PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
OCTOBER 1959

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F 182
PART B

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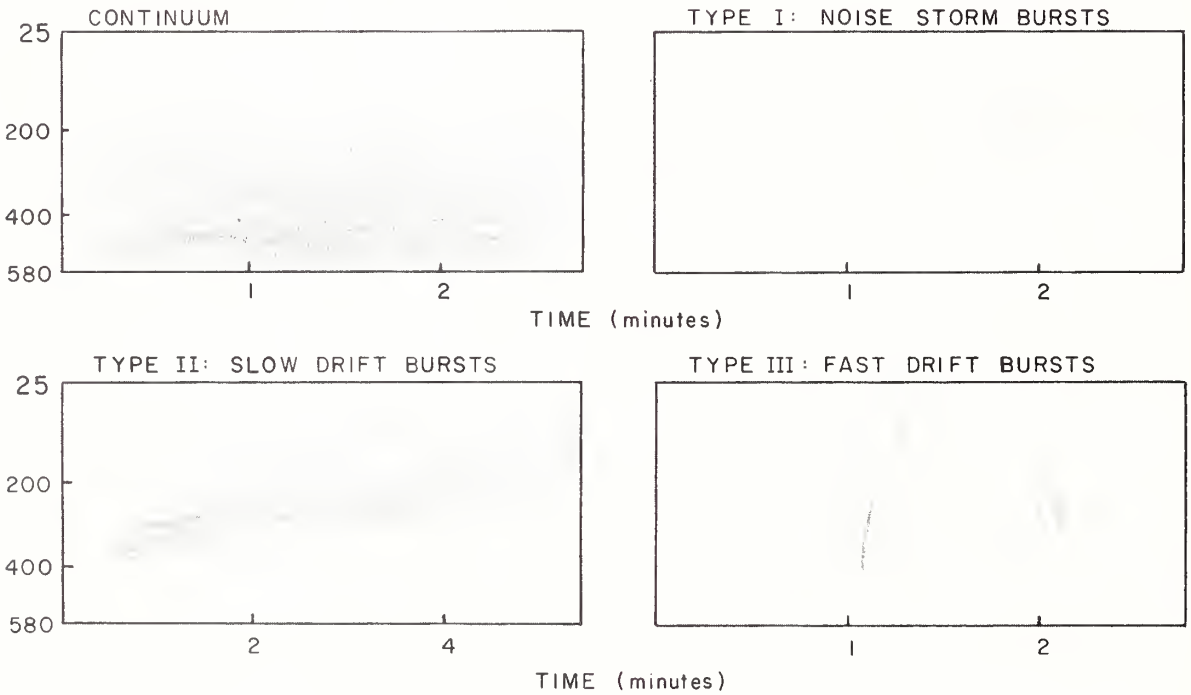
CONTENTS

Spectrum Observations

Data on solar radio emission in the spectral range 25-580 Mc/s recorded at the Radio Astronomy Station of Harvard College Observatory, Fort Davis, Texas, are presented. The research program is supported by financial assistance from the Air Force Cambridge Research Center, through the offices of Sacramento Peak Observatory.

The receiving equipment consists of five separate sweep frequency receivers covering the bands 25-50, 50-100, 100-180, 170-320, 300-580 Mc/s. The 25-50 and 50-100 Mc/s receivers are each connected to broad band dipoles which are cross polarised and mounted over a reflecting screen. The other three receivers are attached to separate broad band feeds mounted coaxially at the primary focus of an 8.55 meter diameter paraboloid, the 170-320 Mc/s feed being cross polarised with the other two feeds. The effective collecting area of the antenna is 40 sq. meters at 100 Mc/s and 45 sq. meters at 500 Mc/s.

The four types of recognized spectral activity are idealized below:



The large scale examples of continuum, sometimes called Type IV, are listed as "Cont. IV" in the tables. Photographic examples of the bursts have been published by Maxwell, Swarup, and Thompson (Proc. IRE 46, 142, 1958), and Maxwell (Sky and Telescope 17, 388, 1958; 18, 544, and 556, 1959). A few remaining solar radio bursts are tabulated as unclassified.

The symbols used in the tables are:

b = single burst
g = small group (<10) of bursts
G = large group ($\geq$10) of bursts
$\longrightarrow$ = Arrows indicate continuity of solar activity between two Greenwich days.

The minimum detectable level of solar activity is a function of frequency: approximately 5 x 10^{-22} watts meter $^{-2}$ $(c/s)^{-1}$ at 500 Mc/s. The equipment records signals over an intensity range of approximately 10,000:1. There are three classes of intensity given in the tables. For 100 Mc/s they are:

1 = Faint, 5 to 40 x 10^{-22} watts meter^{-2} $(c/s)^{-1}$.

2 = Moderate, 30 to 200 x 10^{-22}.

3 = Strong, >200 x 10^{-22}.

The times are Universal Time (U. T.). The accuracy is to the nearest half minute, except in the case of major outbursts which are specified to the nearest 0.1 minute.

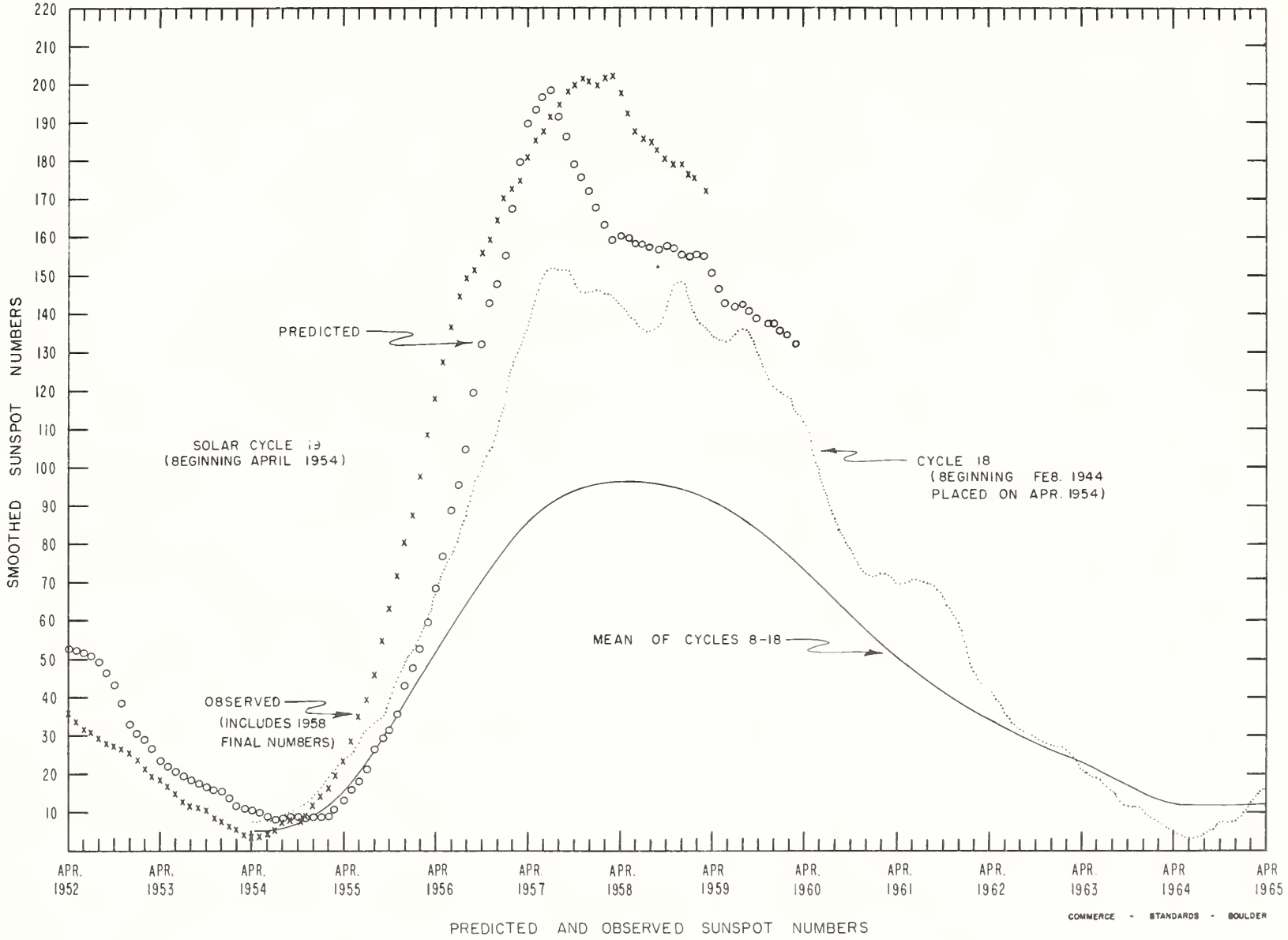
Details of the frequency ranges of activity may be obtained on request to the Radio Astronomy Station, Ft. Davis, Texas.

DAILY SOLAR INDICES

Aug. 1959	American Relative Sunspot Numbers R_A'
1	183
2	214
3	204
4	179
5	194
6	167
7	173
8	141
9	147
10	161
11	144
12	136
13	106
14	106
15	134
16	145
17	122
18	141
19	162
20	160
21	164
22	195
23	192
24	153
25	193
26	228
27	253
28	259
29	273
30	285
31	261
Mean:	179.8

Sept 1959	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	290	282
2	256	269
3	202	257
4	161	239
5	148	220
6	144	200
7	135	192
8	136	199
9	157	209
10	141	201
11	155	203
12	170	195
13	148	189
14	151	196
15	168	184
16	130	168
17	87	170
18	100	167
19	120	175
20	143	185
21	132	182
22	155	188
23	136	182
24	155	183
25	105	175
26	106	164
27	92	163
28	87	162
29	80	159
30	76	156
Mean:	142.2	193.8

COMMERCE STANDARDS - BOULDER



PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

SEPTEMBER 1959

CMP Sept 1959	Lat	McMath Plage Number	Return of Region	Calcium Plage Data				Sunspot Data		
				CMP Values Area	Int.	History	Age	CMP Values Area	Count	History
01.6	N11	5344	*	8000	2.5	ℓ − ℓ	1	1050	32	ℓ / ℓ
02.3	N12	5347	**	(5000)	(3)	ℓ ⌝\ d	-			
03.5	S21	5350	New	(200)	(1)	ℓ \ d	1			
03.6	N04	5349	5314	600	1	ℓ \ d	2			
03.7	N17	5348	New	3500	3	ℓ / ℓ	1	850	1	ℓ − ℓ
04.6	N25	5352	5315	800	2.5	ℓ − ℓ	6,4			
04.7	N03	5351	New	900	1	ℓ \ d	1			
05.3	S14	5353	***	5000	3	ℓ − ℓ	7,2	210	4	ℓ \ d
05.5	N18	5354	5315	1000	1.5	ℓ \ ℓ	6,4			
05.5	S20	5363	New	(1000)	(2.5)	b ⌜ ℓ	1			
06.7	N18	5355	5315	3000	1.5	ℓ / ℓ	6,4	70	1	ℓ ⌝\d
08.3	N15	5356	5315	3200	3	ℓ − ℓ	6,4	80	5	ℓ ⌝\d
08.7	N27	5374	New	(800)	(3)	b ⌜ ℓ	1			
09.8	S12	5358	New	(200)	(1)	ℓ ⌝\ d	1			
09.9	S19	5367	New	(700)	(3)	b / ℓ	1	(100)	(3)	b⌜ ℓ
10.8	N18	5359	5323	1200	2.5	ℓ − ℓ	5	60	4	ℓ ⌝\d
11.4	N06	5360	5323	7000	3	ℓ / ℓ	5	2290	16	ℓ − ℓ
11.5	S17	5361	New	2000	3	ℓ − ℓ	1	460	1	ℓ − ℓ
12.8	N16	5362	5323	1500	2	ℓ − ℓ	5			
15.0	S16	5365	New	1200	3	ℓ − ℓ	1	50	2	ℓ \ d
15.0	S03	5369	New	200	2	b ⋀ d	1	10	1	b⋀d
15.9	N17	5364	New	1000	2.5	ℓ − ℓ	1			
15.9	N06	5366	****	2500	2.5	ℓ − ℓ	4,2	340	3	ℓ − ℓ
17.8	S24	5368	5337	2000	2	ℓ − ℓ	2			
17.8	S12	5370	5330	800	1.5	ℓ ⌝\ d	3			
18.8	S17	5375	New	1200	3	ℓ − ℓ	1	230	6	ℓ − ℓ
19.3	N30	5372	New	(1500)	(1.5)	ℓ ⌝\ d	1			
19.7	N15	5373	New	1500	3	ℓ − ℓ	1	340	11	ℓ − ℓ
20.2	S13	5376	5335	1000	3	b / ℓ	5,4	450	7	b / ℓ
20.7	N12	5377	5336	1000	2	ℓ / ℓ	2			
21.6	S21	5380	New	700	2.5	b⌜ ℓ	1			
22.3	N03	5383	New	700	2.5	b / ℓ	1	60	3	b⌜ ℓ
22.4	N19	5378	5336	4500	2	ℓ − ℓ	2			
22.4	S12	5382	New	500	1.5	b⌜ ℓ	1			
24.2	N18	5379	+	8000	3	ℓ − ℓ	3	390	6	ℓ − ℓ
24.8	S12	5381	5340	7000	3	ℓ − ℓ	2	630	7	ℓ − ℓ
25.3	N00	5400		(500)	(1.5)	b⌜ ℓ				
25.9	N10	5384	5341	700	2	ℓ − ℓ	3,4			
26.9	N20	5387	5346	(500)	(1)	ℓ ⌝\ d	2			
27.5	S06	5385	5343	700	2	ℓ − ℓ	2			
27.6	N10	5386	5344	1500	2.5	ℓ − ℓ	2			
27.8	S20	5388	5342	200	2	b⌜ ℓ	3,6			
29.0	N11	5389	5344	600	1.5	ℓ − ℓ	2			
30.2	S06	5390	New	600	2.5	ℓ − ℓ	1	120	1	ℓ \ ℓ
30.7	N14	5391	5348	1100	2	ℓ − ℓ	2	220	3	ℓ ⌝\d

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* 5310 and new.
** Merged with 5344.
*** 5313,5317.
**** 5328,5329.
\+ 5339 and part of 5341.

Coronal indices for September 1959 will appear in a later issue of this report. Reductions have not yet been made due to scaling equipment failure.

SOLAR FLARES

SEPTEMBER 1959

OBSERVATORY	DATE SEPT 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
CAPRI G	01	0800 E	0905 D		N11	E14	5344	65 D	2				6.00			
AROSA	01	0830 E	0845 D		N14	E12	5344	15 D	1							
ZURICH	01	0841 E	0917		N13	E14	5344	36 D	1&	2	0841		5.00			
WENDEL	01	0854 E	0925 D		N12	E13	5344	31 D	1				3.00			
CAPRI S	01	0801	0915		N14	E20	5348	74	1	3	0832	2.80	3.10			
ARCETRI	01	0826 E	0906 D		N13	E14	5348	40 D	1	3	0834	3.00	3.10			
ZURICH	01	0903	0910		N14	E22	5348	7	1	2	Z903		2.00			
ARCETRI	01	0825 E	0834 D		N13	E90	5356	9 D	1	3						
ZURICH	01	1003	1013		S11	E56	5353	10	1	2	1003		1.00			
CAPRI G	01	1020 E	1039		N24	W57	5339	19 D	1				4.00			
CAPRI G	01	1106	1117		S10	E51	5353	11	1				3.00			
CAPRI G	01	1116	1127		N09	W10	5344	11	1				4.00			
CAPRI S	01	1119 E	1132		N09	W09	5344	13 D	1	2	1126	2.10	2.10			
ZURICH	01	1124 E	1133		N10	W10	5344	9 D	1	2	1124		5.00			
CAPRI G	01	1247	1256		N08	W08	5344	9	1				3.00			
ZURICH	01	1250	1256		N07	W06	5344	6	1	2	1250		3.00			
WENDEL	01	1404 E	1439 D		N10	W49	5341	35 D	2				10.00			
ZURICH	01	1402	1425		S12	W49	5340	23	1	2	1402		5.00			
MCMATH	01	1406 E	1450 D		S12	W52	5340	44 D	1	2	1424		2.50			
CAPRI G	01	1410 E	1425		S12	W52	5340	15 D	1				4.00			
CLIMAX	01	1419	1439	1423	N09	W13	5344	20	1		1423	2.40				
MEUDON	01	1419	1450	1425	N13	W10	5344	31	1				4.00			
AROSA	01	1420 E	1435 D		N08	W13	5344	15 D	1&							
CAPRI S	01	1420 E	1440		N09	W09	5344	20 D	1	2	1424	2.20	2.20			S-SWF
ZURICH	01	1420	1445		N11	W13	5344	25	2	2	1420		7.00			
CAPRI G	01	1422	1443		N10	W13	5344	23	1&				4.00			
MCMATH	01	1424 E	1447 D	1424	N09	W13	5344	23 D	1	2	1424		2.00			
WENDEL	01	1426 E	1438 D		N09	W13	5344	12 D	1				4.00			
CLIMAX	01	1426	1442	1428	N14	W66	5339	16	1		1428	2.80				
ZURICH	01	1427	1449		N16	W67	5339	22	2	2	1427		10.00			
CAPRI S	01	1430 E	1448		N15	W70	5339	18 D	1	2	1431	2.20	5.00			
AROSA	01	1426	1435 D		N11	W64	5341	9 D	1							
WENDEL	01	1434 E	1446 D		N14	W64	5341	12 D	1&				5.00			
CAPRI G	01	1435 E	1447 D		N13	W68	5341	12 D	1				4.00			
ZURICH	01	1451	1455		S12	W49	5340	4	1	2	1451		1.00			
ZURICH	01	1647			N11	W12	5344		1	2	1647		2.00			
SAC PEAK	01	1650	1832	1702	S13	W53	5340	102	2&	2		9.75			37	
ZURICH	01	1655	1723 D		S09	W52	5340	28	3	2	1655		25.00			
CLIMAX	01	1656	1756	1707	S11	W53	5340	60	2		1707	6.20				S-SWF
LOCKHEED	01	1656	1807	1700	S12	W53	5340	71	2&	3	1700	6.10				
MEUDON	01	1700 E			S12	W45	5340		2-							
AROSA	01	1700 E	1715 D		S15	W54	5340	15 D	2&							
LOCKHEED	01	1923	2130 U	1938	N11	E60	5354	127 D	2	3	1938	6.80				
SAC PEAK	01	1926	2216	1958	N12	E61	5354	170	2&	2		12.30			24	Slow S-SWF
HAWAII	01	2044 E	2146		N14	E60	5354	62 D	2&	2	2044	11.10	21.20			
LOCKHEED	01	1947	2030	1953	N09	W15	5344	43	1	3	1953	2.50				
SAC PEAK	01	1948	2030 D	1956	N09	W15	5344	42 D	2	2		6.10			22	Slow S-SWF
HAWAII	01	2202	2220	2206	S07	W59	5340	18	1	3	2206	2.60	4.90			
HAWAII	01	2222	2256	2234	N11	W18	5344	34	1	3	2234	2.90	3.00			
HAWAII	01	2236	2244	2240	S07	W59	5340	8	1	3	2240	2.90	5.50			
MITAKA	02	0256	0258		S14	W54	5340	2	1	1	0256			1.97	128	
MITAKA	02	0355 E	0402		N09	W19	5344	7 D	1	1	0356	1.51	1.59	1.79	110	

SOLAR FLARES

SEPTEMBER 1959

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURATION	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION	MINUTES			TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
	SEPT 1959															
MITAKA	02	0415 E	0425		S00	E38	5353	10 D	1	1	0415	3.02	4.05	1.92	102	
MITAKA	02	0451	0505	0453	N09	W15	5344	14	1	1	0453	1.81	1.85	1.77	131	
SIMEIZ	02	0720 E	0725 D		N25	W76	5339	5 D	1	1	0730		5.10	7.10		
MEUDON	02	0721	0757 D	0746	N13	W13	5344	36 D	1&				12.00			
WENDEL	02	0722 E	0904 D		N12	W10	5344	102 D	2				9.00			
SIMEIZ	02	0723 E	0914 D		N11	W10	5344	111 D	1&	1	0726		7.80	3.00		
MITAKA	02	0725 E	0757 D	0735	N10	W09	5344	32 D	2	1	0735	6.23	6.23	2.97	204	Slow S-SWF
R O HERST	02	0731 E	0920	0745 U	N12	W10	5344	109 D	1&	3	0738	4.40	4.40	3.17	92	
ZURICH	02	0736 E	0925	0745	N10	W10	5344	109 D	3	3	0745		12.00			
AROSA	02	0740 E	0930		N11	W09	5344	110 D	2&							
MEUDON	02	0855	0940		S13	W60	5340	45	1							
ZURICH	02	0857	0913	0900	S11	W59	5340	16	1	3	0900		3.00			
AROSA	02	0900	0930		S13	W62	5340	30	1							
WENDEL	02	0919 E	1002 D		S09	W60	5340	43 D	1&				5.00			
ZURICH	02	0920	0938		S12	W59	5340	18	1	3	0920		3.00			
AROSA	02	0934	0950		N10	W20	5344	16	1							
ZURICH	02	0935	0955 D		N11	W21	5344	20 D	1	3	0935		3.00			
ZURICH	02	1212 E	1222		N25	W73	5339	10 D	1	2	1212		3.00			
ZURICH	02	1430	1450		N30	W82	5339	20	1	2	1430		5.00			
ZURICH	02	1430	1450		N10	W22	5344	20	1	2	1430		2.00			
SAC PEAK	02	1448	1505	1452	N16	E07	5348	17	1	3		2.50			28	
ZURICH	02	1451	1458		N10	E04	5348	7	1	2	1451		1.00			
ZURICH	02	1451	1507		N15	E07	5348	16	1	2	1451		4.00			
ZURICH	02	1456	1459		S11	E33	5353	3	1	2	1456		2.00			
SAC PEAK	02	1602	1637	1606	N24	W76	5339	35	1	3		3.23			30	
MEUDON	02	1603	1645	1607	N25	W70	5339	42	1&							
CLIMAX	02	1604	1634	1607	N24	W78	5339	30	1		1607	2.70				S-SWF
MCMATH	02	1605 E	1633 D	1605	N24	W75	5339	28 D	1	1	1605					
WENDEL	02	1610 E	1634 D		N27	W79	5339	24 D	2				9.00			
SAC PEAK	02	1730	1802	1744	S13	W69	5340	32	1	3		2.32			18	S-SWF
SIMEIZ	03	0645	0715 D	0648	S13	W78	5340	30 D	1	1	0649		4.10	3.40	52	
ZURICH	03	0710 E	0718 D		N08	W32	5344	8 D	1	3	0710		1.00			
ZURICH	03	0844	0900		N09	W34	5344	16	1	3	0844		3.00			
ZURICH	03	0859	0912		N05	W33	5343	13	1	3	0859		2.00			
ZURICH	03	0909	0916		N09	W34	5344	7	1	3	0909		3.00			
WENDEL	03	0950 E	1014 D		N12	W15	5344	24 D	1				4.00			
ZURICH	03	1013 E	1043		N12	W17	5344	30 D	1&	3	1013		5.00			
WENDEL	03	1131 E	1154 D		S11	W74	5340	23 D	1&							
WENDEL	03	1442 E	1522 D		N12	W17	5344	40 D	1				3.00			
WENDEL	03	1530 E	1612 D		S12	W75	5340	42 D	1&				6.00			
CLIMAX	03	1802	1924	1817	N15	W29	5344	82	1		1817	3.30				
LOCKHEED	03	1806 E	1920		N14	W29	5344	74 D	1	2	1822	2.40				G-SWF
MCMATH	03	1806 E	1950 D		N14	W29	5344	104 D	2	1	1820		5.00			
SAC PEAK	03	1840 E	1922 D	1848	N15	W30	5344	42 D	1&	2		5.10			17	
WENDEL	04	0642 E	0733 D		N09	W46	5344	51 D	1				3.00			
ZURICH	04	0706 E	0710 D		N09	W45	5344	4 D	1	3	0706		2.00			
CAPRI G	04	0730	0820		N15	W80	5339	50	2				5.00			
WENDEL	04	0758 E	0821 D		N09	W46	5344	23 D	1&				5.00			
SIMEIZ	04	0801 E	0839 D	0803 U	N08	W47	5344	38 D	1	1	0839		2.60	3.70	68	
SIMEIZ	04	0825 E	0840 D	0825 U	S13	W90	5340	15 D	1	1	0825				32	
WENDEL	04	0845 E	0918 D		N09	W47	5344	33 D	1				3.00			

SOLAR FLARES

SEPTEMBER 1959

OBSERVATORY	DATE SEPT 1959	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg.	MEASUREMENTS MAX. WIDTH Ha	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
ZURICH	04	0848 E	0906		N09	W45	5344	18 D	1	3	0848		2.00			
ZURICH	04	0853	0907		S12	E14	5353	14	1	3	0853		1.00			
CAPRI G	04	1016	1035		N11	E90	5359	19	1							
WENDEL	04	1036 E	1110 D		N09	W49	5344	34 D	1&				5.00			
ZURICH	04	1038	1102 D		N08	W47	5344	24 D	1	2	1038		3.00			
CAPRI G	04	1044 E	1058		N09	W47	5344	14 D	1				4.00			
CAPRI G	04	1113	1127		N10	E90	5359	14	1							
CAPRI G	04	1122	1250		S11	E17	5353	28	1				3.00			
WENDEL	04	1142 E	1228 D		S12	E14	5353	46 D	1				3.00			
ZURICH	04	1246 E	1312		S12	E12	5353	26 D	1	2	1246		1.00			
LOCARNO	04	1415 E	1424		N19	W17	5348	9 D	1	2	1415		1.00			
ZURICH	04	1502	1504		S12	E11	5353	2	1	2	1502		1.00			
MCMATH	05	1556	1612	1558	N11	W52	5344	16	1	1	1558		2.00			
SAC PEAK	05	1557 E	1614	1557 U	N12	W52	5344	17 D	1	2		3.51			20	
SAC PEAK	05	2330	2348 D	2340	N05	E74	5360	18 D	1&	2		5.00			17	
SIMEIZ	06	0750 E	0805 D	0758 U	N09	E79	5360	15 D	1	1	0758		4.10		64	
WENDEL	06	0907 E	0949 D		S19	E69	5361	42 D	1				4.00			
LOCARNO	06	0915 E	0923		S18	E66	5361	8 D	1&	2	0915		4.00			
LOCARNO	06	0932	0940 D		S19	E65	5361	8 D	1	2						
CAPRI G	07	0755 E	0810 D		S20	W51	5353	15 D	1				3.00			
CAPRI S	07	0834 E	0845		N20	W51	5348	11 D	1	1	0840	2.30	3.70			
LOCARNO	07	0835 E	0855		N18	W48	5348	20 D	1&	2						
ZURICH	07	1009	1016		N16	W52	5348	7	1	3	1009		1.00			
AROSA	08	0615 E	0630 D		S10	W41	5353	15 D	1							
SIMEIZ	08	0836 E	0844 D	0845	N18	W66	5348	8 D	1	1	0844		5.00	2.40	88	
MEUDON	08	0836	0906	0840	N19	W57	5348	30	1				5.00			
STOCKHOLM	08	0839	0857		N21	W60	5348	18	1	2	0844	1.80	3.60			
CAPRI S	08	0840 E	0857		N20	W60	5348	17 D	1	3	0846	2.20	4.80			
ARCETRI	08	0842 E	0847 D		N19	W63	5348	5 D	1	3						
WENDEL	08	0842 E	0904 D	0849	N21	W61	5348	22 D	1&				5.00			
AROSA	08	0850 E	0900 D		N21	W60	5348	10 D	1							
CAPRI G	08	0852 E	0904		N20	W61	5348	12 D	1				4.00			
CAPRI G	08	0901	0918		N20	W42	5348	17	1				3.00			
CAPRI S	08	1311 E	1331		S10	W44	5353	20 D	1	3	1322	1.80	2.30			
SAC PEAK	08	2134	2206	2140	N05	E35	5360	32	1	1		2.50			16	
CAPRI S	09	0645	0800		N05	E32	5360	75	2&	3	0706	4.60	5.50			
LOCARNO	09	0650 E	0820	0720	N05	E29	5360	90 D	2-	2	0720		7.00			
MEUDON	09	0650	0925	0710	N05	E28	5360	155	1&				13.00			
SIMEIZ	09	0651 E	0706 D	0707 U	N05	E29	5360	15 D	1	1	0706		4.60	2.50	92	
CAPRI G	09	0651	0815		N05	E29	5360	84	2				6.00			Slow S-SWF
MITAKA	09	0652	0732	0700	N05	E30	5360	40	1	1	0655	2.71	3.20	2.86	152	
WENDEL	09	0701 E	0812 D		N05	E29	5360	71 D	2				10.00			
AROSA	09	0713 E	0735 D		N05	E30	5360	22 D	2							
ZURICH	09	0739 E	0757 D		N05	E28	5360	18 D	2	3	0739		9.00			
ARCETRI	09	0918 E			N03	E27	5360		1	3	0918	4.10	4.70			
ZURICH	09	0938	0942		N05	E30	5360	4	1	3	0938		1.00			
ZURICH	09	0946	1000		N05	E26	5360	14	1	3	0946		3.00			
LOCARNO	09	1325	1420 D		N06	E25	5360	55 D	1&	2	1335		4.00			

