

8
Dec 77

H α SOLAR FLARES

DECEMBER 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS		
	DATE DEC	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	HEMISPHERE REGION	CHR DAY			COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg			
					LAT.	MER. DIST.													
GRP65082	01	0004+1	0006+0	0011	S21	E66	.927	15049	6.0	7	-N								
MITK	01	0004	0006	0010	S21	E65	.921	15049	5.9	6	-N	C	0006	50				D	
CULG	01	0005	0006	0012	S23	E74	.969	15049	6.6	7	-F	C	0006	20				D	
VORO	01	0005	0006	0011	S20	E66	.926	15049	6.0	6	-B	C	0006	72	1.8				
83 VORO	01	0104	0110	0116	N18	E17	.405	15044	2.3	12	-N	C	0110	90	1.0		GJ	Y5	
	01	0132	0135	NO FLARE PATROL															
GRP65084	01	0223+5	0228+1	0235	S22	E70	.950	15049	6.3	12	-N								
VORO	01	0223	0229	0235	S22	E67	.934	15049	6.1	12	-B	C	0229	36	1.9			V	
CULG	01	0228	0228	02320	S23	E74	.969	15049	6.7	40	-F	P	0229	20				V	
85 VORO	01	0253	0257	0300	S19	E61	.891	15049	5.7	7	-B	C	0257	54	1.3		E	Y5	
86 VORO	01	0325	0328	0334	S20	E61	.893	15049	5.7	9	-B	C	0328	27	.6		O	Y5	
87 MITK	01	0425E		0434	S20	E63	.907	15049	5.9	90	-B	P	0426	50	1.2		EH	Y5	
	01	0613	0820	NO FLARE PATROL															
88 MONT	01	1002	1004	1007	S21	E59	.880	15049	5.8	5	-N	C	1004	40			O	Y5	
	01	1024	1036	NO FLARE PATROL															
89 ZURI	01	1323	1331	13330	S21	E56	.856	15049	5.8	100	-N	P	1331	70	1.5			Y5	
	01	1433	1514	NO FLARE PATROL															
90 RAMY	01	1555E	1557	1601	S20	E58	.870	15049	6.0	60	-N	3 C		48			H	Y5	
91 RAMY	01	1620	1622	1630	N22	E15	.433	15044	2.8	10	-N	3 C		63			F R	Y5	
	01	1706	1745	NO FLARE PATROL															
	01	1751	2016	NO FLARE PATROL															
92 PALE	01	2016E	2016U	20270	S18	E57	.858	15049	6.1	110	-F	3 C		69			DE H	Y5	
	01	2127	2134	NO FLARE PATROL															
	01	2148	2209	NO FLARE PATROL															
	01	2217	2325	NO FLARE PATROL															
93 VORO	01	2348	2352	0001	S20	E51	.810	15049	5.8	13	-B	C	2352	63	1.1		EL	Y5	
GRP65094	02	0053+3	0058+1	0103	S21	E51	.813	15049	5.9	10	-B			60	1.0		DHJ		
CULG	02	0053	0058	0110	S23	E51	.819	15049	5.9	17	-N	C	0058	40	.8		J		
MITK	02	0053	0058	0102	S21	E51	.813	15049	5.9	9	-B	C	0058	50	.9		DH		
VORO	02	0056	0059	0103	S20	E51	.810	15049	5.9	7	-B	C	0059	90	1.6		J		
GRP65095	02	0114+4	0118+1	0123	S20	E49	.791	15049	5.7	9	-N			50	.8		E		
MITK	02	0114	0119	0130	S20	E49	.791	15049	5.7	16	-N	C	0119	50	.8		E		
CULG	02	0116	0118	0123	S23	E51	.819	15049	5.9	7	-N	C	0118	40	.7				
VORO	02	0118	0119	0122	S19	E48	.778	15049	5.7	4	-B	C	0119	72	1.2		E		
GRP65096	02	0235+3	0239+0	0246	S21	E50	.804	15049	5.9	11	-N			60	1.0		DHJL		
CULG	02	0235	0239	0246	S23	E51	.819	15049	5.9	11	-F	C	0239	40	.7				
MITK	02	0236	0239	0244	S21	E50	.804	15049	5.9	8	-F	C	0239	50	.9		DH		
VORO	02	0238	0239	0249	S20	E50	.801	15049	5.9	11	-B	C	0239	81	1.4		JL		
	02	0525	0529	NO FLARE PATROL															
GRP65097	02	0534	0553+7	0606	S24	E55	.855	15049	6.4	32	-N			80	1.5		DHJ		
CULG	02	0534	0600	0620	S25	E55	.858	15049	6.4	46	-N	C	0600	90	1.8		TFJ		
MITK	02	0537E		0543	S22	E47	.779	15049	5.8	60	-F	P	0538	60	1.0		DH		
MITK	02	0548	0553	0606	S23	E55	.853	15049	6.4	18	-B	C	0553	70	1.4		D		
	02	0758	0800	NO FLARE PATROL															
98 KANZ	02	0828		0849	N17	E03	.284	15044	2.6	21	-F						G	Y5	
99 HTPR	02	0935	0940	0945	S24	E55	.855	15049	6.5	10	-F	C	0940	30			E	Y5	
GRP65100	02	1056+0	1102+0	1107	S23	E53	.838	15049	6.4	11	-F						E		
KANZ	02	1056	1102	1105	S23	E52	.829	15049	6.4	9	-F								
HTPR	02	1056	1102	1109	S24	E54	.847	15049	6.5	13	-F	C	1102	30			E		

H α SOLAR FLARES

DECEMBER 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN	IMPORTANCE	OBS. COND TYPE	MEASUREMENTS			REMARKS	
	DATE DEC	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY				TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg		
					LAT.	NER. DIST.											
GRP65101	02	1109+0	1112+0	1115	S21	E43	.735	15049	5.7	6	-F						
KANZ	02	1109	1112	1115	S21	E43	.735	15049	5.7	6	-F						
HTPR	02	1109	1112	1114	S22	E44	.750	15049	5.8	5	-F	C	1112	10			
GRP65102	02	1139+1	1142+1	1147	S22	E54	.842	15049	6.5	8	-N			35	.7	D	
MONT	02	1139	1142	1147	S22	E59	.881	15049	6.9	8	-F	C	1142	20		D	
KANZ	02	1139E	1143	1154	S22	E52	.825	15049	6.4	150	-N						
HTPR	02	1140	1143	1147	S24	E54	.847	15049	6.5	7	-N	C	1143	50			
GRP65103	02	1355	1358+1	1410	S21	E53	.831	15049	6.6	15	-F						
HTPR	02	1355	1358	1402	S24	E53	.839	15049	6.6	7	-F	C	1358	20			
HTPR	02	1356	1359	1410	S19	E54	.834	15049	6.6	14	-F	C	1359	20			
104	HTPR	02	1412	1418	1422	S24	E51	.822	15049	6.4	10	-F	C	1418	60		Y5
105	HTPR	02	1428	1431	1439	S27	E55	.863	15049	6.7	11	-F	C	1431	20		Y5
		02	1508	2131	NO FLARE PATROL												
		02	2145	2358	NO FLARE PATROL												
106	HTPR	03	1057	1058	1104	S18	E37	.655	15049	6.2	7	-F	C	1058	20		Y5
107	HTPR	03	1325	1330	1336	N09	W05	.169		3.2	11	-F	C	1330	10		Y5
GRP65108		03	1434	1440	1510	N17	E47	.755	15053	7.1	36	-N					EGK
	HTPR	03	1434	1440	1510	N17	E47	.755	15053	7.1	36	-N	C	1453	40		EGK
	HTPR	03	1434	1453	1510	N17	E47	.755	15053	7.1	36	-N	C	1453			
109	MCMA	03	1806	1807	1826	S19	E33	.614	15049	6.2	20	-F	C	1807	40		E Y5
		03	2048	2340	NO FLARE PATROL												
GRP65110		04	0133+5	0141+3	0148	N12	W61	.879	15051	29.5	15	-F			60	1.3	
	PALE	04	0133	0144	01460	N12	W60	.871	15051	29.6	130	-F	3	V	45		DE F
	MITK	04	0138	0141	0148	N13	W62	.888	15051	29.4	10	-N	C	0141	70	1.4	
111	MITK	04	0150	0153	0205	N14	W62	.889	15051	29.4	15	-N	C	0153	70	1.5	D Y5
112	MITK	04	0608	0614	0622	N13	W65	.910	15051	29.4	14	-N	C	0614	60		D Y5
113	HTPR	04	0801E		0833	N15	W65	.912	15051	29.5	320	-F	C	0826	20		Y5
GRP65114		04	1011+1	1015	1031	S21	E23	.517	15049	6.1	20	-F					E
	HTPR	04	1011	1015	1030	S22	E23	.527	15049	6.1	19	-F	C	1015	20		E
	KANZ	04	1012	1023	1031	S21	E23	.517	15049	6.2	19	-F					
GRP65115		04	1121+1	1123+0	1130	S06	E17	.312		5.7	9	-F					EG
	KANZ	04	1121	1123	1130	S06	E17	.312		5.7	9	-F					G
	HTPR	04	1122	1123	1130	S07	E17	.318		5.7	8	-F	C	1123	30		E
GRP65116		04	1351+0	1355+2	1406	S23	E26	.567	15049	6.5	15	-N					D
	HTPR	04	1351	1357	14060	S24	E26	.576	15049	6.5	150	-N	C	1357	30		D
	KANZ	04	1351	1355	1405	S23	E26	.567	15049	6.5	14	-N					D
117	MCMA	04	1625	1627	1633	S07	E14	.273		5.7	8	-N	C	1627	40		D Y5
		04	1730	1745	NO FLARE PATROL												
		04	1747	1758	NO FLARE PATROL												
		04	1902	1944	NO FLARE PATROL												
		04	2017	2052	NO FLARE PATROL												
		04	2125	2235	NO FLARE PATROL												
GRP65118		05	0043+4	0049	0114	S18	E15	.400	15049	6.2	31	-N					L
				0058													
	CULG	05	0043	0058	0112	S19	E15	.412	15049	6.2	29	-F	C	0058	80	.9	F
	VORO	05	0047	0049	0115	S18	E16	.410	15049	6.2	28	-B	C	0049	99	1.1	EL
119	CULG	05	0258	0300	0305	S19	E10	.370	15049	5.9	7	-F	C	0300	20	.2	T Y5
GRP65120		05	0914+1	0920+2	0931	S24	E81	.990	15056	11.5	17	-F					
	KANZ	05	0914	0920	0932	S25	E76	.976	15056	11.1	18	-N					
	HTPR	05	0915	0922	0929	S24	E86	.998	15056	11.8	14	-F	C	0918	20		
121	KANZ	05	1015	1020	1031	N16	W78	.979	15051	29.6	16	-N					Y5

