

H $\alpha$  SOLAR FLARES

JULY 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	McMATH FLARE REGION	CMP DAY			COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg	
	1977 JUL				LAT.	NER. DIST.											
193 HTPR	01	0511	0522	0540	N17	W12	.316	14822	30.3	29	-F	C	0522	10	.1	Y5	
194 HTPR	01	0611	0615	0625	N15	W20	.393	14822	29.8	14	-F	C	0615	10	.1	Y5	
GRP64195	01	0902+5	0909+2	0927	N14	W20	.386	14822	29.9	25	-N			60	.6	E E E E	
HONT	01	0902	0911	0929	N15	W20	.393	14822	29.9	27	-F	C	0911	40			
ZURI	01	0905	0909	0921	N14	W21	.399	14822	29.6	16	-N	C	0909	70	.8		
HTPR	01	0905	0909	0925	N14	W20	.386	14822	29.9	20	-N	C	0909	60	.6		
KANZ	01	0907	0911	0933	N15	W20	.393	14822	29.9	26	-N	C					
UPIC	01	0910		0910D	N14	W20	.366	14822	29.9		-F	P	0910	122			
196 HUAN	01	1441	1444	1446	S20	W90	1.000	14815	24.9	5	-F	1 C	1444	20		D Y5	
197 HUAN	01	1452	1500	1506	S20	W90	1.000	14815	24.9	14	-F	2 C	1500	40		Y5	
198 HUAN	01	1817		1840	S20	W90	1.000	14815	25.0	23	-F	1 C	1827	15		Y5	
199 HUAN	01	1917	1923	1934	S20	W90	1.000	14815	25.1	17	-F	1 C	1923	15		D Y5	
200 MCMA	01	1932	1940	1955	N23	W24	.511	14822	30.0	23	-N	C	1940	30	.4	D Y5	
GRP64201	02	0524	0527	0558	N40	W22	.670	14832	30.6	34	-F					E E E	
HTPR	02	0524	0527	0558	N40	W21	.664	14832	30.7	34	-F	C	0527	50	.7		
MITK	02	0535E		0542D	N40	W23	.675	14832	30.5	70	-F	C	0535	50	.7		
GRP64202	02	0601	0626	0647	N40	W21	.664	14832	30.7	46	-N					D	
HTPR	02	0601		0633D	N40	W22	.670	14832	30.6	320	-N	C	0612	50	.7	DT	
KANZ	02	0618E	0626	0647	N40	W20	.659	14832	30.8	290	-N	C					
203 CATA	02	0615	0620	0620D	N14	W34	.578	14822	29.7	50	-B	1	0620	56	.7	T Y5	
204 HUAN	02	1617	1620	1622	N17	W40	.665	14822	29.7	5	-F	1 C	1620	20	.3	D Y5	
205 HUAN	02	1921	1925	1928	N14	W41	.668	14822	29.7	7	-F	1 C	1925	30	.4	Y5	
206 HUAN	02	2017	2021	2022	N18	W43	.704	14822	29.6	5	-F	1 C				E Y5	
207 MEUD	03	0924	0926	0930	N16	E67	.921	14835	8.4	6	-F	C	0926	30		D Y5	
208 HUAN	03	1502		1542	N38	W40	.772	14832	30.6	40	-F	1 C				Y5	
209 HUAN	03	1550	1559	1608	N38	W40	.772	14832	30.7	18	-F	1 C	1559	45	.7	Y5	
210 HUAN	03	1622	1627	1637	N38	W39	.765	14832	30.3	15	-F	1 C	1627	40	.6	Y5	
211 HUAN	03	1901		1929	N38	W41	.779	14832	30.7	28	-F	1 C				Y5	
212 HUAN	03	1952		2017	N38	W41	.779	14832	30.8	25	-F	1 C				Y5	
GRP64213	03	2350+5	2355+2	0000	N38	W44	.801	14832	30.7	10	-F			35	.6	E E E	
CULG	03	2350	2355	0000	N38	W45	.808	14832	30.6	10	-F	C	2355	40	.7		
MANI	03	2355	2357	0000	N39	W44	.806	14832	30.7	5	-F	3 P	2357	30	.5		
214 CULG	04	0318	0322	0331	N40	W45	.817	14832	30.8	13	-N	C	0322	80	1.4	Y5	
