DEC 1 3 1960

Reference book not to be taken from the library.

PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
NOVEMBER 1960

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

CRPL-F 195
PART B

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
30 Nov. 1960

SOLAR - GEOPHYSICAL DATA

CONTENTS

The descriptive text was published separately, November 1960.

DAILY SOLAR INDICES

Sept. 1960	American Relative Sunspot Numbers $R_{A'}$
1	92
2	90
3	78
4	69
5	66
6	92
7	120
8	126
9	132
10	148
11	123
12	120
13	161
14	142
15	117
16	96
17	108
18	137
19	149
20	173
21	176
22	157
23	160
24	141
25	131
26	110
27	87
28	71
29	53
30	18
Mean:	114.8

Oct. 1960	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	22	115
2	34	112
3	22	120
4	53	132
5	70	132
6	82	132
7	95	144
8	110	143
9	128	151
10	140	159
11	137	152
12	123	159
13	123	162
14	95	166
15	95	165
16	98	165
17	99	167
18	98	154
19	96	153
20	92	149
21	82	144
22	60	141
23	54	134
24	49	129
25	62	130
26	72	132
27	67	132
28	52	122
29	73	131
30	68	128
31	68	127
Mean:	81.3	141.4

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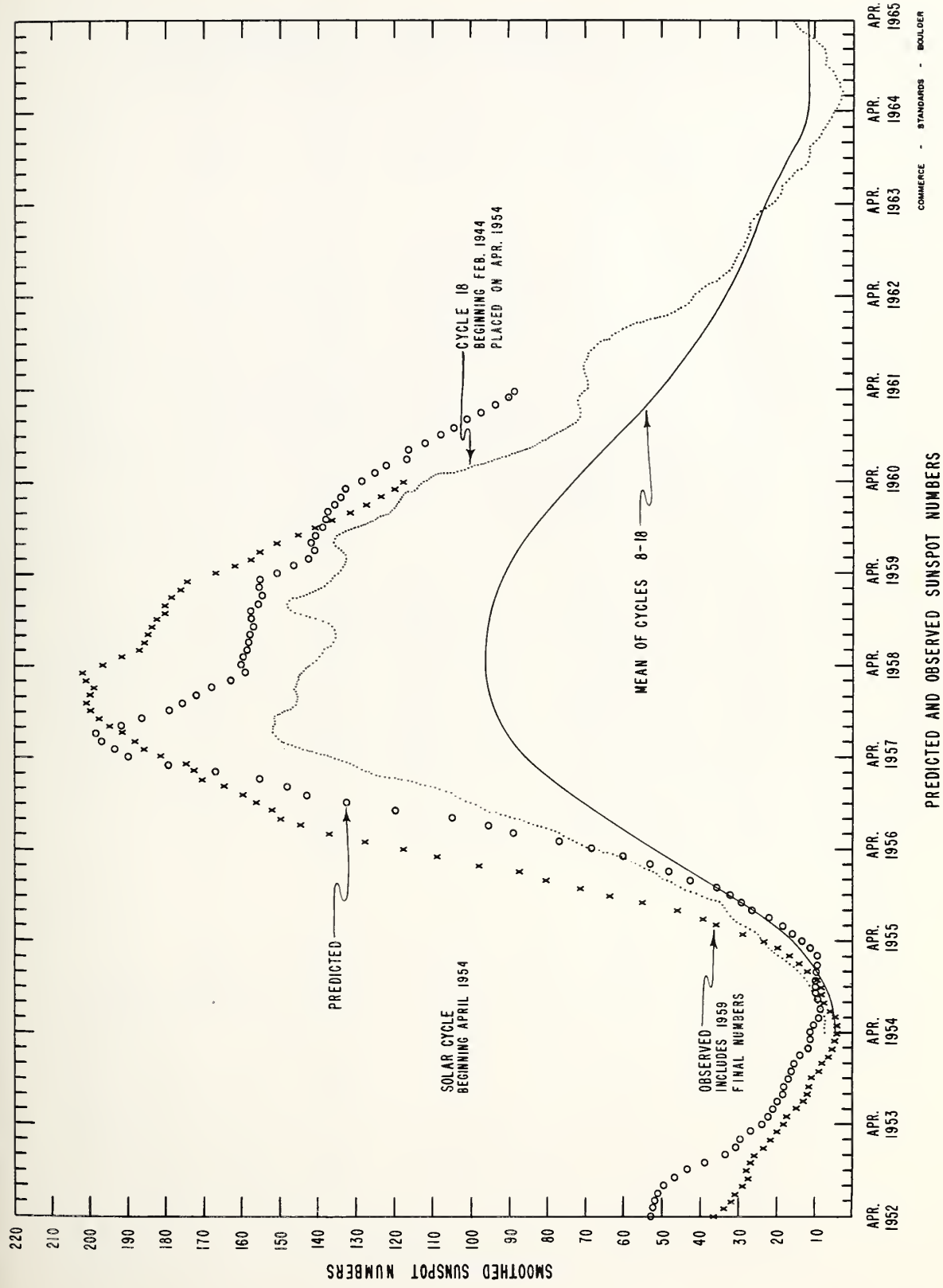


PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

OCTOBER 1960

CMP Oct. 1960	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	S22	5875	5832	1400	1.5	b ⌜ ℓ	6	50	4	b ∧ d
03.1	S12	5869	New	1500	2	ℓ — ℓ	1			
04.3	N22	5872	5835	700	2	ℓ ⌝ d	4			
04.7	S05	5873	5841	1100	2	ℓ — ℓ	2			
05.5	N05	5882	New	800	3	b ⌜ ℓ	1	360	8	b ⌜ ℓ
06.7	N16	5874	5837	4000	2	ℓ — ℓ	4			
07.5	S14	5880	5839	5000	3.5	ℓ — ℓ	3	510	11	ℓ — ℓ
08.0	N08	5879	*	(1600)	(1.5)	ℓ ⌝ d				
08.0	N07	5888	New	700	3	b / ℓ	1	220	8	b ⌜ ℓ
08.4	N27	5878	5837	1800	1.5	ℓ — ℓ	4			
09.1	N04	5898	New	(200)	2.5	b ⌜ ℓ	1			
10.1	S17	5881	5854	3200	3.5	ℓ — ℓ	2			
10.5	N04	5883	5844	500	2	ℓ ⌝ d	3	40	1	ℓ ⌝ d
10.7	N16	5884	5844	3500	3	ℓ — ℓ	3	470	9	ℓ / ℓ
11.1	S13	5886	5845	1400	2.5	ℓ — ℓ	4			
12.1	S03	5887	5847	800	2	ℓ — ℓ	2			
12.8	N20	5889	5848	1900	2	ℓ — ℓ	3			
12.8	S15	5890	5845	1700	2.5	ℓ — ℓ	4			
14.0	N22	5891	5848	(1300)	2	ℓ ⌝ d	3			
15.4	N22	5894	5864	1000	2.5	ℓ — ℓ	2	150	4	ℓ — ℓ
16.4	S11	5893	5856	5500	3.5	ℓ — ℓ	5	410	1	ℓ \ ℓ
16.8	N25	5895	5857	400	2	ℓ — ℓ	3			
18.8	N14	5903	5859	1000	2	b ⌜ ℓ	5			
19.0	S20	5896	5858	2700	2.5	ℓ — ℓ	3			
19.8	S11	5897	5858	1300	2	ℓ \ ℓ	3			
21.0	S15	5900	5861	3700	3.5	ℓ — ℓ	3	190	1	ℓ — ℓ
21.5	N21	5901	5862	6300	3.5	ℓ — ℓ	5	1450	18	ℓ — ℓ
21.7	N09	5904	5862	1500	2	ℓ — ℓ	5	20	1	b ⌜ ℓ
22.5	S20	5906	5863	1200	2	ℓ — ℓ	3			
23.6	S15	5907	5863	2200	2.5	ℓ \ ℓ	3			
24.6	N23	5905	**	3800	2.5	ℓ — ℓ	2,8	50	1	b ∧ d
29.4	S21	5908	5875	1100	2	ℓ \ ℓ	7			
31.3	N24	5909	New	2800	3	ℓ — ℓ	1	500	22	ℓ \ ℓ
31.5	S08	5912	5873	500	1	b ⌜ ℓ	3			

* 5879 merged with 5874

** 5866, 5868

COMMERCE - STANDARDS - BOULDER

PROVISIONAL CORONAL LINE EMISSION INDICES

SEPTEMBER 1960

CMP Sep 1960	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	44a	58a	x	x	19a	24a	x	x	25	28	19	20	47	78	34	60
2	x	x	x	x	x	x	x	x	21	26	x	x	39	50	x	x
3	49	63	10a	12a	32	51	19a	28a	39a	49a	10a	16a	32a	40a	10a	14a
4	56a	62a	x	x	65a	101a	x	x	46	62	12	22	35	42	10	13
5	60a	72a	x	x	x	x	x	x	63	91	13	18	41	60	15	20
6	x	x	21a	25a	48a	75a	x	x	38	68	16	27	43	63	19	35
7	144a	203a	30a	88a	34a	66a	20a	26a	43	90	29	51	53	68	19	25
8	100a	149a	33a	60a	26a	37a	15a	18a	44a	60a	38a	55a	75a	94a	23a	27a
9	125a	162a	41a	64a	32a	74a	37a	76a	x	x	x	x	x	x	x	x
10	116a	126a	38a	72a	67a	134a	46a	100a	62	96	x	x	90	110	x	x
11	x	x	42a	68a	107a	195a	48a	116a	79	110	55	87	91	105	38	52
12	95a	113a	x	x	84a	156a	x	x	x	x	x	x	x	x	x	x
13	111a	193a	21	40	79a	156a	23	60	89a	106a	24a	40a	70a	108a	15a	23a
14	120a	156a	43a	60a	88a	169a	x	x	86	166	x	x	86	111	x	x
15	103	159	78	98	65	114	54	108	x	x	x	x	x	x	x	x
16	99	155	53	72	60	76	28	42	47	60	19	30	80	100	53	70
17	x	x	59a	72a	44a	96a	x	x	50a	74a	48a	80a	73a	99a	97a	132a
18	101	128	36	48	46	80	11	15	86	110	38a	56a	99	146	51a	86a
19	102	143	67	92	62	105	31	52	88	105	19	30	71	96	27	46
20	61	98	22	40	57	74	26	35	83a	133a	43a	50a	56a	73a	29a	56a
21	91	134	19	28	67*	96	13	20	94a	114a	13	17	73a	86a	7	9
22	79a	92a	26a	42a	52a	72a	18a	25a	108a	144a	25	38	92a	116a	21	40
23	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
24	87	108	x	x	94	146	x	x	98a	152a	16a	32a	88a	100a	13a	20a
25	82	90	30	36	89	142	56	92	89a	145a	60a	96a	68a	80a	28a	44a
26	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
27	68a	100a	13a	18a	34a	53a	7a	8a	x	x	x	x	x	x	x	x
28	56	101	x	x	19	20	x	x	13	18	26a	36a	55	65	28a	36a
29	x	x	x	x	x	x	x	x	27	35	x	x	39	51	x	x
30	33	41	16	20	29	36	12	16	25a	36a	x	x	27a	40a	x	x

COMMERCE - STANDARDS - BOULDER

x - no observations

a - index computed from low weight data

* - yellow line observed

SOLAR FLARES

OCTOBER 1960

OBSERVATORY	DATE OCT 1960	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 Hα	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
ISTANBUL	02	0820	0835		S16	E80	5880	15	1							
HAWAII	03	1824	1852	1836	S27	E90	5881	28	1+	3	1836	.70				
LOCKHEED	03	1828	1843	1835	S21	E90	5881	15	1	2	1836	1.00			20	
HAWAII	03	2150	2206	2156	S27	E90	5881	16	1	3	2156	.20				
LOCKHEED	03	2153	2208	2157	S20	E90	5881	15	1	2	2157	.70			10	
HAWAII	03	2236	2246	2240	S27	E90	5881	10	1+	3	2240	.80				
WENDEL	04	1007	1044		N10	E87	5883	37	1+				6.00			
WENDEL	04	1008	1036		S08	E51	5880	28	1				3.00			
SAC PEAK	04	1552	1600 D	1558	N03	E87	5883	8 D	1	3		1.02	3.01		15	Slow-S-SWF
LOCKHEED	04	1600 E	1705	1615 U	N04	E80	5883	65 D	1	1	1615	.70			10	G-SWF
LOCKHEED	04	2241	2253	2245	N12	E80	5884	12	1	1	2245	.70			10	
WENDEL	05	0940 E	1025 D		S16	E38	5880	45 D	1+				5.00			
SAC PEAK	05	2240	2252 D	2246	S18	E26	5880	12 D	1	2		3.32	3.57		20	
HAWAII	05	2242	2300	2248	S22	E22	5880	18	1+	3	2248	1.60				
LOCKHEED	06	0042	0055	0044	N04	W10	5882	13	1	1	0044	1.80			30	
HAWAII	06	0042	0056	0044	N05	W10	5882	14	1	3	0044	1.40				
HAWAII	06	2016	2032 D	2020	S19	E19	5880	16 D	1+	2	2020	2.10				
MCMATH	06	2017 E	2040 D	2023	S15	E23	5880	23 D	1	2	2023		2.00			
MCMATH	07	1348	1408	1351	N16	E46	5884	20	1	2	1351		2.20			
HAWAII	07	1814	1826	1816	N09	W30	5882	12	1	3	1816	1.00				S-SWF
ISTANBUL	08	0720 E	0746		S17	E03	5880	26 D	2							
ISTANBUL	08	0805	0810		N17	E34	5884	5	1							
WENDEL	08	1229 E	1231 D		S17	W01	5880	2 D	1				3.00			
WENDEL	08	1343 E	1402 D		N11	E23	5884	19 D	1+				5.00			
SAC PEAK	08	1802	1830 U	1812	N24	E34	5884	28 U	1	3		3.74	4.09		17	
MCMATH	08	1805 E	1910 D		N25	E36	5884	65 D	1	1	1836		3.00			
WENDEL	09	0810	0829 D		S17	W10	5880	19 D	1				3.00			
LOCKHEED	10	0016	0037	0018	S17	E00	5881	21	1	1	0019	3.00			20	
HAWAII	10	0016	0048 D	0022	S18	W02	5881	32 D	1	2	0022	1.40				
ONDREJOV	10	0722 E	0801		S16	W23	5880	39 D	2	3	0727			2.40		
WENDEL	10	0723 E	0824 D		S16	W23	5880	61 D	1+				5.00			
SAC PEAK	10	1854 E	1855 D	1855	S15	W28	5880	1 D	1	2		1.77	2.12		15	
SAC PEAK	10	2230	2242 D	2240	N12	E03	5884	12 D	1	2		2.10	2.06		17	
KODAIKNL	11	0554 E	0630	0601	S13	W35	5880	7 D	2							S-SWF
WENDEL	11	0649 E	0756 D		S19	W37	5880	67 D	1+				7.00			
ISTANBUL	11	0750	0813		S08	E66	5893	23	1							
WENDEL	11	0753 E	0822 D		S06	E64	5893	29 D	1+				7.00			
WENDEL	11	1050 E	1123		S19	W40	5880	33 D	1+				5.00			
LOCKHEED	11	1746	2007	1810	S16	W45	5880	141	1	2	1810	4.20			20	
SAC PEAK	11	1748	1922	1756	S18	W47	5880	94	2	3		7.42	9.62		32	Slow-S-SWF
MCMATH	11	1754	1915		S17	W44	5880	81	2	2	1819		5.20			
HAWAII	11	1806 E	1906 D	1820	S12	W47	5880	60 D	1+	2	1820	3.50				

SOLAR FLARES

OCTOBER 1960

OBSERVATORY	DATE OCT 1960	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. %	
ISTANBUL	12	0720 E	0745		S09	E90	5896	25 D	1							
ISTANBUL	12	0755	0900 D		N12	W14	5884	65 D	1							
LOCKHEED	12	1722	1820	1728	S17	W60	5880	58	1	2	1728	2.00			20	
SAC PEAK	12	1722	1822	1730	S18	W61	5880	60	2	3		5.92	9.62		27	Slow-S-SWF
MCMATH	12	1726	1758 D	1728	S16	W60	5880	32 D	1	2	1737		2.50			
SAC PEAK	12	1742	1852	1750	N11	W24	5884	70	1	3		3.93	3.95		33	
LOCKHEED	12	1743	1859	1750	N11	W24	5884	76	1	2	1750	2.60			30	
MCMATH	12	1745	1830	1749	N10	W23	5884	45	1	2	1749		2.60			
WENDEL	13	0850 E	0904 D		S13	E34	5893	14 D	1+				6.00			
ARCETRI	13	0856 E			N01	W86	5888	□	1	3	0856	.55	2.20			
LOCKHEED	13	1901	2010	1918	S16	E85	5896	69	2	2	1918	2.20			20	
SAC PEAK	13	1902	2030	1926	S18	E80	5896	88	2+	2		3.49	10.30		22	S-SWF
MCMATH	13	1905 E	2030 D		S17	E80	5896	85 D	2	2	1930		6.00			
HUANCAYO	13	1913 E		1913	S10	E70	5896	□	1+	2	1913	3.60	11.30	1.80		
HAWAII	13	1914 E	1928 D	1924	S26	E90	5900	14 D	1+	2	1924	1.20				
WENDEL	14	0710	0728 D		N13	W43	5884	18 D	1				3.00			
ISTANBUL	14	0710 E	0745		N12	W44	5884	35 D	1							
WENDEL	14	0756 E	0811 D		N13	W44	5884	15 D	1				3.00			
WENDEL	14	0949	1016		S13	E22	5893	27	1+				7.00			
ONDREJOV	14	0953 E	1011		S13	E21	5893	18 D	1+	2	0954			2.60		
CAPRI S	14	0954 E	1014 D		S16	E23	5893	20 D	1	2	1004	2.00	2.30			
SAC PEAK	14	1506	1510	1508	N05	W90	5888	4	1	2		.52	2.60		15	
LOCKHEED	14	2033	2245	2058	S21	E57	5896	132	2	1	2058	4.50			30	
LOCKHEED	14	2033	2245	2143	S21	E57	5896	132	2	1	2058	4.50			30	
HAWAII	14	2040	2238 D	2106	S29	E56	5896	118 D	1	2	2106	1.60				
SAC PEAK	14	2046	2226 D	2058	S23	E55	5896	100 D	3	2		9.60	14.75		21	
LOCKHEED	14	2341	2354	2344	N19	E77	5901	13	1	1	2345	1.20			20	
LOCKHEED	15	1924	1943	1925	N13	W60	5884	19	1	1	1925	1.40			30	
NIZAMIAH	16	0430	0434	0431	S13	E57	5900	4	1	2	0431	1.22	2.34	1.50		
NIZAMIAH	16	0546	0554	0549	S13	E56	5900	8	1	2	0549	1.22	2.34	1.50		
LOCKHEED	17	2135	2143	2139	N14	W90	5884	8	1	2	2139	.40			10	
NIZAMIAH	18	0905 E	0916		N22	E33	5901	11 D	1+	2	0905	1.82	2.82	1.70		
ARCETRI	18	0954 E	1012 D		N19	E35	5901	18 D	1	2	1012	1.80	2.20			
MCMATH	18	1356	1443	1421	N19	E32	5901	47	1	2	1421		2.00			Slow-S-SWF
WENDEL	18	1402 E	1449 D		N18	E35	5901	47 D	1+				5.00			
LOCKHEED	19	0038 E	0045 D	0040 U	N17	E25	5901	7 D	1	1	0040	2.00			30	
ISTANBUL	19	0720 E	0745 D		N17	E22	5901	25 D	2+							
WENDEL	19	0731	0741 D		N21	E29	5901	10 D	1+				7.00			
WENDEL	19	0839	0859 D		N18	E20	5901	20 D	1				3.00			
WENDEL	19	0909 E	0918 D		N18	E19	5901	9 D	1				4.00			
CAPRI S	19	1105	1212 D		N18	E20	5901	67 D	1	3	1134	1.90	2.20			
WENDEL	19	1145 E	1215 D		N17	E22	5901	30 D	1				4.00			
WENDEL	20	1215	1250 D		N16	E09	5901	35 D	1				4.00			

SOLAR FLARES

OCTOBER 1960

OBSERVATORY	DATE OCT 1960	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
WENDEL	20	1405 E	1422 D		N23	W65	5894	17 D	1				3.00			
LOCKHEED	21	1915	2000	1928	N25	W82	5894	45	1	3	1928	.60			10	
LOCKHEED	21	2137	2203	2150	N25	W85	5894	26	1	2	2150	.60			10	
LOCKHEED	21	2224	2245	2228	N25	W85	5894	21	1	2	2228	.60			10	
ONDREJOV	22	1236 E	1241 D		N20	W19	5901	5 D	1	1						
CAPRI S	22	1240 E	1343 D		N18	W15	5901	63 D	2+	2	1319	5.00	5.50			S-SWF
SAC PEAK	22	1520	1540	1530	N26	W90	5894	20	1	2		.58	2.91		17	
SAC PEAK	22	1724	1802	1734	N27	W90	5894	38	1	2		.87	4.36		19	
HUANCAYO	23	1518	1520	1520	S17	W31	5906	2	1	2	1520	3.00	3.50	2.70		
WENDEL	23	1518 E	1525 D		N18	W34	5901	7 D	1+				5.00			
CAPRI S	23	1531 E	1545 D		N18	W32	5901	14 D	2	1	1540	6.00	7.20			
SAC PEAK	23	2114	2210	2131	N22	E90	5909	56	1	2		1.16	5.82		22	
LOCKHEED	23	2114	2215	2128	N25	E90	5909	61	2	2	2128	2.00			30	Slow-S-SWF
LOCKHEED	23	2114	2215	2145	N25	E90	5909	61	1	2	2128	2.00			30	
HAWAII	23	2130 E	2204 D	2143	N13	E90	5909	34 D	1+	2	2143	.80				
SAC PEAK	24	2210	2222 D	2216	N20	E90	5909	12 D	2	2		1.74	8.72		16	
HAWAII	24	2214 E	2220 D		N09	E90	5909	6 D	1	2	2220	.80				
STOCKHOLM	25	0902 E	0912 D		N19	E75	5909	10 D	1	2	0908	2.00				
CAPRI S	25	0945 E	1022 D		N22	E90	5909	37 D	1	2	0950	3.00				
STOCKHOLM	25	1050	1102 D		N19	E74	5909	12 D	1+	2	1055	3.00				
WENDEL	25	1457 E	1507 D		N14	W17	5905	10 D	1				3.00			
HAWAII	25	2116	2240	2211	N07	E90	5913	84	1	3	2211	.50				G-SWF
HAWAII	25	2255 E	0008 D	2340	N07	E90	5913	73 D	1	2	2340	.40				
HAWAII	26	0034 E	0118	0056	N07	E90	5913	44 D	1	2	0056	.30				
WENDEL	26	0847 E	0902 D		N17	E84	5913	15 D	1				3.00			
ONDREJOV	26	1344 E	1354		N21	W68	5901	10 D	1	3	1347			1.90		
SAC PEAK	26	2202	2218 D	2210	N18	E65	5913	16 D	1	2		2.89	4.69		19	
LOCKHEED	26	2204	2231	2210	N21	E62	5909	27	1	1	2210	1.50			20	
NIZAMIAH	27	0504	0519	0508	N23	E54	5909	15	1+	2	0508	1.82	3.18	1.90		
WENDEL	27	0830 E	0948 D		N08	W76	5904	78 D	1				4.00			
WENDEL	27	0946 E	1035 D		N23	E54	5909	49 D	1				4.00			
CAPRI S	27	1025 E	1056 D		N22	E52	5909	31 D	1+	3	1034	1.50	2.70			
WENDEL	27	1033	1058 D		N22	E54	5909	25 D	1				4.00			
ONDREJOV	27	1043 E	1052 D		N20	E58	5909	9 D	1	2	1046			2.90		
CAPRI S	27	1103 E	1121 D		N22	E57	5909	18 D	1+	3	1108	2.30	4.60			
ONDREJOV	27	1105 E	1121		N20	E58	5909	16 D	2	2	1109			2.60		
WENDEL	27	1105	1125 D		N22	E54	5909	20 D	1+				6.00			
SAC PEAK	27	1840	1850	1844	N19	E51	5909	10	1	2		1.62	2.08		17	
SAC PEAK	27	2202	2216 D	2212	N21	W90	5901	14 D	2+	2		1.74	8.72		21	
LOCKHEED	27	2202	2221	2210	N21	W90	5901	19	2	1	2210	1.10			20	
SAC PEAK	28	2120	2218 D	2142	S14	E30	5912	58 D	1	1		3.78	4.05		15	
HAWAII	28	2130 E	2220	2140	S20	E26	5912	50 D	1	2	2140	2.10				
WENDEL	29	1104 E	1331 D		N22	E26	5909	147 D	3				19.00			

SOLAR FLARES

OCTOBER 1960

OBSERVATORY	DATE OCT 1960	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. %	
CAPRI S	29	1140 E	1142 D		N21	E25	5909	2 D	1	1	1140	2.40	2.90			
WENDEL	29	1314 E	1450 D		N21	E45	5913	96 D	2				9.00			
SAC PEAK	29	1415 E	1506 U	1418 U	N17	E40	5913	48 D	1	2		2.49	2.83		18	
WENDEL	30	1312 E	1323 D		N20	E10	5909	11 D	1				3.00			
SAC PEAK	30	1552	1636	1612	N20	E28	5913	44	1	2		2.91	3.01		18	

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

Though Climax operated a flare patrol during October 1960, there were no observations suitable for reduction.