10
Dec 77

H α SOLAR FLARES

DECEMBER 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS		
	DATE DEC	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY			COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.			
					LAT.	MER. DIST.													
122 KANZ	05	1213	1219	1233	S18	E05	.326	15049	5.9	20	-N					D	Y5		
GRP65123	05	1223+2	1224+4	1234	N17	W16	.389	15057	4.3	11	-F								
HTPR	05	1223	1224	1230	N18	W17	.411	15057	4.2	7	-F	C	1224	50	.5	E			
MONT	05	1225	1228	1238	N17	W16	.389	15057	4.3	13	-N	C	1228	40		E			
													60			E			
124 RAY	05	1507E	1508U	1514	S18	E06	.331	15049	6.1	70	-F	3	C		127		F	Y5	
125 RAY	05	1558E	1601	1609	S24	E78	.982	15056	11.5	110	-F	3	C				DE	Y5	
126 RAY	05	1640E	1642	1648D	S16	E01	.283	15049	5.8	80	-N	3	C		95		DE	Y5	
GRP65127	05	1805+0	1810+0	1827	S20	E09	.378	15049	6.4	22	-F				40	.4	U		
PALE	05	1805	1810	1827	S20	E14	.416	15049	6.8	22	-F	3	C		39		F	U	
PALE	05	1805	1810	1827	S20	E04	.355	15049	6.1	22	-F	3	V		39		F	U	
	05	1924	1931	NO FLARE PATROL														F	U
																		F	U
GRP65128	05	1946+0	1948+0	1958	N17	W48	.767	15044	2.2	12	-F				20	.3			
PALE	05	1946	1948	1958	N17	W48	.767	15044	2.2	12	-F	3	C		18		DE		
PALE	05	1946	1948	1958	N17	W48	.767	15044	2.2	12	-F	3	V		18		DE		
	05	2031	2239	NO FLARE PATROL															
GRP65129	05	2211	2219	2335	S18	00	.316	15049	5.9	84	-N						F		
			2312																
CULG	05	2211	2219	2335	S18	E03	.320	15049	6.1	84	-F	C	2219	50	.5	FT			
CULG	05	2306	2312	2320	S18	W04	.323	15049	5.7	14	-N	C	2312	35	.4				
130 CULG	05	2225	2306	0000	S27	E60	.897	15056	10.4	95	-N				80	1.8	SU	Y5	
GRP65131	05	2314	2317	2333	S26	E74	.970	15056	11.5	19	-N								
			2325																
CULG	05	2314	2317	2333	S27	E70	.953	15056	11.2	19	-N	C	2317	20					
HANI	05	2322E	2325U	2329D	S26	E78	.983	15056	11.8	70	-F	3	V		25	.6			
132 PALE	06	0110E	0113	0121	N17	W51	.798	15044	2.2	110	-F	3	V		25		F	Y5	
GRP65133	06	0142+4	0145+2	0153	S18	W04	.320	15049	5.8	11	-N								
CULG	06	0142	0145	0157	S18	W05	.324	15049	5.7	15	-F	C	0145	20	.2	T			
MITK	06	0145	0146	0152	S18	W05	.324	15049	5.7	7	-N	C	0146	150	1.6				
VORO	06	0145	0147	0154	S17	W04	.304	15049	5.8	9	-B	C	0147	90	1.0				
PALE	06	0146	0146	0152	S21	E00	.363	15049	6.1	6	-F	3	V		38		DE		
134 PALE	06	0206	0210	0216	S26	E71	.957	15056	11.4	10	-F	3	V		18		DE	Y5	
GRP65135	06	0235+0	0235+0	0251	S21	00	.363	15049	6.1	16	-F				20	.2	F		
PALE	06	0235	0235	0251	S21	E00	.363	15049	6.1	16	-F	3	C		24		F		
PALE	06	0235	0235	0251	S21	E00	.363	15049	6.1	16	-F	3	V		24		F		
GRP65136	06	0339+1	0346+1	0403	S19	W06	.344	15049	5.7	24	-F				50	.5	F		
			0358																
CULG	06	0339	0347	0355	S18	W07	.334	15049	5.6	16	-F	C	0347	30	.3	FT			
MITK	06	0340	0346	0351	S19	W07	.350	15049	5.6	11	-F	C	0346	70	.8	D			
MITK	06	0350	0358	0411	S22	W04	.384	15049	5.9	21	-N	C	0358	50	.6	D			
GRP65137	06	0435+2	0438+1	0445	S17	W06	.313	15049	5.7	10	-F						D		
CULG	06	0435	0438	0447	S18	W06	.329	15049	5.7	12	-F	C	0438	20	.2	T			
MITK	06	0437	0439	0443	S17	W06	.313	15049	5.7	6	-N	C	0439	80	.9	D			
	06	0522	0529	NO FLARE PATROL															
	06	0550	0730	NO FLARE PATROL															
GRP65138	06	0845		0905	S25	E65	.925	15056	11.2	20	-F						D		
BUCA	06	0845		0905	S25	E65	.925	15056	11.2	20	-N	C	0849	53	1.5	D			
KHAR	06	0848E	0848	0855D	S26	E66	.932	15056	11.3	70	-F	P				D			
139 KHAR	06	0925E	0928	0932D	N17	W55	.835	15044	2.3	70	-F	P				D	Y5		
	06	1020	1100	NO FLARE PATROL															
140 KHAR	06	1103E	1116	1125D	S22	W08	.400	15049	5.9	220	-F	C				D	Y5		
	06	1130	1140	NO FLARE PATROL															
141 RAY	06	1243E	1245	1252	S27	E64	.921	15056	11.3	90	-N	4	C		30		DE	Y5	

