Hα SOLAR FLARES

MAY 1977

OBSERVATORY	OBSERVED UT DATE 1977 MAY	START	MAX. PHASE	END	LOCATION APPROX LAT.	MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	DURATION MIN.	IMPORTANCE	OBS. COND	TYPE	MEASUREMENTS TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	REMARKS	
919 MITK	01	0219	0222	0232	S23	E19	.443	14742	2.5	13	-N		C	0222	50	.6	E	Y5
	01	2004	2145	NO FLARE PATROL														
	02	2057	2058	NO FLARE PATROL														
920 MITK	03	0140	0146	0201	N34	E64	.946	14749	7.9	21	-F		C	0146	60		D	Y5
	03	0209	0216	NO FLARE PATROL														
	03	0446	0459	NO FLARE PATROL														
	03	0500	0600	NO FLARE PATROL														
921 BUCA	03	0620		0653	N33	E60	.925	14749	7.8	33	N		C	0627	107	3.0		Y5
	IMP.1 NO MITK2																	
GRP63922	03	0705+3		0735	N31	E59	.915	14749	7.7	30	-N				60	1.4	D	
CATA	03	0705E	0710	0710D	N31	E58	.909	14749	7.6	50	-B	2		0710	56	1.3		
BUCA	03	0708		0735	N31	E60	.920	14749	7.8	27	-N		C	0709	64	1.7	D	
GRP63923	03	0920+5	0925+5	1000	N33	E59	.920	14749	7.8	40	1F						E	
			0942															
KHAR	03	0926E	0930	1007D	N34	E60	.927	14749	7.9	47D	1F		P				E	
CATA	03	0925	0925	1000D	N32	E57	.906	14749	7.7	35D	-N	2		0925	56	1.3		
UPIC	03	0925E	0929U	0931	N34	E61	.932	14749	8.0	6D	-F		P	0929	20	27.0		
UPIC	03	0942	0942	0952	N35	E58	.919	14749	7.8	10	1F		P	0942	122	157.0		
924 MONT	03	1048	1058	1124	N33	E58	.914	14749	7.8	36	-N		C	1058	110			Y5
GRP63925	03	1428	1450	1525	N33	E55	.897	14749	7.7	57	-N						E	
MCMA	03	1428	1450	1525	N32	E55	.894	14749	7.7	57	-N		C	1450	30	.5	E	
CATA	03	1430E	1430	1440D	N34	E56	.906	14749	7.8	10D	1N	2		1430	84	2.0		
926 MCMA	03	1756	1810	1835	N32	E54	.888	14749	7.8	39	-B		C	1810	60	1.1	EH	Y5
	03	2112	2120	NO FLARE PATROL														
	03	2138	2150	NO FLARE PATROL														
	03	2214	0206	NO FLARE PATROL														
GRP63927	04	1116	1116	1141	N33	E45	.832	14749	7.8	25	-B							
			1125															
ZURI	04	1116	1116	1144	N33	E45	.832	14749	7.8	28	-B		C	1116	50	1.0		
RAMY	04	1120E	1125	1138	N34	E45	.837	14749	7.8	18D	-N	3	C		178		FDE	
GRP63928	04	1211+1	1214+1	1222	N32	E44	.820	14749	7.8	11	1N				150	2.5	EI	
KIEV	04	1211E	1215	1225D	N31	E44	.814	14749	7.8	14D	1N		C	1215	200	3.4	EI	
ZURI	04	1212	1214	1218	N33	E45	.832	14749	7.9	6	-N		C	1214	100	1.9		
929 RAMY	04	1640E	1641U	1652	N33	E42	.811	14749	7.8	12D	-F	3	C		128		F	Y5
930 RAMY	04	1725E	1726U	1741D	N33	E42	.811	14749	7.9	16D	-F	3	C		96		FDE	Y5
	04	1808	1944	NO FLARE PATROL														
	05	0100	0155	NO FLARE PATROL														
	05	0309	0315	NO FLARE PATROL														
931 HTPR	05	0539	0542	0600	N33	E36	.767	14749	7.9	21	-F		C	0540	20	.3	E	Y5
	05	2100	2112	NO FLARE PATROL														
	05	2126	2134	NO FLARE PATROL														
	05	2148	2232	NO FLARE PATROL														
	06	0319	0338	NO FLARE PATROL														
	06	0347	0400	NO FLARE PATROL														
	06	0410	0417	NO FLARE PATROL														
	06	0425	0430	NO FLARE PATROL														
932 HTPR	06	0605	0606	0615	N33	E24	.684	14749	8.1	10	-F		C	0606	20	.3	E	Y5
GRP63933	06	0630+3	0635+5	0655	N34	E22	.682	14749	7.9	25	-N				120	1.6		
BUCA	06	0630		0717	N35	E24	.704	14749	8.1	47	1N		C	0637	214	3.1		
MANI	06	0633E	0640	0655	N33	E20	.660	14749	7.8	22D	-N	2		0640	80	1.1	F	
HTPR	06	0633	0635	0655	N33	E22	.671	14749	7.9	22	-B		C	0635	120	1.5	E	
GRP63934	06	0738+2	0740+5	0755	N33	E23	.677	14749	8.0	17	-F						E	
HTPR	06	0738	0740	0753	N33	E22	.671	14749	8.0	15	-F		C	0740	30	.3	E	
MEUO	06	0739	0745	0755	N33	E23	.677	14749	8.0	16	-F		C	0745	60	.8	E	
BUCA	06	0740		0805	N34	E23	.688	14749	8.0	25	-N		C	0744	107	1.5	E	

