

SOLAR FLARES

JULY 1959

IIIa

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT	
		JULY 1959	START	END	MAX. PHASE	APPROX.					McMATH FLARE REGION	TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hz		MAX. INT. %
						LAT.	MER. DIST.										
STOCKHOLM	01	1015 E	1035		N16	E69	5248	20 D	1	1	1027	1.20	3.30				
MCMATH	01	1138	1149 D		N17	W65	5227	11 D	1	1	1145		2.00				
{ SAC PEAK	01	1916	1934	1920	N16	W67	5227	18	1	2			2.50		15		
MCMATH	01	1919 E	1930 D		N17	W68	5227	11 D	1	1	1924		2.50				
{ MCMATH	01	2204	2220 D		N17	W60	5227	16 D	1	1	2212		2.50				
{ SAC PEAK	01	2204	2310	2216	N15	W62	5227	66	1	2			3.00		15		
HAWAII	01	2212 E	2220 D		N16	W61	5227	8 D	1	2	2212	3.10	5.20				
{ SAC PEAK	01	2248	2334	2302	N15	E62	5248	46	1	2			4.05		20		
CLIMAX	01	2252	2356	2313 U	N16	E61	5248	64	1		2313	3.70					
HAWAII	02	0030	0038	0032	S17	W02	5234	8	1	3	0032	2.70	2.90				
ARCETRI	02	0942 E	0954 D		N16	W73	5227	12 D	1	3							
{ MCMATH	02	1432	1520	1446	N13	E32	5244	48	1	1	1446		2.00				
LOCARNO	02	1435	1500		N13	E30	5244	25	1	3							
HUANCAYO	02	1437	1458	1442	N13	E33	5244	21	16	2	1442	4.60	5.50	3.20	16		
{ SAC PEAK	02	1438	1502	1446	N13	E31	5244	24	1	2			2.95				
CAPRI S	02	1439 E	1501 D		N15	E33	5244	22 D	1	2	1442	2.00	2.50				
ZURICH	02	1441	1456		N13	E31	5244	15	1	2	1441		5.00				
{ CAPRI G	02	1458 E	1515 D		N12	E29	5244	17 D	1				5.00				
CAPRI G	02	1458 E	1515 D		N18	E53	5248	17 D	1				4.00				
LOCARNO	02	1620	1650		S20	E52	5250	30	1	3							
HUANCAYO	02	1622 E	1653 D	1622	S35	E65	5254	31 D	1	2	1622	1.00	2.60	1.80			
LOCARNO	03	0855 E	0940		N11	E18	5244		16	2							
MCMATH	03	1214	1235	1220	N16	E42	5248	21	1	1	1220		2.10				
MCMATH	03	1952 E	2040 D		N11	E13	5244	48 D	1	1	1952		3.50				
LOCARNO	04	0625 E	0640		N09	E08	5244	15 D	16	2	0625		2.00				
LOCARNO	04	1540	1609	1545	N00	E78	5257	29	16	1	1545		4.00				
MCMATH	04	1810	1835	1815	N10	W04	5244	25	1	1	1825		2.00				
MCMATH	04	1902	1955	1908	N10	W04	5244	53	1	1	1908		2.00			Slow S-SWF	
{ HAWAII	05	0000	0102	0008	S22	W45	5239	62	2	3	0008	6.10	9.20				
LOCKHEED	05	0001	0100	0006	S23	W43	5239	59	1	2		2.40					
CAPRI G	05	0720 E	0727 D		N10	E54	5255	7 D	1				3.00				
CAPRI G	05	0800 E	0815		S12	W50	5234	15 D	1				2.50				
{ WENDEL	05	0950 E	1009 D		N23	W02	5247	19 D	16				4.00				
CAPRI G	05	0952 E	1003		N20	W01	5247	11 D	1				4.00				
WENDEL	05	1053 E	1124 D		N08	W14	5244	31 D	1				3.00				
LOCARNO	05	1310	1350		N07	W17	5244	40	16	2							
WENDEL	05	1431 E	1453 D		N08	W17	5244	22 D	1				3.00				
{ WENDEL	05	1536 E	1702 D		N09	W17	5244	86 D	2				12.00				
SAC PEAK	05	1543	1551 D	1549	N08	W20	5244	8 D	1	1			3.05		17		
LOCARNO	05	1545	1600		N07	W18	5244	15	16	2							
CLIMAX	05	1546	1608	1551 U	N07	W22	5244	22	1		1551	2.70					
CAPRI G	05	1546	1650 D		N10	W17	5244	64 D	2				8.00				
CAPRI S	05	1548 E	1628 D		N09	W17	5244	40 D	2	3	1617	4.60	4.80				
CLIMAX	05	1619	1653 D	1641 U	N10	W16	5244	34 D	1		1641	4.80					
MCMATH	05	1625 E	1730 D		N10	W17	5244	65 D	1	1	1635		2.00				
SAC PEAK	05	1900 E	1921	1905	N10	W20	5244	21 D	1	1			2.25		15		
MITAKA	05	2330	2350 D	2345	N08	W24	5244	20 D	1	1	2345	1.03	1.10	1.60	115	S-SWF	
ZURICH	06	0655 E	0710		N08	W27	5244	15 D	1	3	0655		5.00				

SOLAR FLARES

JULY 1959

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX.		McMATH FLARE REGION				TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
					LAT.	MER. DIST.										
ARCETRI	06	0815 E	0818 D		N16	W22	5244	3 D	1	3						
MCMATH	06	1305 E	1345 D		N11	W26	5244	40 D	1	1	1330		2.00			
MCMATH	06	1740	1800 D		N10	W30	5244	20 D	1	1	1743		2.00			
MCMATH	06	1922	1945 D	1934	N10	W30	5244	23 D	1	1	1934		2.00			
NIZAMIAH	07	0425 E	0427 D		N11	W39	5244	2 D	1	2	0425	1.82	2.34	1.30		
MITAKA	07	0527	0535	0528	N10	W40	5244	8	1	1	0528	.82	1.03	2.45	149	
CAPRI G	07	0532 E	0543 D		N09	W41	5244	11 D	1				2.00			
SIMEIZ	07	0718 E	0734 D	0720 U	N16	E42	5260	16 D	1	1	0720			1.90		
CAPRI G	07	0723 E	0726 D		N17	E40	5260	3 D	1				2.50			
ZURICH	07	1023	1036		N17	W11	5248	13	1	2	1023		2.00			
CAPRI G	07	1025 E	1042		N17	W10	5248	17 D	1				4.00			
CAPRI G	07	1027 E	1042		N11	W36	5244	15 D	1				3.00			
ZURICH	07	1249	1254 D		N11	W36	5244	5 D	1	2	1249		1.00			
CAPRI G	07	1303 E	1318		N15	E90	5265	15 D	1							
LOCARNO	07	1545	1555		N12	W35	5244	10	1	1	1550		1.00			
MITAKA	08	0521 E	0528 D		N12	W47	5244	7	1	1	0521	1.23	1.70			
WENDEL	08	0620 E	0633		N12	W51	5244	13 D	1				3.00			
WENDEL	08	0729 E	0746		N09	W47	5244	17 D	16				5.00			
KRASNYA	08	0818	0843 D	0829	N10	W48	5244	25 D	2							
ARCETRI	08	0820	0927		N09	W52	5244	69	2	3	0837	6.60	10.70			
CAPRI G	08	0821	0940		N11	W47	5244	79	2		0830		9.00			
CAPRI S	08	0822	0937		N11	W50	5244	75	2	3	0844	6.50	10.10			
WENDEL	08	0822 E	0946		N10	W47	5244	84 D	2				9.00			
ZURICH	08	0823	0937		N10	W52	5244	14	2	3	0841		9.00			Slow S-SWF
ATHENS	08	0824 E	0910 D		N10	W50	5244	46 D	36							
UTRECHT	08	0826 E	0831		N12	W48	5244	5 D	2							
WENDEL	08	0827 E	0939		N13	W53	5244	72 D	16				7.00			
R O HERST	08	0855 E	0922	0901	N12	W55	5244	27 D	1	2	0901	1.20	1.90			
STOCKHOLM	08	0908 E	0950		N15	W49	5244	42 D	1	3	0910	2.00	3.40			
MCMATH	08	1044 E	1130 D		N13	W50	5244	46 D	1	1	1055		2.10			
HUANCAYO	08	1445 E	1453	1447	N18	E77	5265	8 D	1	2	1447	.70	3.50	2.70		G-SWF
HUANCAYO	08	1548 E	1606	1549	N16	E71	5265	18 D	1	2	1549	1.60	5.00	2.20		
ZURICH	08	1625	1630		N17	E80	5265	5	1	3	1625		4.00			
HUANCAYO	08	2025 E	2055	2037	N16	E75	5265	30 D	1	2	2037	1.40	4.90	3.10		
MITAKA	08	2359 E	2413 D	2400	N09	W61	5244	14 D	1	1	2359	.77	1.50	1.98	113	
MITAKA	09	0314	0327	0317	N08	W60	5244	13	1	1	0325	1.54	3.20	1.57	103	
SIMEIZ	09	0642 E	0715 D	0647 U	N05	W70	5244	33 D	1	1	0649		2.50	1.50	72	
ZURICH	09	0645	0655		N05	W68	5244	10	1	3	0645		2.00			
CAPRI G	09	0645 E	0700		N06	W69	5244	15 D	1							
SIMEIZ	09	0710	0720	0713	N16	W46	5248	10	1	1	0713		2.80		64	
ZURICH	09	0712	0720		N17	W44	5248	8	1	3	0712		1.00			
CAPRI G	09	0713 E	0719		N16	W43	5248	6 D	1				2.00			
CAPRI G	09	0713 E	0720 D		N16	E70	5269	7 D	1							
ARCETRI	09	0804 E	0913 D		N16	E71	5269	69 D	16	3	0850	1.70	5.10			G-SWF
CAPRI G	09	0828 E	0850		N15	E70	5269	22 D	1				4.00			
CAPRI G	09	0835 E	0842		N16	W00	5260	7 D	1				2.00			
ZURICH	09	0929	0936		N17	E68	5269	7	1	3	0929		5.00			
MCMATH	09	1150 E	1230 D		N12	W66	5244	40 D	1	1	1205		2.10			
WENDEL	09	1250 E	1306 D		N19	W46	5248	16 D	1				3.00			
CAPRI G	09	1254 E	1302		N17	W45	5248	8 D	1				2.00			