215 KANZ	04	0833	0854	0913	S21	E90	1.000	14838	11.1	40	-N	C				Y5	
216 HUAN	04	1555	1600	1605	N12	W66	.913	14822	29.7	10	-F	1 C				Y5	
217 HUAN	04	1736		1748	S18	E88	1.000	14838	11.3	12	-F	1 C				Y5	
	04	2207	2214	NO FLARE PATROL													
218 CULG	05	0149	0157	0245	N38	W57	.886	14832	30.8	56	-F	C	0157	25	.6	K Y5	
GRP64219	05	0615+9	0624+1	0637	N10	W73	.955	14822	29.6	22	-N			60		E E	
HTPR	05	0615	0624	0634	N12	W74	.960	14822	29.7	19	-F	C	0624	50			
CATA	05	0625	0625	0640D	N09	W72	.950	14822	29.9	150	1N	1	0625	84			
220 HTPR	05	1120	1125	1135	N40	W60	.908	14832	1.0	15	-F	C	1125	40	.8	E Y5	
GRP64221	05	1140+1	1143+0	1148	N12	W77	.973	14822	29.7	8	-B			70		E E	
ZURI	05	1140	1143	1143D	N12	W78	.977	14822	29.6	30	-B	P	1143	50			
HTPR	05	1141	1143	1148	N13	W76	.969	14822	29.6	7	-B	C	1143	100			
222 HUAN	05	1258		1304	N40	W60	.908	14832	1.0	6	-F	1 C				Y5	

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OBSERVATORY	OBSERVED UT				LOCATION				DURATION MIN	IMPOR- TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE 1977 JUL	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	MCMATH FLARE REGION			CNR DAY	COND.	TYPE	TIME UT	MEAS. AREA Mill of Disk		CORR AREA Sq. Deg.
					LAT.	MER. DIST.											
	05	2204	2221	NO FLARE	RE PATROL												
	05	2227	0001	NO FLARE	RE PATROL												
223 HTPR	06	0637	0646	0657	N22	W35	.625	14841	3.7	20	-F	C	0646	10	.1	Y5	
224 MONT	06	0802	0804	0811	N21	W34	.608	14841	3.8	9	-F	C	0804	40		E Y5	
225 MONT	06	0855	0857	0900	N21	W34	.608	14841	3.8	5	-F	C	0857	20		OH Y5	
226 MONT	06	0906	0911	0919	N21	W35	.620	14841	3.8	13	-F	C	0911	20		DH Y5	
GRP64227	06	1031	1042	1115D	N22	W37	.648	14841	3.7	44	-F					EK	
MONT	06	1031	1042	1115D	N21	W35	.620	14841	3.8	440	-F	C	1042	60		EK	
KHAR	06	1043E	1043	1100	N24	W40	.691	14841	3.4	17D	-F	C				E	
GRP64228	06	1134+2	1137+3	1154	N21	W38	.655	14841	3.6	20	-N			40	.5	E	
HTPR	06	1134	1137	1200	N22	W38	.660	14841	3.6	26	-F	C	1137	30	.4	E	
MCMA	06	1134	1137	1149	N20	W37	.639	14841	3.7	15	-N	C	1137	30	.7	E	
ZURI	06	1136	1140	1154	N21	W38	.655	14841	3.6	18	-N	C	1140	60	.8		
GRP64229	06	1217+1	1220+0	1225	N21	W38	.655	14841	3.7	8	-F			70	.9		
HTPR	06	1217	1220	1226	N22	W38	.660	14841	3.7	9	-F	C	1220	60	.7		
ZURI	06	1218	1220	1224	N21	W38	.655	14841	3.7	6	-N	C	1220	90	1.3		
GRP64230	06	1325+1	1327+1	1343	N21	W37	.643	14841	3.8	18	-N			60	.8	EH	
HTPR	06	1254	1305	1345	N24	W39	.670	14841	3.7	51	-F	C	1305	40	.5		
MCMA	06	1325	1328	1341	N20	W38	.651	14841	3.7	16	-N	C	1328	40	.5	EH	