SOLAR FLARES

SEPTEMBER 1959

OBSERVATORY	DATE SEPT 1959	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg.	MEASUREMENTS MAX. WIDTH Ha	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
ZURICH	09	1332	1410		N05	E24	5360	38	1	3	1332		3.00			
WENDEL	09	1525 E	1652 D	1559	N05	E25	5360	87 D	2				12.00			
MCMATH	09	1540	1700 D	1600	N04	E25	5360	80 D	1	1	1600		2.00			
LOCARNO	09	1545	1700	1610	N06	E25	5360	75	2-	2	1610		7.00			Slow S-SWF
CAPRI G	09	1548	1620 D		N05	E24	5360	32 D	2				6.00			
SAC PEAK	09	1552	1720 D	1602 U	N05	E25	5360	88 D	1	2		2.22			30	
CAPRI S	09	1555	1639		N05	E27	5360	44	1&	3	1603	4.00	4.40			
DUNSINK	09	1557 E	1628		S22	W03		31 D	1	2	1558	3.75	3.75	1.80		
LOCKHEED	09	1603 E	1644		N12	E25	5360	41 D	1	3	1616	2.40				
AROSA	09	1625 E	1640 D		N05	E24	5360	15 D	1							
CLIMAX	09	2113	2130 D		N04	E23	5360	17 D	1		2130	2.10				
CAPRI G	10	0747	0803		N19	W90	5348	16	1							
CAPRI G	10	1005	1018		N07	E14	5360	13	1				4.00			
ZURICH	10	1225 E	1230 D		N04	E11	5360	5 D	2	2	1225		7.00			
LOCARNO	10	1436	1505		N06	E13	5360	29	1&	2						
CAPRI G	10	1605	1615 D		N14	E31	5362	10 D	1				3.00			
LOCARNO	10	1610	1640		N09	E35	5360	30	1&	2						
CAPRI G	11	1139	1148		S16	E45	5365	18	1				3.00			
CAPRI G	11	1304	1414		N12	W12	5360	70	1&				4.00			
ZURICH	11	1317	1349 D		N12	W06	5360	32 D	1	2	1317		2.00			
LOCARNO	11	1637	1645		S20	W19	5367	8	1	2						
CAPRI G	12	1327 E	1336		N03	E55	5366	9 D	1				4.00			
LOCARNO	13	0700 E	0800		N14	E85	5373	60 D	1&	2						
LOCARNO	13	1420	1500		N14	E81	5373	40	1	2						
HAWAII	13	1940	1944	1942	N01	E37	5366	4	1	3	1942	2.60	3.20			
CAPRI G	14	0550 E	0600 D		N06	W36	5360	10 D	1				4.00			
SIMEIZ	14	0557 E	0640 D	0655 U	N07	W37	5360	43 D	1	2	0557		3.90	2.30	60	
SIMEIZ	14	0556 E	0700 D	0655 U	N14	E75	5373	64 D	1&	2	0556		6.10	2.30	64	
SIMEIZ	14	0730 E	0741 D	0734 U	N28	W78	5374	11 D	1	2	0735		4.20	2.90	72	
SIMEIZ	14	0742 E	0855 D	0806 U	N16	E73	5373	73 D	1&	2	0751		9.10	2.20	84	
CAPRI S	14	0744 E	0814 D		N15	E80	5373	30 D	1	3	0749	1.50	4.30			
ZURICH	14	0746 E	0803 D		N16	E71	5373	17 D	1	3	0746		4.00			
CAPRI G	14	0750 E	0835		N14	E71	5373	45 D	2				5.00			
STOCKHOLM	14	0825 E	0932 D		N10	E68	5373	67 D	1	3	0847	1.10	2.50			
ARCETRI	14	1022 E			N13	E70	5373		2	3	1022	2.20	6.40			
ZURICH	14	1022	1027		N29	W80	5374	5	1	3	1022		1.00			
LOCARNO	14	1602	1620		S18	W62	5367	18	1	2						
MCMATH	14	1630 E	1800 D		N14	E66	5373	90 D	1	1						
LOCKHEED	15	0135	0155 D	0145 U	N19	E66	5373	20	2	1	0145	10.00			* 2	
WENDEL	15	0724 E	0840 D		N15	E59	5373	76 D	1&				5.00			
CAPRI G	15	0820 E	0915		N14	E58	5373	55 D	2				5.00			
CAPRI G	15	0845 E			S17	W69	5367		1				4.00			
ZURICH	15	1023 E	1102		N13	E58	5373	39 D	1	2	1044		2.00			
ZURICH	15	1250 E	1302		S17	W78	5367	12 D	1	2	1250		3.00			
ZURICH	15	1250 E	1306		N14	E56	5373	16 D	1	2	1250		1.00			
LOCARNO	15	1310	1335	1318	N14	E56	5373	25	1	2	1318		2.00			
MEUDON	15	1310	1340		N13	E55	5373	30	1							

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES
SEPTEMBER 1959

OBSERVATORY	DATE SEPT 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
ZURICH	15	1317	1337		N14	E57	5373	20	1	2	1317		5.00			
WENDEL	15	1319 E	1417 D		N15	E56	5373	58 D	1&				5.00			
CAPRI G	15	1330 E	1340 D		N13	E53	5373	10 D	1				4.00			
ZURICH	15	1402	1413		N14	E54	5373	11	1	2	1402		1.00			
ZURICH	15	1647 E	1650 D		S17	W80	5367	3 D	1	2	1647		3.00			
CAPRI G	16	0746	0807		N21	E90	5379	21	1							
CAPRI S	16	1435 E	1501		N06	W66	5360	26 D	2	3	1444	4.20	10.90			
CAPRI G	16	1546	1603 D		N06	W72	5360	17 D	1&				4.00			
ZURICH	16	1551 E	1616		N04	W72	5360	25 D	1	3	1551		5.00			
CAPRI S	16	1552	1616		N05	W67	5360	26	2	3	1600	2.80	7.30			
MCMATH	16	1553 E	1602 D		N03	W73	5360	9 D	1	1	1556		2.00			
ZURICH	16	1609	1626		S16	W29	5365	17	1	3	1609		3.00			
SAC PEAK	16	1844	1852 D	1850 U	N33	E90	5379	8 D	1	1		2.29			18	Slow S-SWF
HAWAII	16	1846	1854 D	1848	N29	E90	5379	8 D	2	2	1848	1.60				
SIMEIZ	17	0836 E	0846 D	0837 U	N18	E85	5379	10 D	1	1	0837		8.30		52	
SIMEIZ	17	0847	0900	0849	N05	E71	5378	13	1	1	0849		2.30		52	
CAPRI G	17	1122	1132		S14	E13	5375	10	1				3.00			
CAPRI G	18	0716	0732		N21	E71	5379	16	1				4.00			
SIMEIZ	19	0555 E	0730 D		S13	E14	5376	95 D	1	1	0555		1.00	2.10		
SIMEIZ	19	0812 E	0830 D	0815 U	S15	W09	5375	18 D	1	1	0815		3.50		60	
ARCETRI	19	0905 E	0916 D		S12	E12	5376	11 D	1	3	0907	2.50	2.60			
CAPRI G	19	1243	1300		S15	W14	5375	17	1				3.00			
SIMEIZ	20	0753 E	0800 D	0756 U	S11	E71	5381	7 D	1	1	0756		2.50		56	
SAC PEAK	20	1414	1540	1426	N18	E24	5378	86	1	2		3.01			17	
LOCARNO	20	1425	1540		N19	E26	5378	75	1&	2	1500		3.00			
CAPRI S	20	1418 E	1457 D		N10	E24	5383	39 D	1	3	1424	3.00	3.40			
WENDEL	20	1419	1534		N18	E23	5379	75	2				9.00			
CAPRI G	20	1420 E	1510		N19	E34	5379	50 D	2				5.00			
LOCARNO	20	1520	1620		S08	E46	5381	60	1	2	1600		2.00			
CAPRI G	20	1526	1553 D		S07	E44	5381	27 D	1				3.00			
WENDEL	20	1526	1610		S10	E47	5381	44	1&				6.00			
ZURICH	20	1533 E	1553 D		S08	E46	5381	20 D	1	2	1533		3.00			
WENDEL	20	1558	1612		N05	W41	5366	14	1				3.00			
LOCKHEED	20	2252	2325	2256	S08	E52	5381	33	1	1	2256	1.80			3	
SAC PEAK	20	2252	2330	2256	S08	E50	5381	38	1	2		2.32			24	
HAWAII	20	2254	2330	2258	S11	E52	5381	36	1	3	2258	2.10	3.40			
MITAKA	20	2258 E	2315		S05	E53	5381	17 D	1	2	2301	.80	1.50	2.39		
HAWAII	21	0056	0114	0106	S18	E56	5381	18	1	3	0106	2.30	5.20			
MITAKA	21	0102 E	0113		S12	E58	5381	11 D	1	1	0106	1.51	3.14	1.72	120	
WENDEL	21	0945 E	1004 D		N02	E11	5383	19 D	1				4.00			
LOCARNO	21	1000 E	1010 D		N12	E10	5383	10 D	1	2						
CAPRI S	21	1100	1132 D		S10	E48	5381	32 D	1	3	1112	2.20	3.30			
WENDEL	21	1106	1137 D		S12	E45	5381	31	1&				5.00			
MCMATH	21	1218	1303		S10	E34	5381	45	1	1	1223		2.00			
MEUDON	21	1219	1300 D		S12	E35	5381	41 D	1				4.00			
CAPRI S	21	1233 E	1259		S08	E35	5381	26 D	1	2	1250	2.50	3.10			
SAC PEAK	21	1344 E	1356	1344 U	S12	E44	5381	12 D	1	2		3.01			17	

SOLAR FLARES

SEPTEMBER 1959

OBSERVATORY	DATE SEPT 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
HAWAII	21	2026	2124 D	2038	N24	E34	5379	58 D	1&	2	2038	4.10	5.20			
SAC PEAK	21	2028 E	2222 D	2036	N28	E34	5379	114 D	2	2		5.95			15	
LOCARNO	23	0725 E	0750		N29	E12	5379	25 D	1&	2						
LOCARNO	23	1240	1250		S08	E09	5381	10	1	2	1245		1.00			
CAPRI G	23	1250 E	1301		S08	E06	5381	11 D	1				3.00			
SAC PEAK	23	2342	2346 D	2346 U	N21	W16	5378	4 D	1	1		2.90			14	
HAWAII	24	0044	0048	0048	N06	W23	5383	4	1	3	0048	2.50	2.70			
SIMEIZ	24	0745	0823 D	0749	S19	W00	5381	38 D	1	1	0748		2.40	3.00	100	
ZURICH	24	1010	1018		S07	W01	5381	8	1	3	1010		2.00			
LOCARNO	24	1500 E	1515 D		S07	W03	5381	15 D	1	2						
CAPRI G	25	0749	0757 D		S07	W13	5381	8 D	1				3.00			
CAPRI S	25	0758 E	0809 D		S06	W13	5381	11 D	1	1	0759	3.20	3.20			
CAPRI S	25	1055	1109 D		S07	W16	5381	14 D	1	2	1108	2.10	2.10			
CAPRI G	25	1109 E			S09	W10	5381		1				4.00			
WENDEL	25	1509 E	1550 D		S07	W18	5381	41 D	1				3.00			
WENDEL	26	0906 E	0920 D		N26	W19	5379	14 D	1				3.00			
CAPRI S	26	1256 E	1328 D		S01	W29	5381	32 D	1&	3	1306	4.50	5.00			
CAPRI G	26	1258 E	1320 D		S04	W25	5381	22 D	1				4.00			
SAC PEAK	26	1352	1418	1358	S14	W24	5381	26	1	2		2.29			17	
SAC PEAK	27	2236	2326	2244	S12	W40	5381	50	1	2		2.32			16	S-SWF
CAPRI G	28	0639	0704		S13	E45	5392	25	1&				4.00			
CAPRI S	28	0642	0706		S12	W46	5381	24	1	3	0646	2.50	3.80			
LOCKHEED	29	1900	2000	1926	S08	W30	5385	60	1	2	1926	2.20			2	S-SWF
MITAKA	30	0313 E	0325		S10	W69	5381	12 D	1	1	0315	2.02	5.05	2.50	120	
WENDEL	30	1025 E	1038		S18	E80	5401	13 D	1&				5.00			
MEUDON	30	1316	1326		S12	W80	5381	10	1							
CAPRI G	30	1321 E	1353 D		S13	W72	5389	32 D	1				4.00			

*Lockheed observations: Starting September 10, 1959 all values in the maximum intensity column are arbitrary units on a scale of 1 to 4 - not percent of the continuous spectrum.

COMMERCE - STANDARDS - BOULDER

Errata:

The latitude reported for the Sydney flare observed April 9, 1959 at 2343 UT., which was published in CRPL-F 180 Part B, August 1959 should be corrected to read South 11 instead of North 19.

CAPRI C	ANACAPRI - CERMAN
CAPRI S	ANACAPRI - SWEDISH
COOD HOPE	ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV*	KIEV UNIVERSITY
KODAIKNAL	KODAIKANAL
KRASNYA	KRASNAYA PAKHRA
LOCKHEED	LOS ANCELES
MOSCOW-C	MOSCOW - CAISH
R O EDIN	ROYAL OBSERVATORY, EDINBURGH
R O HERST	GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK	SACRAMENTO PEAK
SCHAUINS	SCHAUINSLAND
USNRL	UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

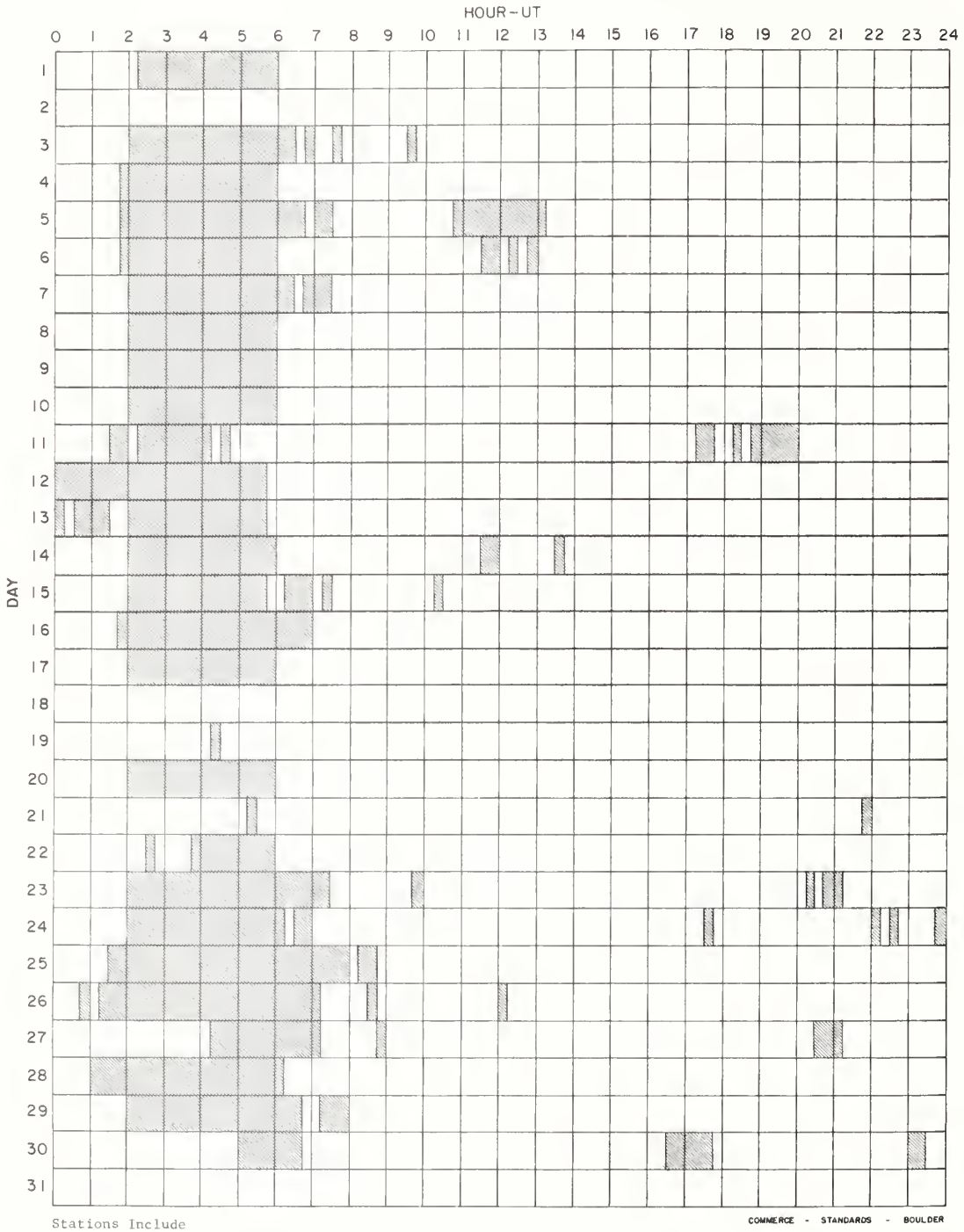
E - LESS THAN & - PLUS

D - CREATER THAN - - MINUS

U - APPROXIMATE ☐ - NOT REPORTED

INTERVALS OF NO FLARE PATROL OBSERVATIONS

SEPTEMBER 1959



Stations Include

Anacapri (Swedish)	Hawaii	Royal Greenwich Observatory
Arcetri	Locarno	Herstmonceux
Arosa	Lockheed	Sacramento Peak
Climax	Meudon	Simeiz
Dunsink	Mitaka	Zurich