H α SOLAR FLARES

DECEMBER 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS				
	DATE	START	MAX. PHASE	END	APPROX.		CENTRAL DISTANCE	MCNATH PLAGE REGION	CMP DAY			MIL.	COND.	TYPE	TIME UT	MEAS. AREA		CORR. AREA			
					LAT.	MER. DIST.													TIME	MEAS. AREA	CORR. AREA
					DEC	MIL. of Disk													Sq. Deg.		
142	HTPR	06	1254	1256	1306	S27	E65	.927	15056	11.4	12	-F	C	1256	20		Y5				
143	HTPR	06	1312	1316	1335	S20	W04	.353	15049	6.3	23	-F	C	1316	30		E Y5				
144	HTPR	06	1352	1352	1358	S27	E64	.921	15056	11.4	6	-N	C	1352	40		Y5				
145	HTPR	06	1412	1415	1427	S19	W05	.340	15049	6.2	15	-N	C	1415	60		E Y5				
		06	1535	1648	NO FLARE PATROL																
146	RAMY	06	1651E	1653	1657D	S20	W11	.390	15049	5.9	60	-N	3 C		79		DE Y5				
		06	1657	1710	NO FLARE PATROL																
147	RAMY	06	1743E	1744	1750D	N17	W59	.870	15044	2.3	70	-N	4 C		64		DE Y5				
148	RAMY	06	1935E	1938	1945D	S18	W18	.430	15049	5.5	100	-B	2 C		190		DE Y5				
		06	1945	2110	NO FLARE PATROL																
		06	2128	2240	NO FLARE PATROL																
149	CULG	07	0120	0135	0145	S19	W15	.409	15049	5.9	25	-F	C	0135	20	.2	Y5				
GRP65150		07	0241	0250+3	0314	S24	E57	.868	15056	11.4	33	-F			70	1.4					
MITK		07	0241	0250	0307	S24	E58	.876	15056	11.5	26	-N	C	0250	70	1.5	E				
CULG		07	0248E	0253	0320	S24	E57	.868	15056	11.4	320	-F	P	0253	70	1.4	F				
GRP65151		07	0333+2	0336+3	0347	S22	W16	.455	15049	5.9	14	-N			110	1.2	EH				
MANI		07	0333	0338	0347	S22	W17	.464	15049	5.9	14	1N	3 P		200	2.3	H				
MITK		07	0334	0339	0349	S22	W17	.464	15049	5.9	15	-B	C	0339	120	1.4	H				
VORO		07	0335	0338	0346	S21	W16	.443	15049	5.9	11	-B	C	0338	99	1.1	E				
CULG		07	0335E	0336	0340D	S22	W16	.455	15049	5.9	50	-N	P	0336	35	.4					
GRP65152		07	0349+1	0352+0	0402	N14	W64	.905	15044	2.4	13	-N			50	1.2	DJ				
MITK		07	0349	0352	0405	N16	W64	.907	15044	2.4	16	-F	C	0352	50		D				
VORO		07	0350	0352	0359	N12	W65	.910	15044	2.3	9	-B	C	0352	63	1.5	J				
		07	0520	0550	NO FLARE PATROL																
153	CULG	07	0525	0526	0542	N17	W63	.900	15044	2.5	17	-N	C	0526	20	.4	Y5				
		07	0558	0620	NO FLARE PATROL																
GRP65154		07	0626E	0626	0646	S26	E55	.858	15056	11.4	20	-F					D				
CULG		07	0626E	0626E	0650	S25	E55	.855	15056	11.4	240	-F	P	0626	50	1.0	D				
KODA		07	0626E	0626	0642	S27	E56	.868	15056	11.5	160	-F	V	0626			D				
		07	0730	0827	NO FLARE PATROL																
155	KHAR	07	0913E	0913	0920D	S22	W12	.423	15049	6.5	70	-F	P				D Y5				
156	KANZ	07	1000	1005	1015	S26	E51	.825	15056	11.2	15	-N					Y5				
GRP65157		07	1039+1	1045+2	1053	N16	W68	.933	15044	2.3	14	-F					D				
KANZ		07	1039	1047	1052	N16	W68	.933	15044	2.3	13	-F					D				
MONT		07	1040	1045	1053D	N16	W68	.933	15044	2.3	130	-F	C	1045	20		D				
GRP65158		07	1208+0	1212+2	1238	S25	E52	.831	15056	11.4	30	1N									
KANZ		07	1208	1212	1251	S25	E50	.814	15056	11.3	43	1N									
WEND		07	1208	1225	1225	S25	E52	.831	15056	11.4	17	1N	V		300						
MONT		07	1211E	1214	1223D	S25	E54	.847	15056	11.6	120	1N	C	1214	250						
159	KANZ	07	1401		1405D	S18	W22	.473	15049	5.9	40	-B					E Y5				
160	RAMY	07	1540E	1548	1602	S25	E45	.769	15056	11.0	220	1N	2 C		190		F Y5				
		07	1639	1700	NO FLARE PATROL																
		07	1713	1756	NO FLARE PATROL																
161	PALE	07	1757E	1759U	1821	S27	E46	.786	15056	11.2	240	2N	3 C		476		F Y5				
		07	1805	1819	NO FLARE PATROL																
GRP65162		07	1826	1830	1934D	S27	E47	.795	15056	11.3	68	1N									
			1905																		
PALE		07	1826	1830	1847	S27	E46	.786	15056	11.2	21	1F	3 C		183		FDE				
HCHA		07	1827E		1859D	S27	E48	.804	15056	11.4	320	-N	P	1827	100		FDE				
PALE		07	1849	1905	1934D	S27	E46	.786	15056	11.2	450	1N	3 C		224		FDE				

H α SOLAR FLARES

DECEMBER 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN	IMPOR- TANCE	OBS.		MEASUREMENTS			REMARKS		
	DATE DEC	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	MCNATH PLAGE REGION	CMR DAY			COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq Deg			
					LAT.	MER. DIST.													
GRP65163	07	1905+0	1907+0	1916	N15	H73	.959	15044	2.3	11	-F								
PALE	07	1905	1907	1916	N15	H73	.959	15044	2.3	11	-F	3	V		60			DE	
PALE	07	1905	1907	1916	N15	H73	.959	15044	2.3	11	-F	3	V		63			DE	
RAMY	07	1910E	1910U	1916	N14	H72	.954	15044	2.4	60	-N	2	C		63			F	
164 MCMA	07	1940E		1955D	S27	E50	.821	15056	11.6	150	-N		P	1940	50			E Y5	
GRP65165	07	1945E	1947	1959	N15	H71	.949	15044	2.5	14	-N							EH	
RAMY	07	1945E	1947	1959	N15	H70	.944	15044	2.6	140	-N	3	C					H	
MCMA	07	1946E		1955D	N16	H73	.959	15044	2.3	90	-N		P	1946	30			E	
GRP65166	07	1951E	1953	2018D	S19	H22	.463	15049	6.2	27	1B							FH	
RAMY	07	1951E	1953	2018	S16	H21	.462	15049	6.3	270	1B	3	C		222			F H	
MCMA	07	1954E		2003D	S20	H22	.492	15049	6.2	90	-B		P	1955	100			E	
CULG	07	2015E	2015U	2105	S19	H24	.505	15049	6.0	500	-N		P	2015	80	.9		F	
167 CULG	07	2058	2101	2105	S25	H21	.535	15049	6.3	7	-N		C	2101	30	.4		Y5	
168 CULG	07	2109	2115	2116D	N14	H72	.954	15044	2.5	70	-N		C	2115	20			Y5	
169 PALE	07	2130	2150	0049	S27	E44	.769	15056	11.2	199	N	3	C		334			U F Y5	
IMP	1	NO	CULG1																
	07	2152	2332	NO FLARE PATROL															
170 VORO	08	0056E		0120	S26	E45	.772	15056	11.4	240	P N		C	0107	134	2.1		EJ Y5	
IMP	1	NO	PALE																
171 PALE	08	0124	0126U	0126D	S27	E42	.749	15056	11.2	20	-F	3	C		75			DE F Y5	
GRP65172	08	0151+4	0155+0	0256	S26	E41	.735	15056	11.2	65	1N							JU	
VORO	08	0151	0155	0205	S25	E41	.730	15056	11.2	14	-B		C	0155	108	1.6		EJ	
KODA	08	0152E	0155	0228	S27	E41	.740	15056	11.2	360	-F		P	0152	135	1.4		E	
PALE	08	0155	0155	0256	S27	E42	.749	15056	11.2	61	1N	3	C		312			U F	
PALE	08	0155	0155	0202D	S27	E42	.749	15056	11.2	70	1N	3	V		222			DE F	
MANI	08	0158E	0158U	0202D	S26	E42	.744	15056	11.2	40	-N		V		70	1.1			
CULG	08	0210	0215	0300	S25	E40	.720	15056	11.1	50	-N		C	0215	50	.8		F	
VORO	08	0213	0215	0219D	S25	E40	.720	15056	11.1	60	1N		C	0215	143	2.1		D	
173 CULG	08	0543E	0543U	0549D	N15	H79	.983	15044	2.3	60	-N		P	0543	25			Y5	
174 ATHN	08	0628E	0635	0650D	S28	E41	.746	15056	11.3	220	-N	1		0635	82	1.1		Y5	
	08	1139	1156	NO FLARE PATROL															
	08	1212	1221	NO FLARE PATROL															
	08	1415	1535	NO FLARE PATROL															
175 RAMY	08	1812E	1815	1828	N26.	E75	.973	15061	14.4	160	-N	3	C					H Y5	
	08	1914	1920	NO FLARE PATROL															
	08	2052	2117	NO FLARE PATROL															
176 CULG	08	2114	2117	2121	S27	E35	.684	15056	11.5	7	-F		C	2117	30	.4		Y5	
177 PALE	08	2123	2125	2133	N23	E68	.939	15061	14.0	10	-F	3	C		26			DE Y5	
	08	2210	2234	NO FLARE PATROL															
GRP65178	08	2248+0	2248+0	2304	N23	E68	.939	15061	14.0	16	-F				20			F	
PALE	08	2248	2248	2304	N23	E68	.939	15061	14.1	16	-F	3	V		22			F	
PALE	08	2248	2248	2304	N23	E68	.939	15061	14.1	16	-F	3	C		22			F	
GRP65179	08	2312+0	2323+0	2349	N23	E67	.933	15061	14.0	37	-F				20			F	
PALE	08	2312	2323	2349	N23	E67	.933	15061	14.0	37	-F	3	C		22			F	
PALE	08	2312	2323	2349	N23	E67	.933	15061	14.0	37	-F	3	V		22			F	
180 CULG	09	0005	0007	0016	S23	E25	.550	15056	10.9	11	-F		C	0007	20	.2		T Y5	
181 PALE	09	0009	0010	0014	N23	E67	.933	15061	14.0	5	-F	3	V		20			FDE Y5	
182 MITK	09	0034	0037	0054	N26	E72	.961	15061	14.4	20	-N		C	0037	60			D Y5	
GRP65183	09	0055+8	0106+1	0117	N24	E70	.950	15061	14.3	22	-N				70			GJ	
MITK	09	0055	0107	0117D	N25	E72	.960	15061	14.4	220	-N				60			E	
PALE	09	0103	0107	0126	N23	E66	.928	15061	14.0	23	-F	3	V	0107	62			FDE	
VORO	09	0103	0106	0116	N24	E70	.950	15061	14.3	13	1N		C	0106	99	2.9		DGJ	

