

PART B
SOLAR - GEOPHYSICAL DATA

ISSUED
OCTOBER 1960

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

SOLAR - GEOPHYSICAL DATA

CONTENTS

INTRODUCTION

I DAILY SOLAR INDICES

- (a) Relative Sunspot Numbers and 2800 Mc Solar Flux
- (b) Graph of Sunspot Cycle

II SOLAR CENTERS OF ACTIVITY

- (a) Calcium Plage and Sunspot Regions

III SOLAR FLARES

- (a-f) Optical Observations - September 1960
- (g) Flare Patrol Observations - September 1960
- (h-j) Subflares - August 1960
- (k-m) Optical Observations - June 1960
- (n) Flare Patrol Observations - June 1960
- (o) Optical Observations - January - April 1960
- (p) Ionospheric Effects (SWF) - August 1960
- (q-r) Ionospheric Effects (SEA-SCNA-Bursts) August 1960

IV SOLAR RADIO WAVES

- (a) 2800 Mc -- Outstanding Occurrences (Ottawa) September 1960
- (b) 169 Mc -- Interferometric Observations (Nancay) September 1960
- (c,d) 167 Mc -- Outstanding Occurrences (Boulder) September 1960

V GEOMAGNETIC ACTIVITY INDICES

- (a) C, Kp, Ap, and Selected Quiet and Disturbed Days
- (b) Charts of Kp by Solar Rotations

VI RADIO PROPAGATION QUALITY INDICES

North Atlantic:

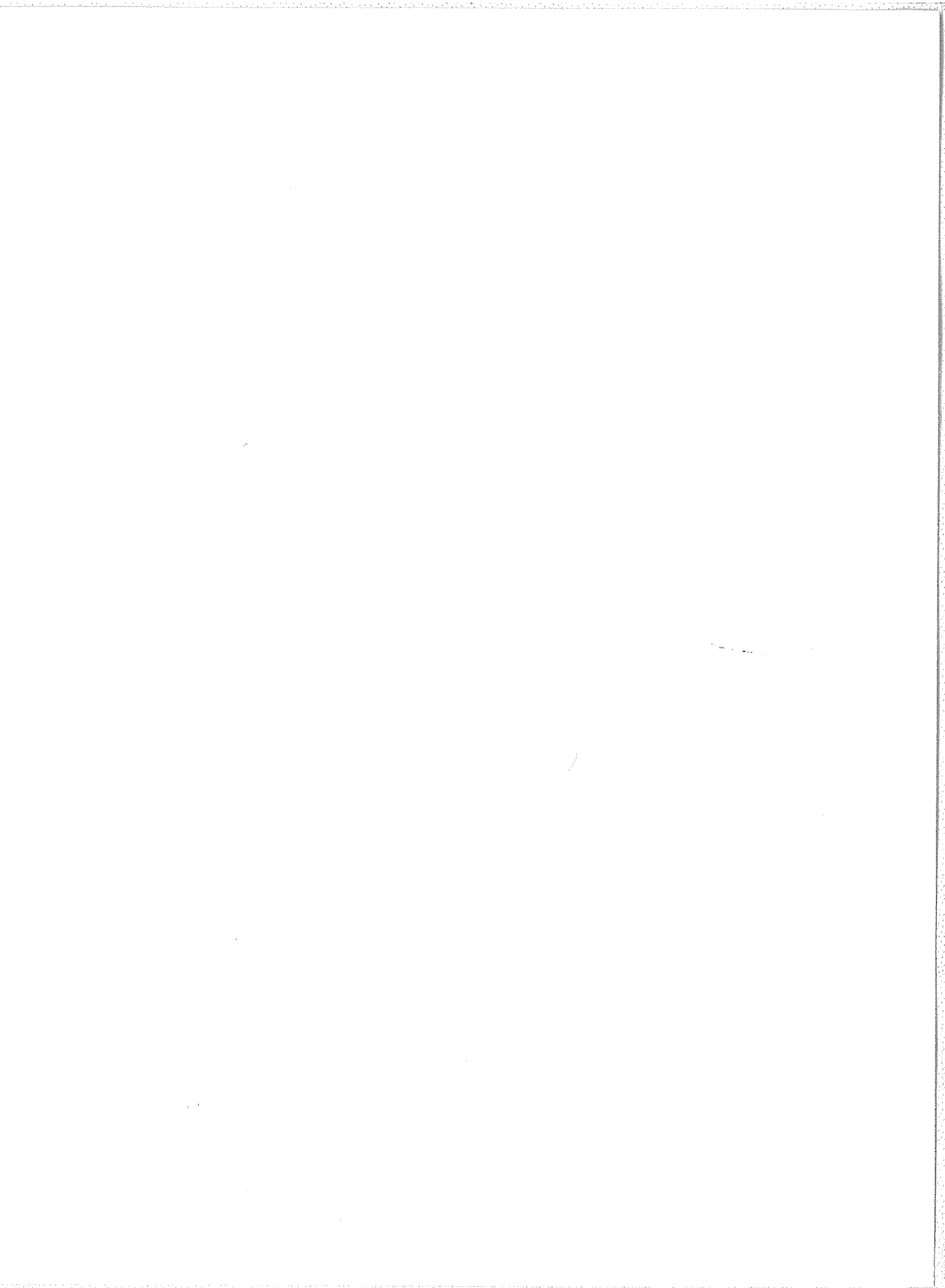
- (a) CRPL Quality Figures and Forecasts
- (b) Graphs Comparing Forecast and Observed Quality
- (c,d) Graphs of Useful Frequency Ranges

North Pacific:

- (e) CRPL Quality Figures and Forecasts
- (f) Graphs Comparing Forecast and Observed Quality

VII ALERT PERIODS AND SPECIAL WORLD INTERVALS

- (a) IGC 1960 Alerts and SWI

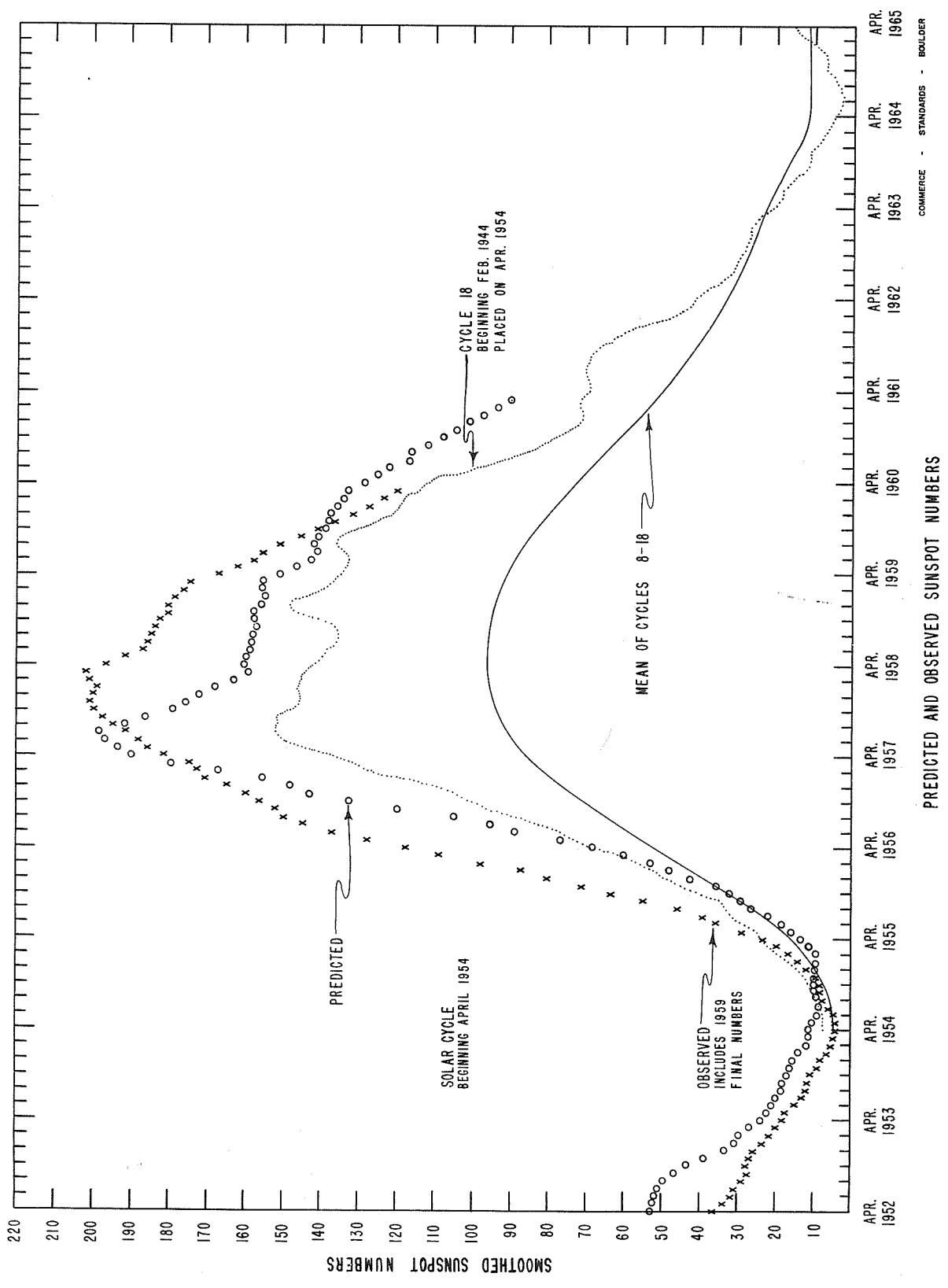


INTRODUCTION

The descriptive text is published periodically or whenever context of the report is changed. The last issue in which the text appeared was CRPL-F189 Part B issued May 1960.

DAILY SOLAR INDICES

Aug. 1960	American Relative Sunspot Numbers R_A'	Sept. 1960	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	60	1	103	137
2	34	2	105	152
3	21	3	80	149
4	19	4	75	142
5	17	5	83	142
6	19	6	100	149
7	39	7	108	162
8	41	8	107	170
9	50	9	129	173
10	88	10	162	175
11	167	11	149	175
12	198	12	143	177
13	195	13	156	181
14	237	14	157	181
15	228	15	159	178
16	234	16	115	177
17	243	17	114	185
18	231	18	141	190
19	208	19	156	199
20	126	20	171	195
21	148	21	177	189
22	141	22	189	184
23	96	23	168	175
24	95	24	157	162
25	126	25	141	155
26	133	26	114	148
27	107	27	92	142
28	113	28	89	132
29	97	29	74	124
30	99	30	44	121
31	111			
Mean:	120.0	Mean:	125.3	164.0



CALCIUM PLAGE AND SUNSPOT REGIONS

SEPTEMBER 1960

CMP Sept. 1960	Lat	McMath Plage Number	Return of Region	Calcium Plage Data			Sunspot Data		
				CMP Values Area Int.		History, Age	CMP Values Area Count		History
03.6	N13	5827	New	300	1.5	ℓ ∩ d	1		
04.2	S22	5832	5788	2100	2	ℓ - ℓ	5		
04.4	S05	5831	5790	600	1.5	ℓ ∩ d	5	70	1
05.0	N29	5836	5789	700	1.5	ℓ ∩ d	3		
05.5	S13	5833	5790	900	1.5	ℓ ∩ d	5		
06.1	S03	5834	5793	600	2	ℓ - ℓ	3		
07.7	N15	5835	5794	2400	3	ℓ - ℓ	3	60	7
08.0	S05	5841	New	300	2.5	b / ℓ	1	80	4
09.8	N20	5838	*	6000	3.5	ℓ - ℓ	-		
10.0	N24	5837	5794	9000	3	ℓ \ ℓ	3	150	5
10.5	S12	5839	5797	4800	3.5	ℓ - ℓ	2	610	5
10.7	N08	5840	5796	3000	3	ℓ \ ℓ	7	20	1
12.2	S18	5843	**	500	2.5	ℓ \ ℓ	2		
12.9	S09	5842	**	1600	2	ℓ \ ℓ	2	100	3
13.0	S20	5854	New	200	2.5	b / ℓ	1	40	4
13.8	N18	5844	5799	3200	2.5	ℓ - ℓ	2	50	4
14.5	S14	5845	5801	5000	3	ℓ - ℓ	3	40	3
15.4	S04	5847	New	1500	3.5	ℓ - ℓ	1	170	8
15.8	N16	5848	5802	5500	3	ℓ - ℓ	2	170	4
16.9	S11	5850	New	500	1.5	ℓ - ℓ	1		
17.1	N20	5849	***	(3000)	(3)	ℓ ∩ d	-		
17.6	N14	5852	5803	700	2.5	ℓ - ℓ	2		
17.8	N25	5851	5806	1400	3.5	ℓ \ ℓ	3		
17.9	N03	5853	5807	1800	2	ℓ \ ℓ	5		
18.2	N20	5864	New	400	3.5	b / ℓ	1		
19.1	N27	5855	5806	1000	2	ℓ - ℓ	3	280	7
19.2	S05	5856	****	3000	2.5	ℓ - ℓ	4	190	2
20.4	N26	5857	5810	1200	2	ℓ - ℓ	2		
20.9	S19	5858	5828	5500	3.5	ℓ \ ℓ	2	1210	10
21.8	N16	5859	5814	1200	2	ℓ - ℓ	4	(50)	(2)
22.9	S12	5861	5829	1200	2	ℓ - ℓ	2		
23.7	N14	5862	5816	4900	3	ℓ - ℓ	4	1000	15
25.3	S03	5865	New	1000	2.5	ℓ - ℓ	1	100	1
25.5	S15	5863	+	8000	3.5	ℓ \ ℓ	2	340	1
26.1	N26	5866	New	3000	3.5	ℓ - ℓ	1	100	3
26.8	N37	5867	5817	800	2.5	ℓ ∩ d	6		
27.4	N17	5868	5822	2000	2	ℓ - ℓ	7	10	1
28.3	S06	5870	New	300	2.5	b - ℓ	1		
30.8	S03	5876	New	400	2	b - ℓ	1		

Correction for August: Region 5806 is return of 5779 in 2nd rotation.
Region 5810 is new in 1st rotation.

*Merged with 5837.

**5798, 5800.

***Merged with 5848.

****5809 and 5811.

+5825, 5830.

Provisional Coronal Line Emission Indices

for

September 1960

will be published at a later date.

SOLAR FLARES

SEPTEMBER 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURATION - MINUTES	IM- POR- TANCE	OBS. COORD.	TIME - U T	MEASUREMENTS		MAX. WIDTH Hr	MAX. INT. °	PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	MER. DIST.					MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.			
{ CAPRI S { ISTANBUL { SAC PEAK { CAPRI S { ONDREJOV { HUANCAYO { HAWAII { LOCKHEED { HUANCAYO { HAWAII { LOCKHEED { HUANCAYO { SAC PEAK	1960	01 0810 E	0834 D	N20 W07	5822	24 D	1	1	0810	2.50	2.80			
	01 0822	0910 D	N20 W16	5822	48 D	1	1							
	01 1320	1358 U	N18 W15	5822	38 U	1	2						18	
	01 1330 E	1430	N19 W13	5822	60 D	1	1					2.60		
	01 1449 E	1530 D	N20 W12	5822	41 D	1	1					1.90		
	01 1502 E	1517	N19 W10	5822	15 D	1	1					3.40		S-SWF
	01 2038	2054	S17 W49	5825	16	1	2							
	01 2042	2100	S19 W52	5825	22	1	1							
	01 2040 E	2051	S18 W46	5825	11 D	1	1							
	01 2058	2312 D	N22 W16	5822	134 D	2	2							
HAWAII KODAIKLN ZURICH ISTANBUL CAPRI S SAC PEAK HUANCAYO CAPRI S ARCTRI LOCARNO LOCARNO ZURICH HAWAII SAC PEAK HAWAII HUANCAYO SAC PEAK HAWAII LOCKHEED	02 0100 E	0142 D	N21 W19	5822	42 D	1	1							
	02 0250 E	0305 D	S14 W54	5825	15 D	2	2							
	02 0706 E	0712 D	N19 W24	5822	6 D	2	1							
	02 0710 E	0800 D	N19 W25	5822	50 D	3	1							
	02 0715 E	0838 D	N18 W21	5822	83 D	2	1							
	02 1356	1414 U	S17 W64	5825	18 U	1	2							
	02 1400 E	1410	S16 W54	5825	10 D	1	2							
	02 1401 E	1432 D	S18 W60	5825	31 D	1	2							
	02 1424 E	1600	N15 W84	5818	11	1	3							
	02 1510 E	1550	N17 W79	5818	50 D	1	2							
HAWAII SAC PEAK HAWAII HUANCAYO SAC PEAK HAWAII LOCKHEED	02 1540 E	1542	N18 W28	5822	10	1	2							
	02 1542 E	1550 D	N17 W28	5822	8 D	1	2							
	02 1814	1824	N17 W90	5818	10	1	3							
	02 1840	2000	N20 W29	5822	80	1	2							
	02 1844	2044	N21 W28	5822	120	2	2							
	02 2058	2125	N17 W80	5818	27	2	2							
	02 2234	2358 D	N20 W32	5822	84 D	2	2							
	02 2250 E	0106	N21 W31	5822	136 D	3	2							
	02 2223	2342	N21 W31	5822	79	1	2							
	LOCKHEED HAWAII HAWAII WENDEL ONDREJOV ARCTRI ARCTRI LOCARNO WENDEL ARCTRI WENDEL CAPRI S CAPRI S	03 0037	0145 U	N20 E87	5838	68 U	2	1						
03 0040		0154 D	N17 E90	5838	74 D	3	2							
03 0136 E		0154	N20 W34	5822	18 D	1	2							
03 0725 E		0808 D	S18 W65	5825	43 D	1+	2							
03 0728		0745	S17 W70	5825	17	1+	2							
03 0728		0758 D	N19 W34	5822	30 D	2	2							
03 0752 E		0807 D	S16 W68	5825	16 D	1+	3							
03 0833 E		0922 D	N15 W90	5818	49 D	1	3							
03 0833 E		0922 D	N17 W87	5818	49 D	1	3							
03 0834 E		0930 D	N18 W39	5822	56 D	1	3							
CAPRI S CAPRI S	04 1051 E	1112 D	S15 W90	5825	21 D	1	3							
	04 1242	1306 D	N21 W50	5822	24 D	1	3							

