DEC.
01											1363.1	
02												
03												
04												
05											1363.3	
06												
07												
08												
09												
10												1363.6
11												
12											1362.8	
13												
14												
15												
16												
17												
18												
19												
20												
21												
22										1363.0		
23												
24												1363.3
25										1362.5		
26											1363.5	
27												
28												
29										1363.3		
30												
31												

SOLAR IRRADIANCE INSTANTANEOUS VALUES
EARTH RADIATION BUDGET EXPERIMENT
NASA LANGLEY RESEARCH CENTER
WATTS/m^2
1987 - NOAA 10

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT.	NOV.	DEC.
01				1363.3								
02												
03												
04		1363.2	1363.6									
05												
06												
07												
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18			1363.5									
19												
20												
21	1363.4											
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												

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."