See descriptive text for details of corrected area reported by Sacramento Peak and flare importances reported by Hawaii, Lockheed and Sacramento Peak.

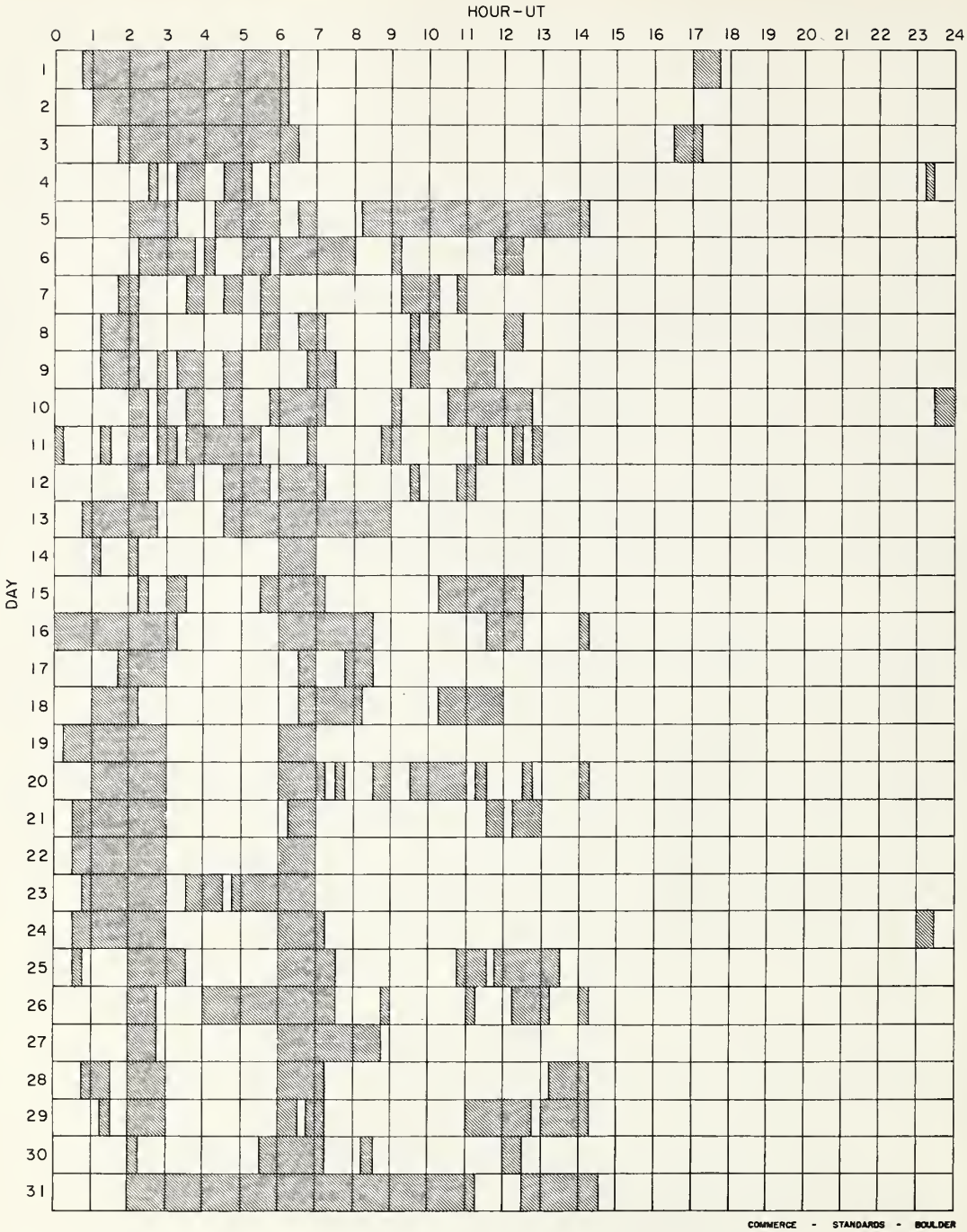
SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40) NOT PERCENT OF CONTINUOUS SPECTRUM.

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

OCTOBER 1960



Stations Include:

Anacapri (Swedish)
Arcetri
Hawaii
Huancayo
Istanbul
Kodaikanai
Lockheed
McMath
Nizamiah
Ondrejov
Royal Greenwich Observatory
Herstmonceux
Sacramento Peak

SUBFLARES

Noted as follows: Date-Universal Time-Coordinates

SEPTEMBER 1960

	LOCKHEED	01	0031	S12 W22	
	LOCKHEED	01	0050	N18 W08	
	ISTANBUL	01	0830	N16 W61	
	ARCETRI	01	0856 E	N12 E83	
	CAPRI S	01	0923 E	N20 W08	
	ARCETRI	01	0955 E	N18 W09	
	CAPRI S	01	1215	N20 W08	
	MCMATH	01	1251	N20 W08	
*	MCMATH	01	1322	N18 W15	
*	HUANCAYO	01	1405	N19 W12	
*	MCMATH	01	1406	N18 W12	
*	ONDREJOV	01	1417 E	N20 W12	
	MCMATH	01	1434	N20 W13	
	MCMATH	01	1434	S11 W30	
*	MCMATH	01	1445	N18 W12	
	SAC PEAK	01	1450	S18 W48	
*	CAPRI S	01	1453 E	N19 W10	
*	SAC PEAK	01	1454	N19 W12	
	MCMATH	01	1458	S19 W47	
	HUANCAYO	01	1459	S18 W45	
	LOCKHEED	01	1646	N21 W17	
	SAC PEAK	01	1646	N20 W16	
	MCMATH	01	1649 E	N18 W16	
	LOCKHEED	01	1715	N21 W17	
	MCMATH	01	1716 E	N18 W16	
	LOCKHEED	01	1716	S14 W49	
	LOCKHEED	01	1732	S14 W49	
	LOCKHEED	01	1750	S14 W49	
	LOCKHEED	01	1750	S14 W49	
	LOCKHEED	01	1819	N20 W14	
	MCMATH	01	1820	N18 W14	
	HAWAII	01	1822	N22 E04	
	LOCKHEED	01	1854	N22 W17	
	MCMATH	01	1855	N19 W18	
	LOCKHEED	01	1919	S15 W50	
*	SAC PEAK	01	2044 E	S17 W51	
*	LOCKHEED	01	2201	N25 W16	
	LOCKHEED	01	2208	S16 W51	
	HAWAII	01	2208	S14 W53	
	HAWAII	01	2244	S19 W52	
	LOCKHEED	01	2334	S17 W55	
	LOCKHEED	01	2358	S16 W54	
	HAWAII	02	0006	S15 W55	
	LOCKHEED	02	0015	N17 W17	
	HAWAII	02	0016	N20 W19	
	LOCKHEED	02	0058	S18 W54	
	CAPRI S	02	0758 E	S18 W57	
	WENDEL	02	1107 E	S11 W44	
	CAPRI S	02	1112	S11 W41	
	MCMATH	02	1205 E	S17 W61	
	MCMATH	02	1236	N19 E88	
	LOCARNO	02	1310 E	S09 W78	
	CAPRI S	02	1344 E	N20 W21	
	SAC PEAK	02	1346	S10 W47	
	MCMATH	02	1348 E	S10 W47	
	MCMATH	02	1348 E	N18 W25	
	SAC PEAK	02	1352	N19 W26	
	HUANCAYO	02	1354 E	N19 W24	
	ARCETRI	02	1424 E	S12 W86	
*	MCMATH	02	1523	N15 W88	
*	CAPRI S	02	1532 E	N18 W85	
*	LOCKHEED	02	1535	N22 W90	
	LOCKHEED	02	1535	S17 W67	
	LOCKHEED	02	1535	S17 W67	
*	LOCKHEED	02	1541	N18 W28	
*	CAPRI S	02	1542	N18 W18	
*	MCMATH	02	1542 E	N17 W29	
	LOCKHEED	02	1602	N17 W90	
	LOCKHEED	02	1616	S16 W63	
	LOCKHEED	02	1616	S16 W63	
	LOCKHEED	02	1616	S16 W63	
	LOCKHEED	02	1741	N18 W28	
	MCMATH	02	1741	N15 W87	
	LOCKHEED	02	1745	N18 W85	
*	SAC PEAK	02	1814	N16 W88	
*	LOCKHEED	02	1815	N18 W85	
	MCMATH	02	1817	N19 W27	
	LOCKHEED	02	1817	N21 W27	
	LOCKHEED	02	1835	N19 W27	
*	MCMATH	02	1839	N18 W26	
	LOCKHEED	02	1844	N18 W90	
	LOCKHEED	02	1845	S16 W67	
	LOCKHEED	02	1845	S16 W67	
	SAC PEAK	02	1854	S16 W66	
	HAWAII	02	1858	S13 W67	
	MCMATH	02	1913	S16 W68	
	MCMATH	02	1939	N15 W90	
	LOCKHEED	02	1940	N18 W90	
	SAC PEAK	02	1940 E	N16 W88	
*	LOCKHEED	02	2009	N20 W80	
*	SAC PEAK	02	2012	N18 W86	
	SAC PEAK	02	2110	S10 W90	
	LOCKHEED	02	2112	S10 W90	
	MCMATH	02	2114	S10 W90	
	LOCKHEED	02	2122	S10 W90	
	MCMATH	02	2124	S10 W90	
	HAWAII	02	2132	N21 W29	
	LOCKHEED	02	2133	N20 W30	
	LOCKHEED	02	2134	S15 W66	
	MCMATH	02	2135	N19 W29	
	HAWAII	02	2136	S13 W67	
	SAC PEAK	02	2136	S16 W68	
	MCMATH	02	2140	S17 W70	
	LOCKHEED	02	2145	N20 W90	
	LOCKHEED	02	2145	N20 W90	
	LOCKHEED	02	2153	N20 W29	
	MCMATH	02	2154	N19 W28	
	LOCKHEED	02	2214	S15 W69	
	MCMATH	02	2217	S17 W70	
	HAWAII	02	2224 E	S14 W69	
*	MCMATH	02	2225	N19 W30	
*	HAWAII	02	2230 E	N21 W29	
	LOCKHEED	02	2302	S17 W68	
	HAWAII	02	2318	S15 W69	
	LOCKHEED	03	0010	S16 W68	
	HAWAII	03	0024 E	S15 W68	
	WENOEL	03	0614 E	S11 W50	
	ISTANBUL	03	0720	S16 W75	
*	CAPRI S	03	0730 E	N20 W35	
*	CAPRI S	03	0731 E	S18 W71	
*	ISTANBUL	03	0740	N19 W36	
*	LOCARNO	03	080D E	S16 W70	
*	ARCETRI	03	0805 E	S18 W70	
	LOCARNO	03	0848	S16 W77	
*	CAPRI S	03	0915 E	N19 W37	
*	MCMATH	03	1120 E	N17 W39	
	MCMATH	03	1227 E	S18 W80	
	MCMATH	03	1227 E	N19 W38	
	MCMATH	03	1230 E	S07 E90	
	WENOEL	03	1429 E	N19 W40	
	SAC PEAK	03	1454	N17 W90	
	LOCKHEED	03	1457	N19 W90	
	MCMATH	03	1501	N17 W90	
	LOCKHEED	03	1512	S19 W87	
	LOCKHEED	03	1542	N20 W40	
	WENOEL	03	1544 E	N19 W39	
	SAC PEAK	03	1550 E	N20 W40	
	MCMATH	03	1553 E	N19 W39	
	LOCKHEED	03	1603	S17 W77	
	LOCKHEED	03	1606	N19 W90	
	WENOEL	03	1609 E	S17 W72	
	SAC PEAK	03	1612 E	N19 W90	
	LOCKHEED	03	1625	N18 W47	
	LOCKHEED	03	1740	N18 W47	
	LOCKHEED	03	1817	N18 W47	
	LOCKHEED	03	1845	N21 W90	
	LOCKHEED	03	1912	N16 W90	
	LOCKHEED	03	1952	N17 W90	
	MCMATH	03	2004	N16 W90	
	MCMATH	03	2013	S18 W83	
	LOCKHEED	03	2016	S19 W87	
	MCMATH	03	2103	S13 E90	
	MCMATH	03	2104	S17 W88	
	LOCKHEED	03	2105	N16 W90	
	MCMATH	03	2108	N15 W90	
	LOCKHEED	03	2134	N21 W44	
	MCMATH	03	2134 E	S17 W88	
	LOCKHEED	03	2138	N18 E69	
	SAC PEAK	03	2254	N20 W90	
	LOCKHEED	03	2254	N19 W90	
	LOCKHEED	03	2348	N20 W90	
	SAC PEAK	03	2355 E	N21 W90	
	LOCKHEED	04	0009	N15 W90	
	LOCKHEED	04	0032	N18 W90	
	LOCKHEED	04	0038	N19 W48	
	LOCKHEED	04	0104	N19 W90	
	LOCKHEED	04	0104	N19 W90	
	CAPRI S	04	1033	N20 W51	
	MCMATH	04	1402	S15 E90	
	MCMATH	04	1413	S17 W90	
	SAC PEAK	04	1423	S17 W90	
	LOCKHEED	04	1435	S18 W90	
	MCMATH	04	1443 E	S17 W90	
	LOCKHEED	04	1521	N22 W55	
	SAC PEAK	04	1522	N20 W55	
	CAPRI S	04	1522 E	N21 W52	
	MCMATH	04	1522	N18 W55	
	MCMATH	04	1619 E	S16 W90	
*	MCMATH	04	1624	S18 W90	
*	MCMATH	04	1626	S15 W90	
*	SAC PEAK	04	1626	S17 W90	
*	SAC PEAK	04	1628	N19 E69	
*	MCMATH	04	1628	N18 E65	
	LOCKHEED	04	1658	N16 E37	
	MCMATH	04	1700	N15 E38	
	HAWAII	04	1754	N22 W54	
	LOCKHEED	04	1756	N19 W54	
	LOCKHEED	04	1756	N19 W54	
	LOCKHEED	04	1937	N16 E35	
	HAWAII	04	1946 E	N13 E36	
	LOCKHEED	04	2010	N16 W90	
	LOCKHEED	04	2208	N20 W58	
	HAWAII	04	2210	N02 W59	
	LOCKHEED	04	2245	N21 W58	
	LOCKHEED	04	2342	N19 W60	
	HAWAII	04	2342	N22 W64	
*	LOCKHEED	05	0005	N21 W58	
	LOCKHEED	05	0035	N18 E59	
	LOCKHEED	05	0035	N18 E59	
	HAWAII	05	0038	N18 E62	
	CAPRI S	05	1230 E	N19 E55	
	MCMATH	05	1308	N21 E49	
	UCCLE	05	1313 E	N19 E50	
	CAPRI S	05	1423 E	N19 E49	
	LOCKHEED	05	1508	N20 W67	
	MCMATH	05	1517	S17 E90	
	LOCKHEED	05	1822	N20 W72	
	MCMATH	05	1832	N20 W70	
	LOCKHEED	05	1838	N22 W70	
	LOCKHEED	05	1950	N19 E48	
*	SAC PEAK	05	2028 E	N04 E68	
	MCMATH	05	2144	S18 E69	
	LOCKHEED	05	2309	N17 E20	
	LOCKHEED	06	0011	N19 E49	
	ISTANBUL	06	0812	N20 W37	
	MCMATH	06	1215	N19 E35	
	MCMATH	06	1251	S07 E46	
	MCMATH	06	1307 E	S16 E79	
	MCMATH	06	1308	N17 E49	
	LOCKHEED	06	1541	N03 E52	
	SAC PEAK	06	1542	N04 E54	
	LOCKHEED	06	1634	N04 E52	
	LOCKHEED	06	1931	S05 E14	
	LOCKHEED	06	1935	N22 W85	
*	LOCKHEED	06	1953	S16 E70	
*	MCMATH	06	2016	S17 E70	
	LOCKHEED	06	2024	N05 E50	
	LOCKHEED	06	2050	N18 E35	
	SAC PEAK	06	2110 E	S18 E78	
	LOCKHEED	06	2120	N22 W85	
	LOCKHEED	06	2155	S04 E13	
	SAC PEAK	06	2246	N18 E90	
	LOCKHEED	06	2247	N19 E90	
	LOCKHEED	06	2318	N19 E29	
	LOCKHEED	06	2320	S05 E12	
	LOCKHEED	07	0125	S18 E53	
	CAPRI S	07	1108 E	N18 E24	
	MCMATH	07	1201	N18 E22	
	MCMATH	07	1300	N11 E90	
	MCMATH	07	1423 E	N14 E90	
	CAPRI S	07	1442 E	S08 E34	
*	MCMATH	07	1458	S17 E60	
	CAPRI S	07	1530 E	S08 E34	
	LOCKHEED	07	1550	N19 E20	
	LOCKHEED	07	1710	S10 E33	
	LOCKHEED	07	1744	N18 E19	
	MCMATH	07	1746	N18 E20	
*	LOCKHEED	07	1806	S10 E33	
*	MCMATH	07	1807	S10 E34	
	LOCKHEED	07	1843	N20 E18	
	LOCKHEED	07	2030	N19 E17	
	CAPRI S	08	0612 E	S06 W01	
*	CAPRI S	08	0635 E	S17 E49	
*	ONDREJOV	08	0725 E	S06 W05	
*	CAPRI S	08	0728 E	S06 W03	
	CAPRI S	08	0733	S10 E25	
*	ONDREJOV	08	0758	S06 W05	
	CAPRI S	08	0930 E	S10 E22	
	LOCARNO	08	0940	S05 W03	
*	LOCARNO	08	0945	S14 E47	
*	CAPRI S	08	0947 E	S16 E48	
	MCMATH	08	1204	S06 W04	
	LOCARNO	08	1326	S08 E24	
	MCMATH	08	1330	S09 E24	
*	MCMATH	08	1406	S06 W05	
*	SAC PEAK	08	1408 E	S05 W05	