SOLAR FLARES

SEPTEMBER 1960

OBSERVATORY	DATE SEPT 1960	OBSERVED TIME		LOCATION		DURA- TION MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	MER. DIST.				MCMATH PLAGE REGION	MEAS. AREA Sq. Deg.	COOR. AREA Sq. Deg.	MAX. WIDTH Hr	
LOCKHEED	04	1624	1640	S19	W90	16	1	2	2.00			20	Slow S-SWF
	04	1628	1650	N20	E64	22	1	2	2.00			20	
HAWAII	05	0004	0032	N22	W64	28	1+	2	5.20				Slow S-SWF
	05	0803	0820	N05	E69	17	1	2					
ISTANBUL	05	0818	0830	S15	E75	12	1	2					Slow S-SWF
	05	1924	2100	N03	E68	96	1	3	1.70				
LOCKHEED	05	1925	2050	N05	E63	85	1	2	2.00			20	Slow S-SWF
	05	1925	2050	N05	E63	85	1	2	2.00			20	
LOCKHEED	05	1925	2050	N05	E63	85	1	2	2.00			20	Slow S-SWF
	05	1925	2050	N05	E63	85	1	2	2.00			20	
MCMATH	05	1925	2054	N04	E66	89	1	2	2.00	2.00			Slow S-SWF
	05	1925	2054	N04	E66	89	1	2	2.00	2.00			
ISTANBUL	06	0740	0825	N20	W80	45	1	2					Slow S-SWF
	06	1444	1624	N15	E12	5822	45	2	4.94			18	
SAC PEAK	06	1446	1601	N14	E11	5835	100	3	3.00				Slow S-SWF
	06	1448	1520	N14	E14	5835	32	3	6.50				
UCCLE	06	1449	1528	N16	E11	5835	39	3	2.20			2.60	Slow S-SWF
	06	1524	1620	N15	E12	5835	56	2	2.10				
HUANGAYO	06	2020	2052	S21	E77	32	1	2	1.10				Slow S-SWF
	06	2020	2052	S21	E77	32	1	2	1.10				
HAWAII	06	0735	0800	S16	E64	25	1	2					Slow S-SWF
	06	1458	1518	S17	E60	5843	20	3	1.00	2.40			
CAPRI S	07	1806	1816	S10	E34	5839	10	2	1.00				Slow S-SWF
	07	2308	2332	S11	E30	5839	24	3	3.40				
HAWAII	07	2309	2345	S09	E29	5839	36	2	4.60				Slow S-SWF
	07	2309	2345	S09	E29	5839	36	2	4.60				
LOCKHEED	08	0623	0634	S20	E55	5843	11	3				2.40	Slow S-SWF
	08	0730	0810	S04	W04	5841	40	1					
ONDREJOV	08	0857	0925	S06	W06	5841	28	2				2.70	Slow S-SWF
	08	0925	0947	N21	E13	5837	22	2				2.70	
ONDREJOV	08	0925	0947	N21	E13	5837	22	2				2.70	Slow S-SWF
	08	0949	1010	S20	E53	5843	21	3				2.20	
LOCARNO	08	1404	1420	S05	W05	5841	16	2					Slow S-SWF
	08	1406	1422	S07	W06	5841	16	2				2.30	
ONDREJOV	08	1406	1422	S07	W06	5841	16	2					Slow S-SWF
	08	1451	1500	N06	E30	5840	9	2					
LOCARNO	08	1510	1533	N06	E29	5840	23	2					Slow S-SWF
	08	1640	1745	S08	E22	5839	65	2					
SAC PEAK	09	1544	1612	S10	E08	5839	28	2	2.18			17	Slow S-SWF
	09	1552	1613	S10	E09	5839	21	2	.40	5.00			
WENDEL	09	1926	1932	N16	E90	5848	6	3					Slow S-SWF
	09	1926	1932	N16	E90	5848	6	3					
WENDEL	10	1156	1211	S10	W08	5839	15	2					Slow S-SWF
	10	1219	1325	N20	W15	5837	66	2				3.00	
LOCARNO	10	1225	1335	N19	W15	5837	70	2				6.00	Slow S-SWF
	10	1617	1700	N19	W17	5837	43	2				4.00	
HAWAII	10	2112	2138	N21	W20	5837	26	2				1.40	Slow S-SWF
	10	2310	0000	N16	W17	5837	50	2				2.70	
LOCKHEED	10	2312	0016	N21	W21	5837	64	2				3.50	Slow S-SWF
	10	2312	0016	N21	W21	5837	64	2				3.50	
CAPRI S	11	0704	0840	S03	E56	5847	96	3	1.80	3.10		20	Slow S-SWF
	11	0959	1025	S05	E55	5847	26	3	3.50	5.00			

SOLAR FLARES

SEPTEMBER 1960

OBSERVATORY	DATE SEPT 1960	OBSERVED TIME		MAX. PHASE	LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	TIME — U T	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END		APPROX. LAT.	APPROX. MER. DIST.					MCNATH PLAGE REGION	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	
{ LOCARNO CAPRI S WENDEL	11	1000	1030		S03 E55	5847	30	1	2	1212	1.80	2.10		
	11	1200	1241 D		N17 W27	5837	41 D	1	3					
	11	1205	1237 D		N19 W25	5837	32 D	1+						
{ LOCARNO MCMATH	11	1210	1230		N18 W27	5837	20 D	2	2	1210	6.00	6.00		
	11	1213	1241 D		N19 W28	5837	28 D	1+	2	1214	3.50	3.50		
	11	1545	1600		N21 E31	5844	15	1	2					
WENDEL	11	1613	1642 D		S03 E52	5847	29 D	1			4.00	4.00		
LOCKHEED	12	0039	0103	0047	N13 W34	5837	24	1	1	0047	2.00	2.00		20
	12	0735	0810 D		N15 W48	5837	35 D	2	3	0740	2.90	4.60		
	12	0737	0823		N20 E49	5848	46 D	1	3	0740	2.50	4.00	3.50	
{ ONDREJOV UCCLE	12	0738	0822		N17 E57	5848	44	1+	3	0857	2.50	4.00		
	12	0850	0935 D		N15 W39	5837	45 D	1	2	1124	4.00	4.40		
	12	1119	1200	1124	N20 E23	5844	41	1	4					
{ LOCARNO CAPRI S	12	1120	1130 D		N19 E20	5844	10 D	1	2	1134	1.90	2.10		
	12	1120	1213 D		N15 E20	5844	53 D	1	3	1134	2.80	4.00		
	12	1127	1156 D		N21 E07	5844	29 D	1	2					
{ WENDEL ONDREJOV	12	1132	1204 D		N15 E25	5844	32 D	1	2					
	12	1125	1130 D		S18 E06	5842	5	1	2					
	12	1938	2002	1946	S11 E10	5842	24	1	2					16
SAC PEAK	12	2234	2256	2244	S03 E29	5847	22	1	2		2.08	2.08		18
ONDREJOV	13	0629	0641	0633	N20 E16	5844	12	1+	3	0633	2.10	2.20		
	13	0754	0844 D		N17 E01	5844	50 D	1	3	0808	7.00	9.00		
	13	0758	0828 D		N20 W03	5844	30 D	2	3	0810	7.00	7.00		
{ ONDREJOV UCCLE	13	0808	0907		N17 E05	5844	59 D	1+	3					
	13	0821	0845 D		N21 E04	5844	24 D	2	3					
	13	1042	1059 D		S06 W44	5839	17 D	1	3	1045	5.00	8.00		
{ ONDREJOV UCCLE	13	1042	1100		S03 W44	5839	18 D	1	1	1113	3.00	3.00		
	13	1058	1141	1113	N21 W57	5837	43 D	2	3					
	13	1115	1125 D		N18 W55	5837	10 D	1	3	1125	2.10	3.40		
{ ONDREJOV CAPRI S	13	1125	1134		S03 W73	5841	9	1	3	1153	2.50	3.00		
	13	1138	1213		N19 W52	5837	35 D	1	3	1141	2.50	4.00		
	13	1139	1211	1141	N19 W54	5837	32	1+	2	1508	2.30	2.40		
{ ONDREJOV STOCKHOLM	13	1140	1232		N19 W52	5837	52	1+	2	1552	2.30	2.50		
	13	1508	1520		S04 W47	5839	12	1	2					
	13	1548	1552	1555	S11 E01	5845	4	1	2					
HUANCAYO	14	1151	1205 D		N26 E50	5851	14 D	1	3	1205	2.50	3.50		
	14	1156	1210		N26 E47	5851	14 D	1	1	1205	2.50	3.50		
	14	1233	1241 D		N17 W20	5844	8	1	3	1244	2.50	3.00		
{ ONDREJOV UCCLE	14	1238	1304 D		N23 W12	5844	26 D	1	3	1308	2.50	3.50		
	14	1257	1310 D		N19 W05	5844	13 D	1+	2					
	14	1302	1333		N20 W04	5844	31	1	3					
{ MCMATH SAC PEAK	14	1722	1814	1735	S17 E90	5856	52	1	2	1800	2.45	2.00		19
	14	1748	1826	1804	N18 W72	5837	38	1	2					
	14	1753	1850 D	1800	N19 W71	5837	57 D	1	2					
ONDREJOV	15	1003	1011	1004	N20 W70	5837	8	1	3	1004	0.40	2.50		
	15	2141	2144 D		S20 E85	5858	3	D	2					
	15	2234	2248	2244	N16 W90	5837	14	1	3	2244				

SOLAR FLARES

SEPTEMBER 1960

OBSERVATORY	DATE SEPT 1960	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	TIME — U T	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT.	MER. DIST.					MCMATH PLACE REGION	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	
{ LOCKHEED LOCKHEED HAWAII	15	2234	0000	2238	N16 W85	5837	86	1	2	2255	2.00			20
	15	2234	0000	2255	N16 W85	5837	86	1	2	2255	2.00			20
	15	2338 E	2342 D	2340	S04 W90	5839	4 D	1	2	2340	2.30			
{ STOCKHOLM ARCTRI { STOCKHOLM HAWAII	16	0923 E	0930 D		N20 W90	5837	7 D	1	3					
	16	0935 E	0940 D		N08 W11	5848	5 D	1	3					
	16	0941 E	0950 D		N11 W11	5848	9 D	1	3	0947	2.50	2.60		
{ HUANCAYO { MCMATH	16	1710	1810 D	1721	S21 E66	5858	60 D	1	2	1720	1.00	2.90	2.80	
	16	1723 E	1855		S23 E70	5858	92 D	1	2	1728	2.00	2.00		S-SWF
ISTANBUL	17	0800	0900 D		S19 E57	5858	60 D	□						
	17	0815	0900 D		N27 E09	5851	45 D	1+						
	17	0820 E	0822		S08 E24	5856	2 D	1	2	0820	2.00	2.00		
LOCKHEED	17	2115	2205	2132	N14 W30	5848	50	1	2	2132	2.60			10
	18	0017	0130	0107	N15 W33	5848	73	1	1	0107	3.60			30
{ HAWAII ISTANBUL	18	0940 E	0150	0052	N16 W29	5848	70 D	1+	2	0111	3.10			
	18	0730 E	0745 D		N26 E05	5855	15 D	1						
WENDEL	18	0856 E	0902 D		S21 E49	5858	6 D	1	4			4.00		
	18	0935 E			N22 W01	5864	□	1						
{ WENDEL { UCLE	18	1114 E	1118 D		S21 E47	5858	4 D	1				4.00		
	18	1114	1127 D	1115	S22 E48	5858	13 D	1	2	1115	1.50	2.00		
{ LOCKHEED { SAC PEAK	18	1815	1910	1829	S21 E42	5858	55	1	2	1829	3.70			30
	18	1824 U	1842 D	1829 U	S21 E44	5858	18 U	1+	1	1829	4.57			32
HAWAII	18	1828 E	1846	1829	S25 E42	5858	18 D	1+	2	1829	2.60			
	18	1835	1850	1840	N29 W07	5851	15	1	2	1840	1.40			
HAWAII	18	2302 E	2344 D	2336	S25 E37	5858	42 D	1	2	2336	1.10			
	19	0707 E	0747 D		S17 E73	5863	40 D	2	2	0707	2.10	7.10		
{ WENDEL { ONDREJOV	19	0720 E	0752 D		S17 E73	5863	32 D	2				9.00		S-SWF
	19	0723 E	0759 D		S18 E72	5863	36 D	2	3	0725			3.90	
ISTANBUL	19	0745 E	0815		N26 W16	5855	30 D	1+						
	19	0754 E	0804 D		N26 W14	5855	10 D	1	2	0757			1.90	
ISTANBUL	19	1122 E	1129		N08 E68	5862	33 D	1+						
	19	1122 E	1129		N25 E87	5866	7 D	1	3	1123			2.60	
HAWAII	19	2150	2230	2218	S16 E90	5863	40	1	3	2218	0.50			
	20	0650 E	0710 D		S03 E66	5865	20 D	1	3	0702	1.30	3.40		
CAPRI S	20	0657 E	0733 D		S10 E80	5863	36 D	1	3	0702	0.80	3.60		
	20	0730 E	0825		S11 E73	5863	55 D	1						
ISTANBUL	20	0730 E	0830 D		S03 E67	5865	60 D	1						
	20	0940 E	1005 D		S20 E15	5858	25 D	1+	3					
LOCARNO	20	1310	1344		N22 E67	5866	34	1	2	1322	0.80	2.10		
	20	1318 E	1341 D		N22 E75	5866	23 D	1	2	1320				
CAPRI S	21	0832 E	0850 D		N23 E56	5866	18 D	1	3	0838	1.50	2.90		
	21	1032	1057	1034	S15 E42	5863	25	1+	2	1034	3.00	3.00		
LOCARNO	21	1232	1250	1235	S12 W05	5858	18	1+	2	1235	2.00	2.00		
	21	1326	1438	1349	N22 W43	5864	72	2	2	1349	7.00	7.00		
CAPRI S	21	1335	1354 D		N22 W43	5864	19 D	1	1	1345	1.80	2.60		
	21	1350 E	1500 U	1350 E	N22 W44	5864	70 U	1	2	1345	3.49	2.60		19

SOLAR FLARES

SEPTEMBER 1960

OBSERVATORY	DATE SEPT 1960	OBSERVED TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	TIME — U T	MEASUREMENTS		MAX. WIDTH H α	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	APPROX. MER. DIST.					MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.			
SAC PEAK	21	2100	2134	S15 E60	E60	34	1		3.64				20	
LOCARNO	22	0737	0747	N23 E41	E41	10	1	2	0739	1.00	1.00			
{ LOCARNO	22	0858	0927	N21 W54	W54	29	1+	2	0905	4.00	4.00			
{ CAPRI S	22	0902 E	0918 D	N21 W52	W52	16 D	1	3	0905	2.20	2.20			
LOCARNO	22	1512	1525	S16 E30	E30	13	1	2		1.30				
SAC PEAK	22	1800	1906 U	S20 W19	W19	66 U	1	2		3.64			20	
LOCKHEED	23	0040	0120 D	S20 E35	E35	40 D	1	1	0115	3.00	3.00		20	
{ WENDEL	23	0717	0732	N25 E29	E29	15	1	2						
{ LOCARNO	23	0718	0729	N22 E27	E27	11	1	2						
{ STOCKHOLM	23	1019 E	1031 D	N22 W65	W65	12 D	1	2	1021	1.50	3.00			
{ WENDEL	23	1019 E	1034 D	N21 W69	W69	15 D	1+	2						
{ LOCARNO	23	1127	1155	S21 E11	E11	28	1+	2	1131		2.00			
{ WENDEL	23	1129	1148	S20 E11	E11	19	1	2						
{ WENDEL	23	1329	1401	N21 E11	E11	32	1+	2	1339		3.00			
{ LOCARNO	23	1333	1403	S21 E11	E11	30	1+	2	1337	2.00	2.20	3.10	15	
{ HUANCAYO	23	1334	1354	S20 E08	E08	20	1	2	1338	3.00	3.60			
{ STOCKHOLM	23	1335	1356 D	S23 E13	E13	21 D	1	3						
SAC PEAK	23	2324	2344 D	S14 E27	E27	20 D	1	3		2.60				
{ WENDEL	24	0705 E	0715 D	S19 E03	E03	10 D	1	2			3.00			
{ WENDEL	24	0714	0801	S21 W01	W01	47	1+	2			6.00			
{ LOCARNO	24	0725 E	0730 D	S20 W01	W01	5 D	1	2	0830	1.00	1.00			
{ UCLE	24	0922	0940	S20 E02	E02	18	1	3	0926	2.00	2.00			
{ LOCARNO	24	0923	0955	S20 E01	E01	32	1+	2	0926					
{ ZURICH	24	0928	0940	S20 E02	E02	12	1	3	0928		3.00			
{ WENDEL	24	0946 E		S19 E01	E01	11	1	2			3.00			
{ LOCARNO	24	1341	1355	S20 W05	W05	14	1	2			3.00			
{ WENDEL	24	1343	1404	S21 W02	W02	21	1	2			3.00			
{ WENDEL	24	1420	1436	N07 W02	W02	16	1	2			3.00			
{ LOCARNO	24	1435	1450	N05 W06	W06	15	1	2			5.00			
{ MCMATH	24	2116	2139 D	S20 W10	W10	23 D	2	2	2118	8.72			25	
{ SAC PEAK	24	2116	2202	S21 W10	W10	46	2+	2	2119	3.40			30	
{ LOCKHEED	24	2116	2203	S22 W11	W11	47	1	2	2310	2.30				
{ HAWAII	24	2304 E	2340 D	N26 E19	E19	36 D	1+	1						
WENDEL	25	0759	0932	N26 E09	E09	93	3	3		19.00			16	
{ WENDEL	25	1025	1045	S20 W15	W15	20	1	3	1256	4.00		1.90		
{ ONDREJOV	25	1246	1307	S20 W12	W12	21	1	3						
{ WENDEL	25	1246	1318	S18 W10	W10	32	2	3	1257	9.00				
{ CAPRI S	25	1255 E	1314	S14 W13	W13	19 D	1	1	1257	2.50	2.60			
{ ONDREJOV	25	1353 E	1410	S23 W50	W50	17 D	1	3	1358			1.80		
{ WENDEL	25	1507	1558	S18 W19	W19	31	1	3			4.00			
{ SAC PEAK	25	1514	1528	S18 W20	W20	14	1	3		2.45				
{ WENDEL	25	1556	1615	S02 W06	W06	19	1	3			4.00			
{ SAC PEAK	25	1834	1852	S18 W22	W22	18	1	3	1839	4.40			17	
{ LOCKHEED	25	1834	1855	S18 W22	W22	18	1	3	1950	1.90			20	
{ HAWAII	25	1840	2050	N27 E07	E07	70	2	3		3.30			18	
{ SAC PEAK	25	1942	2024	N26 E06	E06	42	2	3		5.69			20	
{ LOCKHEED	25	1932	2052	N27 E04	E04	80	2-	2	1950	5.40			18	

SOLAR FLARES

SEPTEMBER, 1960

OBSERVATORY	DATE	OBSERVED TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	MGRATH PLACE REGION				MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH He	
SAC PEAK	25	2156	2222	S02	W08	5865	1	3	3.20			16
ISTANBUL	26	0735 E	0748	S10	E06	5863	1					
ISTANBUL	26	0735 E	0805	S19	W63	5858	1					
{ LOCARNO	26	1016	1037	S10	E05	5863	1	2				
{ UCCLLE	26	1023 E	1028 D	S12	E03	5863	5	3	3.00			
{ LOCARNO	26	1332	1337	S21	W63	5858	1	3				
{ LOCARNO	26	1350	1435 D	S21	W63	5858	2	2				
{ CAPRI S	26	1355 E	1432 D	S23	W59	5858	1	3	5.00			
{ SAC PEAK	26	1358 E	1424	S21	W64	5858	26	3	2.30			
{ ZURICH	26	1400 E	1430	S23	W65	5858	30	3	2.08			
{ UCCLLE	26	1402 E	1434	S20	W64	5858	32	3	4.00			
ZURICH	26	1450 D	1500 D	N28	W04	5866	10	3	3.00			
SAC PEAK	26	1910	1924	S15	W26	5863	14	3	2.28			15
SAC PEAK	26	1950	1956	S20	W32	5863	6	2	2.14			18
WENDEL	27	0802 E	0809 D	N09	W39	5862	7	2	3.00			
LOCARNO	27	0828	0837	S20	W37	5863	9	2	2.00			
LOCARNO	27	0943	1020	S16	W13	5863	37	2	2.00			
LOCARNO	27	1030	1046	S21	W75	5858	16	2				
WENDEL	27	1229 E	1240 D	S20	W76	5858	11	2	3.00			
{ LOCARNO	27	1250	1430	S14	W24	5863	100	2				
{ UCCLLE	27	1303	1342	S10	W25	5863	39	4	4.50			
{ WENDEL	27	1311 E	1342 D	S17	W17	5863	31	2	3.00			
{ WENDEL	27	1315 E	1342 D	S17	W12	5863	27	2	6.00			
LOCARNO	27	1429	1447	N11	W43	5862	18	2	2.00			
UCCLLE	27	1507	1723	S08	W25	5863	21	3	4.00			
LOCKHEED	27	1702	1940	N09	W47	5862	21	2	1.80			
HAWAII	27	1900	1932	N12	W46	5862	40	3	1.10			40
UCCLLE	28	0909	0914 D	S08	W27	5863	5	3	3.00			
CAPRI S	28	0940 E	1038 D	S18	W90	5858	58	2	3.70			
CAPRI S	28	1218 E	1308 D	S14	W90	5858	50	2	5.00			
MC MATH	30	1953	2020	S11	W59	5863	27	1	2.00			