H α SOLAR FLARES

DECEMBER 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IMPORTANCE	OBS		MEASUREMENTS			REMARKS
	DATE DEC	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	McNATH PLAGE REGION	CMP DAY			COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg	
					LAT.	HER. DIST.											
184 CULG	09	0120	0126	0138	S24	W39	.703	15049	6.1	18	-F		C	0126	20	.2	Y5
GRP65185 VORO PALE	09 09 09	0133+3 0133 0136	0135+1 0135 0136	0148 01560 0139	S27 S28 S26	E29 E32 E27	.626 .662 .598	15056 15056 15056	11.2 11.5 11.1	15 230 3	-N -B -F		C C V	0135	60 90 44	.8 1.0	HJK OHJK F H
186 PALE	09	0212	0221	0317	S26	E26	.588	15056	11.0	65	-F	3	V		43		FDE Y5
187 PALE	09	0239	0241	0259	N23	E66	.928	15061	14.1	20	-F	3	V		41		F H Y5
188 VORO	09	0346	0347	0354	S26	E30	.627	15056	11.4	8	-N		C	0347	99	1.3	EJ Y5
	09	0622	0625	NO FLARE PATROL													
189 CULG	09	0650	0652	0714	S24	W41	.724	15049	6.2	24	-N		C	0652	55	.8	V Y5
190 CULG	09	0655	0658	0715	S28	E30	.643	15056	11.5	20	-N		C	0658	100	1.3	T Y5
	09	0710	0718	NO FLARE PATROL													
	09	0749	0754	NO FLARE PATROL													
	09	0814	0821	NO FLARE PATROL													
	09	0853	0913	NO FLARE PATROL													
	09	0928	1003	NO FLARE PATROL													
	09	1011	1052	NO FLARE PATROL													
	09	1116	1117	NO FLARE PATROL													
191 RAMY	09	1137E	1141	1151	S26	E26	.588	15056	11.4	140	-N	3	C		32		F Y5
	09	1235	1411	NO FLARE PATROL													
192 RAMY	09	1448	1450	1502	S24	E17	.485	15056	10.9	14	-N	3	C		48		Y5
	09	1550	1605	NO FLARE PATROL													
	09	1659	1732	NO FLARE PATROL													
193 PALE	09	1747	1752	1801	N24	E60	.890	15061	14.2	14	-F	3	C		13		DE Y5
194 PALE	09	1813	1813	1817	S26	E18	.518	15056	11.1	4	-F	3	C		36		F Y5
195 PALE	09	1815	1831	1900	N24	E59	.883	15061	14.2	45	-F	3	C		17		F Y5
196 PALE	09	1857	1900	1908	S26	E18	.518	15056	11.1	11	-F	3	C		34		FDE Y5
197 PALE	09	1918	1919	1926	S26	E18	.518	15056	11.2	8	-F	3	C		19		F Y5
GRP65198 PALE PALE RAMY CULG RAMY	09 09 09 09 09 09	1939 1939 1939 1950E 2026E 2030	1940 2027+6 1940 2027 1950U 2033U 2032	2045 2050 2050 1958D 2045D 2043	S26 S26 S26 S26 S25 S26	E17 E17 E17 E21 E14 E21	.510 .510 .510 .543 .475 .543	15056 15056 15056 15056 15056 15056	11.1 11.1 11.1 11.4 10.9 11.4	66 71 71 80 190 13	-N -F 1N -F -N -F		C C C C C C		134 272 120 2033 20 130	.2	DE F DE F
199 CULG	09	2045E IMP 1 NO	2103U PALE2	2128	S24	E37	.683	15056	12.6	430	?F		P	2103	60		Y5
200 CULG	09	2137	2142	2155	S29	E21	.576	15056	11.5	18	-N		C	2142	30	.4	Y5
	09	2142	2252	NO FLARE PATROL													
201 MANI	09	2325E	2325U	23270	S28	E22	.573	15056	11.6	20	-F	2	V		20	.2	Y5
	09	2327	2339	NO FLARE PATROL													
	09	2341	2348	NO FLARE PATROL													
	09	2352	0003	NO FLARE PATROL													
202 PALE	10	0009	0011	0018	S27	E20	.544	15056	11.5	9	-F	3	C		45		FDE Y5
203 PALE	10	0030	0030	0033	S22	W52	.820	15049	6.1	3	-F	3	C		44		F Y5
GRP65204 PALE MANI	10 10 10	0035 0035 0039E	0038 0038 0039U	0047 0042D 0047	N01 N01 N01	W11 W12 W11	.192 .209 .192	15060 15060 15060	9.2 9.1 9.2	12 7D 8D	-N -N -N		C C V		45 35 50	.5	FDE
205 VORO	10	0114	0117	0124	S26	E03	.437	15056	10.3	10	-B		C	0117	45	.5	E Y5