SOLAR FLARES

JULY 1959

III

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	LAT.	MER. DIST.	MC MATH PLAGE REGION				TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _z	MAX. INT. %	
{ WENDEL	09	1413 E	1429		N17	E68	5269	16 D	1				3.00			S-SWF
{ LOCARNO	09	1413	1458		N17	E66	5269	45	16	1	1426		3.00			
{ WENDEL	09	1734 E	1749 D		N12	W64	5244	12 D	16				5.00			
{ MCMATH	09	1750 E	1810 D		N10	W71	5244	20 D	1	1	1758		2.10			
{ MCMATH	09	1810	1830 D	1815	N14	E67	5269	20 D	1	1	1815		3.50			
{ MCMATH	09	1840	1930 D	1856	N14	E67	5269	50 D	1	1	1856		2.00			
{ MCMATH	09	1930	2320 D	1940	N14	E67	5269	230 D	2	1	1955		5.00			
{ LOCKHEED	09	1933	2010 D	1956	N19	E70	5269	37 D	16	2		2.40				
{ HAWAII	09	1937 E	2122	1959	N19	E67	5269	105 D	26	3	1959	10.30	23.70			S-SWF
{ HUANCAYO	09	1944 E	2104	2001	N21	E65	5269	80 D	2	2	2001	4.70	11.10	5.40		S-SWF
{ SAC PEAK	09	2024 E	2250 D	2025	N18	E67	5269	146 D	1	2			3.15		20	S-SWF
{ HAWAII	09	2226	2232	2228	N18	E65	5269	6	1	3	2228	2.10	4.70			
{ MCMATH	09	2115 E	2155 D	2130	N19	E48	5265	40 D	1	1	2130		2.00			
{ MCMATH	09	2155	2320 D	2230	N21	E55	5265	85 D	1	1	2230		3.00			
{ SYDNEY	10	0210 E	0510 D	0240	N22	E70	5265	180 D	36							Slow S-SWF
{ TASHKENT	10	0216 E			N18	E61	5265		36							G-SWF
{ CAPRI G	10	0514 E	0600		N08	W79	5244	46 D	16				32.00			
{ CAPRI G	10	0514 E	0730		N16	E59	5265	136 D	36				65.00			
{ SIMEIZ	10	0539 E	0908 D	0908 U	N21	E60	5265	209 D	3	1	0555		18.00	1.80	128	
{ LOCARNO	10	0555 E	0900		N15	E60	5265	185 D	3	1	0710		22.00			
{ CAPRI S	10	0600 E	0710 D		N20	E53	5265	70 D	3	3	0638	12.00	10.00			
{ WENDEL	10	0604 E			N18	E54	5265		2				5.00			
{ ARCETRI	10	0827 E	0836 D		N18	E50	5265	9 D	1	3	0836	3.30	2.00			
{ MCMATH	10	1049 E	1200 D		N16	E48	5265	71 D	1	1	1100		2.00			
{ ZURICH	10	1319	1325		N18	E58	5265	6	1	3	1319		2.00			
{ WENDEL	10	1356 E	1434 D		N12	W74	5244	38 D	1				3.00			S-SWF
{ WENDEL	11	0555 E	0734 D		N14	E46	5265	99 D	16				6.00			
{ ARCETRI	11	0810 E	0955 D		S14	E16	5264	105 D	2	3	0842	5.00	5.50			
{ LOCARNO	11	0825 E	0925		S14	E15	5264	60 D	2-	1	0830		4.00			
{ ZURICH	11	0838 E	0924 D		S14	E17	5264	46 D	2	1	0838		7.00			
{ STOCKHOLM	11	0902 E	1010		S14	E16	5264	68 D	1	2	0914	2.50	2.70			
{ ARCETRI	11	0840 E	0853 D		N13	W90	5244	13 D	1	3	0853	.60	1.00			
{ LOCARNO	11	0850 E	0908		N17	E45	5265	18 D	1	1	0850		4.50			
{ STOCKHOLM	11	0902 E	0945		N15	E44	5265	43 D	1	2	0920	3.00	1.00			
{ ZURICH	11	0923 E	0924 D		N16	E42	5265	1 D	1	1	0923		1.00			
{ LOCARNO	11	0925	0950	0933	N17	E44	5265	25	1	1	0933		6.00			S-SWF
{ LOCARNO	11	0928	1032	0940	S14	E14	5264	64	2-	1	0940		2.20			
{ CAPRI S	11	0932 E	1004 D		S14	E16	5264	32	1	3	0939	2.00				
{ LOCARNO	11	0938	1006		S25	E78	5273	28	16	1			5.00			
{ WENDEL	11	1056 E	1105 D		N16	E43	5265	9 D	16				2.10			
{ MCMATH	11	1630	1730 D	1702	N16	E45	5265	60 D	1	1	1702		3.00			
{ MCMATH	11	1905 E	1950 D		N08	W57	5271	45 D	1	1	1925		4.00			
{ MCMATH	11	2019 E	2029 D		N16	E40	5265	10 D	1	1	2022					
{ CLIMAX	11	2058	2130	2107 U	N14	E38	5265	32	1		2107	5.10	3.00			
{ MCMATH	11	2101	2150 D	2111	N15	E40	5265	49 D	1	2	2111		3.00			
{ MCMATH	11	2206	2255	2208	N15	E40	5265	49	1	2	2208		2.00			S-SWF
{ CAPRI G	12	0512 E	0525		N06	W58	5271	13 D	1				5.00			
{ CAPRI G	12	0512 E	0535		S26	E70	5273	23 D	1				10.00			
{ CAPRI G	12	0512 E	0540		N19	E27	5265	28 D	2							
{ CAPRI G	12	0534	0544		N26	E90	5277	10	1							

SOLAR FLARES

JULY 1959

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX.		McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
					LAT.	MER. DIST.										
{ SIMEIZ CAPRI G	12	0623	0647 D	0625 U	N06	W60	5271	24 D	1	1	0630		2.50	2.30	100	S-SWF
	12	0628 E	0640 D		N06	W58	5271	12 D	1				2.00			
	12	0623 E	0650 D	0640 U	N20	E35	5265	27 D	1&	1	0637		11.70	3.60	140	
	12	0636 E	0655		N18	E35	5265	19 D	1				3.00			
{ CAPRI G ATHENS WENDEL	12	0636 E	0656		N18	E35	5265	20 D	2							S-SWF
	12	0640 E	0656		N15	E33	5265	16 D	1&				5.00			
	12	0640 E	0650 D	0642 U	N16	E89	5274	10 D	1&	1	0642		7.00		88	
	12	0642 E	0656		N16	E32	5265	14 D	1	1	0642	1.53	1.94	1.86	120	
{ MITAKA MITAKA SIMEIZ	12	0642 E	0647		N16	W89	5248	5 D	1	1	0642	1.03				
	12	0835	0850	0844	N07	W62	5271	15 D	1	1	0844		4.00		96	
	12	0843 E	1000 D		S14	E02	5264	77 D	1	3						
	12	0907 E	1000 D		N17	E33	5265	53 D	1	3						
{ LOCARNO WENDEL CAPRI G	12	0950 E	1012		N16	E29	5265	22 D	1&	2	0950		2.00			
	12	0923 E	1002		N16	E31	5265	39 D	1&				6.00			
	12	0915 E	0920		S26	E65	5273	5 D	1				3.00			
	12	0936	1000 D		S11	E01	5264	24 D	1	3	0943	2.20	2.20			
{ WENDEL CAPRI G LOCARNO	12	0936 E	1004		S13	E01	5264	28 D	1&				7.00			
	12	0944 E	1005		S13	E02	5264	21 D	1				3.50			
	12	0950 E	1008		S13	E02	5264	18 D	2-	2	0950		4.00			
	12	1006	1010		N26	E90	5277	4	1							
{ LOCARNO CAPRI G CAPRI G	12	1050	1110	1055	N06	W62	5271	20	1	2	1055		1.00			
	12	1058 E	1105		N06	W60	5271	7	1				2.00			
	12	1148 E	1155 D		N10	E90	5280	7	1							
	12	1148 E	1300 D		S15	W01	5264	72 D	1	2	1157		2.00			
{ MCMATH LOCARNO LOCARNO	12	1148 E	1330 D		N16	E30	5265	102 D	1	2	1157		3.00			
	12	1215 E	1320 D		N16	E28	5265	65 D	1	2	1220		3.00			
	12	1250	1302	1255	N07	W64	5271	12 D	1	2	1255		1.00			
	12	1258 E	1340 D		N17	E30	5265	42 D	1				4.00			
{ CAPRI G CAPRI S MCMATH	12	1300 E	1340 D		N18	E30	5265	40 D	1	2	1336	1.70	2.00			
	12	1410 E	1515	1425	N16	E30	5265	65 D	2	1	1425		6.00			
	12	1419 E	1540 D	1451	S15	W01	5264	81 D	1	1	1451		2.50			
	12	1455 E	1510 D		S13	W01	5264	15 D	1							
{ MCMATH CAPRI G MCMATH	12	1629	1700 D	1633	S14	W03	5264	31 D	1	1	1633		3.00			
	12	1637 E			N26	E90	5277		1							
	12	2006	2105	2015	N08	W70	5271	59	1	2	2015		2.00			S-SWF
	12	2020	2200	2105	S14	W06	5264	100	2	2	2105		5.00			
{ MCMATH HAWAII SAC PEAK	12	2105 E	2124	2105	S12	W11	5264	19 D	1	3	2105	3.10	3.30			
	12	2152	2334 D	2230 U	N18	E26	5265	102 D	2	1			12.35		18	
	12	2154	2245 D	2240	N17	E25	5265	51 D	3	2	2240		13.00			
	12	2154	2335	2230	N20	E23	5265	101	2	2		7.30				G-SWF
{ LOCKHEED HAWAII SAC PEAK	12	2220	2254	2230	N18	E26	5265	34	2	3	2230	11.50	13.30			
	12	2246	2256	2250	S23	E58	5273	10	1	1			2.15		14	
	12	2315 E	2353 D		N19	E25	5265	38 D	2		2331	6.70				
	13	0626	0704 D		N14	E20	5265	38 D	1&				5.00			Slow S-SWF
{ WENDEL LOCARNO LOCARNO	13	0914	0925	0920	N16	E16	5265	11	1	2	0920		2.00			
	13	0955 E	1010 D		N16	E16	5265	15 D	1&	2	1000		4.00			
	13	0956	1006 D		N15	E16	5265	10 D	1	2	0956		3.00			
	13	0957 E	1004 D		N15	E16	5265	7 D	1&	1	0957	2.43	2.56	1.70		
{ NIZAMIAH ARCETRI CAPRI G	13	1004 E	1011 D		N16	E20	5265	7 D	1	3						
	13	1006 E	1009		N16	E16	5265	3 D	1				2.00			
	13	1029	1040 D		N05	W77	5271	11 D	1							
	13	1031 E	1108 D		N05	W73	5271	37 D	1	3	1035	1.00	3.70			