COMMERCE - STANDARDS - BOULDER

SUBFLARES

Noted as follows: Date-Universal Time-Coordinates

SEPTEMBER 1960

*	MCMATH	08	1452	N04 E27
	LOCARNO	08	1615	S08 E22
	SAC PEAK	08	1616	S10 E22
*	MCMATH	08	1719	S09 E21
*	MCMATH	08	1737	S09 E20
	MCMATH	08	1816	N18 E90
	MCMATH	08	1933	N04 E25
	UCCLE	09	1133	N23 W02
	UCCLE	09	1145	S05 E90
	UCCLE	09	1527	S05 E08
	SAC PEAK	09	1842	N22 W08
	HAWAII	09	1850 E	N23 W05
	MCMATH	09	1856 E	N22 W06
	HAWAII	09	2114	N05 E14
	MCMATH	09	2115	N05 E12
	SAC PEAK	09	2224	N02 W52
	HAWAII	09	2250 E	S07 W01
	WENOEL	10	0728 E	N22 W14
	LOCARNO	10	1126	S05 W37
*	CAPRI S	10	1228 E	N18 W15
*	MCMATH	10	1308 E	N18 W15
	LOCKHEED	10	1953	N19 W17
	LOCKHEED	10	2020	N10 E03
*	LOCKHEED	10	2059	N18 W21
*	LOCKHEED	10	2114	N18 W21
*	MCMATH	10	2116 E	N18 W20
	LOCKHEED	10	2221	S03 E59
	HAWAII	10	2222	S08 E60
	LOCKHEED	10	2238	N20 W17
	LOCKHEED	10	2328	S03 E59
	LOCKHEED	10	2328	S03 E59
	HAWAII	10	2328	S08 E60
	LOCKHEED	10	2352	S03 W46
	LOCKHEED	11	0039	N19 E68
	LOCKHEED	11	0052	S03 E59
*	WENOEL	11	0812 E	S03 E57
	MCMATH	11	1230	S03 E55
	MCMATH	11	1305	S04 E53
	LOCKHEED	11	1500	N11 W11
*	LOCKHEED	11	1550	N23 E31
*	MCMATH	11	1551	N22 E33
	LOCARNO	11	1555	S03 E52
*	LOCKHEED	11	1608	S02 E51
*	MCMATH	11	1610	S04 E50
	LOCKHEED	11	1810	S03 E48
	HAWAII	11	1814	S09 E49
	MCMATH	11	1815	S04 E50
	LOCKHEED	11	1945	N09 W11
	HAWAII	11	2000	N19 W14
	LOCKHEED	11	2059	N23 E25
	HAWAII	11	2108 E	N19 W32
	LOCKHEED	11	2123	N23 W33
	LOCKHEED	11	2135	N19 W33
	MCMATH	11	2138 E	N18 W32
	HAWAII	11	2140 E	N21 W33
	LOCKHEED	11	2238	N19 W33
	LOCKHEED	11	2341	N18 W33
	HAWAII	11	2344 E	N21 W31
	LOCKHEED	12	0051	N18 E26
	HAWAII	12	0058 E	N17 E28
	CAPRI S	12	0753 E	S02 E40
	UCCLE	12	0838	S05 E45
	UCCLE	12	1040	N20 W38
	UCCLE	12	1058	S19 E02
	UCCLE	12	1058	S12 E11
	UCCLE	12	1134	N26 E78
	UCCLE	12	1134	N10 E40
*	MCMATH	12	1135 E	N19 E20
	WENOEL	12	1135 E	S13 E38
	SAC PEAK	12	1516	N12 E37
	SAC PEAK	12	1534	S07 W39
	LOCKHEED	12	1617	N13 E33
	SAC PEAK	12	1618	N12 E35
	SAC PEAK	12	1654	S10 E12
	LOCKHEED	12	1655	S11 E11
	LOCKHEED	12	1655	S11 E11
	LOCKHEED	12	1715	S04 E32
	LOCKHEED	12	1715	S04 E32
	LOCKHEED	12	1730	S11 E11
	LOCKHEED	12	1730	S11 E11
	SAC PEAK	12	1732	S11 E12
	LOCKHEED	12	1737	S19 E02
	MCMATH	12	1747 E	S11 E11
	SAC PEAK	12	1808	N10 E32
	LOCKHEED	12	1809	N12 E32
	MCMATH	12	1809	N10 E33
	LOCKHEED	12	1817	S04 E32
	SAC PEAK	12	1822	S11 E11
	MCMATH	12	1823	S04 E37
	MCMATH	12	1823	S10 E10
	LOCKHEED	12	1825	S10 E10
	HAWAII	12	1826 E	N09 E32
	HAWAII	12	1826 E	S11 E11
	LOCKHEED	12	1913	S10 E10
	SAC PEAK	12	1914	S10 E09
	HAWAII	12	1915	S11 E09
	MCMATH	12	1916 E	S10 E10
	HUANCAYO	12	1917	S09 E09
	LOCKHEED	12	1922	S04 E35
*	LOCKHEED	12	1941	S11 E10
*	HUANCAYO	12	1941 E	S10 E11
*	MCMATH	12	1942	S10 E10
*	HAWAII	12	1943	S11 E10
	LOCKHEED	12	1949	N20 E17
	HAWAII	12	1950	N25 E31
	LOCKHEED	12	2039	S03 E31
	SAC PEAK	12	2040	S03 E31
	LOCKHEED	12	2040	S11 E10
	MCMATH	12	2043	S03 E31
	LOCKHEED	12	2125	S11 E10
	LOCKHEED	12	2150	N14 E32
*	LOCKHEED	12	2240	S02 E30
	LOCKHEED	12	2243	N14 E31
	LOCKHEED	12	2247	S10 E09
	LOCKHEED	12	2310	S04 E33
	LOCKHEED	13	0020	S12 E08
	LOCKHEED	13	0043	S04 E33
*	CAPRI S	13	0630 E	N17 E08
	ONOREJOV	13	0737	S02 E27
*	CAPRI S	13	1039 E	S05 W45
	SAC PEAK	13	1500	N04 W47
*	MCMATH	13	1504	S05 W48
*	ONOREJOV	13	1504	S03 W46
	SAC PEAK	13	1504	S06 E26
*	CAPRI S	13	1505 E	S03 W46
*	SAC PEAK	13	1536	S11 W02
*	MCMATH	13	1538	S12 W01
*	CAPRI S	13	1540 E	S11 W00
*	LOCKHEED	13	1540 U	S13 W02
	LOCKHEED	13	1619	S06 W49
	LOCKHEED	13	1639	S05 E23
	SAC PEAK	13	1648	S04 E23
	MCMATH	13	1651 E	S05 E24
	LOCKHEED	13	1852	S03 E17
	SAC PEAK	13	1854	S03 E18
	MCMATH	13	1856 E	S03 E18
	HAWAII	13	1900 E	S10 E29
	LOCKHEED	13	2012	S05 W49
	LOCKHEED	13	2221	S03 W52
	SAC PEAK	13	2224	S05 W50
	HAWAII	13	2232 E	N25 E53
	SAC PEAK	13	2330	N13 E18
	LOCKHEED	13	2334	S06 W53
	LOCKHEED	13	2334	N13 E17
	LOCKHEED	13	2338	S12 W05
	HAWAII	13	2342 E	N11 E18
	LOCKHEED	14	0036	S03 E14
	ONOREJOV	14	0806 E	S06 W21
*	MCMATH	14	1238	N17 W20
*	MCMATH	14	1303	N19 W05
	MCMATH	14	1339	S04 E11
	MCMATH	14	1339	S12 W11
	LOCKHEED	14	1517	N21 W07
	SAC PEAK	14	1520	N21 W07
*	LOCKHEED	14	1721	S16 E90
*	SAC PEAK	14	1724 E	S18 E90
*	LOCKHEED	14	1749	N18 W71
*	HAWAII	14	1756 E	N22 W73
	LOCKHEED	14	1953	S02 W90
	HAWAII	14	2004	N23 E08
	SAC PEAK	14	2004	N22 E07
	LOCKHEED	14	2004	N23 E06
	MCMATH	14	2005	N22 E07
	SAC PEAK	14	2102	N20 W74
	LOCKHEED	14	2107	N19 W74
	LOCKHEED	14	2107	N19 W74
	HAWAII	14	2116 E	N25 W72
	LOCKHEED	14	2217	S16 E90
	LOCKHEED	14	2224	N14 E03
	HAWAII	14	2312	N22 W78
	LOCKHEED	14	2312	N19 W78
	SAC PEAK	14	2314 E	N19 W76
	LOCKHEED	15	0117	N14 E00
	ONOREJOV	15	0626 E	S13 W18
	ARCETRI	15	0850 E	N13 E08
	MCMATH	15	1339	S03 W06
	MCMATH	15	1508 E	S06 W03
	MCMATH	15	1538	S20 E90
	SAC PEAK	15	1550 E	S11 E90
	MCMATH	15	1606	S19 E90
	MCMATH	15	1615 E	S06 E46
	LOCKHEED	15	1850	S18 E83
	MCMATH	15	1911 E	S20 E85
	LOCKHEED	15	1937	S03 W11
	SAC PEAK	15	1938	S03 W10
	LOCKHEED	15	2139	S19 E85
	HAWAII	15	2148 E	S23 E79
	LOCKHEED	15	2148	N01 W42
	HAWAII	15	2212	S25 E80
	LOCKHEED	15	2318	N16 W01
	LOCKHEED	16	0100	S12 W34
	HAWAII	16	0101	S10 W34
	CAPRI S	16	0729 E	S19 E70
	STOCKHOLM	16	1107 E	S10 W90
	SAC PEAK	16	1518	S04 E34
	CAPRI S	16	1520 E	S19 E66
	SAC PEAK	16	1600	S19 E66
*	SAC PEAK	16	1706	S21 E66
	LOCKHEED	16	1935	N16 W24
	LOCKHEED	16	2048	S20 E66
	LOCKHEED	16	2226	N26 E16
	LOCKHEED	17	0040	N23 W90
*	ISTANBUL	17	0813	S07 E26
	CAPRI S	17	1218 E	N25 E04
	LOCKHEED	17	1955	N14 W26
	SAC PEAK	17	2006	N16 W25
	LOCKHEED	17	2047	N22 W35
	SAC PEAK	17	2106	N12 E90
	LOCKHEED	17	2156	S19 E52
	HAWAII	17	2216	S25 E42
	LOCKHEED	17	2218	S21 E42
	SAC PEAK	17	2220	S20 E44
	LOCKHEED	17	2345	N13 W34
	ISTANBUL	18	0730 E	S21 E45
*	CAPRI S	18	0857 E	S19 E47
	UCCLE	18	0940	S22 E48
	WENOEL	18	1053 E	S18 E43
*	CAPRI S	18	1112 E	S19 E46
	WENOEL	18	1336 E	S18 E41
	LOCKHEED	18	1610	S08 E08
	LOCKHEED	18	1618	S21 E41
	LOCKHEED	18	1618	S21 E41
	LOCKHEED	18	1627	N22 W07
	MCMATH	18	1629	N26 W06
	LOCKHEED	18	1731	S21 E41
	LOCKHEED	18	1747	S22 E41
	HAWAII	18	1751 E	S23 E42
	LOCKHEED	18	1825	S18 E54
	LOCKHEED	18	2006	N20 W07
	LOCKHEED	18	2030	S09 E06
	SAC PEAK	18	2038 U	S20 E38
	LOCKHEED	18	2040	S21 E39
	MCMATH	18	2045 E	S20 E38
	MCMATH	18	2119	S20 E38
	MCMATH	18	2128	N21 E90
	HAWAII	18	2138	S06 E00
	SAC PEAK	18	2138	S06 E01
	LOCKHEED	18	2140	S05 E01
*	LOCKHEED	18	2245	S21 E38
	SAC PEAK	18	2316	S03 E03
	LOCKHEED	18	2317	S04 E02
	LOCKHEED	18	2321	S21 E34
	LOCKHEED	18	2349	S17 E76
	LOCKHEED	18	2349	S17 E76
	HAWAII	18	2352 E	S24 E78
	LOCKHEED	19	0020	S21 E38
	LOCKHEED	19	0020	S21 E38
	HAWAII	19	0024	S25 E38
	HAWAII	19	0114 E	S25 E38
	CAPRI S	19	0710 E	S19 E33
*	CAPRI S	19	0750 E	N26 W17
	HAWAII	19	1828 E	N28 W14
	LOCKHEED	19	1924	N27 W23
	HAWAII	19	1932 E	N29 W22
	LOCKHEED	19	1940	S03 E71
	SAC PEAK	19	1942	N13 E50
	LOCKHEED	19	1943	N15 E47
	HAWAII	19	1952 E	N10 E41
	LOCKHEED	19	2000	N24 E82
	SAC PEAK	19	2002	N22 E88
	LOCKHEED	19	2015	S03 W09
	LOCKHEED	19	2023	S08 W67

COMMERCE - STANDARDS - BOULDER

SUBFLARES

Noted as follows: Date - Universal Time - Coordinates

SEPTEMBER 1960

	LOCKHEED	19	2025	N26 W25
	LOCKHEED	19	2036	N23 W23
	LOCKHEED	19	2036	N23 W23
	HAWAII	19	2042	S07 E73
	LOCKHEED	19	2108	N16 W52
*	LOCKHEED	19	2140	S12 E85
	LOCKHEED	19	2145	S20 E25
	HAWAII	19	2154	S24 E72
	LOCKHEED	19	2155	S21 E71
	LOCKHEED	19	2224	N26 W24
	LOCKHEED	19	2241	S18 E59
	HAWAII	19	2244	S07 E70
	LOCKHEED	20	0021	S19 E59
	HAWAII	20	0104	S21 E16
	CAPRI S	20	0657 E	N23 E78
	ISTANBUL	20	0740 E	S20 E13
	CAPRI S	20	0744 E	S21 E17
*	CAPRI S	20	0923	S20 E14
	LOCARNO	20	1100	N21 E54
	SAC PEAK	20	1347 E	S22 E18
	SAC PEAK	20	1508	S08 W20
	SAC PEAK	20	1526	N27 E75
	LOCKHEED	20	1527	N27 E73
	SAC PEAK	20	1734	S17 E55
	LOCKHEED	20	1737	S18 E53
	SAC PEAK	20	1742	N20 E67
	LOCKHEED	20	1742	N21 E66
	LOCKHEED	20	1823	S06 W25
	SAC PEAK	20	1824	S07 W24
	LOCKHEED	20	1855	S21 E48
	LOCKHEED	20	2029	S14 E80
	HAWAII	20	2118	S23 E47
	LOCKHEED	20	2120	S19 E47
	LOCKHEED	20	2123	S19 E09
	LOCKHEED	20	2145	S21 E46
	HAWAII	20	2152	S24 E46
	HAWAII	20	2212	S14 E67
	LOCKHEED	21	0006	S19 E46
	LOCKHEED	21	0006	S19 E46
	LOCKHEED	21	0008	S21 E07
	LOCKHEED	21	0046	S21 E07
	HAWAII	21	0136 E	N18 E61
	CAPRI S	21	0658 E	S22 E05
	LOCARNO	21	1210	S19 E32
	LOCARNO	21	1216	S20 W06
	SAC PEAK	21	1706	N22 W44
	MCMATH	21	1707	N23 W47
	SAC PEAK	21	1834	S18 E62
*	LOCKHEED	21	2113 E	S14 E58
*	LOCARNO	22	0729	N25 E44
	LOCARNO	22	0738	N09 E29
*	ISTANBUL	22	0740	N25 E47
	LOCARNO	22	1032	S19 E24
	LOCARNO	22	1315	S20 W07
	SAC PEAK	22	1448 E	S11 E46
*	LOCKHEED	22	1513	S20 E28
*	SAC PEAK	22	1514 E	S20 E31
	LOCARNO	22	1520	S20 W08
	SAC PEAK	22	1630	S21 W08
	LOCARNO	22	1633	S20 W08
	LOCKHEED	22	1705	S20 E19
	SAC PEAK	22	1710	S22 E21
	SAC PEAK	22	1740	S20 E20
	LOCKHEED	22	1747	S20 E19
	HUANCAYO	22	1749 E	S21 E20
*	LOCKHEED	22	1800	S17 W20
	LOCKHEED	22	1849	S20 E19
	HAWAII	22	1900 E	S17 W21
	LOCKHEED	22	1917	S20 E19
	LOCKHEED	22	1938	S11 E39
	SAC PEAK	22	1954 E	S15 E45
	LOCKHEED	22	2011	S20 E18
	LOCKHEED	22	2055	N08 E21
	WENDEL	23	0641 E	S12 E42
	WENDEL	23	0701 E	N23 W60
	LOCARNO	23	1001	S13 E41
	STOCKHOLM	23	1002 E	S30 E36
	WENDEL	23	1003 E	S13 E40
	WENDEL	23	1026 E	S03 E26
	WENDEL	23	1049 E	N30 E39
*	STOCKHOLM	23	1130 E	S23 E12
	WENDEL	23	1155 E	S20 E14
	WENDEL	23	1209 E	N20 E10
*	CAPRI S	23	1334	S19 E08
*	SAC PEAK	23	1345 E	S22 E09
	SAC PEAK	23	1606	N32 E36
	LOCKHEED	23	1610 D	N28 E33
	SAC PEAK	23	1642	S21 E08
	LOCKHEED	23	1656	S20 E06
	SAC PEAK	23	1758	N03 E11
	LOCKHEED	23	1857	N09 E09
	SAC PEAK	23	1902	N10 E10
	SAC PEAK	23	1958	S20 W30
	LOCKHEED	23	2000	S12 W27
	LOCKHEED	23	2032	N05 E04
	SAC PEAK	23	2054	S23 E08
	LOCKHEED	23	2056	S21 E07
	SAC PEAK	23	2112	S03 E19
	LOCKHEED	23	2117	S02 E07
	LOCKHEED	23	2210	S19 E05
	LOCKHEED	23	2235	S20 E05
*	LOCKHEED	23	2325	S11 E24
	LOCKHEED	24	0020	S21 E05
	LOCKHEED	24	0020	S21 E05
	HAWAII	24	0106 E	N06 E03
	WENDEL	24	0636 E	S19 E03
*	CAPRI S	24	0708	S19 E01
*	STOCKHOLM	24	0927 E	S21 W01
	LOCARNO	24	1025	S20 W02
*	WENDEL	24	1328 E	S20 W01
	LOCARNO	24	1430	S00 W39
*	SAC PEAK	24	1432	N04 W05
*	WENDEL	24	1435 E	N11 W03
	SAC PEAK	24	1610 *	N23 E13
	LOCKHEED	24	1612	N23 E12
	WENDEL	24	1613 E	N23 E12
	LOCKHEED	24	1614	N30 E21
	WENDEL	24	1618 E	N30 E22
	LOCKHEED	24	1852	N30 E20
	LOCKHEED	24	2031	N06 W08
	SAC PEAK	24	2032	N05 W10
	LOCKHEED	24	2122	N07 W07
	MCMATH	24	2123	N07 W07
	MCMATH	24	2134	S10 E12
	LOCKHEED	24	2134	S11 E11
	SAC PEAK	24	2134	S11 E14
	LOCKHEED	24	2141	N24 E06
	HAWAII	24	2150 E	S21 W11
	LOCKHEED	24	2223	S16 W02
	SAC PEAK	24	2224	S17 W00
*	LOCKHEED	24	2255	N31 E18
	LOCKHEED	25	0026	S19 W07
	WENDEL	25	0733 E	S19 W14
*	WENDEL	25	1035 E	S16 W15
	WENDEL	25	1037 E	N18 W52
	WENDEL	25	1058 E	S16 W15
	WENDEL	25	1115 E	S18 W18
	WENDEL	25	1307 E	N20 W23
	WENDEL	25	1307 E	N18 W17
	MCMATH	25	1429	N23 W03
*	LOCKHEED	25	1510 E	S23 W11
	LOCKHEED	25	1510 E	N24 W03
	MCMATH	25	1512	N23 W03
*	MCMATH	25	1516	S18 W19
	WENDEL	25	1540 E	S17 W19
*	SAC PEAK	25	1554	S02 W06
*	MCMATH	25	1558 E	S02 W05
	WENDEL	25	1606 E	S17 W19
	WENDEL	25	1610 E	S19 W20
	LOCKHEED	25	1616	S10 E01
	WENDEL	25	1616 E	S10 E03
	LOCKHEED	25	1628	S23 W52
	WENDEL	25	1630 E	S22 E50
	LOCKHEED	25	1706	S02 W07
	LOCKHEED	25	1720	N07 W20
	LOCKHEED	25	1758	S21 W52
*	HAWAII	25	1900 E	S17 W24
	LOCKHEED	25	1915	N08 W19
	HAWAII	25	1916	N10 W18
	SAC PEAK	25	1916	N08 W19
	LOCKHEED	25	2010	S17 W24
	SAC PEAK	25	2013	S18 W23
	HAWAII	25	2018	S17 W24
	LOCKHEED	25	2022	S07 W90
	LOCKHEED	25	2022	N18 W19
	LOCKHEED	25	2035	S22 W53
	SAC PEAK	25	2106	S18 W23
	LOCKHEED	25	2139	N31 E03
	SAC PEAK	25	2142	N10 W20
	LOCKHEED	25	2142	N21 W22
	HAWAII	25	2144	N15 W21
	SAC PEAK	25	2150	N30 E06
*	LOCKHEED	25	2156	S01 W11
	LOCKHEED	25	2219	S17 W24
	SAC PEAK	25	2220	S19 W25
	LOCKHEED	25	2220	S17 W60
	LOCKHEED	25	2320	N24 W05
	LOCKHEED	25	2320	N24 W05
	CAPRI S	26	0634 E	S20 W59
	LOCARNO	26	0904	S21 W59
*	CAPRI S	26	1014 E	S10 E10
	LOCARNO	26	1056	S18 W66
*	LOCARNO	26	1319	S20 W62
	SAC PEAK	26	1406	N08 W29
	UCCLE	26	1408 E	N08 W29
	UCCLE	26	1408 E	S10 E03
	LOCARNO	26	1408	N08 W27
	SAC PEAK	26	1408	S10 E02
	LOCARNO	26	1410	S10 E03
*	SAC PEAK	26	1454	N31 W06
*	UCCLE	26	1457	N32 W04
	LOCARNO	26	1544	S18 W68
	LOCKHEED	26	1635	S11 W02
	LOCKHEED	26	1635	S11 W02
	SAC PEAK	26	1708	S11 W02
	LOCKHEED	26	1810	S18 W31
	LOCKHEED	26	1848	S16 W05
	LOCKHEED	26	1901	S01 W20
	SAC PEAK	26	1902	S01 W21
	LOCKHEED	26	1902	S18 W32
	SAC PEAK	26	1904	S19 W32
*	LOCKHEED	26	1909	S15 W26
*	LOCKHEED	26	1950	S20 W33
	SAC PEAK	26	2034 E	N26 W18
	LOCKHEED	26	2036	N25 W19
	SAC PEAK	26	2106 U	S20 W33
	LOCKHEED	26	2106	S19 W32
	LOCKHEED	26	2120	S15 W35
	LOCKHEED	26	2120	S15 W35
	LOCKHEED	26	2210	S16 W34
	LOCKHEED	26	2213	S22 W70
	LOCKHEED	26	2213	S22 W70
	LOCKHEED	26	2213	S22 W70
	SAC PEAK	26	2326	S22 W70
	LOCKHEED	27	0124	N24 E16
*	LOCARNO	27	0745	N11 W39
*	ISTANBUL	27	0752	N08 W40
*	UCCLE	27	0831	S18 W41
*	UCCLE	27	0952 E	S17 W18
	LOCARNO	27	1134	N29 W12
	WENDEL	27	1135 E	N28 W15
*	LOCARNO	27	1228	S21 W76
	LOCARNO	27	1231	S12 W19
*	WENDEL	27	1232 E	S13 W23
*	UCCLE	27	1233	S12 W24
	UCCLE	27	1352	N18 W43
*	UCCLE	27	1423	N18 W43
*	WENDEL	27	1428 E	N17 W39
*	LOCARNO	27	1428	N18 W41
*	ONDREJOV	27	1429 E	N18 W44
*	SAC PEAK	27	1430	N09 W45
*	WENDEL	27	1431 E	N11 W43
	MCMATH	27	1529 E	S09 W24
	LOCKHEED	27	1615 E	S09 W24
	LOCKHEED	27	1619	S14 W90
	LOCKHEED	27	1640	N09 W47
*	SAC PEAK	27	1702	N10 W46
*	MCMATH	27	1703	N10 W45
	LOCKHEED	27	1725	N18 W63
	LOCKHEED	27	1749	S20 W80
	LOCKHEED	27	1810	S23 W80
*	LOCKHEED	27	1900	N09 W47
*	LOCKHEED	27	1900	N09 W47
*	SAC PEAK	27	1906 U	N10 W48
	LOCKHEED	27	1945	S23 W80
	LOCKHEED	27	1945	S23 W80
	LOCKHEED	27	2008	N11 W47
	SAC PEAK	27	2056	N10 W48
	MCMATH	27	2058	N09 W48
	LOCKHEED	27	2157	N09 W47
	LOCKHEED	27	2330 E	N09 W48
	LOCKHEED	27	2355	N09 W48
	LOCKHEED	28	0003	N11 W49
	LOCKHEED	28	0034	N10 W49
	LOCKHEED	28	0119	N11 W48
	UCCLE	28	1327	S08 W28
	HAWAII	28	1934 E	S06 W33
	SAC PEAK	29	1756	N13 E84
	LOCKHEED	29	2031	S16 W77
	SAC PEAK	29	2032	S16 W78
	HAWAII	29	2033 E	S10 W75
	LOCKHEED	29	2207	S16 W80
	WENDEL	30	0734 E	N30 W51
	LOCKHEED	30	2301	S11 W60

*Rated as flare of importance ≥ 1 by other observatories (see CRPL-F 194 Part B, October 1960).