SUBFLARES

Noted as follows: Date-Universal Time-Coordinates

AUGUST 1959

* LOCARNO	01	0715	N13 E06	
* LOCARNO	01	0727	N17 W38	
* CAPRI S	01	1034 E	N07 W17	
MCMATH	01	1140	N15 W35	
MCMATH	01	1207	N10 W01	
MCMATH	01	1301	N15 W35	
MCMATH	01	1319	N08 W48	
SAC PEAK	01	1454	N14 W00	
LOCARNO	01	1505	N03 E25	
MCMATH	01	1508 E	N15 W35	
LOCKHEED	01	1551	N12 W14	
SAC PEAK	01	1556 E	N12 W13	
LOCKHEED	01	1618	N27 W21	
MCMATH	01	1645 E	S21 E30	
LOCKHEED	01	1650	N10 E66	
LOCKHEED	01	1710	N13 W37	
LOCKHEED	01	1713	N11 W21	
LOCKHEED	01	1746	N15 W50	
MCMATH	01	1746	N15 W37	
LOCKHEED	01	1811	N06 W22	
MCMATH	01	1812	N07 W22	
* HAWAII	01	1824 E	N15 W12	
LOCKHEED	01	1901	N06 E21	
LOCKHEED	01	2028	N06 E21	
MCMATH	01	2039	N13 W13	
LOCKHEED	01	2047	N13 W14	
MCMATH	01	2107	N10 W05	
LOCKHEED	01	2214	N12 W20	
LOCKHEED	02	0148	N11 E16	
WENDEL	02	0706 E	N12 E15	
* WENDEL	02	0722 E	N03 E18	
MCMATH	02	1134	S22 E20	
MCMATH	02	1151	N12 W31	
MCMATH	02	1156	N18 W59	
MCMATH	02	1210	N07 W33	
MCMATH	02	1235 E	N14 W15	
MCMATH	02	1244	N07 W33	
MCMATH	02	1303	N07 W33	
SAC PEAK	02	1406	N12 W25	
MCMATH	02	1432	S22 E18	
SAC PEAK	02	1442	N14 W27	
MCMATH	02	1555 E	N15 W27	
SAC PEAK	02	1608	N06 E07	
MCMATH	02	1609	N06 E07	
SAC PEAK	02	1610	N14 W27	
SAC PEAK	02	1616	N12 W16	
MCMATH	02	1638	N06 E07	
MCMATH	02	1652	N15 W27	
MCMATH	02	1700	S23 E19	
SAC PEAK	02	1704 E	S22 E18	
HAWAII	02	1828	N05 E12	
SAC PEAK	02	1828	N03 E12	
LOCKHEED	02	1828	N03 E12	
MCMATH	02	1828	N05 E13	
MCMATH	02	1855	N35 W29	
SAC PEAK	02	1920	N03 E11	
MCMATH	02	1921	N03 E10	
LOCKHEED	02	1931	S23 E18	
MCMATH	02	1931	S23 E19	
SAC PEAK	02	1936 E	S22 E17	
MCMATH	02	2032	N04 E11	
LOCKHEED	02	2127	S22 E16	
MCMATH	02	2127	S23 E18	
HAWAII	02	2128	S21 E16	
SAC PEAK	02	2134 E	S22 E15	
MCMATH	02	2148	N13 W27	
LOCARNO	03	0610	N14 W18	
LOCARNO	03	1200	N12 W37	
MCMATH	03	1220	N13 W40	
MCMATH	03	1308	N12 W40	
LOCARNO	03	1318	N01 W05	
MCMATH	03	1321	N02 W06	
SAC PEAK	03	1322	N02 W05	
SAC PEAK	03	1346	N11 W39	
MCMATH	03	1347	N12 W39	
* SAC PEAK	03	1348	S22 E06	
* MCMATH	03	1348	S21 E07	
* LOCARNO	03	1350	N14 W76	
* SAC PEAK	03	1350	N17 W78	
LOCARNO	03	1352	N12 W37	
LOCARNO	03	1419	N01 W06	
LOCARNO	03	1420	S21 E07	
SAC PEAK	03	1422	N02 W07	
SAC PEAK	03	1424	S22 E07	
MCMATH	03	1433 E	S21 E07	
* SAC PEAK	03	1514	N07 W11	
* MCMATH	03	1517 E	N07 W11	
* SAC PEAK	03	1548	N01 W07	
SAC PEAK	03	1644	N02 W04	
SAC PEAK	03	1654	S21 E06	
SAC PEAK	03	1722	S22 E05	
SAC PEAK	03	1732	N03 W02	
SAC PEAK	03	1804	N25 E84	
LOCKHEED	03	1913	N05 W06	
LOCKHEED	03	2135	N13 W30	
SAC PEAK	03	2136	N13 W29	
LOCKHEED	03	2216	N13 W29	
LOCKHEED	03	2312 E	N01 W10	
SIMEIZ	04	0646 E	N00 E47	
* WENDEL	04	0717 E	N05 W13	
SIMEIZ	04	0807 E	N06 W14	
* R O HERST	04	1050 E	N02 W10	
MCMATH	04	1622 E	N18 W90	
LOCKHEED	04	1631	S02 E38	
LOCKHEED	04	1704	N02 W16	
MCMATH	04	1704	N02 W16	
LOCKHEED	04	1714	N15 E90	
LOCKHEED	04	1716	N14 W56	
LOCKHEED	04	1750	N15 E61	
LOCKHEED	04	1817	N06 W16	
LOCKHEED	04	1847	N16 E60	
LOCKHEED	04	2027	N02 W23	
LOCKHEED	04	2046	N10 W30	
MCMATH	04	2057 E	N09 W29	
LOCKHEED	05	0018	S34 W05	
LOCKHEED	05	0056	N02 W22	
LOCKHEED	05	0106	N08 W32	
SIMEIZ	05	0637 E	N11 E17	
ZURICH	05	0701 E	N06 W35	
LOCARNO	05	0950	N18 E64	
MCMATH	05	1115 E	N28 E35	
MCMATH	05	1115 E	S01 E32	
MCMATH	05	1310	N05 W26	
CAPRI S	05	1312	N02 W24	
MCMATH	05	1312	S01 E31	
MCMATH	05	1329	N09 W40	
MCMATH	05	1400	N14 E50	
MCMATH	05	1449	N11 E11	
* SAC PEAK	05	1536	N07 W35	
MCMATH	05	1554	S01 E30	
MCMATH	05	1600	N13 E50	
SAC PEAK	05	1628	N13 E74	
MCMATH	05	1629 E	N11 E85	
MCMATH	05	1640 E	S01 E30	
LOCKHEED	05	1729	N16 W70	
LOCKHEED	05	1733	N20 E59	
MCMATH	05	1737	N18 E60	
LOCKHEED	05	1801	N12 W70	
MCMATH	05	1803	S18 E37	
MCMATH	05	1808	N11 W74	
SAC PEAK	05	1810	N11 W60	
LOCKHEED	05	1911	N12 E69	
* SAC PEAK	05	1950 E	S17 E38	
MCMATH	05	2017	N12 W75	
LOCKHEED	05	2033	N13 W74	
LOCKHEED	05	2037	N05 W39	
LOCKHEED	05	2037	N13 E69	
LOCKHEED	05	2044	N04 W30	
LOCKHEED	05	2121	N13 E71	
LOCKHEED	05	2251	N09 W44	
MCMATH	05	2255 E	N08 W46	
LOCKHEED	05	2309	N13 E71	
* CAPRI S	06	0558 E	N14 E65	
LOCARNO	06	0855	N13 W71	
LOCARNO	06	1030	N13 W72	
MCMATH	06	1200	N15 E37	
MCMATH	06	1210	N14 W78	
MCMATH	06	1225 E	S11 E26	
* MCMATH	06	1323	N13 E66	
MCMATH	06	1351	N17 E43	
* MCMATH	06	1500	N13 E64	
* LOCKHEED	06	1505 E	N15 E62	
* LOCKHEED	06	1518	N17 E31	
* MCMATH	06	1519	N16 E33	
* MCMATH	06	1525	S01 E18	
MCMATH	06	1544	N10 W68	
* LOCKHEED	06	1635	N10 W77	
* MCMATH	06	1640	N11 W78	
LOCARNO	06	1643	N16 E61	
SAC PEAK	06	1656	N11 W76	
LOCARNO	06	1659	N16 E61	
LOCKHEED	06	1731	N16 E61	
LOCKHEED	06	1752	N16 E61	
MCMATH	06	1752	N13 E60	
LOCKHEED	06	1758	N14 E60	
MCMATH	06	1834	N14 E60	
MCMATH	06	1835 E	N14 W40	
MCMATH	06	1919 E	N14 E60	
MCMATH	06	1944	N15 E41	
MCMATH	06	2002	N15 E60	
LOCKHEED	06	2137	N18 E34	
MCMATH	06	2138 E	N17 E34	
MCMATH	06	2147	N15 E58	
LOCKHEED	06	2153	N15 E60	
LOCKHEED	06	2336	N18 E34	
SIMEIZ	07	0704 E	N26 E36	
SIMEIZ	07	0709 E	N18 E31	
SIMEIZ	07	0716 E	N17 W71	
* CAPRI S	07	0729 E	N20 E39	
SIMEIZ	07	0802 E	S07 E23	
WENDEL	07	0844 E	N17 E25	
* ARCETRI	07	0849 E	N18 E30	
* STOCKHOLM	07	0951 E	N13 E48	
SAC PEAK	07	1322	N05 E90	
SAC PEAK	07	1426	S07 E18	
SAC PEAK	07	1520	N21 E31	
LOCKHEED	07	1520	N22 E30	
WENDEL	07	1522 E	N21 E30	
* LOCKHEED	07	1532	N18 E19	
* SAC PEAK	07	1534 E	N17 E19	
* SAC PEAK	07	1534	S07 E18	
WENDEL	07	1536 E	N16 E20	
SAC PEAK	07	1658	N03 W55	
LOCKHEED	07	1659	N02 W54	
LOCKHEED	07	1716	N14 E46	
SAC PEAK	07	1716	N14 E47	
WENDEL	07	1721 E	N12 E46	
SAC PEAK	07	1724 E	N17 E17	
LOCKHEED	07	1724	N17 E19	
* SAC PEAK	07	1732	N17 E17	
LOCKHEED	07	1856	N29 E29	
LOCKHEED	07	2108	N18 E16	
LOCKHEED	07	2320	S06 E13	
LOCKHEED	08	0024	N18 E13	
HAWAII	08	0034 E	N17 E14	
WENDEL	08	0537 E	N17 E20	
WENDEL	08	0546 E	N17 E09	
* SIMEIZ	08	0652 E	N18 E11	
WENDEL	08	0704 E	N02 W02	
SIMEIZ	08	0707	N01 W07	
* WENDEL	08	0733 E	N17 E27	
WENDEL	08	0814 E	N01 W70	
STOCKHOLM	08	0831	N05 W69	
* WENDEL	08	0839 E	N15 E33	
* STOCKHOLM	08	0842	N12 E36	
* STOCKHOLM	08	0858	N03 W10	
* CAPRI S	08	0939 E	N17 E10	
* STOCKHOLM	08	0944 E	N12 E36	
STOCKHOLM	08	0958 E	S10 W61	
SAC PEAK	08	1356	N14 E34	
SAC PEAK	08	1356	N14 W90	
* CAPRI S	08	1449 E	N13 E33	
SAC PEAK	08	1546	N14 W90	
SAC PEAK	08	1702 E	N16 E35	
LOCKHEED	08	1705	N15 E13	
LOCKHEED	08	1711	N25 W90	
MCMATH	08	1714 E	N22 W90	
SAC PEAK	08	1715 E	N23 W90	
MCMATH	08	1725	S08 E05	
MCMATH	08	1727	N17 E24	
MCMATH	08	1742 E	N11 W29	
MCMATH	08	1745	N27 E18	
* MCMATH	08	1837	N01 W15	
MCMATH	08	2012	N16 E05	
LOCKHEED	08	2038	N02 W79	
LOCKHEED	08	2056	N12 W30	
MCMATH	08	2149	N18 E11	
LOCKHEED	08	2149	N18 E10	
HAWAII	08	2150	N18 E09	
LOCKHEED	08	2154	N00 W16	
LOCKHEED	09	0031	N12 W34	
LOCKHEED	09	0118	N16 E01	
LOCKHEED	09	0124	N18 W01	
HAWAII	09	0130 E	N18 W01	
SIMEIZ	09	0817 E	S07 W05	
SAC PEAK	09	1422	N07 E08	
* CAPRI S	09	1423 E	N21 E06	
SAC PEAK	09	1540	N02 E83	
CLIMAX	09	1541	N00 E82	
SAC PEAK	09	1812	N20 E05	
LOCKHEED	09	1918	N18 E04	
LOCKHEED	09	2347	N11 E85	
SIMEIZ	10	0852 E	N12 W53	
SIMEIZ	10	0855 E	S07 W20	
WENDEL	10	1200 E	S18 E34	
SAC PEAK	10	1420	N02 W38	
SAC PEAK	10	1424	N17 E10	
SAC PEAK	10	1514	N10 E73	
SAC PEAK	10	1528	N21 E03	
* LOCKHEED	10	1555	N27 W08	
LOCKHEED	10	1648	N11 E74	
SAC PEAK	10	1648	N10 E73	
MCMATH	10	1651 E	N10 E80	
MCMATH	10	1811	N19 W14	
SAC PEAK	10	1812	N19 W14	
LOCKHEED	10	1812	N21 W18	
SAC PEAK	10	1848	N22 W09	
LOCKHEED	10	1849	N21 W09	
MCMATH	10	1850	N20 W12	
LOCKHEED	10	1855	N21 W18	
LOCKHEED	10	2142	S07 W28	
MCMATH	10	2152 E	S07 W27	
MCMATH	10	2157	N18 W14	
LOCKHEED	10	2157	N19 W14	
HAWAII	10	2200	N18 W13	
LOCKHEED	10	2332	S08 W28	
LOCKHEED	10	2344	N11 E72	
LOCKHEED	11	0022	N11 E72	
HAWAII	11	0026 E	N08 E70	
LOCKHEED	11	0102	N11 E72	
SIMEIZ	11	0620 E	S10 W38	
SIMEIZ	11	0623 E	S14 W30	
SIMEIZ	11	0639 E	N10 E67	
WENDEL	11	0719 E	N14 W07	
LOCARNO	11	0856	N20 W17	
* WENDEL	11	0901 E	N11 E63	
* MCMATH	11	1205 E	N20 W25	
SAC PEAK	11	1331	N15 W03	
SAC PEAK	11	1350	S07 W35	
SAC PEAK	11	1400	N11 W22	
* SAC PEAK	11	1410	N02 W59	
* SAC PEAK	11	1412	S07 W38	
WENDEL	11	1413 E	N00 W33	
WENDEL	11	1420 E	N17 E10	
SAC PEAK	11	1434	N15 W23	
SAC PEAK	11	1442	N10 E59	
SAC PEAK	11	1526	S07 W36	
LOCKHEED	11	1646	N17 W07	
MCMATH	11	1647	N16 W05	
HUANCAYO	11	1649 E	N17 W02	
LOCKHEED	11	1730	N12 E50	
MCMATH	11	1807 E	N20 W27	
LOCKHEED	11	1958	N03 W60	
MCMATH	11	2044	S09 W40	
MCMATH	11	2210 E	N20 W28	
LOCKHEED	11	2221	N17 W08	
LOCKHEED	11	2226	N11 E58	
LOCKHEED	12	0003	* N09 E55	
LOCKHEED	12	0154	N17 W10	
LOCKHEED	12	0206	N17 W35	
SIMEIZ	12	0556 E	S06 W46	
SIMEIZ	12	0626	S09 E24	
SIMEIZ	12	0720 E	S10 W42	
MCMATH	12	1150 E	N13 W19	
* CAPRI S	12	1217 E	S06 W44	
* MCMATH	12	1220 E	N11 E52	
CAPRI S	12	1342 E	S07 E19	
MCMATH	12	1345 E	S09 E20	
* SAC PEAK	12	1534	S09 E18	
SAC PEAK	12	1616	S09 E18	
MCMATH	12	1620 E	S09 E20	
LOCARNO	12	1635	N18 W41	
LOCKHEED	12	1637	N12 W22	
SAC PEAK	12	1642 E	N19 W42	
LOCKHEED	12	1703	N06 W71	
LOCKHEED	12	1721	N12 W23	
LOCKHEED	12	1807	N20 W41	
SAC PEAK	12	1812	N20 W41	
MCMATH	12	1812 E	N21 W41	
LOCKHEED	12	1830	S07 W50	
MCMATH	12	1830	S06 W49	
MCMATH	12	1929	N15 E54	
* MCMATH	12	1940	N10 W87	
* HAWAII	12	1940	N09 W80	
LOCKHEED	12	1947 E	S01 W85	
MCMATH	12	1950	N11 W87	
LOCKHEED	12	2210	S10 W51	
* LOCKHEED	13	0012	S09 W51	
SIMEIZ	13	0613	N23 E33	
SIMEIZ	13	0630 E	N13 E41	
STOCKHOLM	13	0918	N08 W77	
HAWAII	13	2124 E	S08 E01	
MCMATH	13	2129	S08 E01	
HAWAII	14	0004	N06 E90	
LOCARNO	14	0847	N13 E22	
WENDEL	14	0954 E	N14 E24	
STOCKHOLM	14	0955	N12 E23	
MCMATH	14	1143	N09 E21	
MCMATH	14	1144	N29 W62	
MCMATH	14	1220	N13 E21	
WENDEL	14	1629 E	N05 E53	
MCMATH	14	1753	N28 W58	
MCMATH	14	1756	S09 E87	
MCMATH	14	1800 E	N12 E17	
HAWAII	14	1802 E	N14 E15	
* MCMATH	14	1847	N14 E16	
MCMATH	14	2203 E	N11 E16	
SAC PEAK	14	2300	S05 W18	
LOCKHEED	14	2300	S05 W17	
HAWAII	14	2302	S05 W17	
LOCKHEED	14	2317	S09 E87	
LOCKHEED	15	0150	N14 E13	
* CAPRI S	15	1453 E	N15 E05	
* SAC PEAK	15	1456 E	N14 E03	
MCMATH	15	1600	N13 E05	
MCMATH	15	1626 E	N14 E15	
LOCKHEED	15	1818	N13 E01	
LOCKHEED	15	1823	N14 E03	
HAWAII	15	1826	N14 E03	
MCMATH	15	1827 E	N14 E04	
LOCKHEED	15	1902	N13 W01	
* HAWAII	15	1932	N14 E00	
LOCKHEED	15	2055	N12 E02	
LOCKHEED	15	2121	N12 E04	
LOCKHEED	15	2328	N15 E01	
LOCKHEED	16	0110	N12 W70	
SIMEIZ	16	0632	N06 E48	
SIMEIZ	16	0646	N15 W03	
SIMEIZ	16	0835 E	N15 W03	
LOCARNO	16	1346 E	N14 W02	
LOCKHEED	16	2016	S08 W37	
HAWAII	16	2020	S09 W38	
LOCKHEED	16	2043	N13 W13	
LOCKHEED	16	2222	N14 W12	
HAWAII	16	2318	N13 W14	
SAC PEAK	16	2320	N14 W13	
HAWAII	17	0102	N11 W16	
SIMEIZ	17	0626	N15 W17	
SIMEIZ	17	0805 E	N15 W21	
SIMEIZ	17	0853 E	N15 W17	
* MEUDON	17	1236	N03 E38	
SAC PEAK	17	1345 E	N16 W90	
SAC PEAK	17	1346	N12 W18	
* SAC PEAK	17	1404	S07 W48	
* CLIMAX	17	1409	S06 W48	
SAC PEAK	17	1410	N14 W24	
* R O HERST	17	1412 E	S06 W44	

SUBFLARES

Noted as follows: Date-Universal Time-Coordinates

AUGUST 1959

* MEUDON	18	1438		S04 W21		SAC PEAK	21	1425 E	S15 W90		* MEUDON	25	1246		N09 W85
* CAPRI	18	1439	E	S16 W18		MCMATH	21	1448	N10 E46		MCMATH	25	1257		N17 W09
* R O HERST	18	1439		N13 W23		SAC PEAK	21	1448	N10 E45		SAC PEAK	25	1314		N05 W65
HUANCAYO	18	1606		N15 W22		WENDEL	21	1450 E	N11 E44		MCMATH	25	1328		S05 E88
MCMATH	18	1608	E	N14 W27		SAC PEAK	21	1450	N23 E76		SAC PEAK	25	1332		S10 E46
MCMATH	18	1634	F	N12 W25		WENDEL	21	1503 E	N24 E71		* MEUDON	25	1639		N12 W11
HUANCAYO	18	1635		N14 W22		LOCKHEED	21	1555	N13 E41		* MCMATH	25	1640		N14 W06
MEUDON	18	1642		N06 E45		* LOCKHEED	21	1617	N10 W25		MCMATH	25	1706		N13 E06
HUANCAYO	18	1647		N07 E39		MCMATH	21	1618 E	N05 W25		* MCMATH	25	1720		S13 E41
LOCKHEED	18	1852		N04 E42		SAC PEAK	21	1740	N 1 E42		MCMATH	25	1757		S13 E41
LOCKHEED	18	2017		N14 W28		LOCKHEED	21	1733	N11 E43		MCMATH	25	1819		S10 W62
LOCKHEED	18	2150		N13 W30		LOCKHEED	21	1747	S17 E90		MCMATH	25	1831		N13 W07
LOCKHEED	18	2155		N14 W40		SAC PEAK	21	1748	N07 W18		MCMATH	25	1839		S13 E40
LOCKHEED	18	2330		N14 W22		MCMATH	21	1752 E	N06 W20		MCMATH	25	1906		S11 E40
LOCKHEED	18	2345		N13 W28		SAC PEAK	21	1752	S14 W90		HAWAII	25	2018		N18 W13
						SAC PEAK	21	1756	N12 E89		LOCKHEED	25	2236 E		N17 E16
* LOCKHEED	18	0025		N15 W32		HAWAII	21	1758 E	N07 W17		LOCKHEED	25	2249		N07 W82
* HAWAII	18	0026		N16 W31		LOCKHEED	21	1822	N18 E41		LOCKHEED	25	2331		N17 W15
SIMEIZ	18	0651		N03 E21		LOCKHEED	21	1840	N13 E68						
* STOCKHOLM	18	1124		N13 E16		LOCKHEED	21	1843	N22 W88		LOCKHEED	26	0009		N14 E37
LOCARNO	18	1132		S08 E35		HAWAII	21	1844	N23 W88		LOCKHEED	26	0030		N15 W17
* ARINA	18	1300	F	N10 W36		LOCKHEED	21	1845	N11 E44		SIMEIZ	26	0629		N24 E16
* MEUDON	18	1301		N04 E29		LOCKHEED	21	1907	N18 E41		* WENDEL	26	0806 E		S08 E30
* CAPRI S	18	1304	E	N05 E25		HAWAII	21	1908	N18 E41		* SIMEIZ	26	0807 E		S09 E30
* CLIMAX	18	1344	E	N11 W45		LOCKHEED	21	1951	N13 E39		* WENDEL	26	0855 E		S04 E75
* STOCKHOLM	18	1356	F	N14 W32		MCMATH	21	2000	N07 E40		* CAPRI S	26	0912 E		S10 E34
CLIMAX	18	2406		N06 E26		LOCKHEED	21	2117	N13 E38		* R O HERST	26	0912		S10 E32
* CLIMAX	18	2406		N04 E13		HAWAII	21	2120	N14 E37		LOCARNO	26	1104		S11 E29
WENDEL	18	2406	E	N08 E25		HUANCAYO	21	2124	N11 E37		* CAPRI S	26	1240		S09 E29
* WENDEL	18	2406	E	N04 E13		LOCKHEED	21	2141	N04 W33		MCMATH	26	1353		S11 E27
SAC PEAK	18	1428	F	N10 W36		LOCKHEED	21	2202	N04 W33		WENDEL	26	1442 E		N20 E12
MCMATH	18	1500		N07 W48		HAWAII	21	2304	N05 W34		MCMATH	26	1528		N12 E11
SAC PEAK	18	1536		N07 W47		LOCKHEED	21	2325	N18 E38		MCMATH	26	1642		N26 E10
* SAC PEAK	18	1526		N15 W39		HAWAII	21	2328	N18 E38		MCMATH	26	1650		N10 E90
* MCMATH	18	1526		N15 W39							CLIMAX	26	1650		N07 E90
* CLIMAX	18	1529		N16 W19		LOCKHEED	22	0000	N25 E75		CLIMAX	26	1802 E		N08 E90
* CAPRI	18	1529	E	N14 W47		LOCKHEED	22	0045	N13 E85		LOCKHEED	26	1825 E		N09 E90
MCMATH	18	1548		N26 W40		LOCKHEED	22	0048	N15 E48		MCMATH	26	1926		N10 E90
MCMATH	18	1633		S08 E43		HAWAII	22	0050	N15 E48		LOCKHEED	26	2015		S11 E26
SAC PEAK	18	1633		S08 E43		LOCKHEED	22	0102	S10 E90		MCMATH	26	2016		S11 E24
WENDEL	18	1638	E	S07 E42		LOCKHEED	22	0102	N18 E38		HAWAII	26	2018 E		S12 E25
SAC PEAK	18	1642		N07 E10		LOCKHEED	22	0142	N13 E85		MCMATH	26	2124		N19 E17
MCMATH	18	1642		N06 E24		LOCKHEED	22	0144	N07 W32		LOCKHEED	26	2124		N19 E16
WENDEL	18	1643	F	N08 E23		SIMEIZ	22	0611	N18 W37		LOCKHEED	26	2325		S14 E27
WENDEL	18	1705	F	N17 W36		SIMEIZ	22	0842	N07 W37		LOCKHEED	26	2329		N23 E07
SAC PEAK	18	1748		N12 E80		SIMEIZ	22	0858 E	S08 W26						
SAC PEAK	18	1756		N14 W41		MCMATH	22	1156	N23 E62		HAWAII	27	0008 E		N23 E03
MCMATH	18	1758	E	N14 W41		MCMATH	22	1220	N13 E59		LOCKHEED	27	0058		S11 E23
MCMATH	18	1845		N14 W41		MCMATH	22	1230	N16 E40		* ARCETRI	27	0943 E		S10 E15
MCMATH	18	1917		N13 E81		MCMATH	22	1231	N13 E59		* CAPRI S	27	1117 E		N25 E02
SAC PEAK	18	1924		N12 E8		* CLIMAX	22	1332 E	N14 E61		* MCMATH	27	1203		S10 E15
MCMATH	18	1932		N09 E10		SAC PEAK	22	1348	N04 W42		* MCMATH	27	1205		N17 W16
MCMATH	18	1937		N15 W39		MCMATH	22	1350	N14 W42		MCMATH	27	1315		N16 W20
SAC PEAK	18	1938		N14 W39		MCMATH	22	1405	N05 W33		* CLIMAX	27	1422		S09 E12
MCMATH	18	2040	E	N12 W40		MCMATH	22	1450 E	N05 W32		* CAPRI S	27	1423 E		S07 E13
MCMATH	18	2112		S07 E26		MCMATH	22	1549	N06 W32		MEUDON	27	1424		S06 E03
MCMATH	18	2150	E	N14 E05		LOCKHEED	22	1600	N06 W33		* MCMATH	27	1428 E		S09 E12
MCMATH	18	2144	F	N14 W40		HUANCAYO	22	1602 E	N07 W30		* MCMATH	27	1432		N16 W38
MCMATH	18	2334		N11 W39		LOCKHEED	22	1636	N08 W30		* LOCARNO	27	1525		N12 W32
						MCMATH	22	1637 E	N07 W31		* MEUDON	27	1559		N17 W19
SIMEIZ	19	0622	F	N04 E15		SAC PEAK	22	1642 E	N07 W31		* MCMATH	27	1603		N28 E00
* WENDEL	19	0849	E	N08 E78		MCMATH	22	1702	N06 W34		* MEUDON	27	1604		N26 E06
MEUDON	19	1123		N15 W18		LOCKHEED	22	1709	N04 W44		LOCARNO	27	1606		N16 W37
CAPRI	19	1128	F	N15 W47		LOCKHEED	22	1721	N15 E40		CLIMAX	27	1608 E		N18 E21
MCMATH	19	1140	F	S24 E26		MCMATH	22	1722	N15 E40		* HUANCAYO	27	1611 E		N30 E03
MCMATH	19	1158		N04 E11		LOCKHEED	22	1740	N07 W33		* MEUDON	27	1615		N15 W34
MCMATH	19	1302		N07 E07		LOCKHEED	22	1749	S12 E90		* MCMATH	27	1616		N15 W39
MCMATH	19	1316		N14 E65		LOCKHEED	22	1807	N24 E61		* HUANCAYO	27	1620		N17 W36
MCMATH	19	1335		N11 E80		LOCKHEED	22	1811	N06 W38		LOCARNO	27	1625		N09 E74
* MCMATH	19	1344		N12 E75		HAWAII	22	1820	N05 W37		MCMATH	27	1657		N15 W30
* WENDEL	19	1348	E	N15 E67		MCMATH	22	2020	N05 W38		MCMATH	27	1708		N26 W03
MCMATH	19	1510		N08 E13		MCMATH	22	2036	N15 W44		MCMATH	27	1755 E		S09 E15
MCMATH	19	1519		N14 E65		HAWAII	22	2044	N19 W44		HAWAII	27	1804		N31 W01
WENDEL	19	1524	F	N15 E66		LOCKHEED	22	2116	N16 E37		MCMATH	27	1820 E		N16 W31
MCMATH	19	1545		N21 W07		LOCKHEED	22	2121	N17 E56		LOCKHEED	27	1935		S12 E13
MCMATH	19	1640		N14 E69		LOCKHEED	22	2121	N05 W36		LOCKHEED	27	1955		S12 E08
MCMATH	19	1751		N 4 E 8		MCMATH	22	2126	N15 E35		HAWAII	27	2000		S13 E05
LOCKHEED	19	1755	F	N14 E68		* LOCKHEED	22	2134	N16 W36		LOCKHEED	27	2006		N13 E73
LOCKHEED	19	1755	E	N13 W56		* MCMATH	22	2246 E	N05 W38		LOCKHEED	27	2017		S12 E08
MCMATH	19	1848		N14 E67		LOCKHEED	22	2228 F	S11 E80		LOCKHEED	27	2041		S12 E08
LOCKHEED	19	1851	F	N13 E86		MCMATH	22	2237 E	N23 E60		LOCKHEED	27	2054		N15 W42
HAWAII	19	1850		N14 E65		MCMATH	22	2237 E	N18 E31		HAWAII	27	2056		N17 W42
MCMATH	19	2019		N15 W47		HAWAII	22	2248	N17 E27		MCMATH	27	2100 E		N16 W41
LOCKHEED	19	2042		N16 W56		LOCKHEED	22	2300	N25 E59		LOCKHEED	27	2101		S12 E08
HUANCAYO	19	2041		N18 W56		LOCKHEED	22	2245	N18 E25		LOCKHEED	27	2126		S12 E08
MCMATH	19	2056		N23 W58		LOCKHEED	22	2347	N05 W37		MCMATH	27	2155		S10 E11
MCMATH	19	2200		N23 W58							LOCKHEED	27	2228		S09 E12
HAWAII	19	2211		N23 W58							MCMATH	27	2233 E		S10 E11
						LOCKHEED	23	0050	N17 E36		HAWAII	27	2234 E		S10 E12
LOCKHEED	20	0045		N14 E9		HAWAII	23	0138	N04 W36		CLIMAX	27	2243		N13 E70
* ARCA	20	0630	F	N44 W05		SIMEIZ	23	0721	N04 W41		LOCKHEED	27	2245		N13 E71
MEUDON	20	1056		N14 E55		APOCA	23	1158	N19 E23		LOCKHEED	27	2338		N10 E70
WENDEL	20	1059	F	N14 E55		SAC PEAK	23	1444	N05 W55						
WENDEL	20	1205	F	N16 E45		SAC PEAK	23	1458	N17 E37						
WENDEL	20	1207	F	N13 E69		* SAC PEAK	23	1638 E	S12 E66		* MEUDON	28	0545 E		S06 E03
WENDEL	20	1220	F	N13 E69		SAC PEAK	23	1808	N05 W56		* MEUDON	28	0608		N21 W12
WENDEL	20	1237	F	N24 W65		HAWAII	23	1810	N05 W57		* MEUDON	28	0751		N10 E65
* MCMATH	20	1250	E	N16 E85		MCMATH	23	1927	N11 E30		MCMATH	28	1157		N23 W14
WENDEL	20	1254	F	N24 W65		HAWAII	23	2136	N07 W47		MCMATH	28	1201		S10 E03
CLIMAX	20	1334		N11 E9		* LOCKHEED	23	2331	N16 E28		* MCMATH	28	1219		N12 W44
CLIMAX	20	1339		N13 E67		LOCKHEED	23	2341	S10 E66		ZURICH	28	1225 E		N23 W16
WENDEL	20	1340	E	N16 E67							MCMATH	28	1226		N14 W06
MCMATH	20	1410	F	N05 W12		LOCKHEED	24	0001	N06 W56		MCMATH	28	1247		N26 W13
MCMATH	20	1421		N17 W69		LOCKHEED	24	0030	N17 E18		MCMATH	28	1334		N12 E64
MCMATH	20	1422		N14 E62		* LOCKHEED	24	0108	N03 W62		MEUDON	28	1341		S06 E02
MCMATH	20	1440	F	N09 E19		SIMEIZ	24	0558 E	S11 E59		MCMATH	28	1341		S08 E00
MCMATH	20	1624		N09 W06		SIMEIZ	24	0714	N11 W43		MCMATH	28	1348		N13 W07
MCMATH	20	1658		N09 W08		MCMATH	24	1116 E	S17 E57		ARCETRI	28	1445 E		N12 E66
MCMATH	20	1758		N14 W16		LOCARNO	24	1400	N16 E13		MCMATH	28	1500 E		N11 E63
MCMATH	20	1805		N15 E66		SAC PEAK	24	1402 E	N17 E14		SAC PEAK	28	1512		N12 W11
LOCKHEED	20	1817		N16 E66		MCMATH	24	1422	S11 E49		* MEUDON	28	1520		N08 E56
MCMATH	20	1857		N09 W15		HUANCAYO	24	1604	N03 W55		* MCMATH	28	1527		N09 E52
MCMATH	20	1911		N07 W05		MCMATH	24	1756	N04 W59		HUANCAYO	28	1543 E		S12 E02
MCMATH	20	1912		N15 E64		MCMATH	24	1827	N11 E03		MCMATH	28	1546 E		S11 E01
* MCMATH	20	1926		N05 W10		LOCKHEED	24	1829	N12 E02		MCMATH	28	1548 E		N14 W09
LOCKHEED	20	1947		N14 E52		LOCKHEED	24	1842	N04 W72		MEUDON	28	1550		N15 W06
MCMATH	20	1959		N15 E54		MCMATH	24	1842	N06 W72		HUANCAYO	28	1553 E		N15 W09
HUANCAYO	20	1941		N14 E50		MCMATH	24	1853	N07 W65		MCMATH	28	1556		N09 E52
LOCKHEED	20	2014	S	N16 E63		LOCKHEED	24	1935	S14 E69		MCMATH	28	1630		N09 E52
LOCKHEED	20	2014		N13 W04		LOCKHEED	24	1949	N04 W72		MCMATH	28	1703		N19 E50
MCMATH	20	2015		N04 W04		MCMATH	24	1949	N06 W72		MCMATH	28	1725		N19 E50
MCMATH	20	2038		N21 W24		LOCKHEED	24	2003	N05 E59		LOCKHEED	28	1727		N06 E73
LOCKHEED	20	2021		N21 W24		LOCKHEED	24	2022	N14 E47		SAC PEAK	28	1732 E		N08 E49
MCMATH	20	2045	E	N16 W16		LOCKHEED	24	2100	N04 W72		MCMATH	28	1745		N18 W21
LOCKHEED	20	2244		N13 W23		LOCKHEED	24	2154	S11 E53		LOCKHEED	28	1745		N04 W22
LOCKHEED	20	2343		N15 W17		LOCKHEED	24	2204	N18 E34		MCMATH	28	1850 E		N25 W17
						LOCKHEED	24	2220	N06 W76		MCMATH	28	1858 E		S11 W02
LOCKHEED	21	0111		N24 E86		LOCKHEED	24	2339	N16 W02		MCMATH	28	1859		N09 E49
LOCKHEED	21	0122		N16 E57							LOCKHEED	28	1905		S12 W02
* LOCKHEED	21	0259		N14 W77		LOCKHEED	25	0042	N12 W01		LOCKHEED	28	1905		N09 E51
SIMEIZ	21	0631	F	N16 E57		LOCKHEED	25	0047	N16 E43		MCMATH	28	1930 E		N11 E63
* WENDEL	21	0634	F	N08 W13		LOCKHEED	25	0135	N11 E32		MCMATH	28	2015		S10 W03
SIMEIZ	21	0714		N21 W78		* LOCKHEED	25	0150	N21 E31		MCMATH	28	2021		N08 E48
WENDEL	21	0754	F	N24 E13		* WENDEL	25	0601 E	N10 E28		HAWAII	28	2022		N29 E45
SIMEIZ	21	0758	F	N19 W22		WENDEL	25	0610 E	N10 E45		LOCKHEED	28	2023 E		N06 E73
SIMEIZ	21	1036	F	N21 W22		WENDEL	25	1652 E	N13 E39		MCMATH	28	2031		N07 E44
* CAPRI	21	1135	E	N15 E43		SIMEIZ	25	0653	N14 E41		MCMATH	28	2133		N10 E57
* CAPRI	21	1208	F	N08 W20		SIMEIZ	25	0716 E	S13 E49		MCMATH	28	2040 E		N20 W18
WENDEL	21	1247	F	N11 E48		* MCMATH	25	1210	S06 E90		MCMATH	28	2050		N29 E21
SAC PEAK	21	1417	F	N24 E76		MCMATH	25	1239	S08 W62		LOCKHEED	28	2149		S10 E02
WENDEL	21	1419	F	N25 E72		* MCMATH	25	1246	N07 W88		LOCKHEED	28	2308		N07 E48