HTPR	06	1325	1327	1340	N22	W38	.660	14841	3.7	15	-N	C	1327	80	1.0		
ZURI	06	1326	1328	1338	N21	W38	.655	14841	3.7	12	-N	C	1328	60	.8		
WENO	06	1332E		1355	N20	W36	.627	14841	3.9	230	-N						
231 HTPR	06	1418	1421	1424	N22	W40	.662	14841	3.6	6	-F	C	1421	20	.2	Y5	
GRP64232	06	1522+2	1526+3	1533	N23	W39	.676	14841	3.7	11	-F			40	.5		
KANZ	06	1522	1529	1549	N21	W40	.679	14841	3.6	27	-N	C					
HTPR	06	1523	1526	1531	N24	W39	.660	14841	3.7	8	-F	C	1526	30	.4		
HUAN	06	1524	1528	1533	N23	W38	.665	14841	3.8	9	-F	1 C	1528	45	.6		
233 HTPR	06	1545	1550	1605	N24	W39	.680	14841	3.7	20	-F	C	1550	20	.2	Y5	
GRP64234	06	1643+2	1647+0	1649	N12	W90	1.000	14822	29.9	6	-N			30		A	
HTPR	06	1643	1647	1650	N12	W90	1.000	14822	29.9	7	-N	C	1647	20		A	
HUAN	06	1645	1647	1648	N12	W90	1.000	14822	29.9	3	-N	2 C	1647	40			
235 MCMA	06	1827	1829	1830D	N20	W41	.685	14841	3.7	30	-F	C	1829	35	.4	D Y5	
GRP64236	06	1837+3	1845+1	1851	N21	W42	.700	14841	3.6	14	-N			70	1.0	E	
HUAN	06	1837	1846	1849	N23	W42	.708	14841	3.6	12	-N	2 C	1845	60	.9	E	
PALE	06	1840	1845	1853	N20	W42	.697	14841	3.6	13	-N	3 C		83		DE	
237 VORO	06	2138	2139	2144	N21	W43	.711	14841	3.7	6	-B	C	2139	27	.4	EJ Y5	
GRP64238	06	2305+4	2309+1	2319	N22	W44	.726	14841	3.7	14	-N			100	1.5	DJ	
VORO	06	2305	2309	2322	N24	W45	.743	14841	3.6	17	-B	C	2309	99	1.5	DJ	
PALE	06	2309	2310	2316	N21	W44	.722	14841	3.7	7	-F	3 C		97			
239 VORO	06	2336	2340	2350	N24	W45	.743	14841	3.6	14	-B	C	2340	72	1.1	DJ Y5	
240 VORO	07	0013	0019	0044	N24	W45	.743	14841	3.6	31	-B	C	0019	90	1.3	DJ Y5	
GRP64241	07	0523+5	0529+0	0536	N22	W48	.767	14841	3.6	13	-F						
CULG	07	0523	0529	0539	N23	W48	.770	14841	3.6	16	-F	C	0529	65	1.0		
HTPR	07	0528	0529	0533	N22	W48	.767	14841	3.6	5	-F	C	0529	10	.1		
242 MONT	07	1047	1050	1056	N42	W90	.999	14832	30.7	9	-F	C	1050	20		D Y5	
243 KANZ	07	1349E	1351	1355	N22	W52	.805	14841	3.7	60	-F	P				T Y5	
GRP64244	07	1609	1614	1634	N23	W53	.817	14841	3.7	25	-F						
HTPR	07	1609	1614	1629	N23	W53	.817	14841	3.7	20	-F	C	1614	10	.2		
HUAN	07	1630E		1638D	N23	W53	.817	14841	3.7	80	-F	1 P	1635	40	.7		
245 HUAN	07	1630E		1638D	N46	W85	.995	14832	1.3	80	-F	* P				Y5	
246 HTPR	07	1642	1645	1655	N23	W53	.817	14841	3.7	13	-N	C	1645	20	.3	Y5	
247 HTPR	07	1703		1727D	N46	W82	.990	14832	1.6	240	-F	C	1715	20		Y5	

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IMPOR- TANCE	OBS.		MEASUREMENTS			REMARKS		
	DATE 1977 JUL	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	McMATH PLAGE REGION	GMR DAY			COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg			
					LAT.	MER. DIST.													