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE 1977 MAY	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
GRP63935	06	1519+2	1521+1	1533	N32	E09	.597	14749	7.3	14	-B				110	1.4		
MEUD	06	1519E	1522	1533	N32	E10	.601	14749	7.4	14D	-B		C	1522	140	1.7		
ZURI	06	1521	1521	1533	N32	E09	.597	14749	7.3	12	-B		C	1521	90	1.1		
	06	1921	1936	NO FLARE PATROL														
	06	1956	2009	NO FLARE PATROL														
	06	2033	2040	NO FLARE PATROL														
936 RAMY	06	2041E	2042	2049	N31	E05	.574	14749	7.2	8D	-F	2	C		95		DE	Y5
	06	2102	2112	NO FLARE PATROL														
	06	2134	2156	NO FLARE PATROL														
	06	2209	2221	NO FLARE PATROL														
	06	2227	0010	NO FLARE PATROL														
937 MANI	07	0249E	0251	0259	N31	E02	.568	14749	7.3	10D	-F	2		0251	40	.5		Y5
938 CULG	07	0305	0309	0325	N31	E02	.568	14749	7.3	20	-F		C	0309	30	.4		Y5
GRP63939	07	0451	0455	0459	N32	E01	.582	14749	7.3	8	-F				35	.4		
CULG	07	0451	0455	0459D	N32	E02	.582	14749	7.4	8D	-F		P	0455	45	.5		
HTPR	07	0455E		0459	N32	E01	.582	14749	7.3	4D	-F		C	0458	20	.2		
940 HTPR	07	0510	0513	0520	N37	E10	.664	14749	8.0	10	-F		C	0513	10	.1		Y5
941 HTPR	07	0612	0614	0617	N37	E09	.662	14749	7.9	5	-F		C	0614	20	.2	E	Y5
942 HTPR	07	1337		1338D	N32	W05	.586	14749	7.2	1D	-F		C	1337	20	.2		Y5
943 MCMA	07	1654	1655	1712	N36	E04	.639	14749	8.0	18	-N		C	1655	70	.7	E	Y5
GRP63944	07	2320	2326+0	2340	N32	W08	.593	14749	7.4	20	-F				50	.6	F	
CULG	07	2320	2326	2340	N33	W08	.607	14749	7.4	20	-F		C	2326	40	.5		
MANI	07	2324E	2326	2340	N31	W08	.579	14749	7.4	16D	-F	2		2326	60	.7	F	
GRP63945	07	2348+2	2352+1	0001	N31	W09	.582	14749	7.3	13	-F				80	1.0	H	
MITK	07	2348	2353	0002	N32	W10	.599	14749	7.2	14	-N		C	2353	110	1.4	E	
MANI	07	2350	2352	2359	N31	W08	.579	14749	7.4	9	-F	2		2352	50	.6	FH	
946 VORO	08	0259	0304	0315	S25	E62	.893	14768	12.8	16	-N		C	0304	72		D	Y5
	09	0309	0313	NO FLARE PATROL														
947 MONT	09	0931E	0931	1003D	S24	E90	1.000	14771	16.1	32D	-F		C	0931	20			Y5
GRP63948	09	1048E	1054	1104	S24	E42	.713	14768	12.6	16	-F				35	.5	DH	
MCMA	09	1048E		1110	S24	E42	.713	14768	12.6	22D	-N		P	1053	35	.5	DH	
ATHN	09	1053E	1054	1058	S25	E42	.717	14768	12.6	5D	-F		V		33	80.0		
949 MCMA	09	1105	1112	1140	N32	W26	.683	14749	7.5	35	-N		C	1112	20	.3	DH	Y5
	09	1200	1305	NO FLARE PATROL														
	09	1310	1525	NO FLARE PATROL														
	09	1530	1540	NO FLARE PATROL														
	09	1554	1610	NO FLARE PATROL														
	09	2059	2141	NO FLARE PATROL														
	09	2153	2230	NO FLARE PATROL														
950 HTPR	11	0807	0808	0811	S24	E12	.405	14768	12.2	4	-F		C	0808	10	.1		Y5
GRP63951	12	1006+2	1006	1021	S23	E53	.819	14771	16.4	15	-F							
HTPR	12	1006	1006	1010	S23	E56	.845	14771	16.6	4	-F		C	1006	10	.1		
KANZ	12	1008	1021	1032	S24	E51	.803	14771	16.2	24	-F		C					
952 HTPR	12	1212	1215	1229	S23	E55	.837	14771	16.6	17	-F		C	1215	50	.7	E	Y5
953 CATA	12	1525	1525	1540	S25	E48	.778	14771	16.2	15	-F	2		1525	56	.9		Y5
	12	1753	1800	NO FLARE PATROL														
	12	1919	1945	NO FLARE PATROL														
	12	1946	2015	NO FLARE PATROL														
	12	2026	2050	NO FLARE PATROL														
	12	2100	2144	NO FLARE PATROL														
	13	2121	2200	NO FLARE PATROL														
	14	1900	1909	NO FLARE PATROL														
	15	0935	1009	NO FLARE PATROL														
	15	1946	2008	NO FLARE PATROL														