Noted as follows: Date-Universal Time-Coordinates

AUGUST 1959

	LOCKHEED	28	2349	S09 W07
	LOCKHEED	29	0007	N13 W13
	LOCKHEED	29	0019	N30 E18
	LOCKHEED	29	0044	N10 E57
*	LOCKHEED	29	0101	S10 W02
	LOCKHEED	29	0124	N22 W24
	LOCKHEED	29	0152	N08 E47
	MEUDON	29	0747	S22 W30
*	MEUDON	29	0907	S11 W10
*	MEUDON	29	0941	N14 W18
	MEUDON	29	1022	S05 E29
	MCMATH	29	1146 E	S11 W10
	MCMATH	29	1218	N12 W14
	MCMATH	29	1242	N10 E50
	MCMATH	29	1252	S09 W12
	MCMATH	29	1305	N10 W59
*	MCMATH	29	1311	N28 W25
*	CAPRI S	29	1316 E	N29 W25
*	MCMATH	29	1325	N16 W59
*	MCMATH	29	1328	N10 W59
*	MCMATH	29	1415	N29 E12
*	LOCARNO	29	1420	N34 E14
	MCMATH	29	1435	N15 W60
	LOCARNO	29	1445	N14 W61
	MCMATH	29	1513	S12 W12
*	LOCKHEED	29	1523	N48 E38
*	MCMATH	29	1523	N09 E39
*	SAC PEAK	29	1526 E	N08 E37
	MCMATH	29	1539	S10 W11
	MCMATH	29	1547	N15 W61
	MCMATH	29	1552	N18 W33
	MCMATH	29	1552	N09 W11
	LOCKHEED	29	1553	N13 E21
*	MCMATH	29	1554	N13 W20
*	SAC PEAK	29	1604	N12 W20
	MCMATH	29	1640	N10 E47
	LOCKHEED	29	1644	N09 E47
	SAC PEAK	29	1646	N10 E47
	LOCKHEED	29	1653	N25 W26
	MCMATH	29	1702	S10 W13
	MCMATH	29	1710	N26 W56
*	LOCKHEED	29	1720	N08 E37
*	CLIMAX	29	1723	N07 E37
	MCMATH	29	1729	N16 W62
	LOCKHEED	29	1730	N18 W46
	MCMATH	29	1730	N19 W33
	MCMATH	29	1742	S10 W13
	MCMATH	29	1810 E	N16 W62
	LOCKHEED	29	1815	N12 E53
	MCMATH	29	1816 E	N10 E50
	LOCKHEED	29	1817	N20 W35
	MCMATH	29	1818 E	N09 W12
	LOCKHEED	29	1820	N10 W13
	MCMATH	29	1824	S06 E23
	LOCKHEED	29	1825	S07 E23
	LOCKHEED	29	1833	S08 W17
	HAWAII	29	1834	S08 W17
	MCMATH	29	1836 E	S08 W16
	HAWAII	29	1850	N17 W58
	LOCKHEED	29	1851	N15 W62
	MCMATH	29	1855 E	N16 W58
	LOCKHEED	29	1903	N09 E35
	MCMATH	29	1903 E	N09 E35
	HAWAII	29	1904	N19 E35
	HAWAII	29	1906	S11 W11
	MCMATH	29	1910 E	S10 W14
	SAC PEAK	29	2052 E	S11 W16
	HAWAII	29	2052	S09 W17
	LOCKHEED	29	2136	N06 E02
	LOCKHEED	29	2158	S11 W12
	LOCKHEED	29	2210	N10 E45
	LOCKHEED	29	2316	N15 W67
	HAWAII	29	2318	N17 W65
	LOCKHEED	29	2323	N20 E62
	LOCKHEED	30	0017	S12 W14
	HAWAII	30	0018	S12 W14
*	LOCKHEED	30	0054	S12 E90
	LOCKHEED	30	0207	N20 W34
	SIMEIZ	30	0606 E	N12 E29
	SIMEIZ	30	0633 E	N13 E88
	SIMEIZ	30	0635	N11 E37
	SIMEIZ	30	0658	S12 W21
	SIMEIZ	30	0723	S12 W34
	SIMEIZ	30	0731 E	N13 W34
	SAC PEAK	30	1430	N12 E31
	SAC PEAK	30	1444	S11 E78
	SAC PEAK	30	1450	N12 E31
	SAC PEAK	30	1528	N22 W45
	LOCKHEED	30	1530 E	N35 W40
	SAC PEAK	30	1546	S18 E05
	LOCKHEED	30	1548	N12 W75
	SAC PEAK	30	1548	N12 W76
	SAC PEAK	30	1558	N21 W46
	LOCKHEED	30	1559	N35 W40
	SAC PEAK	30	1610	N11 E38
	MCMATH	30	1616 E	N13 E38
	MCMATH	30	1640 E	S09 W26
	LOCKHEED	30	1646	S05 E15
	SAC PEAK	30	1646	S05 E15
	MCMATH	30	1655	N10 E15
	SAC PEAK	30	1658	N10 E15
	LOCKHEED	30	1709	N10 E16
	LOCKHEED	30	1719	N19 E70
*	SAC PEAK	30	1722	N01 E67
*	SAC PEAK	30	1740	S07 W30
*	LOCKHEED	30	1741	S06 W30
*	HAWAII	30	1757	S07 W30
	LOCKHEED	30	1832	S10 W23
	MCMATH	30	1844 E	S08 W31
	MCMATH	30	1908	N11 E28
	SAC PEAK	30	1908	N12 E28
	LOCKHEED	30	1909	N12 E28
	SAC PEAK	30	1936	N15 W77
	LOCKHEED	30	1937	N15 W79
	LOCKHEED	30	1958	N22 W45
*	LOCKHEED	30	2018	S08 W30
	SAC PEAK	30	2032	S04 E12
	LOCKHEED	30	2032	S05 E11
	LOCKHEED	30	2220	N18 E40
	LOCKHEED	30	2248	S12 W31
	SAC PEAK	30	2248	S13 W31
	HAWAII	30	2250	S11 W30
*	SAC PEAK	30	2346	N10 E11
*	CLIMAX	30	2346	N10 E11
	SAC PEAK	30	2350	S12 E78
	CLIMAX	30	2350	S14 E77
*	LOCKHEED	30	2351 E	N11 E11
	LOCKHEED	30	2352	S13 E80
	LOCKHEED	31	0033	S08 W35
*	CAPRI S	31	0731	S11 E68
	MEUDON	31	0753 E	S14 E78
	MEUDON	31	0928	N09 E06
	MEUDON	31	0943	N17 E54
	MEUDON	31	0943	S14 E76
*	STOCKHOLM	31	1032 E	S20 W28
*	MEUDON	31	1226	N27 W61
	MEUDON	31	1303	N09 E04
	CAPRI S	31	1312 E	N10 E05
	MEUDON	31	1332	S11 W39
	MCMATH	31	1405 E	N10 E04
*	MEUDON	31	1447	N09 E21
*	MCMATH	31	1457 E	N10 E23
	LOCARNO	31	1500 E	N14 W57
*	CAPRI S	31	1502 E	N10 E21
	MCMATH	31	1509 E	N21 W59
*	MCMATH	31	1509 E	N10 E04
*	LOCARNO	31	1517	N09 E09
*	CLIMAX	31	1524	N10 E03
*	LOCKHEED	31	1525	N11 E03
*	LOCKHEED	31	1537	N09 E00
*	LOCKHEED	31	1540	S12 E45
*	CLIMAX	31	1543	S14 E68
*	LOCKHEED	31	1607	N16 E32
*	LOCKHEED	31	1620 E	N16 E31
	SAC PEAK	31	1638	N27 W58
	MCMATH	31	1642 E	N10 E03
	LOCKHEED	31	1708	N16 E34
	SAC PEAK	31	1736	N12 E22
	MCMATH	31	1743 E	N12 E23
	SAC PEAK	31	1812	N22 W62
	HAWAII	31	1824	N12 E01
	LOCKHEED	31	1845	N16 E35
	LOCKHEED	31	1934	N16 E29
	LOCKHEED	31	1953	S12 W41
*	LOCKHEED	31	2025	S11 W38
	SAC PEAK	31	2050	S12 E80
	LOCKHEED	31	2142	N10 W01
	CLIMAX	31	2150	N26 W53
	SAC PEAK	31	2150	N26 W52
	LOCKHEED	31	2151	N23 W42
	HAWAII	31	2152	N27 W54
	SAC PEAK	31	2152	S10 W40
	LOCKHEED	31	2152	S10 W40
*	CLIMAX	31	2235	S08 W48
	SAC PEAK	31	2326	N14 E22

*Rated as flare of importance = 1 by other observatories (see CRPL 181 Part B).

SOLAR FLARES

JUNE 1959

OBSERVATORY	DATE JUNE 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
ALMA-ATA	01	0413 E	0418	0413	S14	E42	5179	5 D	1&	1	0414		7.30		66	S-SWF
SIMEIZ	01	0629 E	0645 D	0631 U	S12	E42	5179	16 D	1	2	0632		1.40	1.80	76	
ALMA-ATA	02	0545 E	0553	0545	S15	E53	5179	8 D	1	2	0545		4.20		57	
ALMA-ATA	02	0553	0603	0558	S12	E31	5179	10	1	2	0558		3.00		70	
SIMEIZ	02	0556 E	0610 D	0600 U	S09	E30	5179	14 D	1	2	0600		1.50		80	
SIMEIZ	02	0725 E	0751 D	0726 U	S12	E32	5179	26 D	1	2	0726		2.50		84	
SIMEIZ	02	0856 E	0859 D	0859 U	S12	E30	5179	3 D	1	2	0859		1.20		92	
SIMEIZ	03	0758 E	0801 D	0801 U	S15	E17	5179	3 D	1&	2	0801		5.20	2.80	104	S-SWF
GOOD HOPE	03	0759	0815	0801	S14	E17	5179	16	1		0801	3.70	4.00			
KRASNYA	03	0840 E	0933 D	0845 U	S12	E22	5179	53 D	1	2	0845		.90		78	
MOSCOW-G	03	1111 E	1113 D		S15	E09	5179	2 D	□	1						
SIMEIZ	04	0554 E	0705 D		N12	E42	5185	71 D	1	1	0554		2.80		80	
SIMEIZ	04	0554 E	0650		S13	E05	5179	56 D	1	1	0554		4.00		68	
ONDREJOV	04	1348	1410		S15	E22	5179	22	1	3	1353			2.10		
SIMEIZ	05	0615 E	0645 D	0617 U	N12	E34	5185	30 D	1	1	0617		1.50		84	
ONDREJOV	05	0628	0653		N34	W54	5183	25	1	3	0634			2.21		
KRASNYA	05	0919 E	0936 D	0923 U	S12	W12	5179	17 D	1	2	0923		.80		80	
ONDREJOV	05	0923 E	0938		S12	W14	5179	15 D	1	3	0924			2.31		
ONDREJOV	05	1657 E	1757 D		S09	W16	5179	60 D	1	3	1704			3.62		
SYDNEY	06	0045	0105	0050	S19	E46	5194		1	2	0050	1.50	2.00			
ONDREJOV	06	0610	0625		S07	W15	5179	15	1	3	0614			2.15		
ONDREJOV	06	0927 E	0935		N07	W06	5180	8 D	1	3	0927			2.68		
KRASNYA	06	0927 E	0938 D	0928 U	N08	W05	5180	11 D	1	2	0928		.90		92	
KHARKOV	06	0927	0941		N07	W07	5180	14	1	3	0931		2.80	2.00		
ONDREJOV	06	0939	0953		N32	W72	5183	14	1	3	0942			3.44		
KRASNYA	06	0939 E	0954 D	0941 U	N35	W80	5183	15 D	1	2	0941		3.90		76	
TASHKENT	07	0434 E	0453	0443	S09	W40	5179	9 D	1&	1	0441		2.00	4.60	135	
ONDREJOV	07	0440 E	0451		S10	W39	5179	11 D	1	3	0445			4.30		
KRASNYA	07	0730	0739	0732	S08	W42	5179	9	1	2	0732		3.70		60	
KRASNYA	07	0806	0827	0809 U	S08	W42	5179	21	1&	2	0809		3.00		80	S-SWF
ONDREJOV	07	0811	0829	0814	S08	W41	5179	18	2	3	0814			2.86		
ONDREJOV	07	0837	0851		S08	W41	5179	14	1	3	0841			2.30		
ONDREJOV	07	1002 E	1013		S13	W39	5179	11 D	1	3	1003			3.00		
UCCLE	07	1101			S06	W44	5179		1	4						
ONDREJOV	07	1058 E	1102		N08	W21	5180	4 D	1	3	1059			2.77		
MOSCOW-G	07	1144 E	1202 D		S08	W38	5179	18 D	1&	1	1145		11.40	2.30	110	Slow S-SWF
ONDREJOV	07	1145 E	1200		S08	W43	5179	15 D	1	3	1147			3.40		
ONDREJOV	07	1354 E	1417 D		S08	W44	5179	23 D	1&	2	1355			3.58		S-SWF
SYDNEY	08	0130	0143 D	0136	N14	E67	5197	13 D	1	2	0136	1.50	3.00			
SYDNEY	08	0250	0326	0256	N24	E71	5198	36	2	2	0256	3.00	8.00			
SYDNEY	08	0321	0343 D	0326	S09	W50	5179	22	1	2	0326	2.00	3.00			
ONDREJOV	08	0511 E	0519		N14	E58	5197	8 D	1	3	0512			2.09		
SIMEIZ	08	0741 E	0755 D	0741 U	N22	E61	5198	14 D	1	1	0741		2.00		84	
SIMEIZ	08	0746 E	0810 D	0751 U	S09	W54	5179	24 D	1	1	0803		2.00	1.30	96	
SIMEIZ	08	0815 E	0830 D	0820 U	N14	E58	5197	15 D	1	1	0820		1.70		84	
SIMEIZ	08	0835 E	0840 D	0836 U	S09	W54	5179	5 D	1	1	0836		2.00		100	

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OBSERVATORY	DATE JUNE 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
ONDREJOV	08	1222 E	1239		N22	E50	5198	17 D	1&	2	1228			1.97		
ONDREJOV	08	1443 E	1520	1451	N09	W13	5185	37 D	1&	3	1451			2.58		
SYDNEY	09	0430	0519 D	0503	S31	E20	5194	49	1	2	0503	2.00	3.00			
OTTAWA	09	1609	1622	1611	S20	E00	5194	13	1	4	1611	1.97	2.11			
LOCKHEED	09	1910 E	1919		N11	W27	5185	9 D	1	2	1910	2.20				S-SWF
OTTAWA	10	1559	1617 D	1604	N06	E10	5201	18 D	1	4	1604	2.15	2.20			
SYDNEY	11	0027	0107		N18	E24	5198		1	1	0033	2.00	2.00			
LOCKHEED	11	0029	0113	0033	N18	E26	5198	44	1	3		2.20				
SYDNEY	11	0136	0143		N20	E90	5204	7	□	2						
SYDNEY	11	0148	0205	0151	N15	E87	5204	17	□	2	0151	.75				
VOROSHILOV	11	0152	0159	0153	N24	E27	5205	7	1	1	0153		3.16		68	
TASHKENT	11	0304 E	0315 D	0306	S12	W85	5179	11 D	1	1					130	
SYDNEY	11	0305	0312	0308	S12	W90	5179	7	□	2	0308	1.00				
SYDNEY	11	0332	0347	0339	N13	E23	5197	15	1	2	0339	1.50	2.00			
ALMA-ATA	11	0344 E	0406	0345	N16	E21	5197	22 D	1	3	0345		1.70		57	
SYDNEY	11	0432	0452	0447	N15	E86	5204	20	□	2	0447	1.50				
SYDNEY	11	0445	0454	0447	S14	W90	5179	9	□	2	0447	.75				
KRASNYA	11	0801	0806	0803 U	S09	W90	5179	5	1	2	0803		2.30		60	
KRASNYA	11	0802	0818	0807 U	N16	W80	5185	16	1	2	0807		3.20		60	
KRASNYA	11	0831	0840	0831 U	N14	E88	5204	9	1	2	0831		6.00		64	Slow S-SWF
VOROSHILOV	11	2209	2212	2210	N15	E82	5204	3	1	2	2210		4.72		78	
SYDNEY	12	0331	0344	0333	N19	E77	5204	13	1	2	0333	.75	2.50			
ABASTUMANI	12	0503	0609 D	0527	N15	E09	5197	66 D	1	2	0528		3.70		68	
SIMEIZ	12	0600 E	0608 D	0603 U	N14	E07	5197	8 D	1	2	0603		1.00		104	
SIMEIZ	12	0627 E	0655 D	0633 U	N14	E07	5197	28 D	1&	2	0543		.50	4.30	104	
ABASTUMANI	12	0628	0700 D	0647	N14	E08	5197	32 D	1	2	0647		1.10		73	
KRASNYA	12	0719	0730	0723 U	N22	E66	5204	11	1	2	0723		3.50		65	
SIMEIZ	12	0720 E	0730 D	0723 U	N19	E70	5204	10 D	1	2	0723		5.00		68	
SIMEIZ	12	0734 E	0907 D	0741 U	N24	E60	5204	93 D	2	2	0907		14.00	4.30	120	
KRASNYA	12	0735	1001	0910 U	N22	E66	5204	146	2	2	0910		9.20		110	
ABASTUMANI	12	0737	0913 D	0832 U	N23	E61	5204	96 D	2&	2	0840		23.20	2.50	86	
SIMEIZ	12	0750 E	0810 D	0753 U	N17	E12	5197	20 D	1	2	0753		1.00	1.90	92	G-SWF
ABASTUMANI	12	0750	0818 D	0757	N16	E13	5197	28 D	1	2	0757		2.10		68	
MOSCOW-G	12	0901 E	1159 D		N19	E64	5204	178 D	2&	2	0915		36.46	2.20	120	
KHARKOV	12	0953	1030 D	0953	S03	E90	5208	37 D	1&	1	1006		10.10	2.00		
DUNSINK	12	1002 E	1007 D		N20	E65	5204	5 D	2	1	1002			1.40		
TASHKENT	13	0357	0408	0358	N18	E61	5204	11	1&	3	0359		5.00	4.70		S-SWF
UCCLE	13	1051	1140		N17	E27	5204	49	2	4						
SYDNEY	14	0256	0315	0304	N26	E78	5212	19	1	2	0304	.75	3.00			
SYDNEY	14	0326	0335	0329	S17	W59	5194	9	1	2	0329	1.00	2.00			
ABASTUMANI	14	0632 E	0651 D	0639 U	N18	E41	5204	19 D	1&	3						S-SWF
KHARKOV	14	0637 E	0709		N23	E43	5204	32 D	1&	1	0642		8.50	1.50		
SYDNEY	15	0119	0216	0129	N25	E26	5204	57	1	2	0129	2.00	3.00			G-SWF
SYDNEY	15	0232 E	0350	0302	N20	E28	5204	78 D	3	2	0302	11.00	14.00			Slow S-SWF
TASHKENT	15	0255 E	0420		N20	E28	5204	85 D	2	2	0302		16.00	2.70	135	G-SWF

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OBSERVATORY	DATE JUNE 1959	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
TASHKENT	15	0520	0609 D	0545	N16	E30	5204	49 D	1	2	0550		4.00	2.00	80	
ABASTUMANI	15	0539 E	0624 D	0548 U	N16	E29	5204	45 D	1&	3	0600		6.50	2.00		
ONDREJOV	15	0546 E	0625		N18	E26	5204	39 D	1&	3	0552			2.13		
ONDREJOV	15	1053 E	1144	1059	N16	E30	5204	51 D	2	3	1059			3.22		G-SWF
ONDREJOV	15	1626 E	1639	1628	N15	E25	5204	13 D	2	3	1628			3.30		S-SWF
LOCKHEED	15	1629 E	1715		N16	E25	5204	46 D	1	3	1629	2.50				
ABASTUMANI	16	0621 E	0800 D	0627	N15	E15	5204	99 D	2&	1	0627		23.50		139	
SIMEIZ	16	0649 E	0901 D		N18	E15	5204	132 D	2	1	0649		22.00	2.00	160	S-SWF
PIRCULI	16	0700 E	0730 D	0700	N15	E15	5204	30 D	3	3	0700		26.75			
VOROSHILOV	16	2157	2220	2200	N17	E08	5204	23	1	2	2200		2.29		66	
VOROSHILOV	16	2327	0123 D		N14	E10	5204	116 D	1	2	0108		2.34		60	
SYDNEY	17	0224	0233	0226	N14	E77	5219	9	1	2	0226	1.50	5.00			
SYDNEY	17	0245	0305	0255	N16	E80	5219	60	2	2	0255	1.50	5.00			
SIMEIZ	17	0611 E	0650 D	0618 U	N18	E03	5204	39 D	1	1	0618		2.10		68	
SIMEIZ	17	0649 E	0725 D	0654 U	N24	E69	5219	36 D	1	1	0655		3.30	1.70	72	
ONDREJOV	17	0653	0712		N21	E62	5219	19	1	2	0655			2.20		
ONDREJOV	17	0953	1015	0957	N16	E02	5204	22	1	3	0957			2.50		
ONDREJOV	17	1341	1346	1342	N13	E65	5219	5	1	3	1342			2.20		
ONDREJOV	17	1427	1515	1436	N17	W01	5204	48	2	3	1436			3.00		
DUNSINK	17	1427	1526		N18	E00	5204	59	2	2	1435	7.50	7.50	2.95		Slow S-SWF
LOCKHEED	17	1448 E	1604		N18	W02	5204	76 D	2	2	1502	5.40				
VOROSHILOV	17	2321 E	2341		N13	E67	5219	20 D	1&	2	2326		7.48		66	
SYDNEY	17	2322 E	2347		N15	E68	5219	25 D	1	2	2322	2.00	4.00			
VOROSHILOV	18	0014	0029	0017	N10	E68	5219	15	1	1	0017		3.23		71	
VOROSHILOV	18	0058	0150	0102	N19	W07	5204	52	1	1	0102		3.37		69	
SIMEIZ	18	0645 E	0700 D	0649 U	N19	W12	5204	15 D	1	1	0649		3.50		76	
ONDREJOV	18	1104 E	1138		N07	E58	5219	34 D	2	3	1120			3.10		S-SWF
DUNSINK	18	1123 E	1126 D		N06	E61	5219	3 D	2	1	1123	5.00	10.30	1.95		
ONDREJOV	18	1145 E	1227		N19	W14	5204	42 D	2&	3	1147			3.90		
ONDREJOV	18	1229 E	1305		N04	E57	5219	36 D	2	3	1233			3.60		Slow S-SWF
LOCKHEED	18	1926 E	2006		N15	W15	5204	40 D	1	3	1927	2.50				
SYDNEY	19	0244	0251	0247	N08	E46	5219	7	1	2	0247	1.00	2.00			
KRASNYA	19	0757 E	0815	0757 U	N13	W23	5204	18 D	1	2	0757		2.30		75	
KRASNYA	19	0843 E	0920	0852	N11	E23	5219	37 D	1	2	0852		1.70		90	
LOCKHEED	19	1607	1739	1642	N17	W29	5204	92	1	2		4.00				
DUNSINK	19	1625 E	1634		N21	W30	5204	9 D	1	1	1628	2.50	2.87	2.75		
UCCLE	19	1632	1656 D		N15	W30	5204	24 D	1&	2						S-SWF
ONDREJOV	19	1634 E	1638		N15	W40	5204	4 D	1	3	1634			2.10		
DUNSINK	19	1734	1757		N17	W30	5204	23	2	2	1739	6.25	7.17	1.90		
VOROSHILOV	19	2312	0021	2319	N19	W35	5204	69	1&	1	2319		2.40		80	
LOCKHEED	19	2313	2353	2318	N17	W35	5204	40	1	3		2.50				
SIMEIZ	20	0604	0625	0609	N16	W35	5204	21	1	2	0607		2.50	1.80	88	
SIMEIZ	20	0622 E	0700 D	0627 U	N22	W40	5204	38 D	1	2	0630		1.40	1.70	100	
SIMEIZ	20	0658 E	0705 D	0700 U	N17	W34	5204	7 D	1	2	0659		1.20	1.50	92	
KHARKOV	20	1017	1033	1022	N17	W03	5211	16	1	1	1022		4.40	1.50		
SIMEIZ	21	0631 E	0745 D	0636 U	N25	W44	5204	74 D	1	1	0636		2.00		52	
SIMEIZ	21	0652 E	0730 D	0659 U	N21	W54	5204	38 D	1	1	0659		4.00		84	