SOLAR FLARES

JULY 1960

OBSERVATORY	DATE JULY 1960	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 Hα	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
VOROSHILOV	01	0004	0013 D	0006	N08	E38	5726	9 D	1+	1		3.25			106	
HAWAII	01	0058	0112	0104	N22	W69	5713	14	1	3	0104	1.00				
ALMA-ATA	01	0359 E		0359	N22	W80	5713		2+	2	0359	6.44			62	
ALMA-ATA	01	0359	0424 D	0424	S15	W08	5725	25 D	1	2	0424	4.57			49	
ALMA-ATA	01	0404 E		0404	N08	E37	5726		2+	2	0404	16.10			82	
TASHKENT	01	0440	0550	0505	N18	W74	5713	70	1	2	0505	1.84	6.00			S-SWF
ABASTUMANI	01	0508 E	0613 D	0515 U	N20	W73	5713	65 D	2	3		8.16	26.40		73	
ABASTUMANI	01	0617 E	0805 D	0725 U	N09	E35	5726	108 D	1	3		3.18	3.90		63	
ZURICH	01	0824	0843		N21	W75	5713	19	1	3	0824		1.00			
CAPRI S	01	0941 E	0945 D		N20	E80	5735	4 D	1	1	0943	.50	.50			
CAPRI S	01	1012	1032		N20	W75	5713	20	1	3	1025	.70	2.80			S-SWF
ZURICH	01	1015	1027		N21	W76	5713	12	1	3	1015		2.00			
WENDEL	01	1042 E	1050 D		N11	E34	5726	8 D	1				4.00			
ZURICH	01	1042	1051		N11	E34	5726	9	1	3	1042		2.00			
CAPRI S	01	1151 E	1323		N18	W76	5713	92 D	1	1	1215	.80	2.90			
CAPRI G	01	1154 E	1230 D		N19	W77	5713	36 D	1	2			4.00			
WENDEL	01	1154	1344 D		N18	W77	5713	110 D	2				8.00			
ONDREJOV	01	1205 E	1210 D		N18	W75	5713	5 D	1	1	1208			2.80		G-SWF
KIEV	01	1205 E	1300 D		N18	W80	5713	55 D	1	1	1220	1.04			129	
SCHAUINS	01	1210 E	1255 D		N23	W85	5713	45 D	1	1						
ZURICH	01	1242 E	1330		N18	W84	5713	48 D	1	3	1242		5.00			
WENDEL	01	1336 E	1355 D		N10	W37	5720	19 D	1				3.00			
SAC PEAK	01	1406	1416	1410	N22	W86	5713	10	1	3		2.70			15	
WENDEL	01	1410 E	1434 D		N22	W80	5713	24 D	1				4.00			
HUANCAYO	01	1502	1509 D	1503	N22	W83	5713	7 D	1+	1	1505	1.00	6.60	2.40		
ZURICH	01	1524	1528		N21	W79	5713	4	1	3	1524		3.00			
LOCKHEED	01	1702	1714	1711	N21	W85	5713	12	1	4	1711	.50			20	
MCMATH	01	1843 E	1903 D	1847	N22	W87	5713	20 D	1+	1	1847		4.10			
HAWAII	01	2008	2022	2014	N21	W90	5713	14	1	3	2014	.80				
ALMA-ATA	02	0357 E		0357	N10	E18	5726	□	1	2	0357	3.64			78	
ALMA-ATA	02	0422 E		0422	N28	E02	5724	□	1+	2	0422	5.50			61	
WENDEL	02	0732 E	0742 D		N11	E21	5726	10 D	1				3.00			
WENDEL	02	1222	1307 D		S13	W27	5725	45 D	1				3.00			
TASHKENT	03	0426	0513	0452	N10	E07	5726	47	1	3	0452	3.21	3.00			
TASHKENT	03	0438	0456	0440	N27	W23	5724	18	1	3	0440	1.56	3.00			
WENDEL	03	1020 E	1033 D		N25	W21	5724	13 D	1				3.00			
ZURICH	03	1432	1440		N26	W27	5724	8	1	2	1432		2.00			
HAWAII	03	2038 E	2044 D		N31	W27	5724	6 D	1	2	2040	1.20				
UCCLE	04	0914	0916 D	0916	N33	W35	5724	2 D	1	2	0916	3.00	4.50			
ZURICH	04	1054	1058 D		N27	W40	5724	4 D	1	2	1054		2.00			
MCMATH	04	1220	1332	1247	N14	E60	5737	72	2	3	1247		7.50			
CAPRI S	04	1232	1251 D		N14	E60	5737	19 D	1	2	1240	2.00	4.40			
ZURICH	04	1233	1246 D		N14	E60	5737	13 D	1+	2	1233		5.00			
SCHAUINS	04	1245 E			N16	E60	5737	□	1+	2			5.00	2.40		
CAPRI G	04	1245 E	1251		N17	E60	5737	6 D	1+	2			4.00			
LOCKHEED	04	2358	0130	0030	N15	E55	5737	92	1	2	0030	2.60			10	
HAWAII	05	0030 E	0104 D		N16	E52	5737	34 D	2	2	0048	3.00				

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PIRCULI	05	0740 E	0747 D	0744 U	N26	W51	5724	7 D	1+	2	0744	3.21	5.19		85	
KRASNYA	05	0741	0756	0746	N25	W51	5724	15	1			2.29			65	
KRASNYA	05	0749	0754	0750	S16	W62	5725	5	1	2		1.19			85	
STOCKHOLM	05	1400 E	1436 D		S17	E90	5741	36 D	1	1	1436	2.00				
MEUDON	06	0759	0835		N28	W62	5724	36	1							
CAPRI S	06	0802	0814		N25	W59	5724	12	1	3	0811	1.00	2.50			
CAPRI G	06	0805 E	0820		N25	W63	5724	15 D	1	2			3.00			
MEUDON	06	0917	1017		N10	W35	5726	60	1							
CAPRI S	06	0920	0955		N06	W29	5726	35	1	3	0931	3.50	4.00			
UCCLE	06	0921	0926 D	0926	N09	W35	5726	5 D	2	4	0926	6.00	7.50			
ARCETRI	06	0923 E	0945 D		N10	W41	5726	22 D	1+	3						
CAPRI G	06	0930 E	0950		N07	W33	5726	20 D	1	2			4.00			
UCCLE	06	1221	1223 D	1223	N25	W65	5724	2 D	1	4	1223	2.00	5.00			
HAWAII	06	1758 E	1810	1800	N08	W40	5726	12 D	1	3	1800	1.40				
HAWAII	06	1918	1946	1918	N06	W40	5726	28	1	3	1918	1.30				
HAWAII	06	2314	2322	2316	S04	W47	5726	8	1	3	2316	1.00				
LOCKHEED	07	0200	0245 D	0210	N24	E13	5737	45 D	2	1	0210	5.20			20	S-SWF
VOROSHILOV	07	0214 E	0326 D		N24	E11	5737	72 D	2	2	0217	9.40			91	
KIEV	07	1100 E	1120 D	1100	S13	E58	5741	21 D	1	1	1100	1.04			50	
MCMATH	07	2004	2033 D	2007	N12	E35	5740	29 D	1	3	2007		2.00			
WENDEL	08	0746	0802		N18	E66	5746	16	1				4.00			
KHARKOV	08	0932 E	1006		S12	E48	5741	34 D	1	1	0953	2.29	3.50	1.60		
CAPRI G	08	0936 E	1005		S12	E45	5741	29 D	1	2			2.00			
MCMATH	08	1927	1959	1931	N06	W76	5726	32	1	3	1931		3.10			
HAWAII	08	2328	0010	2332	N07	W32	5732	42	2+	3	2332	6.40				
SAC PEAK	08	2331 E	2354 D	2333 U	N08	W33	5732	23 D	2	1		6.54			23	
MITAKA	09	0505 E	0527 D		S10	W00	5744	22 D	1	1	0512	1.23	1.27	1.80	89	
PIRCULI	09	0732 E	0750 D	0736 U	N13	E15	5740	18 D	1	2	0736	1.84	1.95		66	
MCMATH	09	1730	1913 D	1819	S16	E32	5741	103 D	2	3	1819		6.00			
LOCKHEED	09	1813	1910	1824	S15	E30	5741	57	1	2	1824	2.30			20	G-SWF
HAWAII	09	1816 E	1904	1820	S15	E29	5741	48 D	2	2	1820	2.50				
HAWAII	09	2024 E	2028 D	2024	N15	E07	5740	4 D	1	2	2024	1.20				
VOROSHILOV	10	0122	0128	0126	N05	W82	5726	6 D	1+	1		.73			107	
MITAKA	10	0250 E	0256		N05	W79	5732	6 D	1	1	0250	1.03		2.49	96	
PIRCULI	10	0635 E	0650 D	0640 U	N13	E03	5740	15 D	1	3	0640	2.01	2.02		57	
WENDEL	10	0715	0745 D		N20	W01	5740	30 D	1+				7.00			
PIRCULI	10	0715	0750 D	0725 U	N16	E01	5740	35 D	1+		0725	10.10	10.40		78	
CAPRI S	10	0725 E	0745		N15	E00	5740	20 D	1	3	0735	4.50	4.50			
CAPRI G	10	0734 E	0750		N14	E02	5740	16 D	1	2			6.00			
WENDEL	10	0739	0816 D		S10	W15	5744	37 D	2				8.00			
PIRCULI	10	0739	0840	0750	S10	W15	5744	61	1+		0750	4.59	4.97		92	
ABASTUMANI	10	0740 E	0811 D	0754 U	S10	W16	5744	31 D	1	3		3.62	3.90		76	
CAPRI S	10	0743	0826		S09	W15	5744	43	1	3	0757	3.50	3.50			
CAPRI G	10	0744 E	0820		S10	W15	5744	36 D	1+	2			5.00			
ZURICH	10	0746 E	0807 D		S12	W18	5744	21 D	1	1	0746		4.00			
ONDREJOV	10	0750 E	0818		S13	W15	5744	28 D	1	3	0754			2.10		

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KRASNYA	10	0750	0819	0754	S09	W15	5744	29	1			1.82			90	
WENDEL	10	0806 E	0816 D		N17	E80	5749	10 D	1				3.00			
PIRCULI	10	0928	1107	0944	N15	W00	5740	99	1+		0944	5.05	5.18		77	
CAPRI S	10	0937	1030		N15	W01	5740	53	1	3	1000	3.00	3.10			
CAPRI G	10	0951 E	1025		N13	E00	5740	34 D	1	2			3.00			
CAPRI G	10	1429 E	1510		N13	W02	5740	41 D	1	2			3.00			
CAPRI S	10	1435 E	1505		N13	W03	5740	30 D	1	1	1452	4.50	4.50			
HUANCAYO	10	1532	1642	1613	N17	W06	5740	70	1	2	1615	3.30	3.40	2.00		
CAPRI G	10	1539 E	1620 D		N15	W03	5740	41 D	1	2			5.00			
SAC PEAK	10	1858	1922	1904	N12	W05	5740	24	1	2		3.84			16	
HAWAII	10	1858	1938 D	1908	N14	W04	5740	40 D	1	2	1908	1.50				
LOCKHEED	10	2307	2345	2320	S19	E17	5741	38	1	2	2320	2.00			20	
SAC PEAK	10	2310	2332 D	2322	S15	E13	5741	22 D	1	2		3.05			18	
HAWAII	10	2312	2340	2320	S15	E12	5741	28	1+	3	2320	2.00				
HAWAII	11	0030	0038 D	0030	S16	E11	5741	8 D	1	2	0030	1.30				
PIRCULI	11	0700 E	0755 D	0725 U	S18	W70	5734	55 D	1	2	0725	1.84	5.58		56	
WENDEL	11	0716 E	0755 D		S13	W65	5734	39 D	1				3.00			
PIRCULI	11	0701	0745	0717	S09	W29	5744	44	1+		0717	3.68	4.41		80	
WENDEL	11	0710 E	0748 D		S10	W30	5744	38 D	1				3.00			
CAPRI G	11	0714 E	0745		S10	W28	5744	31 D	1	2			4.00			
CAPRI G	11	0958 E	1200		N14	W36	5737	122 D	1+	2			7.00			
UCCLE	11	1009 E	1200		N16	W35	5737	111 D	1+	4	1028	9.00	11.00			
CAPRI S	11	1001 E	1106		N15	W25	5740	5 D	2	3	1034	5.00	5.50			
CAPRI G	11	1008 E			N13	W14	5740	□	1	2			2.00			
UCCLE	11	1022	1040	1028	N13	W14	5740	18	1	4	1028	5.00	5.00			
STOCKHOLM	11	1150 E	1203 D		N16	W27	5740	13 D	1	1	1157	2.00	2.40			
HUANCAYO	11	1330 E	1421	1330	N15	W14	5740	51 D	1	2	1335	2.90	3.10	2.50		
STOCKHOLM	11	1335	1355 D		N17	W11	5740	20 D	1	3	1336	3.00	3.10			
CAPRI S	11	1336	1412		N14	W15	5740	36	1	3	1342	2.00	2.10			
STOCKHOLM	11	1355 E	1401 D		S18	E13	5741	6 D	1+	2	1356	4.00	4.80			
CAPRI G	11	1355 E	1403		S16	E10	5741	8 D	1	2			2.00			
CAPRI S	11	1356 E	1410		S18	E13	5741	14 D	1	3	1358	3.00	3.30			
MCMATH	11	1828	1836	1830	N14	E62	5749	8	1	3	1830		2.50			
PIRCULI	12	0900	0920	0906	N17	W24	5740	20	1	1	0906	3.21	3.63		68	
KIEV	12	1348 E	1350 D	1350	N16	W27	5740	2 D	1		1350	2.60			70	
MCMATH	12	1648	1722 D		N14	W30	5740	34 D	1	1	1653		1.80			Slow S-SWF
HUANCAYO	12	1651	1712	1656	N18	W28	5740	21	1	2	1658	3.40	3.90	2.20		
MCMATH	12	2028 E	2115 D		N14	W31	5740	47 D	1+	1	2038		3.50			S-SWF
HUANCAYO	12	2032	2054	2039	N16	W29	5740	22	2+	2	2037	12.20	14.20	2.90		
HAWAII	12	2338 E	0010 D	2354	N13	W31	5740	32 D	1	2	2354	1.20				S-SWF
HUANCAYO	13	1820 E	1841	1822	N16	W40	5740	21 D	1	2	1822	2.50	3.30	2.80		
CAPRI G	14	0532 E	0550		S04	E75	5756	18 D	1	2						
STOCKHOLM	14	0947 E	0951		N18	W50	5740	4 D	1	3	0949	1.80	3.20			
WENDEL	14	1054 E	1151		N13	W51	5740	57 D	1+				7.00			
CAPRI S	14	1056	1145 D		N13	W52	5740	49 D	2	3	1105	6.00	10.00			
STOCKHOLM	14	1057	1130		N19	W48	5740	33	1+	3	1059	2.10	3.80			
KHARKOV	14	1057	1149		N14	W54	5740	52	2	3	1108	14.96	22.90	2.90		

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MEUDON	14	1058	1137		N16	W50	5740	39	1+							
CAPRI G	14	1100 E	1145		N14	W53	5740	45 D	2	2			6.00			
UCCLE	14	1101 E	1230 D		N15	W54	5740	89 D	2	4	1120	8.00	12.00			
R O HERST	14	1102 E	1113 D	1102 U	N16	W48	5740	11 D	1	1	1102	1.40	2.40		72	
SCHAUINS	14	1104 E	1130		N15	W54	5740	26 D	2	1			8.00			
KIEV	14	1119 E	1129 D		N16	W58	5740	10 D	1+	1	1129	2.60			123	
NEDERHORST	14	1110 E	1113 D		N15	W15	5746	3 D	2	1						
CAPRI G	14	1438 E	1450		N19	E31	5749	12 D	1	2			4.00			
HAWAII	14	2126	2200	2138	N13	W90	5737	34	1+	3	2138	2.00				
SAC PEAK	14	2148 E	2152 D	2148 U	N14	W90	5737	4 D	1	1		2.16			17	
HAWAII	15	0002 E	0006	0004	N25	E26	5749	4 D	1	3	0004	1.60				
HAWAII	15	0048 E	0100 D		N21	E23	5749	12 D	1+	2	0048	1.90				
TASHKENT	15	0515	0600	0529	N14	W65	5740	45	1	2	0529	4.31	10.00			
CAPRI G	15	0515 E	0602		N17	W63	5740	47 D	2	2			6.00			
KRASNYA	15	0524	0600	0542	N11	W68	5740	36	1+	2		3.22			110	Slow S-SWF
KIEV	15	0526 E	0555 D	0542	N16	W63	5740	29 D	2+	1	0542	5.19			200	
KHARKOV	15	0533 E	0556		N14	W61	5740	23 D	1+	3	0543	6.92	12.50	2.00		
NIZAMIAH	15	0534 E	0546 D	0544	N18	W64	5740	12 D	1+	1	0544	1.82	4.07	2.90		
CAPRI S	16	0958 E	1010		N25	E85	5763	12 D	1	3	1000	.50	.50			
PIRCULI	16	0959 E	1011 D	1001 U	N24	E87	5763	12 D	1+	1		4.62			53	
ZURICH	16	1003 E	1006		N26	E82	5763	3 D	1	2	1003		2.00			
MCMATH	16	1828 E	1836 D	1833	N12	E68	5766	8 D	1	3	1833		3.00			
WENDEL	17	0811 E	0828		S12	W74	5741	17 D	1				3.00			
CAPRI S	17	0827 E	0900 D		N22	E78	5763	33 D	1	3	0836	1.00	2.80			
ARCETRI	17	0835 E			N18	E77	5763	□	1	3						
CAPRI G	17	0837 E	0843		N18	E71	5763	6 D	1+	2			5.00			
MEUDON	18	1040	1055		N17	E60	5763	15	1							
CAPRI G	18	1040	1102	1044	N18	E62	5763	22	1+	2			5.00			
CAPRI S	18	1041 E	1100		N20	E64	5763	19 D	2	3	1045	3.50	7.70			
KIEV	18	1046 E			N18	E63	5763	□	1+	1	1046	3.12			78	
SAC PEAK	18	2238	2300	2244	N04	W53	5759	22	1	2		2.83			16	
HAWAII	18	2240	2304 D		N03	W54	5759	24 D	1	2	2256	1.30				
VOROSHILOV	18	2251 E	2257 D		N03	W56	5759	6	1	1	2251	1.98			68	
LOCKHEED	19	0013	0120	0045	N24	W28	5749	67	1+	1	0045	3.40			30	
VOROSHILOV	19	0014	0126 D	0051	N23	W29	5749	72 D	1+	1		4.25			92	
HAWAII	19	0052 E	0108 D		N23	W27	5749	16 D	1	2	0052	1.00				
ALMA-ATA	19	0318	0340	0323	N07	W56	5759	22	1	2	0323	3.22			55	
TASHKENT	19	0316	0559	0448	N22	W30	5749	163	1+	2	0448	4.23	5.00			
TASHKENT	19	0318	0550	0450	N22	W29	5749	152	2							
ALMA-ATA	19	0319	0456 D	0456	N22	W30	5749	97 D	2+	2	0456	3.69			98	
ALMA-ATA	19	0321	0458 D	0458	N23	W26	5749	97 D	1	2	0458	2.75			76	
MITAKA	19	0342	0423	0407	N21	W27	5749	41	1	1	0357	2.06	2.37	2.54	120	
MITAKA	19	0357 E	0418		N18	W31	5749	21 D	1	1	0357	4.11	4.89	2.41	118	
MITAKA	19	0437 E	0515		N21	W26	5749	38 D	1	1	0455	3.08	3.54	2.58	98	S-SWF
MITAKA	19	0437 E	0515		N18	W31	5749	38 D	1	1	0455	3.08	3.67	2.58	98	
NIZAMIAH	19	0447 E	0454 D		N22	W30	5749	7 D	1+	1	0447	2.73	3.29	1.60		

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KIEV	19	0508 E	0550 D		N21	W29	5749	42 D	2	1	0508	6.23			86	
WENDEL	19	0530 E	0553		N21	W31	5749	23 D	1+				7.00			
ISTANBUL	19	0810	0830		N25	W29	5749	20	1							
WENDEL	19	0821	0844		N11	E62	5765	23	1				3.00			
ISTANBUL	19	0822	0830 D		N11	E63	5765	8 D	1							
PIRCULI	19	0824 E	0843 D	0834 U	N11	E61	5765	19 D	1	2		1.01			64	
CAPRI G	19	1145 E	1225		N03	W59	5759	40 D	1	2			4.00			
WENDEL	19	1256	1310 D		N21	W31	5749	14 D	1				3.00			
SAC PEAK	19	1350	1432	1354	N22	W33	5749	42	1	2		3.32			15	
CAPRI S	19	1350	1503		N20	W31	5749	73	1	3	1400	2.00	2.50			
CAPRI G	19	1356 E	1442		N20	W31	5749	46 D	1+	2			6.00			
SAC PEAK	19	1816 U	1822 D	1822	N18	W41	5749	6 D	1	3		2.18			20	
LOCKHEED	19	1817	1833	1818	N19	W42	5749	16	1	2	1819	2.20			30	
HAWAII	19	1818	1828 D		N16	W42	5749	10 D	1	1	1822	1.10				S-SWF
MCMATH	19	1818 E	1835 D	1819	N18	W42	5749	17 D	1+	2	1819		4.50			
HUANCAYO	19	1821	1833 D	1822	N19	W41	5749	12 D	1	2	1834	1.90	2.60	2.60		
TASHKENT	20	0526	0552	0527	N22	W43	5749	27	1	1	0527	2.01	3.00			
MITAKA	20	0528	0542	0534	N21	W45	5749	14	1	1	0532	2.06	2.84	2.00	100	
KODAIKNL	20	0530 E	0540 D		N20	W48	5749	10 D	1		0530			1.80		
MITAKA	20	0625	0638	0629	N12	E57	5765	13	2	1	0630	3.60	7.20	5.45	169	
CAPRI G	20	0625 E	0658		N10	E55	5765	33 D	1	2			4.00			
KHARKOV	20	0628 E			N14	E58	5765	□	1	2		3.43	6.30			
ZURICH	20	1020	1116 D	1027	N21	W46	5749	56 D	2	2	1020		8.00			
CAPRI S	20	1020 E	1120		N22	W44	5749	60 D	2	3	1033	6.50	9.70			S-SWF
KHARKOV	20	1021	1140	1026	N20	W47	5749	79	2	2	1026	13.40	12.80	3.40		
SCHAUINS	20	1035 E			N21	W45	5749	□	2	1			10.00			
CAPRI G	21	1201	1232		S06	E52	5767	31	1	2			4.00			
ZURICH	21	1637	1645		N19	W63	5749	8	1	3	1637		2.00			
MCMATH	21	1931 E	1957	1935	N18	W77	5749	26 D	1+	1	1935		3.00			
HAWAII	22	0054 E	0116 D		N14	W48	5752	22 D	1+	1	0054	2.40				
MITAKA	22	0444 E	0451		S11	E19	5764	7 D	1	1	0444	4.11	4.44	1.85	120	
TASHKENT	22	0512	0600 D	0524	N22	E07	5763	48 D	1	2	0524	1.74	2.00			
MITAKA	22	0514 E	0541 D	0523	N19	E08	5763	27 D	1	1	0526	2.06	2.10	1.44	102	
ABASTUMANI	22	0602	0620	0608	S11	E18	5764	18	1	3		2.72	2.96		68	
CAPRI G	22	0604 E	0624		S11	E15	5764	20 D	1+	2			5.00			
SIMEIZ	22	0604 E	0625 D	0606	S14	E14	5764	21 D	1	2	0606	1.82			88	
MITAKA	22	0605 E	0615		S11	E18	5764	10 D	1	1	0611	2.06	2.22	1.65	102	
CAPRI G	22	0639	0654		S04	E43	5767	15	1	2			3.00			
CAPRI G	22	0759	0831		N18	W80	5749	32	2	2			6.00			
ABASTUMANI	22	0802 E	0824 D	0806 U	N16	W86	5749	22 D	1+	3		.90	6.51		69	
NEDERHORST	22	0803	0813		N19	W76	5749	10	2	3						
ARCETRI	22	0823 E	0835 D		N16	W80	5749	12 D	1	3	0823	1.10	3.30			
ARCETRI	22	0823 E	0835 D		N20	W72	5749	12 D	1	3	0823	1.20	2.80			
CAPRI G	22	0900	1110		N11	W09	5766	130	1	2			5.00			
CAPRI S	22	0901	1030 D		N13	W02	5766	89 D	1	2	0922	2.50	2.50			
KHARKOV	22	0915 E	0938 D		N13	W06	5766	23 D	1	1	0925	6.96	6.70	1.50		
ZURICH	22	0906	0913		S06	E39	5767	7	1	2	0906		2.00			
CAPRI G	22	0907	0914		S10	E39	5767	7	1	2			3.00			