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

JULY 1959

III

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
					APPROX.		McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
		LAT.	MER. DIST.	START	END	MAX. PHASE										
CAPRI G	13	1032 E	1043		N06	E74	5280	11 D	1							
CAPRI G	13	1035 E	1113 D		N17	E18	5265	38 D	1				3.00			
WENDEL	13	1050 E	1118 D		N19	E21	5265	28 D	1				4.00			
MCMATH	13	1050 E	1230		N16	E17	5265	100 D	16	1	1055		4.00			
WENDEL	13	1050 E	1056 D		N07	W78	5271	6 D	1				4.00			
CAPRI G	13	1106 E	1120 D		N06	E74	5280	14 D	1							
MCMATH	13	1200	1225	1208	S26	E55	5273	25	1	2	1208		2.00			
LOCARNO	13	1255 E	1355	1320	N16	E15	5265	60 D	16	2	1320		5.00			
MCMATH	13	1258	1430	1309	N16	E15	5265	92	1	1	1309		2.00			
ZURICH	13	1300 E	1338 D		N17	E14	5265	38 D	1	2	1323		3.00			
CAPRI G	13	1309 E	1350 D		N17	E16	5265	41 D	1				5.00			
LOCARNO	13	1320	1340	1325	N13	E79	5280	20	1	2	1325		2.00			
ZURICH	13	1325	1338 D		N13	E80	5280	13 D	1	2	1325		2.00			
MCMATH	13	1450	1550	1510	N16	E15	5265	60	1	1	1510		2.10			
MCMATH	13	1825	1850 D		S27	E50	5273	25 D	1	1	1840		2.00			
MCMATH	13	1901 E	2303 D	2000	S25	E48	5273	242 D	2	1	2000		6.00			
SAC PEAK	13	1920	2130 D	2016 U	S24	E47	5273	130 D	2	2			5.70		18	
LOCKHEED	13	1930	2210	2015	S15	E50	5273	160	1	3		2.70				Slow S-SWF
CLIMAX	13	2012 E	2044 D		S23	E45	5273	32 D	2		2044	5.20				
HUANCAYO	13	2014 E	2112 D	2044	S21	E39	5273	58 D	26	2	2044	9.40	13.50	2.50		
NIZAMIAH	14	0325 E	0444 D		N17	E06	5265	79 D	3	1	0340	18.23	18.77	3.30		
TASHKENT	14	0342 E	0434 D	0349	N16	E07	5265	52 D	36							
ONDREJOV	14	0425 E	0545		N16	E05	5265	80 D	3							
LOCARNO	14	0445 E	0810 D		N17	E06	5265	205 D	36	2	0610		28.00			S-SWF
CAPRI G	14	0452 E	0720		N15	E00	5265	148 D	36		0530		30.00			
WENDEL	14	0520 E	0936 D		N26	E13	5270	256 D	16				7.00			
WENDEL	14	0520 E	1121 D	0527 U	N15	E01	5265	361 D	36				72.00			
SIMEIZ	14	0553 E	0945 D	0945 U	N17	E02	5265	232 D	3	2	0553		50.00	2.00	148	
AROSA	14	0555 E	0600 D		N19	E01	5265	5 D	3							
CAPRI S	14	0600 E	0730 D		N13	E00	5265	90 D	2	3	0608	12.00	12.50			
SCHAUINS	14	0640 E	0901		N18	W01	5265	141 D	3							
ZURICH	14	0716 E	0730		N12	E05	5265	14 D	1	3	0716		2.00			
ZURICH	14	0716 E	0740		N23	E04	5270	24 D	1	3	0716		1.00			
ZURICH	14	0748	0818		N23	E04	5270	30	1	3	0748		1.00			
ARCETRI	14	0840 E	0846 D		N26	E13	5270	6 D	1	3	0840	2.10	2.30			
ARCETRI	14	0840 E	0958 D		N17	E03	5265	78 D	1	3	0840	4.00	4.00			
WENDEL	14	0922 E	0936 D		N30	E65	5277	14 D	1				3.00			
LOCARNO	14	1140 E	1145 D		N11	E07	5265	5 D	16	2	1140		3.00			
WENDEL	14	1145 E	1148 D		N12	E10	5265	3 D	1				4.00			
CAPRI G	14	1146 E	1158		N13	E05	5265	12 D	1				2.00			
MCMATH	14	1230	1320	1236	N15	E01	5265	50	1	2	1236		2.00			
ZURICH	14	1333	1337		N15	W00	5265	4	1	3	1333		1.00			
MCMATH	14	1332	1350 D	1337	N03	E25	5272	18 D	1	1	1337		2.20			
ZURICH	14	1333	1352		N03	E24	5272	19	16	3	1333		5.00			
CAPRI S	14	1334	1350		N04	E24	5272	16	1	3	1340	2.80	3.10			
CAPRI G	14	1338 E	1350		N04	E24	5272	12 D	16				5.00			
SAC PEAK	14	1344 E	1348 D	1344 E	N03	E25	5272	4 D	1	2			3.65		15	
CLIMAX	14	1400	1558	1442 U	S28	E36	5273	118	3		1442	14.40				
CAPRI S	14	1400	1605 D		S23	E40	5273	125 D	3	3	1454	15.00	22.00			
CAPRI G	14	1405 E	1615		S27	E38	5273	130 D	2				10.00			
R O HERST	14	1408 E	1543	1426	S25	E35	5273	95 D	2	2	1426	3.60	5.30			
MCMATH	14	1420 E	1730		S26	E37	5273	190 D	3	2	1435		13.00			Slow S-SWF

SOLAR FLARES

JULY 1959

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX.		McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _a	MAX. INT. %	
					LAT.	MER. DIST.										
↑ HUANCAYO NEDERHORST WENDEL LOCKHEED SAC PEAK MCMATH SAC PEAK MCMATH LOCKHEED	14	1425 E	1700 D	1500	S21	E36	5273	155 D	3	2	1500	20.50	28.20	2.40		
	14	1447 E	1525		S25	E37	5273	38 D	2							
	14	1451 E			S22	E31	5273		36				25.00			
	14	1527 E	1630		S26	E35	5273	63 D	2	2	1540	7.50				
	14	1548 E	1636 U	1548 E	S25	E36	5273	48 D	2	2			7.15		15	
	14	1730	1750 D	1737	N13	E02	5265	20 D	1	2	1737		2.20			S-SWF
	14	1730	1756	1738	N12	E02	5265	26	1	2					18	
	14	2203	2255	2230	N13	W01	5265	52	1	3	2230		2.50			G-SWF
	14	2205	2256	2228	N13	W02	5265	51	1	2		3.50				
	{ SIMEIZ CAPRI G CAPRI S CAPRI G CAPRI S CAPRI S MCMATH SAC PEAK CAPRI G CAPRI G MCMATH HAWAII MCMATH HAWAII LOCKHEED CLIMAX MCMATH MCMATH LOCKHEED MCMATH HAWAII SAC PEAK HAWAII	15	0640 E	0713 D	0657 U	N13	W06	5265	33 D	1	1	0657		5.00		120
15		0641 E	0710		N12	W05	5265	29 D	1				3.00			
15		0648 E	0712 D		N12	W05	5265	24 D	1	3	0653	2.00	2.00			
15		1024 E	1120		N16	W08	5265	56 D	2				6.00			
15		1251	1333		N16	W11	5265	42	1	2	1307	2.50	2.60			
15		1300	1445	1312	N15	W15	5265	105	26	2	1312		9.00			
15		1302 E	1346	1312	N15	W14	5265	44 D	16	2			5.10		18	S-SWF
15		1305 E	1350		N16	W10	5265	45 D	2				6.00			
15		1409 E	1425		N11	W09	5265	16 D	1				3.00			
15		1800 E	1825 D		N18	W17	5265	25 D	1	1	1805		2.50			
15		1802 E	1804 D		N19	W17	5265	2 D	1	1	1802	3.40	3.70			
15		1902 E	1932 D		S30	E20	5273	30 D	1	1	1911		2.20			
15		1908 E	1914 D		S28	E18	5273	6 D	1	1	1908	3.10	3.90			
15		1923	1951	1927	N05	W14	5265	28	16	2		4.30				
15		1924	1938 D		N11	W13	5265	14 D	1		1926	4.00				S-SWF
15		1929 E	1945 D		N12	W19	5265	16 D	16	1	1929		4.00			
15		2135 E	2220 D		N17	W18	5265	45 D	2	1	2155		6.00			
15		2234	2256	2245	N16	W19	5265	22	1	2		3.20				G-SWF
15		2238	2255 D	2245	N16	W19	5265	17 D	2	1	2245		6.00			
15		2318	2352 D	2324	N15	W22	5265	34 D	1	3	2324	2.20	2.40			
15	2334 E	2352	2334 E	N14	W21	5265	18 D	1	2			3.45		14		
15	2358	0010		N19	W21	5265	12	1	2	2402	2.10	2.30				
{ MITAKA MITAKA LOCARNO MITAKA SIMEIZ CAPRI G MITAKA CAPRI S LOCARNO STOCKHOLM STOCKHOLM SAC PEAK MCMATH MEUDON LOCARNO R O HERST SAC PEAK MCMATH CAPRI S CAPRI G	16	0419 E	0428	0425	N15	W21	5265	9 D	1	1	0422	5.14	5.50	1.52	100	
	16	0549	0554		N15	W25	5265	5	1	1	0549	3.08	3.36	2.93	107	
	16	0555 E	0610 D		N15	W24	5265	15 D	16	4						
	16	0602 E	0616 D		N14	W26	5265	14 D	1	1	0607	1.03	1.13	1.89	98	
	16	0636 E			N17	W23	5265		16	1	0637		8.10	3.00	80	
	16	0636	0735		N15	W21	5265	59	2				5.00			
	16	0639	0742		N15	W19	5265	63	2	1	0639	6.17	6.66	2.08	165	
	16	0640 E	0740 D		N15	W19	5265	60 D	16	2	0709	4.00	4.40			
	16	0640 E	0800		N15	W20	5265	80 D	2-	3	0640		7.00			
	16	0929	0945		N17	W23	5265	16	2	3	0934	5.00	6.00			
	16	1036	1110		N17	W23	5265	34	1	3	1042	3.00	3.60			
	16	1308	1320	1314	N17	W31	5265	12	1	3			2.33		15	
	16	1309 E	1350 D		N16	W27	5265	41 D	1	1	1311		4.00			
	16	1336	1519	1407	N23	W20	5265	103	2							
	16	1343	1345	1400	N20	W23	5265	2	26	3	1400		6.00			
	16	1352	1413	1401	N18	W26	5265	21	1	2	1401	1.80	2.10			
	16	1352	1416	1358	N22	W27	5265	24	2	3			6.10		17	
	16	1352	1500 D	1358	N18	W28	5265	68 D	2	1	1358		10.00			
	16	1358 E	1422 D		N23	W24	5265	24 D	1	2	1404	3.00	3.60			
	16	1405 E	1425		N22	W24	5265	20 D	1				5.00			