248 MCMA	07	1727	2121	NO FLARE PATROL															
	07	2013E		2043D	N23	W56	.843	14841	3.6	300	-N	C	2013	25	.5	D	Y5		
249 CULG	07	2124	2134	NO FLARE PATROL															
	07	2138	2150	NO FLARE PATROL															
250 CULG	08	0211	0220	0309	N20	W61	.879	14841	3.5	58	-F	C	0220	60	1.2		Y5		
251 CULG	08	0340	0345	0438	N20	W61	.879	14841	3.6	58	?N	C	0345	130	2.6		Y5		
252 CULG	IMP.	1	NO	TACH1															
	08	0446	0453	0509	N21	W61	.880	14841	3.6	23	?F	C	0453	110	2.2		Y5		
253 CATA	08	0920E	0920	0935	N21	W64	.902	14841	3.6	150	-N	1	0920	56	1.4		Y5		
254 HTPR	08	1506	1507	1510	N22	W67	.923	14841	3.6	4	-F	C	1507	30	.6		Y5		
255 MCMA	08	1922E		19240	N22	W72	.951	14841	3.4	20	-F	P	1922	20	.9	BD	Y5		
256 CULG	08	2340	2347	0005	N25	W74	.961	14841	3.4	25	-F	C	2347	50			Y5		
257 HTPR	09	1956	1959	NO FLARE PATROL															
	09	2002	2008	NO FLARE PATROL															
	09	2030	2040	NO FLARE PATROL															
	09	2130	2151	NO FLARE PATROL															
	10	0542E		0735	N23	W70	.940	14849	5.0	1130	-F	C	0704	20	.4	E	Y5		
258 HTPR	10	0750		09160	N23	W70	.940	14849	5.1	860	-F	C	0810	10	.2	E	Y5		
259 RAMY	10	1232E	1233U	1249	N23	W90	1.000	14841	3.8	170	-F	3	C					Y5	
260 HTPR	10	1349	1358	1417	N25	W90	1.000	14841	3.8	28	-F	C	1358	50		A	Y5		
261 HTPR	10	2019	2140	NO FLARE PATROL															
	10	2152	2158	NO FLARE PATROL															
	11	1918	1935	NO FLARE PATROL															
	11	1949	2016	NO FLARE PATROL															
	11	2022	2032	NO FLARE PATROL															
	11	2038	2055	NO FLARE PATROL															
262 HTPR	12	0814	0822	0824	N23	W48	.767	14835	8.7	10	-F	C	0822	20	.3		Y5		
262 HTPR	12	0841	0843	0847	N23	W48	.767	14835	8.8	6	-F	C	0843	20	.3		Y5		
GRP64263	12	1140+1	1141+5	1200	N21	W51	.792	14835	8.7	20	-N			50	.8		G		
HTPR	12	1140	1146	1205	N23	W49	.777	14835	8.8	25	-N	C	1146	60	1.2				
RAMY	12	1140E	1141U	1150	N21	W51	.792	14835	8.7	100	-F	4	C	40					
KANZ	12	1141	1145	1159	N21	W51	.792	14835	8.7	18	-F	C					G		
CATA	12	114E	1145	12000	N19	W53	.807	14835	8.5	150	-B	1	C	1145	56	1.0			
GRP64264	12	1722+8	1732+1	1738	S20	W25	.564	14838	10.8	16	-N			70	.8		E		
WEND	12	1722E		1740	S20	W22	.534	14838	11.1	180	1N	V		300					
HTPR	12	1724	1733	1737	S20	W27	.585	14838	10.7	13	-F	C	1733	80	1.0		E		
HUAN	12	1727	1732	1739	S22	W25	.584	14838	10.9	12	-N	1	C	1732	70	.9		E	
KANZ	12	1729	1732	1735	S20	W25	.564	14838	10.9	6	-N	P							
PALE	12	1730	1732	1737	S20	W25	.564	14838	10.9	7	-F	3	C	60			DE		
GRP64265	12	1853	1911	NO FLARE PATROL															
	13	0010+4	0018	0040	S21	W28	.605	14838	10.9	30	-N			50	.6		E		
CULG	13	0010	0018	0040	S21	W29	.615	14838	10.8	30	-N	C	0018	60	.8				
MITK	13	0014		0026D	S22	W28	.613	14838	10.9	120	-B	C	0018	50	.7		E		
GRP64266	13	0112	0118	NO FLARE PATROL															
	13	0131	0137	NO FLARE PATROL															
HTPR	13	1036	1041+6	1116	S21	W34	.666	14838	10.9	40	-N			120	1.6		E		
HTPR	13	1036	1041	1112	S18	W36	.667	14838	10.7	36	-F	C	1041	100	1.3		E		
ATHN	13	1046E	1047	1058D	S22	W32	.653	14838	11.0	120	-N	1		147					
MCMA	13	1101E		1120	S22	W34	.673	14838	10.9	190	-N	C	1101	50	.7		E		
267 HUAN	13	1409	1412	1414	S22	W36	.693	14838	10.9	5	-F	1	C	1412	20	.3	D	Y5	

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OBSERVATORY	OBSERVED UT				LOCATION				DURATION MIN.	IMPOR- TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE 1977 JUL	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	MCNATH PLAGE REGION			CMP. DAY	COND.	TYPE	TIME UT	MEAS. AREA		CORR AREA
					LAT.	MER. DIST.											