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OBSERVATORY	DATE JUNE 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
ABASTUMANI	21	0657 E	0720 D	0700 U	N21	W52	5204	23 D	1	2	0700		3.20	3.20	71	
ONDREJOV	22	0949 E	1010		N13	W44	5211	21 D	1	3	0954			2.20		
PIRCULI	22	1010 E	1039 D	1010	N15	W44	5211	29 D	1	2	1010		11.20			
ONDREJOV	22	1012	1019	1013	N18	W66	5204	7	1	2	1013			2.60		
UCCLE	22	1013	1125		N20	W67	5204	12	2	3						
KHARKOV	22	1014	1140 D	1032	N17	W69	5204	86 D	3	2	1035		32.90	2.70		S-SWF
PIRCULI	22	1015 E	1123 D	1040	N18	W68	5204	68 D	2	2	1040		53.86			
ONDREJOV	22	1025	1127 D	1030	N20	W68	5204	62 D	2	2	1030			4.50		
KIEV	22	1112 E	1125	1112 U	N20	W70	5204	13 D	1&	2	1134		7.44		50	
LOCKHEED	22	1855	1911	1857	N11	W02	5219	16	1	3		2.40				G-SWF
ALMA-ATA	23	0312	0420	0337	N14	E01	5219	68	1	2	0337		4.00	4.00	80	
ALMA-ATA	23	0324	0350	0337	N22	W05	5219	26	1	3	0337		3.00	3.10	62	
TASHKENT	23	0347	0427	0354	N17	W04	5219	40	2	3	0400		11.00	2.50	85	
SIMEIZ	23	0553 E	0612 D		S16	E69	5230	19 D	1&	1	0553		6.20		80	
SIMEIZ	23	0553 E	0640 D		N19	E33	5225	47 D	1	1	0553		2.30		84	
ONDREJOV	23	0829 E	0839		N23	E05	5219	10 D	1	3	0831			2.10		
SIMEIZ	23	0829 E	0845 D	0831 U	S25	E05	5223	16 D	1	1	0831		1.10		80	
UCCLE	23	1103	1114		N20	E65	5228	11	1	2						S-SWF
ONDREJOV	23	1106 E	1112		N24	E05	5219	6 D	1	3	1106			2.50		
ONDREJOV	23	1112 E	1116		N15	W12	5219	4 D	1	3	1112			2.30		
ONDREJOV	23	1348	1411		N10	E38	5227	23	1	2	1406			1.90		
OTTAWA	23	1352 E	1523		N12	E39	5227	91 D	1	4	1400	1.86	2.44			
DUNSINK	23	1406 E	1440 D		N08	E25	5225	34 D	2	2	1406	5.00	5.50	1.52		
LOCKHEED	23	1649	1720	1651	N24	W01	5219	31	1	3		2.40				
LOCKHEED	23	1649	1718	1654	N09	E26	5225	29	1	3		2.10				S-SWF
OTTAWA	23	1649 E	1751 D		N09	E26	5225	62 D	1	2	1703	3.13	3.52			
ONDREJOV	24	1410	1416	1412	S17	E51	5230	6	1	3	1412			2.50		
ONDREJOV	24	1606	1628	1611	N11	E13	5225	22	1	3	1611			2.30		
ONDREJOV	25	0652	0722 D		N11	E04	5225	30 D	1	2	0707			2.30		
SIMEIZ	25	0656	0750 D	0659 U	N11	E05	5225	54 D	1	1	0659		3.50	1.80	100	
ABASTUMANI	25	0657 E	0708 D	0705 U	N10	E06	5225	11 D	1&	2	0704		4.40	3.00	100	
KRASNYA	25	0852 E			S07	W74	5211		1	1	0852		2.80		70	
TASHKENT	26	0314	0352	0320	N22	E26	5228	38	1	3	0317		2.00	2.10	70	
TASHKENT	26	0411	0453	0422	N10	W08	5225	42	1	3	0421		5.00	2.80	85	
ALMA-ATA	26	0417	0433	0419	N07	W05	5225	16	1	2	0419		2.00	2.50	62	
ALMA-ATA	26	0417	0433	0421	N11	W04	5225	16	1	2	0421		1.20	1.30	73	
ALMA-ATA	26	0417	0433	0427	N12	W04	5225	16	1	2	0427		4.00	4.80	71	
ALMA-ATA	26	0417	0441	0421	N07	W08	5225	24	1	2	0421		3.00	4.50	57	
SYDNEY	26	0420 E	0439		N08	W06	5225	19 D	1	1	0420	2.00	2.00			
KHARKOV	26	0917 E	0921 D		N34	E70	5241	4 D	1	1	0919			1.50		
KRASNYA	26	0919	0921 D	0920	N24	E67	5241	2 D	1	1	0920		2.60		70	
MOSCOW-G	26	1055 E	1106 D	1059	N29	E62	5241	11 D	1	1	1059		2.70	2.40	120	
ONDREJOV	26	1058 E	1103		N29	E67	5241	5 D	1	3	1059			2.20		
SYDNEY	27	0043 E	0055	0050	N24	E62	5241	7 D	1	2	0050	1.00	2.00			
SYDNEY	27	0146	0208	0155	N24	E61	5241	22	1	2	0155	1.50	3.00			
SYDNEY	27	0310 E	0320	0312	N27	E61	5241		1	1	0312	1.00	3.00			
SYDNEY	27	0320	0330	0325	N24	E60	5241	10	1	1	0325	1.00	2.00			

SOLAR FLARES

JUNE 1959

OBSERVATORY	DATE JUNE 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
SYDNEY	27	0338 E	0343	0340	N25	E59	5241	5 D	1	1	0340	1.00	2.00			
TASHKENT	27	0515	0534	0516	N08	W22	5225	19	1&	2	0517		6.00	1.80	65	
ONDREJOV	27	0631	0642		N25	W01	5233	11	1	2	0637			2.10		
ONDREJOV	27	0656	0702		N27	E53	5241	6	1	3	0658			2.40		
KRASNYA	27	0705	0712	0705	N10	W26	5225	7	1	2	0705		1.00		65	
KRASNYA	27	0815	0824	0819	N00	W74	5243	9	1	2	0819		3.00		56	
KRASNYA	27	0833	0840	0836	N31	E68	5241	7	1	2	0836		3.50		78	
KRASNYA	27	0939	0958 D		N00	W74	5243	19 D	1	2	0945		2.60		65	
KHARKOV	27	0940 E	1010	0946	N27	W03	5233	30 D	1	1	0946		2.90	1.50		
KHARKOV	27	0943 E	1010	0947	S17	E11	5230	27 D	1	1	0946		2.50	1.50		
MOSCOW-G	27	1030 E	1134 D		N27	E53	5241	64 D	□	1					80	
LOCKHEED	27	1645	1719	1649	N08	W27	5225	34	1	2		2.40				S-SWF
SYDNEY	28	0346	0405	0350	N16	W45	5219	19	1	1	0350	1.50	2.00			
KRASNYA	28	0831 E	0946	0842	N18	W09	5228	75 D	1&	2	0842		3.10		85	
SIMEIZ	28	0827 E	0848 D	0832 U	N18	W10	5228	21 D	1&	1	0832		6.00		84	
TASHKENT	29	0508	0520	0511	N09	W49	5225	12	1	3	0511		2.00	5.30	95	
PIRCULI	29	0653 E	0705 D	0700	N35	W20	5233	12 D	1	1			12.43			
SIMEIZ	29	0854 E	0911 D	0908 D	S13	E30	5234	17 D	1&	1	0911		6.70	2.20	80	
KRASNYA	29	0903 E	0949		S23	E30	5234	46 D	1&	2	0910		3.40		90	
MOSCOW-G	29	0907 E	1020 D		S25	E32	5234	73 D	2	2	0916		11.97	2.12	120	
KHARKOV	29	0910	0938 D		S22	E27	5234	28 D	1	2	0925		2.20	1.70		
KHARKOV	29	0910	0938 D		S24	E33	5234	28 D	1	2	0925		4.40	1.70		
PIRCULI	29	0915 E	0940 D	0915	S20	E30	5234	25 D	2	1			13.86			
DUNSINK	29	0940 E	0959 D		S13	E25	5234	19 D	1	2	0940	5.00	5.50	1.45		
GOOD HOPE	29	1310	1324 D	1316 U	S16	E29	5234	14 D	2		1316	5.00	6.00			
KIEV	29	1314 E	1337 D	1314 U	S16	E29	5234	23 D	1	2	1313		2.18		64	
VOROSHILOV	29	2132	2257	2134	S15	W22	5230	85	1&	2	2134		3.63		86	
TASHKENT	30	0347	0402	0349	N08	W44	5227	15	1	2	0356		1.00	1.80	50	
SIMEIZ	30	0728 E	0745	0731	S14	W29	5230	17 D	1	2	0728		3.30	1.90	140	
KRASNYA	30	0729	0736	0731	S14	W27	5230	7	1&	2	0731		1.60		105	
GOOD HOPE	30	0731 E	0740	0732	S14	W28	5230	9 D	1		0732	1.80	2.10			
GOOD HOPE	30	1308	1330	1314	N09	W70	5225	22	1		1314	1.00	2.90			

These flare reports are addenda to the June 1959 flares published in CRPL-F 179 Part B, July 1959.

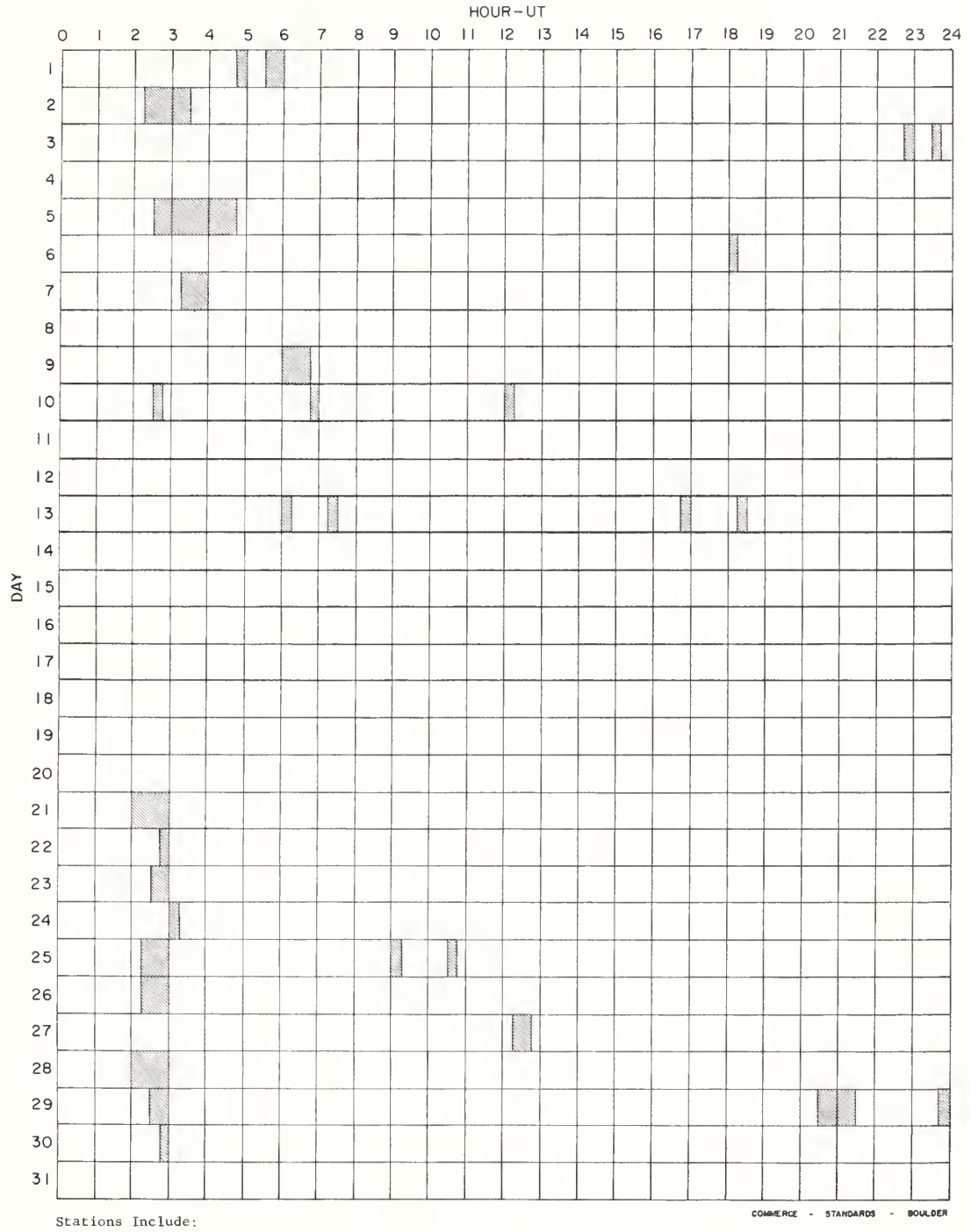
COMMERCE - STANDARDS - BOULDER

CAPRI G ANACAPRI - GERMAN
CAPRI S ANACAPRI - SWEDISH
GOOD HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV* KIEV UNIVERSITY
KODAIKNAL 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
SCHAUINS SCHAUINSLAND
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

INTERVALS OF NO FLARE PATROL OBSERVATIONS

JUNE 1959



Stations Include:

Abastumani
Alma Ata
Anacapri (Swedish)
Arcetri
Climax
Dunsink
Hawaii
Huancayo
Kharkov
Kiev GAO
Kodaikanal
Krasnaya Pakhra
Locarno
Lockheed
McMath
Meudon
Mitaka
Moscow University
Nederhorst
Nizamiah
Ondrejov
Ottawa
Pirculi
Royal Observatory
Cape of Good Hope
Royal Greenwich Observatory
Herstmonceux
Sacramento Peak
Simeiz
Sydney
Tashkent
Uccle
Utrecht
Voroshilov
Zurich

IONOSPHERIC EFFECTS OF SOLAR FLARES

(Sudden Cosmic Noise Absorption / Sudden Enhancements Of Atmospherics / Solar Noise Bursts At 18 Mc.)

MARCH 1959

Mar. 1959	CLASS SCNA	CLASS SEA	Burst	DEFINITENESS	TIME (UNIVERSAL TIME) BEGIN	MAX.	END	PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
2		1		5	2314	2333	0026		A7, BO, HA
2	2			5	2319	2323	0034	60	BO, HA
5		2+		3	1346	1355	1435		A1, A5, A6
5		3		3	1457	1515			A1, A5, A6
5	3			5	1525	1532	1600	70	BO, MC, RE
5		3		5	1526	1534	1615		A2, A7, BO, DU, ED, MC, NE, PA
7	3			5	1727	1743	1810	60	BO, MC, RE
7		1+		5	1728	1750	1910		A5, A7, BO, DU, ED, NE
11		2		5	1136	1142	1220		ED, NE, PA, PU
11		2		5	1409	1421	1446		A1, A5, ED, NE
11	2			5	1808	1817	1850	60	BO, HA, MC, RE, SP
11		2		5	1809	1817	1910		A1, A5, A6, A7, BO ED, HA, MC
11	1			5	2020	2022	2040	19	BO, HA
11		2		5	2020	2031	2050		A1, A5, A6, A7, BO, HA, PA
15		1+		1	1135		1150		PU
15		1+		4	1216	1223	1252		DU, ED, NE, PU
16	2			1	0050	0054	0144	50	HA
16		1		1	0053	0100	0131		HA
16		1		4	0917	0926	1006		DU, ED, NE, PU
16		1+		5	1355	1400	1450		ED, NE, PA, PU
16		1		5	1628	1633	1706		BO, ED, NE
16	1			4	1629	1635	1650	25	RE, SP
17		1		1	0649		0745		NE
18		1+		5	0631		0700		HO, NE
18		1+		5	1347	1354	1434		DU, ED, NE, PA, PU
18		□		1	1539	1547	1607		ED
19		1+		3	1041	1047	1057U		ED, NE
19		1+		4	1057	1102	1140		ED, NE, PU
19		2		5	1429	1437	1530		A5, DU, ED, NE, PA, PU
19	1-			1	1429	1435	1440	15	RE
20	1			5	2238	2242	2317	25	BO, HA
20		1+		5	2239	2257	2334		A5, BO, HA
21		2+		4	0908	0923	1020		DU, ED, NE, PU
21		2		4	1315	1321	1329U		DU, ED, NE, PU
21		2+		5	1329	1334	1415		DU, ED, NE, PA, PU
21	1			1	1651	1704	1712	20	RE
21		1		1	1655	1702	1723		A1
21	1+			4	1831	1841	1906	25	BO, RE
21		1		1	1836	1848	1906		BO
21	1-			1	2258	2308	2330	7	BO
21		1		4	2258	2313	2335		A7, BO
22	2+			5	1342	1352	1415	75	BO, MC, RE
22		2+		5	1342	1350	1454		A1,A3,A5,BO,DU,ED,NE,PA,PU
23	1			3	1332	1348	1430	20	MC, RE
23		2		5	1332	1351	1440		A1,A5,DU,ED,MC,NE,PA,PU
23		1+		5	1549	1556	1620		A3, ED, NE
23	1-			1	1556	1604	1616	20	RE
23		1		5	1900	1912	1952		A3, A7, BO, MC
23	1			5	1902	1905	1945	20	BO, MC, RE
24		1		1	0737		0811		NE
24		2		5	1003	1015	1112		DU, ED, NE, PA, PU
24	1-			1	1722	1729	1733	20	RE
24		1		1	1733	1742	1815U		A7
24		1		5	2059	2112	2210		A7, BO, HA, MC
24	1+			5	2106	2110	2132	25	BO, HA, MC
25		1		1	0546		0617		HO
25	2			5	2009	2022	2130	42	BO, HA, MC, RE, SP
25		2		5	2018	2028	2130		A1, A3, A5, HA
26		1		3	1249	1300	1327		ED, NE
26	2			5	1517	1522	1550	40	BO, MC, RE
26		2		5	1517	1528	1615		A7, BO, DU, ED, NE, PA, PU

IONOSPHERIC EFFECTS OF SOLAR FLARES

(Sudden Cosmic Noise Absorption / Sudden Enhancements Of Atmospherics / Solar Noise Bursts At 18 Mc.)

MARCH 1959

Mar. 1959	CLASS SCNA	CLASS SEA	CLASS Burst	WIDESPREAD INDEX	TIME (UNIVERSAL TIME) BEGIN	MAX.	END	PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
26		2		5	1630	1640	1700		A7, ED
26	2			5	2101	2120	2200		A3, A5, BO, HA
26			1	3	2102		2104		BO, SP
26		2		5	2104	2108	2137	38	BO, HA, MC, RE, SP
26			1	5	2119		2122		BO, MC, SP
27	1			1	0146	0149	0230	30	HA
27		1		1	0151	0157	0230		HA
28			2	5	1728	1734	1738		BO, MC, RE
28		1-		1	1738	1740	1825U		A3
28	1+			5	2124	2130	2200	18	BO, HA, MC
28		1		5	2124	2135	2240		A5, A7, BO, HA
29		1+		5	0748	0754	0836		ED, HO, NE, PU
29		2+		4	1545	1600	1630		A3, A7 .
29			1+	5	1908	1910	1911		BO, MC, RE, SP
30		2+		5	1550	1557	1625		A2, A3, A5, A7, DU, ED, KU
30			1+	5	1635	1641	1643		BO, MC, RE
31			1	5	2057		2101		BO, HA
31	1			1	2129	2134	2145		BO
31		1+		1	2132	2143	2154		BO

COMMERCE - STANDARDS - BOULDER

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

AUGUST 1959

Aug. 1959	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F 181
1	0130	0158	G-SWF	3	1+	AN, OK	0125
1	1325	1352	Slow S-SWF	5	1	FM, MC, PR, PU	1314
2	0540	0620	G-SWF	1	1+	OK	0558E
3	0730	0758	S-SWF	1	1	OK	0721
3	1525	1704	Slow S-SWF	5	3-	FM, MC, PR, WS	1515
3	2051	2110D	S-SWF	5	1+	AD, BE, FM, LA, MC, PR	2044
3	2110	2140	S-SWF	5	1+	AD, FM, LA, MC, PR, WS	
4	1031	1042	Slow S-SWF	3	2	DA, NE	1033E
4	1446	1514	Slow S-SWF	5	1-	FM, LA, MC, PR, WS	1438
5	1631	1655	S-SWF	5	1-	AN, FM, LA, MC, PR	
6	0103	0125	Slow S-SWF	5	1	AD, OK	0102
6	0537	0610	S-SWF	1	1+	OK	0553E
6	0650	0710	S-SWF	5	1	LI, NE, OK	0657E
6	1500	1528	S-SWF	5	2	BE, FM, HU, JU, KU, LI, MC, NE, PR	1440E
6	1647	1712	S-SWF	5	1	AN, FM, HU, MC, PR, WS	1636
6	2004	2015	S-SWF	4	1	FM, MC, PR	
7	1600	1625	S-SWF	5	2	BE, FM, MC, NE, PR, WS, CW*	1551
7	1737	1800	S-SWF	4	1-	MC, PR, WS	1734E
8	0445	0535	S-SWF	5	2	AD, NE, OK	0534E
14	0105	0310	Slow S-SWF	5	3	AD, CA, OK	0044
16	0752	0848	Slow S-SWF	5	2	NE, OK	
17	0330	0400	S-SWF	5	2	AD, CA, OK, CW+	0328
17	0715	0740	S-SWF	5	2	LI, NE, OK, CW**, CW+	0708
17	1220	1242	S-SWF	5	2+	BE, LI, NE, PR, SW, CW*	1220E
17	1438	1502	S-SWF	5	1	FM, HU, PR, CW*	1436
17	1638	1705	S-SWF	5	1	FM, HU, PR, WS	
17	2048	2112	S-SWF	5	2	BE, FM, HU, LA, NE, PR, WS	2046
18	0320	0455	S-SWF	5	2+	AD, OK	*
18	0543	0620	S-SWF	5	2	NE, OK	*
18	1025	1225	S-SWF	5	3	LI, NE, PR, SW, CW*	1019E
18	1620	1655	Slow S-SWF	5	2	FM, HU, MC, PR	1618
18	1700	1749	Slow S-SWF	5	1+	FM, HU, NE, PR, WS	1654
19	1747	1810	S-SWF	5	1+	FM, HU, MC, PR, WS	
20	0924	0945	S-SWF	3	2	DA, NE	0920
20	1255	1317	S-SWF	4	1+	MC, PU	1252E
21	1630	1650	Slow S-SWF	3	1	FM, MC, PR	1608
22	0055	0143	S-SWF	5	2	AD, CA, OK, TO	
22	1313	1346	Slow S-SWF	5	2-	MC, NE, PR, PU	1311E
22	1520	1540	S-SWF	5	2	BE, FM, HU, JU, LA, MC, PR, SW, WS	1511
23	1622	1655	Slow S-SWF	5	1	FM, MC, PR, WS	1610
24	2240	2340	S-SWF	5	2+	AD, MC, OK, WS	2233
25	0630	0703	S-SWF	5	1+	NE, OK	0624
25	0907	0948	Slow S-SWF	1	2	DA	0929E
25	1650	1740	Slow S-SWF	4	2-	FM, HU, PR	1642
26	0909	0947	S-SWF	3	2	DA, NE, PU	0907
28	0028	0248	Slow S-SWF	5	2+	AD, AN, CA, OK	0027
29	0206	0221	S-SWF	5	1+	AD, TO	0206
29	1442	1505	Slow S-SWF	5	1	BE, FM, MC, PR	
29	1726	1752	S-SWF	5	1+	BE, FM, LA, MC, NE, PR, WS	1722
29	2235	0012	Slow S-SWF	5	1+	OK, WS	2245

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

AUGUST 1959

Aug. 1959	Start UT	End UT	Type	Wide Spread Index	Impor-tance	Observation Stations	Known Flare, UT CRPL-F 181
30	0622	0710	Slow S-SWF	5	2	OK, PU	0634
30	1442	1520	S-SWF	5	1	FM, HU, MC, PR	1415E
30	1541	1615	Slow S-SWF	5	1+	BE, FM, HU, LA, MC, PR, TO, WS	1536
30	2342	0057	S-SWF	5	2	AD, CA, LA, OK, TO	2348
31	0726	0757	S-SWF	1	1+	OK	0729E
31	1552	1608	Slow S-SWF	5	1	FM, HU, MC, PR, WS	1543E
31	1856	2000	Slow S-SWF	5	2+	BE, FM, HU, MC, PR, WS	1850
31	2242	2314	S-SWF	5	2+	AD, AN, CA, LA, MC, OK, WS	2222

COMMERCE - STANDARDS - BOULDER

* No known flare patrol

BR = Breisach, G.F.R.
CA = Canberra, Australia
DA = Darmstadt, G.F.R.
JU = Juhlesruh, G.D.R.
KO = Kodaikanal, India
KU = Kuhlungsborn, G.D.R.
LA = Los Angeles, Calif.
LI = Lindau, G.F.R.
NE = Nederhorst den Berg, Netherlands
PA = Paramaribo, Dutch Guiana
PU = Prague, Czechoslovakia
SW = Enkoping, Sweden
TO = Hiraiso Radio Wave Observatory, Japan
CW* = Cable and Wireless, Barbadoes
CW** = Cable and Wireless, Somerton, England
CW*** = Cable and Wireless, Brentwood, England
CW+ = Cable and Wireless, Hong Kong
CW++ = Cable and Wireless, Singapore
CW+++ = RCA Communications, Inc., Pt. Reyes, Calif.

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

SEPTEMBER 1959

Ottawa — 2800 Mc.