SOLAR FLARES

JULY 1959

811

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX.		McMATH FLARE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
					LAT.	MER. DIST.										
LOCARNO	16	1525	1600		N15	W29	5265	35	1	3						
MCMATH	16	1555	1622 D	1618	N15	W30	5265	27 D	3	1	1618		14.00		24	
SAC PEAK	16	1604 U	1640	1616	N13	W33	5265	36 U	3	3			13.25			
MEUDON	16	1604	1645	1615	N15	W20	5265	41	2							
LOCKHEED	16	1607	1637	1615	N12	W25	5265	30	2	2		7.50				S-SWF
LOCARNO	16	1607	1715		N10	W27	5265	68	2G	3	1610		6.00			
CAPRI G	16	1608	1630		N11	W27	5265	22	2				6.00			
CLIMAX	16	1608	1642 D	1615 U	N13	W24	5265	34 D	2		1615	7.80				
CAPRI G	16	1630 E	1650 D		N14	W28	5265	20 D	1				2.00			
MCMATH	16	1725 E	1750 D		N21	W28	5265	25 D	1	1	1726		2.00			
CLIMAX	16	2114	2237 D	2131 U	N11	W30	5265	83 D	3		2131	21.80				S-SWF
LOCKHEED	16	2115	2430	2129	N16	W29	5265	195	3	2		22.20				
MCMATH	16	2118	2320 D	2125	N17	W30	5265	122 D	3G	1	2135		40.00			
SIMEIZ	17	0607 E	0838		N19	W44	5265	151 D	1				2.50		148	
LOCARNO	17	0620	0645		N15	W35	5265	20	1	2	0630		2.00			
SIMEIZ	17	0620	0659	0627	N16	W39	5265	39	1	2	0626		1.70	2.00	220	
CAPRI G	17	1222 E	1228		N21	W51	5265	6 D	1				2.50			
CAPRI G	17	1222 E	1235		N21	W36	5265	13 D	1				4.00			
MCMATH	17	1239 E	1330 D		N18	W42	5265	51 D	1	1	1241		2.00			
ZURICH	17	1245 E	1253		N16	W42	5265	8 D	1	2	1245		2.00			
ZURICH	17	1245 E	1254		N23	W35	5265	9 D	1	2	1245		2.00			
LOCARNO	17	1255	1310		N15	W38	5265	15	1	2	1230		2.00			
ZURICH	17	1302	1311		N16	W42	5265	9	1	2	1302		1.00			
ZURICH	17	1339	1403		N10	W39	5265	24	1	2	1339		3.00			
CLIMAX	17	1340	1356	1341 U	N12	W38	5265	16	1		1341	2.10				
LOCARNO	17	1340	1415	1350	N15	W38	5265	35	1G	2	1350		3.00			
CAPRI S	17	1341	1404		N12	W36	5265	13	1	3	1345	2.00	2.50			
MCMATH	17	1341 E	1415	1345	N12	W40	5265	34 D	1G	1	1352		4.00			
CAPRI G	17	1344 E	1405		N13	W38	5265	21 D	1				4.00			
LOCARNO	17	1615	1640		N15	W38	5265	25	1	2	1620		1.00			
LOCARNO	17	1705 E	1710 D		N10	E28	5280	5 D	1	2						
ZURICH	17	1706	1718		N08	E28	5280	12	1	2	1706		1.00			
ZURICH	17	1722	1732		N16	W43	5265	10	1	2	1722		2.00			
HAWAII	17	1828	1840 D	1830	N19	W41	5265	12 D	1	2	1830	3.30	4.60			
LOCKHEED	17	1939	2005	1948	N21	W42	5265	26	1	2		2.60				
SIMEIZ	18	0620	0630	0624	N10	W63	5265	10 D	1G	2	0623		8.40	2.60	156	
CAPRI S	18	0623	0630 D		N20	W60	5265	7 D	1	3	0624	2.00	4.40			
ZURICH	18	0721 E	0728		N24	W61	5265	7 D	1	3	0721		1.00			
ZURICH	18	0724	0728		N16	E24	5280	4	1	3	0724		2.00			
SIMEIZ	18	0739	0812	0743	N20	W62	5265	33 D	1G				5.60		92	
SIMEIZ	18	0843	0849	0846	N14	W55	5265	6	1				3.06		156	
ARCETRI	18	0852	0908		N15	E24	5280	16	1	3	0901	2.50	2.70			
CAPRI G	18	0856 E	0905		N13	E23	5280	9 D	1				2.50			
SCHAUINS	18	0858 E	0913		N13	E23	5280	15 D	2							
SIMEIZ	18	0859	0912	0855	N15	E25	5280	13 D	1				3.00		156	
DUNSINK	18	0901 E	0906	0901	N12	E23	5280	5 D	1	1	0901	3.75	4.07	1.65		
ZURICH	18	0932	0956		N24	E08	5277	24	1	3	0932		1.00			
ZURICH	18	1105 E	1120		N20	W51	5265	15 D	1	3	1105		3.00			
STOCKHOLM	18	1144	1205		N32	W85	5265	21	2			1.50	10.10			
LOCARNO	18	1237	1245	1230	N20	W65	5265	8	1	2	1230		2.00			
LOCARNO	18	1537	1545		N16	E20	5280	8	1	2	1540		2.00			

SOLAR FLARES

JULY 1959

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT	
		START	END	MAX. PHASE	APPROX.		McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %		
					LAT.	MER. DIST.											
CAPRI G HAWAII LOCKHEED HAWAII	18	1540 E	1550		N18	W68	5265	10 D	1				3.00			S-SWF	
	18	1800 E	1844	1802	N15	W58	5265	44 D	1	3	1802	2.90	5.50				
	18	2212	2240	2218	N13	E20	5280	28	1	2		2.40					
	18	2216	2240	2224	N13	E19	5280	24	1	3	2224	2.60	2.80				
LOCKHEED HAWAII CAPRI G SIMEIZ LOCARNO SIMEIZ	19	0032	0130	0049	N13	E18	5280	58	1	2		3.60					
	19	0040	0200 D	0103	N11	W17	5274	80 D	26	3	0103	16.50	17.30				
	19	0511 E	0522 D		N32	E04	5277	11 D	1				3.00				
	19	0650 E	0710 D		N29	E35	5283	20 D	1	1			3.50		88		
	19	0700 E	0720		N28	E32	5283	20 D	1		3	0700		1.00			
	19	0840 E	0850 D	0842 U	N20	E80	5286	10 D	1					4.00		92	
MITAKA MITAKA CAPRI G SIMEIZ MITAKA SIMEIZ ZURICH ZURICH LOCARNO SAC PEAK LOCARNO CLIMAX MEUDON HUANCAYO CAPRI G CAPRI G CAPRI S CAPRI G WENDEL CAPRI G SIMEIZ CAPRI G CAPRI G CAPRI G ZURICH ARCETRI LOCARNO WENDEL HAWAII MCMATH CAPRI G MCMATH ZURICH CAPRI S WENDEL CAPRI G LOCARNO WENDEL MCMATH	20	0411	0445 D	0414	S28	W39	5273	34 D	1	1	0414	1.54	2.25	1.78	100		
	20	0412	0445 D	0414	S23	W42	5273	33 D	1	1	0429	2.06	2.93	1.60	100		
	20	0604 E	0615		N18	W90	5265	11 D	1								
	20	0605 E	0612 D		N22	W90	5265	7 D	1	1						116	
	20	0609	0621		N23	W88	5265	12	1	1	0611	4.11		3.68	134		
	20	0759 E	0809 D	0805 U	N21	W90	5265	10 D	1							88	
	20	0840	0853		N14	W06	5280	13	1	3	0840		3.00				
	20	1349	1350 D		S15	E66	5287	1 D	1	1	1349		1.00				
	20	1350	1405		S15	E63	5287	15	1	3							
	20	1524	1700 U	1600	N14	W46	5274	96 U	2	2			6.85		17		
	20	1525	1600 D	1545	N15	W44	5274	35 D	26	4							
	20	1526	1620 D		N12	W47	5274	54 D	1		1608	4.10					
	20	1526	1715		N17	W40	5274	109	2								
	20	1527 E	1646	1530	N21	W40	5274	79 D	1	2	1530	3.30	4.40	2.40			
	20	1534 E	1555		N17	W80	5265	21 D	1								
	20	1534 E	1620		N18	W44	5274	46 D	2					7.00			
	20	1534 E	1635 D		N13	W45	5274	61 D	2	3	1620	5.00	7.20				
	20	1610 E	1635 D		N12	W41	5274	25 D	1					4.00			
20	1619	1653 D		N11	W44	5274	34 D	16					5.00				
													1.00				
	21	0539 E	0555		N20	W90	5265	16 D	1								
	21	0656 E			N20	W85	5265		1	1							
	21	0658 E			N20	W82	5265		1								
	21	1020 E	1035		S10	E90	5289	15 D	1								
	21	1020 E	1100 D		S13	E50	5287	40 D	16								
	21	1021	1050		S16	E53	5287	29	1	3	1021		5.00				
	21	1021	1050		S16	E53	5287	29	1				4.00				
	21	1028 E	1046 D		S16	E55	5287	18 D	1	3							
	21	1035 E	1100 D		S15	E54	5287	25 D	1	2							
	21	1609 E	1632 D		S16	E50	5287	23 D	1				3.00				
	21	1940	2002	1944	S17	E90	5289	22	16	3	1944	2.10					
	21	1949 E	2014 D		S20	E90	5291	25 D	1	1							
	22	1106 E	1125		N24	W90	5265	19 D	1				1.00				
	22	1223	1345		N19	W56	5274	82	1	1	1246		3.00				
	22	1225 E	1310	1242	N16	W57	5274	45 D	2	2	1242		8.00				
	22	1227	1307 D		N15	W52	5274	40 D	1	3	1257	2.00	3.50				
	22	1226 E	1340 D		N15	W43	5280	74 D	16				6.00				
	22	1242 E	1345		N15	W51	5280	63 D	16				6.00				
	22	1250 E	1320		N22	W53	5280	30 D	16	2							
	22	1526 E	1654		S09	E85	5289	88 D	2				9.00				
	22	1528	1550	1536	S18	E85	5289	22	1	1	1536		2.00				G-SWF

SOLAR FLARES

JULY 1959

III

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT			
		START	END	MAX. PHASE	APPROX.		McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %				
					LAT.	MER. DIST.													
LOCARNO CAPRI G HAWAII HAWAII	22	1530	1553		S15	E74	5289	23	1	2						Slow S-SWF			
	22	1545 E	1550 D		S17	E77	5289	5 D	1										
	22	2026	2106	2036	S20	E31	5287	40	1	3	2036	2.70	3.50						
	22	2354	2358 D	2354	N17	W37	5280	4 D	1	2	2354	2.50	3.10						
ARCETRI ARCETRI ARCETRI MCMATH	24	0825 E	0827 D		N12	E90	5294	2 D	1	3	0825	.80							
	24	0851 E	0903 D		N11	E90	5294	12 D	1	3	0903	.70							
	24	0953 E	1001 D		N12	E90	5294	8 D	1	3									
	24	2225 E	2255 D		N10	E90	5294	30 D	1	1	2229		2.50						
MITAKA LOCARNO SIMEIZ LOCARNO SIMEIZ ZURICH CAPRI G ARCETRI CAPRI G CAPRI G MCMATH	25	0316 E	0335 D	0323	S20	E47	5289	19 D	1&	1	0316	7.20	11.70	2.14	146	Slow S-SWF			
	25	0450 E	1000		N12	E90	5294	310 D	1&	2									
	25	0556 E			N12	E90	5294		1	2	0600			2.60					
	25	0625 E	0635		N15	E75	5294	10 D	1	2									
	25	0723 E		0900. U	N21	E90	5294		1		0727			3.30					
	25	0724	0740		N10	E87	5294	16	1	3	0724		4.00						
	25	0725 E	0745 D		N14	E88	5294	20 D	1				3.00						
	25	0815 E	0831 D		N12	E90	5294	16 D	1	3									
	25	0820 E	0836		N14	E85	5294	16 D	1				4.00						
	25	0911	0920 D		S18	E46	5289	9 D	1				5.00						
	25	2025 E	2035 D		N10	E80	5294	10 D	1	1	2033		2.00						
	HAWAII ZURICH LOCARNO ZURICH ZURICH LOCARNO LOCARNO CAPRI S SIMEIZ CAPRI G ARCETRI SIMEIZ LOCARNO	26	0042	0110	0046	N25	E47	5291	28	1	3	0046	2.70	4.10					
		26	0657	0704		N10	E73	5294	7	1	3	0657		2.00					
		26	0700	0725		N14	E79	5294	25	1	2								
		26	0801	0805		N13	E61	5294	4	1	3	0801		1.00					
26		0811 E	0816		N24	E47	5291	5 D	1	3	0811		1.00						
26		0827	0845		N36	E68	5292	18	1	2									
26		0827	0905	0845	N10	E74	5294	38	1&	2	0845		9.00						
26		0832 E	0905 D		N12	E71	5294	33 D	1	3	0850	1.50	4.80						
26		0833 E	0906 D	0843 U	N13	E74	5294	33 D	1&	1	0843		7.60	2.80	92				
26		0844 E	0857 D		N12	E69	5294	13 D	1				4.00						
ARCETRI SIMEIZ LOCARNO MITAKA ZURICH ZURICH SIMEIZ SIMEIZ ZURICH ARCETRI WENDEL WENDEL LOCARNO MCMATH ZURICH MCMATH CAPRI S	26	0849 E	0908 D		N10	E73	5294	19 D	1&	3									
	26	0850 E	0906 D	0853 U	N11	E78	5294	16 D	1		0853		3.00	4.00	112				
	26	1400	1410		N35	E60	5292	10	1	2									
	27	0217 E	0229		N24	E33	5291	12 D	1	1	0217	.82	1.05	1.52	96				
	27	0634	0639	0636	N11	E52	5294	5	1	2	0638		.80	2.30	68				
	27	0713 E	0733 D		S06	W35	5296	20 D	1	3	0713		6.00						
	27	0726	0731		N13	E48	5294	5	1	3	0726		1.00						
	27	0759 E	0817		S07	W36	5296	18 D	1	3	0759		1.00						
	27	0833	0843	0835	N07	E59	5294	10	1		0838		.90	3.20	80				
	27	0851	0900	0855	N07	E59	5294	9	1		0854		.90	2.20	76				
ZURICH ARCETRI WENDEL WENDEL LOCARNO MCMATH ZURICH MCMATH CAPRI S	27	1032	1050		N24	E32	5291	18	1	3	1032		4.00						
	27	1037 E	1044 D		N24	E32	5291	7 D	1	3									
	27	1037 E	1126		N24	E31	5291	49 D	1&				7.00						
	27	1123 E	1147 D		N38	E46	5292	24 D	1&				5.00						
	27	1222	1257	1229	N14	E50	5294	35	2				12.00						
	27	1225	1250	1234	N15	E50	5294	25	2	2	1234		6.00						
	27	1225	1340	1229	N12	E50	5294	75	2	1	1229		5.00						
	27	1226	1250		N14	E49	5294	24	2&	3	1226		7.00				S-SWF		
	27	1227 E			N13	E50	5294		2										
	27	1228 E	1245		N14	E52	5294	17 D	1	3	1231	2.30	3.70						