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	15	2020	2028	NO FLARE PATROL														
	15	2032	2042	NO FLARE PATROL														
954 MCMA	16	1717	1721	1740	S18	W09	.305	14771	16.0	23	-F		C	1721	20	.2	EH	Y5
	16	2057	2205	NO FLARE PATROL														
	17	1818	1839	NO FLARE PATROL														
	17	1952	2011	NO FLARE PATROL														
	17	2015	2206	NO FLARE PATROL														
	17	2215	2235	NO FLARE PATROL														
955 KHAR	18	0920E	0927	0940D	S18	W29	.537	14771	16.2	20D	-F		C	0927	55	.7	D	Y5
	18	1200	1252	NO FLARE PATROL														
	18	1305	1453	NO FLARE PATROL														
	18	1601	1604	NO FLARE PATROL														
	18	1728	1740	NO FLARE PATROL														
	18	1945	2005	NO FLARE PATROL														
	18	2008	2013	NO FLARE PATROL														
	18	2019	2043	NO FLARE PATROL														
	18	2057	2113	NO FLARE PATROL														
	18	2133	2227	NO FLARE PATROL														
GRP63956	19	0015+4	0027+1	0100	S18	W39	.661	14771	16.1	45	-B				150	2.0	E	
CULG	19	0015	0028	0100	S18	W39	.661	14771	16.1	45	1N		C	0028	160	2.2		
MITK	19	0019	0027	0059	S19	W39	.665	14771	16.1	40	-B		C	0027	140	1.9	E	
	19	0253	0301	NO FLARE PATROL														
	19	0413	0414	NO FLARE PATROL														
	19	0445	0453	NO FLARE PATROL														
	19	0454	0500	NO FLARE PATROL														
	19	0503	0507	NO FLARE PATROL														
GRP63957	19	1415+4	1426	1434	S18	W48	.762	14771	16.0	19	-F				40	.6	D	
MCMA	19	1415		1434	S18	W48	.762	14771	16.0	19	-N		C	1427	25	.4	D	
MEUO	19	1419		1435	S18	W46	.740	14771	16.1	16	-F		C	1424	40	.6		
RAMY	19	1424E	1426U	1429	S18	W49	.772	14771	15.9	5D	-F	3	C		48			
958 HUAN	19	1925	1928	1942	S20	W54	.825	14771	15.8	17	-N	1	C	1928	50	.9	EH	Y5
	20	0251	0256	NO FLARE PATROL														
GRP63959	20	1029+5	1037+1	1043	S27	W11	.454	14780	19.6	14	-F						G	
KANZ	20	1029	1038	1041	S27	W12	.460	14780	19.5	12	-F		C					
MONT	20	1034	1037	1044	S27	W11	.454	14780	19.6	10	-F		C	1037	20		G	
	20	2058	2119	NO FLARE PATROL														
960 HUAN	21	1536		1606	N35	W60	.921	14781	17.2	30	-F	1	C	1545	25			Y5
	21	2100	2156	NO FLARE PATROL														
961 CULG	21	2358	2405	0012	N19	W18	.461	14776	20.6	14	-F		C	2405	20	.2		Y5
	22	0320	0330	NO FLARE PATROL														
962 HUAN	22	1603		1626	N35	W78	.988	14781	16.8	23	-F	1	C				T	Y5
963 HUAN	22	1753		1823	N35	W80	.992	14781	16.7	30	-F	1	C					Y5
964 HUAN	22	1923		2118	N21	W28	.584	14776	20.7	115	-N	1	C	1948	80	1.0	E	Y5
	22	2007	2012	NO FLARE PATROL														
	24	0940	0945	NO FLARE PATROL														
	24	0950	1000	NO FLARE PATROL														
	24	2004	2018	NO FLARE PATROL														
	25	2154	2251	NO FLARE PATROL														
	25	2256	2337	NO FLARE PATROL														
	25	2344	0005	NO FLARE PATROL														
	26	0117	0122	NO FLARE PATROL														
	26	0126	0129	NO FLARE PATROL														
	26	0133	0138	NO FLARE PATROL														
	26	0147	0150	NO FLARE PATROL														
	26	2123	2140	NO FLARE PATROL														
	26	2152	2218	NO FLARE PATROL														
	28	0030	0140	NO FLARE PATROL														