COMMERCE - STANDARDS - BOULDER

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

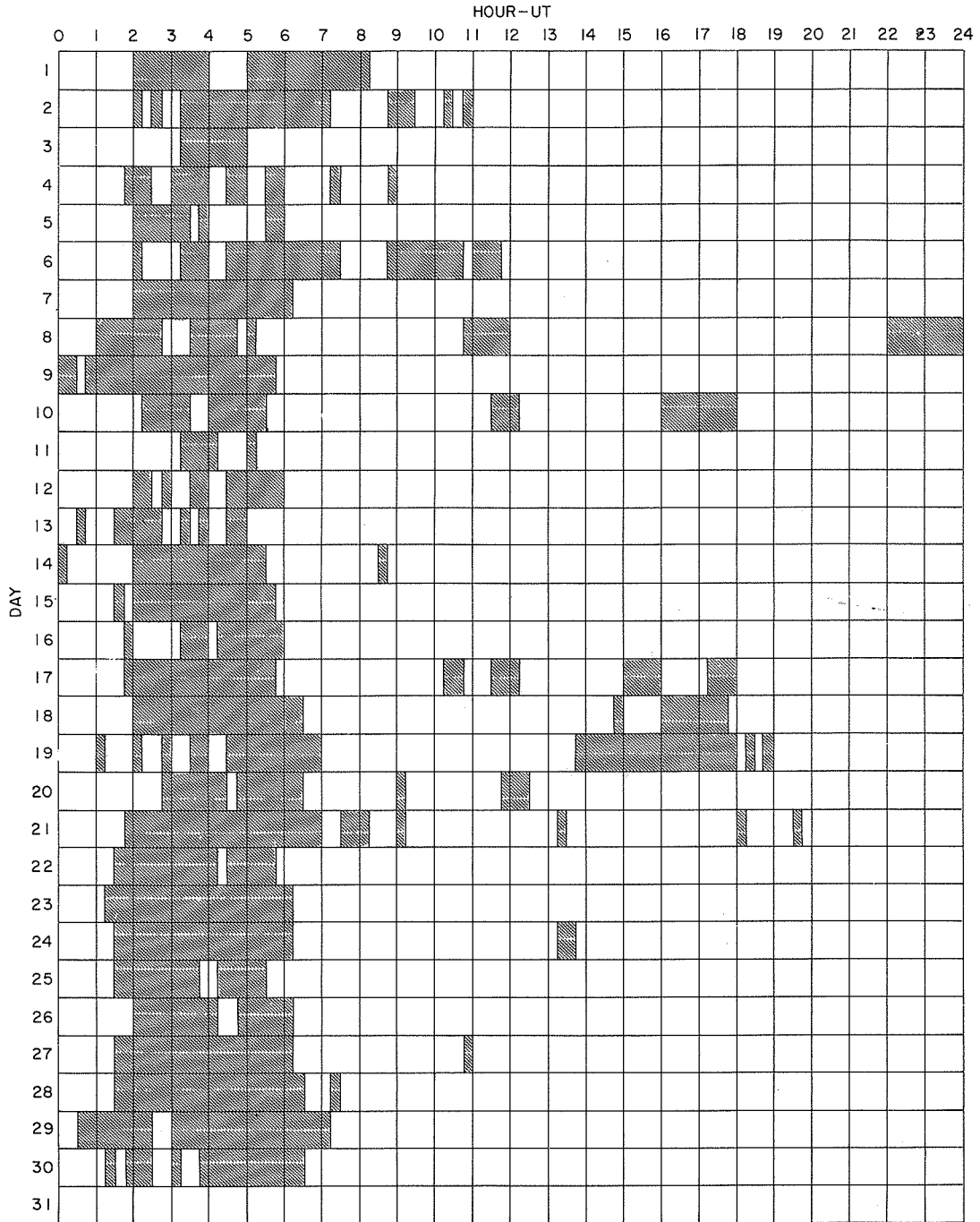
MOSCOW-G MOSCOW - GAISH
R O EDIN ROYAL OBSERVATORY, EDINBURGH
R O HERST GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK SACRAMENTO PEAK
SCHAUMS SCHAUMS
USNRL UNITED STATES NAVAL RESEARCH LABORATORY

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

LOCKHEED OBSERVATIONS: ALL VALUES IN THE MAXIMUM INTENSITY COLUMN ARE ARBITRARY UNITS ON A SCALE OF 10 TO 40 - NOT PERCENT OF THE CONTINUOUS SPECTRUM.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

SEPTEMBER 1960



952044-105-9L

Stations include:

COMMERCE - STANDARDS - BOULDER

- | | | |
|--------------------|------------|-----------------------------|
| Anacapri (Swedish) | Kodaikanal | Royal Observatory Greenwich |
| Arcetri | Lockheed | Herstmonceux |
| Hawaii | McMath | Sacramento Peak |
| Istanbul | Ondrejov | Uccle |

SUBFLARES

Noted as follows: Date-Universal Time- Coordinates

AUGUST 1960

LOCKHEED	01 0057	N06 W20	* ONDREJOV	10 0642	S17 E70	LOCKHEED	13 1919	N20 W20
UCCLE	01 0959	N16 W28	SAC PEAK	10 1256	N23 E43	MCMATH	13 1920	N19 W20
* CAPRI S	01 1027	E N05 W24	LOCKHEED	10 1600	N12 E85	LOCKHEED	13 1958	N00 W47
SAC PEAK	01 1440	N24 W76	LOCKHEED	10 1708	S09 E85	LOCKHEED	13 2010	N16 E40
SAC PEAK	01 1524	E N07 W27	SAC PEAK	10 1726	N08 E86	LOCKHEED	13 2022	N18 E44
MCMATH	01 1524	N07 W27	LOCKHEED	10 1726	N12 E85	LOCKHEED	13 2050	S03 W44
LOCKHEED	01 1525	E N07 W27	* LOCKHEED	10 1752	N12 E85	MCMATH	13 2052	S03 W44
HAWAII	01 1834	N00 W29	* SAC PEAK	10 1820	N08 E85	LOCKHEED	13 2052	N21 W22
SAC PEAK	01 1834	N08 W31	WENDEL	11 0846	E S05 E65	LOCKHEED	13 2113	S13 E70
LOCKHEED	01 1837	N06 W30	* MCMATH	11 1201	N24 E25	LOCKHEED	13 2140	N12 E71
HAWAII	01 1840	N00 W32	* WENDEL	11 1225	E S02 W08	LOCKHEED	13 2140	N12 E71
LOCKHEED	01 2119	N11 W28	WENDEL	11 1253	E S10 E56	LOCKHEED	13 2156	E N15 W40
LOCKHEED	02 0029	N13 W32	WENDEL	11 1253	E S02 W11	LOCKHEED	13 2158	S22 W90
UCCLE	02 1133	N05 W39	WENDEL	11 1337	E N22 E25	LOCKHEED	13 2209	N01 W43
* SAC PEAK	02 1344	N24 W90	SAC PEAK	11 1442	S25 W52	LOCKHEED	13 2212	N21 E44
SAC PEAK	02 1510	N03 W42	LOCKHEED	11 1552	S24 W54	HAWAII	13 2214	N22 E48
LOCKHEED	02 1858	N08 W44	SAC PEAK	11 1552	S25 W56	SAC PEAK	13 2218	U N20 E46
HAWAII	02 2242	N04 E27	SAC PEAK	11 1704	S25 W55	* LOCKHEED	13 2234	S03 W44
LOCKHEED	02 2301	N13 W45	LOCKHEED	11 1705	S24 W54	* MCMATH	13 2235	S03 W44
LOCKHEED	02 2315	N13 W45	MC MATH	11 1735	S14 E43	* LOCKHEED	13 2251	S12 E48
SAC PEAK	03 1932	N10 W54	LOCKHEED	11 1743	N23 E18	MC MATH	13 2253	S12 W69
LOCKHEED	03 1933	U N09 W54	LOCKHEED	11 1750	S04 E63	LOCKHEED	13 2300	N21 E00
SAC PEAK	03 1622	E N07 W56	MC MATH	11 1751	E S04 E63	LOCKHEED	14 0051	S06 E32
LOCKHEED	03 1654	N06 W55	HAWAII	11 1752	E S04 E66	LOCKHEED	14 0104	N22 E40
LOCKHEED	03 1821	N06 W55	LOCKHEED	11 1821	S23 W53	LOCKHEED	14 0114	N21 W03
HAWAII	03 1932	N16 E13	LOCKHEED	11 1821	S23 W53	* LOCKHEED	14 0131	N22 E39
SAC PEAK	03 2026	N10 W57	HAWAII	11 1824	S02 W14	* CAPRI S	14 0755	E N24 E39
LOCKHEED	03 2026	N10 W58	LOCKHEED	11 1825	S02 W16	CAPRI S	14 1009	E S11 E02
SAC PEAK	04 1754	N19 E90	LOCKHEED	11 1840	S06 E63	MC MATH	14 1159	N21 E47
SAC PEAK	04 1848	E N19 E90	HAWAII	11 1842	S06 E64	MC MATH	14 1159	S13 E19
SAC PEAK	04 2136	E N19 E90	* LOCKHEED	11 2003	S02 W18	* MCMATH	14 1236	E N20 E33
UCCLE	05 0951	S11 W11	* MCMATH	11 2004	S02 W18	* MCMATH	14 1237	N15 E32
SAC PEAK	05 1318	N17 E90	* SAC PEAK	11 2038	E N20 E23	* MCMATH	14 1332	S02 E28
SAC PEAK	05 1338	N05 W86	LOCKHEED	11 2140	S25 W57	WENDEL	14 1349	E S11 E06
SAC PEAK	05 1356	N17 E90	LOCKHEED	11 2207	S10 E90	* SAC PEAK	14 1410	N01 W53
SAC PEAK	05 1526	N17 E90	LOCKHEED	11 2254	S24 W57	LOCKHEED	14 1455	E N20 W12
HAWAII	05 1857	S12 W20	HAWAII	11 2256	S27 W59	LOCKHEED	14 1513	N20 W28
HAWAII	05 2210	S11 W22	LOCKHEED	12 0012	S02 W17	LOCKHEED	14 1525	S06 E16
* LOCKHEED	05 2212	N18 E85	LOCKHEED	12 0033	S10 E90	SAC PEAK	14 1526	S08 E15
HAWAII	06 0020	S30 E08	LOCKHEED	12 0045	S24 W58	HUANCAYO	14 1533	S08 E14
LOCKHEED	06 0217	N19 E85	HAWAII	12 0046	S27 W59	LOCKHEED	14 1706	N20 E30
ARCETRI	06 0217	E N20 E77	HAWAII	12 0156	S03 W21	LOCKHEED	14 1721	S09 E55
STOCKHOLM	06 1046	E N19 E76	MC MATH	12 1226	S11 E98	LOCKHEED	14 1727	N19 E32
* SAC PEAK	06 1618	N06 E70	MC MATH	12 1230	S01 W24	LOCKHEED	14 1806	N19 E29
LOCKHEED	06 1742	N17 E90	MC MATH	12 1240	N19 E18	LOCKHEED	14 1816	S01 W56
MC MATH	06 1744	E N16 E90	MC MATH	12 1313	N20 W04	HAWAII	14 1820	S02 W58
LOCKHEED	06 1807	N18 E75	SAC PEAK	12 1315	S14 E29	LOCKHEED	14 1949	N19 E49
LOCKHEED	06 1814	N18 E75	MC MATH	12 1450	N19 E16	MC MATH	14 1955	E N20 E89
* LOCKHEED	06 1960	N18 E75	MC MATH	12 1504	S03 W50	LOCKHEED	14 2030	S16 W01
LOCKHEED	06 2108	N21 E73	MC MATH	12 1591	S14 E27	MC MATH	14 2051	E N10 E88
LOCKHEED	06 2206	N23 E83	LOCKHEED	12 1535	N20 E59	LOCKHEED	14 2051	N12 E90
SAC PEAK	06 2304	E N20 E90	LOCKHEED	12 1605	N23 E17	LOCKHEED	14 2104	S02 W56
* LOCKHEED	06 2306	N18 E75	MC MATH	12 1608	S16 E16	LOCKHEED	14 2106	N19 W15
* SAC PEAK	06 2314	E N06 E70	SAC PEAK	12 1615	E N20 E17	LOCKHEED	14 2126	S01 W56
LOCKHEED	06 2345	N17 E71	LOCKHEED	12 1630	S23 W67	SAC PEAK	14 2130	E N01 W58
LOCKHEED	07 0001	N23 E90	LOCKHEED	12 1718	N21 E15	LOCKHEED	14 2216	N21 E27
HAWAII	07 0008	E N24 E90	MC MATH	12 1804	N20 E04	LOCKHEED	14 2307	N03 E27
* LOCKHEED	07 0104	N21 E72	LOCKHEED	12 1920	S15 E25	LOCKHEED	14 2316	S13 E46
* LOCKHEED	07 0131	N19 E81	LOCKHEED	12 1920	S15 E25	LOCKHEED	15 0110	N18 E26
* ONDREJOV	07 0831	E N17 E64	LOCKHEED	12 1923	S15 E82	CAPRI S	15 0725	E N15 E57
* SAC PEAK	07 1305	N21 E64	LOCKHEED	12 2049	S05 E45	SAC PEAK	15 1334	S14 W18
SAC PEAK	07 1305	N20 E90	MC MATH	12 2052	E S05 E46	MC MATH	15 1334	S14 W17
SAC PEAK	07 1358	N22 E85	LOCKHEED	12 2111	S23 W67	SAC PEAK	15 1348	N22 E23
* SAC PEAK	07 1734	E N22 E63	MC MATH	12 2137	S03 W30	MC MATH	15 1351	N21 E23
SAC PEAK	07 1940	E N16 E78	MC MATH	12 2157	N21 W10	MC MATH	15 1406	S04 E22
SAC PEAK	07 2200	N17 E58	SAC PEAK	12 2200	E N11 E90	SAC PEAK	15 1408	S04 E23
HAWAII	07 2202	N14 E60	MC MATH	12 2217	N13 E93	MC MATH	15 1418	S04 E22
LOCKHEED	07 2202	N19 E57	SAC PEAK	12 2220	N11 E52	SAC PEAK	15 1428	N15 E61
MC MATH	07 2204	E N17 E58	LOCKHEED	12 2310	S12 E85	MC MATH	15 1522	S11 E39
LOCKHEED	07 2230	N18 E61	SAC PEAK	12 2318	E N12 E90	SAC PEAK	15 1522	S10 E39
LOCKHEED	08 0000	N22 E59	LOCKHEED	12 2346	N20 E12	* MCMATH	15 1547	S06 E01
ARCETRI	08 0900	E S16 E89	LOCKHEED	13 0112	S13 E82	* LOCKHEED	15 1550	S07 E02
MC MATH	08 1215	N18 E49	LOCKHEED	13 0212	S13 E82	SAC PEAK	15 1552	D N00 W68
LOCKHEED	08 1605	E N20 E46	* CAPRI S	13 1004	E N22 E08	HUANCAYO	15 1552	S00 W66
LOCKHEED	08 2251	N21 E44	MC MATH	13 1132	E N20 E50	MC MATH	15 1552	N01 W67
LOCKHEED	08 2331	N21 E44	MC MATH	13 1136	N12 E88	LOCKHEED	15 1552	N00 W68
HAWAII	09 0031	E N05 W25	* SAC PEAK	13 1302	N20 E05	CAPRI S	15 1552	E S04 E03
* ONDREJOV	09 0608	E N21 E58	MC MATH	13 1320	E N20 E05	MC MATH	15 1554	N22 E22
HAWAII	09 1827	N23 E47	MC MATH	13 1408	S13 E08	SAC PEAK	15 1555	E S07 E01
LOCKHEED	09 1924	N19 E54	SAC PEAK	13 1510	N20 E50	SAC PEAK	15 1624	N14 E60
LOCKHEED	09 1940	N21 E31	LOCKHEED	13 1510	U N20 E49	MC MATH	15 1625	N12 E60
LOCKHEED	09 1945	N18 E23	CAPRI S	13 1520	E N23 E53	LOCKHEED	15 1630	S11 E38
HAWAII	09 2022	E N21 E53	MC MATH	13 1533	N22 W04	SAC PEAK	15 1630	S11 E41
LOCKHEED	09 2043	N20 E53	MC MATH	13 1558	N13 E75	MC MATH	15 1631	S12 E40
HAWAII	09 2044	N19 E53	LOCKHEED	13 1610	N24 E01	HUANCAYO	15 1635	S10 E40
MC MATH	09 2045	E N19 E53	LOCKHEED	13 1644	S04 W40	* LOCKHEED	15 1644	N21 W24
HAWAII	09 2204	N19 E53	SAC PEAK	13 1656	S04 W43	* MCMATH	15 1645	N21 W33
LOCKHEED	09 2205	N20 E53	MC MATH	13 1700	S04 W42	* LOCKHEED	15 1646	S15 W14
LOCKHEED	09 2335	S13 E80	LOCKHEED	13 1707	N17 E76	* MCMATH	15 1647	S14 W14
LOCKHEED	09 2347	N20 E52	SAC PEAK	13 1708	N16 E80	* HUANCAYO	15 1650	S14 W12
LOCKHEED	10 0005	S12 E80	LOCKHEED	13 1718	N21 E44	LOCKHEED	15 1657	S14 W17
HAWAII	10 0008	E N19 E52	* LOCKHEED	13 1734	N20 E47	* LOCKHEED	15 1721	S11 E38
LOCKHEED	10 0019	S12 E80	* MCMATH	13 1736	E N20 E48	* SAC PEAK	15 1722	S10 E40
LOCKHEED	10 0035	S12 E80	SAC PEAK	13 1742	S13 E70	* MCMATH	15 1724	S11 E39
LOCKHEED	10 0035	S12 E80	LOCKHEED	13 1742	S12 E70	LOCKHEED	15 1733	S12 W15
LOCKHEED	10 0035	S12 E80	MC MATH	13 1819	S11 E08	MC MATH	15 1734	N20 E21
			LOCKHEED	13 1834	N21 E47	LOCKHEED	15 1753	N10 E74
			LOCKHEED	13 1839	N22 W12	LOCKHEED	15 1753	N00 W68