14
Dec 77

H α SOLAR FLARES

DECEMBER 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPO-RANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX PHASE	END	APPROX		CENTRAL DISTANCE	MCNATH PLAGE REGION	CMP. DAY			MIN.	COND.	TYPE	TIME UT	MEAS. AREA		CORR. AREA
					LAT.	MER. DIST.												
GRP65206	10	0301+6	0311+4	0402	S27	E16	.513	15056	11.3	61	1B						FJ	
VORO	10	0301	0313	0358	S26	E21	.541	15056	11.7	57	2N						EJ	
MANI	10	0305	0315	0327D	S28	E16	.526	15056	11.3	220	1B	3	V	0313	484	5.6	F	
HITK	10	0307	0312	0405	S27	E18	.528	15056	11.5	58	2N		C	0312	760	9.2	F	
CULG	10	0308E	0311	03320	S28	E16	.526	15056	11.3	240	1B		C	0311	220	2.5	F	
207 HITK	10	0416	0420	0423D	S29	E18	.552	15056	11.5	70	-N		C	0420	70	.9	D	Y5
	10	0423	0430	NO FLARE	PATROL													
	10	0440	0445	NO FLARE	PATROL													
	10	0446	0453	NO FLARE	PATROL													
208 HITK	10	0457	0459	0517	N03	W14	.248	15060	9.2	20	-F		C	0459	110	1.2	E	Y5
209 HITK	10	0613	0614	0618D	N16	E90	1.000	15067	17.0	50	-N		C	0614	50		DH	Y5
	10	0731	0821	NO FLARE	PATROL													
	10	0849	0853	NO FLARE	PATROL													
210 KHAR	10	0957E	0957	1013D	S25	E06	.429	15056	10.9	160	-F		C				E	Y5
211 KHAR	10	1032E	1035	1040D	S26	E14	.486	15056	11.5	80	-F		C				E	Y5
	10	1307	1314	NO FLARE	PATROL													
	10	1330	1540	NO FLARE	PATROL													
GRP65212	10	1712E	1715	1955	S25	E06	.429	15056	11.2	163	1N							
			1744															
RAMY	10	1712E	1715	1727D	S25	E08	.437	15056	11.3	150	-B	4	C		120			
PALE	10	1721E	1744	1955	S26	E04	.439	15056	11.0	1540	1N	3	C		203		DE F	
213 PALE	10	2020	2028	2038	S26	E04	.439	15056	11.1	18	-F	3	C		42		DE	Y5
214 PALE	10	2157	2159	2201	S22	W64	.913	15049	6.1	4	-F	3	C		46		DE	Y5
215 PALE	10	2207	2207	2217D	S22	W64	.913	15049	6.1	100	-N	3	C		68		DE	Y5
	10	2217	2248	NO FLARE	PATROL													
216 PALE	10	2336	2343	2344D	S27	E07	.463	15056	11.5	80	-F	3	C		107		DE	Y5
GRP65217	11	0032+2	0038+2	0113	S27	E06	.458	15056	11.5	41	1N				260	2.9	EJU	
			0046															
MITK	11	0022	0039	0115	S27	E08	.465	15056	11.6	53	1B		C	0039	230	2.7	E	
CULG	11	0032	0046	0122	S28	E06	.473	15056	11.5	50	-N		C	0046	120	1.3	U	
VORO	11	0033	0038	0110	S28	E07	.476	15056	11.5	37	1N		C	0038	287	3.3	EJ	
MANI	11	0034	0040	0048	S27	E02	.449	15056	11.2	14	-N	3	P		60	.7		
PALE	11	0035E	0036U	0036D	S27	E06	.458	15056	11.5	10	1N	3	C		375		DE F	
GRP65218	11	0418+1	0422+2	0440	S24	W05	.409	15056	10.8	22	-N				50	.5	E	
HITK	11	0418	0422	0440	S24	W04	.406	15056	10.9	22	-N		C	0422	60	.7	E	
CULG	11	0413	0423	0444	S24	W05	.409	15056	10.8	26	-F		C	0423	30	.3		
VORO	11	0419	0424	0435	S24	W05	.409	15056	10.8	16	-B		C	0424	63	.7	E	
219 HITK	11	0450	0510	0520	S26	E05	.440	15056	11.6	30	-N		C	0510	70	.8	E	Y5
GRP65220	11	0945+3	0947+4	1010	S28	E04	.468	15056	11.7	25	-N				170	1.9	EU	
HTPR	11	0930	0947	1010	S28	W03	.466	15056	11.2	40	-B		C	0947	180		E	
KHAR	11	0945	0947	1010	S28	E04	.468	15056	11.7	25	1F		C	0947	190	2.2	E	
TEHR	11	0948	0951	1000	S27	E05	.455	15056	11.8	12	-N	2	C		154		U	
GRP65221	11	1208E	1222	1258D	S23	W09	.411	15056	10.8	50	-F						E	
			1238															
LVOV	11	1208E	1238	1258	S23	W09	.411	15056	10.8	50D	1F		C	1238	200	2.3	E	
KHAR	11	1210E	1222	1235D	S24	W10	.431	15056	10.8	25D	-F		P				E	
222 MCMA	11	1515	1515	1522	N28	E43	.766	15061	14.9	7	-N		C	1515	50		D,H,V	Y5
223 MCMA	11	1526	1528	1532	S29	E74	.970	15062	17.2	6	-N		C	1528	30		D	Y5
224 MCMA	11	1718	1724	1738	S23	W12	.430	15056	10.8	20	-B		C	1724	75		E,H	Y5
225 MCMA	11	1742	1745	1750D	S23	W12	.430	15056	10.8	8D	-N		C	1745	40		D	Y5
226 CULG	11	2015	2021	2030	S30	E70	.954	15062	17.1	15	-F		C	2021	50			Y5
227 PALE	11	2032	2034	2054D	S26	W09	.455	15056	11.2	22D	-F	3	C		60		DE	Y5

H α SOLAR FLARES

DECEMBER 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IMPOR- TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE DEC	START	MAX PHASE	END	APPROX		CENTRAL DISTANCE	MCMATH FLARE REGION	OMR DAY			COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
					LAT.	MER. DIST.												
GRP65228 PALE CULG	11	2116	2154	NO FLARE PATROL														
	11	2154+2	2206	23050	S27	W05	.455	15056	11.5	71	1N						FJU	
	11	2154E	2223	2223U	S27	W05	.455	15056	11.5	480	1B	3	C		482		U F	
	11	2156	2206	23050	S27	W05	.455	15056	11.5	690	1N		C	2206	250	2.9	JU	
GRP65229 CULG KODA MANI	11	2231	2241	NO FLARE PATROL														
	12	0212	0220	NO FLARE PATROL														
	12	0219	0226	02510	S27	W08	.463	15056	11.5	32	-N							
	12	0219	0238	0340	S28	W07	.474	15056	11.6	81	-N		C	0238	150	1.7		
	12	0222E	0226	0251	S27	W08	.463	15056	11.5	290	-N		P	0222	142	1.5	E	
	12	0231E	0231U	02350	S26	W11	.464	15056	11.3	40	-F	2	V		100	1.1	F	
230 CULG	12	0500	0505	0525	S28	W08	.478	15056	11.6	25	-F		C	0505	15	.2	Y5	
	12	0652	0736	NO FLARE PATROL														
GRP65231 TEHR MANI	12	0743	0746	0806	S27	W09	.468	15056	11.6	23	-F				110	1.2		
	12	0743	0746	0756	S27	W07	.459	15056	11.8	13	-F	2	C		127			
	12	0752E	0752U	0815	S27	W11	.478	15056	11.5	230	-F	2	V		90	1.0		
GRP65232 KHAR MONT ABST	12	1049E	1055+5	1107	S28	W13	.503	15056	11.5	18	-F				60	.7	D	
	12	1049E	1055	11070	S28	W18	.537	15056	11.1	180	-F		C				E	
	12	1058E	1100	1106	S28	W11	.492	15056	11.6	80	-F		C	1100	40		D	
	12	1101E	1101	11030	S28	W10	.487	15056	11.7	20	-N		P	1101	87	1.0	D	
GRP65233 HERS KHAR MONT RAMY	12	1122+3	1130+7	1225	S27	W13	.489	15056	11.5	63	1N				310	3.5	E	
	12	1122	1137	1216	S27	W13	.489	15056	11.5	54	1B		S					
	12	1123	1130	12250	S28	W14	.509	15056	11.4	620	1F		C	1130	275	3.2	E	
	12	1125	1132	1238	S27	W12	.483	15056	11.6	73	1N		C	1132	350			
	12	1155E	1157	12100	S26	W13	.476	15056	11.5	150	-N	3	C		150			
	12	1331	1355	NO FLARE PATROL														
	12	1408	1520	NO FLARE PATROL														
	12	1536	1604	NO FLARE PATROL														
	12	1719	1809	NO FLARE PATROL														
	234 PALE	12	1816	1816	1831	S27	W15	.503	15056	11.6	15	-F	3	C		28		DE Y5
235 PALE	12	1833	1834	1838	S27	W15	.503	15056	11.6	5	-F	3	C		24		DE Y5	
GRP65236 PALE RAMY	12	1846	1850+0	1900	S27	W16	.510	15056	11.6	14	-N				150	1.7	U	
	12	1846	1850	1903	S27	W15	.503	15056	11.7	17	-N	3	C		196		U F	
	12	1849E	1850	1856	S28	W17	.529	15056	11.5	70	-N	3	C		111		DE	
12	1924	2007	NO FLARE PATROL															
12	2019	2102	NO FLARE PATROL															
GRP65237 PALE CULG	12	2127+4	2132+2	2149	S26	W20	.529	15056	11.4	22	-F							
	12	2127	2132	2152	S26	W20	.529	15056	11.4	25	-F	3	C		88		FDE	
	12	2131	2134	2145	S26	W20	.529	15056	11.4	14	-F		C	2134	20	.2		
12	2204	2214	NO FLARE PATROL															
238 PALE	12	2254	2255	2347	S26	W21	.538	15056	11.4	53	-F	3	C		50		U F Y5	
	12	2302	2343	NO FLARE PATROL														
239 CULG	12	2315	2323	2350	N17	W56	.847	15065	8.8	35	-F		C	2323	20	.2	Y5	
GRP65240 PALE CULG MITK	13	0033+1	0038+1	0113	S26	W20	.528	15056	11.5	40	1N						FU	
	13	0033	0039	00480	S26	W24	.564	15056	11.2	150	1N	3	C		325		U F	
	13	0033	0038	0105	S26	W20	.528	15056	11.5	32	-N		C	0038	65	.8		
	13	0034	0039	0120	S27	W20	.539	15056	11.5	46	1N		C	0039	170	2.1		