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OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE 1977 MAY	START	MAX PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
965 CATA	28	0615	0615	0620D	S21	E17	.436	14791	29.5	5D	-F	2		0615	28	.3	Y5
966 KANZ	28	1538	1538	1542	S21	E12	.391	14791	29.6	4	-F		C				Y5
GRP63967	29	1132	1210 1235	1239	N21	E88	1.000	14794	6.1	67	-N						
KANZ	29	1132	1210	1239	N21	E88	1.000	14794	5.1	67	-		C				
KANZ	29	1132	1235	1239	N21	E88	1.000	14794	5.1	67	-		C				
GRP63968	29	1648>9	1718	1723	N20	E81	.990	14794	5.8	35	-F						D
HUAN	29	1648		1723D	N20	E77	.979	14794	4.5	35D	-F	1	C	1657	20		DT
KANZ	29	1705	1718	1723	N21	E85	.997	14794	5.1	18	-N		P				
969 HUAN	29	1957	2000	2011D	N20	E76	.975	14794	4.5	14D	-N	1	C	2000	25		D Y5
970 PALE	29	2023	2026	2035	N20	E74	.968	14794	4.4	12	-F	3	C		25		F R Y5
	30	0054	0101	NO FLARE PATROL													
	30	0109	0124	NO FLARE PATROL													
	30	0134	0140	NO FLARE PATROL													
	30	0145	0152	NO FLARE PATROL													
	30	0303	0305	NO FLARE PATROL													
GRP63971	30	1039+2	1045+6	1104	N19	W23	.502	14785	28.7	25	-N				30	.4	
KANZ	30	1039	1050	1107	N20	W23	.511	14785	28.7	28	-B		C				E
CATA	30	1040	1045	1100D	N17	W24	.495	14785	28.6	20D	-B	2		1045	28	.3	
MONT	30	1040	1051	1104	N19	W23	.502	14785	28.7	24	-N		C	1051	80		E
MEUD	30	1041	1048	1100	N19	W24	.513	14785	28.6	19	-N		C	1048	30	.4	D
GRP63972	30	1222+1	1227	1245	N19	W25	.524	14785	28.6	23	-F				35	.4	E
MCMA	30	1222E		1230D	N18	W25	.516	14785	28.6	8D	-F		P	1228	30	.4	D
MEUD	30	1223	1227	1245	N19	W25	.524	14785	28.6	22	-F		C	1227	40	.5	E
WEND	30	1232E		1242	N20	W26	.544	14785	28.6	10D	-N						
HUAN	30	1237E		1252	N20	W25	.533	14785	28.7	15D	-F	1	P	1240	35	.4	ET
973 HUAN	30	1300		1306	N20	E66	.926	14794	4.5	6	-F	1	C				Y5
974 HUAN	30	1340		1344	N20	E66	.926	14794	4.5	4	-F	1	C				Y5
GRP63975	30	1412+1	1415+6 1427	1435	N20	W25	.533	14785	28.7	23	-F				30	.4	D
HUAN	30	1412	1416	1432	N19	W25	.524	14785	28.7	20	-N	2	C	1416	25	.3	D
MEUD	30	1413	1415	1435	N20	W25	.533	14785	28.7	22	-F		C	1415	30	.4	D
RAMY	30	1420E	1421U	1426D	N20	W26	.533	14785	28.7	6D	-F	3	C		32		FDE
MCMA	30	1426E		1440	N18	W26	.527	14785	28.7	14D	-N		P	1426	25	.3	D
HUAN	30	1426	1427	1432D	N22	W22	.521	14785	29.0	6D	-F	1	P	1427	30	.4	E
976 HUAN	30	1604		1610D	N20	E66	.926	14794	4.6	6D	-F	1	P				Y5
GRP63977	30	1607+2	1610	1622	N22	W23	.531	14785	28.9	15	-N				30	.4	DH