SUBFLARES

Noted as follows: Date-Universal Time - Coordinates

AUGUST 1960

LOCKHEED	15	1759	N22	W20	SAC PEAK	16	2246	S07	W10	MCMATH	18	1844	E	N19	W21	
SAC PEAK	15	1800	N21	E20	LOCKHEED	16	2319	N25	W42	LOCKHEED	18	1844	N27	W67		
MCMATH	15	1800	N26	E23	LOCKHEED	17	0112	N23	W41	MCMATH	18	1844	E	S10	W33	
HAWAII	15	1800	N21	E20	HAWAII	17	0113	N23	W41	SAC PEAK	18	1850	N19	W31		
LOCKHEED	15	1810	S01	W70	LOCKHEED	17	0142	U	S13	W32	LOCKHEED	18	1925	S10	W40	
HAWAII	15	1816	N18	W28	HAWAII	17	0146	U	S10	W29	MCMATH	18	1927	S11	W41	
MCMATH	15	1816	S11	E37	CAPRI S	17	0640	E	S11	E16	LOCKHEED	18	1929	N18	W70	
LOCKHEED	15	1818	S09	E46	SCHAUINS	17	0641	E	S13	E18	LOCKHEED	18	1937	N14	E06	
SAC PEAK	15	1820	S10	E37	ONDRE JOV	17	0725	S07	W15	MCMATH	18	1938	N13	E07		
HAWAII	15	1820	S11	E38	* UCLE	17	0936	E	N10	E38	LOCKHEED	18	2000	S08	W38	
MCMATH	15	1842	S15	W18	* CAPRI S	17	0949	E	N12	E54	LOCKHEED	18	2009	N23	W22	
MCMATH	15	1912	S15	W18	* CAPRI S	17	0957	S11	E14	MCMATH	18	2010	N21	W21		
LOCKHEED	15	1914	N00	W70	MCMATH	17	1238	S06	W16	LOCKHEED	18	2015	S10	W41		
LOCKHEED	15	1925	S14	W19	CAPRI S	17	1240	E	S05	W15	MCMATH	18	2017	S10	W41	
HAWAII	15	1926	S16	W18	MCMATH	17	1252	N09	E46	LOCKHEED	18	2040	S10	W44		
MCMATH	15	1927	S15	W18	* MCMATH	17	1305	N10	E52	LOCKHEED	18	2104	S11	W41		
LOCKHEED	15	1933	S14	W22	* SAC PEAK	17	1314	U	S10	E51	SAC PEAK	18	2200	N17	W76	
MCMATH	15	1933	S14	W22	MCMATH	17	1317	S18	E90	LOCKHEED	18	2235	S19	E65		
LOCKHEED	15	1934	N00	W70	* SAC PEAK	17	1446	S11	E78	SAC PEAK	18	2236	S20	E67		
HAWAII	15	1935	E	S16	W21	* MCMATH	17	1446	S09	E78	LOCKHEED	18	2257	S10	W44	
LOCKHEED	15	1940	S07	W01	SAC PEAK	17	1457	N20	W55	LOCKHEED	18	2310	N23	W22		
LOCKHEED	15	2002	S14	W19	MCMATH	17	1527	S08	W17	LOCKHEED	18	2312	N13	W64		
MCMATH	15	2002	S15	W19	* MCMATH	17	1541	E	S08	E78	LOCKHEED	18	2330	N14	E07	
SAC PEAK	15	2003	S15	W19	* LOCKHEED	17	1545	U	S11	E75	LOCKHEED	19	0032	N14	E07	
LOCKHEED	15	2034	N21	W26	* SAC PEAK	17	1552	S11	E70	LOCKHEED	19	0032	N20	W39		
LOCKHEED	15	2051	N03	W72	SAC PEAK	17	1558	S10	W32	LOCKHEED	19	0105	S10	W05		
MCMATH	15	2052	N03	W70	* SAC PEAK	17	1615	S12	E11	LOCKHEED	19	0122	N15	W31		
LOCKHEED	15	2100	S14	W15	* MCMATH	17	1617	S10	E13	LOCKHEED	19	0125	N13	E29		
LOCKHEED	15	2129	N12	E73	LOCKHEED	17	1645	S11	E75	SAC PEAK	19	1406	N16	W82		
MCMATH	15	2130	N09	E76	MCMATH	17	1720	E	S09	E76	* CAPRI S	19	1408	N15	W85	
* LOCKHEED	15	2130	S07	E01	SAC PEAK	17	1726	S11	W78	LOCKHEED	19	1408	N15	W02		
MCMATH	15	2131	S07	W00	SAC PEAK	17	1726	S11	E78	SAC PEAK	19	1426	N17	W88		
SAC PEAK	15	2132	E	N10	W78	SAC PEAK	17	1804	S11	E78	UCLE	19	1449	E	N15	W87
LOCKHEED	15	2140	S07	W73	* LOCKHEED	17	1806	N16	W83	LOCKHEED	19	1548	S14	W65		
LOCKHEED	15	2150	N19	W30	* MCMATH	17	1808	N21	W59	SAC PEAK	19	1550	E	S16	W67	
MCMATH	15	2150	N20	W30	HAWAII	17	1838	N10	E46	SAC PEAK	19	1550	N17	W88		
LOCKHEED	15	2201	S11	E37	LOCKHEED	17	1911	S10	E11	LOCKHEED	19	1550	N17	W85		
MCMATH	15	2218	S07	E00	LOCKHEED	17	1922	N26	W46	LOCKHEED	19	1606	N20	W33		
LOCKHEED	15	2219	S07	W01	LOCKHEED	17	1926	N14	E27	LOCKHEED	19	1606	N20	W33		
LOCKHEED	15	2244	N13	E11	MCMATH	17	1928	N14	E27	LOCKHEED	19	1631	N21	W33		
LOCKHEED	15	2246	S13	E16	SAC PEAK	17	1930	MCMATH	E28	MCMATH	19	1633	N20	W33		
HAWAII	15	2246	S13	W15	LOCKHEED	17	1955	S11	E75	LOCKHEED	19	1712	N18	W85		
SAC PEAK	15	2248	S13	W16	LOCKHEED	17	1955	S11	E75	LOCKHEED	19	1737	N21	W42		
SAC PEAK	15	2250	N10	E75	LOCKHEED	17	2010	S09	E11	LOCKHEED	19	1741	N20	W41		
LOCKHEED	15	2250	N00	W76	LOCKHEED	17	2024	N10	E46	HAWAII	19	1749	E	S19	E57	
SAC PEAK	15	2254	N00	W74	MCMATH	17	2109	S18	E85	* LOCKHEED	19	1803	N18	W85		
HAWAII	15	2254	S01	W70	LOCKHEED	17	2112	S11	E09	* LOCKHEED	19	1803	N18	W85		
LOCKHEED	16	0010	S12	W20	LOCKHEED	17	2112	S11	E09	LOCKHEED	19	1939	N20	W44		
LOCKHEED	16	0033	S15	W24	LOCKHEED	17	2113	S10	E12	LOCKHEED	19	2004	S08	W52		
LOCKHEED	16	0058	N19	W19	MCMATH	17	2113	S10	E12	LOCKHEED	19	2010	S11	W19		
LOCKHEED	16	0058	S16	W21	HAWAII	17	2125	E	S11	E12	LOCKHEED	19	2020	N17	W90	
LOCKHEED	16	0109	S12	W18	HAWAII	17	2132	S10	E09	LOCKHEED	19	2020	S20	E37		
HAWAII	16	0132	E	S13	W27	MCMATH	17	2217	S11	E18	LOCKHEED	19	2042	S20	E37	
ARCETRI	16	1002	E	N20	W40	HAWAII	17	2238	S10	E10	LOCKHEED	19	2044	N18	E53	
STOCKHOLM	16	1002	E	N20	W30	LOCKHEED	17	2238	S11	E09	LOCKHEED	19	2103	S08	W21	
CAPRI S	16	1011	S11	E29	LOCKHEED	17	2238	S11	E09	* LOCKHEED	19	2103	N17	W90		
CAPRI S	16	1014	E	N10	E68	SAC PEAK	17	2250	S11	E73	* SAC PEAK	19	2135	E	N17	W88
WENDEL	16	1026	E	S07	E01	SAC PEAK	17	2250	S11	E73	LOCKHEED	19	2223	S07	W54	
WENDEL	16	1027	E	N12	E65	LOCKHEED	17	2310	S11	E72	SAC PEAK	19	2224	S09	W54	
CAPRI S	16	1056	E	S05	W06	SAC PEAK	17	2324	U	S11	W73	LOCKHEED	19	2241	N18	W90
CAPRI S	16	1104	N19	W35	HAWAII	17	2342	E	S11	E73	LOCKHEED	19	2331	N16	W08	
* SCHAUINS	16	1208	E	N08	E58	LOCKHEED	18	0119	S11	E07	LOCKHEED	20	0010	N18	W85	
* MCMATH	16	1224	N10	E65	ARCETRI	18	0909	E	S10	E04	LOCKHEED	20	0016	S18	E50	
MCMATH	16	1347	S11	E26	CAPRI S	18	1137	E	S06	E04	LOCKHEED	20	0022	S18	E50	
MCMATH	16	1414	S07	W11	SAC PEAK	18	1308	N21	W27	LOCKHEED	20	0052	N17	W90		
* MCMATH	16	1525	S07	W11	* SAC PEAK	18	1344	N18	W66	LOCKHEED	20	0132	S07	W22		
* CAPRI S	16	1530	E	S05	W08	SAC PEAK	18	1358	N23	W18	LOCKHEED	20	0137	N16	W63	
* SCHAUINS	16	1533	E	S06	W09	UCLE	18	1400	N23	W16	LOCKHEED	20	0145	S12	W21	
* HUANGAYO	16	1555	S11	W18	SAC PEAK	18	1400	N08	E38	WENDEL	20	0824	E	S06	W50	
* MCMATH	16	1558	S10	W20	CAPRI S	18	1402	E	N23	W16	WENDEL	20	0943	E	S21	W43
* LOCKHEED	16	1601	N23	W49	SAC PEAK	18	1406	N18	W66	ONDRE JOV	20	1027	E	S12	W80	
* MCMATH	16	1602	N23	W46	CAPRI S	18	1406	S08	E03	LOCKHEED	20	1325	N20	W90		
* SCHAUINS	16	1605	N21	W49	* SAC PEAK	18	1430	S09	E01	SAC PEAK	20	1336	E	N18	W90	
MCMATH	16	1655	S12	E26	LOCKHEED	18	1530	U	S10	E01	SAC PEAK	20	1506	S10	W27	
LOCKHEED	16	1656	S10	E25	* SAC PEAK	18	1538	S12	W54	LOCKHEED	20	1555	S11	W27		
LOCKHEED	16	1836	S06	W14	MCMATH	18	1555	S10	E03	LOCKHEED	20	1640	S19	E43		
MCMATH	16	1834	E	S07	W13	LOCKHEED	18	1600	N17	W68	LOCKHEED	20	1659	S13	W90	
LOCKHEED	16	1842	N14	W01	LOCKHEED	18	1600	N17	W68	LOCKHEED	20	1718	S11	W27		
MCMATH	16	1853	N14	E34	LOCKHEED	18	1604	S10	W36	SAC PEAK	20	1730	N13	W52		
LOCKHEED	16	1854	N19	E35	MCMATH	18	1604	S10	W37	LOCKHEED	20	1730	N14	W53		
MCMATH	16	1859	S11	E24	SAC PEAK	18	1606	S11	W30	LOCKHEED	20	1730	N14	W53		
LOCKHEED	16	1900	S11	E24	LOCKHEED	18	1609	N20	W20	MCMATH	20	1737	N11	E08		
LOCKHEED	16	1939	S11	E24	SAC PEAK	18	1648	S10	E02	LOCKHEED	20	1737	N14	W53		
SAC PEAK	16	2018	E	N08	E56	SAC PEAK	18	1648	N22	W20	LOCKHEED	20	1921	S10	W30	
LOCKHEED	16	2018	N10	E55	LOCKHEED	18	1648	N22	W21	MCMATH	20	1922	S10	W30		
HAWAII	16	2019	N10	E57	MCMATH	18	1648	E	N20	W20	LOCKHEED	20	1950	N20	W90	
MCMATH	16	2025	N12	E34	MCMATH	18	1649	S11	E01	LOCKHEED	20	2005	N14	W54		
LOCKHEED	16	2027	N13	E33	SAC PEAK	18	1649	S11	E01	LOCKHEED	20	2106	S12	W90		
LOCKHEED	16	2035	N13	E35	MCMATH	18	1659	S11	E03	SAC PEAK	20	2232	S11	W30		
MCMATH	16	2037	N12	E37	LOCKHEED	18	1659	S11	E03	LOCKHEED	20	2233	S11	W30		
HAWAII	16	2041	N13	E37	MCMATH	18	1659	S11	E39	SAC PEAK	20	2258	S10	W31		
SAC PEAK	16	2050	E	N13	E37	LOCKHEED	18	1727	S11	E01	LOCKHEED	20	2259	S10	W30	
HAWAII	16	2052	N13	E35	MCMATH	18	1728	S10	W00	ARCETRI	21	1005	E	S11	E26	
MCMATH	16	2120	S11	E27	LOCKHEED	18	1736	S17	E67	* SAC PEAK	21	1334	N25	W90		
LOCKHEED	16	2121	S11	E27	MCMATH	18	1745	E	N13	E34	* SAC PEAK	21	1350	S07	W76	
MCMATH	16	2201	N08	E55	MCMATH	18	1745	N12	E08	* SCHAUINS	21	1354	E	S05	W75	
LOCKHEED	16	2203	N09	E59	HAWAII	18	1748	E	N13	E09	* SCHAUINS	21	1521	S11	W37	
SAC PEAK	16	2206	E	N10	E55	LOCKHEED	18	1810	N17	W69	* MCMATH	21	1601	E	N26	W03
MCMATH	16	2207	S14	W34	LOCKHEED	18	1826	N13	E32	SAC PEAK	21	1618	S10	W90		
MCMATH	1															

SUBFLARES

Noted as follows: Date-Universal Time - Coordinates

AUGUST 1960

SCHAUMS	22 0634 E	N21 W75	* SAC PEAK	26 1354	N07 E14	* MCMATH	28 1947 E	N08 W27
WENDEL	22 0640 E	N17 W70	* MCMATH	26 1356	N08 E15	LOCKHEED	28 2009	N12 E78
WENDEL	22 0640 E	S15 W50	* CAPRI S	26 1405 E	N09 E23	MCMATH	28 2014 E	N12 E80
* CAPRI S	22 1151 E	S09 E15	SAC PEAK	26 1432	N10 W90	LOCKHEED	28 2023	S12 W74
SCHAUMS	22 1151 E	S10 E12	MCMATH	26 1440	N20 W90	LOCKHEED	28 2104	S01 W78
MCMATH	22 1634	N12 W46	CAPRI S	26 1507	S18 W34	LOCKHEED	28 2124	N15 E35
SCHAUMS	22 1635 E	N12 W40	MCMATH	26 1521	S18 W37	LOCKHEED	28 2135	S01 W78
SCHAUMS	22 1717 E	N10 W20	WENDEL	26 1521 E	S18 W38	LOCKHEED	28 2240	S01 W78
LOCKHEED	22 2331	N10 W27	* MCMATH	26 1552	N08 W56	SAC PEAK	28 2308	N16 W12
CAPRI S	23 0635 E	S11 E38	* WENDEL	26 1556	N22 W40	LOCKHEED	29 0008	N19 E36
MCMATH	23 1230	N13 W30	CAPRI S	26 1555	N08 W53	LOCKHEED	29 0050	N17 W14
* SAC PEAK	23 1604	S18 E03	MCMATH	26 1637	S04 W40	HAWAII	29 0059 E	N18 W12
* MCMATH	23 1604	S18 E04	* MCMATH	26 1700	N15 W90	* LOCKHEED	29 0125	N18 E93
MCMATH	23 1759 E	S18 E04	* MCMATH	26 1703	N19 W90	* CAPRI S	29 1000 E	S19 E06
MCMATH	23 1759 E	S11 W70	MCMATH	26 1708	S18 W38	SAC PEAK	29 1512	S17 W84
LOCKHEED	23 2208	N04 W22	MCMATH	26 1746	S18 W38	LOCKHEED	29 1537	S19 W85
LOCKHEED	23 2230	S08 W74	LOCKHEED	26 1725	S17 W40	SAC PEAK	29 1624	S04 W88
LOCKHEED	23 2235	N18 W56	LOCKHEED	26 1928	N17 W90	SAC PEAK	29 1654	S05 W89
SAC PEAK	23 2308	N15 W34	LOCKHEED	26 2007	S04 W45	LOCKHEED	29 1745	N19 E22
LOCKHEED	23 2310	N19 W35	MCMATH	26 2008 E	S04 W45	* MCMATH	29 1913	N20 E25
LOCKHEED	23 2319	N28 W35	LOCKHEED	26 2132	N05 W62	LOCKHEED	29 2145	N19 E18
SAC PEAK	23 2320	N27 W32	MCMATH	26 2011	N04 W60	LOCKHEED	29 2145	S20 W58
LOCKHEED	23 2340	N18 W56	LOCKHEED	26 2028	S03 W47	HAWAII	29 2202	S19 W58
LOCKHEED	24 0004	N18 W56	LOCKHEED	26 2028	S03 W47	LOCKHEED	29 2207	N20 E23
LOCKHEED	24 0028	N18 W56	LOCKHEED	26 2130	S03 W47	LOCKHEED	29 2217	S19 W11
LOCKHEED	24 0118	N15 W35	LOCKHEED	26 2224	S03 W48	HAWAII	29 2220 E	S19 W09
LOCKHEED	24 0118	N18 W56	LOCKHEED	26 2242	S03 W48	LOCKHEED	29 2242	N19 E21
LOCKHEED	24 0120	N05 W24	LOCKHEED	26 2242	S08 W50	ISTANBUL	30 0806	N19 E17
ISTANBUL	24 0705	N05 W22	HAWAII	26 2244	N09 W59	CAPRI S	30 1050 E	S14 W13
ONDREJUV	24 1047 E	N27 W32	LOCKHEED	26 2245	N10 W50	MCMATH	30 1416	S16 W19
MCMATH	24 1235	S10 W15	LOCKHEED	26 2303	S03 W47	SAC PEAK	30 1433	N17 E11
MCMATH	24 1302	N06 W30	HAWAII	26 2306	S18 W45	MCMATH	30 1443	N19 E12
CAPRI S	24 1310 E	N08 W29	LOCKHEED	26 2307	S18 W45	SAC PEAK	30 1456	S17 E14
MCMATH	24 1403	S10 W15	LOCKHEED	26 2323	S03 W48	MCMATH	30 1456	N17 E11
* MCMATH	24 1429	S19 W08	LOCKHEED	26 2345	S09 W52	LOCKHEED	30 1528	N18 E10
* CAPRI S	24 1450 E	S18 W07	LOCKHEED	27 0014	S18 W42	LOCKHEED	30 1530	N18 E10
* MCMATH	24 1639	N25 W40	LOCKHEED	27 0103	S03 W49	LOCKHEED	30 1559	N21 E14
* HUANCAYO	24 1644 E	N27 W36	WENDEL	27 0730 E	S03 W48	MCMATH	30 1600	N20 E15
LOCKHEED	24 1821	S19 W10	WENDEL	27 0804 E	N25 W39	LOCKHEED	30 1628	N19 E09
MCMATH	24 1823 E	S20 W11	* ARCTRI	27 0831 E	S03 W56	LOCKHEED	30 1658	N08 E08
LOCKHEED	24 1945	N17 W68	WENDEL	27 1025 E	S03 W55	LOCKHEED	30 1756	S18 W18
LOCKHEED	24 2155	N17 W68	* WENDEL	27 1058 E	S08 W53	LOCKHEED	30 1806	N18 E09
LOCKHEED	24 2358	N17 W71	* WENDEL	27 1111 E	S03 W57	MCMATH	30 1808	N18 E10
LOCKHEED	25 0149	S17 W16	* WENDEL	27 1132 E	N22 E21	MCMATH	30 1808	S14 W22
WENDEL	25 0730 E	N25 W15	MCMATH	27 1132	N22 E21	LOCKHEED	30 1919	N26 W85
WENDEL	25 0736 E	S06 W20	MCMATH	27 1136	N17 E27	LOCKHEED	30 1919	N26 W85
CAPRI S	25 0807 E	N17 W74	MCMATH	27 1147	N28 E37	MCMATH	30 1919	N26 W85
WENDEL	25 0816 E	N16 W70	CAPRI S	27 1153 E	S18 W47	LOCKHEED	30 2032	N18 E08
SCHAUMS	25 0840 E	N04 W43	WENDEL	27 1233 E	N19 E53	MCMATH	30 2034	N18 E08
* CAPRI S	25 1016 E	S05 W22	* MCMATH	27 1236	S03 W58	MCMATH	30 2115	N17 E10
SCHAUMS	25 1221	S06 W27	* WENDEL	27 1247 E	S03 W57	LOCKHEED	30 2210	N17 W40
* MCMATH	25 1305 E	N16 W90	* MCMATH	27 1312	S03 W58	LOCKHEED	30 2339	N18 E08
* ONDREJUV	25 1305	N17 W80	* WENDEL	27 1315 E	S03 W57	UCCLE	31 0937 E	N18 E04
* SCHAUMS	25 1306	N17 W85	* SAC PEAK	27 1400	S11 W61	UCCLE	31 1042	N18 E05
* SAC PEAK	25 1310	N18 W86	* MCMATH	27 1401	S15 W61	CAPRI S	31 1045 E	N18 E03
SAC PEAK	25 1428 E	S08 W28	* WENDEL	27 1421 E	S03 W57	MCMATH	31 1220	S11 W15
MCMATH	25 1428	S05 W28	WENDEL	27 1524 E	S03 W57	MCMATH	31 1225	S17 W31
* SAC PEAK	25 1506	S06 W29	LOCKHEED	27 1638	S03 W60	MCMATH	31 1305	N18 E03
MCMATH	25 1507	S07 W29	LOCKHEED	27 1724	S03 W60	SAC PEAK	31 1306	N18 E03
* MCMATH	25 1529	S05 W28	MCMATH	27 1736	S03 W61	UCCLE	31 1312	N18 E05
* SAC PEAK	25 1530	S03 W29	HAWAII	27 1830	N18 E51	MCMATH	31 1328	S11 W15
SAC PEAK	25 1600	N20 E85	MCMATH	27 1835	N03 W70	* MCMATH	31 1414	S16 W33
MCMATH	25 1601	N20 E80	LOCKHEED	27 1839	N28 W77	MCMATH	31 1424	S18 W27
MCMATH	25 1654	S12 W33	SAC PEAK	27 1912	S02 W63	SAC PEAK	31 1512	N18 W02
SAC PEAK	25 1718	S03 W29	MCMATH	27 1915	S03 W62	LOCKHEED	31 1619	N19 E00
MCMATH	25 1718	S05 W28	LOCKHEED	27 1919	N20 E49	MCMATH	31 1618	N18 W00
LOCKHEED	25 1745	S03 W32	MCMATH	27 1921	N19 E30	LOCKHEED	31 1635	N17 W49
LOCKHEED	25 1748	S05 W28	LOCKHEED	27 1954	S01 W63	MCMATH	31 1635	N15 W50
SAC PEAK	25 1814	S04 W31	LOCKHEED	27 1956	S03 W63	* MCMATH	31 1648	N18 W02
LOCKHEED	25 1846	S03 W32	LOCKHEED	27 2022	S03 W65	LOCKHEED	31 1745	S18 W38
LOCKHEED	25 1920	S06 W31	LOCKHEED	27 2022	S03 W65	LOCKHEED	31 1745	S18 W38
MCMATH	25 1921	S05 W30	LOCKHEED	27 2022	S03 W65	LOCKHEED	31 1912	S17 W35
LOCKHEED	25 1952	S03 W33	MCMATH	27 2028	S03 W63	LOCKHEED	31 1912	S17 W35
HUANCAYO	25 1954	S02 W33	MCMATH	27 2047	S04 W64	LOCKHEED	31 1955	S18 W38
MCMATH	25 1955	S04 W31	LOCKHEED	27 2059	S21 W67	LOCKHEED	31 1955	S18 W38
* MCMATH	25 1956 U	S04 W32	SAC PEAK	27 2114 E	S02 W63	LOCKHEED	31 1955	S18 W38
LOCKHEED	25 2012	S15 W35	LOCKHEED	27 2140	S15 W54	LOCKHEED	31 2051	S10 W20
LOCKHEED	25 2043	N26 W21	HAWAII	27 2142	S40 W38	LOCKHEED	31 2051	N17 W55
MCMATH	25 2047 E	N25 W21	MCMATH	27 2145	S16 W53	LOCKHEED	31 2110	S17 W39
HAWAII	25 2048	N27 W20	LOCKHEED	27 2205	N27 W77	LOCKHEED	31 2110	S17 W39
LOCKHEED	25 2052	S03 W33	LOCKHEED	27 2217	S15 W54	LOCKHEED	31 2110	S17 W39
LOCKHEED	25 2052	S03 W33	MCMATH	27 2218	S16 W53	SAC PEAK	31 2136 U	N17 E90
SAC PEAK	25 2054 U	N26 W21	LOCKHEED	27 2220	S02 W67	MCMATH	31 2139	N16 E90
MCMATH	25 2110	S16 W25	LOCKHEED	27 2254	S02 W67	SAC PEAK	31 2202	S16 W41
MCMATH	25 2113	S05 W33	LOCKHEED	27 2345	S15 W55	LOCKHEED	31 2222	N19 W04
MCMATH	25 2140	S05 W33	LOCKHEED	28 0007	N24 W54	SAC PEAK	31 2224	N18 W03
LOCKHEED	25 2150	S03 W33	HAWAII	28 0050 E	N18 E57	SAC PEAK	31 2224	N19 W02
SAC PEAK	25 2236	S18 W28	LOCKHEED	28 0056	N20 E47	MCMATH	31 2224	N18 W04
LOCKHEED	25 2306	S03 W33	HAWAII	28 0338 E	S17 E13			
WENDEL	26 0718 E	N15 W28	* CAPRI S	28 0830 E	S18 E16			
* ARCTRI	26 0826 E	N19 W89	SAC PEAK	28 1336	S10 W78			
CAPRI S	26 0845 E	N27 W27	SAC PEAK	28 1438	S11 W80			
WENDEL	26 0910 E	N16 W61	MCMATH	28 1441	N20 E40			
* MCMATH	26 1205	N23 W29	MCMATH	28 1546	N20 E38			
WENDEL	26 1215 E	S10 W42	MCMATH	28 1643	N20 E38			
MCMATH	26 1223	N18 W90	LOCKHEED	28 1808	N19 E39			
MCMATH	26 1236	N18 W90	MCMATH	28 1855	S16 E09			
MCMATH	26 1321	N18 W90	* LOCKHEED	28 1913	N09 W27			
MCMATH	26 1331	N15 W90	* MCMATH	28 1919 E	N08 W27			
SAC PEAK	26 1338 E	N18 W90						