Sept 1959	Type	Start UT	Duration Minutes	Maximum Time UT	Maximum Peak Flux	Remarks
1	3 Simple 3 A	1418	45	1440	9	
	2 Simple 2	1419.3	2	1420	30	
1	3 Simple 3 A	1645	2 26.5	indet.	20	
	6 Complex	1657.5	16	1706	70	
1	3 Simple 3 A	1928	>3 32	2023	50	
	7 Period Irregular Activity	1931.5	41.5	2009.3	45	
	2 Simple 2	2226.3	5	2228.5	25	
2	2 Simple 2	1450	1.5	1450.8	12	
	4 Post Increase		7		4	
2	6 Complex	1603	8	1607.3	120	
	5 Absorption		30		-8	
3	3 Simple 3	1755	1 20	indet.	11	
9	3 Simple 3 A	1540	1 20	indet.	8	
	1 Simple 1	1557.5	5	1558.8	5	
	1 Simple 1	1612.5	2	1613.3	4	
11	2 Simple 2	2157.5	3	2159	15	
13	1 Simple 1	1940.3	0.7	1940.6	7	
14	2 Simple 2	2155.5	3	2156	25	
16	6 Complex	1433.5	3.5	1435.8	33	
	4 Post Increase		1 13		6	
16	3 Simple 3	1550	30	1557	5	
16	8 Group (2)	1829.8	42.4			
	2 Simple 2 f	1829.8	2	1830	27	
	2 Simple 2 f	1844.2	3	1845.4	78	
	4 Post Increase		25		10	
16	2 Simple 2	2112.7	2	2113	57	
19	1 Simple 1	2027	2	2027.5	4	
20	8 Group (2)	b1527.5	> 15.5			
	6 Complex	b1527.5	> 7.5	1528	14	
	2 Simple 2	1535	8	1538	14	
21	2 Simple 2	1242	3	1242.9	17	
21	2 Simple 2	1340.5	1.5	1341	9	
	4 Post Increase		10		4	
21	3 Simple 3 f	2029	1 45	2036.5	9	
22	1 Simple 1	1930	3	1931	6	Doubtful
26	3 Simple 3 A	1255.5	42	1309	8	
	6 Complex	1256	4.5	1256.6	15	
26	6 Complex f	1352	5	1354.8	18	
	4 Post Increase		15		4	

COMMERCE - STANDARDS - BOULDER

HOURS OF OBSERVATION: JULY, AUGUST, SEPTEMBER 1959

OBSERVING PERIOD:
July 1130 UT - 2400 UT (approx.)
August 1155 UT - 2320 UT (approx.)
September 1205 UT - 2240 UT (approx.)

with the following exceptions:

(1) Observations commenced:
July 6 at 1415
July 31 at 1505
August 16 at 1405
September 4 at 1415
September 7 at 1440
September 11 at 1520
September 13 at 1440

(2) Observations ended
July 29 at 2230
September 10 at 1930
September 12 at 1900

(3) Daily interruption of observations for calibration purposes of approximately 20 minutes, usually in the period 1430 UT to 1600 UT.

(4) Periods of interference obscuring the records on:
July 2, 7, 9-10, 13-15, 20-22, 28-29, 31
August 4, 6-9, 12, 14, 18-22, 25-28
September 3-4, 9, 11, 13-14, 16-18, 23-24

SOLAR RADIO EMISSION
TIMES OF OBSERVATIONS
JANUARY – AUGUST 1959

BOULDER 167 MC

Jan	U.T.	Feb	U.T.	Mar	U.T.	Apr	U.T.	May	U.T.	Jun	U.T.	Jul	U.T.	Aug	U.T.
1	1423-2332	1	1409-2322	1	1334-0037	1	1245-0015	1	1159-0141	1	1114-0130	1	1132-0220	1	1230-0155
2	1423-2333		2333-0007	2	1334-0037	2	1411-0111	2	1200-0141	2	1324-1623	2	1133-0219	2	1156-1323
3	1423-2335	2	1900-2022	3	1358-0039	3	1243-0112	3	1158-0141		1801-0130	3	1134-0218		1545-0158
4	1424-2335		2034-2050	4	1330-0039	4	1300-2301	4	1157-0141	3	1130-0210	4	1135-0218	3	1157-1307
5	1424-1611		2105-0009	5	1329-0041	5	1245-2207	5	1157-0141	4	1129-0209	5	1135-0217		1323-0157
	1815-1905	3	1407-1700	6	1327-0042		2218-2257	6	1157-0143	5	1130-0212	6	1142-0213	4	1200-0157
	1914-2004		1708-0010	7	1326-0044		2302-0114	7	1153-0144	6	1129-0212	7	1135-0215	5	1201-1345
	2009-2020	4	1406-0011	8	1324-1409	6	1238-1306	8	1153-1425	7	1128-0212	8	1329-0215		1403-1614
	2039-2335	5	1415-0012		1410-0024		1852-0114		1455-0146	8	1128-0213	9	1139-0215		1822-0156
6	1423-2337	6	1404-0015	9	1321-0046	7	1410-0116	9	1146-1244	9	1129-2001	10	1138-1835	6	1201-1900
7	1420-2338	7	1402-0016	10	1355-0047	8	1234-1259		1300-0146		2002-0214		1900-0216		1955-0154
8	1421-2340	8	1401-0016	11	1508-0047		1315-0117	10	1150-0147	10	1129-0214	11	1139-0210	7	1202-0152
9	1422-2340	9	1401-0018	12	1326-0049	9	1232-0117	11	1148-0147	11	1129-0215	12	1139-0210	8	1202-0150
10	1420-2130	10	1400-0022	13	1345-1417	10	1232-0118	12	1147-0147	12	1129-0216	13	1145-0210	9	1203-0149
	2138-2342	11	1359-0021		1426-0050	11	1229-0119	13	1147-0148	13	1127-0217	14	1135-0212	10	1204-1248
11	1421-1445	12	1358-0021	14	1331-0051	12	1227-0120	14	1146-0149	14	1128-0217	15	1140-0210		1700-0150
	1708-1902	13	1357-0026	15	1311-0052	13	1226-0121	15	1145-0150	15	1127-0217	16	1200-0210	11	1205-1313
	1920-2341	14	1355-0025	16	1310-0054	14	1223-1602	16	1500-0150	16	1127-0219	17	1200-0210		1400-0149
12	1421-1701	15	1353-0024	17	1309-0055		1756-0122	17	1144-1230	17	1127-0219	18	1200-0210	12	1207-1325
	1814-2000	16	1352-0026	18	1308-0056	15	1223-0122		1800-2131	18	1712-2202	19	1145-1338		1345-0149
	2149-2342	17	1351-0026	19	1305-0058	16	1222-0123		2139-0151		2220-0219		1345-0210	13	1204-0146
13	1457-1846	18	1350-0027	20	1304-0058	17	1221-0124	18	1445-0151	19	1129-1323	20	1145-0205	14	1210-0144
14	C*	19	1348-0027	21	1324-0059	18	1219-0126	19	1411-0153		1342-0219	21	1152-0200	15	1209-2125
15	C*	20	1347-0029	22	1301-1342	19	1220-0127	20	1141-0153	20	1129-1325	22	1200-0200	16	1211-1423
16	C*	21	1346-0030		1348-0101	20	1216-0128	21	1140-0154		1342-0219	23	1200-0200		1601-1919
17	C*	22	1345-0032	23	1259-2230	21	1215-0128	22	1140-0157	21	1129-0219	24	1200-0200		1924-2315
18	1649-2348	23	1343-0032	24	1256-1334	22	1212-1944	23	1139-0157	22	1129-0219	25	1200-0200		0004-0140
19	C*	24	1342-0034		1358-2007		2000-2043	24	1138-0158	23	1123-0220	26	1200-0200	17	1219-1315
20	C*	25	1341-0034		2046-2104		2049-0129	25	1137-0200	24	1128-0220	27	1200-0200		1600-1751
21	C*	26	1344-0035		2107-2159	23	1212-2154	26	1135-1323	25	1127-0220	28	1200-0200		1806-2305
22	1740-2355	27	1343-0036		2207-2313	24	1211-1333		1325-0202	26	1130-1703	29	1200-0200		2350-0139
23	1415-1557	28	1336-0037		2319-0101		1549-0131	27	1135-0203		1845-0220	30	1154-0159	18	1338-1611
	1619-2357			25	1256-1327	25	1208-0132	28	1135-0204	27	1130-1246	31	1155-0155		1634-2001
24	1414-2357				1416-1926	26	1208-1300	29	1135-0204		1306-0221				2007-2257
25	1414-0000				1941-2326		1415-0134	30	1134-0205	28	1130-1240				2310-0137
26	1413-0000			26	1356-1818	27	1206-0133	31	1133-0205		1254-0220			19	1215-1330
27	1412-2330				1852-0102	28	1205-0137			29	1132-0220				1509-0137
28	1418-1702			27	1332-0103	29	1205-0138			30	1132-0219			20	1215-1326
	1819-0002			28	1252-0103	30	1202-0139								1350-0141
29	1412-1802			29	1250-0106									21	1215-0133
	1849-0004			30	1247-0109									22	1217-0133
30	1410-1635			31	1247-0109									23	1218-0132
	1916-0005													24	1217-0130
31	1410-0005													25	1217-0129
														26	1219-1351
															1358-1502
															1505-0127
														27	1219-2007
															2021-0127
														28	1320-0122
														29	1226-1447
															1530-2254
															2302-0121
														30	1224-0119
														31	1227-1405
															1417-0118

* Equipment Failure

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

SEPTEMBER 1959

BOULDER

167 MC

Sept 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	6	1231 E		763 D	2 I
2	6	1229 E		761 D	S
2	3	1317	1319.8	2.8	2
2	8	1341	1343.5	5	2
2	8	1609.0	1610.0	2.1	3
3	6	1229 E		761 D	2 S
3	4	1603.0	1603.6	0.9	3
4	6	1500 E		300 D	2
4	4	1534.8	1536.6	1.8	2
4	2	1607.1	1609.7	3.3	2
4	2	2321	2323.5	3	2
5	4	1553.4	1553.6	0.9	1
5	8	1555.6	1557.0	4	2
5	2	1600.8	1605.8	7	2
5	2	1805.3	1805.4	2.4	2
5	4	1956.6	1956.8	3.4	3
5	2	2112.8	2119.5	7	1
5	4	2153	2157.2	6	3
6	2	1524	1524.5	1.5	1 I
8	3	0025.6	0025.7	0.6	1
8	3	1559.1	1559.2	0.3	2 I
10	2	0013.6	0013.8	1.1	1
10	6	1238 E		743 D	2 S
10	2	2054	2055.9	4.3	2
11	6	1239 E		739 D	2 I,S
11	2	1318	1319.9	3.5	2
11	3	2203.6	2204.0	0.9	2
11	2	2217.5	2217.9	1.4	2
12	6	1240 E		735 D	2 I
12	8	2038.7	2039.8	2.9	3
13	6	1240 E		733 D	2
13	4	1320	1321.5	2.3	3
13	2	1453.2	1453.3	1.3	2
13	8	1940.1	1940.7	1.4	3
14	2	1326.5	1326.6	0.9	2

Sept 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
14	3	1437.3	1437.4	0.7	1
14	3	1523.3	1523.6	0.7	2
14	3	1707.8	1708.0	0.6	2
16	3	1844.1	1844.2	1.1	1
17	6	1245 E		723 D	3
17	2	1246	1247.0	3	3 *
18	6	1245 E		405 D	2
18	3	1421.1	1421.3	0.4	2
19	3	0031.8	0032.1	0.4	2
19	4	1931.3	1931.9	1.4	2
19	3	1933.3	1933.4	0.7	2
20	9	1249 E	1256.2	23 D	2
20	2	1413	1416.0	4.8	1
20	3	1440.8	1440.9	0.6	1
20	8	1530 E	1539.9	42 D	2
21	2	0008	0008.2	5	2
22	7	1841	2059.3	181 D	2
22	3	2334.4	2334.6	0.8	3 S
23	3	1253.1	1253.2	0.6	1 *
23	3	2042.1	2042.9	0.6	2
24	4	1248.9	1302.2	12	2 S*
25	4	1304.8	1305.3	1.4	1 *
25	8	1610	1616.2	8	2
26	4	1739.4	1741.9	2.4	1
26	3	1744.0	1744.9	1.7	2
26	4	2029 E	2029.2	2.0	3
29	8	2031	2032.9	4	2 I,S

* On sunrise pattern

** On sunset pattern

TIMES OF OBSERVATIONS

Sept.	U.T.	Sept.	U.T.
1	1231-1926	13	1240-0053
	2046-0114	14	1242-2450
2	1229-0110	15	1243-0049
3	1229-0110	16	1244-0049
4	1500-0109	17	1245-0048
5	1419-0107	18	1245-0047
6	1513-1900	19	1248-0045
	1907-0106	20	1249-0043
7	1428-0104	21	1248-0042
8	1237-2001	22	1251-0040
	2003-0103	23	1250-0038
9	1240-2119	24	1251-0037
	2204-0102	25	1254-2230
10	1238-0101	26	1452-0032
11	1239-1430	27	1256-0032
	1550-0058	28	1258-0029
12	1240-1255	29	1535-1751
	1317-1404		1937-0028
	1416-0055	30	1257-0027

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES
JULY 1959

HAWAII

200 MC

July 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Remarks
1					*
2	3	0205.7	0206.7	1.1	
3	3	1922.8	1923.0	0.6	
	3	2357.0	2357.4	0.5	
4	3	0127.3	0127.6	0.7	
	2	0204.0	0210.7	7.0	
5	1	0150.0	0207.0	98.0	
	1	1907.0	2010.0	76.0	
	3	2234.0	2234.0	0.1	
	2	2335.0	2338.6	7.5	
6	2	0159.4	0200.0	1.8	
7	1	0344	0344.8	2.0	
8	1	1803.0	1805.0	2.3	
9	0	2022.5	2158.0	143.5	
	2	2319.0	2342.0	31.0	
10	3	0200	0200.1	2.0	
	0	0209	0212.0	24.0	
	2	2323.0	2337.5	27.0	
11	2	0205.1	0225.0	25.5	
	1	1848.0	2208.0	201.0	
12	3	1954.0	1954.2	1.0	
	0	2219.0	2316.8	120.0	
13	1	0122.0	0214.5	97.5	
14	1	0054.5	0144.6	188.5	
	3	1831.0	1831.3	0.5	
	2	1951.0	2010.2	30.5	
	2	2222.4	2226.8	4.6	
15	3	0253.2	0253.5	0.6	
	3	1926.8	1926.9	0.5	
	1	2329.0	2329.5	16.0	
16	0	2121.0	2144.0	341.0	
17					*
18					*
19	3	0023.3	0023.4	0.4	
	3	0210.0	0210.2	0.3	
	3	2328.0	2328.2	0.7	
20	3	0232.0	0232.8	1.0	
	3	0329.0	0329.6	1.0	
21					*
22					*
23					*
24	3	2100.0	2100.5	1.0	
25	3	2026.0	2026.2	0.5	
26					*
27	2	2109.0	2111.2	3.0	
28	3	2133.0	2133.5	1.0	
29	3	0054.0	0054.3	0.7	
	3	0229.0	0229.5	1.0	
	2	2118.0	2118.2	6.0	
30	2	0002.8	0006.6	6.2	
	3	0038.4	0038.8	1.3	
	3	0153	0153.7	1.0	
31					*

*No activity

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

JANUARY – MARCH 1959

Fort Davis

25-580 Mc

Date and Observing Times (U.T.) 1959	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified			Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
Jan. 1		1415-27	1-	Uncl.	1656-1700	2	g	1501-02	2	
1414-2350		1441-1505	1-				g	1646-47	1	
		1505-41	1				g	1649	2	
		1541-47	2				g	1736	2	
		1547-1607	1				g	1742	3	
		1607-18	2				g	1746-47	1-	
		1618-1704	3				g	1901-02	1-	
		1704-1810	1				b	2126	1	
		1810-18	2				g	2129-30	1	
		1818-45	1				g	2131-32	1	
		1845-53	2				G	2132-33	3	
		1853-1931	1				G	2133-36	2	
		1931-41	2				g	2235-36	1	
		1941-2026	1							
		2026-41	1-							
		2041-2330	1							
Jan. 2		1416-36	1				g	1426-27	1	
1415-1445		1618-24	1				b	1431	1	
1618-2350		1624-50	2				G	1641-43	2	
		1650-1905	1				g	1644	1	
		1905-30	1-				G	1648-50	2	
		1930-51	1							
		1951-2029	2				g	2238	2	
		2029-55	1							
		2055-2114	2							
		2114-26	1							
		2126-35	2							
		2135-2345	1							
Jan. 3		1416-46	1	II	1610-13	2	b	1615	3	
1415-2350		1446-1540	1-				g	1617	1-	
		1602-15	1-	Uncl.	1651-52	3	b	1820	2	
		1621-31	1-							
		1649	1-							
		1712-34	1-							
		1807-1908	1							
		1918-19	1-							
		1927-2101	1							
		2117-20	1-							
		2134	1-							
		2334-46	1-							
Jan. 4		1414-1504	1				g	1507	2	
1414-2350		1504-15	2				g	1509	1	
		1515-45	1				g	1627-28	2	
		1627-29	1				b	1719	3	1719 inverted U burst
		1701-02	1				b	1720	3	1720 inverted U burst
		1716-25	1-							
		1744-1835	1-							
		1835-53	2							
		1853-1908	1							
		1932-34	1-							
		2006-07	1-							
		2115-18	1-							
		2138-44	1-							
		2209-24	1-							
		2252-2306	1							
		2306-48	2							
Jan. 5		1414-35	2				b	1427	1	
1414-1445		1525-40	1-				b	1624	1	
1525-2350		1554-58	1-				b	1657	1-	
		1610	1-				b	1809	1-	
		1624-30	1-				b	1827	1	
		1639-48	1-							
		1712	1-							
		1805-15	1							
		1815-46	1-							
		1855-1903	1-							
		1903-18	1							
		1918-29	1-							
		1939-40	1-							
		2017-31	1-							
		2031-41	1							
		2041-54	2							
		2054-2100	3							
		2100-07	2							
		2107-23	1							
		2123-48	2							
		2148-2206	1							
		2206-2347	1-							
Jan. 6	Cont.	1556-1641	1				b	1836	2	
1414-2355	Cont.	1641-1715	2				b	1851	3	
	Cont.	1715-1900	3				b	1942	2	
	Cont.	1900-2019	2				b	1957	1	
	Cont.	2019-2348	1				g	2235	2	
							b	2302	1-	

*Burst unless specified otherwise

Fort Davis

25-580 Mc.

Date and Observing Times (U.T.) 1959	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified			Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
		1418-1536	1				b	2306	1-	
		1536-50	2				g	2309	1-	
		1550-2019	3				g	2320	1	
		2019-2149	2				b	2325	2	
		2149-2240	1				b	2336	3	
		2240-2302	2							
		2302-24	3							
		2324-48	2							
Jan. 7	Cont.	2211-2352	1				b	1838	2	
1551-2355							b	1914	1	
1600-1829		1551-1610	2				b	1942	1	
		1610-28	1				b	1944	1-	
		1628-1704	2							
		1704-1829	1							
		1829-36	2							
		1836-59	3							
		1859-1936	2							
		1936-2019	3							
		2019-2108	2							
		2108-2208	3							
		2208-2352	3+							
Jan. 8	Cont.	1414-2125	1				g	1432	2	
1414-2355	Cont.	2235-2348	1				g	1446	2	
							g	1626	2	
		1414-58	2				g	1723	3	
		1458-1517	1				g	1804	1	
		1517-53	2				g	1901	3	
		1553-1640	3				g	1908	3	
		1640-1956	2				g	1924	2	
		1956-2009	3				b	1936	3	
		2009-2123	2				g	2051	2	
		2123-2255	1							
		2255-2310	2							
		2310-2349	1							
Jan. 9	Cont.	1414-1800	1				b	1429	2	
1414-1800	Cont.	1813-2352	1				g	1909	1	
1813-2355							g	1911-12	1	
		1417-1510	1-				b	1924	1	
		1510-21	1				g	2120	3	
		1521-1800	2							
		1815-23	1							
		1823-1920	2							
		1920-48	3							
		1948-2105	2							
		2105-2156	1							
		2156-2231	2							
		2231-44	3							
Jan. 10	Cont.	1414-1912	3				b	1415	1	
1414-2355	Cont.	1912-2002	2				b	1456	3	
	Cont.	2002-24	3				b	1639	2	
	Cont.	2024-32	2							
	Cont.	2032-51	3							
	Cont.	2051-57	2							
	Cont.	2057-2300	1							
	Cont.	2300-52	2							
		1415-1640	3							
		1640-1717	2							
		1717-55	3							
		1755-1816	2							
		1816-27	3							
		1827-46	2							
		1846-1925	3							
		1925-2011	2							
		2011-55	3							
		2055-2216	2							
		2216-43	1							
		2243-2300	2							
		2300-52	3							
Jan. 11		1417-1703	1	Uncl.	1940-43	1	g	1642	1-	
1414-2200		1703-15	2				g	1838	1-	
2209-2400		1715-1727	3				b	2200	3	
		1727-1819	3+							
		1819-34	3							
		1834-39	2							
		1839-1910	1							
		1910-51	1-							
		1951-2009	1							
		2009-19	1-							
		2047-2130	1-							
		2155-2200	1							
		2228-30	1-							
		2251-2305	1-							
		2333-49	1-							

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

Fort Davis

25-580 Mc.

Date and Observing Times (U.T.) 1959	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified			Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
Jan. 12		1601-12	1				b	1738	1	
1415-2400		1629	1							
		1759-1803	1-							
		1821	1							
		1828-38	1-							
		1852	1-							
		1938-45	1							
		2001-11	1-							
		2339-40	1							
Jan. 13							g	1545	3	
1414-2400										
Jan. 14		1644-1703	1-				b	1649	1-	
1415-2330		1729-30	1-							
Jan. 15							b	1850	1-	
1414-2400										
Jan. 16				Uncl.	1912	1	b	1551	1	
1415-2400							g	1824-25	1	
							b	1836	1-	
							G	1842-46	3	
							g	1907-08	3	
							g	1908-09	2	
							g	1910	2	
							G	1914-17	3	
							G	1917-19	1	
							g	1936-37	3	
Jan. 17	Cont.	1422	3				g	1422	2	
1414-2400							b	1448	1	
		1523-24	1				b	2156	1	
		1649	1				b	2216	1	
							g	2218	3	
							b	2354	3	
Jan. 18		1758-1805	1				b	1539	1-	
1414-2400		1822	1-				b	1842	1	
		2004	1				g	2003-04	1-	
		2145	1				b	2006	1-	
		2150	1				g	2123-24	2	
							G	2127-29	2	
							g	2132-33	1-	
Jan. 19		2016-17	1				g	1744	1	
1415-2400		2253	1-				b	2017	1-	
		2352	1-				g	2101	1	
							g	2239	1-	
Jan. 20		1415-22	1				g	1633	3	
0000-0003		1452-1522	1				b	1651	3	
1414-2400		1618	1-				g	1724	3	
		1651	1-				g	1725	1	
		1840	2				g	1726	2	
		2120-22	1				g	1735-36	2	
		2252	1-				b	1817	3	
		2317-18	1-				g	1819-20	3	
		2334-52	1-				g	1820-21	1-	
							b	1905	2	
							b	1912	3	
							g	1927-28	1	
							b	2014	3	
							b	2045	1	
							b	2104	1	
							b	2142	3	
							b	2153	3	
							b	2333	3	
Jan. 21		1526-54	1	Uncl.	1716-17	1	G	1519-20	2	
0000-0005		1604	1-				g	1535	3	
1415-2400		1707-17	1-				b	1537	1	
		1733-1823	1	II.	1718-43	3	b	1553	2	
		1843-1904	1				G	1600-01	3	
		1922	1-				b	1604	1	
		1934	1				g	1608	2	
		1940	1				b	1708	1	
		1947	1				g	1720-21	3	
		2017	1				b	1737	1-	
		2038-40	1-				b	1747	2	
		2052-58	1				b	1805	1-	
		2125	1				b	1812	1-	
		2258	1				b	1824	1-	
		2322-38	1-				b	1833	1	
		2352-56	1				b	1834	3	
							g	1836	3	
							G	1838-41	3	
							b	1842	1-	
							g	1920-21	2	
							g	2001	2	
							g	2002	3	

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	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
							g	2003-04	3	
							b	2136	1	
							g	2139	2	
							g	2223	2	
							G	2224-25	2	
							g	2306	3	
							G	2350-52	2	
							b	2353	1	
							b	2354	1	
Jan. 22	Cont.	1547-48	3	Uncl.	1554-58	2	b	1446	2	1554-58 this
1415-2325	Cont.	1611-16	1	II.	2102-12	2	b	1543	1	Uncl. burst has
	Cont.	1616-20	2				g	1546-48	3	some features
	Cont.	1816-17	3				g	1549	1	of a Type II
	Cont.	2057-59	3				b	1645	1-	burst.
							g	1759	2	
		1446-48	1-				g	1815	1-	
		1501-1606	1				G	1816-17	3	
		1638-1910	1				g	1819	2	
		1933-45	1				g	1821	3	
		1958-2020	1				g	1822-23	1	
		2033-51	1				b	1829	1	
		2100-10	1				g	1926	3	
		2128	1-				g	1932-33	2	
		2319	1-				g	1940	1-	
							b	1941	2	
							b	1942	1	
							g	2048-49	1	
							g	2057-58	3	
							b	2113	1	
							b	2118	1-	
							b	2124	1	
							g	2238	2	
							g	2241	3	
							g	2259	1	
1415-2325										
Jan. 23		1415-1601	1				b	1555	1-	
1415-2400		1617-32	1				G	1608-11	2	
		1632-41	2				g	2124	3	
		1641-55	1				g	2330-31	1-	
		1708-10	1-				G	2332-35	2	
		1727-38	1-							
		1746-1826	1							
		1838-1904	1							
		1904-40	2							
		1940-2201	1							
		2215-51	1							
		2319-54	1							
Jan. 24		1415-1511	2				b	1726	3	
0000-0005		1511-45	1				b	1740	1	
1415-2400		1545-59	2				b	1745	1	
		1559-1702	1				g	1801-02	1	
		1740-1803	1				g	1802-03	1	
		1803-42	3				b	1836	2	
		1842-1922	1				g	2030	2	
		1922-37	2				g	2034	3	
		1937-59	3				b	2049	1	
		1959-2018	2				g	2051	2	
		2018-2141	1				b	2052	2	
		2141-51	2				b	2100	1-	
		2151-2222	1				g	2104-05	1	
		2237-2357	1				b	2150	1	
							g	2342	3	
Jan. 25		1416-38	1				g	1430	1-	
0000-0005		1438-1556	2				g	1431-32	2	
1414-2400		1556-2158	1				g	1436	1-	
		2223-29	2				g	1440	3	
		2229-2353	1				g	1442	3	
							g	1446	1-	
							b	1532	3	
							g	1647	3	
							b	1649	1	
							g	1702-03	3	
							G	1705-06	2	
							g	1733	1	
							g	1911-12	1	
							g	2002	1	
							g	2009-10	2	
Jan. 26		1546-47	1-				b	2007	1-	
0000-0005		1559-1608	1-							
1414-2400		1622	1-							
		1632-38	1-							
		1757-1802	1-							
Jan. 27	Cont.	1857-58	2				b	1611	1	
0000-0005	Cont.	2044-45	2				g	1857	3	
1415-2400							b	1929	3	