SOLAR FLARES

JULY 1959

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX.		McMATH FLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
					LAT.	MER. DIST.										
ONDREJOV	27	1230 E	1251		N14	E52	5294	21 D	2							
CAPRI G	27	1232 E	1254		N13	E51	5294	22 D	2				7.00			
WENDEL	27	1449 E	1512 D		N12	E42	5294	23 D	16				6.00			
LOCARNO	27	1452	1505		N11	E39	5294	13	16	2						
CAPRI G	27	1453	1504		N10	E41	5294	11	1				4.00			G-SWF
ARCETRI	27	1455 E			N11	E42	5294		1	3						
ZURICH	27	1502 E	1505		N10	E41	5294	3 D	1	2	1502		2.00			
LOCKHEED	27	1702	1726	1709	N25	E27	5291	24	1	2		2.40				
WENDEL	27	1703	1742		N23	E27	5291	39	16				6.00			
WENDEL	27	1739	1758		N09	E49	5294	19	1				3.00			
McMATH	27	1802	1822	1807	N07	E48	5294	20	1	1	1807		2.00			S-SWF
WENDEL	27	1804	1808 D		N10	E47	5294	4 D	16				4.00			
LOCKHEED	27	2001	2100	2017	N26	E42	5291	59	1	3		2.40				
SAC PEAK	27	2004	2100 U	2018 U	N25	E41	5291	56 U	1	2			2.40		18	
LOCKHEED	27	2050	2250	2115	N26	E25	5291	120	3	3		17.00				
McMATH	27	2055	2240	2112	N28	E26	5291	105	26	1	2112		8.00			
HUANCAYO	27	2108	2220	2112	N25	E25	5291	72	26	2	2112	13.70	15.20	3.10		Slow S-SWF
HAWAII	27	2117 E	2119	2118	N28	E26	5291	2 D	3	2	2118	1.70	2.10			
McMATH	27	2120 E	2145 D		N24	E25	5291	25 D	2							
CLIMAX	27	2146 E	2210		N27	E28	5291	24 D	1		2151	4.50				
McMATH	27	2211 E	2245 D	2215	N09	E50	5294	34 D	1	1	2215		2.00			
MITAKA	28	0028 E	0039		N10	E39	5294	11 D	1	1	0031	2.06	2.62	1.70	85	
SIMEIZ	28	0631	0702	0636	N12	E45	5294	31	1		0631		2.60	2.20	88	
SIMEIZ	28	0655	0744	0726	N13	E63	5299	49	16		0726		7.50	2.70	92	
CAPRI G	28	0724	0736		N13	E66	5299	12	1				3.00			
SIMEIZ	28	0829	0919	0846	N38	E37	5292	50	1	2	0845		3.40	2.20	76	
ZURICH	28	1215	1222		N14	E32	5294	7	1	2	1215		1.00			
ZURICH	28	1245	1258		N22	E17	5291	13	1	2	1245		1.00			
ZURICH	28	1250	1302 D		N09	E35	5294	12 D	1	2	1250		2.00			
WENDEL	28	1251 E	1307		N08	E35	5294	16 D	16				7.00			
CAPRI G	28	1253	1303		N10	E38	5294	10	1				3.00			
McMATH	28	1430 E	1455 D		N07	E36	5294	25 D	1	1	1440		3.00			
WENDEL	28	1624 E	1637 D		N12	E36	5294	13 D	1				3.00			
LOCARNO	28	1630	1650 D		N13	E33	5294	20 D	1	3						
SIMEIZ	29	0629 E	0830 D		N07	W67	5285	121 D	1	1	0631		4.60	1.90		
CAPRI G	29	0710	0751		N11	E30	5294	41	2				5.00			
SIMEIZ	29	0711 E	0823 D		N12	E29	5294	72 D	16		0712		5.20	3.50		
CAPRI S	29	0712 E	0754 D		N11	E28	5294	42 D	1	3	0741	2.00	2.00			
SIMEIZ	29	0725 E	0830 D		N15	E36	5294	65 D	1		0737		1.80	2.70		
CAPRI S	29	1205	1303		N10	E25	5294	58	1	3	1212	4.50	4.90			
CAPRI G	29	1213	1306		N13	E28	5294	53	2				8.00			
ZURICH	29	1228 E	1350		N10	E26	5294	82 D	2	1	1228		8.00			Slow S-SWF
McMATH	29	1233 E	1321 D		N09	E25	5294	48 D	16	1	1233		4.00			
LOCARNO	29	1240 E	1345 D		N13	E28	5294	65 D	16	3						
R O HERST	29	1243 E	1244 D	1243 D	N11	E28	5294	1 D	1	1	1243	1.90	2.10			
ZURICH	29	1351	1408 D		N11	E23	5294	17 D	2	1	1351		6.00			
ZURICH	29	1439	1443		N06	E28	5294	4	1	1	1439		1.00			
SAC PEAK	29	1534	1558	1536	N10	E18	5294	24	1	2			3.05		24	
CAPRI S	29	1535 E	1552 D		N11	E22	5294	17 D	1	3	1536	2.80	3.10			
CAPRI G	29	1537	1558		N11	E25	5294	21	1				3.00			
McMATH	29	2020	2117 D	2031	N10	E22	5294	57 D	2	2	2047		5.50			

SOLAR FLARES

JULY 1959

III

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL
		START	END	MAX. PHASE	APPROX.		McMATH FLAGE REGION				TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _o	MAX. INT. %	IONOSPHERIC
					LAT.	MER. DIST.										EFFECT
LOCKHEED HAWAII MCMATH MCMATH MCMATH LOCKHEED HAWAII	29	2020	2119	2047	N12	E20	5294	59	2	3		5.20				Slow S-SWF
	29	2022	2234 D	2032	N14	E22	5294	12 D	3	3	2120	19.60	21.40			
	29	2025 E	2050 D		N12	E25	5294	25 D	2							
	29	2105	2145		N05	E65	5300	40	1	1	2120		2.00			S-SWF
	29	2117	2240	2120	N14	E25	5294	83	26	2	2120		10.00			
	29	2117	2243	2120	N16	E18	5294	86	26	3		12.20				
	29	2214	2218	2216	N09	E23	5294	4	1	3	2216	2.50	2.70			G-SWF
	30	0000	0117	0016	N13	E36	5299	77	2	3		5.80				
30	0027 E	0028 D		N11	E33	5299	1 D	26	1	0028	10.30	11.90				
MITAKA	30	0255 E	0303		N21	W68	5286	8 D	16	1	0255	2.57	5.80	2.08	107	S-SWF
MITAKA	30	0303 E	0315	0310	N08	E19	5294	12 D	1	1	0310	1.54	1.62	2.74	143	
MITAKA	30	0339 E	0405		N11	E12	5294	26 D	1	1	0339	4.11	4.23	2.26	149	
MITAKA	30	0514	0522		N08	E18	5294	8	1	1	0514	2.06	2.16	1.52	120	
CAPRI G	30	0940 E	0947		N16	E07	5294	7 D	1				3.00			
ARCETRI	30	1044 E	1059 D		S07	W80	5296	15 D	1	4	1044	.40	2.30			
ARCETRI	30	1048 E	1153 D		N12	E35	5299	65 D	1	4	1048	1.70	2.10			
MCMATH	30	1648	1850 D	1716	N28	W11	5291	122 D	2	1	1716		5.00			
LOCKHEED	30	1652	1735	1715	N29	W12	5291	43	1	2		3.70				14
SAC PEAK	30	1710 E	1722 D	1714 E	N29	W11	5291	12 D	2	2			6.40			
LOCKHEED	30	2018	2055	2029	N26	W16	5291	37	1	3		2.70				
SAC PEAK	30	2018	2112	2032	N26	W16	5291	54	2	1			4.65		20	
MCMATH	30	2022 E	2130	2027	N25	W16	5291	68 D	16	1	2027		4.00			
LOCKHEED MITAKA MITAKA SIMEIZ SIMEIZ SIMEIZ ARCETRI SIMEIZ CAPRI G LOCARNO LOCARNO CAPRI G LOCKHEED LOCARNO LOCKHEED LOCKHEED HAWAII MCMATH SAC PEAK	31	0105	0125	0111	N14	E08	5294	20	1	1		2.40				134
	31	0106	0120	0106	N15	E07	5294	14	1	1	0106	3.08	3.14	2.04		
	31	0107	0120	0107	N15	E09	5294	13	1	1	0107	2.06	2.10	1.72	122	
	31	0648 E	0708 D	0650 U	N12	E23	5299	20 D	1				2.50			2.00
	31	0654 E	0724 D	0657 U	N11	E07	5294	30 D	1		0717		1.80			
	31	0732 E	0737 D	0734 U	N04	E41	5300	5 D	1				2.90			
	31	0800 E	0825 D		N12	E06	5294	25 D	16	3						2.20
	31	0801 E	0807 D	0804 U	N13	E04	5294	6 D	16		0804		5.40			
	31	0809 E	0827		N13	E05	5294	18 D	16				4.00			
	31	1236	1242		N13	E15	5299	6	1	2						3.00
	31	1255 E	1300		N18	W05	5294	5	1	2						
	31	1459 E	1515		N14	W23	5298	16 D	1				3.00			
	31	1555	1609	1559	N10	W08	5294	14	1	2	1605	2.40				
	31	1650	1720		S12	E43	5301	30	1	2						
	31	1725	1745	1727	N11	E10	5294	20	1	3		2.10				
	31	2228	2250	2237	N11	E10	5294	22	1	3		2.10				16
	31	2230 E	2254 D		N13	E08	5294	24 D	2	2	2242	6.60	6.70			
	31	2230 E	2300 D		N11	E08	5294	60 D	1	1	2241		2.50			
	31	2245 E	2245 D	2245 U	N12	E08	5294		1	1						