*Rated as flare of importance 2.1 by other observatories (see CRPL-F 193 Part-B for September 1960).

SOLAR FLARES

JUNE 1960

OBSERVATORY	DATE JUNE 1960	OBSERVED TIME		MAX. PHASE	LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	TIME — U.T.	MEASUREMENTS		PROVISIONAL IONOSPHERIC EFFECT	
		START	END		APPROX. LAT.	MER. DIST.					MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH H _g
NIZAMIAH { SIMEIZ KRASNAYA PIRCULI UCCLE MOSCOW G PIRCULI KIEV	01	0536	0543	0538	N28 E47	5680	7	1	2	0538	1.52	2.52	1.50	156
	01	0828	E		N28 E47	5680	□	3	2	0850	40.80			187
	01	0832	1020 D	0856	N27 E45	5680	108 D	3	2		24.48			120
	01	0838	E		N30 E46	5680	97 D	3	2	0857	25.71			
	01	0838	E		N30 E47	5680	172 D	3+	3	0851	16.00	42.60		
	01	0858	E	1130 D	N31 E46	5680	144 D	2+	2	0901	18.49	30.14	3.70	250
	01	0905	E	0920	S18 W07	5677	15	1+	2	0908	6.89	7.24		54
	01	1045	E	1300 D	N27 E42	5680	135 D	2	1	1045	5.19			48
	03	1105	E	1107 D	S13 W07	5679	2 D	1	1	1107	3.64			42
	06	0452	E	0518	N33 W10	5680	26 D	1	1	0504	2.57	3.21	2.23	100
{ TASHKENT	06	0455	0540	0458	N32 W11	5680	45	1	2	0458	3.30	4.00		
	07	0603	E	0610 D	N28 W39	5680	7 D	1	3		.90	1.30	1.20	53
ABASTUMANI KHARKOV	07	1006	E	1027 D	N25 W43	5680	21 D	1	2	1020	3.43	5.16		
	08	0514	E	0552 D	N16 E60	5693	38 D	1+	3		1.99	4.20		70
{ ABASTUMANI	08	0735	0840 D	0747	N34 W35	5680	65 D	2+	3		10.88	16.70		108
	08	0736	E	0855 D	N34 W37	5680	79 D	1+	2	0745	10.88			113
{ SIMEIZ	08	0756	E	0850 D	S10 W68	5679	54 D	1	2	0807	1.82			76
	08	0758	E	0822	S09 W68	5679	24	2	3		1.82	6.60		85
UCCLE	08	0820	E		N33 W33	5680	□	□	4					
	09	0442	0505	0449	N36 W51	5680	23	1+	1	0449	1.82	3.55	1.70	50
NIZAMIAH PIRCULI	09	0555	E	0635 D	S10 E85	5695	40 D	1	3	0618	.91	4.66		
	10	0506	E	0802 D	N03 W65	5687	176 D	2+	3	0645	8.16	22.40	3.00	84
{ KODAIKHL	10	0510	E	0525 D	N31 W56	5680	15 D	2	3	0520	4.20	7.50	1.70	122
	10	0512	E	0518 U	N32 W61	5680	16 D	2	1	0518	6.89	15.70		75
{ PIRCULI	10	0535	E	0710 D	N30 W61	5680	95 D	2	2	0636	9.14	18.10	3.20	
	10	0542	E	0628 D	S08 E72	5695	46 D	1	2	0543	3.43	7.70	1.70	90
{ KHARKOV	10	0525	1009 D	0946	N30 W65	5680	44 D	2	2		4.53			
	10	0936	E	1022 D	N29 W63	5680	46 D	1	2	0945	1.59	3.94	3.40	100
{ MOSCOW G	10	0940	E	1011 D	N10 W54	5688	31 D	1	1	0951	2.75	4.57		56
	10	1159	E	1215 D	S12 E64	5695	16 D	1	1	1201	.73			63
PIRCULI KIEV	10	1159	E	1217 D	N10 W90	5687	18 D	1+	1	1202				66
	11	2134	2140	2138	N30 W83	5680	6	1	1		.54			74
{ TASHKENT	12	0436	0611 D		S16 E55	5695	95 D	1+	2		8.31	15.00		
	12	0525	E	0534 D	S09 E51	5695	9 D	1	1	0525	3.08	4.99	1.85	102
{ MITAKA	12	0754	E	0801 D	N31 W90	5680	7 D	1	2	0756	.73			
	13	0529	E	0650 D	N26 W85	5699	81 D	1+	1	0614	2.30	11.70		52
{ PIRCULI	13	0550	E	0650 D	S20 W18	5696	60 D	1	1	0614	3.68	4.16		70
	13	0602	E	0812 D	S20 W20	5696	130 D	1+	3		1.99	2.30		59
{ ABASTUMANI	13	0650	E	0812 D	N18 W28	5693	82 D	2	3		8.16	9.90		105
	13	0736	E	0812 D	N19 W28	5693	36 D	1	2	0736	2.72			100
{ SIMEIZ	13	1710	1738 D	1714	N18 W32	5693	28 D	2	3		7.00	8.00		
	14	0004	0040 D	0013	N19 W37	5693	36 D	1+	2		3.16			129

SOLAR FLARES

JUNE 1960

OBSERVATORY	DATE JUNE 1960	OBSERVED UNIVERSAL TIME		MAX. PHASE	LOCATION			DUR. OF OBS. MINUTES	IM. POR. TANCE	OBS. COND.	TIME — U T	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END		APPROX. LAT.	M-PLACE	M-REGION					MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Rg	
MITAKA KIEV KIEV KIEV	14	0005 E	0028 D	0009	N18 W34	5693	23 D	1+	1	0009	4.11	5.26	3.19	149	
	14	1055 E	1120 D	5693	N13 W29	5693	25 D	1+	2	1055	3.64			77	
	14	1243 E	1315 D	1252	S10 E15	5695	32 D	1+	2	1252	2.60			46	
	14	1334 E	1413 D	1337	S12 E13	5695	39 D	2	2	1337	5.71			66	
TASHKENT TASHKENT ABASTUMANI PIRCULI KRASNAYA	15	0248	0349	0301	N18 W13	5694	61	1	3	0301	2.66	3.00		150	
	15	0251	0339	0254	N22 W53	5693	48	3	3	0254	7.89	13.00		65	
	15	0548 E	0806 D	0653 U	S11 E08	5695	138 D	1+	3	0706	8.16	8.60		112	
	15	0652 E	0850 D	0706 U	S11 E09	5695	118 D	2	1	0706	11.02	11.40		99	
SIMEIZ PIRCULI ABASTUMANI KRASNAYA	16	0647	0715 D	0653 U	S12 W01	5695	28 D	1+	2	0653	6.35			84	
	16	0648 E	0705 D	0701 U	S12 E00	5695	17 D	1	2	0655	2.30			70	
	16	0648	0709	0653	S12 W02	5695	21	1	2	0655	4.53	2.30		73	
	16	0655 E	0706	0737 U	S11 W02	5695	11 D	1+	2	0655	7.25			85	
KRASNAYA PIRCULI UCCLE VOROSHILOV	16	0728 E	0736	0737 U	N16 E71	5706	8 D	1	2	0706	2.72			70	
	16	0829 E	0850	0832 U	S13 W08	5695	21 D	1	2	0706	2.20			67	
	16	1340 E	2333	2308	N21 W70	5693	□	1+	2	0706	3.00	6.60		87	
	16	2254	2333	2308	S12 W18	5695	39	1+	1	0706	2.25			87	
VOROSHILOV TASHKENT	17	0024	0042 D	0029	N17 W37	5694	18 D	1+	2	0938	1.90			85	
	17	0932	0948	0938	N20 E59	5706	16	1+	2	0938	1.82	3.69	1.80	75	
	17	0937	0954 D	0954	N17 E58	5706	17 D	1	3	0954	2.29			75	
VOROSHILOV TASHKENT	18	0017 E	0026 D	0541	S09 W35	5695	9 D	1	2	0018	2.25	3.00		66	
	18	0539	0600	0541	N19 W50	5694	21	1	2	0541	1.84			66	
PIRCULI ABASTUMANI	19	1026 E	1105	1046	N22 E89	5713	39 D	1+	1	0644	1.84	7.90		75	
	19	1043	1058	1047	N20 E90	5713	15	1+	1	0644	3.89			56	
SIMEIZ PIRCULI	20	0640 E	0740 D	0644 U	S13 W66	5695	60 D	1	2	0644	1.27			80	
	20	0945	1007	0955	S15 W65	5695	22	2+	2	0644	5.97			86	
TASHKENT	23	0329	0344	0332	N12 W23	5706	15	1	3	0332	1.19	1.00		96	
	24	0915	0950	0925	N10 W40	5706	35	1+	3	0930	2.01	2.16	1.70	96	
PIRCULI KHARKOV	24	0923	0945 D	0925	N10 W39	5706	22 D	1	1	0930	1.71			96	
	25	0414 E	0414	0414	N22 E11	5713	□	1	2	0414	3.69			66	
ALMA-ATA ALMA-ATA	25	0414 E	0434	0414	S10 E60	5719	20 D	1+	2	0414	2.75			74	
	25	0708	0805	0711	N21 E10	5713	57	1+	3	0414	4.99	5.40		80	
ABASTUMANI MOSCOW G	25	1027 E	1046 D	0731	N21 E08	5713	16	2	2	1030	9.37	3.83		100	
	25	1027 E	1046 D	1029	N18 E04	5713	19 D	1	2	1030	3.71			120	
PIRCULI KIEV	25	1027 E	1046 D	1029	N20 E04	5713	19 D	1+	1	1204	4.59			148	
	25	1131 E	1204 D	1204	N21 E06	5713	33 D	3	2	1204	12.46			130	
MOSCOW G ALMA-ATA	25	1133 E	1300 D	0434	N19 E09	5713	87 D	2	2	1202	16.94	17.81	2.87	220	
	26	0428	0439 D	0434	N20 W06	5713	11 D	2+	2	0434	5.76			200	
ALMA-ATA ALMA-ATA	26	0433	0439 D	0435	N22 W07	5713	6 D	1+	2	0435	1.14			118	
	26	0435 E	0439 D	0435	N23 E00	5713	7 D	1	2	0449	4.15			59	
PIRCULI	26	0435 E	0525	0437 U	N18 W09	5713	50 D	3	1	0449	27.54			150	

SOLAR FLARES

JUNE 1960

OBSERVATORY	DATE	OBSERVED TIME		LOCATION		IM- FOR- TANCE	ORS. COND.	TIME -- U T	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX.	MAX. PHASE				LAT.	MR. DIST.	MONTH REGION	
PIRCULI	26	0517	0525	N15 W65	0520	1	1	0752	1.84			68
	26	0520	0537	N29 E85	0524 U	1	2		1.19			76
	26	0748 E	0845 D	N20 W09	0752 U	1	3	0752	3.62			66
	26	0940	1004	N18 W05	1004	1	4		2.50	2.50		
UCCLE	26	1027	1036	N08 E38	1030	1	1	1301	2.00	2.50		50
	26	1300 E	1308 D	N14 W68	1301	1	1	1302	2.08			66
KIEV	26	1300 E	1316 D	N08 E37	1302	1	1		2.29			
	27	0418	0615	N22 W19	0429	1	1	0429	4.95	6.00		
TASHKENT	27	0433 E	0520	N19 W19	0433	1	2	0433	4.62			100
	27	0451	0531 D	N23 W18	0520	1	2	0502	3.69			104
ALMA-ATA	27	0520	0531 D	N11 W81	0531	1	2	0531	.93			61
	27	0601 E	0601 E	S16 W82	0601	1	2	0601	1.82			58
ALMA-ATA	27	0603 E	0825 D	N19 W18	0722 U	1	1		6.95	6.00		63
	27	0719	0823 D	N13 W81	0721 U	1	1	0757	3.90	6.50		54
ABASTUMANI	27	0755	0823 D	N11 E24	0720	1	2		3.43	3.60	2.40	
	27	0755	0825 D	N09 E25	0758	1	2		3.82	4.00		
KHARKOV	27	1114 E	1135 D	N23 W23	1125	1	1	1125	4.15			92
	27	1150 E	1157 D	N12 W88	1157	1	1	1157	1.04			65
KIEV	27	1150 E	1157 D	N12 W88	1157	1	1		1.04			65
	28	0340 E	0448	S17 E33	0340	1	1	0340	4.62			65
ALMA-ATA	28	0433 E	0448	N09 E75	0439	1	2		.91			56
	28	0433 E	0727 D	S15 E33	0650 U	1	2		4.13			66
PIRCULI	28	0837	1234	N24 E51	1234	1	3	1216	2.00	2.50		
	28	1214	1234	N23 W38	1216	1	4		2.00			
UCCLE	28	1214	1234	N23 W38	1216	1	4		2.00			
	29	0100	0104	N22 W43	0102	1	2		3.61			68
VOROSHILOV	29	0102	0129	N10 E03	0107	1	2		3.34			74
	29	0127	0247	N19 W44	0152	1	2		2.80			93
VOROSHILOV	29	0142	0146	N28 E45	0143	1	2		1.71			120
	29	0617 E	0800 D	N17 E44	0720 U	1	3		1.82	2.80		66
ABASTUMANI	29	0725 E	0742 D	N30 E43	0724	1	3		3.68	6.30		68
	29	0742 E	1045	N29 E40	0724	1	4	1045	4.50			
PIRCULI	29	1042 E	1600	N28 E71	1045	1	2		2.89			74
	29	1458 E	2229	S12 E71	1517	1	2	2205	2.89			
UCCLE	29	1514 E	1600	N26 E30	1517	1	2		2.11	2.00		
	29	2204 E	2229	N28 E27	2229	1	2	2205	2.11	2.00		
VOROSHILOV	30	0229	0255	S08 W12	0240	1	2	0240	2.11	2.00		
	30	0334	0419	N11 E51	0349	1	2	0349	3.95	6.00		
TASHKENT	30	0408	0519	N20 W57	0414	1	2	0414	3.95	6.00		
	30	0452	0535	N18 W61	0510 U	1	2		3.30	6.00		
PIRCULI	30	0610 E	0618 D	N10 E45	0612 U	1	2		4.59			73
	30	0944 E	0949	N21 W62	0612 U	1	2		1.19			71
DUNSHINK	30	1030 E	1110	N18 W64	1030	1	1	0946	1.87	4.30	7.30	
	30	1039	1135	N18 W63	1110	1	1	1040	3.00	6.60	2.10	
UCCLE	30	1109	1307	N12 E43	1115	1	4	1302	1.00			112
	30	1255	2154	N10 E44	1302	1	4		1.71			126
VOROSHILOV	30	2136	2230	N19 W68	2136	1	2					
	30	2224	2230	N22 W69	2228	1	2					

COMMERCE - STANDARDS - BOULDER

These flare reports are addenda to the June 1960 flares published in CRPL-F 191 Part B, July 1960.