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	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
Feb. 13	Cont.	← 0009	1				b	1724	2	
0000-0015	Cont.	2211-45	1				g	1737-38	2	
1400-2400	Cont.	2245-2303	2				g	1740-41	1	
	Cont.	2303-11	3				b	1749	1	
	Cont.	2311-19	2				b	2115	1-	
	Cont.	2319-38	3				g	2134	1	
	Cont.	2338 →	3+				b	2153	1-	
							b	2315	2	
		← 0004	1-				C	2318-21	3	
		1443-48	1-							
		1454-55	1-							
		1510-27	1-							
		1542-43	1							
		1557-1611	1-							
		1621-39	1-							
		1654	1-							
		1711-14	1-							
		1719-46	2							
		1804-11	1-							
		1817-21	1-							
		1837-41	1-							
		1925-27	1-							
		2113-17	1-							
		2126	1-							
		2133-39	1-							
		2142-2202	2							
		2210	1-							
		2223-26	1-							
		2234-45	1							
		2245-2327	2							
		2327 →	3							
Feb. 14	Cont.	← 0015	3+							
0000-0015	Cont.	1400-1641	2							
1400-2400	Cont.	1641-1718	3							
	Cont.	1718-1833	3+							
	Cont.	1833 →	3							
		← 0015	3							
		1400-1641	2							
		1641-1718	3							
		1718-2000	3+							
		2000-46	3							
		2046-2240	3+							
		2240 →	3							
Feb. 15	Cont.	← 0020	3				g	1523-25	1	
0000-0015	Cont.	1400-1701	3				b	1633	1-	
1400-2400	Cont.	1701-2026	2				g	1635	2	
	Cont.	2026-2144	1							
	Cont.	2144-2224	2							
	Cont.	2224 →	1							
		← 0005	3							
		1414	1-							
		1428-39	1-							
		1447-1541	1-							
		1541-1717	1							
		1735-1905	1							
		1916-2031	1-							
		2045-2058	1-							
		2058-2153	1							
		2153-2206	2							
		2206-2222	3							
		2222-55	1							
		2255 →	1-							
Feb. 16	Cont.	← 0012	1				b	1440	3	
0000-0020	Cont.	1435-1819	1				g	1635	3	
1400-2400	Cont.	1819-1928	2				g	2230	2	
	Cont.	1928 →	1							
		← 0012	1-							
		1403-1632	1							
		1632-45	2							
		1645-1710	1							
		1710-33	2							
		1733-1816	1							
		1816-1943	2							
		1943-2049	1							
		2049-2141	1-							
		2141-2335	1							
		2335 →	2							
Feb. 17	Cont.	← 0013	1	Uncl.	2224-30	2	g	1508	1	1733 inverted U burst.
0000-0020	Cont.	1605-07	1	Uncl.	2235-38	3	g	1643	2	2224-30; 2235-38 These
1400-2400	Cont.	1615-21	1				g	1733	2	uncl. bursts have some
	Cont.	1911-12	2				b	1816	1	features of Type II
							G	1837-38	2	bursts.
		← 0013	2				g	1840	2	
		1400-53	2				g	1924	2	

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		1453-1540	1				G	2220-22	3	
		1554-1605	1				g	2223	1	
		1605-22	2				g	2224	2	
		1622-1707	1				b	2321	1	
		1707-39	1-				g	2322-23	1	
		1739-1828	1				b	2354	1	
		1850-2020	1-							
		2020-27	1							
		2027-31	2							
		2031-40	3							
		2040-2105	1							
		2105-30	2							
		2130-2220	3							
		2220-24	2							
		2224-55	1							
		2255 →	2							
Feb. 18		← 0018	2	Uncl.	1901-02	2	g	1420	3	
0000-0020		1502-04	1-	II	2241-51	3	g	1439	3	
1400-2400		1529	1-				b	1447	1-	
		1901-03	1				g	1608	1	
		1956-2006	1-				g	1803	2	
		2015-26	1-				g	1804	2	
		2054	1-				g	1842	1	
		2132-34	1-				g	2005	1-	
		2238-44	1				g	2012	1	
		2345 →	1-				g	2129	1	
							g	2232-33	1-	
							g	2237	2	
							b	2248	2	
							g	2259-2302	1-	
Feb. 19	Cont.	2131-49	1-				g	1947	1	
0000-0020							g	1959-2000	1-	
1400-2400		2031-2126	1				g	2003-04	1-	
		2126-36	2				b	2044	1-	
		2136-2200	1				b	2059	1	
		2314-34	1-				g	2107-08	1	
							g	2254	1	
							G	2314-15	2	
Feb. 20	Cont.	1813-15	2	Uncl.	1752	1-	g	1452	1	
0000-0020	Cont.	1815-19	3	II.	1753-1804	3	b	1553	1	
1400-2400	Cont.	1819-24	2	Uncl.	1817-19	3	b	1644	1	
	Cont.	2040-42	3	Uncl.	1828-33	2	g	1645	2	
				Uncl.	2043-44	2	g	1721	1	
		1400-12	1-				g	1748-49	1	
		1428-29	1-				G	1806-08	1	
		1436	1-				g	1902	1	
		1506	1-				g	1927-28	2	
		1528-33	1-				g	1935	1-	
		1544-55	1-				g	1957-58	2	2043 possible
		1618-20	1-				g	2022	2	small slow drift
		1640-42	1-				g	2023	3	burst with
		1757-1807	1-				G	2040-42	3	harmonics.
		1807-30	1				g	2313-14	2	
		1830-1900	1-							
		1918-21	1-							
		1936	1-							
		2011-16	1							
		2254-55	1-							
		2356 →	1-							
Feb. 21		← 0011	1-				G	1450-51	3	1451 U burst.
0000-0020		1400-39	1-				g	1725	3	
1400-2400		1501-1602	1-				g	2006	3	
		1616-18	1-				b	2013	1	
		1632-54	1-				G	2122-23	2	
		1654-1716	1				b	2245	1	
		1716-1803	2				g	2254	1	
		1803-2115	1				G	2314-15	2	2315 U burst.
		2131	1-							
		2149	1-							
		2315 →	1-							
Feb. 22		← 0010	1-				g	1447	1	
0000-0020		1849-50	1-				b	1503	1	
1400-2400		1906-07	1-				b	2014	1	
		2133-35	1-				g	2139	1	
		2150-55	1				g	2142	1	
							g	2143-44	1	
							g	2252	2	
							g	2309	1	
							b	2338	1	
							b	2339	1	
							g	2342	2	
							b	2347	1-	
Feb. 23		← 0010	1				b	1546	2	
0000-0020		1400-07	1-				g	1548-49	2	
1400-2400		1455	1-				b	1550	1-	
		1512-22	1-				b	1552	1-	
		1547	1-				b	1555	1	

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	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
		1717-32	1-				g	2220	1	
		1821-25	1-				g	2320	1	
		2145	1-							
Feb. 24		1400-1614	1-				g	1558	2	
0000-0020		1614-1700	1				g	1600	1	
1400-2400		1700-41	1-				G	2346-47	1	
		1741-2303	1				g	2355	1	
		2303 ⟶	1-				G	2357-58	3	
Feb. 25		⟵ 0019	1-				g	0007	1	
0000-0025		1423-24	1-				g	0008-09	1	
1400-2400		1530	1-				b	1601	1	
		1743	1-				b	1636	1-	
		1759	1-				g	1639	3	
		1811-12	1-				g	1715	1	
		1820-22	1-				g	1722	2	
		1834-35	1-				g	1749-50	3	
		1934-37	1-				g	1827-28	2	
		1946-2007	1-				g	1829	2	
		2018-22	1-				g	1833	1	
		2029-41	1-				g	1837-38	1-	
		2041-57	1				b	1847	1	
		2057-2120	1-				g	2017	2	
		2120-49	1				b	2038	2	
		2149- ⟶	1-				g	2110	3	
							b	2145	1-	
Feb. 26		⟵ 0015	1-				b	1644	1-	
0000-0025		1541-1603	1-				b	2038	3	
1539-2400		1635	1-				g	2042-43	3	
		1701-34	1-				b	2051	1-	
		1854-2011	1-				b	2138	1-	
		2027-2134	1-				g	2315-16	2	
		2134-49	1							
		2149-2203	1-							
		2225 ⟶	1-							
Feb. 27		⟵ 0017	1-				g	1601	1	
0000-0025		1413	1-							
1400-2400		1550	1-							
		1609-37	1-							
		1724-1818	1-							
		1818-52	1							
		1852-2002	1-							
		2002-55	1							
		2055-2140	1-							
		2205-16	1-							
		2310-42	1-							
		2342-53	1							
		2358 ⟶	1-							
Feb. 28		⟵ 0023	1-				g	2034	3	
0000-0025		1400-22	1-				g	2035	2	
1400-2400		1448-55	1-				g	2111-12	3	
		1518	1-							
		1551-1616	1-							
		1638-39	1-							
		1728-1801	1-							
		1928	1-							
		2008	1-							
		2127-35	1-							
		2146-2218	1-							
							g	1914	2	
Mar. 1		1400-1530	1				g	2334	1-	
0000-0025		1530-1610	1-				g	2359	1	
1400-2400										
Mar. 2		1400-25	1-							
0000-0025		1438	1-							
1400-2400		1609	1-							
		1753	1-							
		1855-2034	1-							
		2121-24	1-							
Mar. 3				Uncl.	1719	1	g	1841	1-	
0000-0030							g	1843	1-	
1400-2400							b	2030	1	
							g	2050-51	2	
							g	2053-54	1	
							g	2156-57	1-	
							g	2337	1	
Mar. 4										
0000-0030							g	2021	1	
1400-2040										
Mar. 5							b	2324	2	
0000-0030							g	2331	1-	
1413-2400										
Mar. 6							g	1720	2	
0000-0035							b	2101	1	
1345-2400										

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Mar. 7		1757-59	2	Uncl.	1727-28	3	g	1724	2	
0000-0035		2349-59	1	Uncl.	1739-43	1	g	1725	1-	
1345-2400				Uncl.	1746-47	3	g	1726	3	
				Uncl.	1749-51	3	g	1727	3	
				Uncl.	1913	2	g	1728-29	1-	
							g	1730	1	
							G	1731-42	3	
							g	1746-47	3	
							g	1751-52	2	
							g	1753	3	
							b	1835	2	
							b	1913	1-	
							g	2120-22	1	
Mar. 8		1453-56	1-				g	1600	2	
0000-0035		1456-1546	1				b	1732	1-	
1330-2400		1546-1741	2				G	2118-21	2	
		1741-1920	3				G	2122-27	3	
		1920-58	2				b	2128	1-	
		1958-2042	1							
		2042-2134	1-							
		2134-52	1							
		2152-2218	1-							
		2218-44	1							
		2244 →	1-							
Mar. 9		← 0016	1-	II.	1723-27	3	b	1631	1-	
0000-0035		1338-1425	2				g	1721-22	1-	
1330-2400		1425-38	1				g	1723	1	
		1438-1644	1-	Uncl.	1732-38	1	g	1724	1	
		1658-1720	1	Uncl.	1743	2	b	1730	1	
		1720-27	2	Uncl.	1752-54	3	b	1743	1	
		1727-40	1				b	1808	2	
		1740-41	1				b	1841	1	
		2010	1-				b	2007	1-	
		2132	1-				g	2009	1	
		2140-44	1				g	2107-08	1	
		2238	1-				g	2123	1-	
		2244	1-				b	2128	1	
							g	2132-33	3	
							g	2138	1	
							b	2215	2	
							g	2221	1-	
							g	2231	2	
							g	2234	1-	
							g	2240	1	
							g	2241-42	2	
Mar. 10		1557-1743	1-				b	1443	1-	
0000-0040		1758	1-				b	1455	3	
1340-2400		1837-1927	1-				g	1612-13	2	
		1955	1-				g	1652	1	
		2012	1-				g	1703	1-	
		2043-2100	1-				G	1735-38	2	
		2100-56	1				b	1746	1	
		2156-2319	1-				G	1803-05	2	
		2337 →	1-				b	1807	3	
							g	1809	1	
							g	1811-12	2	
							g	1824-25	1-	
							g	1920	3	
							b	1932	2	
							g	1940	2	
							b	2017	1-	
							b	2018	3	
							b	2020	2	
							g	2023-26	2	
							g	2032	1	
							g	2141-42	1-	
							g	2144-45	1-	
Mar. 11	Cont.	1814	1	Uncl.	1825	1-	b	0005	1	
0000-0040	Cont.	1820-21	3				g	1423	1-	
1331-2400	Cont.	1821-22	1-				g	1723-24	2	
							b	1730	1	
		← 0030	1-				g	1745-47	1	
		1411	1-				g	1758-59	1-	
		1810-11	1-				b	1809	1-	
		1831	1				G	1812-15	1	
		2006	1				G	1816-20	1	
							g	1822-23	1-	
							b	1906	1-	
							g	2009-10	3	
							b	2016	1-	
							b	2147	3	
Mar. 12		1333-1416	1				g	1653-54	3	
0000-0040		1416-1441	1-				g	1655-56	2	
1331-2400		1512-40	1-				b	1743	3	
		1930	1-				b	1806	3+	

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Fort Davis — 25-580 Mc.

Date and Observing Times (U.T.) 1959	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified			Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
		1936	1-				g	1821	1-	
		2116	1-							
		2327-34	1-							
Mar. 13		0000-0031	1-				g	0024-25	3	
0000-0040		1516-24	1-				b	0026	1	
1400-2400		1642-53	1-				b	1830	1	
		1715-40	1-				g	1840	3	
		1759-1804	1-							
		1824-45	1-							
		1917	1-							
		2116-21	1-							
		2208	1-							
		2225	1-							
		2241	1-							
		2342 →	1							
Mar. 14		← 0020	1-	Uncl.	2023-24	2	g	0025-26	2	
0000-0040		1624-26	1-				g	1400	1-	
1331-2400		1707	1-				b	1457	1-	
		1835-57	1-				g	1803-04	2	
		2001-11	1-				g	2257-58	2	
		2042-50	1-							
Mar. 15		0011-12	1-				g	1950	1	
0000-0045		1405	1-							
1332-2400		1521-43	1-							
		1555-56	1-							
		2241-42	1-							
Mar. 16		← 0004	1-							
0000-0045		1722-48	1-							
1400-2400										
Mar. 17		1339-57	1				g	0013	1-	
0000-0044		1619-20	1-				g	1335	1-	
1332-2400		1652	1-				g	1417	1	
		1844	1-				b	2148	2	
		1916-20	1-				g	2150	1	
		1928	1-							
		1936-2006	1-							
		2006-2140	1							
		2140-2203	1-							
		2316-31	1-							
Mar. 18		1332-50	1-				b	1701	3	2114 U burst
0000-0045		1402-03	1-				g	1923	2	
1332-2400		1414-42	1				g	1941	2	
		1517-1602	1-				b	2114	1	
		1614-34	1-							
		1701-51	1-							
		1751-1820	1							
		1820-35	2							
		1835-1908	1							
		1908-2053	1-							
		2053-2110	1							
		2110-29	2							
		2129-2239	1							
		2239 →	1-							
Mar. 19	Cont.	2209-2314	1-				b	1448	1-	
000-0045							b	1523	1	
1340-2400		1356-1428	1-				g	1545	1	
		1428-1504	1				g	1817-18	1-	
		1504-17	1-				C	1820-22	2	
		1548	1-				b	2030	1	
		1806	1-				g	2050	1-	
		1855-1922	1-				b	2051	1-	
		1934-39	1-				g	2121	1	
		2007-23	1-				g	2132-33	1-	
		2023-43	1				b	2149	3	
		2043-2108	1-				C	2151-53	2	
		2108-24	1-				g	2154-55	3	
		2124-2204	1				g	2157	1	
		2204-2314	2				b	2223	1	
		2314-51	1-				g	2307-08	1	
							g	2309	1	
Mar. 20	Cont.	1542-1923	2				b	1442	2	
0000-0044	Cont.	1923-2010	1				g	1450	1	
1351-2400	Cont.	2227-56	1				g	1531-32	1	
	Cont.	2256 →	2				b	1534	1-	
							g	1535	1-	
		← 0037	1-				g	1542-43	2	
		1351-55	1-				b	1624	2	
		1408-22	1-				b	2314	2	
		1435-1529	1-				b	2342	2	
		1529-42	1							
		1542-1652	2							

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Date and Observing Times (U.T.) 1959	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified			Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
		1652-1731	3							
		1731-50	2							
		1750-1917	3							
		1917-2007	2							
		2007-2141	1							
		2210-22	1-							
		2222 →	2							
Mar. 21	Cont.	← 0040	2				G	1333-35	1	
0000-0045							b	1531	1	
1330-2400		← 0040	2				g	1713-14	2	
		1330-51	1-				b	1730	1-	
		1408-11	1-				g	1910-11	1	
		1438-45	1-				g	2120	2	
		1505-1617	1-				b	2122	1	
		1617-52	1				g	2146	2	
		1652-1802	1-				g	2159	2	
		1802-54	1				g	2314	1	
		1854-1909	1-				g	2331	1	
		1909-2057	1							
		2057-2142	1-							
		2202-56	1							
		2256 →	1-							
Mar 22	Cont.	1844-45	1				g	1409	2	
0000-0045							b	1419	1	
1331-2400		← 0035	1-				g	1424	2	
		1338-1802	1-				g	1444-45	2	
		1802-1915	1				g	1446	2	
		1915-2001	1-				g	1448-51	2	
		2001-49	1				b	1551	1	
		2049-2236	1-				g	1641	3	
		2236-2301	1				g	1859	3	
		2301-22	2				g	1947	1	
		2322 →	1				b	2155	1	
							g	2245-46	2	
							g	2350	2	
Mar. 23		← 0042	1				b	1326	2	
0000-0045		1319-1408	1				g	1327-28	2	
1311-2400		1408-1420	1-				g	1332	2	
		1446-49	1-				g	1333	1-	
		1501-09	1-				G	1335-36	2	
		1548-52	1				g	1412	2	
		1607-18	1-				g	1552	1	
		1710-21	1-				b	1607	3	
		1738-1814	1-				g	1717	2	
		1814-1908	1				g	1740	3	
		1908-38	2				b	1809	2	
		1938 →	1				g	1816	2	
							g	1915	1	
							g	2004	2	
Mar. 24		← 0035	1				g	1619-20	2	
0000-0050		1337-1653	1				b	1728	1	
1332-2400		1653-1858	2				b	1839	1-	
		1858-1916	1				b	1846	1	
		1916-18	2				b	1857	1-	
		1918-55	1				b	1918	1-	
		1955-2023	1-				b	1957	1-	
		2042-43	1-				b	2152	1	
		2116-21	1-				g	2303-04	1	
		2347 →	1-				b	2354	3	
Mar. 25	Cont.	1556 →	1	Uncl.	1754	2	g	1708	1	
0000-0050		0023-24	1-				g	1710	1-	
1346-2400		1407-1551	2				b	1724	1	
		1551-1758	1				g	1941	2	
		1758-1825	1-				g	2020	1	
		1825-1931	1				g	2048	2	
		1931-2049	2				g	2132	1	
		2049-2129	3				g	2203	1-	
		2129-2324	2				g	2203	1-	
		2324 →	1				b	2206	1-	
							g	2212	3	
							g	2217	2	
							g	2312	2	
							g	2318	3	
							b	2350	1	
							b	2355	1	
Mar. 26	Cont.	← 0041	1	Uncl.	1846	3	g	0003	1	
0000-0050	Cont.	2120	3				g	0004	3	
1313-2400							G	0005-07	3	
		← 0036	1-				g	0032	2	
		1325-42	1-				g	0039-40	1-	
		1425	1-				g	1336	1	
		1520-51	1-				b	1343	1	
		1642-1715	1-				g	1509	1-	
		1818	1-				g	1626-27	1-	
		1832-45	1-				g	1629-30	1-	
		1937-2050	1-				g	1631	1-	

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	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
		2110-14	1-				g	1707	1	
		2114-53	1				g	1711	2	
		2153-2214	1-				g	1744	1	
		2214-55	1				g	1828	2	
		2255-2320	1-				g	1911-12	1	
		2344 →	1-				G	1913-15	1	
							g	1916	1-	
							g	1917-18	1-	
							g	1919-20	1-	
							b	1933	1-	
							b	2002	1-	
							G	2003-05	2	
							G	2009-10	3	
							b	2026	2	
							g	2053	3	
							g	2100	2	
							g	2103-04	1	
							g	2120	3	
							g	2144	3	
							g	2206	2	
							g	2257	1-	
							g	2302-03	1	
							g	2318	3	
Mar. 27	Cont.	1315-1923	1				g	0016-17	3	
0000-0050	Cont.	1923 →	2				g	0019	1-	
1315-2400							G	0026-28	2	
		← 0036	1-				b	0051	1-	
		1325-1708	3+				g	1342	3	
		1708-1840	3				g	1427	1	
		1840-1914	2				g	1428	2	
		1914-2241	3				g	1437	3	
		2241 →	3+				g	1441	1	
							g	1454	1	
							b	1530	3+	
							g	1600	2	
							g	1602	3	
							g	1605	2	
							b	1749	1	
							b	1758	3	
							b	1805	2	
							b	1812	1	
							g	1822	1	
							b	1832	1	
							g	1844-45	3	
							b	1846	2	
							b	1858	1	
							b	1906	1-	
							g	1908	1	
							g	1910	1	
							G	1916-2140	2	
							b	2158	1	
							g	2312-13	2	
							b	2322	1-	
Mar. 28	Cont.	← 0043	2				g	1605	1-	
0000-0050	Cont.	1729-37	3				b	1637	2	
1352-2400							b	1647	1	
		← 0047	3				b	1701	2	
		1352-2040	1				b	1706	1	
		2040-54	2				b	1717	1-	
		2054 →	1				G	1725-28	1	
							G	1729-37	3	
							b	1805	1-	
							b	1808	1-	
							g	1815-16	1-	
							b	1820	1-	
							b	1834	1-	
							b	1858	3	
							b	1930	1-	
							g	1938	1	
							g	1945-47	1	
							b	2019	1-	
							g	2020-21	1	
							b	2022	1-	
							b	2043	1	
							b	2118	1-	
							g	2311	1	
							g	2322	2	
Mar. 29	Cont.	1901-2054	1				b	0034	1-	
0000-0049	Cont.	2054 →	2				g	1318-19	1	
1312-2400							G	1419-20	2	
		← 0041	1				G	1420-23	1-	
		1312-1420	2				g	1423-24	2	
		1420-33	3				G	1424-31	1-	
		1433-1615	2				b	1432	2	
		1615-1755	3				g	1434	2	
		1755-1827	3+				g	1615	1	

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Date and Observing Times (U.T.) 1959	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified			Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
		1827-1904	3				g	1706-07	2	
		1904-10	3+				g	1722	1	
		1910-2110	3				g	1739-40	2	
		2110 ⟶	3+				b	1746	1	
							b	1800	1	
							b	1802	1	
							g	1817	1	
							g	1824-25	2	
							g	1826	2	
							b	1828	1-	
							b	1830	1-	
							b	1858	1-	
							G	1907-10	3	
							g	1932	2	
							b	1952	3	
							b	2022	3	
							g	2028-29	1	
							b	2032	1-	
							g	2120-21	3	
							G	2137-38	2	
							b	2147	2	
							g	2155-56	2	
							g	2229	1	
							g	2309	1	
							G	2341-42	2	
							g	2343	3	
							G	2347-48	1-	
Mar. 30	Cont.	⟵ 0054	2				b	0037	2	
0000-0054							g	1324	3	
1311-2400		⟵ 0054	3+				g	1346	2	
		1311-1642	3				b	1420	2	
		1642-59	2				G	1637-39	2	2044 U Burst
		1659-1737	3				b	1645	2	
		1737-54	2				g	1747	3	
		1754-1903	3				g	1756	1	
		1903-43	2				b	1806	1-	
		1943-55	3				b	1818	3+	
		1955-2021	2				g	1827	2	
		2021-2200	3				g	1900	1-	
		2200-56	2				g	1905-06	1-	
		2256	3				b	1935	1	
							G	1939-46	1	
							b	2039	2	
							G	2044-46	2	
							g	2049-51	2	
							b	2059	1-	
							b	2140	2	
							g	2156	1	
							g	2221-23	1	
							g	2239	2	
							g	2246	1-	
							g	2251-52	1-	
							b	2254	1-	
Mar. 31	Cont.	2158-59	3				g	0023	2	1328 U Burst
0000-0052							g	0037-38	1	
1312-2400		⟵ 0052	3				g	1327-28	3	
		1312-53	2				G	1336-37	3	
		1353-1501	1				g	1350-51	1	
		1501-11	2				b	1356	1-	
		1511-1635	1				G	1357-59	1	
		1635-1717	2				b	1400	3	
		1717-56	1				G	1402-03	2	
		1756-1820	2				b	1406	1	
		1820-1857	1				G	1443-46	2	
		1857-1900	2				b	1448	1	
		1900-24	1				g	1453-54	1	
		1924-51	2				g	1501	2	
		1951-2137	1				g	1541	1-	
		2137-49	2				b	1645	3	
		2149 ⟶	1				g	1703-07	1	
							G	1721-40	1	
							b	1747	2	
							g	1758	3	
							g	1803-04	2	
							g	1812	2	
							g	1834-35	1	
							b	1840	1	
							g	1848-49	1-	
							g	1854-55	2	
							g	1858-1902	2	
							b	1913	2	
							g	1927	2	
							G	1929-37	1-	
							g	1944	1	
							g	1951-52	2	
							g	2002	1	
							b	2027	2	
							g	2040	1	
							g	2043	2	