H α SOLAR FLARES

DECEMBER 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN	IMPOR- TANCE	OBS		MEASUREMENTS			REMARKS
	DATE DEC	START	MAX PHASE	END	APPROX		CENTRAL DISTANCE	MCMA PLAGE REGION	CWR DAY			COND	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq. Deg.	
					LAT.	MER. DIST.											
	23	0611	0748	NO FLARE PATROL													
278 CULG	23	0631	0640	0712	N23	E06	.432	15070	23.7	41	-N	C	0640	40	.4	Y5	
	23	0757	0803	NO FLARE PATROL													
279 KANZ	23	1016	1020	1027	S26	W23	.540	15074	21.7	11	-F					Y5	
280 KANZ	23	1138	1138	1141	N23	E10	.450	15070	24.2	3	-B					D Y5	
281 MCMA	23	1457	1458	1508	N23	E08	.440	15070	24.2	11	-N	C	1458	50		E,H Y5	
282 MCMA	23	1814E	1818	1855D	N13	E78	.981	15075	29.6	41D	-N	C	1818	15		D Y5	
283 MCMA	23	1956E		1959D	N21	E77	.980	15075	29.6	30	-F	P	1956	20		D Y5	
284 CULG	24	0010	0023	0045	N22	W06	.418	15070	23.6	35	-F	C	0023	20	.2	Y5	
285 CULG	24	0342	0343	0350	N20	W04	.380	15070	23.9	8	-F	C	0343	20	.2	Y5	
286 CULG	24	0755	0757U	0800D	N24	W04	.443	15070	24.0	50	-F	P	0757	20	.2	Y5	
287 ABST	24	0903	0906	0958D	N26	E76	.979	15075	30.1	55D	1F	P	0906	79		DH Y5	
288 ABST	24	0916	0945	0958D	N27	W05	.491	15070	24.0	42D	-F	P	0945	70	.8	FH Y5	
	24	1229	1240	NO FLARE PATROL													
	24	1310	1523	NO FLARE PATROL													
GRP65289	24	1845	1851+1	1911	N21	W12	.436	15070	23.9	26	-F						
PALE	24	1845	1852	1908	N22	W12	.450	15070	23.9	23	-F	3	C		54		
RAMY	24	1848E	1851	1914	N21	W13	.443	15070	23.8	26D	-N	3	C		127	FDE	
GRP65290	24	2018E	2018+4	2030	S27	W43	.745	15074	21.6	12	-N			60	.9		
PALE	24	2018E	2018U	2022D	S27	W42	.735	15074	21.7	40	-N	3	C		63	F	
RAMY	24	2020E	2022	2030	S27	W44	.754	15074	21.5	100	-N	3	C		64	DE	
291 CULG	24	2344	2345	2358	N18	W15	.421	15070	23.9	14	-F	C	2345	20	.2	Y5	
292 CULG	25	0556	0601	0605D	N21	W21	.514	15070	23.7	9D	-N	P	0601	60	.7	Y5	
293 ABST	25	0716E	0730	0807D	N22	W21	.525	15070	23.7	51D	-F	P	0730	70	.8	D Y5	
294 ABST	25	0727	0729	0752	N19	E49	.794	15075	29.0	25	?N	C	0729	131	2.2	EJ Y5	
		IMP. 1 NO	CULG1														
295 ATHN	25	0835E	0835	0843D	N18	E51	.810	15075	29.2	8D	-N	1		0835	33	.5	Y5
296 ATHN	25	0904E	0905	0910D	S30	W54	.850	15074	21.3	6D	-N	1		0905	21	.3	Y5
GRP65297	25	1356+0	1357+1	1401	S28	W54	.844	15074	21.5	5	-F			25	.5	DH	
MCMA	25	1356E	1357	1401	S27	W53	.833	15074	21.6	50	-F	C	1357	25		D,H	
HTR	25	1356	1358	1400	S29	W56	.862	15074	21.4	4	-F	C	1358	20			
	25	1500	1852	NO FLARE PATROL													
298 PALE	25	1829E	1830U	1830D	S27	W56	.857	15074	21.6	1D	-F	3	C		90		F Y5
299 PALE	25	1912	1918	1933	S27	W56	.857	15074	21.6	21	1N	3	C		184		F H Y5
	25	2052	2100	NO FLARE PATROL													
300 PALE	25	2102	2105	2111	S27	W57	.865	15074	21.6	9	-F	3	C		20		F Y5
301 PALE	25	2143	2144	2153	S26	W55	.847	15074	21.8	10	1N	3	C		170		FDE Y5
302 PALE	25	2304	2306	2308	S26	W56	.855	15074	21.8	4	-F	3	C		21		FDE Y5
303 PALE	25	2312	2313	2323	S26	W56	.855	15074	21.8	11	-F	3	C		53		DE F Y5
304 PALE	25	2348	2349	2352	S26	W56	.855	15074	21.8	4	-F	3	C		26		DE F Y5
GRP65305	26	0053+1	0054+1	0059	S25	W59	.876	15074	21.6	6	-N						
VORO	26	0053	0055	0059	S25	W62	.897	15074	21.4	6	-B	C	0055	90	1.9	DJ	
PALE	26	0054	0054	0058	S26	W57	.862	15074	21.8	4	-F	3	C		24		DJ DE