ANACAPRI - GEFMAN
 ANACAPRI - SWEDISH
 GOOD HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE
 KIEV* KIEV UNIVERSITY
 KODAIKANAL
 KRASNAYA PAKHRA
 LOCKHEED LOS ANGELES
 MOSCOW - GAISS
 MOSCOW OBSERVATORY
 R O EDIN ROYAL OBSERVATORY, EDINBURGH
 R O HERST GREENWICH ROYAL OBSERVATORY, HERSTHONCEUX
 SAC PEAK SACRAMENTO PEAK
 SCHAUBINS SCHAUBINSLAND
 USNRL UNITED STATES NAVAL RESEARCH LABORATORY

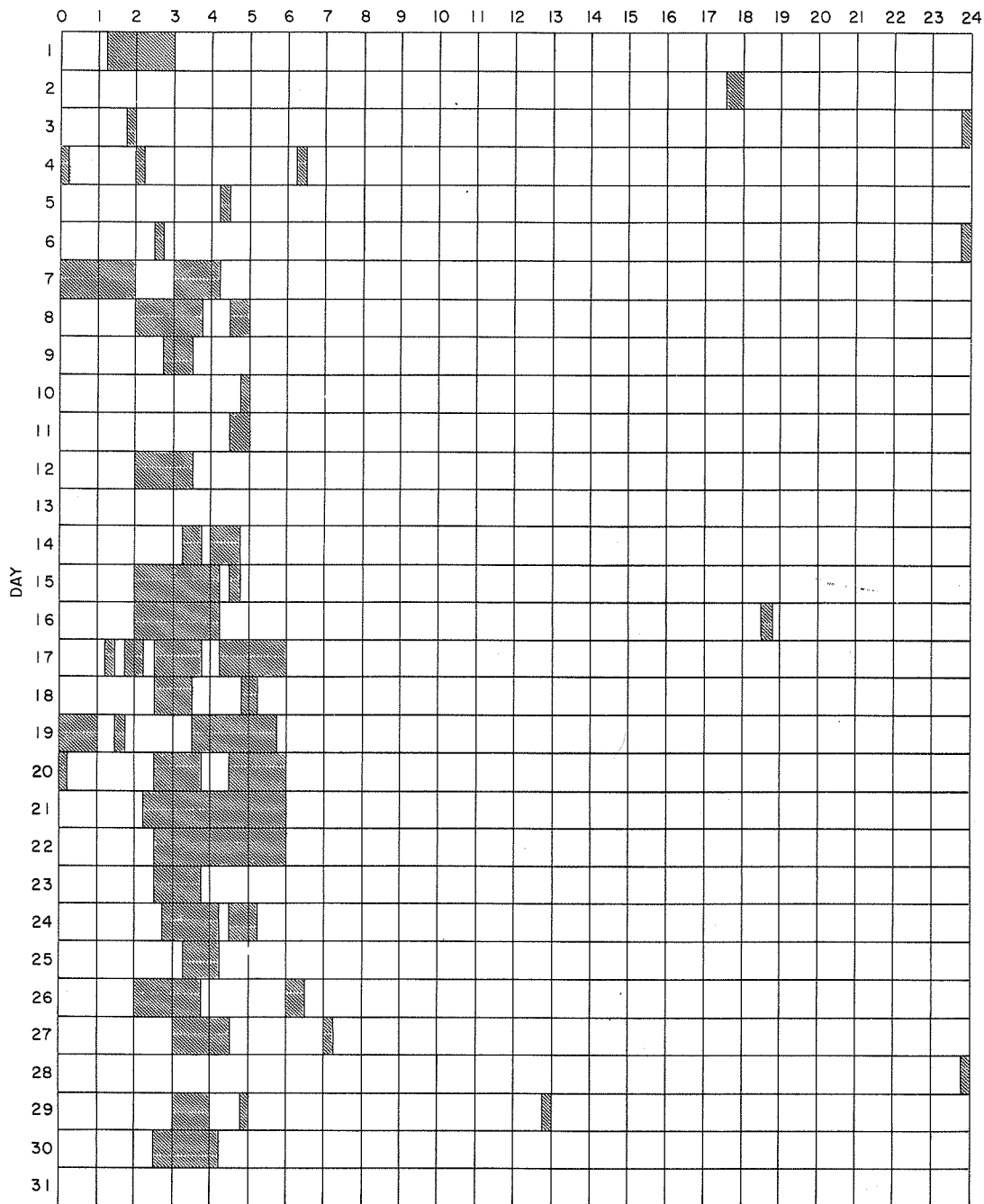
SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.
 E - LESS THAN & - PLUS
 D - GREATER THAN - - MINUS
 U - APPROXIMATE □ - NOT REPORTED

LOCKHEED OBSERVATIONS: ALL VALUES IN THE MAXIMUM INTENSITY COLUMN ARE ARBITRARY UNITS ON A SCALE OF 10 TO 40 - NOT PERCENT OF THE CONTINUOUS SPECTRUM.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

JUNE 1960

HOUR-UT



Stations Include:

COMMERCE - STANDARDS - BOULDER

- | | | | | |
|--------------------|------------|-----------------|-----------------------------|-----------------|
| Abastumani | Hawaii | Krasnaya Pakhra | Moscow - G | Sacramento Peak |
| Alma Ata | Huancayo | Lockheed | Nizamiah | Simeiz |
| Anacapri (Swedish) | Kharkov | McMath | Ondrejov | Uccle |
| Arcetri | Kiev GAO | Meudon | Pirculi | Voroshilov |
| Dunsink | Kodaikanal | Mitaka | Royal Greenwich Observatory | |
| | | | Herstmonceux | |

SOLAR FLARES

JAN THRU APRIL 1960

OBSERVATORY	DATE 1960	OBSERVED UNIVERSAL TIME		LOCATION APPROX.			DURA. TION MINUTES	IM. POR. TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	LAT.	LONG. REGION				MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _g	MAX. INT. %	
TASHKENT	Jan 01	0557	0611	0603	N25 E85	5520	14	1+	1	2.58	20.00	5.40	220	
TASHKENT	15	0747	0758	0749	N08 E85	5540	11	1+	2	1.65		5.00	130	
TASHKENT	Feb 02	0621	0635	0624	N04 W47	5550	14	1	3	1.01	2.00	4.20	100	
TASHKENT	03	0724	0731	0726	S17 W18	5551	7	1	2	.64	1.00	2.30	55	
TASHKENT	05	0624 E	0659 D	0648	S17 W09	5560	35 D	1	2	1.46	2.00	2.20	65	
TASHKENT	17	0747	0800		N11 W02	5574	13	1	2	2.48	3.00	1.20	45	
TASHKENT	19	0535	0556	0539	N08 W20	5574	21	1+	2	8.72	10.00		65	
TASHKENT	Mar 31	0331	0356	0337	N10 E04	5615	25	1	2	2.66	3.00	1.30	55	
TASHKENT	Apr 01	0249 E	0337		N12 W07	5615	48 D	1+	2	6.24	6.00	2.50		
TASHKENT	02	0519	0600	0520	N11 W23	5615	41	1+	3	2.39	3.00	3.60	195	S-SWF
TASHKENT	05	0300	0447	0447	N13 W68	5615	107	1+	2	10.74	13.00	2.00		
TASHKENT	05	0525	0530	0525	S09 W23	5618	5	1	2	1.84	2.00	2.20	75	
TASHKENT	16	0419	0440	0423	S11 E02	5630	21	1	2	1.46	2.00	1.90	65	
TASHKENT	24	0317	0336	0319	N09 E81	5644	19	1	2	.83	5.00	4.60	70	S-SWF
TASHKENT	29	0333 E	0600 D	0359	N12 W23	5642	147 D	2+	2	23.87	29.00	3.00	130	Slow S-SWF

COMMERCE - STANDARDS - BOULDER

These flare reports are addenda to the 1960 flares published in CRPL-F Part B, 186, 187, 188 and 189.

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

AUGUST 1960

Aug. 1960	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F 193
5	1043	1104	S-SWF	1	3+	<u>PU</u>	1123E
5	1152	1252	S-SWF	5	2	<u>PR</u> , <u>PU</u>	1123E
6	0915	0926	S-SWF	3	2	<u>NE</u> , <u>CW***</u>	0834E
6	1306	1325	S-SWF	5	1+	<u>BE</u> , <u>HU</u> , <u>MC</u> , <u>NE</u> , <u>PR</u> , <u>WS</u>	1313E
6	1327	1355	S-SWF	5	1+	<u>FM</u> , <u>HU</u> , <u>PR</u> , <u>WS</u>	1313E
6	1510	1530	S-SWF	5	1+	<u>BE</u> , <u>BO</u> , <u>FM</u> , <u>HU</u> , <u>MC</u> , <u>NE</u> , <u>PR</u> , <u>WS</u> , <u>CW**</u>	1506
6	1620	1640	S-SWF	5	2	<u>BE</u> , <u>BO</u> , <u>FM</u> , <u>HU</u> , <u>JU</u> , <u>MC</u> , <u>NE</u> , <u>PR</u> , <u>WS</u>	1618
6	1903	1918	S-SWF	5	1+	<u>BE</u> , <u>BO</u> , <u>FM</u> , <u>HU</u> , <u>MC</u> , <u>NE</u> , <u>PR</u> , <u>WS</u>	1908E
7	0102	0127	Slow S-SWF	5	1	<u>AD</u> , <u>OK</u>	0104E
7	0730	0825	S-SWF	5	2+	<u>BR</u> , <u>OK</u> , <u>TO</u> , <u>CW++</u> , <u>CW***</u>	0728
7	1220	1233	S-SWF	5	2-	<u>BE</u> , <u>BR</u> , <u>FM</u> , <u>MC</u> , <u>NE</u> , <u>PR</u>	1222E
7	1740	1818	G-SWF	5	1	<u>BE</u> , <u>HU</u> , <u>MC</u> , <u>PR</u>	1728
8	0445	0538	S-SWF	5	2-	<u>AD</u> , <u>OK</u> , <u>TO</u> , <u>CW+</u> , <u>CW**</u>	0500E
9	1940	2023	Slow S-SWF	5	1+	<u>AD</u> , <u>BE</u> , <u>FM</u> , <u>MC</u> , <u>PR</u>	
11	0225	0355	Slow S-SWF	5	2	<u>AD</u> , <u>OK</u> , <u>TO</u> , <u>CW+</u>	0247
11	1925	2030	S-SWF	5	2	<u>AN</u> , <u>BE</u> , <u>BO</u> , <u>FM</u> , <u>HU</u> , <u>MC</u> , <u>NE</u> , <u>PR</u> , <u>WS</u> , <u>CW***</u>	1916
12	1021	1040	S-SWF	3	2	<u>KU</u> , <u>NE</u>	1033E
14	0515	0600	S-SWF	5	3	<u>AD</u> , <u>CA</u> , <u>NE</u> , <u>OK</u> , <u>TO</u> , <u>CW+</u>	0534E
14	1307	1400	S-SWF	5	3-	<u>BE</u> , <u>BO</u> , <u>FM</u> , <u>HU</u> , <u>KU</u> , <u>MC</u> , <u>NE</u> , <u>PR</u> , <u>SW</u> , <u>CW***</u>	1250E
15	0112	0133	S-SWF	5	1-	<u>AD</u> , <u>OK</u>	
15	0517	0555	Slow S-SWF	1	1	<u>OK</u>	0525E
16	1143	1206	Slow S-SWF	5	1	<u>BE</u> , <u>HU</u> , <u>MC</u> , <u>NE</u> , <u>PR</u> , <u>SW</u>	1130E
16	2312	2335	Slow S-SWF	5	1	<u>AD</u> , <u>AN</u> , <u>MC</u> , <u>OK</u> , <u>WS</u>	2303
17	1348	1420	Slow S-SWF	4	1	<u>FM</u> , <u>MC</u> , <u>PR</u> , <u>WS</u>	1310
19	1237	1315	S-SWF	5	2+	<u>BE</u> , <u>BR</u> , <u>FM</u> , <u>HU</u> , <u>KA</u> , <u>MC</u> , <u>NE</u> , <u>PR</u> , <u>SW</u> , <u>CW***</u>	1233
19	1822	1901	Slow S-SWF	5	1+	<u>BE</u> , <u>FM</u> , <u>HU</u> , <u>MC</u> , <u>PR</u> , <u>WS</u>	1837E
20	0354		S-SWF	1	2	<u>KO</u>	
20	0707	0745	S-SWF	1	2	<u>PU</u>	
20	0833		S-SWF	1	1	<u>KO</u>	0833E
21	0354	0420	Slow S-SWF	5	1	<u>AD</u> , <u>OK</u>	*
21	1357	1420	S-SWF	5	1	<u>BE</u> , <u>HU</u> , <u>MC</u> , <u>PR</u>	1358E
21	1538	1830	Slow S-SWF	5	3+	<u>BE</u> , <u>BO</u> , <u>FM</u> , <u>HU</u> , <u>MC</u> , <u>PR</u> , <u>WS</u>	1546E
26	0000	0055	Slow S-SWF	5	1+	<u>AD</u> , <u>OK</u>	*
26	1427	1506	S-SWF	5	2	<u>BE</u> , <u>DA</u> , <u>FM</u> , <u>HU</u> , <u>MC</u> , <u>PR</u> , <u>PU</u> , <u>WS</u>	1358
30	0843	0948	S-SWF	1	2	<u>PU</u>	0921

COMMERCE - STANDARDS - BOULDER

BO = Boulder, Colorado
 BR = Breisach, G.F.R.
 CA = Canberra, Australia
 DA = Darmstadt, G.F.R.
 JU = Juhlesruh, G.D.R.
 KA = Kanzelhohe, Austria
 KO = Kodaikanal, India
 KU = Kuhlungsborn, G.D.R.
 NE = Nederkorst den Berg, Netherlands

PU = Prague, Czechoslovakia
 SW = Enkoping, Sweden
 TO = Hiraio 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

IONOSPHERIC EFFECTS OF SOLAR FLARES

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

AUGUST 1960

Aug. 1960	CLASS			WIDESPREAD INDEX	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
1			1	5	2222		2226		<u>BO</u> , HA, MC
2			1	5	2152		2155		<u>BO</u> , HA
3			2	1	0147		0150		<u>HA</u>
3			1	4	1615		1640		<u>BO</u> , <u>MC</u> (Group of Bursts)
3			1	4	1906		1909		<u>BO</u> , MC
3			1	4	1944		1946		<u>BO</u> , MC
3		3	1	1	2217	2223	2246		<u>TY</u>
3			1	1	2325		2336		<u>HA</u> (Group of Bursts)
4			1	1	0100		0102		<u>HA</u>
4			1	1	0144		0147		<u>HA</u>
4		2+		5	1200	1221	1350D		<u>A1</u> , A3, A5, A10, KA
4			2	5	1500		0100		<u>BO</u> , HA, MC (Noise Storm)
5		3+		1	0659	0712	0750		<u>A11</u>
5			2	5	1300		0100		<u>BO</u> , HA, MC (Noise Storm)
6		1		5	0915		0945D		<u>A11</u> , <u>NE</u>
{6			2	5	1300		0145		<u>BO</u> , HA, MC (Noise Storm)
*{6			5	5	1309	1317	1357		<u>A1</u> , A3, <u>A5</u> , A6, NE, PA
*{6		1+	5	5	1508	1519	1547		A3, <u>BO</u> , NE, PA
{6			4	4	1509	1516	1530	25	<u>BO</u> , MC
{6			1	4	1619		1629		<u>BO</u> , MC
*{6			2	5	1622	1633	1703		A3, A6, <u>BO</u> , NE, PA
{6		□	4	4	1629	1630	1640		<u>BO</u> , MC (Obscured by Bursts)
*{6			1	5	1901		1904		<u>BO</u> , HA, MC
*{6			2	5	1902	1912	1958		A3, A5, A6, <u>BO</u> , HA, PA
{6		□	5	5	1904	1905	1912		<u>BO</u> , HA, MC (Obscured by Bursts)
7		1+		5	0729	0734	0759		<u>A11</u> , HO, <u>TY</u>
*,+ 7		1+		5	1219	1225	1315		<u>A1</u> , A3, <u>A5</u> , NE, PA
7			2	5	1300		0100		<u>BO</u> , HA, MC, (Noise Storm)
* 7		2		5	1745	1754	1825D		<u>A1</u> , A3, <u>A5</u> , PA
7		1+		5	2007	2019	2045D		<u>A1</u> , A3, <u>A5</u> , A6
8		1		1	0451	0512	0529		<u>TY</u>
{9		1		5	1946	1954	2025	15	<u>BO</u> , HA, MC
*{9		2		5	1948	1959	2030		<u>A1</u> , A3, A5, A6, A10, <u>BO</u> , HA
9			1	5	2334		2336		<u>BO</u> , <u>HA</u>
{11		2		1	0229	0244	0334		<u>HA</u>
{11			1	1	0230	0306	0335		<u>HA</u>
11		1+		3	1310	1318	1332		<u>A1</u> , A3, <u>A5</u> , A10
11			1	1	1444		1447		<u>MC</u>
11			1	1	1555		1559		<u>MC</u>
{11		2+		5	1925		2008		<u>A1</u> , A3, A5, A6, A10, HA, <u>MC</u> , NE, PA
{11			3	5	1925		2020	75	<u>BO</u> , HA, <u>MC</u> (Group of Bursts)
{11		3		5	1932U				HA, <u>MC</u>
11			2	5	2255		2302		<u>BO</u> , HA, MC
12			2	1	0045		0051		<u>HA</u>
12		1		1	1021				<u>NE</u>
12			1	1	1239		1242		<u>MC</u>
{12		1+		3	1458	1503	1550		<u>A1</u> , A3, A5
{12			2	4	1452		1457		<u>BO</u> , MC
12			1	5	2130		0130		<u>BO</u> , <u>HA</u> (Noise Storm)
13			1	5	0000		0004		<u>HA</u>
14		2		1	0506		0554		<u>HO</u>
{14			1	1	1308	1312	1325		<u>MC</u>
*{14		1		5	1308	1312	1340		<u>A1</u> , A3, A5, NE, PA
15		1		1	0702		0742D		<u>HO</u>
15			2	5	1428		0115		<u>BO</u> , HA, MC (Noise Storm)
16			1	5	1855		1858		<u>BO</u> , HA, MC
16			1	5	1909		1911		<u>BO</u> , HA, MC
16			1	5	2203		2206		<u>BO</u> , <u>HA</u>
{16		2		1	2307	2313	0015	35	<u>HA</u>
*{16		2		5	2307	2323	0030		<u>A1</u> , A3, A5, A6, A10, <u>HA</u> , HO, MC, TY
17			1	5	2142		2143		<u>BO</u> , HA
17			1	5	2151		2153		<u>BO</u> , HA

IONOSPHERIC EFFECTS OF SOLAR FLARES

IIIr

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

AUGUST 1960

Aug. 1960	CLASS			WIDE INDEX	TIME (UNIVERSAL TIME) MAX. END			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN				
* { 19 19 19 19	1	2	1	1	1235		1236		<u>MC</u>
				1	1236	1250	1315		<u>MC</u>
				5	1236		1326		A1, NE, <u>PA</u>
				3	1506	1510	1540D		A1, <u>A6</u>
* { 19 19 19 19 19 19	1	1+	2	5	1832		1834		BO, <u>HA</u> , MC
				5	1836	1840	1900	20	BO, <u>HA</u> , MC
				5	1837	1850	1905		A1, A3, A5, <u>HA</u>
				5	2131		2134		<u>BO</u> , HA, MC
				5	2131	2140	2205		A3, A5, <u>BO</u>
				5	2134	2140	2200	20	<u>BO</u> , HA, MC
* { 20 21 21 21 22	1	1+	1	1	0603	0615	0650		<u>A11</u>
				4	1536	1605		25	<u>BO</u> , MC
				4	1537	1604			A1, <u>BO</u>
				5	1557		0100		<u>BO</u> , HA, MC (Series of Bursts)
				3	1954	2008	2030		A3, <u>A6</u>
23 23 24 24 25			1	5	1953		1956		<u>BO</u> , HA, MC
				5	2319		2321		<u>BO</u> , HA
				4	1713		1714		<u>BO</u> , MC
				4	1834		1836		<u>BO</u> , MC
				3	1923	1930	1955		A1, <u>A5</u>
				* { 26 26 26 26 26	1	1+	1	1	0002
1	0004	0020	0100						<u>HA</u>
5	1426	1440							A1, A5, A10, BO, <u>MC</u> , PA
1	1427	1431	1500					15	<u>MC</u>
5	1629		2400						<u>BO</u> , HA, MC (Noise Storm)
27 27 28 28 29 30	1		1	1	0359	0409	0421		<u>TY</u>
				4	1537	1548	1630		<u>A1</u> , A5, A6, A10
				5	1650		2313		<u>BO</u> , HA, MC (Series of Bursts)
				5	1912		1920		<u>BO</u> , HA, MC
				1	0019	0022	0045	10	<u>HA</u>
30 30 31	1		1	5	0020	0032	0200		A11, <u>HA</u>
				5	1901		1917		<u>BO</u> , HA, MC (Group of Bursts)
				5	1646		1658		<u>BO</u> , MC (Group of Bursts)

COMMERCE - STANDARDS - BOULDER

- A10 = Blauvelt, New Jersey
- A11 = Manila, Philippines
- KA = Kanzelhoehe, Austria
- TY = Research Institute of Atmospherics, Toyokawa, Japan
- * = Sudden Enhancement of Signal from 18 kc (NBA-Panama Canal Zone) observed by A5
- + = Sudden Phase Anomaly of 18 kc (NBA) at Boulder, Colorado

Note: No usable record Sacramento Peak for August 1960.

**SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES**

Ottawa SEPTEMBER 1960 2800 Mc

Sept. 1960	Type*	Start UT	Duration Hrs:mins	Maximum		Remarks
				Time UT	Peak Flux	
4	6 Complex	1627	3	1628.8	18	
	4 Post Increase A		15		3	
	1 Simple 1 f	1633.3	3.5	1634	4	
5	1 Simple 1	1924	2.5	1926	7	
6	3 Simple 3	1450	1 40	indet.	7	
7	6 Complex	1302	8	1302.5	8	
7	2 Simple 2	2309.5	5	2311	110	In sunset osc.
8	2 Simple 2	1815.5	2	1816.5	13	
9	3 Simple 3	1548	30	1551	5	
10	1 Simple 1	1301	3	1302	4	
10	1 Simple 1	1406.5	1.5	1406.8	7	
10	2 Simple 2 f	1621	4	1621.8	90	
	4 Post Increase		45		4	
11	2 Simple 2 f	1206.5	5	1207.5	140	
	4 Post Increase		30		15	
14	1 Simple 1	1418.5	2	1419	4	
14	6 Complex	1703	6	1705	19	
15	3 Simple 3 A	1252.5	1 27.5	indet.	6	
	6 Complex	1257	5	1257.6	19	
	3 Simple 3	1403	14	1410	6	
15	3 Simple 3	1510	1 50	1540	6	
16	- Great Burst f	1702	1 37	1756	2000	
	4 Post Increase A		2 40		18	
	6 Complex	1842.5	23	1901	63	
18	1 Simple 1	1527.8	1	1528.2	4	
18	1 Simple 1	1731.5	1.5	1732	7	
18	2 Simple 2	1748.5	2.5	1749.5	30	
18	6 Complex	1824	10	1828	50	
18	2 Simple 2	2041	1	2041.5	8	
20	1 Simple 1	1316	3	1317	5	
22	2 Simple 2 f	1800	5	1801	10	
23	3 Simple 3 A	1322	1 00	1326	7	
	2 Simple 2	1334	4	1335	20	
24	6 Complex f	2115	6	2116.9	130	
	4 Post Increase		40		9	
25	1 Simple 1	1556	4	1557	3	
25	6 Complex	1834	25	1835.7	11	
25	3 Simple 3 A	1940	1 30	indet.	5	
	6 Complex	2014.7	2.5	2016.3	7	
25	1 Simple 1	2143	1.5	2143.3	7	
26	2 Simple 2 f	1205.5	5	1207.5	16	
26	6 Complex	1353	5	1354.8	80	
	4 Post Increase		35		6	
26	2 Simple 2	1659.3	1	1659.8	16	
26	6 Complex f	1950.5	2	1950.8	19	
27	3 Simple 3	1310	4 30	indet.	8	

COMMERCE - STANDARDS - BOULDER

HOURS OF OBSERVATION: JULY, AUGUST, SEPTEMBER 1960

OBSERVING PERIOD:

July 1135 UT - 2400 UT (approx.)
August 1200 UT - 2330 UT (approx.)
Sept. 1210 UT - 2230 UT (approx.)

with the following exceptions:

(1) Observations for calibration purposes only:
September 1, September 3

(2) Observations commenced:

August 5 - 1515
August 9 - 1410
August 12 - 1440
August 13 - 1450
August 15 - 1530
August 17 - 1450
August 31 - 1530
September 2 - 1355
September 4 - 1440
September 5 - 1505
September 6 - 1440
September 18 - 1330

(3) Observations ended:

August 16 - 2025
September 2 - 1900
September 4 - 1740
September 5 - 1720

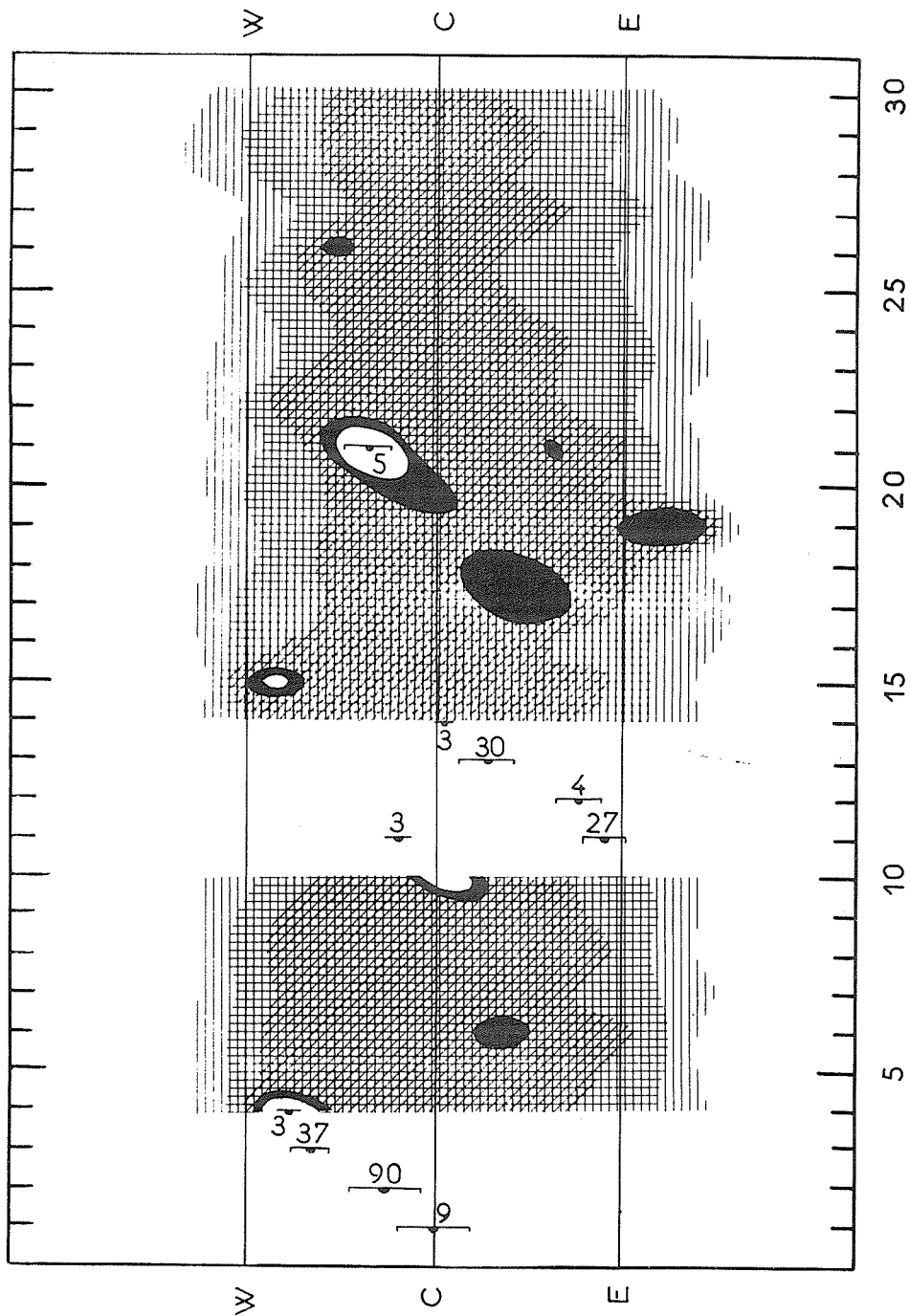
(4) Continuous observations have been interrupted, on all days, for receiver calibration and, on most days, by sporadic interference.

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

Nancay

SEPTEMBER 1960

169 Mc



SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

BOULDER

SEPTEMBER 1960

167 MC

Sept. 1960	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity	Sept. 1960	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	8	1322.3	1325.0	7	1	14	3	1808.0	1808.0	0.4	2
1	3	1419.9	1419.9	0.9	2	14	3	2004.5	2005.0	1.0	2
1	3	1612.0	1612.2	0.3	2	14	3	2036.5	2036.5	0.5	2
1	7	2041		276 D	2	14	3	2103.6	2103.9	0.5	2
1	8	2041.8	2044.1	3	3	14	3	2107.2	2108.2	1.7	2
1	8	2100.0	2102.0	3	3	16	9	1709.0	1809.0	89	3
2	6	1229 E		770 D	2	16	9	1838.0		47	2
2	8	2309.0	2310.1	6	3	18	3	1339.0	1339.0	0.2	2*
3	9	0102.1	0103.0	13	3**	18	3	1425.0	1425.0	0.4	2
3	6	1229 E		124 D	2	18	3	1452.9	1453.0	0.5	2
3	2	1637		19	1	18	3	1645.0	1646.0	2.1	2
3	7	2116		60	1	18	2	1824.6	1824.8	10	2
4	9a	0009.0	0009.0	6	3**	18	3	1840.6	1841.0	1.5	3
4	9b	0015.0	0020.0	15	2**	18	3	1907.5	1908.0	1.4	3
5	3	1821.0	1822.0	1.5	2	18	3	1949.0	1949.0	1.0	3
5	8	1932.0	1939.5	10	1	18	3	2040.2	2041.2	1.8	3
7	3	1301.9	1302.5	3.1	2*	20	3	1300.5	1300.5	0.8	3*
7	3	1334.0	1334.5	1.6	1	21	7	1357		647. D	2
7	3	2316.2	2317.0	0.9	1	22	7	1430		45	1
8	3	0028.0	0028.0	0.3	1	23	3	1333.5	1335.0	2.5	2
8	8	1815.5	1816.1	1.7	3	24	6	1250 E		295 D	1
9	3	1742.0	1742.5	1.1	2	24	8	2114.0	2116.0	6	1
9	3	2214.5	2214.7	0.8	2	25	3	1840.5	1841.0	1.5	2
10	3	1517.2	1517.2	0.1	2	25	3	2012.0	2012.2	0.5	2
10	3	1534.5	1534.5	0.3	3	25	3	2035.5	2036.0	1.5	2
10	3	1933.8	1934.2	1.2	2	25	3	2041.0	2041.5	0.8	2
11	6	1237 E		218 D	2	25	2	2248.0	2249.0	2.8	2
11	3	1707.6	1707.6	0.2	2	26	3	0029.5	0029.5	0.3	2**
11	2	1721.5	1722.0	2.0	2	26	3	1355.0	1355.5	2.0	3
11	2	1730.0	1730.9	2.0	2	26	8	1846.5	1847.0	2.6	3
12	7	1402		657 D	2	27	6	1252 E		92 D	1
12	8	1806.8	1807.0	3	2	28	3	0023.2	0023.5	0.6	2**
12	8	1810.0	1812.0	4	3	30	3	1807.5	1808.2	1.5	2
12	3	1821.0	1821.2	1.8	3						
13	6	1238 E		740 D	2						

* On sunrise pattern.

** On sunset pattern.

COMMERCE - STANDARDS - BOULDER

BOULDER

TIMES OF OBSERVATIONS

167 MC

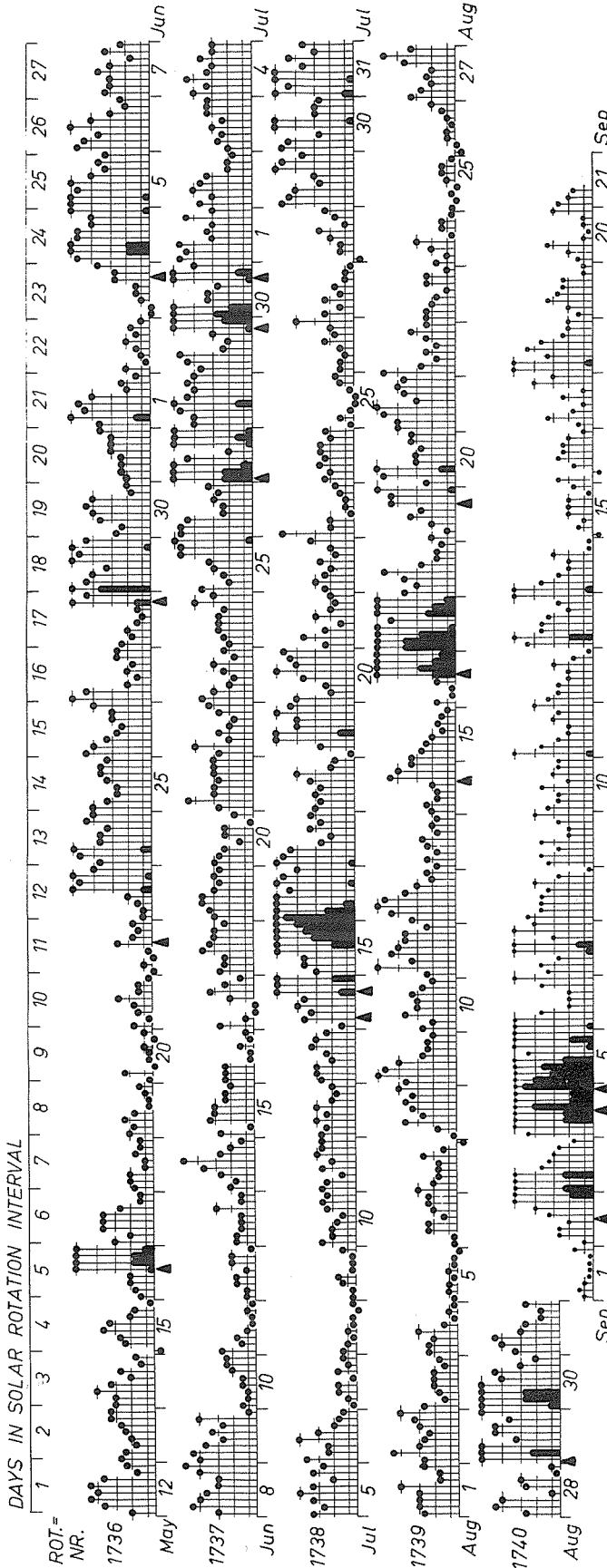
Sept. 1960	U.T.		Sept. 1960	U.T.	
1	1227-0117	I 1515-0117	16	1236-2045	I 1525-1730;
2	1229-0119	I 1525-0119		2224-0051	2300-2340
3	1229-0115		17	1244-0051	I 1845-0051
4	1229-0114		18	1245-0047	
5	1232-0111	I 1945-0111	19	1245-0048	I 1603-2355
6	1233-0109	I 1503-1838; 1929-0109	20	1245-0045	I 1515-1800; 2000-0010
7	1233-0108	I 1507-2359	21	1247-0044	I 1520-1800; 1953-0027
8	1233-0105	I 1517-1547; 1745-1837; 1923-0105	22	1248-0042	I 1520-1800; 1928-0042
9	1235-0104	I 1514-0020	23	1248-0040	I 1625-1848; 1928-0005
10	1235-0102	I 2212-0102	24	1250-0043	
11	1237-0102		25	1250-0037	
12	1238-0059	I 1440-1715; 1955-2250; 2357-0045	26	1252-0035	I 1512-1818; 1921-0000
13	1238-0058		27	1252-0033	I 1512-1625; 1823-1849; 2135-2347
14	1239-0055	I 1500-1610; 1645-1900; 2132-0055	28	1253-0031	I 1520-1722; 1930-2325
15	1240-0054	I 1502-2220	29	1253-0030	I 1530-1840; 2055-2315
			30	1255-0030	I 1638-1755; 1900-0030

COMMERCE - STANDARDS - BOULDER

GEOMAGNETIC ACTIVITY INDICES

AUGUST 1960

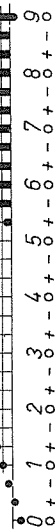
Aug. 1960	C	Values Kp								Sum	Ap	Final Selected Days
		Three hour Gr. interval										
		1	2	3	4	5	6	7	8			
1	0.7	3-	3o	3o	3o	4o	2-	2-	3-	22-	14	Five Quiet
2	0.9	3-	4+	3o	3-	2+	3o	3+	4o	25+	18	
3	0.4	3-	1+	2-	2o	2o	2o	1+	2-	15-	7	
4	0.4	2+	2+	2o	3o	1+	1-	1o	1-	13+	7	
5	0.1	1-	1o	1o	1-	1o	1-	1-	0+	6o	3	
6	0.4	1-	1-	2+	2+	1+	2o	2+	2+	14o	7	4
7	0.5	3o	2o	2-	2-	2-	3-	1+	0o	14o	7	5
8	1.0	1-	2-	4-	3-	3+	4-	3+	4o	23o	16	24
9	1.1	4-	5o	5-	4o	3-	2+	2+	2o	27-	22	25
10	0.8	3-	2o	4-	3o	3o	3+	3-	2o	22+	14	26
11	1.2	2+	5o	3+	4+	4o	4-	4-	2+	29-	23	Five Disturbed
12	1.1	3+	4+	5o	5-	4-	3o	2o	2+	28+	24	
13	0.5	2-	2+	2-	2+	3-	2-	2o	2-	16o	8	
14	1.0	2o	2+	2-	2-	2o	4+	4o	3+	21+	14	
15	0.5	3+	3-	2+	2o	1+	2-	1+	1o	16-	8	
16	1.4	2-	1-	1-	2-	6+	7o	6+	6o	30+	52	16
17	1.8	8-	8-	7o	5+	4+	7-	6+	6-	51-	106	17
18	1.0	4-	3o	4-	5-	3-	2-	2-	1+	22+	16	18
19	1.2	2o	1o	2o	3+	3-	4+	4+	5+	25o	21	19
20	1.3	2+	5-	6o	3o	3o	3-	3+	3+	28+	26	20
21	1.2	4o	4o	5-	5o	3o	4-	4o	4-	32o	28	Ten Quiet
22	0.8	5-	3-	2-	2+	2-	2+	3+	2+	21o	14	
23	0.4	2+	2+	2o	2-	1o	2+	2+	1o	15o	7	
24	0.2	2-	1o	2o	3o	1-	1+	1+	1-	12-	6	
25	0.1	1-	0+	1-	0+	1o	1+	1+	1-	6+	3	
26	0.1	0o	0+	1o	1o	1-	1o	1+	2o	7+	4	3
27	1.1	3+	3-	2o	2+	2o	4-	5-	3+	24o	16	4
28	0.8	3-	4+	4o	1o	3-	3o	1-	1o	19+	14	5
29	1.5	5o	7-	5o	3+	4+	4+	4-	5o	37+	45	6
30	1.4	6-	7o	7o	5o	4o	4+	3o	2o	38o	58	7
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	8
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	9
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	10
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	11
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	12
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	13
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	14
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	15
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	16
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	17
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	18
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	19
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	20
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	21
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	22
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	23
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	24
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	25
31	0.8	3+	4o	4+	3o	3-	2-	2-	3-	23+	16	26
Mean:	0.83									Mean:	20	



PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES

Kp till 1960 August 31
(Ks from Wingst and Göttingen till Sept. 21)

KEY
▲ = sudden commencement



J.B.

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS
NORTH ATLANTIC

AUGUST 1960

Aug. 1960	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:				Geomag- netic 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	1-3 days SDW	1-7 days J	Half Day (1) (2)	
1	6o	5o	6-	6+	5	5	6	6	6-	5		5	3	3	
2	7-	4+	6-	6+	6	4	5	6	6-	6		6	(4)	2	
3	6+	5-	6+	6+	6	5	6	6	6o	6		6	2	2	
4	6+	6-	6+	7-	6	4	6	6	6+	6		6	3	1	
5	7-	6o	7-	7o	6	6	7	7	7-	6		6	2	1	
6	7o	6o	7-	7-	7	6	7	7	7-	6		6	2	2	
7	7-	7-	6+	7o	7	6	7	7	7-	6		6	3	2	
8	7-	6-	6+	6+	7	6	7	7	6+	6		6	2	3	
9	6-	4+	5+	6o	6	6	6	6	5o	6		6	(4)	2	
10	6+	5o	6-	6+	6	6	6	6	6-	6		6	3	2	
11	6-	5-	5+	6o	6	4	6	6	5+	6		6	(4)	3	
12	6-	3+	5+	6+	6	5	6	6	5-	6		6	(4)	3	
13	6+	6-	6+	6+	5	5	6	6	6+	5	5	6	2	2	
14	7-	6-	7-	6+	5	5	6	6	6+	3	3	5	3	3	
15	6o	6-	6o	6+	6	4	6	6	6o	4	4	5	3	1	
16	6+	6+	6+	6-	6	6	7	5	6+	6	6	5	1	(5)	
17	2+	2-	4-	4-	4	2	3	4	(3o)	6	6	6	(6)	(4)	
18	3+	2+	5o	6o	3	3	5	5	(4-)	3		3	(4)	2	
19	6+	5+	6o	6o	5	5	6	6	6o	5		5	2	(4)	
20	6o	4+	6-	6+	5	5	5	6	5+	5		5	(4)	3	
21	6+	5o	6-	7-	6	5	6	6	6-	6		6	(4)	3	
22	6o	5+	6+	7-	6	4	6	7	6o	6		6	3	3	
23	7-	6o	7-	7-	7	6	7	7	7-	6		6	2	2	
24	7-	6o	7o	7-	7	6	6	7	7-	6		6	2	1	
25	7-	6+	7-	7o	6	6	7	7	7-	6		6	1	1	
26	7-	6+	6+	7-	5	5	6	6	7-	4		4	1	2	
27	7-	6+	6o	6+	7	6	7	7	6+	4		4	2	(4)	
28	6+	5+	7-	7-	6	5	6	7	6+	6		6	(4)	2	
29	7-	4+	6-	5+	7	6	5	6	5+	6		6	(5)	(4)	
30	3-	1+	4-	5-	5	1	4	4	(3o)	7		7	(6)	3	
31	3-	2o	6-	6-	4	2	4	6	(3+)	4	4	7	(4)	1	
Score: Quiet Periods		P	18	13	15	21					10	10			
		S	7	7	13	9					13	15			
		U	2	0	0	0					0	0			
		F	0	2	1	0					4	2			
Disturbed Periods		P	1	4	1	1					0	0			
		S	1	2	1	0					2	1			
		U	2	1	0	0					0	0			
		F	0	2	0	0					2	3			

() represent disturbed values.
All times are Universal time (UT).