CAPRI G ANACAPRI - GERMAN
 CAPRI S ANACAPRI - SWEDISH
 GOOD HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE
 KIEV* KIEV UNIVERSITY
 KODAIKANAL KODAIKANAL
 KRASNAYA KRASNAYA PAKHRA
 LOCKHEED LOS ANGELES

MOSCOW-G MOSCOW - GAISH
 R O EDIN ROYAL OBSERVATORY, EDINBURGH
 R O HERST GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
 SAC PEAK SACRAMENTO PEAK
 SCHAUVINS SCHAUVINS
 USNRL UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE
 ARBITRARY UNITS (0-40), NOT PERCENT
 OF CONTINUOUS SPECTRUM.
 E - LESS THAN & - PLUS
 D - GREATER THAN - - MINUS
 U - APPROXIMATE □ - NOT REPORTED

SOLAR FLARES

JULY 1959

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX.		McMATH PLACE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
					LAT.	MER. DIST.										
SYDNEY	01	0100	0110	0102	N27	E77	5250	10	1	2	0102	1.00	4.00			
{ KRASNYA	01	0650 E	0835 D		N17	E73	5248	105 D	1	2	0700		4.30		65	
{ KRASNYA	01	0757	0806	0759 U	S16	W43	5230	9	1	2	0759		1.80		65	
{ KRASNYA	01	0941	0958	0950	S17	W43	5230	17	1&	2	0950		.90		130	
{ KHARKOV	01	0945	1009	0954	S17	W42	5230	24	1	2	0950		1.60	1.70		
{ MOSCOW G	01	0909 E	1140 D		N17	E72	5248	151 D	2	2	0929		14.20	2.80	150	
{ MOSCOW G	01	1144 E	1156 D		N16	W66	5227	12 D	1	2	1153		7.10	1.70	130	
{ GOOD HOPE	01	1144	1205	1147	S17	W85	5238	21	1		1147	.50				
{ KHARKOV	01	1146	1212	1200	S21	W80	5238	26	1&	2	1205		11.40	1.80		
{ KRASNYA	02	0802	0904	0805 U	N17	E58	5248	62	1	1	0805		2.00		60	
{ GOOD HOPE	02	0941	1007	0943	N16	W75	5227	26	1		0943	1.00	3.90			
{ KHARKOV	02	0945	0959	0950	N16	W76	5227	14	1&	2	0946		6.80	1.80		
{ KHARKOV	03	0900 E	0950 D		N12	E22	5244	50 D	1	2	0913		3.70	1.20		
{ KHARKOV	03	0900 E	0950 D		N08	E13	5244	50 D	1	2	0913		5.70	1.20		
{ PIRCULI	05	0929 E	1005 D	0955	N13	W16	5244	36 D	1	3	0955		4.24			
{ PIRCULI	05	0931 E	0947 D	0940	N09	W15	5244	16 D	1	3	0940		10.40			
{ PIRCULI	05	0950 E	1002 D	0958	S08	E03	5251	12 D	1	3	0958		3.60			
{ ONDREJOV	05	1545	1600	1548	N07	W22	5244	15	1	3	1548			2.40		
{ ABASTUMANI	06	0633	0710	0646	N07	W28	5244	37	1	3	0646		2.10			
{ GOOD HOPE	06	1155	1219	1200	N10	W32	5244	24	1		1200	2.40	2.90			
{ PIRCULI	06	1158 E	1220 D	1209	N11	W39	5244	22 D	1	2	1209		6.45			
{ ABASTUMANI	07	0716	0726	0721	N18	E42	5260	10	1	2	0721		1.80		80	
{ MEUDON	07	0727	0807	0741	N19	W85	5240	40	1							
{ MEUDON	07	0756	0832	0802	S12	W85	5234	36	1							
{ MEUDON	07	1027	1108	1036	S12	W87	5234	41	1							
{ ONDREJOV	08	0520	0528	0522	N13	W48	5244	8	1	3	0522			3.10		
{ KRASNYA	08	0703	0740	0706	N16	E88	5265	37	1&	2	0706		8.30		65	
{ KRASNYA	08	0728	0739	0735 U	N11	W46	5244	11	1&	2	0735		3.10		110	
{ GOOD HOPE	08	0730	0800	0733	N11	W51	5244	30	1		0733	1.80	2.80			
{ KRASNYA	08	0819	0839 D	0829	N12	W48	5244	20	2&	2	0829		7.40		180	
{ GOOD HOPE	08	0819	0945	0827	N11	W51	5244	86	2		0827	6.50	10.10			
{ ONDREJOV	08	0824 E	0924		N10	W53	5244	60 D	1&	3	0825			2.50		
{ UTRECHT	08	0826		0829				3	2							
{ MEUDON	08	0916	0954		N12	E50	5265	38 D	1&				5.00			
{ GOOD HOPE	08	1027	1105	1029	N12	W50	5244	38	1		1029	1.40	2.20			
{ PIRCULI	09	0645 E	0706 D	0700	N08	W74	5244	21 D	1	2	0700		9.03			
{ KRASNYA	09	0711 E	0716		N07	W66	5244	5 D	1&	2	0714		3.20		80	
{ MEUDON	09	0708	1000		N17	E70	5269	172	1							
{ KRASNYA	09	0711 E	0720	0713 U	N15	W47	5248	9 D	1	2	0713		1.80		80	
{ KRASNYA	09	0711 E	0813	0714 U	N20	E73	5269	62 D	2	2	0714		9.60		100	
{ KRASNYA	09	0747	0844	0747 U	N07	W66	5244	57	1&	2	0747		4.20		105	
{ KRASNYA	09	0819	0939 D	0822	N20	E73	5269	80 D	1&	2	0822		3.60		85	
{ GOOD HOPE	09	0922	0944	0930	N19	E67	5269	22	1		0930	.90	2.40			
{ GOOD HOPE	09	1200	1203 D	1203	N10	W68	5244	3 D	1		1203	1.30	3.50			
{ GOOD HOPE	09	1251	1304	1254	N18	W48	5248	13	1		1245	1.50	2.20			
{ KIEV	09	1252	1301	1255	N20	W48	5248	9	1	2	1254		4.48		51	

SOLAR FLARES

JULY 1959

III

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME				LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX.		McMATH FLARE REGION	TIME — U T				MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _z	MAX. INT. %		
					LAT.	MER. DIST.											
{ SYDNEY TASHKENT ALMA-ATA ONDREJOV KRASNYA MEUDON	10	0206	0505 D	0236	N20	E63	5265	179 D	36	3	0255	35.00	70.00			Slow S-SWF	
	10	0215 E	0400 D	0222	N21	E64	5265	105 D	36	2	0306		37.00	2.90	225		
	10	0257 E	0538 D	0308	N20	E60	5265	161 D	36	3	0308		73.80		144		
	10	0515 E	0532		N10	W80	5244	17 D	1	3	1519			4.30		G-SWF	
	10	0653 E	1000		N20	E51	5265	187 D	16	2	0653		2.90		100		
	10	1226	1302		S10	E90	5276	36	16								
	ALMA-ATA	11	0310	0530	0338	S15	E20	5264	140	1	2	0338		4.90		74	
	ALMA-ATA	11	0432	0530	0452	N16	E47	5265	58	1	2	0452		4.90		61	
	KRASNYA	11	0706 E	0957	0707 U	N17	E45	5265	171 D	16	2	0707		4.40		90	
	KRASNYA	11	0706 E	0719	0708 U	N15	W88	5244	13 D	1	2	0708		5.40		70	
KRASNYA	11	0706 E	0810	0707 U	N10	W48	5271	64 D	1	2	0707		2.20		70		
KRASNYA	11	0706 E	0903	0707 U	S13	E14	5264	117 D	1	2	0707		2.30		70		
{ ONDREJOV	11	0817 E	0837	0832	S14	E16	5264	20 D	1	3	0832			2.20			
{ GOOD HOPE	11	0830	0901		N15	W90	5244	31	1		0852	4.40					
{ KRASNYA	11	0842	0903	0851 U	N15	W88	5244	21	1	2	0851		3.60		75		
{ KRASNYA	11	0929	1001 D	0933	S14	E16	5264	32 D	16	2	0933		2.60		110		
{ GOOD HOPE	11	0933	0953	0937	S14	E16	5264	20	1		0937	3.00	3.20				
{ GOOD HOPE	11	1137	1146 D	1144	N14	W90	5244	9 D	1		1144	5.50					
{ ONDREJOV	11	1248 E	1257		N16	W90	5244	9 D	1	3	1248			5.80			
SYDNEY	12	0140	0143	0141	N18	W91	5248	3	□	3	0141	2.25					
SYDNEY	12	0303	0335	0318	N25	E65	5277	32	1	3	0318	2.00	5.00				
ALMA-ATA	12	0308 E	0344 D	0524	S15	E03	5264	36 D	16	2	0524		6.10		62		
{ ALMA-ATA	12	0308 E	0540	0514	N16	E34	5265	152 D	1	2	0514		3.10		56		
{ SYDNEY	12	0424	0500 D	0431	N20	E35	5265	36 D	1	2	0431	3.00	4.00				
{ TASHKENT	12	0424	0534	0429	N20	E35	5265	70	1	2	0428		4.00	2.30	65		
{ ALMA-ATA	12	0424	0535	0437	N20	E34	5265	71	16	2	0437		7.20		62		
{ ABASTUMANI	12	0508	0536	0514	S29	E74	5273	28	26	2	0514		12.10		100		
{ ALMA-ATA	12	0512	0535	0519	S26	E74	5273	23	1	2	0519		4.90		53		
{ ABASTUMANI	12	0621	0636	0626	N11	W57	5271	15	16	2	0627		3.40	1.60	90		
{ ABASTUMANI	12	0629	0652	0636	N14	E34	5265	23	16	2	0635		2.40	2.00	86		
{ KRASNYA	12	0630 E	0653		N18	E34	5265	23 D	1	1	0630		2.50		70		
{ ONDREJOV	12	0632	0647	0636	N17	E32	5265	15	1	3	0636			3.30		S-SWF	
{ KRASNYA	12	0641	0646	0642	N15	W88	5248	5	1	1	0642		2.30		70		
{ ONDREJOV	12	0642 E			N13	W90	5248		1	3							
{ KRASNYA	12	0923	0947	0927 U	N18	E34	5265	24	1	1	0927		2.00		70		
{ ONDREJOV	12	0935	0947	0941	S13	E01	5264	12	1	3	0941			3.20			
{ KHARKOV	12	0936 E	0952	0939	S12	W02	5264	16 D	1	2	0937		2.30	1.80			
{ KRASNYA	12	0941 E	0950 D		S13	E03	5264	9 D	16	1	0941		4.30		105		
{ KHARKOV	12	0945	1011 D		S13	E04	5264	26 D	1	2	0949		2.30				
{ MOSCOW G	12	1105 E	1126 D		S28	E70	5273	21 D	16	1	1113		20.69	1.60	90		
{ VOROSHILOV	12	2109 E	2146	2113	S12	W06	5264	37 D	1	3	2113		3.37		60		
{ VOROSHILOV	12	2134	0019	2231	N20	E23	5265	165	26	3	2231		21.00		82		
{ VOROSHILOV	12	2311	2315	2312	N26	E90	5277	4	16	2	2312		6.80		74		
{ VOROSHILOV	12	2319	2331	2321	S13	W06	5264	12	1	2	2321		2.08		76	G-SWF	
SYDNEY	13	0023	0031	0026	N09	E62	5274	8	1	3	0026	2.00	3.00				
ALMA-ATA	13	0255 E	0605 D	0410	N15	E18	5265	190 D	1	2	0410		4.70		56		
{ SYDNEY	13	0238	0325	0306	S22	E68	5273	47	2	2	0306	3.00	7.00				
{ ALMA-ATA	13	0300	0316	0312	S24	E57	5273	16	1	2	0312		4.70		53		
{ ALMA-ATA	13	0302	0322	0312	S29	E59	5273	20	16	2	0312		5.80		51		
{ ABASTUMANI	13	0716	0719	0718	N26	E17	5270	3	1	3	0718		2.20		76		