SOLAR FLARES

JULY 1960

OBSERVATORY	DATE JULY 1960	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 Ho	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
CAPRI S	22	1242	1326		N24	W73	5749	44	1	3	1303	1.50	4.80			
MCMATH	22	1245 E	1332 D		N22	W80	5749	47 D	2	1	1256		7.40			
STOCKHOLM	22	1247 E	1312 D		N22	W69	5749	25 D	1	1	1249	1.50	3.90			Slow S-SWF
CAPRI G	22	1254 E	1325 D		N22	W73	5749	31 D	1+	2			4.00			
UCCLE	22	1304 E	1323 D		N24	W74	5749	19 D	1	4	1308	4.00	8.00			
WENDEL	22	1308 E	1335		N22	W71	5749	27 D	1+				7.00			
CAPRI G	22	1406 E	1425 D		S11	E11	5764	19 D	2	2			6.00			
CAPRI G	22	1622 E	1635 D		S05	E37	5767	13 D	1	2			4.00			
HUANCAYO	22	1625	1640	1629	S02	E38	5767	15	1	2	1629	1.90	2.40	2.50		
MCMATH	22	1722	1743	1725	N14	W55	5752	21	1	3	1725		2.00			
HUANCAYO	22	1723	1736	1725	N13	W55	5752	13	1	2	1725	1.80	3.10	2.10		
MCMATH	22	1831	1844	1832	N23	W79	5749	13	1+	3	1832		4.00			
HUANCAYO	22	1833	1844	1836	N21	W76	5749	11	1	2	1836	1.00	3.50	3.00		
HUANCAYO	22	2107 E	2112	2108	N19	W78	5749	5 D	1	2	2109	.30	1.20	6.30		
PIRCULI	23	0742	0800 D	0747 U	N09	E10	5765	18 D	1	1		1.84			72	
PIRCULI	23	0830	0852 D	0838 U	N09	E06	5765	22 D	1	1		5.05			75	
PIRCULI	23	0833	0840 D	0838 U	S09	E37	5767	7 D	1	1		1.19			70	
CAPRI G	23	1020 E	1030 D		S11	E36	5767	10 D	1	2			4.00			
CAPRI G	23	1105 E	1124 D		N17	W90	5749	19 D	1	2						
MCMATH	23	1227	1242	1229	N13	W68	5752	22	2	2	1229		5.00			
CAPRI S	23	1231 E	1252		N15	W65	5752	21 D	2	3	1235	2.50	6.10			
CAPRI G	23	1232 E	1248		N13	W71	5752	16 D	1+	2			4.00			
LOCKHEED	23	1704	1915	1714	N11	E09	5765	131	1	2	1714	2.70			10	
MCMATH	23	1705	1758 D	1713	N10	E08	5765	53 D	1	2	1713		2.00			S-SWF
HUANCAYO	23	1718 E	1806 D		N11	E14	5765	48 D	1	2	1727	2.40	2.50			
MCMATH	23	1808	1828	1812	N04	E87	5775	20	1+	2			4.00			
HAWAII	23	2258	2322	2302	N09	W04	5765	24	1	2	2302	1.00				
TASHKENT	24	0508	0622	0538	S08	E25	5767	74	1	2	0538	3.03	3.00			
TASHKENT	24	0547	0645 D	0558	N08	W05	5765	58 D	1	2	0558	2.94	3.00			
KHARKOV	24	0555 E	0636		N07	W06	5765	41 D	1	2	0606	2.91	2.80	1.70		
SCHAUINS	24	0605 E	0613		N07	W05	5765	8 D	1	2						
PIRCULI	24	0620 E	0705	0625 U	N08	W06	5765	45 D	1+	2		7.82			80	
ISTANBUL	24	0620 E	0841		N08	W05	5765	141 D	1+							
PIRCULI	24	0640 E	0705 D	0747 U	N07	E89	5775	25 D	1+	2		1.29			78	
SAC PEAK	24	1408	1518	1434	N10	W10	5765	70	1	2		2.60			17	
CAPRI S	24	1410	1512	1430	N08	W07	5765	62	2	3	1444	5.50	5.50			
CAPRI G	24	1422	1505		N08	W13	5765	43	2	2			6.00			
MCMATH	24	1424	1515 D	1432	N09	W10	5765	51 D	1	2	1432		2.00			
LOCKHEED	24	1450 E	1510	1450 U	N08	W12	5765	20 D	1	1	1450	2.50			10	
CAPRI G	24	1456	1516		S07	E13	5767	20	1	2			3.00			
HAWAII	24	2150 E	2248 D	2214	N08	W13	5765	58 D	1	2	2214	1.40				
CAPRI G	25	0933	0944		S09	W31	5764	11	1	2			3.00			
KHARKOV	25	0935 E	0946 D		N09	W22	5765	11 D	1	2	0935	1.14	1.20	1.80		
HAWAII	25	2124	2206	2126	N07	W28	5765	42	1	3	2126	1.50				
HAWAII	26	0054	0114	0056	N07	W30	5765	20	1	3	0056	1.00				
TASHKENT	26	0320	0502	0333	N09	W31	5765	102	1	2	0333	3.40	4.00			Slow S-SWF
ARCETRI	26	0840 E	0842 D		N06	W90	5768	2 D	1	3	0842	.40	2.10			

SOLAR FLARES

JULY 1960

OBSERVATORY	DATE JULY 1960	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 Ho	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
KHARKOV	26	1109 E	1121 D		N10	W37	5765	12 D	1	2	1112	2.29	2.70	1.40		
CAPRI S	26	1146 E	1225		N03	E53	5775	39 D	1	3	1200	1.50	2.60			
KHARKOV	26	1147	1239		N06	E52	5775	52	1+	2	1152	5.71	9.00	1.80		
CAPRI G	26	1151 E	1215		N04	E52	5775	24 D	1	2			4.00			
SAC PEAK	26	1702	1732	1708	N03	E50	5775	30	1+	2		4.15			26	
WENDEL	26	1705 E	1723 D		N04	E50	5775	18 D	1+				7.00			S-SWF
HUANCAYO	26	1707	1728	1711	N00	E52	5775	21	1	2	1709	1.70	2.70			
HAWAII	26	2220	2232 D	2228	N16	E43	5775	12 D	1	2	2228	1.40				
TASHKENT	27	0245	0254	0249	N05	E40	5775	9	1	2	0249	2.26	3.00			
MITAKA	27	0318 E	0326		N04	E40	5775	8 D	1	1	0318	1.03	1.35	1.86	98	
ISTANBUL	27	0722	0733		N06	E43	5775	11	1							
ISTANBUL	27	0743	0759		N09	W50	5765	16	1							
ISTANBUL	27	0825	0830 D		N06	E43	5775	5 D	1							
CAPRI G	27	0829 E	0838		N04	E43	5775	9 D	1	2			4.00			
PIRCULI	27	0832	0842	0834	N05	E43	5775	10	1+	1		4.59			72	
MCMATH	27	1122	1216	1135	N12	W36	5765	54	1+	3	1135		3.60			
ONDREJOV	27	1126	1222		N10	W36	5765	56	1	3	1136			1.80		
CAPRI G	27	1133 E	1220		N12	W37	5765	47 D	1+	2			5.00			
ISTANBUL	28	0710	0730		N06	E31	5775	20	1							
CAPRI G	28	0840	0852		S10	W78	5764	12	1	2			4.00			
WENDEL	28	1240 E	1253 D		N11	E31	5775	13 D	1				3.00			
CAPRI G	28	1243 E	1252		N13	E28	5775	9 D	1	2			4.00			
CAPRI G	28	1557	1652		N06	E26	5775	55	1	2			3.00			
SAC PEAK	28	1632	1710	1636	S09	W89	5764	38	1	2		3.95			16	
CAPRI G	28	1635	1700 D		S10	W82	5764	25 D	1	2						
PIRCULI	29	0637 E	0647 D	0637 U	N09	E13	5775	10 D	1	2		2.11			54	
PIRCULI	29	0647 E	0714 D	0651 U	S08	W90	5764	27 D	1	2		1.10			52	
PIRCULI	29	0809 E	0845 D	0814 U	S08	W90	5764	36 D	1+	2		1.46			63	
ARCETRI	29	0813 E	0852 D		S08	W90	5764	39 D	1	3	0823	.50	2.60			
CAPRI G	29	1215	1247		N04	E10	5775	32	2	2			6.00			
MCMATH	29	1215	1256 D	1228	N05	E14	5775	41 D	1+	2	1228		4.60			
CAPRI S	29	1216	1247		N04	E12	5775	31	1	3	1231	4.00	4.00			
WENDEL	29	1217	1244		N06	E10	5775	27	1+				7.00			
KIEV	29	1223 E	1250 D	1232	N04	E13	5775	27 D	1+	1	1232	4.15			70	
KRASNYA	30	0644	0714	0655	N10	E03	5775	30	1+			5.45			85	
WENDEL	30	0644	0716		N08	E04	5775	32	1				3.00			
WENDEL	30	0644	0718		N10	E09	5775	34	1				3.00			
PIRCULI	30	0649 E	0750 D	0740 U	N08	E05	5775	61 D	1+	3		5.97			73	
ZURICH	30	0651 E	0705		N09	E05	5775	14 D	1	2	0651		4.00			
CAPRI G	30	1112	1138		N08	E05	5775	26	1	2			3.00			
KIEV	30	1215 E	1240 D	1217	N08	E04	5775	25 D	1	1	1217	3.12			70	
CAPRI G	30	1223 E	1239		N08	E03	5775	16 D	1	2			4.00			
WENDEL	30	1225 E	1246 D		N09	E03	5775	21 D	1+				6.00			
WENDEL	30	1359	1436		N09	E02	5775	37	1+				5.00			
KIEV	30	1404 E	1407 D	1407	N07	E03	5775	3 D	1		1407	3.12			70	
ONDREJOV	30	1404	1440		N06	E01	5775	36	1	3	1412			1.90		
CAPRI G	30	1407	1431		N08	E02	5775	24	1	2			5.00			

SOLAR FLARES

JULY 1960

OBSERVATORY	DATE JULY 1960	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
MITAKA	31	0217	0227	0219	N10	W11	5775	10	1	1	0219	1.54	1.54	1.64	110	
LOCKHEED	31	0218	0237 D	0230	N08	W07	5775	19 D	1	1	0230	2.10			20	
MITAKA	31	0226 E	0253	0239	N10	W06	5775	27 D	2	1	0226	5.14	5.24	2.49	183	
MITAKA	31	0323 E	0330		N10	W06	5775	7 D	1	1	0326	3.09	3.15	1.44	120	
MITAKA	31	0458	0504	0500	N10	W12	5775	6	1	1	0500	3.09	3.09	2.54	122	
ONDREJOV	31	0500 E	0510		N10	W15	5775	10 D	1	3	0501			2.30		
ONDREJOV	31	1045	1111		N07	W17	5775	26	1	3	1046			2.80		
WENDEL	31	1150 E	1206 D		N10	W16	5775	16 D	1				3.00			
CAPRI G	31	1405 E	1412		N04	W16	5775	7 D	1	2			3.00			
MCMATH	31	1642	1700	1650	N24	W23	5774	18	1	3	1650		2.00			
VGROSHILOV	31	2226	2242	2228	N24	W64	5779	16	1	2		1.00			76	

These flare reports are addenda to the July 1960 flares published in CRPL-F 192 Part B, August 1960.

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

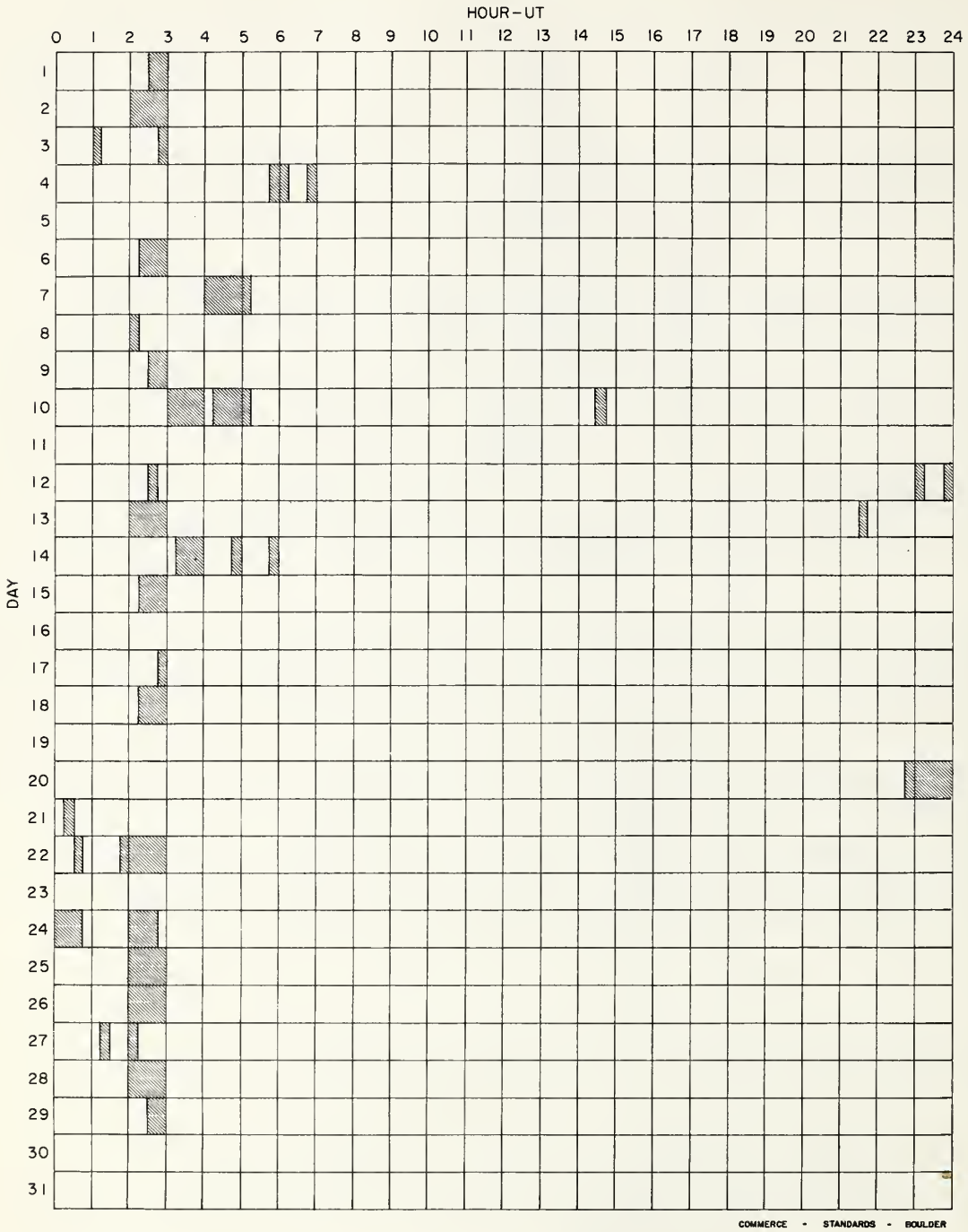
SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40) NOT PERCENT OF CONTINUOUS SPECTRUM.

E - LESS THAN & - PLUS
D - GREATER THAN - - MINUS
U - APPROXIMATE □ - NOT REPORTED

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

JULY 1960



Stations Include:

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

SOLAR FLARES

JUNE 1960

OBSERVATORY	DATE JUNE 1960	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
GOOD HOPE	01	0823	1318 D	0900	N30	E50	5680	295 D	3+		0900	27.00	46.00			Slow S-SWF
GOOD+HOPE	03	1105	1137	1110	S11	W06	5679	32	1		1110	3.20	3.30			
GOOD HOPE	09	1011	1032	1014	S11	E84	5695	21	1		1014	.70				
GOOD HOPE	10	0713 E	0737		N32	W63	5680	24 D	2		0713	3.30	8.20			
GOOD HOPE	10	0959 E	1011 D		N33	W63	5680	12 D	2		1003	3.40	8.40			Slow S-SWF
GOOD HOPE	10	1003 E	1011 D		N09	W90	5687	8 D	1		1003	.30				Slow S-SWF
GOOD HOPE	10	1047	1107		N09	W90	5687	20	1		1048	.30				
GOOD HOPE	10	1158	1219	1201	N09	W90	5687	21	1		1201	.60				
GOOD HOPE	10	1212	1248	1232 U	S18	W90	5679	36	1		1232	1.00				
GOOD HOPE	14	1043	1051 D	1049	N13	W28	5693	8 D	1		1049	2.10	2.40			
GOOD HOPE	16	0846 E	0916 D		N10	E63	5706	30 D	1		0846	1.10	2.60			
GOOD HOPE	27	0757	0826	0800	N10	E25	5720	29	1		0800	3.80	4.30			
GOOD HOPE	27	1017	1042	1030	N29	E62	5724	25	2		1030	2.20	5.40			
GOOD HOPE	27	1149	1216	1152	N12	W87	5706	27	1		1152	1.00				S-SWF
GOOD HOPE	28	0716 E	0731		S16	E31	5725	15 D	1		0717	2.50	3.10			
GOOD HOPE	28	0815	0906		N17	W90	5706	51	1		0850	1.00				
GOOD HOPE	28	1215	1234	1220	N22	W37	5713	19	1		1220	2.30	3.00			
GOOD HOPE	29	0716 E	0757	0722	N29	E45	5724	41 D	1		0722	2.80	4.30			
GOOD HOPE	29	1044	1058	1045	N29	E41	5724	14	1		1045	2.40	3.50			
GOOD HOPE	30	1024	1055 D	1034	N20	W65	5713	31 D	1		1034	1.60	3.90			S-SWF

COMMERCE - STANDARDS - BOULDER

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

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

SEPTEMBER 1960

Sept. 1960	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F 194
1	1455	1523	S-SWF	3	1-	BE, MC	1449E
1	2042	2057	S-SWF	5	1-	LA, MC, PR, WS	2038
2	0240	0323	S-SWF	5	2-	AD, CA, OK, TO, CW++	0250E
2	0540	0646	Slow S-SWF	1	2	OK	*
2	0707	0830	S-SWF	5	1+	OK, PU	0706E
2	2300	2350	S-SWF	5	2+	AD, AN, BO, LA, MC, NZ, OK, TO, WS	2234
3	0045	0251	Slow S-SWF	5	3+	AD, AN, LA, OK, TO, CW++	0037
3	0730	0800	Slow S-SWF	1	1	OK	0725E
3	1605	1715	G-SWF	5	2	BE, BO, FM, HU, MC, PR, WS	
4	0003	0140	Slow S-SWF	5	3	AD, AN, NZ, OK, TO	
4	1100	1127	S-SWF	1	2	TO	1051E
4	1630	1650	S-SWF	5	1	BE, HU, MC, PR, WS	1624
5	0208	0240	S-SWF	5	1	AD, OK, TO	*
5	0300	0328	S-SWF	5	1+	NZ, TO	*
7	1230	1305	S-SWF	3	1-	FM, MC	
7	1307	1400	G-SWF	5	1+	DA, FM, HU, PR	
7	2310	2340	S-SWF	5	2	AD, AN, LA, NZ, OK, TO, WS	2308
14	0814	0839	S-SWF	1	2	PU	
14	1006	1012	S-SWF	1	2	NE	
14	1620	1830	Slow S-SWF	5	3	BE, BO, FM, HU, MC, PR, WS	1722
15	0047	0130	Slow S-SWF	5	2	AD, AN, OK, TO	
15	1510	1555	Slow S-SWF	5	2+	BE, BO, FM, HU, NC, PR, PU, WS	
15	1913	1940	Slow S-SWF	4	1	BE, MC, PR	
15	1950	2025	G-SWF	5	2-	AN, BE, HU, MC, PR, WS	
16	1709	1850	S-SWF	5	3	BE, BO, FM, HU, LA, MC, NE, PR, WS	1710
18	1114	1124	S-SWF	1	1	NE	1114E
18	1824	1850	S-SWF	5	1+	AN, BE, FM, HU, LA, MC, NE, PR, WS	1815
19	0217	0238	S-SWF	5	1-	AD, OK	*
19	0703	0800	S-SWF	5	2+	NE, OK, TO, CW++, CW***	0707E
19	1333	1355	Slow S-SWF	5	2-	BE, DA, HU, MC, PR	*
20	0330	0344	S-SWF	5	1	AD, AN, OK, TO	*
21	0835	0844	S-SWF	3	2	BR, NE, CW**	0832E
26	0520	0721	Slow S-SWF	1	3+	OK	
26	1350	1425	Slow S-SWF	5	2	BE, FM, HU, JU, MC, NE, PR, PU, WS	1332
27	1703	1713	S-SWF	5	1-	BE, FM, HU, MC, PR, WS	1702
29	0504	0540	Slow S-SWF	1	1	OK	*

COMMERCE - STANDARDS - BOULDER

BR = Breisach G.F.R.
CA = Canberra, Australia
DA = Darmstadt, G.F.R.
JU = Juhlesruh, G.D.R.
LA = Los Angeles Calif.
NE = Nederhorst den Berg, Netherlands
NZ = New Zealand Post and Telegraph Department
PU = Prague Czechoslovakia
TO = Hiraiso Radio Wave Observatory Japan
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.)

SEPTEMBER 1960

Sept. 1960	CLASS SCNA	CLASS SEA	CLASS Burst	WIDESPREAD INDEX	TIME (UNIVERSAL TIME) BEGIN	TIME (UNIVERSAL TIME) MAX.	TIME (UNIVERSAL TIME) END	PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
1			1	1	0015		0031		HA (Group of Bursts)
1			1	1	1322	1325	1329		RE
1	1			1	2005	2009	2028	15	HA
1			2	5	2030		0017		BO,HA.MC,RE (Noise Storm with strongest peaks at: 2045, 2103, 2112, 2142, 2202, 2232, 2246, and 2251.
1		2		5	2042	2112	2147		A1, A3, A9, A10, HA
1	□			5	2047U			10	BO, HA (Times and Maximum absorption obscured by bursts. 10% absorption at 2047).
1		1+		3	2130	2140U	2230		A1, A10
2		1		5	0240	0255	0315		A11, HA, HO, TY
2	2			1	0240	0247	0330	45	HA
2		1		1	0552	0558			A11
2		1		1	0939	0945	1006		TY
2			2	5	1742	1811	1850		BO, MC, RE, (Group of Bursts).
2		1+		5	2159	2211	2235		A1, A3, TO
*2	2			5	2302	2305	2340	50	BO, HA, MC
*2		3		5	2303	2310	0000		A2, BO, HA, TO
*2			2	5	2306		2314		BO, HA
3			2	1	0007		0011		HA
3	3			1	0103	0109	0230D	90	HA
3		3		1	0103	0116	0230		HA
3		2+		1	0652	0656U	0728		A11
3		2+		1	0728	0737	0755D		A11
*3			1	1	1609		1650		RE, (Group of Bursts).
3			1	1	1728	1730	1733		RE
4	2			1	0005	0020	0130D	50	HA
4		3-		5	0007	0026	0140		A11, HA
* 4		1		5	1242		1322		A1, A3, A5, NE, PA
4			1	5	1923	1926	1927		BO, MC, RE
5	1			1	0206	0212	0235	10	HA
5		1		1	0212	0227	0305		HA
5			1	5	1952		1957		BO, HA, MC
5		2+		3	2113	2119	2155		A1, A10
5			1	1	2114		2116		HA
7	1			1	1248	1259	1307		MC
7		1		5	1307		1352		NE, PA
7	2			5	2310	2314	2330	50	BO, HA
7		2		5	2310	2321	2350		A3, A11, HA, HO, TY
7			1	5	2331		2333		BO, HA
8		3+		1	0357	0408	0457		A11
8		2		1	0726	0735	0820D		A11
8			1	5	2340		2342		BO, HA
10		1		1	2324	2339	2357		TY
* 11		2		5	1204	1212	1242		A5, DU
11			1	1	2245		2249		HA
11			1	1	2300		2303		HA
12			1	4	1516		1518		BO, MC
12			1	4	1618		1624		BO, MC
12			2	4	1804		1815		BO, MC
12			1	4	1820		1840		BO, MC, (Group of Bursts).
13		1		1	1113				NE
13		1+		3	1456	1505	1530		A1, A3
13			1	4	1513		1518		BO, MC
13			1	4	1555		1602		BO, MC
13			1	5	2035		2037		BO, HA
14		1+		1	0003	0012	0042		TY
14		1		1	0516	0524	0551		TY
14		1		1	1006		1026		NE
14			2	5	1400		2300D		BO, HA, MC, (Noise Storm).