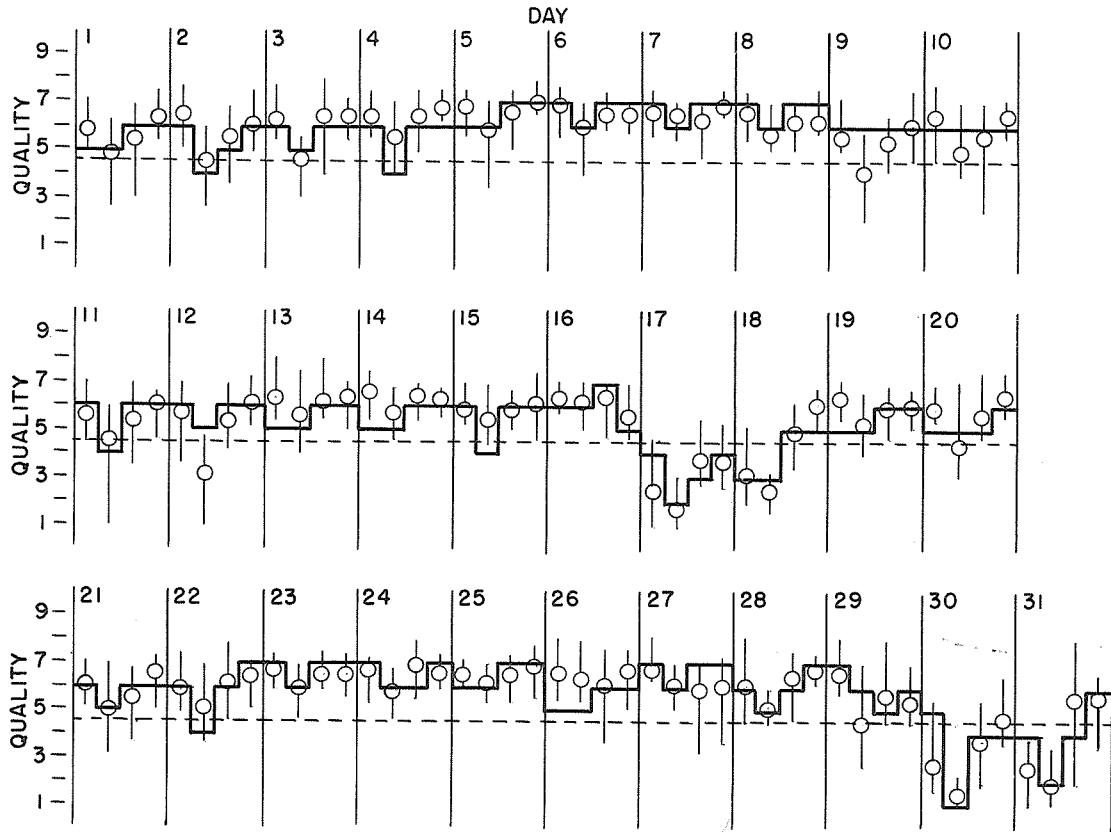
CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS NORTH ATLANTIC

VIb

AUGUST 1960

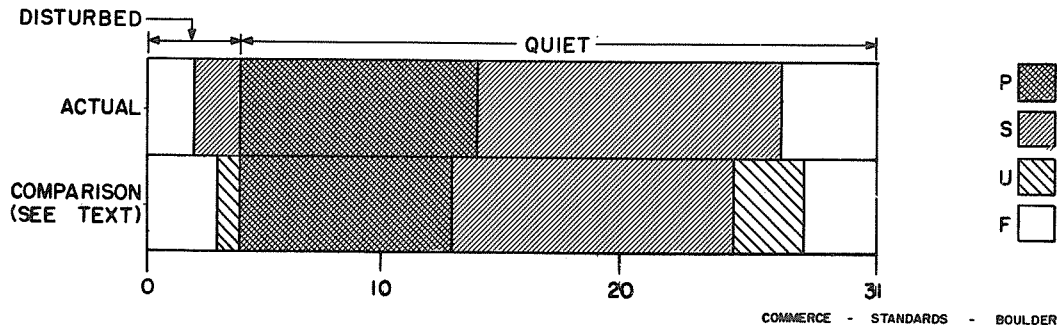
— Short-term forecast
○ Quality figure

| Range of reports



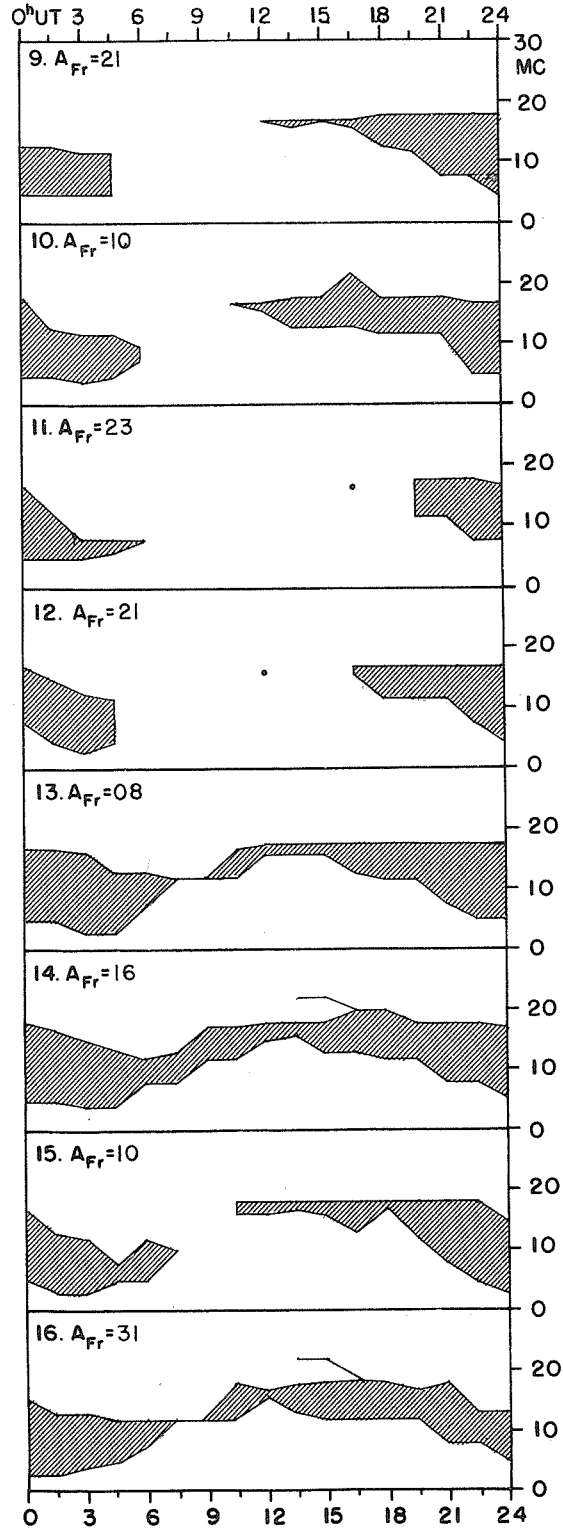
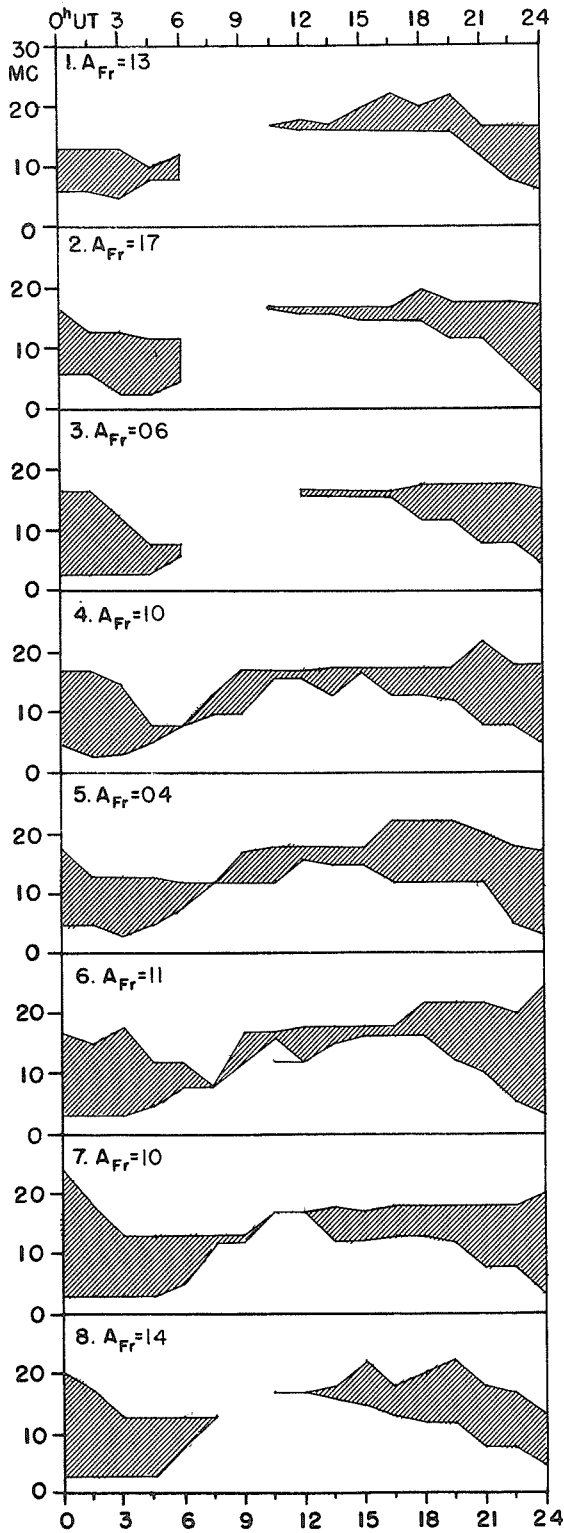
OUTCOME OF ADVANCED FORECASTS

FINAL ESTIMATE

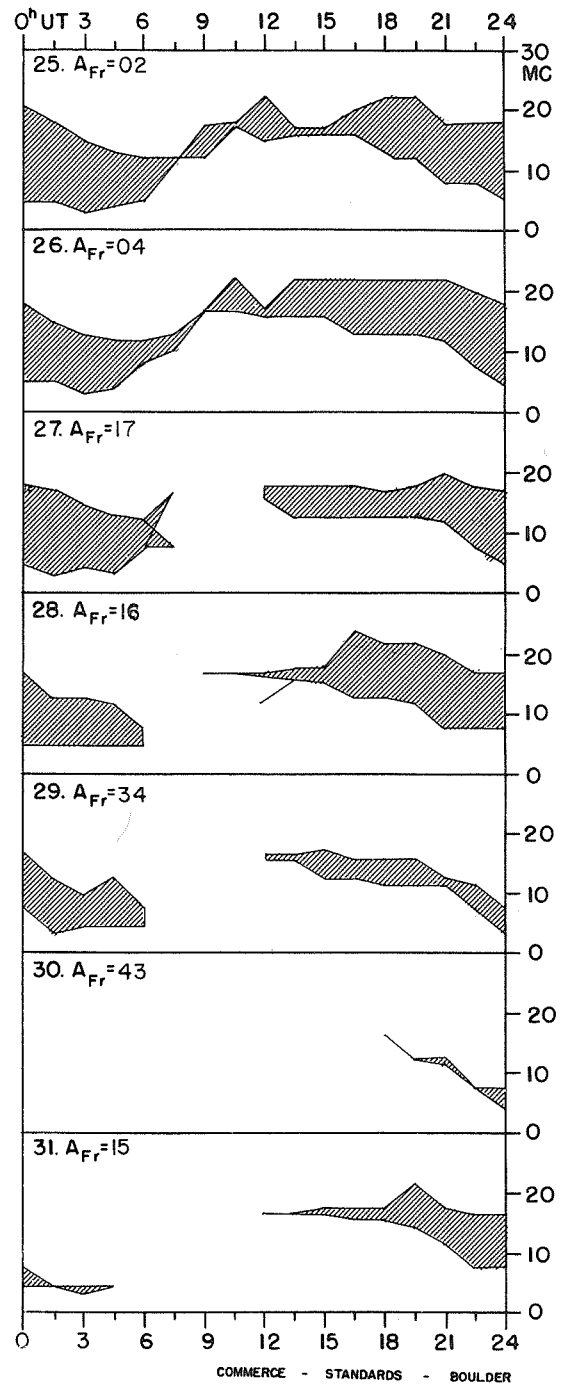
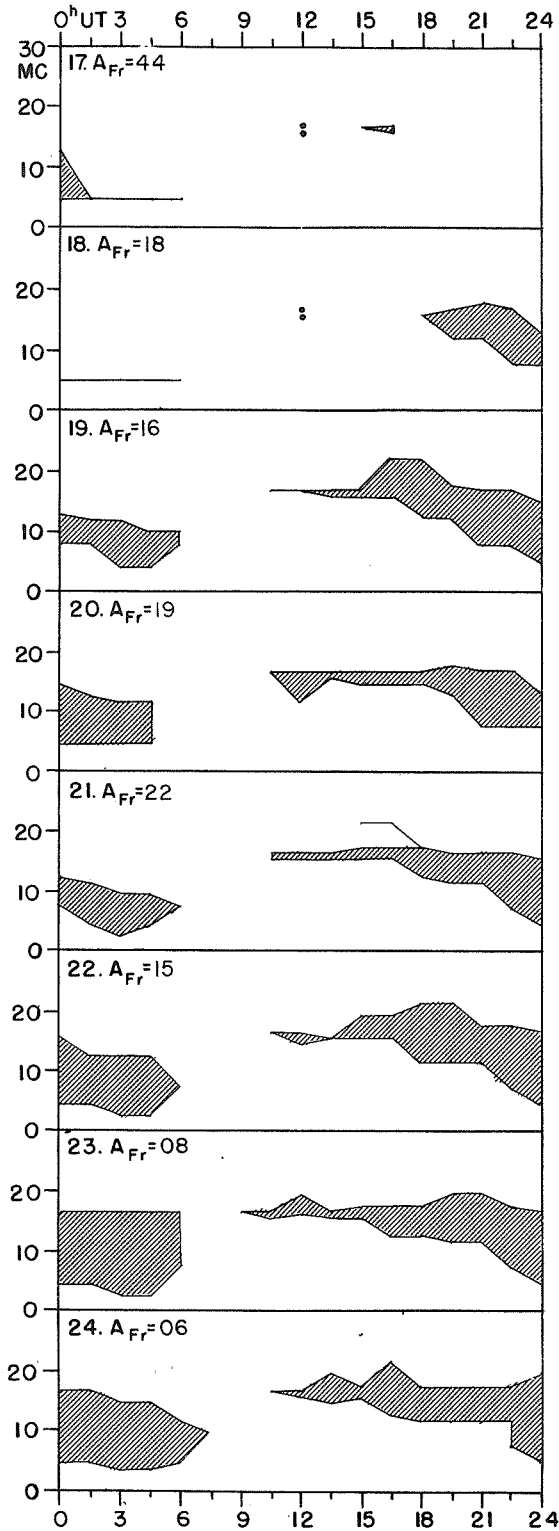


USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

AUGUST, 1960



AUGUST 1960



Adapted from Observations by Deutsches Bundespost

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

AUGUST 1960

Aug. 1960	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	1-3 days SDW	1-7 days Jp	Half Day (1)	Half Day (2)
1	6	6	5	6	6	6			6	3	3
2	6	6	5	6	6	6			6	(4)	3
3	6	6	6	6	6	6			6	2	2
4	6	7	6	6	6	6			6	3	1
5	6	7	6	7	7	6			6	1	0
6	6	7	6	6	6	6			6	2	2
7	6	7	5	6	6	6			6	2	2
8	6	7	6	5	6	6			6	2	3
9	6	6	4	6	6	6			6	(5)	2
10	6	6	6	6	6	6			6	3	2
11	5	6	4	5	5	6			6	(4)	(4)
12	6	6	5	6	6	6			6	(5)	3
13	6	5	5	5	6	(4)		4	6	2	2
14	7	6	5	6	6	(3)		3	5	2	3
15	7	6	5	6	6	(4)		4	5	2	1
16	5	5	7	4	5	6	6		6	1	(6)
17	4	4	4	4	(3)	6	6		6	(8)	(6)
18	4	5	5	5	(4)	(4)			4	(5)	2
19	5	6	6	5	5	5			5	2	(4)
20	6	5	4	5	6	5			5	(4)	3
21	5	5	5	6	5	5			5	(5)	3
22	6	6	6	6	6	6			6	3	2
23	6	6	6	6	6	6			6	2	2
24	5	6	7	6	6	6			6	2	1
25	6	6	7	6	6	6			6	0	1
26	7	6	7	6	7	5			5	0	1
27	6	6	6	5	6	5			5	2	2
28	6	5	5	6	6	6			6	3	2
29	5	5	3	5	5	6			6	(5)	(4)
30	3	4	4	4	(2)	6			6	(8)	(4)
31	4	5	5	5	(4)	6			6	(4)	2
Score:	Quiet Periods		P 11	19		17					
			S 9	9		6					
			U 5	1		1					
			F 2	0		3					
	Disturbed Periods		P 1	2		1					
			S 3	0		0					
			U 0	0		0					
			F 0	0		3					

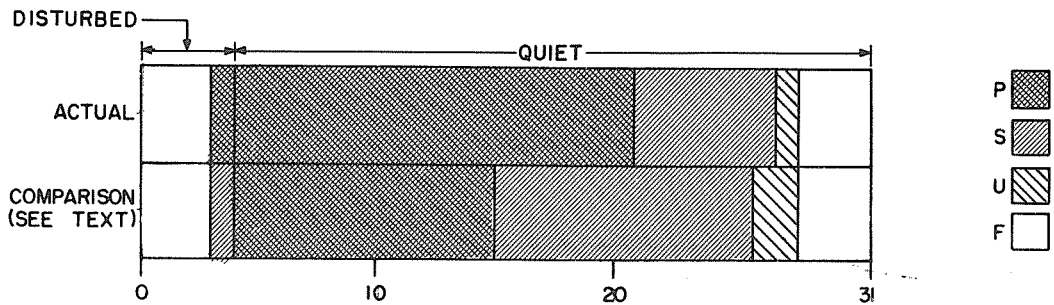
() represent disturbed values.
 All times are Universal time (U.T.)

NORTH PACIFIC

AUGUST 1960

OUTCOME OF ADVANCED FORECASTS

FINAL ESTIMATE



ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL WORLD DAY SERVICE

SEPTEMBER 1960

Issued Day/Time UT Sept. 1960	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Interval
3/1600		85	Magnetic Storm 2/17XXZ	
4/0925	Ft. Belvoir, Magnetic Storm 04/0230Z			
4/1600		86	Magnetic Storm 04/0230Z	Start Special World Interval
5/1600		87		Continue Special World Interval
6/1600		88		Finish Special World Interval
16/2030	Climax, Solar Flare 16/1705Z			
18/0255*	Ft. Belvoir, Magnetic Storm 18/0150Z			
24/1255*	Ft. Belvoir, Magnetic Storm 24/02XXZ			

COMMERCE - STANDARDS - BOULDER

*Was not considered magnetic storm by time to be issued as a world-wide geophysical alert.