SOLAR FLARES

JULY 1959

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX.		McMATH PLACE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
					LAT.	MER. DIST.										
{ KRASNYA	13	0804	0810	0805	N06	W78	5271	6	16	2	0805		7.50		95	
{ KRASNYA	13	0811	0815	0813	N05	W80	5271	4	16	2	0813		7.40		95	
{ KRASNYA	13	0833	0838	0834	N05	W80	5271	5	1	2	0834		2.70		95	
{ KRASNYA	13	0845	0902	0846	N05	W80	5271	17	1	2	0846		7.90		80	
{ ONDREJOV	13	1000 E	1009		N15	E15	5265	9 D	1	3	1004			3.10		
{ ONDREJOV	13	1032	1038	1033	N08	W76	5271	6	1	3	1033			2.40		
{ ONDREJOV	13	1045 E	1054 D		N18	E21	5265	9 D	1	3	1047			2.60		
{ ONDREJOV	13	1050 E	1057 D		N08	W76	5271	7 D	1	3	1051			2.50		
{ VOROSHILOV	13	2254	2256	2255	N06	W80	5271	2	1	1	2255		2.54		68	
{ VOROSHILOV	13	2337	2344	2341	N06	W87	5271	7	16	1	2341		4.85		80	
{ ALMA-ATA	14	0319	0630 D	0342	N18	E10	5265	191 D	36	2	0342		46.40		179	
{ SYDNEY	14	0332 E	0418 D		N17	E07	5265	46 D	36	1	0413	32.00	34.00			
{ TASHKENT	14	0342 E	0431 D	0349	N17	E07	5265	49 D	36	2	0348		38.00	5.50	400	
{ ONDREJOV	14	0425 E	0545 D		N16	E05	5265	80 D	3	3	0457			2.50		
{ ABASTUMANI	14	0506 E	0805 D		N18	E08	5265	179 D	36	3	0548		59.60	2.10	82	
{ KODAIKNL	14	0523 E	0527 D		N15	E05	5265	4 D	36	1		27.00	27.00			
{ KRASNYA	14	0650 E	0828		N20	E03	5265	98 D	2	2	0652		8.00		85	
{ GOOD HOPE	14	0706 E	0855		N19	E01	5265	109 D	2		0709	6.30	6.50			
{ GOOD HOPE	14	0711	0727	0715	N16	W90	5252	16	1		0715	4.40				
{ ABASTUMANI	14	0717	0724	0720	N13	E07	5265	7	1	3	0720		2.00		73	
{ KRASNYA	14	0718	0729	0721	N12	E08	5265	11	1	2	0721		.90		75	
{ KHARKOV	14	0941 E			N20	E03	5265		16	2	0941		9.20			
{ KHARKOV	14	1136 E	1159 D		N20	E03	5265	23 D	16	2	1136		4.60	1.70		
{ KIEV	14	1333	1343	1338	N04	E24	5272	10	1	2	1338		.97		84	
{ KIEV	14	1400	1541 D	1448	S26	E38	5273	101 D	26	2	1448		25.93		65	
{ ONDREJOV	14	1402 E	1637 D		S25	E36	5273	155 D	26	2	1408			3.10		
{ ONDREJOV	14	1600	1609		N13	E03	5265	9	1	3	1601			2.90		
{ ABASTUMANI	15	0641 E	0710	0653 U	N13	W04	5265	29 D	1		0653			2.00		
{ KRASNYA	15	0644 E	0707		N12	W06	5265	23 D	1	1	0644		1.40		75	
{ MOSCOW G	15	0652 E	0831 D		N11	W05	5265	99 D	1	1	0659		5.89	1.50	100	
{ KRASNYA	15	0821	0857	0827 U	N17	W07	5265	36	1	1	0827		.80		65	
{ KHARKOV	15	1019	1130	1024	N18	W08	5265	71	1	3	1024		2.30	2.00		
{ KHARKOV	15	1019 E	1130 D	1024	N13	W13	5265	71 D	1	3	1024		4.60	2.00		
{ GOOD HOPE	15	1020	1125	1025	N16	W11	5265	5	1		1025	3.50	3.70			
{ KIEV	15	1251	1347	1312	N16	W13	5265	46	16	3	1312		2.78		81	
{ GOOD HOPE	15	1300	1319 D	1307	N16	W13	5265	19 D	1		1307	3.00	3.10			
{ VOROSHILOV	15	2240	2248	2242	N15	W18	5265	8	1	2	2242		2.92		78	
{ KHARKOV	16	0650 E	0703 D		N15	W22	5265	13 D	16	1	0703		12.20	1.80		
{ KRASNYA	16	0701 E	0829		N19	W19	5265	88 D	16	1	0702		2.70		98	
{ GOOD HOPE	16	0729 E	0820		N17	W22	5265	51 D	2		0731	5.50	6.10			
{ KHARKOV	16	0913	0951 D	0925	N15	W21	5265	38 D	16	2	0938		14.80	1.80		
{ GOOD HOPE	16	0922	0947	0929	N19	W25	5265	25	1		0929	3.00	3.40			
{ KHARKOV	16	1054	1107		N14	W24	5265	13 D	1	1	1058		11.20	1.40		
{ GOOD HOPE	16	1055	1106	1056	N17	W27	5265	11	1		1056	2.20	2.50			
{ MEUDON	16	1336	1519	1407	N23	W20	5265	103	2				15.00			
{ KIEV	16	1352	1411	1358	N22	W27	5265	19	16	2	1358		5.30		61	
{ MEUDON	16	1604	1645	1615	N15	W20	5265	41	2				10.00			
{ MEUDON	16	1609	1625	1616	N17	W32	5265	16	1				3.00			
{ SYDNEY	17	0043 E	0121 D		N18	W36	5265	38 D	1	1	0016	3.00	4.00			

SOLAR FLARES

JULY 1959

iii

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX.		McMATH PLACE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
					LAT.	MER. DIST.										
ABASTUMANI	17	0520	0656	0626	N16	W40	5265	96	16	2	0630		2.04	1.70	92	
{ KRASNYA	17	0912	0916	0914	N21	W49	5265	4	1	2	0914		.70		90	
{ KRASNYA	17	0919	0926	0921	N16	W40	5265	7	1	2	0921		.60		80	
{ KIEV	17	1223 E	1306	1225	N21	W48	5265	43 D	1	2	1225		3.30		58	
{ KIEV	17	1340	1408 D	1346	N13	W39	5265	28 D	1	2	1346		3.40		78	
{ MEUDON	17	1341	1402	1346	N12	W40	5265	21	1				4.00			
{ ABASTUMANI	18	0539	0750	0624	N15	W55	5265	131	16	2	0637		25.00	3.40	84	
{ GOOD HOPE	18	0718	0736	0722	N23	W62	5265	18	1		0722	1.00	2.20			
{ KRASNYA	18	0721 E	0730		N24	W60	5265	9 D	1	2	0722		2.00		100	
{ GOOD HOPE	18	0742	0757	0746	N21	W62	5265	15	1		0746	1.80	3.80			
{ KRASNYA	18	0754	0800		N24	W60	5265	6	1	2	0759		1.60		90	
{ MEUDON	18	0854	0906		N15	W28	5265	12	1				5.00			
{ KRASNYA	18	0854	0909	0856	N15	E25	5280	15	16	2	0856		3.40		115	
{ GOOD HOPE	18	0855	0913	0900	N16	E22	5280	18	1		0900	3.30	3.60			
{ KRASNYA	18	0858	0903	0900	N21	E27	5283	5	1	2	0900		.50		85	
{ GOOD HOPE	18	1102 E	1120		N21	W52	5265	18 D	1		1102	1.30	2.20			
{ GOOD HOPE	18	1139	1231 D	1147	N28	W88	5265	52 D	1		1147	1.00				
{ SYDNEY	19	0039	0220 D	0106	N13	E15	5280	141 D	2	2	0106	5.00	5.00			
{ SYDNEY	19	0039	0220 D	0200	N14	E24	5280	141 D	1	2	0200	3.00	3.00			
{ SYDNEY	19	0039	0220 D	0059	N18	E21	5280	141 D	1	2	0059	3.00	4.00			
{ VOROSHILOV	19	0044	0206 D		N10	E16	5280	82 D	16	1	0104		6.60		65	
{ SYDNEY	19	0409	0430	0412	N30	E06	5277	21	1	3	0412	1.50	2.00			
{ ABASTUMANI	19	0551	0603	0555	N24	W74	5265	12	1	2	0555		4.69		55	
{ GOOD HOPE	19	0842	0900	0844	N19	W80	5265	18	1		0844	1.00				
{ KRASNYA	19	0913 E	0922 D		N20	E85	5286	9 D	1	1	0921		6.90		80	
{ GOOD HOPE	19	1325	1345	1328	N21	W81	5265	20	1		1328	1.00				
{ VOROSHILOV	19	2141	2142	2141	N20	W90	5265	1	16	1	2141		3.09		91	
{ VOROSHILOV	19	2229	2234	2231	N12	W71	5265	5	1	1	2231		4.84		65	
{ TASHKENT	20	0559	0607 D	0603	N19	W80	5265	8 D	1	2	0603		12.00		75	
{ ABASTUMANI	20	0601 E	0616 D	0606 U	N20	W89	5265	15 D	3	1	0606		32.70			
{ KRASNYA	20	0839	0847	0841 U	N17	W07	5280	8	1	2	0841		1.20		80	
{ GOOD HOPE	20	1153	1212	1156	N21	W90	5265	19	1		1156	.40				
{ MEUDON	20	1526	1715	1619	N17	W40	5274	109	2				18.00			
{ MEUDON	20	1539	1600		N10	W80	5265	21	1							
{ MEUDON	21	0654	0740		N20	W89	5265	46	1							
{ KRASNYA	21	0658 E	0705		N19	W87	5265	7 D	1	2	0658		4.60		75	
{ KRASNYA	21	0808	0813		N21	W50	5274	5	1	2	0809		3.20		70	
{ MEUDON	21	1020	1120	1035	S16	E56	5287	60	16				7.00			
{ KHARKOV	21	1025 E	1051	1029	S21	E56	5287	26 D	16	3	1029		11.40	1.80		Slow S-SWF
{ GOOD HOPE	22	1057	1123	1105	N23	W90	5270	26	1		1105	.50				
{ GOOD HOPE	22	1224	1241 D	1233	N15	W53	5274	17 D	16		1233	2.90	4.90			
{ MEUDON	22	1225	1325		N20	W55	5274	60	1							
{ KIEV	22	1226	1330	1247	N17	W58	5274	64	16	3	1247		9.64		58	
{ MEUDON	22	1530	1550		N25	E90	5291	20	1							
{ SYDNEY	22	2352	0013 D	2355	N17	W38	5280	21 D	1	2	2355	2.00	2.00			
{ KHARKOV	24	0615 E	0618 D		N12	E87	5294	3 D	1	2	0618					
{ VOROSHILOV	25	0028	0031 D		N10	W80	5280	3 D	16	2	0029		6.63		69	
																G-SWF Slow S-SWF