HUAN	30	1607		1628	N22	W22	.521	14785	29.0	21	-N	1	P	1624	30	.4	D
MCMA	30	1609		1622	N21	W23	.521	14785	28.9	13	-B		P	1609	25	.3	DH
MEUD	30	1609	1610	1613	N22	W23	.531	14785	28.9	4	-F		C	1610	30	.4	
GRP63978	30	1654>9	1657 1751	1816	N21	W25	.542	14785	28.8	82	-F						
MCMA	30	1654	1657	1830D	N19	W26	.536	14785	28.8	96D	-N		C	1657	50	.6	E
MEUD	30	1747	1751	1802	N23	W25	.561	14785	28.9	15	-F		C	1751	30	.4	D
979 MCMA	30	1853		1859D	N20	E62	.900	14794	4.4	6D	-F		C	1858	15	.2	D Y5
	30	1859	1935	NO FLARE PATROL													
980 CULG	31	0250	0256	0304	N21	W30	.595	14785	28.9	14	-N		C	0256	30	.4	Y5
GRP63981	31	1104	1111+4	1134	N22	W36	.667	14785	28.8	30	-N				50	.7	EH
MCMA	31	1104	1111	1128	N22	W34	.646	14785	28.9	24	-N		C	1111	50	.7	EH
CATA	31	1105E	1115	1140D	N21	W36	.661	14785	28.8	35D	-B	2		1115	56	.7	
HTPR	31	1116		1118D	N22	W37	.678	14785	28.7	2D	-N		C	1116	50	.7	
GRP63982	31	1125+3	1130+0	1145	N20	E53	.828	14794	5.5	20	-N				30	.5	D
CATA	31	1125	1130	1140D	N20	E52	.819	14794	4.4	15D	-N	2		1130	28	.5	
HTPR	31	1128		1140D	N20	E54	.837	14794	4.5	12D	-B		C	1130	40	.6	
MCMA	31	1128	1130	1145	N20	E54	.837	14794	4.5	17	-N		C	1130	25	.5	D
	31	1515	1519	NO FLARE PATROL													
	31	1801	1816	NO FLARE PATROL													

Hα SOLAR FLARES

MAY 1977

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE 1977 MAY	START	MAX PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	
	31	1902	1908	NO FLARE PATROL													
	31	1942	1953	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_3 in emission.
Q = Flare shows the Balmer continuum in emission.
R = Marked asymmetry in Hα 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 Hα line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

MAY 1977

DAILY FLARE INDICES
Includes all Flares

Date	Flare Index	HR. OBS	Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS
770501	5.62	22.3	770511	5.28	24.0	770521	4.35	23.1
770502	0.00	24.0	770512	5.96	21.8	770522	5.07	23.8
770503	10.15	18.5	770513	0.00	23.4	770523	0.00	24.0
770504	18.68	22.4	770514	0.00	23.9	770524	0.00	23.5
770505	1.98	21.9	770515	0.00	22.8	770525	0.00	22.0
770506	22.38	20.2	770516	5.45	22.9	770526	0.00	23.0
770507	22.65	24.0	770517	0.00	21.2	770527	0.00	24.0
770508	.84	24.0	770518	3.79	19.1	770528	11.05	22.8
770509	3.75	18.9	770519	14.62	23.6	770529	3.38	24.0
770510	0.00	24.0	770520	3.39	23.6	770530	8.83	22.8
						770531	5.18	23.4

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