268 HTPR	14	0615	0621	0636	S17	W47	.777	14838	10.7	21	-F	C	0621	40	.6	Y5	
269 MONT	14	0733	0738	0744	S22	W43	.761	14838	11.1	11	-F	C	0738	20		Y5	
270 HTPR	14	1004	1005	1011	S17	W48	.787	14838	10.8	7	-F	C	1005	30	.4	E Y5	
GRP64271	14	1004+1	1009+1	1015	N23	W79	.976	14835	8.6	11	-N			50		G	
MONT	14	1004	1009	1014	N23	W79	.979	14835	8.5	10	-F	C	1009	50		G	
CATA	14	1005	1010	1015D	N23	W77	.972	14835	8.6	10D	1N	1	1010	56			
272 MONT	14	1036	1039	1044	S19	W49	.804	14838	10.8	8	-F	C	1039	40		E Y5	
GRP64273	14	1147+1	1154+1	1228	S22	W48	.807	14838	10.9	41	1N			130	2.2	EIL	
KIEV	14	1147E	1155	1230D	S25	W47	.811	14838	11.0	43D	1N	C	1155	200	3.6	EI	
HTPR	14	1147	1154	1215	S17	W50	.806	14838	10.7	28	-N	C	1158	130	2.0	E	
MCMA	14	1148	1154	1240	S22	W47	.798	14838	11.0	52	-B	C	1154	70	1.2	EL	
KHAR	14	1148E	1155	1225D	S22	W48	.807	14838	10.9	37D	1N	C		110	2.1	E	
CATA	14	1200E	1200	1215D	S22	W47	.798	14838	11.0	15D	1B	1	1200	140	2.4		
HUAN	14	1205E		1223	S22	W48	.807	14838	10.9	23D	-F	1	1211	25	.4	D	
274 HUAN	14	1230	1231	1238	S22	W47	.798	14838	11.0	8	-F	1	C	1231	25	.4	D Y5
275 HUAN	14	1638	1645	1650	S23	W48	.811	14838	11.1	12	-F	1	C	1645	20	.3	D Y5
276 HUAN	14	1825E		1829D	S21	W52	.837	14838	10.9	4D	-F	1	P	1827	20	.4	D Y5
	14	1949	1950		NO FLARE PATROL												
	14	2004	2008		NO FLARE PATROL												
277 MONT	16	0836	0838	0840	S22	W74	.974	14838	10.8	4	-F	C	0838	20		OG Y5	
	16	1600	1610		NO FLARE PATROL												
	16	2011	2156		NO FLARE PATROL												
	17	0043	0054		NO FLARE PATROL												
	17	1846	1854		NO FLARE PATROL												
	17	1857	1921		NO FLARE PATROL												
	17	2345	2353		NO FLARE PATROL												
278 CATA	19	1145E	1200	1220	N19	E65	.905	14863	24.4	35D	1F	1	1200	84	2.0	Y5	
279 HUAN	19	1906		1917	N20	E90	1.000	14866	26.5	11	-F	1	C				Y5
	19	2131	2148		NO FLARE PATROL												
	20	0049	0056		NO FLARE PATROL												
	21	0121	0136		NO FLARE PATROL												
	21	0146	0204		NO FLARE PATROL												
280 MONT	21	1021	1028	1030D	N37	E90	.999	14872	28.2	9D	-F	C	1028	20		Y5	
	21	1823	1824		NO FLARE PATROL												
	21	1828	1842		NO FLARE PATROL												
	21	1853	1907		NO FLARE PATROL												
	21	1911	1915		NO FLARE PATROL												
	21	1947	1950		NO FLARE PATROL												
	21	1955	2007		NO FLARE PATROL												
	21	2022	2025		NO FLARE PATROL												
	21	2034	2037		NO FLARE PATROL												