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

SEPTEMBER 1959

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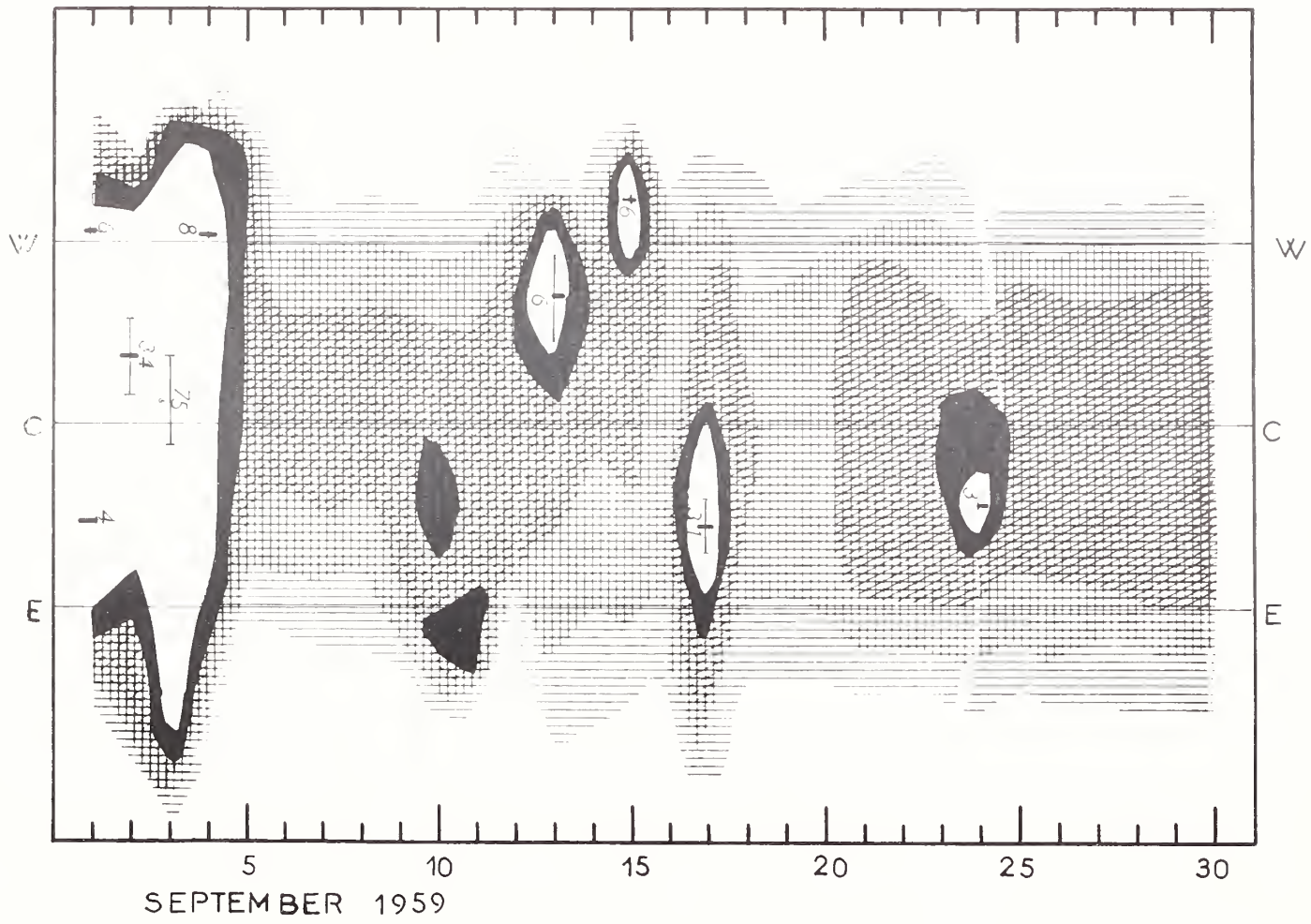
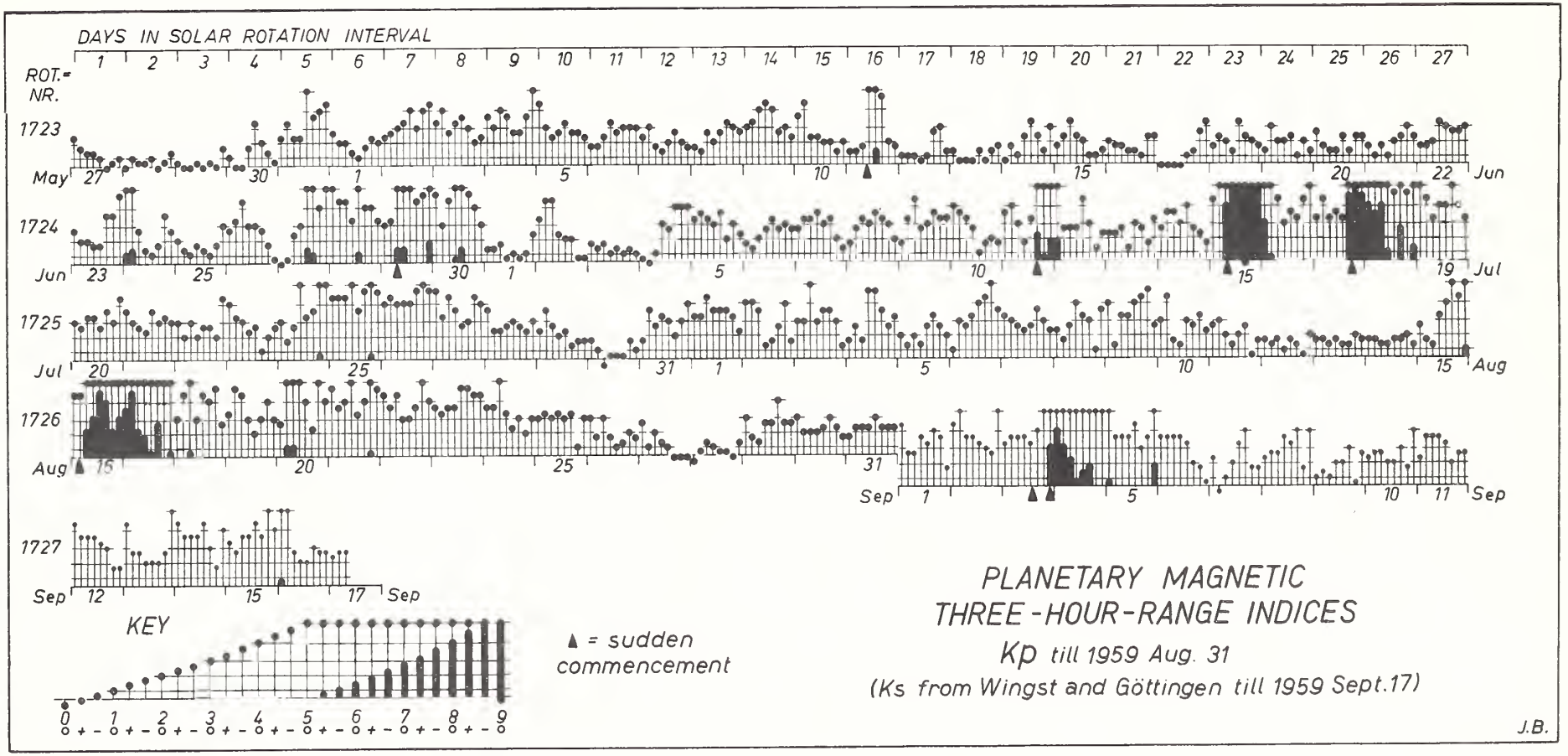


GEOMAGNETIC ACTIVITY INDICES

AUGUST 1959

Aug. 1959	C	Values Kp Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	1.0	3+ 3+ 4+ 4-	4- 4- 3+ 2+	28-	20	Five
2	0.9	4o 4o 4- 1+	2- 3- 4o 2-	23o	16	Quiet
3	1.0	3o 3o 5o 3o	4- 4- 3o 1+	26-	20	
4	1.0	2- 3- 2- 5-	5- 4- 3- 3+	25o	19	12
5	0.6	2o 1+ 2o 1+	3- 3+ 3- 2o	17+	9	13
						14
6	1.1	1o 3o 3- 3+	4o 4+ 5o 4-	27o	22	27
7	1.0	3+ 3o 3- 2+	3- 4- 3o 2+	23o	14	28
8	0.8	2+ 2- 3- 4o	3+ 3o 1o 4-	22-	14	
9	1.1	4o 1+ 3+ 3+	4o 4+ 5- 3-	28-	22	
10	0.8	3o 4+ 2- 1+	3o 3- 3+ 2+	22-	14	
11	0.4	3- 3o 2o 1+	2o 3- 3- 2-	16o	8	Five
12	0.2	2- 1+ 2- 1o	2- 1+ 1- 2o	11+	5	Disturbed
13	0.3	2- 2- 1+ 2-	1+ 1+ 2o 2-	13-	6	
14	0.3	2- 2- 1+ 1+	2- 2- 2o 1+	13-	6	16
15	1.2	3- 2- 1+ 3+	4o 5o 4+ 6-	28o	27	17
						20
16	2.0	4+ 4+ 7- 7+	8+ 8o 7- 7+	53o	130	21
17	1.8	8- 8+ 7- 6+	5+ 7o 5o 5+	52-	114	23
18	1.2	3o 4+ 5+ 3o	4+ 4o 5- 3-	31+	28	
19	1.1	3+ 5- 4+ 3o	2o 3o 4o 3o	27+	21	
20	1.4	3- 6- 6- 5o	4o 2+ 5o 4o	34+	28	
21	1.3	5- 4- 4o 5o	3+ 4o 5+ 5-	35-	34	Ten
22	1.1	4+ 4- 4+ 3o	3o 4- 5o 4o	31o	27	Quiet
23	1.2	4- 3+ 4- 4-	5- 5- 4+ 4+	32+	28	
24	1.1	4- 4- 5o 3+	2+ 3o 2o 3o	26o	20	5
25	0.9	3o 3+ 3o 3+	3o 3+ 1o 3o	23o	15	11
						12
26	0.4	3o 2- 3o 2-	1o 1+ 2o 2-	15+	8	13
27	0.2	3- 1o 2o 1+	1o 0+ 0+ 0+	9o	5	14
28	0.1	0o 1- 1+ 1o	1- 1- 0+ 1+	6o	3	26
29	0.7	3o 2- 1+ 3-	3- 4o 3- 3-	21-	13	27
30	0.6	3o 2o 2o 2o	2+ 3o 2+ 2-	18+	9	28
31	0.6	2- 2+ 2+ 2+	3o 2+ 2+ 2+	19-	9	30
						31
Mean:	0.88			Mean:	23	

COMMERCE - STANDARDS - BOULDER



CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

AUGUST 1959

Aug. 1959	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day index	Advance forecasts (J-reports) for whole day; issued in advance by:				Geomagnetic K_{Fr}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-7 days Final	1-7 days Js	1-7 days SDW	1-7 days J	Half Day (1)	(2)
1	6o	4+	6+	7-	6	6	6	6	6-	6			6	(4)	3
2	6-	5o	7-	7o	6	5	7	7	6o	5			5	(4)	2
3	7-	5+	6+	7o	6	6	7	6	6+	5			5	(4)	3
4	7o	6o	6o	6+	7	6	7	7	6+	6			6	2	3
5	7-	5+	7-	7-	7	6	7	7	6+	6			6	1	3
6	7-	5+	6+	6o	7	6	7	7	6+	7			7	(4)	3
7	5o	5+	6+	7-	7	5	6	6	6-	7			7	3	3
8	6+	5-	6-	6+	7	6	6	6	6-	7			7	3	3
9	7-	6o	6+	7-	6	6	6	6	6+	7			7	3	3
10	6o	6-	7o	7-	7	5	7	7	6+	6			6	3	3
11	7-	6o	7-	7o	7	6	7	7	7-	6			6	2	2
12	7o	7-	7-	7o	7	6	7	7	7-	6			6	1	1
13	7+	7-	7+	7+	7	7	7	7	7o	7			7	2	2
14	7o	6+	7+	7+	7	7	7	7	7o	7			7	2	1
15	7+	7o	7+	7-	7	7	7	7	7o	7			7	2	(5)
16	6+	3+	5o	4-	5	6	3	4	(4+)	7			7	(5)	(6)
17	2o	1+	3+	4-	2	1	3	4	(3-)	7			7	(7)	(4)
18	3+	3+	5+	6o	3	3	6	6	(4o)	4	4		7	(4)	3
19	6o	4o	6o	6+	5	4	6	6	5+	5	5		5	3	3
20	6+	5+	6o	7-	6	2	5	6	6o	5			5	(4)	(4)
21	6o	5-	6+	6+	6	4	6	7	6-	5			5	(4)	(4)
22	6-	4+	6o	6+	6	5	6	6	5+	6			6	(4)	3
23	6-	5o	6+	6o	6	5	6	6	6-	6			6	3	(5)
24	6o	5o	6o	7-	5	5	6	7	6o	6			6	(4)	3
25	7-	5+	7-	7-	6	6	7	7	6+	6			6	3	2
26	7-	6-	7-	7-	7	6	7	7	6+	6			6	2	1
27	7-	7-	7-	7o	7	6	7	7	7-	6			6	1	1
28	8-	7o	7o	7+	7	7	7	7	7+	6			6	1	1
29	7+	6+	7o	7-	7	7	7	7	7-	6			6	2	3
30	7o	6-	6+	6+	7	6	7	7	6+	7			7	2	3
31	7+	6-	6+	7-	7	6	7	6	6+	7			7	2	2
Score: Quiet Periods					P	19	13	22	19		12		12		
					S	9	11	7	10		16		16		
					U	1	1	1	0		0		0		
					F	0	0	0	0		0		0		
Disturbed Periods					P	2	3	1	2		1		0		
					S	0	1	0	0		0		0		
					U	0	0	0	0		0		0		
					F	0	2	0	0		2		3		

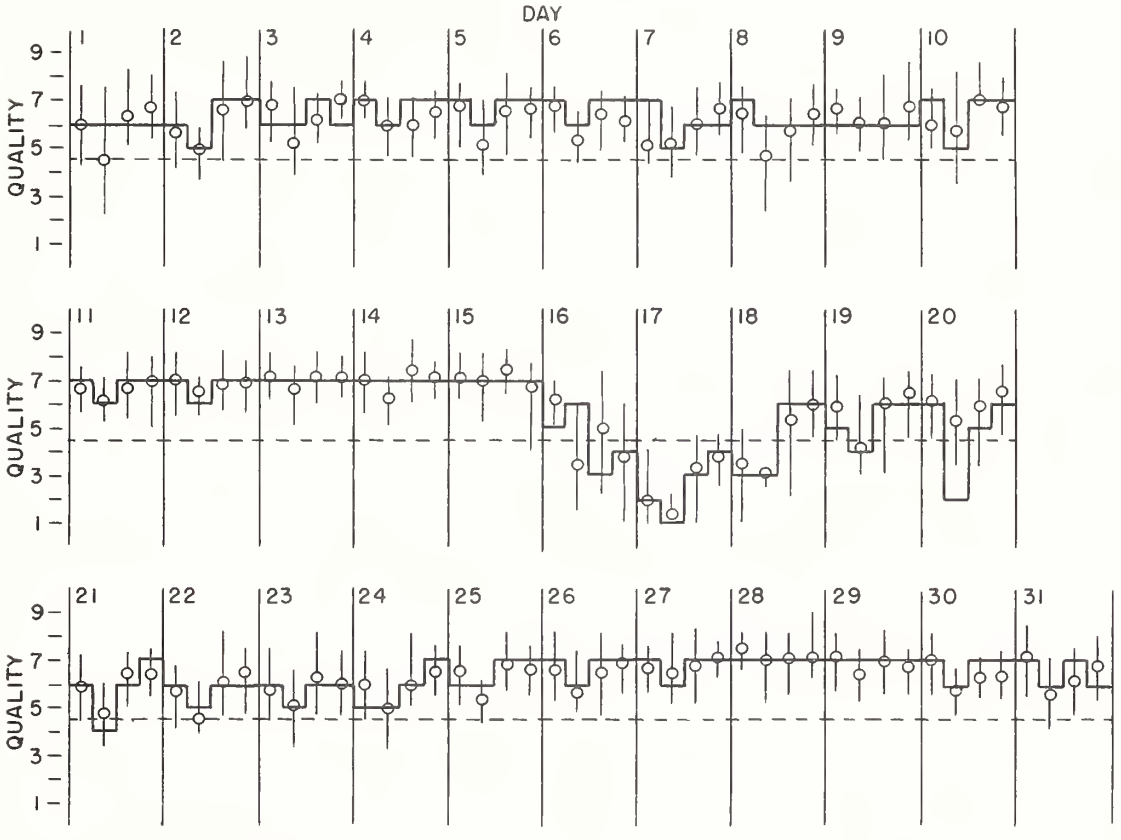
( ) represent disturbed values.

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

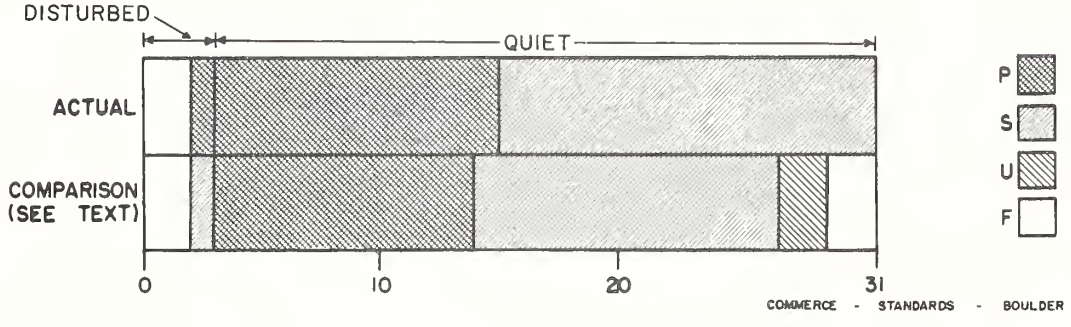
NORTH ATLANTIC

— Short-term forecast AUGUST 1959 | Range of reports

° Quality figure

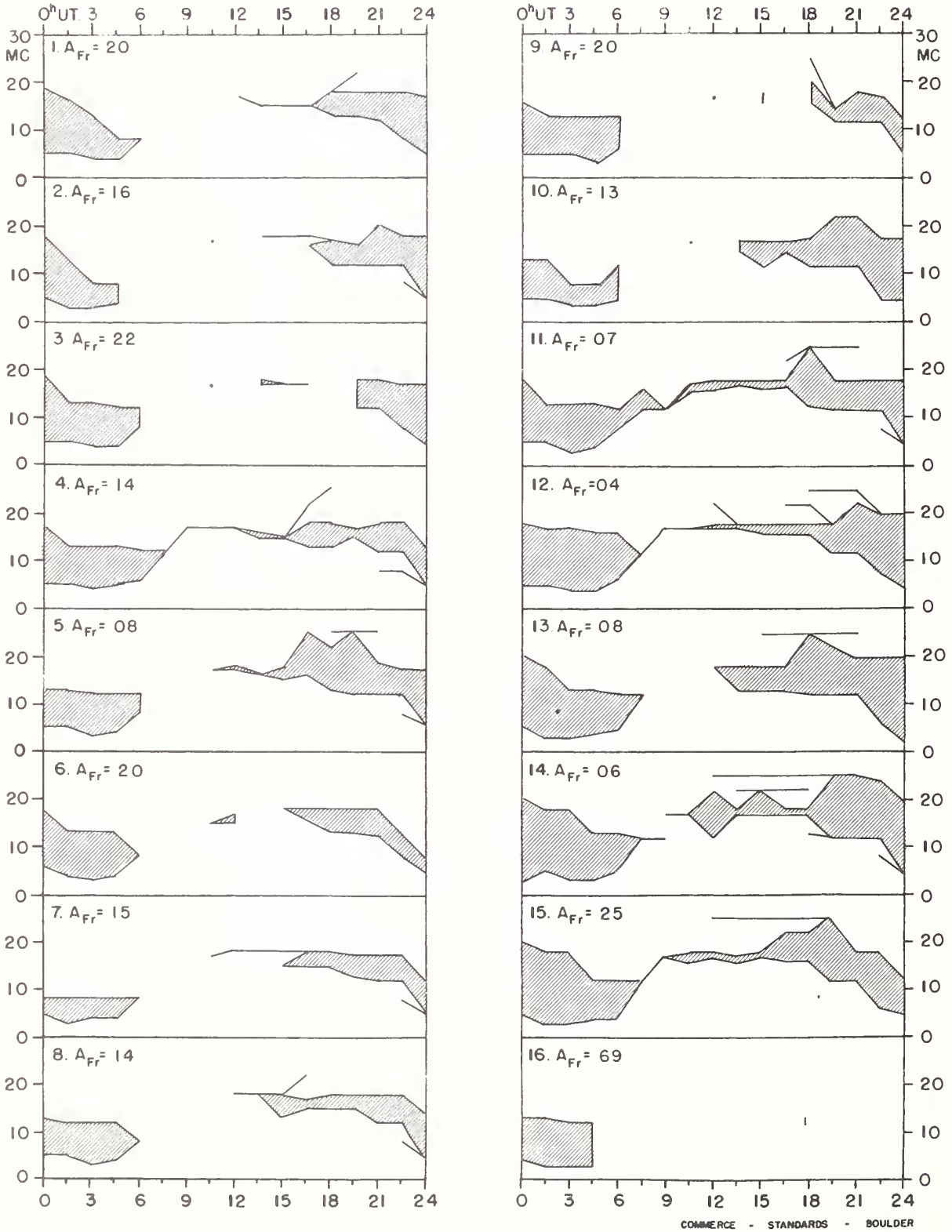


OUTCOME OF ADVANCED FORECASTS FINAL ESTIMATE

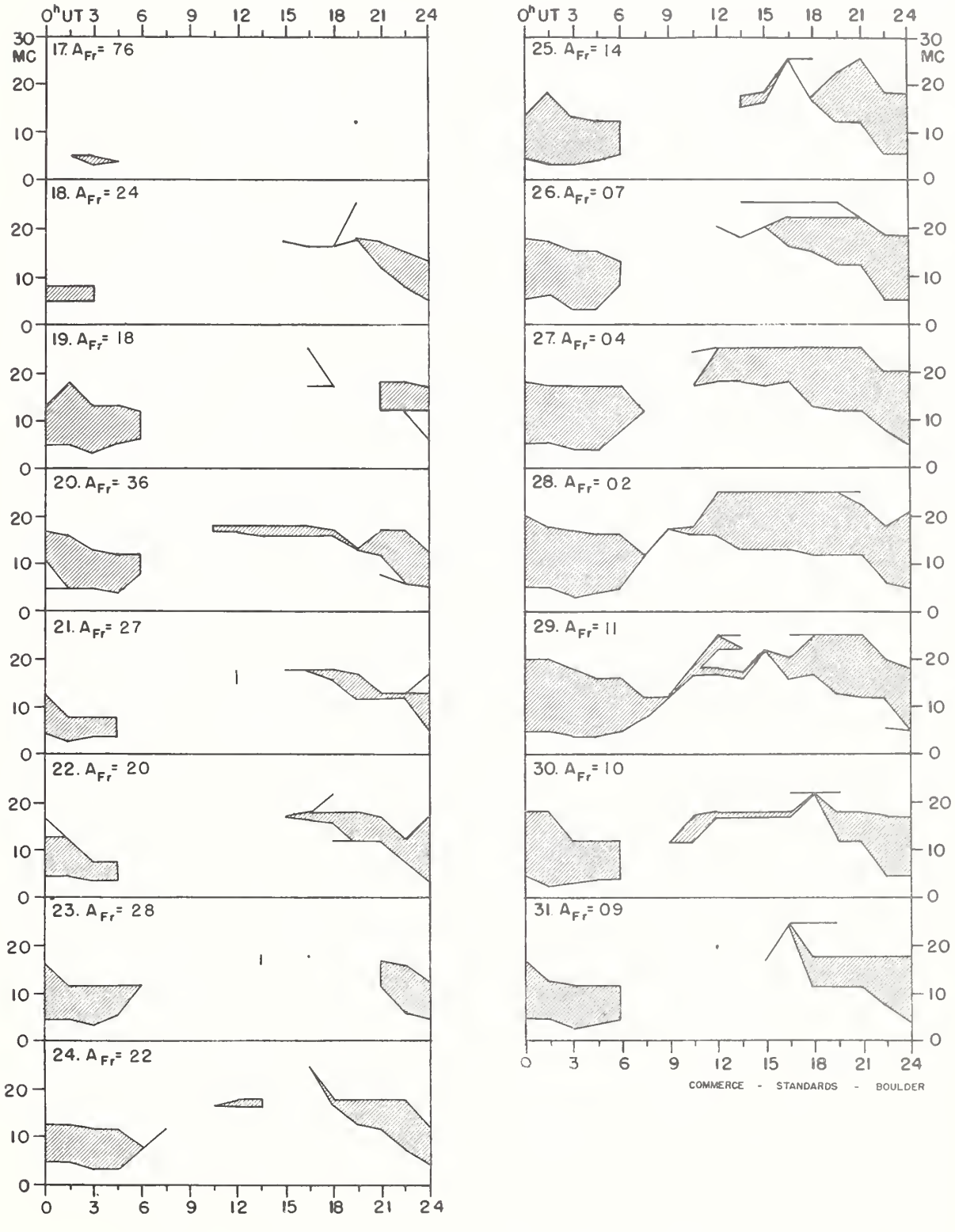


USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

AUGUST 1959



AUGUST 1959



Adapted from Observations by Deutsches Bundespost

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

AUGUST 1959

Aug. 1959	North Pacific 12-hourly quality figures		Short-term forecasts issued at		Whole day index	Advance forecasts (Jp reports) for whole day; issued in advance by:				Geomagnetic K_{Si}	
	0700 to 1900	1900 to 0700	0600	1800		1-7 days Final	1-7 days Jps	1-7 days SDW	1-7 days Jp	Half (1)	Day (2)
1	5	5	5	6	6	6			6	(4)	3
2	7	7	5	6	7	6			6	(4)	2
3	7	6	6	6	7	6			6	(4)	3
4	6	6	6	5	6	6			6	3	3
5	6	5	6	6	6	6			6	2	2
6	5	5	6	5	6	6			6	3	(4)
7	6	6	6	6	6	6			6	3	2
8	6	5	6	6	6	6			6	2	3
9	5	6	6	5	5	6			6	3	(4)
10	6	7	6	6	6	5			5	2	2
11	6	7	6	7	6	5			5	2	1
12	6	7	7	7	7	5			5	2	2
13	7	7	7	7	7	7			7	2	2
14	7	7	7	7	7	7			7	2	2
15	7	6	6	6	7	7			7	2	(4)
16	3	3	5	4	(4)	6			6	(6)	(7)
17	2	4	2	3	(2)	6			6	(8)	(5)
18	5	6	4	5	5	6			6	(5)	3
19	6	6	5	6	6	6			6	(5)	2
20	5	6	3	5	5	5			5	(4)	3
21	5	4	6	5	5	5			5	(4)	3
22	5	6	5	5	5	5			5	(4)	3
23	6	5	6	5	6	4			4	(4)	(4)
24	7	6	6	6	6	4			4	(4)	2
25	6	6	6	6	6	5			5	3	2
26	6	7	6	7	6	6			6	3	1
27	7	7	6	7	7	6			6	1	0
28	7	7	7	7	7	6			6	0	0
29	7	6	6	6	7	5			5	2	3
30	6	6	6	6	6	5			5	2	3
31	6	6	5	6	6	6			6	3	2

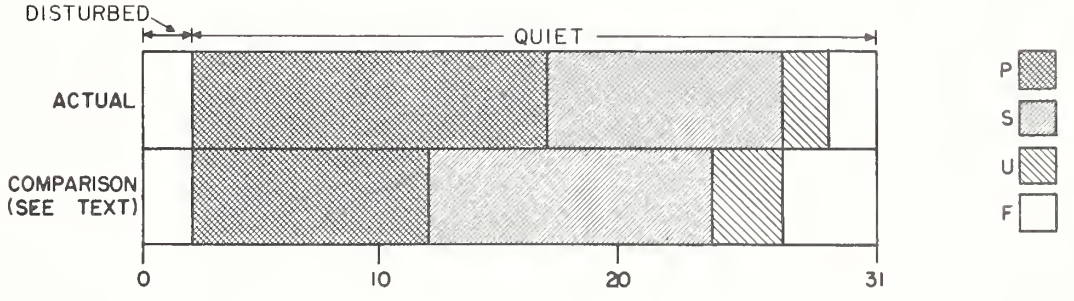
Score:				
Quiet Periods	P	15	17	15
	S	12	11	10
	U	2	0	2
	F	0	0	2
Disturbed Periods	P	1	0	0
	S	0	3	0
	U	1	0	0
	F	0	0	2

( ) represent disturbed values.

NORTH PACIFIC

AUGUST 1959

OUTCOME OF ADVANCED FORECASTS FINAL ESTIMATE



ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL GEOPHYSICAL COOPERATION 1959

SEPTEMBER 1959

Issued Day/Time UT Sept 1959	Advance Geophysical Alert	No.	Worldwide Geophyaical Alert	Special World Interval
01/1300	Burbank Solar Flare 8/31/2235Z			
01/1800	Sacramento Peak Solar Flare 01/1652Z			
02/1340	Ft. Belvoir, Magnetic Storm 02/0110Z			
02/1600		24	Magnetic Storm 02/0110Z	
04/0045	Ft. Belvoir, Aurora Inferred Magnetic Storm 03/2159Z			
04/1600		25	Aurora Inferred Magnetic Storm 03/2159Z	Start Special World Interval
05/1600		26		Finish Special World Interval
19/0500	Ft. Belvoir, Magnetic Storm 18/21XXZ			
19/1600		27	Magnetic Storm 18/2100Z	
20/1600		28		Start Special World Interval
21/1600		29		Finish Special World Interval
25/0200	Ft. Belvoir, Magnetic Storm 25/0045Z			
25/1600		30	Magnetic Storm 25/0045Z	

COMMERCE - STANDARDS - BOULDER

USCOMM-NBS-BL