SOLAR FLARES

JULY 1959

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX.		McMATH FLARE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hz	MAX. INT. %	
					LAT.	MER. DIST.										
TASHKENT	25	0310	0400	0316	S20	E49	5289	50	1	3	0323		6.00	1.90	65	Slow S-SWF
{ ALMA-ATA	25	0328 E	0340	0332	S21	E54	5289	12 D	1	2	0332		3.00		54	
{ ALMA-ATA	25	0328 E	0340	0334	S20	E48	5289	12 D	1	2	0334		4.90		52	
{ ALMA-ATA	25	0328 E	0346	0331	S23	E50	5289	18 D	1	2	0331		5.00		55	
TASHKENT	25	0259 E	0603 D		N12	E90	5294	184 D	1	3					70	
{ KRASNYA	25	0658 E	0752		N11	E90	5294	54 D	16	2	0658		6.40		115	
{ KRASNYA	25	0724	0745	0729 U	N09	E90	5294	21	16	2	0729		7.30		160	
{ KRASNYA	25	0758	0804	0800	N11	E90	5294	6	16	2	0800		4.60		115	
{ KRASNYA	25	0815	0844	0818 U	N11	E90	5294	29	16	2	0818		6.00		140	
{ GOOD HOPE	25	0815	0845	0822	N12	E89	5294	30	1		0822	0.50				
{ KRASNYA	25	0924 E	0926 D		N11	E90	5294	2 D	16	1	0925		5.50		85	
{ GOOD HOPE	25	1326	1346	1330	N25	E52	5291	20	1		1330	1.30	2.20			
{ VOROSHILOV	25	2205	2214	2208	N08	E69	5294	9	1	1	2208		2.49		78	
{ VOROSHILOV	25	2323	2330	2327	N10	E87	5294	7	16	1	2327		4.33		120	
ABASTUMANI	26	0619	0622	0620	N08	E73	5294	3	1	3	0620		3.10		76	S-SWF
{ GOOD HOPE	26	0658	0723	0701	N10	E80	5294	25	1		0701	0.60				
{ ABASTUMANI	26	0658	0724	0708	N08	E78	5294	26	16	3	0704		6.58	3.30	80	
{ KRASNYA	26	0700 E	0722 D		N10	E81	5294	22 D	16	2	0711		2.30		120	
{ KRASNYA	26	0728	0739	0731 U	S07	W21	5296	11	1	2	0731		1.70		85	
{ KRASNYA	26	0753	0804	0755	S07	W21	5296	11	1	2	0755		0.50		90	
{ KRASNYA	26	0831	0844 D	0839 U	N16	E82	5294	13 D	16	2	0839				215	
{ ONDREJOV	26	0831	0858		N14	E73	5294	27	1	3	0840			2.30		
{ GOOD HOPE	26	0831 E	0915	0840	N13	E75	5294	44 D	2		0840	2.20	8.50			
{ GOOD HOPE	26	0848	0910	0853	N10	E79	5294	22	1		0853	1.00				
{ ONDREJOV	26	0852	0858	0852	N09	E76	5294	6	1	3	0852			2.80		
{ KRASNYA	26	0917 E	1001 D	0917 U	S07	W21	5296	44 D	1	1	0917		1.70		75	
{ KRASNYA	26	0956	1002 D	0957 U	N09	E82	5294	6 D	1	1	0857		3.70		110	
{ GOOD HOPE	26	0956	1009	0959	N10	E79	5294	13	1		0959	1.00				
{ KHARKOV	26	1000 E	1015 D	1003	N07	E62	5294	15 D	1	1	1012		3.80	1.50		
{ KHARKOV	26	1030	1125 D		N32	E67	5292	55 D	1	1	1054		5.60	1.20		
SYDNEY	27	0145	0253	0214	N26	E35	5291	68	1	2	0214	1.50	2.00			S-SWF
{ KRASNYA	27	0655 E	0719 D	0703 U	S07	W37	5296	24 D	1	2	0703		0.50		100	
{ ONDREJOV	27	1034	1048 D	1037	N22	E31	5291	14 D	1	2	1037			2.60		
{ GOOD HOPE	27	1224	1258	1229	N14	E50	5294	34	2		1229	5.30	8.40			
{ ONDREJOV	27	1228	1251		N14	E49	5294	23	2	3	1231			5.70		
{ VOROSHILOV	27	2142 E	2226	2155	N28	E26	5291	44 D	2	3	2155		7.46		85	
{ VOROSHILOV	27	2208	2308	2217	N12	E51	5294	60	16	3	2217		4.22		85	
{ SYDNEY	28	0006	0028	0012	N12	E64	5299	22	1	3	0012	2.00	4.00			
{ VOROSHILOV	28	0008	0029	0012	N11	E66	5299	21	16	3	0012		6.68		71	
{ KRASNYA	28	0658 E	0712		N07	E45	5294	14 D	1	2	0707		1.30		80	
{ ABASTUMANI	28	0707	0740	0727	N10	E60	5299	33	16	1	0730		11.40	2.00		
{ KRASNYA	28	0711	0716	0712	N06	E66	5299	5	1	2	0712		2.30		90	
{ KRASNYA	28	0723	0744	0725 U	N11	E62	5299	21	1	2	0725		2.10		105	
{ ONDREJOV	28	0727 E	0740		N13	E60	5299	13 D	1	3	0728			2.60		
{ ONDREJOV	28	1629	1645	1631	N11	E34	5294	16	1	2	1633			2.30		
{ KRASNYA	29	0711	0746	0734	N11	E33	5294	35	16	2	0734		1.60		160	Slow S-SWF
{ GOOD HOPE	29	0713 E	0812	0735	N11	E29	5294	59 D	2		0735	5.10	5.90			
{ ABASTUMANI	29	0718 E	0753 D	0739 U	N12	E31	5294	35 D	16	1	0745		7.76	2.10		
{ KRASNYA	29	0731	0810	0733 U	N14	E38	5294	39	1	2	0733		0.70		95	

SOLAR FLARES

JULY 1959

III

OBSERVATORY	DATE JULY 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX.		McMATH PLACE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _z	MAX. INT. %	
					LAT.	MER. DIST.										
PIRCULI	29	0738 E	0748 D	0738	N11	E27	5294	10 D	3	1	0738		20.16		6	
	29	0834	0911	0840 U	N27	E07	5291	37	1	2	0840		1.30		110	
{ GOOD HOPE	29	0834	0920	0839	N26	E05	5291	46	1		0839	2.70	2.90			
	29	0912	0921	0917	N10	E24	5294	9	1	2	0917		.60		95	
{ GOOD HOPE	29	1202	1324 D	1213 U	N10	E26	5294	82 D	2		1213	6.30	7.00			Slow S-SWF
	29	1308 E	1405 D	1309 U	N10	E30	5294	57 D	16	1	1309		2.96		99	
{ VOROSHILOV	29	2145 E	2229		N15	E20	5294	44 D	1	2	2157		3.18		68	Slow S-SWF
	29	2145 E	2231		N14	E36	5294	46 D	16	2	2158		6.92		60	
VOROSHILOV	30	0003	0108	0010	N10	E34	5299	65	2	2	0010		7.50		83	G-SWF
TASHKENT	30	0338	0350	0339	N13	E14	5294	12	16	3	0341		2.00	2.80	110	S-SWF
ABASTUMANI	30	0514 E	0521	0516 U	N09	E19	5294	7 D	1	1	0516		1.85			
{ GOOD HOPE	30	0845	0904	0846	N14	E31	5299	19	1		0846	2.00	2.40			
	30	0845	0904	0846 U	N12	E30	5299	19	1	1	0846		1.10		85	
{ KRASNYA	30	0857	0907	0858 U	N08	E12	5294	10	1	1	0858		.60		85	
	30	0853	0906	0856	S23	W78	5287	13	16	1	0856		6.00		120	
{ GOOD HOPE	30	0854	0914	0859	S07	W85	5296	20	1		0859	1.10				
	30	0908	0916	0911	N07	E18	5294	8	1	1	0911		.50		70	
{ KRASNYA	30	0938	0943	0940	N16	E12	5294	5	1	1	0940		.70		115	
	30	0940 E	0950 D	0945	N11	E10	5294	10 D	3	1	0945		17.34		5	
{ KHARKOV	30	0942	0949	0944	N15	E10	5294	7	1	1	0944			1.80		
	30	0952	1002	0957	N11	E38	5299	10	1	1	0957		.80		120	
{ KRASNYA	30	0954	1015 D	0957	N12	E36	5299	21 D	1	1	1008		1.30	1.30		
	30	1037 E	1046	1042	N12	E36	5299	9 D	1	1	1042		1.30	1.50		
{ KHARKOV	30	1042 E	1110 D	1049	N11	E12	5294	28 D	1	1	1106			1.50		
	30	1313	1329	1317	N18	W78	5286	16	16		1317	2.00				
VOROSHILOV	31	0048	0110	0052	N09	E42	5300	22	1	2	0052		2.83		63	
{ PIRCULI	31	0659 E	0710 D	0705	N15	E05	5294	11 D	4	1	0705		7.00		4	
	31	0758	0824	0803	N12	E06	5294	26	1	2	0803		1.10		85	
{ GOOD HOPE	31	0801	0834	0806	N12	E05	5294	33	1		0806	2.30	2.30			
	31	0802	0840	0806	N14	E02	5294	38	1				2.00			
{ ONDREJOV	31	0807 E	0818 D		N10	E06	5294	11 D	1	1	0809			2.20		
	31	0810 E	0825 D	0810	N13	E04	5294	15 D	4	2	0810		30.00		8	
{ GOOD HOPE	31	1210	1250	1220	N28	W24	5291	40	1		1220	2.90	3.30			

These flare reports are addenda to the July 1959 flares published in CRPL-F 180 Part B, August, 1959.

COMMERCE - STANDARDS - BOULDER

CAPRI G ANACAPRI - GERMAN
CAPRI S ANACAPRI - SWEDISH
GOOD HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV* KIEV UNIVERSITY
KODAIKANAL KODAIKANAL
KRASNYA KRASNAYA PAKHRA
LOCKHEED LOS ANGELES

MOSCOW-G MOSCOW - GAISH
R O EDIN ROYAL OBSERVATORY, EDINBURGH
R O HERST GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK SACRAMENTO PEAK
SCHAUVINS SCHAUVINSLAND
USNRL UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE
ARBITRARY UNITS (0-40), NOT PERCENT
OF CONTINUOUS SPECTRUM.
E - LESS THAN & - PLUS
D - GREATER THAN - - MINUS
U - APPROXIMATE □ - NOT REPORTED