GRP64281	21	2305+0	2313+6	2329	S24	E90	1.001	14874	28.7	24	1N			70		DH	
CULG	21	2305	2313	2331	S26	E90	1.001	14874	28.7	26	1N	C	2313	45			
MITK	21	2305E	2319	2327	S22	E90	1.001	14874	28.7	22D	1N	C	2319	90		DH	
282 MONT	22	0751E	0751	0755D	S25	E81	.995	14874	28.4	4D	-F	C	0751	20		D Y5	
GRP64283	22	0937+1	0944	1005	S25	E78	.989	14874	28.3	28	-F			15		D	
			1001+1														
HTPR	22	0937	0944	0950	S25	E76	.983	14874	28.1	13	-F	C	0944	20			
MONT	22	0938	1001	1005D	S25	E80	.993	14874	28.4	27D	-F	C	1001	20		D	
HTPR	22	0956	1002	1005	S25	E76	.983	14874	28.1	9	-F	C	1002	10			
GRP64284	22	1149+2	1158+1	1208	S26	E78	.989	14874	28.3	19	-N			50		E	
HTPR	22	1149	1159	1205D	S25	E75	.980	14874	28.1	16D	-N	C	1159	60			
ZURI	22	1151	1159	1203D	S26	E77	.987	14874	28.3	12D	-F	P	1159	50			
RAMY	22	1155E	1158U	1209	S25	E75	.980	14874	28.1	14D	-F	2	C	64		DE	
HUAN	22	1155E	1159	1207	S27	E85	.999	14874	28.9	12D	-N	2	P	1159	30		
MCMA	22	1156E	1158	1203	S26	E80	.993	14874	28.5	12D	-B	C	1158			E	

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# H $\alpha$ SOLAR FLARES

JULY 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IMPOR- TANCE	OBS.		MEASUREMENTS			REMARKS		
	DATE 1977 JUL	START	MAX. PHASE	END	APPROX		CENTRAL DISTANCE	McHATH FLARE REGION	CMP. DAY			COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.			
					LAT.	MER. DIST.													
285 HUAN	22	1300	1306	1309	S26	E80	.993	14874	28.5	9	-F	1	C	1306	20		D	Y5	
286 HUAN	22	1316	1319	1320	S24	E80	.992	14874	28.6	4	-F	1	C	1319	15		D	Y5	
287 HUAN	22	1516	1520	1523	S25	E80	.993	14874	28.6	7	-F	1	C	1520	20		D	Y5	
288 HUAN	22	1810		1819	S25	E75	.980	14874	28.4	9	-F	1	C					Y5	
289 HUAN	22	1837	1838	1840	S25	E74	.977	14874	28.3	3	-F	1	C	1838	20		D	Y5	
290 HUAN	22	1902		1907	S25	E75	.980	14874	28.4	5	-F	1	C					Y5	
	23	0156	0206		NO FLARE PATROL														
	23	0240	0247		NO FLARE PATROL														
291 MONT	23	0837	0846	0907	S26	W77	.987	14860	17.6	30	-F		C	0846	20		DGH	Y5	
292 MONT	23	0941	0947	1032	S25	E64	.933	14874	28.2	51	-N		C	0947	100		E	Y5	
	23	2120	2154		NO FLARE PATROL														
293 CULG	23	2236	2244	2254	S25	E59	.904	14874	28.4	18	-N		C	2244	25	.5		Y5	
	23	2305	2313		NO FLARE PATROL														
294 HTPR	24	0520	0522	0527	S25	E52	.855	14874	28.1	7	-F		C	0522	30	.5		Y5	
GRP64295	24	0533+5	0543+2	0558	S26	E52	.859	14874	28.1	25	-F				50	.9	E		