COMMERCE - STANDARDS - BOULDER

IONOSPHERIC EFFECTS OF SOLAR FLARES

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

SEPTEMBER 1960

Sept. 1960	CLASS SCNA	CLASS SEA	CLASS Burst	WIDESPREAD INDEX	TIME (UNIVERSAL TIME) BEGIN	TIME (UNIVERSAL TIME) MAX.	TIME (UNIVERSAL TIME) END	PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
14	2			4	1648	1720	1815D	45	BO, MC
14		1+		3	1700	1708			A1, A3
15	1			1	0046	0055	0110	15	HA
15		1+		5	0049	0058	0116		HA, TY
*+15		1+		3	1510	1520	1620		A3, A5
15	1			1	1520	1528	1540		MC
15			1	5	2140		2153		BO, HA, (Group of Bursts).
16			3	4	1518		1525		BO, MC
16		3+		5	1708	1718	1745D		A1, A3, A5, A10
16	2			5	1710	1730	1746	40	BO, MC, RE
16			3	1	1718	1724	1726		RE
16			2-	5	1744		1835		BO, MC, RE, (Group of Bursts)
16			1	1	2116		2121		BO
18		2		1	1114		1144D		PA
18			2	5	1400		2200D		BO, HA, MC, RE, (Series of Bursts with peaks ar: 1645, 1710, 1718, 1750, 1828, 1833, 1909, 1950, 2043, and 2120).
18		1-		1	1404	1405	1434		DU
18	2			5	1827	1830	1837	35	BO, HA, MC
*+18		1		5	1827	1838	1915		A1, A3, A9, A10, BO, HA
19		1		1	0705	0710	0742		TY
* 19		1+		3	1327	1343	1355D		A3, A5
19			1	4	1753		1757		BO, MC
19			1	4	1825		1828		BO, MC
19			1	5	2023		2028		BO, HA
19			1	5	2039		2040		BO, HA
20		1		4	0333	0350	0400		A11, TY
20			1	4	1634		1636		BO, MC
21		2		4	0834	0839	0935		A11, TY
21			1	1	2215	2219	2223		RE
21			1	1	2229	2232	2233		RE
22			1	1	2001		2003		BO, HA
22			1-	1	2111	2114	2115		RE
24			1	5	2115	2118	2121		BO, MC, RE
25		2		3	1835	1854	1940		A1, A3, A10
25			1	4	2035		2040		BO, HA
25		2		3	2116	2132	2210		A1, A3, A10
26		3		1	0534	0606	0827		TY
26			1-	1	1812	1814	1816		RE
26			1	5	1847		1852		BO, MC, RE
26			1	1	2148	2150	2152		RE
27	1			5	1703	1706	1715	15	BO, MC, RE
*27		1		4	1703		1725		A3, BO, MC
27			1	5	1816		1821		BO, MC, RE
27		1		1	2052	2100	2124		A3
27	1			5	2057	2100	2108	10	BO, HA
28			1	5	2041		2044		BO, HA, MC
28			1	1	2351		2353		HA

COMMERCE - STANDARDS - BOULDER

* = Sudden Enhancement of Signal from 18 kc to (NBA - Panama Canal Zone) observed by A5.

\+ = Sudden Phase Anomaly of 18 kc (NBA) at Boulder, Colorado (equipment working part of Sept. 12, 13, 14, 16 17, and 20, 1960).

Note: No usable record at Sacramento Peak for September 1960.

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

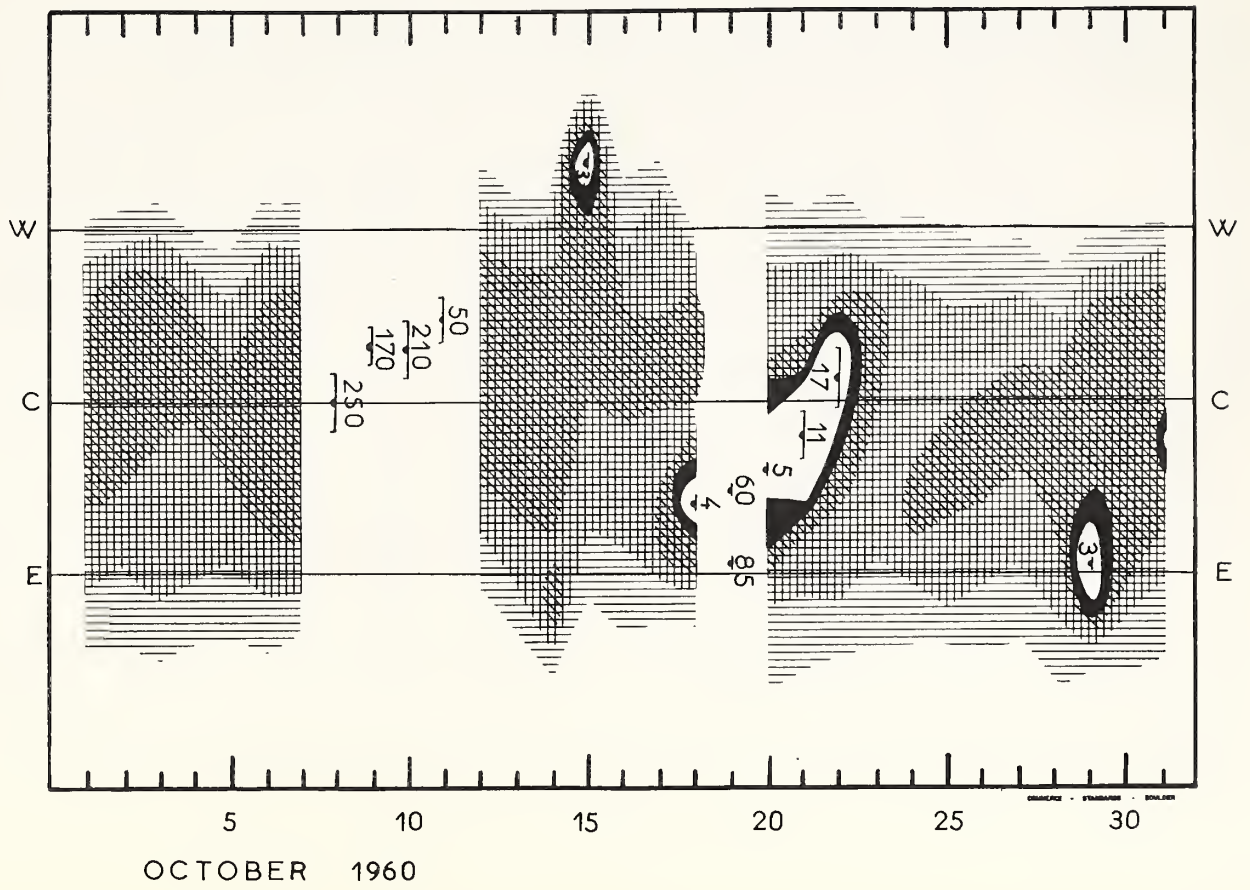
Ottawa OCTOBER 1960 **2800 Mc**

Oct. 1960	Type*	Start UT	Duration Hrs:Mins	Maximum		Remarks
				Time UT	Peak Flux	
7	2 Simple 2	1949	3.5	1949.8	45	
8	2 Simple 2	1228.5	5	1229.5	10	
9	2 Simple 2	1157	15	1200	85	
	4 Post Increase		50		9	
9	2 Simple 2	1547.5	1	1547.8	10	
9	2 Simple 2	1639.7	2	1640.3	10	
9	2 Simple 2	2137	3	2137.3	11	
10	3 Simple 3 A	1420	1 10	1453	6	
	2 Simple 2	1428	2.5	1429.1	18	
10	3 Simple 3	1830	2 00	1930	5	
11	1 Simple 1	1610.2	1	1610.7	4	
11	3 Simple 3 A	1748	1 42	1815	13	
	2 Simple 2 f	1759.5	12.5	1804.7	190	
	6 Complex	1817	18	1818	28	
12	2 Simple 2	1211	5	1212	62	
12	3 Simple 3 A	1722	1 25	indet.	8	
	6 Complex f	1725	6	1726.5	29	
	6 Complex	1734	5	1736.5	8	
	6 Complex f	1745.5	7	1748	83	
13	3 Simple 3 A	1910	1 20	indet.	5	
	1 Simple 1	2000	5	2002.5	4	
15	1 Simple 1	1327	6	1330	7	
15	3 Simple 3 f	1414.5	9	1419.5	15	
15	2 Simple 2 f	1924	2	1924.5	12	
16	2 Simple 2	1519.5	1	1520	12	
16	1 Simple 1	1825	1.5	1825.5	5	
18	1 Simple 1	1934	1	1934.3	7	
20	1 Simple 1	1245	3	1246	7	
20	2 Simple 2	1453	1	1453.3	40	
21	1 Simple 1	1239.3	5	1239.9	7	
23	9 Precursor	2056	4.7		9	
	6 Complex f	2100.7	37	2122.5	325	
	4 Post Increase		> 20		15	
29	- Record Incomplete	b1215	>3 15	1215	15	
30	3 Simple 3	1553	1 10	indet.	4	

COMMERCE · STANDARDS · BOULDER

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

Nancay OCTOBER 1960 169 Mc



SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

BOULDER — OCTOBER 1960 — 108 MC

Oct. 1960	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
3	3	1413.2	1413.2	0.4	1*
3	2	1443.3	1444.0	2.7	1
3	3	1547.6	1548.0	1.2	1
3	3	1549.8	1550.1	0.4	1
3	3	2221.0	2221.0	0.2	1
4	3	2248.2	2248.2	0.9	1
5	3	1400.0	1400.1	0.3	1
5	3	1417.5	1418.0	0.6	2
6	3	1900.0	1900.9	1.0	1
6	3	1916.8	1917.1	1.2	1
6	3	2015.2	2015.2	1.0	2
6	8	2019.0	2020.0	3.2	2
6	3	2024.9	2025.3	2.0	2
6	3	2032.0	2032.0	2.5	2
6	3	2046.4	2046.7	0.7	2
6	3	2337.5	2338.0	2.1	2
7	3	1654.0	1654.2	0.4	1
7	2	1944.0	1946.0	2.6	1
7	8	1948.8	1950.0	3.2	3
7	7	2005		214. D	1
7	3	2352.4	2353.1	0.8	2**
7	3	2359.0	2359.5	0.5	1**
8	6	1308 E	1347	649 D	2
9	6	1309 E	1835	647 D	2
9	8	2136.0	2137.5	2.9	3
10	6	1310 E	2150	644 D	3
11	6	1311 E		499 D	2
11	8	1803.4	1804.7	3.6	3
12	6	1312 E		433 D	1
12	8	1645.5	1646.0	3.5	2
12	8	1725.0	1727.5	5 0	2
12	3	1751.5	1753.0	2.0	3
12	8	1756.8	1758.9	4.2	3
13	3	1734.8	1735.2	0.5	2
13	3	1804.0	1805.0	1.6	2
13	3	1905.1	1906.2	2.0	2
13	3	2238.5	2238.9	0 2	2
14	2	1506.5	1510.0	6	1
14	3	1814.2	1814.5	0.3	2
14	8	2116.5	2119.0	3.0	1
14	8	2123.0	2123.0	10	1
14	2	2146.0	2150.0	13	1
14	8	2200.0	2204.0	14	1
14	3	2341.0	2342.0	1.9	2
14	3	2348.5	2349.0	1.3	1
15	2	1414.4	1422.0	11	2
15	3	2156.8	2157.2	1 0	2
16	8	1408.0	1410.0	2.5	2
16	7	1418.0		492	1
16	3	1928.0	1929.3	1.5	3
17	3	1413.5	1414.4	0.9	2
17	3	1452.6	1454.4	2.0	2
17	3	1456.8	1457.0	0.8	2
17	3	1517.0	1517.0	0.4	2
17	3	1520.0	1520.7	1.3	2

Oct. 1960	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
18	2	2011.0	2019.4	9	2
18	7	2156	2306	112 D	2
19	6	1320 E	1503	627 D	3
19	8	1925.0	1927.5	3.0	3
20	3	1349.4	1349.6	0.6	1
20	3	1359.5	1359.5	0.3	1
20	3	1422.6	1423.0	1.0	1
20	3	1446.0	1448.0	2.0	3
20	3	1453.0	1453.5	2.0	3
20	3	1618.3	1618.5	0.4	2
20	3	1645.2	1645.2	0.4	1
20	3	1713.6	1714.7	1.4	3
20	3	1827.5	1827.9	1.0	1
20	3	1834.0	1835.5	2.0	2
20	3	1903.0	1903.8	1.0	1
20	3	1910.0	1910.0	0.4	1
20	3	1953.0	1953.4	0.7	1
20	3	2136.1	2136.1	0.5	1
21	6	1322 E		622 D	1
22	6	1323 E		102 D	1
22	3	1358.4	1359.0	3.5	3
22	3	2244.7	2245.2	0.9	2
23	8	2107.0	2110.0	16	1
24	7	1531		58	1
24	2	1656.0	1656.7	3.4	2
24	3	1704.2	1704.2	0.2	1
24	3	1718.0	1718.6	0.9	2
24	3	1948.1	1949.0	0.9	3
24	3	2007.0	2008.2	1.0	2
24	3	2123.0	2123.0	0.4	2
24	2	2149.8	2150.0	41	2
25	3	1337.0	1337.1	0.3	1
25	2	1347.0	1347.1	3.5	1
25	3	1407.3	1407.3	0.2	1
25	3	1701.9	1702.0	0.4	1
28	3	1830.0	1830.2	0.7	1
29	3	1401.0	1402.0	4.2	2
29	3	1428.0	1428.0	0.3	1
29	3	1528.4	1529.4	2.0	1
29	3	1600.0	1600.3	0.7	1
29	2	1622.0	1624.6	5	1
29	3	1638.8	1638.8	0.4	1
29	8	1656.5	1658.7	8	3
29	3	1705.0	1706.4	1.7	1
29	3	1711.0	1711.0	1.0	1
29	3	1728.0	1728.5	1.0	1
29	3	1753.0	1753.0	0.7	1
29	2	1905.0	1906.8	3.0	1
29	3	1939.5	1940.0	1.0	1
29	2	1959.0	2007.7	15	1
29	3	2046.5	2047.5	2.0	2
29	3	2052.1	2052.8	0.8	2
29	2	2054.0		2.0	1
29	2	2148.1	2150.0	3.4	2
29	3	2158.1	2158.9	0.9	1

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

BOULDER 108 MC

Oct. 1960	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
17	3	1532.5	1533.0	0.8	1
17	3	1545.7	1547.9	2.5	1
17	3	1614.5	1614.7	0.4	2
17	3	1706.0	1706.0	0.4	2
17	3	1716.3	1716.5	1.7	1
17	3	1910.9	1911.0	0.3	1
17	2	1922.2	1934.1	17	1
17	3	2032.5	2033.0	1.0	2
17	3	2048.8	2049.6	2.0	1
17	3	2129.0	2129.1	0.5	1
17	2	2245.0	2245.5	30	2
17	3	2346.2	2347.0	1.0	2
18	3	1351.1	1352.2	1.3	1
18	7	1458	1511	63	1
18	7	1625	1653	171	2
29	3	2241.0	2241.0	0.1	1
29	3	2322.5	2322.8	0.7	1
30	3	1911.0	1911.0	0.4	1
30	3	2007.0	2007.5	0.7	2
30	2	2025.0	2041.0	39	1
30	3	2131.0	2131.0	0.4	1
30	3	2217.5	2219.4	3.0	1
31	3	1420.1	1420.2	0.3	1
31	3	2022.9	2023.5	1.2	1
31	3	2111.0	2112.2	1.2	1
31	3	2148.9	2149.1	0.6	1
31	2	2156.0	2201.0	7	2

COMMERCE - STANDARDS - BOULDER

NOMINAL TIMES OF OBSERVATIONS

BOULDER 108 MC

Oct. 1960	U.T.	Oct. 1960	U.T.
1	1301-0010	17	1317-2348
2	1302-0010	18	1319-2348
3	1303-0007	19	1320-2347
4	1304-0002	20	1321-2345
5	1305-0002	21	1322-2344
6	1306-0000	22	1323-2343
7	1307-2359	23	1324-2341
8	1308-2357	24	1325-2340
9	1309-2356	25	1326-2340
10	1310-2354	26	1327-2339
11	1311-2353	27	1328-2336
12	1312-2353	28	1330-2335
13	1313-2352	29	1331-2335
14	1314-2352	30	1332-2334
15	1315-2351	31	1333-2331
16	1316-2349		

COMMERCE - STANDARDS - BOULDER

COSMIC RAY INDICES

(Climax Neutron Monitor)

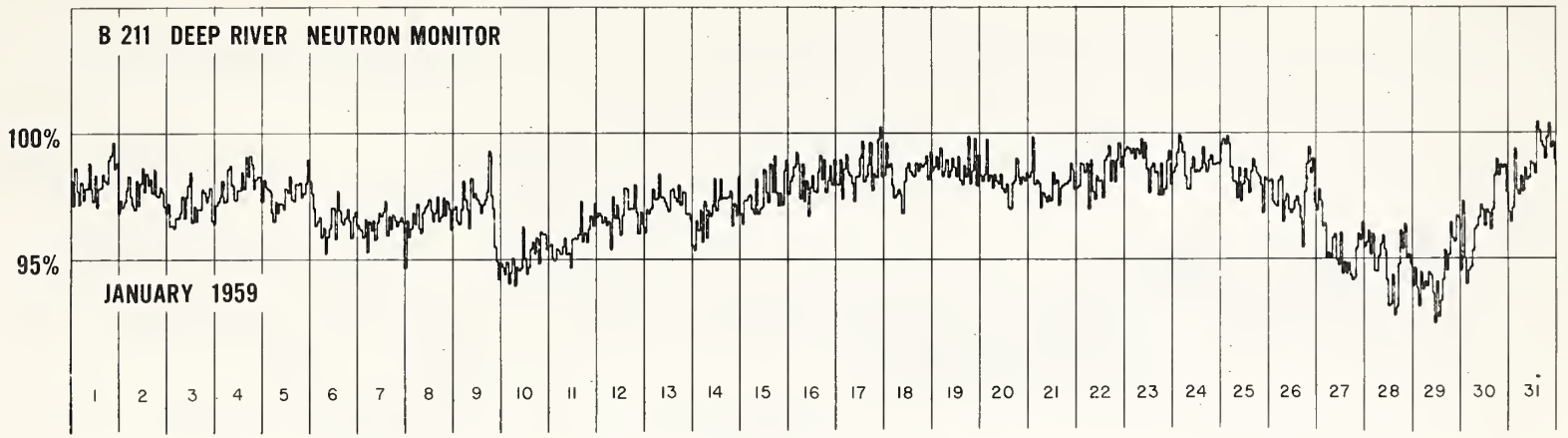
Sept. 1960	Daily average counts/hr	Sept. 1960	Daily average counts/hr
1	2857.5	16	2885.1
2	2864.5	17	2877.2
3	2862.1	18	2899.6
4	2827.7	19	2905.2
5	2828.0	20	2904.9
6	2780.3	21	2903.6
7	2764.5	22	2912.7
8	2781.1	23	2913.1
9	2802.2	24	2915.5
10	2824.4	25	2894.5
11	2835.7	*26	2894.8 (18)
12	2850.1	27	2906.8
13	2881.5	*28	2888.2 (18)
14	2883.1	29	2901.6
15	2894.1	30	2909.7

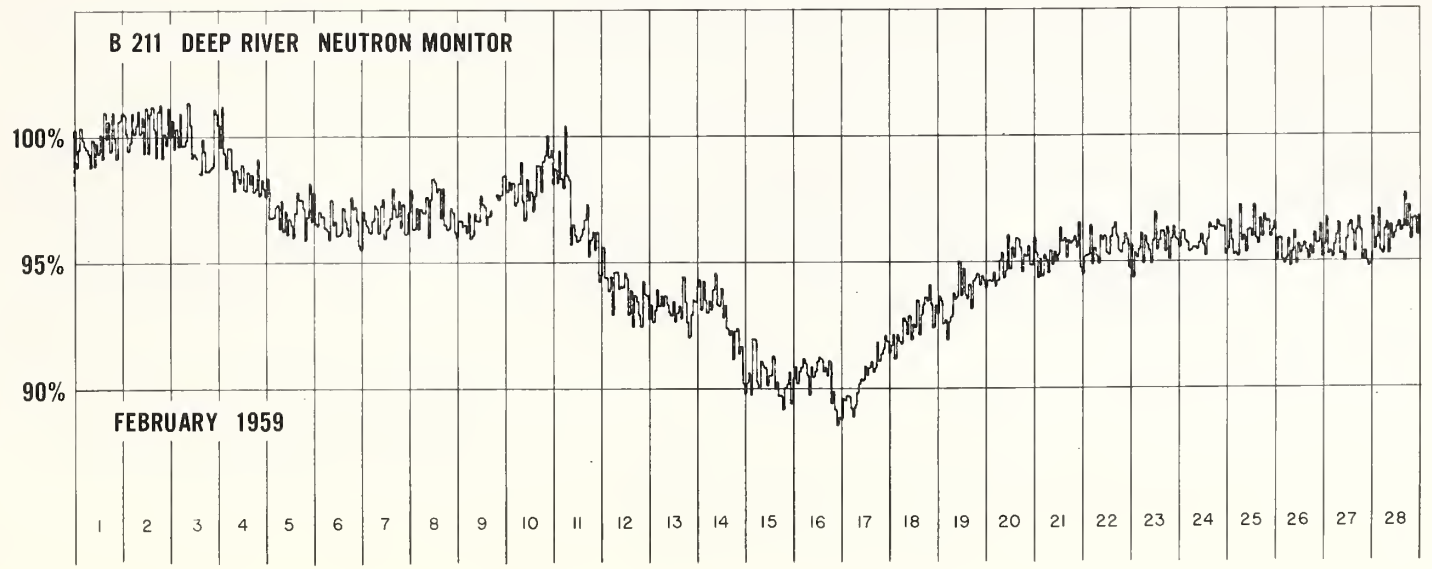
COMMERCE - STANDARDS - BOULDER

*There were fewer than 20 hours contributing to the given average. The number in parentheses following the average gives the number of hours in the average.