H α SOLAR FLARES

DECEMBER 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IMPOR- TANCE	OBS.		MEASUREMENTS			REMARKS		
	DATE DEC	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	MC MATH FLARE REGION	CMP DAY			COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.			
					LAT.	MER. DIST.													
GRP65306	26	0125+2	0127+1	0133	S26	W60	.885	15074	21.6	8	-N								
MANI	26	0125	0128	0133	S26	W60	.885	15074	21.6	8	-F	3	P		60	1.3		J	
VORO	26	0126	0128	0134	S25	W62	.897	15074	21.4	8	-F		C	0128	20	.3		DJ	
PALE	26	0127	0127	0133	S27	W57	.864	15074	21.8	6	-F	3	C		90	1.9		DE F	
307 PALE	26	0136	0136	0138	S26	W57	.862	15074	21.8	2	-F	3	C		18			DE Y5	
308 PALE	26	0140	0142	0145	S26	W57	.862	15074	21.8	5	-F	3	C		22			DE Y5	
309 PALE	26	0150	0155	0157	S26	W57	.862	15074	21.8	7	-F	3	C		27			DE F Y5	
GRP65310	26	0251+0	0254+3	0302	S26	W60	.885	15074	21.6	11	-N				90	2.0		J	
VORO	26	0251	0254	0304	S26	W63	.905	15074	21.4	13	-F		C	0254	81	1.8		DJ	
PALE	26	0251	0257	0300	S26	W58	.870	15074	21.8	9	-F	3	C		103			DE F	
311 CULG	26	0345	0348	0417	S29	W60	.890	15074	21.7	32	-F		C	0348	30	.7		Y5	
GRP65312	26	0447+1	0453	0512	S26	W63	.905	15074	21.5	25	-N							E	
MITK	26	0447	0452	0512	S27	W63	.907	15074	21.5	25	-F		C					E	
VORO	26	0448	0453	0459	S26	W63	.905	15074	21.5	11	1N		P	0453	99	2.2		E	
GRP65313	26	0625+3	0629+4	0651	S26	W62	.899	15074	21.6	26	1N							DHKLZ	
TACH	26	0625	0633	0645	S25	W60	.883	15074	21.8	20	1F		C	0633	115	3.0		DL	
MITK	26	0627	0629	0651	S26	W63	.905	15074	21.5	24	-B		C	0629	60	1.4		DH	
HANI	26	0628	0630	06340	S26	W62	.899	15074	21.6	60	-F	3	P		50	1.0			
ABST	26	0633E	0654	0708	S26	W64	.912	15074	21.5	350	2N		P	0654	288			BFKZ	
314 KODA	26	0630E	0632	0635	N22	W30	.616	15070	24.0	50	-B		V	0630				D Y5	
315 ABST	26	0719	0724	0817	S25	W68	.935	15074	21.2	58	?N		C	0724	96			DKZ Y5	
		IMP. 1 NO	TACH2																
GRP65316	26	0821+0	0822+1	0843	N20	W37	.677	15070	23.6	22	-F				60	.8			
ABST	26	0821	0823	0840	N22	W36	.678	15070	23.6	19	-F		C	0823	87	1.2		D	
HTPR	26	0821	0822	0845	N18	W38	.676	15070	23.5	24	-F		C	0822	40			E	
GRP65317	26	0847+5	0854	0915	S27	W67	.931	15074	21.3	28	-N							DZ	
			0904																
HTPR	26	0847	0904	0912	S29	W67	.933	15074	21.3	25	-F		C	0904		.3			
ABST	26	0852	0854	0917	S25	W68	.935	15074	21.3	25	1N		C	0854	87			DZ	
GRP65318	26	0904+1	0907+1	0916	N19	W36	.660	15070	23.7	12	-F							D	
ABST	26	0904	0907	0916	N21	W35	.661	15070	23.8	12	-F		C	0907	70	1.0		D	
HTPR	26	0905	0908	0916	N18	W38	.676	15070	23.5	11	-F		C	0908	20			D	
GRP65319	26	0918+1	0920+1	0931	S16	E90	1.000	15081	2.1	13	?N							AEJ	
ABST	26	0918	0920	0933	S17	E90	1.000	15081	2.1	15	N		C	0920	201			AEJ	
		IMP. 2 IMP. S																	
HTPR	26	0919	0921	0929	S16.	E90	1.000	15081	2.1	10	-N		C	0921		.3			
320 HTPR	26	0946	0948	0957	S29	W68	.938	15074	21.3	11	-F		C	0948	40			E Y5	
GRP65321	26	1000+2	1003+0	1011	S27	W68	.936	15074	21.3	11	-F							DVZ	
HTPR	26	1000	1003	1008	S29	W68	.938	15074	21.3	8	-F		C	1003	10			DVZ	
ABST	26	1002	1003	1013	S25	W68	.935	15074	21.3	11	-F		C	1003	61			DVZ	
322 ABST	26	1013	1023	1041	S17	E90	1.000	15081	2.2	28	?N		C	1023	218			EA Y5	
		IMP. 2 NO	HTPR2																
323 HTPR	26	1101	1102	1103	S29	W69	.943	15074	21.3	2	-F		C	1102	10			Y5	
GRP65324	26	1115+9	1159	12230	S26	W68	.935	15074	21.4	68	-N							HK	
			1207																
HTPR	26	1115	1159	1223	S29	W69	.943	15074	21.3	68	-N		C	1159	40			K	
KANZ	26	1130		11560	S24	W68	.934	15074	21.4	260	-N								
RAMY	26	1205E	1207U	12210	S26	W60	.885	15074	22.0	160	-B	1	C		190			DE H	
325 HTPR	26	1159	1208	1225	N24	E56	.869	15079	30.7	26	-F		C	1208	20			E Y5	
GRP65326	26	1208	1221+0	1228	S17	E90	1.000	15081	2.3	20	-N								
HTPR	26	1208	1221	1225	S14	E90	1.000	15081	2.3	17	-F		C	1209	20				
RAMY	26	1221E	1221U	12300	S20	E90	1.000	15081	2.3	90	1B	2	C						
327 HTPR	26	1250	1253	1257	S29	W69	.943	15074	21.4	7	-N		C	1253	40			Y5	

20
Dec 77

H α SOLAR FLARES

DECEMBER 1977

OBSERVATORY	OBSERVED UT				LOCATION				DURATION MIN	IMPOR- TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE DEC	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	MCNATH PLAGE REGION			CMP. DAY	COND	TYPE	TIME UT	MEAS. AREA Mill of Disk		CORR AREA Sq Deg
					LAT.	MER. DIST.											
GRP65328 HTPR RAMY	26	1332	1336+5	1344	S27	H69	.942	15074	21.4	12	-N	3	C	1336	50	FDE	
	26	1332	1336	1342	S29	H69	.943	15074	21.4	10	-N				70		
	26	1340E	1341U	1346	S25	W70	.945	15074	21.3	60	-N				40		
GRP65329 MCMA HTPR	26	1430+2	1437+0	1444	S27	H71	.951	15074	21.3	14	-N	C	1437	25	EHS E,H,S		
	26	1430	1437	1444	S25	W72	.955	15074	21.2	14	-B			25			
	26	1432	1437	1443	S29	H70	.948	15074	21.4	11	-N			20			
330 MCMA	26	1516	1530	1540D	S25	H72	.955	15074	21.2	240	-N	C	1530	30	E,K Y5		
GRP65331 MCMA MCMA	26	1555E	1611	1730D	S25	H73	.960	15074	21.2	95	-N	C	1648	40	K D,K		
	26	1555E	1648	1730D	S25	H73	.960	15074	21.2	95D	-N			40			
	26	1555E	1648	1730D	S25	H73	.960	15074	21.2	95D	-N			40			
	26	1730	1827	NO FLARE	PATROL												
	26	1828	2024	NO FLARE	PATROL												
	26	2051	2238	NO FLARE	PATROL												
GRP65332 CULG MANI MITK	26	2322	2327+0	0000	S27	H72	.956	15074	21.6	38	1N	3	C	2327	80	EH	
	26	2322	2327	0000	S28	H76	.973	15074	21.3	38	1N				80		
	26	2325E	2327	2338	S26	H72	.956	15074	21.6	130	-N				80		1.8
	26	2358E		0024	S27	H70	.947	15074	21.7	260	1N				110		
GRP65333 MANI CULG	26	2335+0	2336+2	2349	N20	H42	.729	15070	23.8	14	-F	3	V	2338	30	.4 1.2	
	26	2335	2336	2340	N21	H43	.744	15070	23.8	5	-F				80		
	26	2335	2338	2358	N20	H42	.729	15070	23.8	23	-N				80		
334 MITK	27	0101	0108	0120	S27	H75	.969	15074	21.4	19	-N	C	0108	50	D Y5		
GRP65335 VORO MITK	27	0244+4	0246	0257	S16	E85	.996	15081	2.5	13	-N	C	0246	72	3.5		
	27	0244	0246	0255D	S16	E85	.996	15081	2.5	110	1N			72			
	27	0248		0257	S16	E85	.996	15081	2.5	9	-F			72			
GRP65336 CULG VORO	27	0308+6	0315+1	0329	S15	E86	.997	15070	2.6	21	-N	*	C	0315	45	DH	
	27	0308	0315	0337	S16	E87	.998	15070	2.7	29	-N				40		
	27	0314	0316	0321	S15	E85	.996	15070	2.5	7	1N				54		2.7
GRP65337 CULG MITK VORO	27	0309+4	0311+3	0320	N25	H41	.745	15070	24.1	11	-B	C	0311	60	.9 .6 .8 1.2		
	27	0309	0311	0321	N24	H40	.730	15070	24.1	12	-N			40			
	27	0312	0313	0318	N26	H41	.751	15070	24.1	6	-B			50			
	27	0313	0314	0320	N25	H41	.745	15070	24.1	7	-F			81			
	27	0313	0314	0320	N25	H41	.745	15070	24.1	7	-F			81			
338 CULG	27	0438	0442	0457	S18	E80	.984	15081	2.2	19	-N	C	0442	40	Y5		
GRP65339 ABST CULG	27	0700+3	0705+2	0743	S27	H79	.982	15074	21.4	43	1B	C	0707	222	EZ EZ		
	27	0700	0707	0743	S27	H79	.982	15074	21.4	43	2F			50			
	27	0703	0705	0743	S27	H80	.985	15074	21.3	40	1N			50			
340 ABST	27	0812	0816	0843	N19	E45	.755	15080	30.7	31	1F	C	0816	253	3.9	FJX Y5	
341 ABST	27	0825	0828	0845	S26	H87	.998	15074	20.8	20	?F	C	0828	61	D Y5		
	IMP. 1	NO	CULG1														
GRP65342 ABST MONT	27	0835+9	0837	0904	S18	E79	.981	15081	2.3	29	-N	C	0837	175	JZ FJZ E		
	27	0835	0837	0910	S18	E80	.984	15081	2.4	35	1N			40			
	27	0845	0848	0858	S18	E79	.981	15081	2.3	13	-F			40			
343 ABST	27	0846	0849	0853	S26	H79	.982	15074	21.4	7	-F	C	0849	61	D Y5		
344 ABST	27	0853	0854	0858	S27	H79	.982	15074	21.4	5	?F	C	0854	87	OVZ Y5		
	IMP. 1	NO	MONT2														
345 ABST	27	0900	0902	0909	S26	H87	.998	15074	20.9	9	?F	C	0902	70	D Y5		
	IMP. 1	NO	MONT2														
GRP65346 ABST KANZ	27	1007	1014	1038	S16	E74	.961	15081	2.0	31	1F	C	1014	175	D D D		
	27	1007	1014	1041	S16	E78	.978	15081	2.3	34	1F			175			
	27	1023E		1035	S17	E73	.957	15081	1.9	120	-F			175			
347 ABST	27	1022	1029	1042D	N22	H48	.796	15070	23.8	200	-F	P	1029	52	.9	D Y5	
GRP65348 KHAR KANZ	27	1045+1	1105	1126D	S25	H79	.982	15074	21.5	41	1N	V	1101	110	D D D		
	27	1045E		1115	S26	H82	.990	15074	21.3	300	1N			110			
	27	1046	1105	1126D	S25	H77	.975	15074	21.7	400	1B			110			