HTPR	24	0533	0545	0558	S27	E51	.855	14874	28.1	25	-F		C	0543	40	.6	E		
MITK	24	0538	0543	0558	S26	E54	.873	14874	28.3	20	-N		C	0543	70	1.5	E		
296 HTPR	24	0930E	0848	0955	S27	E52	.863	14874	28.3	850	-F		C	0848	20	.4	D	Y5	
297 HUAN	24	1822	1825	1840	S27	E47	.825	14874	28.3	18	-F	1	C	1825	20	.4	D	Y5	
	24	1944	1945		NO FLARE PATROL														
	24	2106	2107		NO FLARE PATROL														
	24	2120	2126		NO FLARE PATROL														
	24	2239	2244		NO FLARE PATROL														
GRP64298	25	0800>3	0816+1	0847	S26	E38	.746	14874	28.2	47	1N				240	3.6			
MONT	25	0800	0816	0847	S25	E39	.749	14874	28.3	47	1N		C	0816	400				
GATA	25	0810	0817	0855	S26	E37	.738	14874	28.1	45	1N	2		0817	281	4.3			
ATHN	25	0820E	0820	0841	S27	E45	.810	14874	28.7	210	-N	1			131				
HTPR	25	0825E		08280	S26	E38	.746	14874	28.2	30	1F		C	0825	200	3.0	B		
299 MONT	25	0921	0936	1009D	N19	W21	.417	14863	23.8	480	-F		C	0936	40		EG	Y5	
300 KHAR	25	0939E	0943	0946D	S25	E37	.731	14874	28.2	70	-F		C				E	Y5	
GRP64301	25	2139+1	2141+2	2152	S25	E29	.660	14874	28.1	13	-F								
RAMY	25	2139	2141U	2145D	S25	E30	.669	14874	28.2	60	-F	2	C		95		F		
HUAN	25	2140	2143	2152	S26	E29	.669	14874	28.1	12	-F	1	C	2143	30	.4	E		
302 CULG	26	0020	0039	0130	S28	E28	.680	14874	28.1	70	-F		C	0039	50	.7		Y5	
	26	0925	0945		NO FLARE PATROL														
303 GATA	26	0935E	0939	0935D	N40	E36	.736	14872	29.1		-N	2		0935	28	.4		Y5	
GRP64304	26	1348+3	1352+1	1406	S26	E21	.607	14874	28.1	18	-F				50	.6	E		
HTPR	26	1348	1353	1407	S27	E20	.611	14874	28.1	19	-F		C	1353	40	.5	E		
MCMA	26	1351	1352	1405	S26	E22	.614	14874	28.2	14	-F		C	1352	60	.8	E		
305 HUAN	26	1604E		1612	N23	E60	.869	14876	31.2	80	-F	1	P	1605	25	.5	D	Y5	
306 MCMA	26	1743E	1750	1805D	N21	W39	.655	14863	23.8	220	-F		C	1750	35	.5	E	Y5	
	26	2013	2024		NO FLARE PATROL														
	26	2054	2144		NO FLARE PATROL														
307 CULG	26	2324	2329	0020	N23	W42	.697	14863	23.8	56	-N		C	2329	50	.7	K	Y5	
308 CULG	27	0230	0248	0314	N21	W45	.723	14863	23.7	44	-F		C	0248	60	.8		Y5	
309 CULG	27	0520	0533	0544	N22	W45	.726	14863	23.8	24	-F		C	0533	30	.4		Y5	

# H $\alpha$ SOLAR FLARES

JULY 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IMPOR- TANCE	OBS. COND. TYPE	MEASUREMENTS			REMARKS	
	DATE 1977 JUL	START	MAX. PHASE	END	APPROX.		CENTRAL DISTANCE	MCNATH PLAGE REGION	CMP DAY				TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.		
					LAT.	MER. DIST.											
310 BUCA	27	0640		0655	N21	W47	.745	14863	23.9	15	-N	C	0640	53	.8	CD	Y5
311 MONT	27	0927	0938	0946	N19	W49	.762	14863	23.7	19	-F	C	0938	20		D	Y5
312 MCMA	27	1120	1122	1126	S26	E11	.547	14974	28.3	6	-F	C	1122	40	.5	E	Y5
	27	1359	1405	NO FLARE PATROL													
313 MCMA	27	1547	1550	1613	N22	W53	.807	14963	23.7	31	-N	C	1550	60	1.1	Z	Y5
314 MCMA	27	1950	1954	2020	N22	W55	.625	14863	23.7	30	-N	C	1954	50	.9	OH	Y5
	27	2057	2113	NO FLARE PATROL													
	27	2118	2128	NO FLARE PATROL													
315 CULG	27	2330	2335	0000	N20	W55	.923	14863	23.9	30	-F	C	2335	20	.4		Y5
	28	0237	0241	NO FLARE PATROL													
316 UPIC	28	0540	0600	0645C	N20	W61	.874	14863	23.7	650	-F	P	0600	41		K	Y5
317 HUAN	28	1225E		1227D	N21	W65	.904	14863	23.6	20	-F	1 P	1226	20	.4	D	Y5
318 MCMA	28	1538E		1548D	N22	W72	.947	14863	23.3	100	-F	C	1538	25	.3	OH	Y5
	28	1610	1619	NO FLARE PATROL													
	28	1626	1641	NO FLARE PATROL													
	28	1646	1755	NO FLARE PATROL													
319 HUAN	28	1931		1935	N20	W75	.962	14863	23.2	4	-F	1 C					Y5
	28	1940	1952	NO FLARE PATROL													
	28	1956	2019	NO FLARE PATROL													
	28	2034	2037	NO FLARE PATROL													
	28	2044	2131	NO FLARE PATROL													
	28	2134	2139	NO FLARE PATROL													
320 MONT	29	0756	0846	0851	N19	W79	.977	14863	23.4	55	-F	C	0846	20		OK	Y5
321 MONT	29	1004	1010	1019	N19	W80	.981	14863	23.4	15	-F	C	1010	20		B	Y5
322 MONT	29	1058	1111	1118	N19	W80	.981	14863	23.5	20	-F	C	1111	20		D	Y5
323 MONT	29	1120	1131	1138	N19	W80	.981	14863	23.5	18	-F	C	1131	20		D	Y5
324 MONT	29	1241	125E	1335D	N35	W90	.998		22.8	540	-F	C	1256	20		OG	Y5
GRP64325	29	1250	1253	1300	S26	W90	1.001	14855	22.9	10	-F					G	
			1256														
MONT	29	1250	1253	1300	S28	W90	1.001	14855	22.8	10	-F	C	1253	40		OG	
MONT	29	1254	1256	1259	S25	W90	1.001	14855	22.9	5	-F	C	1256	20		OG	
326 LVOV	29	1455E	1500	1515D	N21	W87	.997	14863	23.1	200	-F	C	1500	100		OF	Y5
GRP64327	30	0704>5	0722	0800D	N18	W42	.680	14866	27.1	56	1N					E	
			0740														
MITK	30	0704	0722	0727D	N18	W42	.680	14866	27.1	230	1N	C	0722	220	3.1	Z	
BUCA	30	0715		0800	N14	W41	.659	14866	27.2	45	1F	C	0734	214	2.9	C	
CATA	30	0720	0740	0905	N19	W42	.682	14866	27.2	105	1B	2	0740	196	2.8		
328 CATA	30	0855	0855	0905	N24	W90	.999	14863	23.6	10	1N	2	0855	56			Y5
329 HUAN	30	1509	1515	1517	N21	W90	.999	14863	23.9	8	-F	1 C	1516	20		D	Y5
330 HUAN	30	1753	1757	1759	N21	W90	.999	14863	24.0	6	-F	1 C	1757	25		D	Y5
331 CATA	31	1505	1510	1525	N34	W06	.463		31.2	20	-N	2	1510	26	.3		Y5
332 HUAN	31	1911		1951	N28	W35	.643	14883	29.2	40	-F	* C				Z	Y5
	31	2040	2048	NO FLARE PATROL													

"Remarks":

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

- N = Continuous spectrum shows effects of polarization.
- O = Observations have been made in the calcium II lines H and K.
- P = Flare shows helium D<sub>2</sub> in emission.
- Q = Flare shows the Balmer continuum in emission.
- R = Marked asymmetry in H $\alpha$  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 $\alpha$  line.
- Y = System of loop-type prominences.
- Z = Major sunspot umbra covered by flare.