H α SOLAR FLARES

DECEMBER 1977

OBSERVATORY	OBSERVED UT				LOCATION				DURATION MIN	IMPOR- TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE DEC	START	MAX PHASE	END	APPROX		CENTRAL DISTANCE	MCNATH PLAGE REGION			CNR DAY	COND	TYPE	TIME UT	MEAS. AREA Min. of Disk		CORR AREA Sq Deg
					LAT.	MER. DIST.											
GRP65396	30	1247	1256+1	1311	S17	E34	.592	15081	2.1	24	-B				E		
KANZ	30	1247	1256	1311	S16	E33	.575	15081	2.0	24	1N						
RAMY	30	1255E	1257	1310	S17	E34	.592	15081	2.1	150	-B	4	C	90	DE		
KANZ	30	1256	1300	1311	S20	E39	.666	15081	2.5	15	-N				E		
397 KANZ	30	1327	1331	1349	S19	E38	.650	15081	2.4	22	-N				Y5		
	30	1447	1454	NO FLARE PATROL													
398 RAMY	30	1550E	1553	1601	S19	E38	.650	15081	2.5	110	-N	3	C.	64	R	Y5	
	30	1610	1625	NO FLARE PATROL													
	30	1705	1734	NO FLARE PATROL													
	30	1749	1810	NO FLARE PATROL													
GRP65399	30	1805+0	1807+0	1815	S17	E57	.845	15083	4.0	10	-F			20	.4		
PALE	30	1805	1807	1815	S17	E57	.845	15083	4.0	10	-F	3	C	21		DE	
PALE	30	1805	1807	1815	S17	E57	.845	15083	4.0	10	-F	3	V	21		DE	
400 PALE	30	1838	1838	1856	S18	E33	.584	15081	2.3	18	-F	3	C	43		DE	Y5
	30	1903	1925	NO FLARE PATROL													
401 PALE	30	1903	1906	1914	S17	E57	.845	15083	4.1	11	-F	3	V	71		DE	Y5
402 PALE	30	1908	1909	1957	N20	W03	.390	15080	30.6	49	-F	3	C	26		FDE	Y5
GRP65403	30	1948+0	1951+0	2009	S17	E56	.836	15083	4.0	21	-F			20	.4		
PALE	30	1948	1951	2009	S17	E56	.836	15083	4.0	21	-F	3	V	21		DE	
PALE	30	1948	1951	2009	S17	E56	.836	15083	4.0	21	-F	3	C	21		DE	
GRP65404	30	2010+0	2012+3	2040	S22	E37	.653	15081	2.6	30	-N			40	.5		
PALE	30	2010	2012	2040	S22	E37	.653	15081	2.6	30	-N	3	V	44		DE	
PALE	30	2010	2012	2040	S22	E37	.653	15081	2.6	30	-N	3	C	41		DE	
RAMY	30	2013E	2015	2036	S22	E37	.653	15081	2.6	230	-N	3	C	48		DE	
GRP65405	30	2030+0	2032+0	20450	N20	W03	.390	15080	30.6	15	-F			20	.2		
PALE	30	2030	2032	20450	N20	W03	.390	15080	30.6	150	-F	3	C	24		DE	
PALE	30	2030	2032	20450	N20	W03	.390	15080	30.6	150	-F	3	V	24		DE	
	30	2130	2239	NO FLARE PATROL													
GRP65406	30	2244	2251	2258	S17	E28	.515	15081	2.0	14	-F			40	.5	F	
CULG	30	2244	2251	2300	S18	E30	.546	15081	2.2	16	-N			30	.3		
MANI	30	2245E	2245U	2255	S16	E26	.482	15081	1.9	100	-F	2	V	50	.5	F	
407 MANI	31	0141	0145	0153	S16	E27	.495	15081	2.1	12	-F	3	P	30	.3	Y5	
408 MANI	31	0143	0146	0152	N20	W09	.415	15079	30.4	9	-F	3	P	30	.3	Y5	
409 CULG	31	0220	0229	0231	S18	E28	.520	15081	2.2	11	-N			50	.6	Y5	
410 MANI	31	0330E	0334	0340	S16	E49	.765	15083	3.8	100	-F	3	P	40	.6	Y5	
GRP65411	31	0907	0908+4	0915	S16	E44	.710	15083	3.7	8	-F						
HPR	31	0907	0908	0914	S16	E44	.710	15083	3.7	7	-N			120			
MANI	31	0910E	0912	0915	S17	E45	.724	15083	3.8	50	-F	2	V	40	.6		
412 MANI	31	0912	0914	09200	N19	W10	.406	15080	30.6	80	-F	2	V	50	.5	Y5	
413 HTPR	31	1205	1205	1211	S14	E18	.358	15081	1.9	6	-F			20		Y5	
414 HTPR	31	1309	1313	1316	S15	E42	.684	15083	3.7	7	-F			10		Y5	
415 HTPR	31	1346	1347	1349	S14	E17	.344	15081	1.8	3	-N			20		Y5	
416 CULG	31	2328	2337	23520	S22	E16	.417	15081	2.2	240	1N			260	2.9	F	Y5
417 MANI	31	2335E	2335U	23420	S18	E43	.704	15083	4.2	70	2B	2	V	170	2.4	F	Y5

"Remarks":

A = Eruptive prominence whose base is less than 90° from central meridian.
 B = Probably the end of a more important flare.
 C = Invisible 10 minutes before.
 D = Brilliant point.
 E = Two or more brilliant points.
 F = Several eruptive centers.
 G = No visible spots in the neighborhood.
 H = Flare accompanied by a high speed dark filament.
 I = Active region very extended.
 J = Distinct variations of plage intensity before or after the flare.
 K = Several intensity maxima.
 L = Existing filaments show signs of sudden activity.
 M = White-light flare.

N = Continuous spectrum shows effects of polarization.
 O = Observations have been made in the calcium II lines H and K.
 P = Flare shows helium D₂ in emission.
 Q = Flare shows the Balmer continuum in emission.
 R = Marked asymmetry in H α line suggests ejection of high velocity material.
 S = Brightness follows disappearance of filament (same position).
 T = Region active all day.
 U = Two bright branches, parallel (||) or converging (Y).
 V = Occurrence of an explosive phase: important and abrupt expansion in about a minute with or without important intensity increase.
 W = Great increase in area after time of maximum intensity.
 X = Unusually wide H α line.
 Y = System of loop-type prominences.
 Z = Major sunspot umbra covered by flare.