COSMIC RAY INDICES

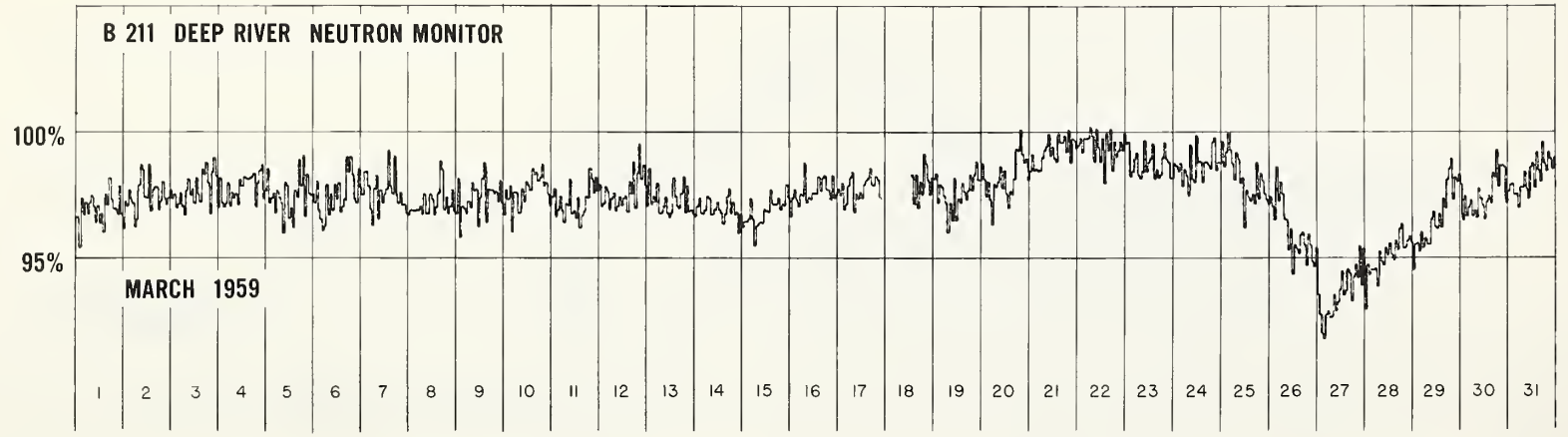
(Pressure Corrected Hourly Totals)

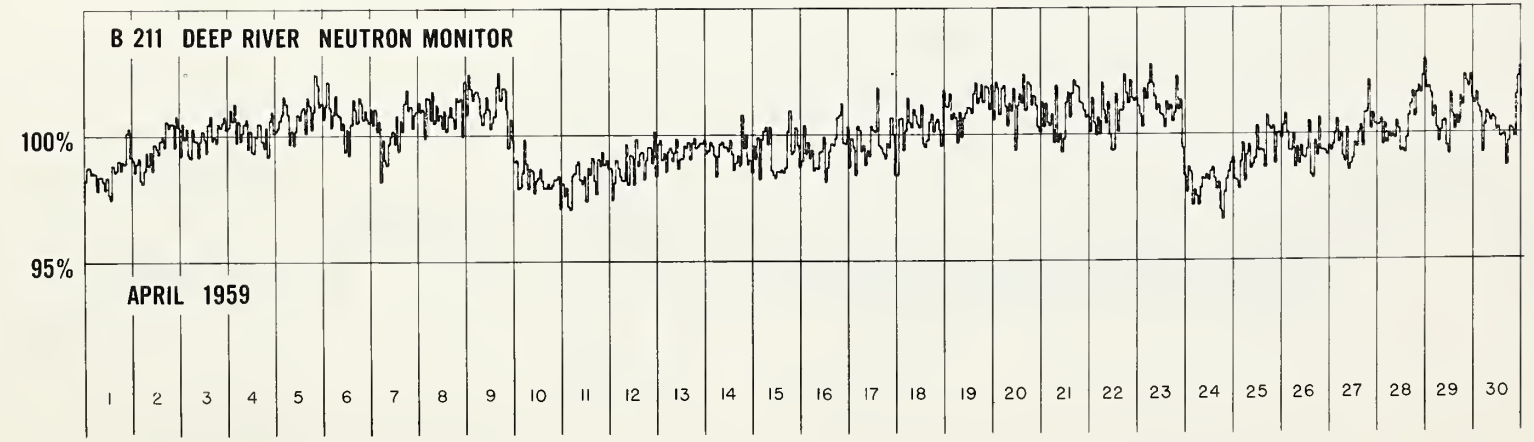




COSMIC RAY INDICES

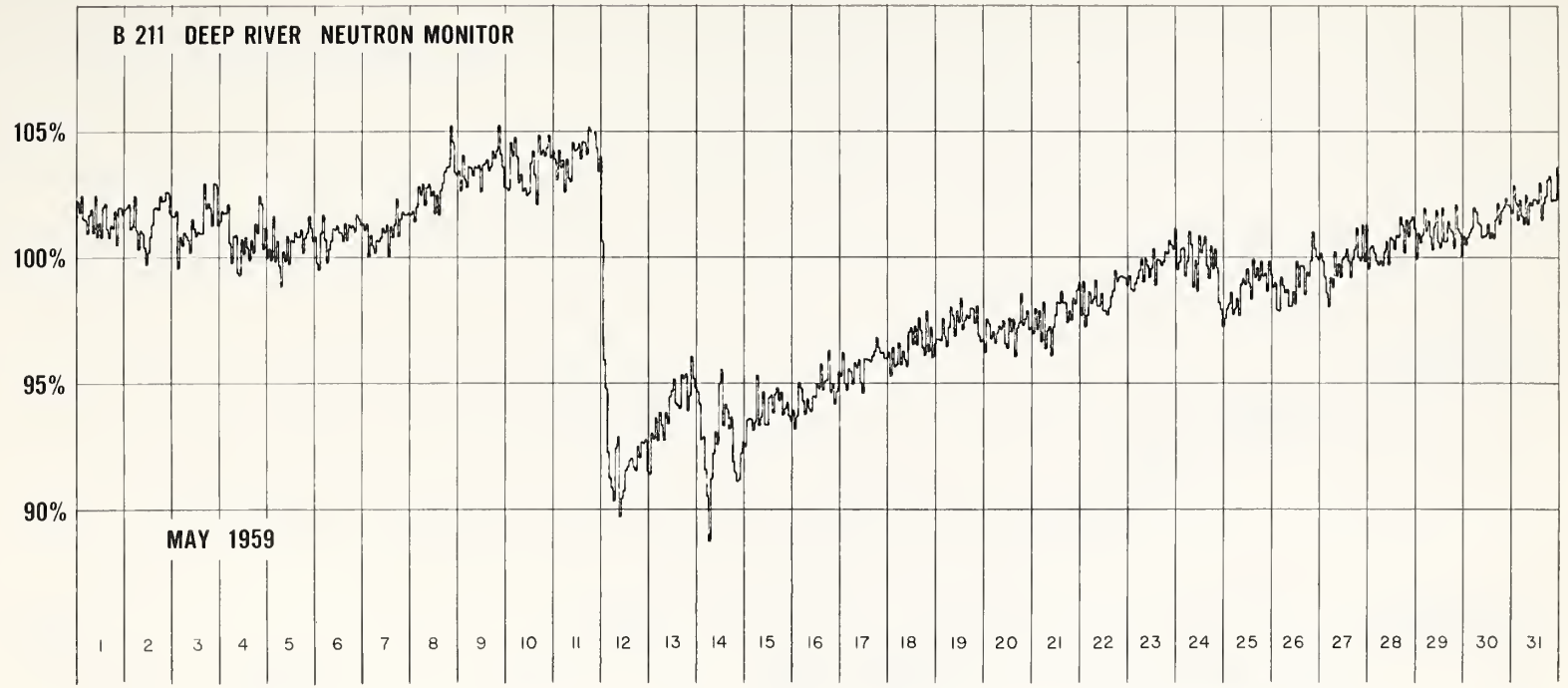
(Pressure Corrected Hourly Totals)





COSMIC RAY INDICES

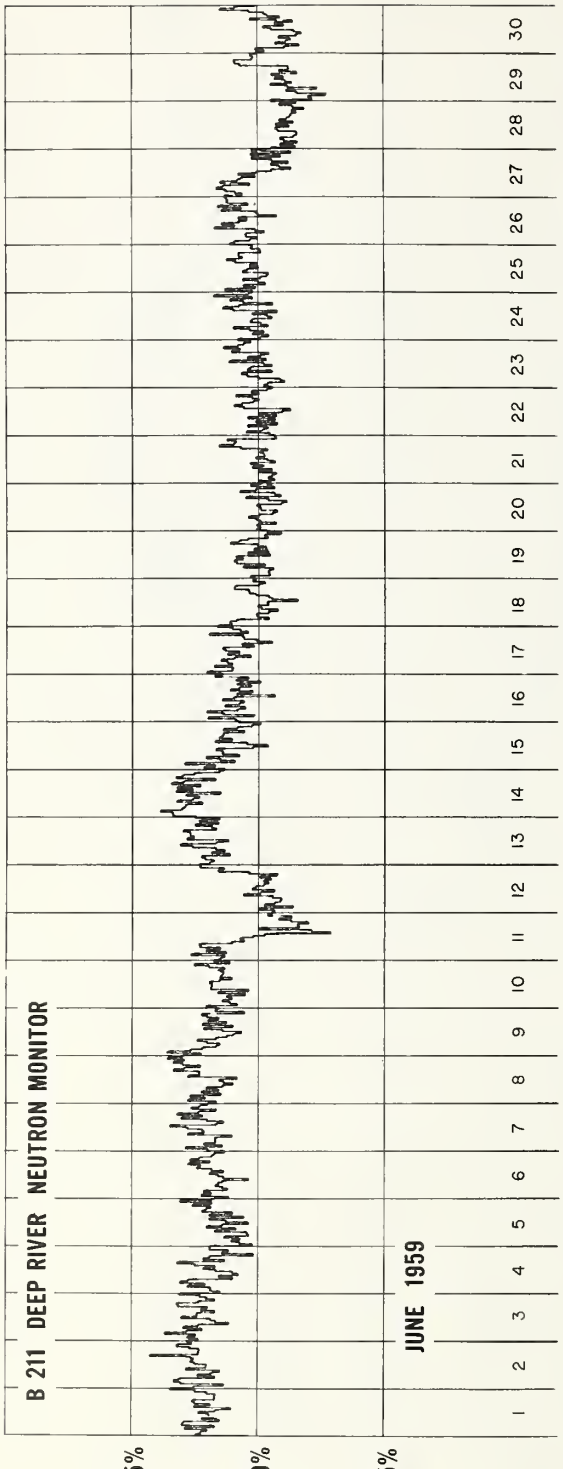
(Pressure Corrected Hourly Totals)



COMMERCE - STANDARDS - BOULDER

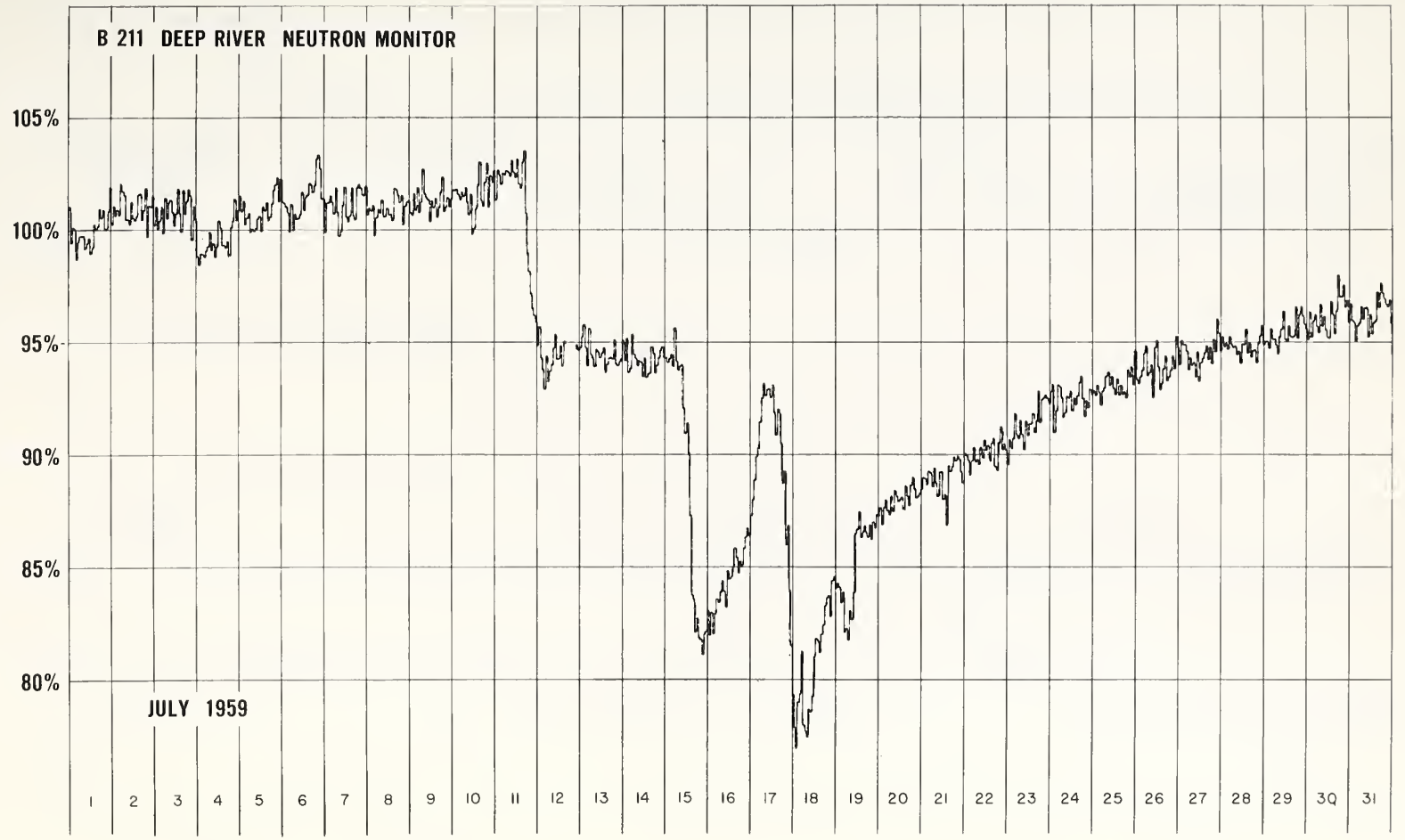
COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)



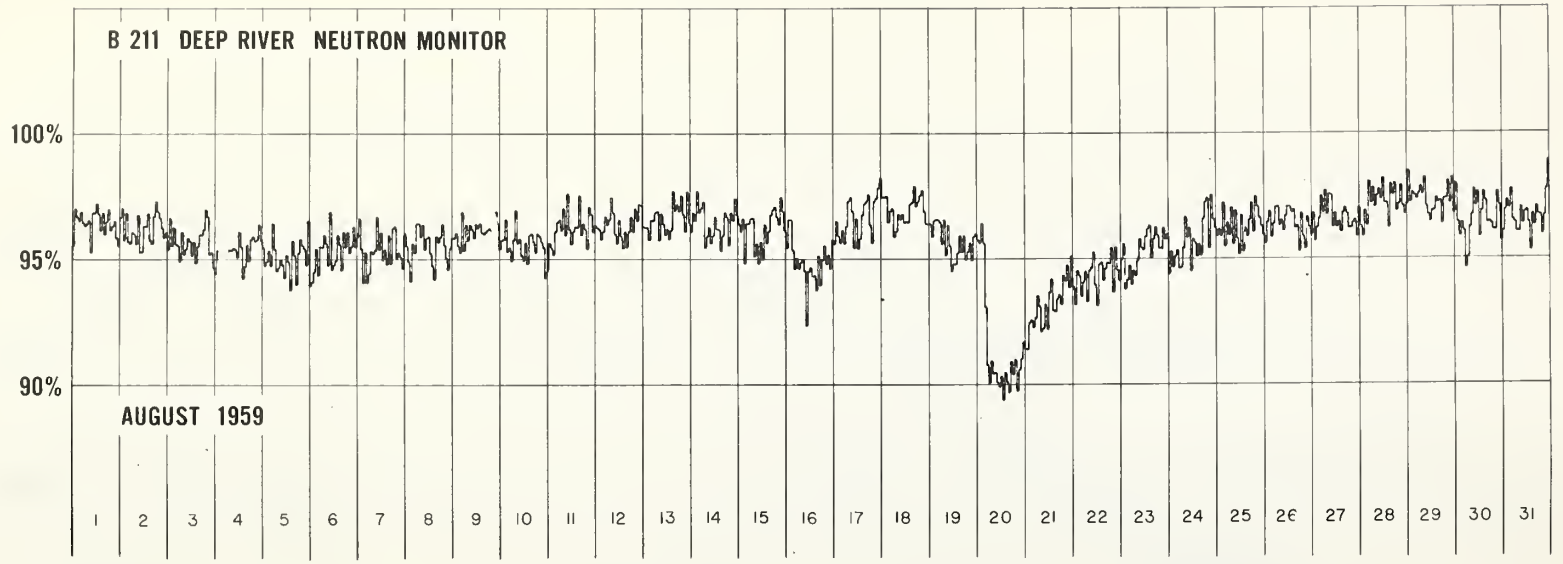
COSMIC RAY INDICES

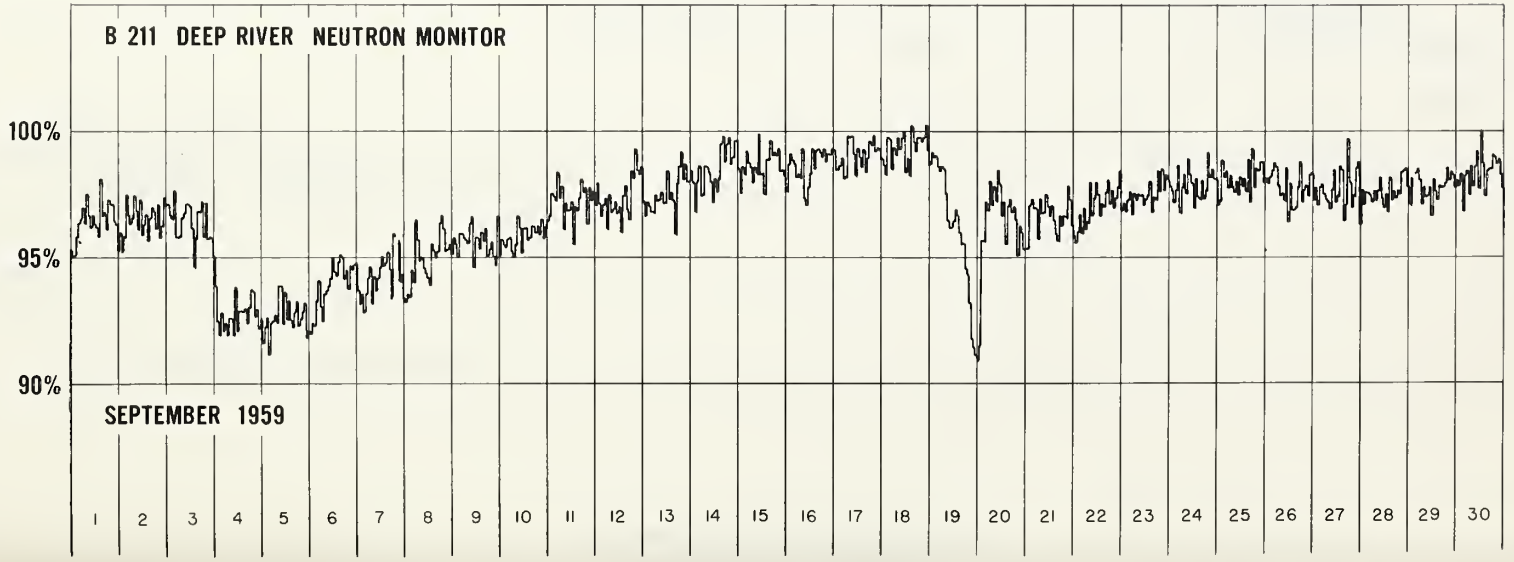
(Pressure Corrected Hourly Totals)



COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

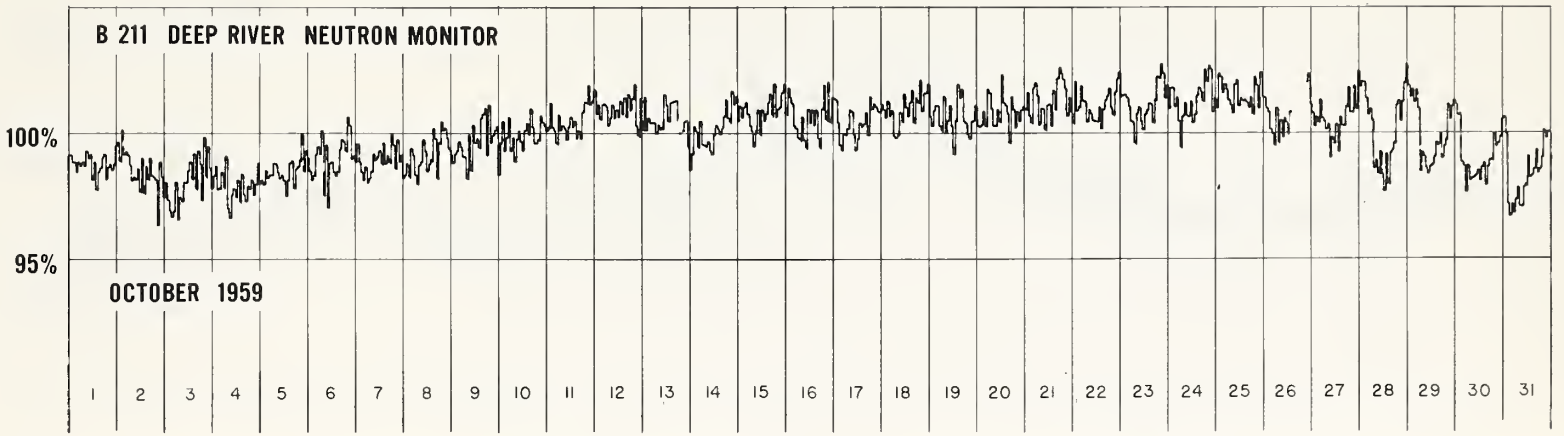


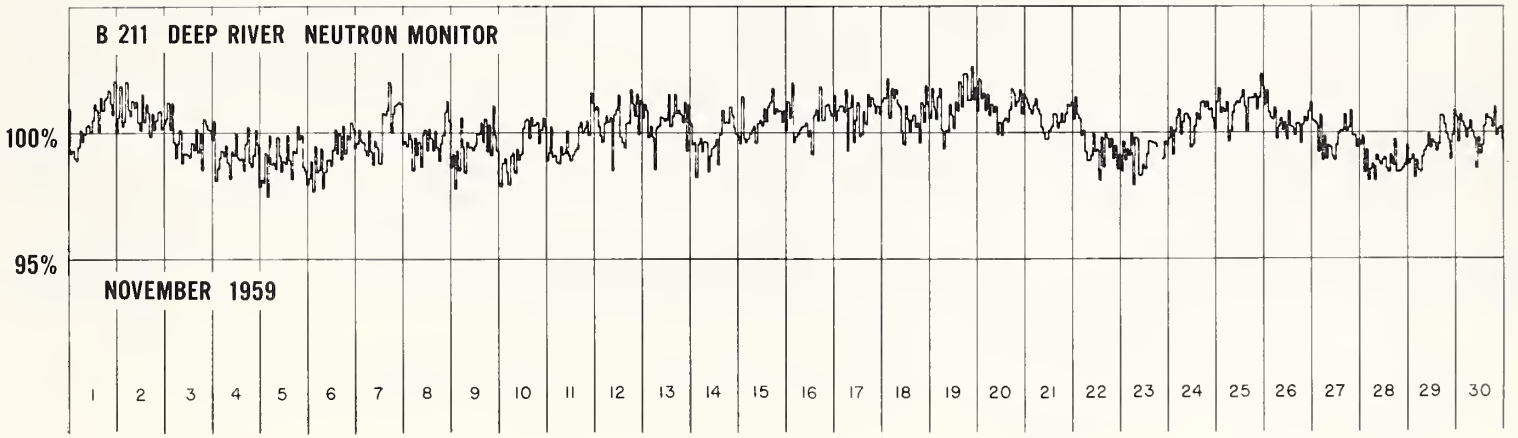


COMMERCE - STANDARDS - BOULDER

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

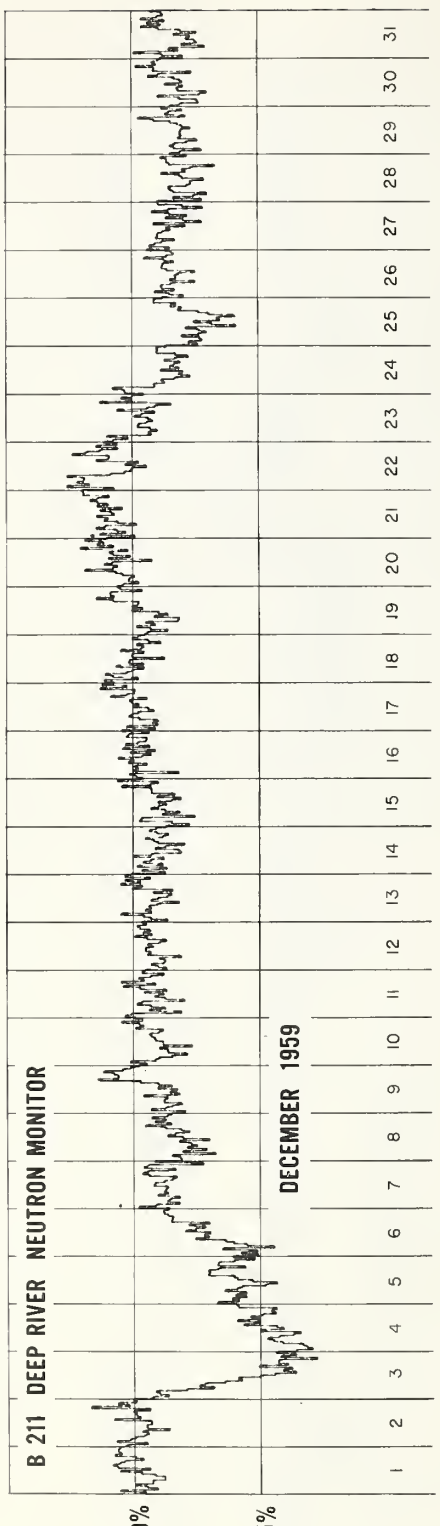


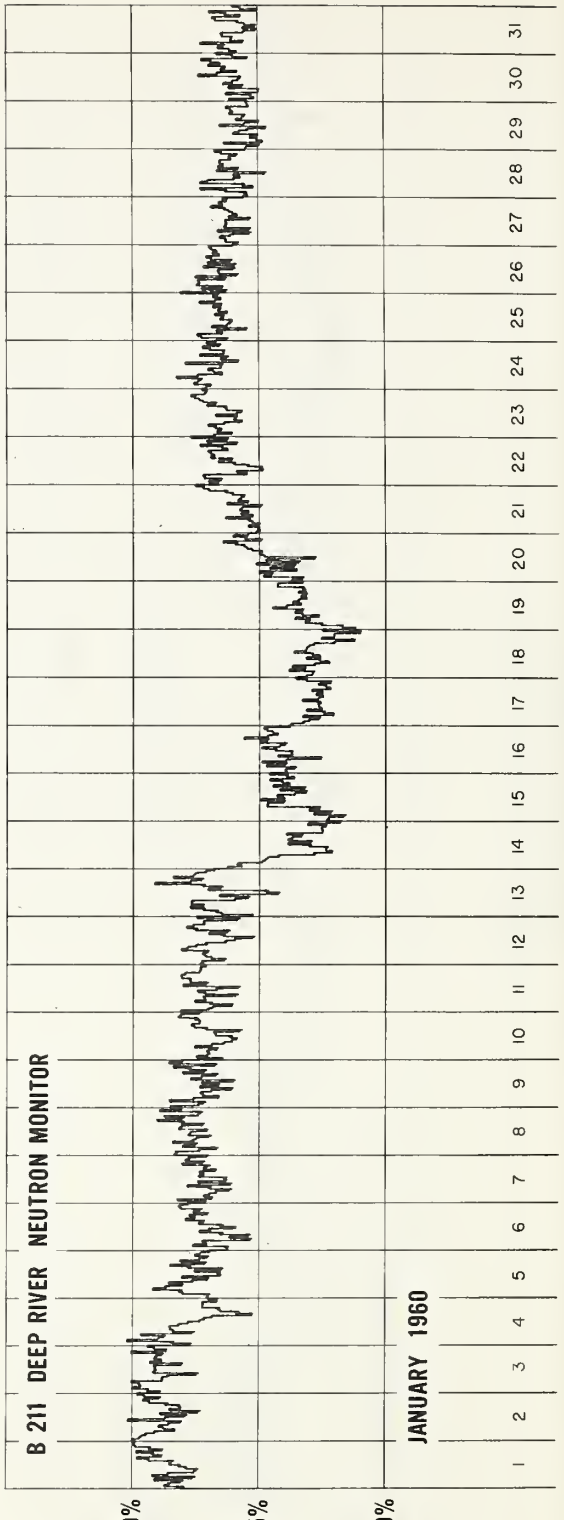


COMMERCE - STANDARDS - BOULDER

COSMIC RAY INDICES

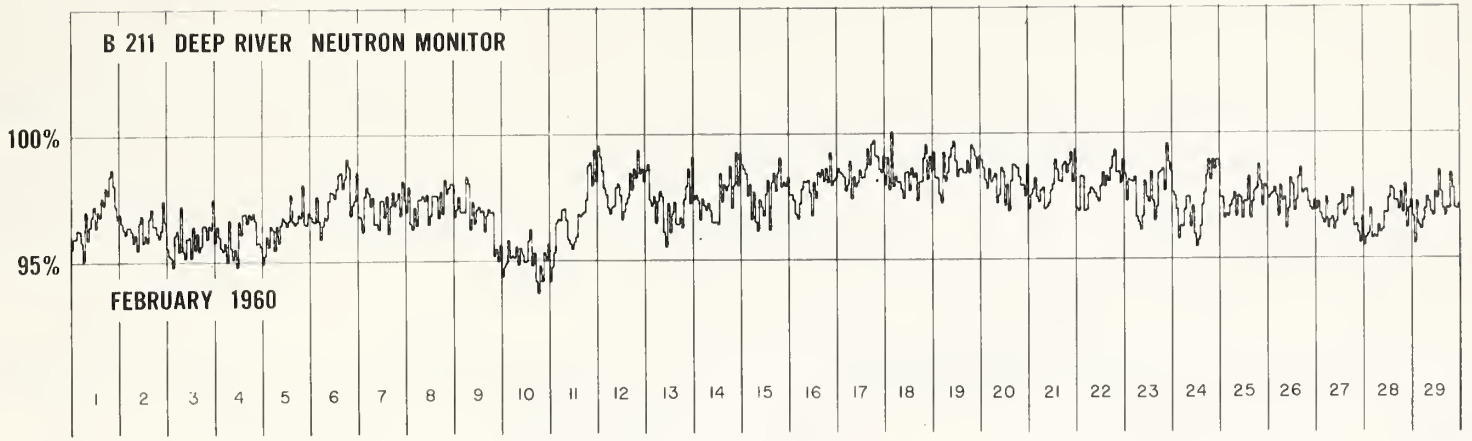
(Pressure Corrected Hourly Totals)

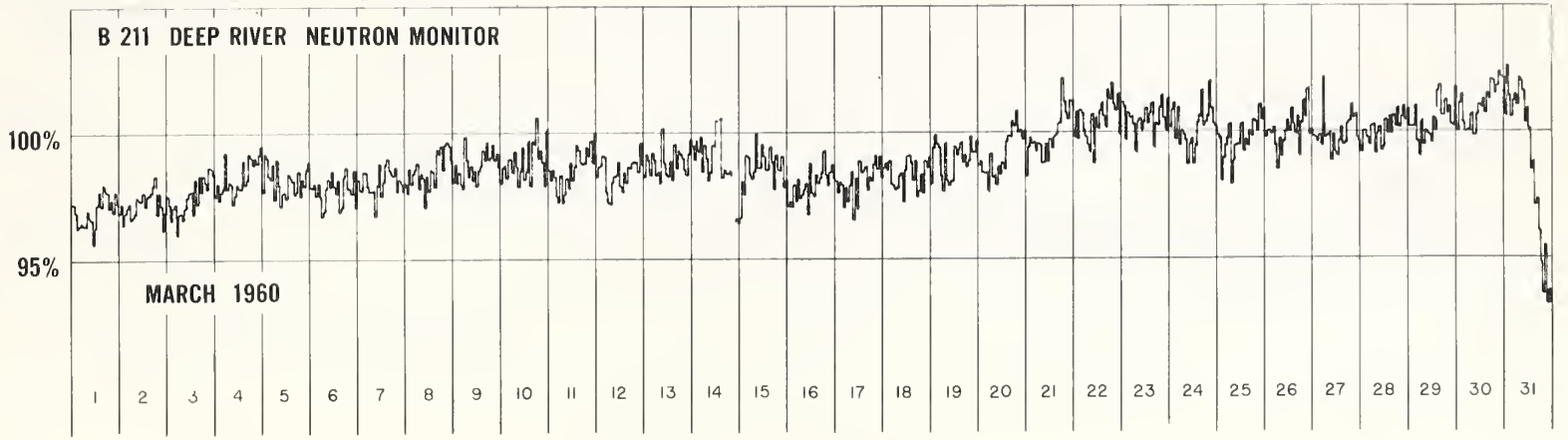




COSMIC RAY INDICES

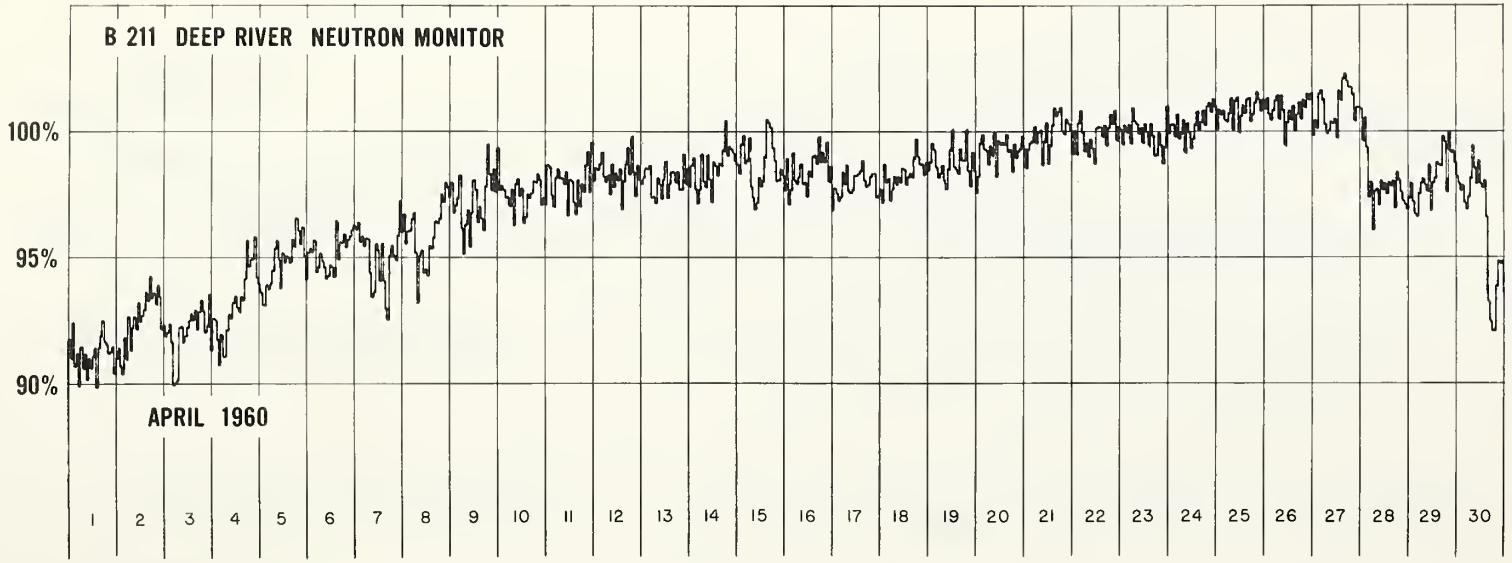
(Pressure Corrected Hourly Totals)



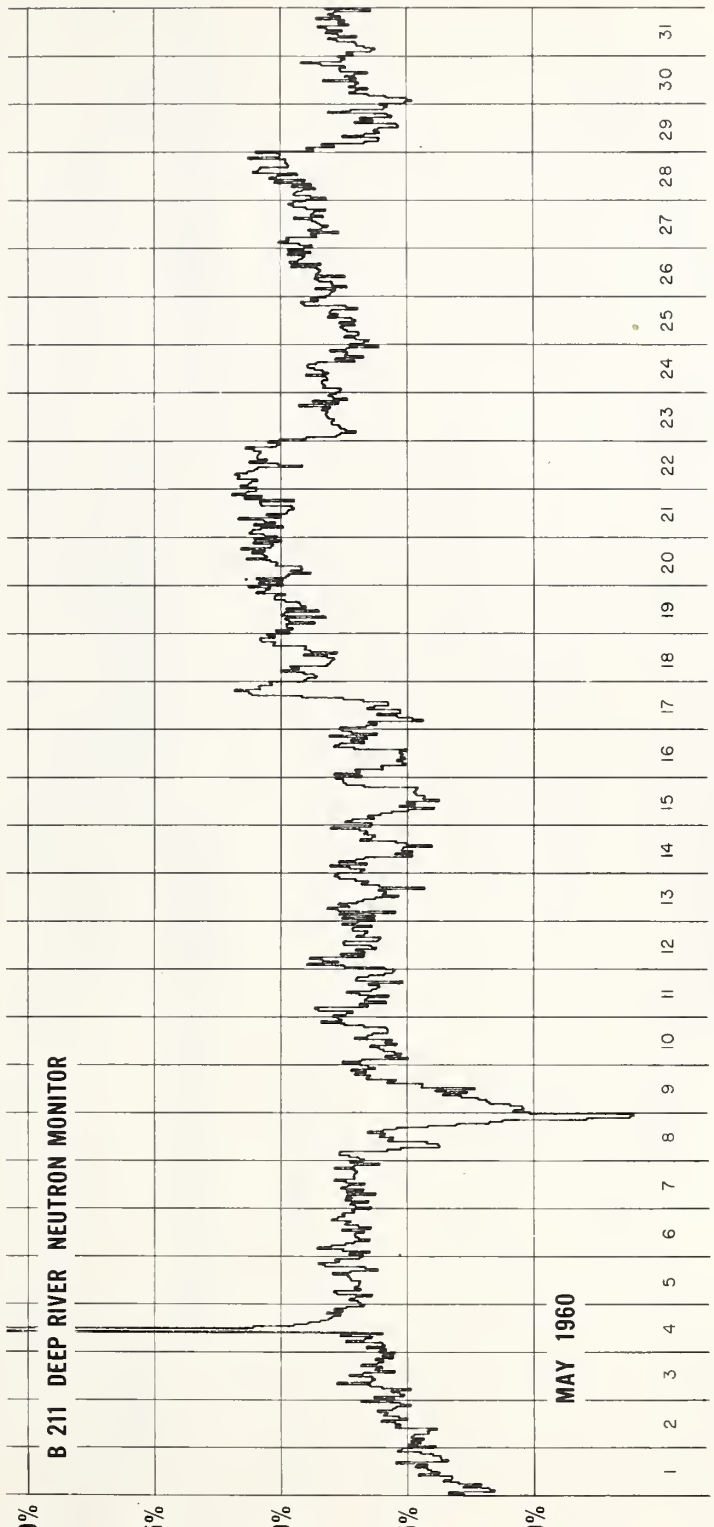


COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

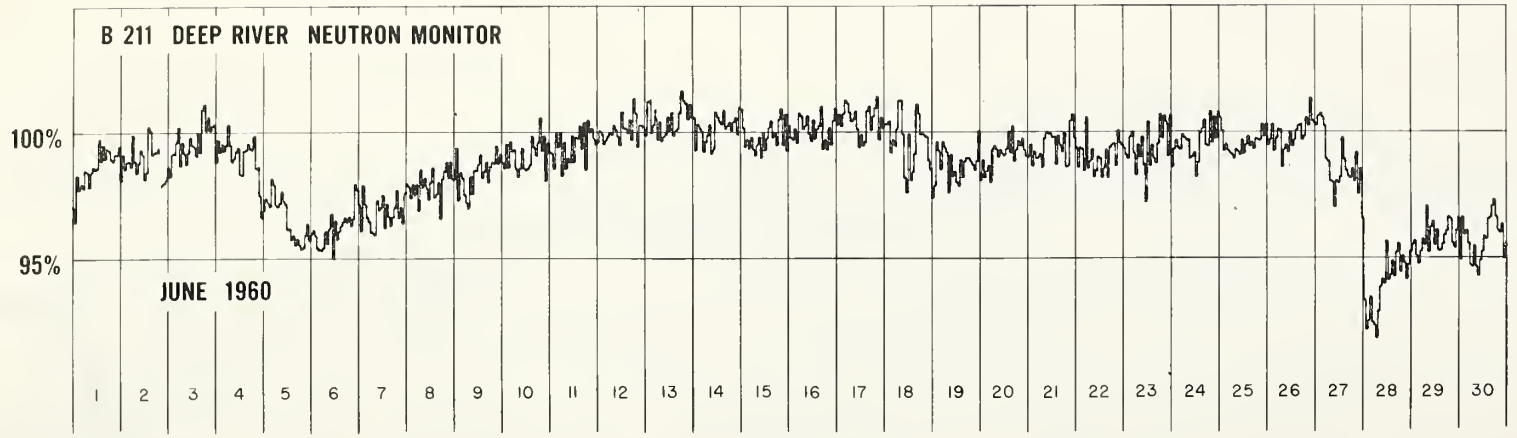


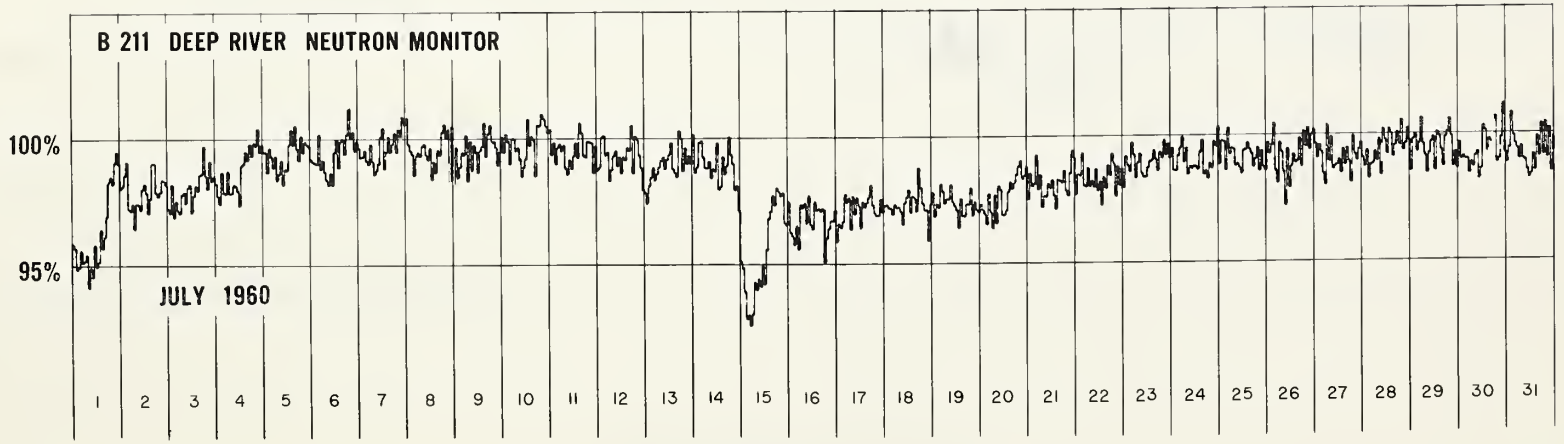
COSMIC RAY INDICES
(Pressure Corrected Hourly Totals)



COSMIC RAY INDICES

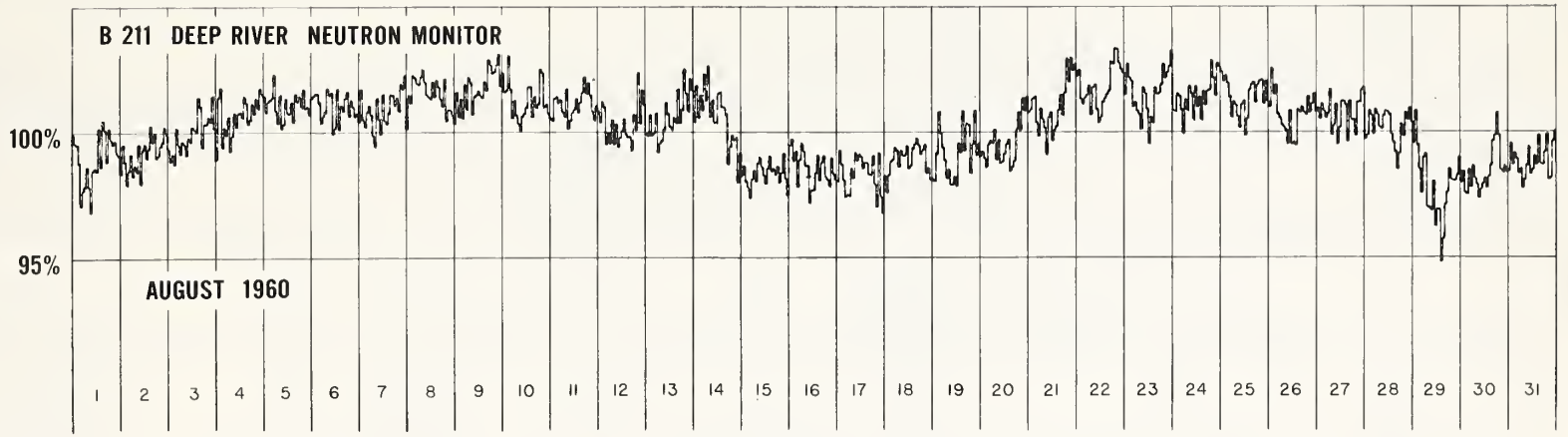
(Pressure Corrected Hourly Totals)

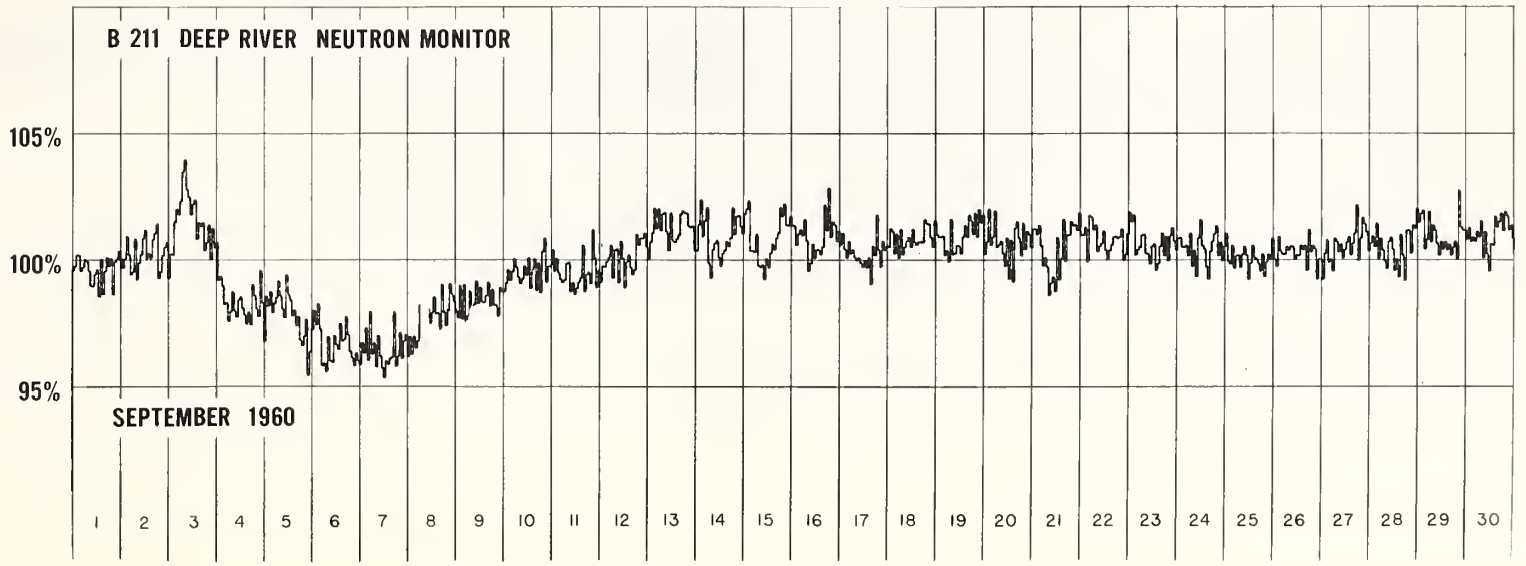




COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)



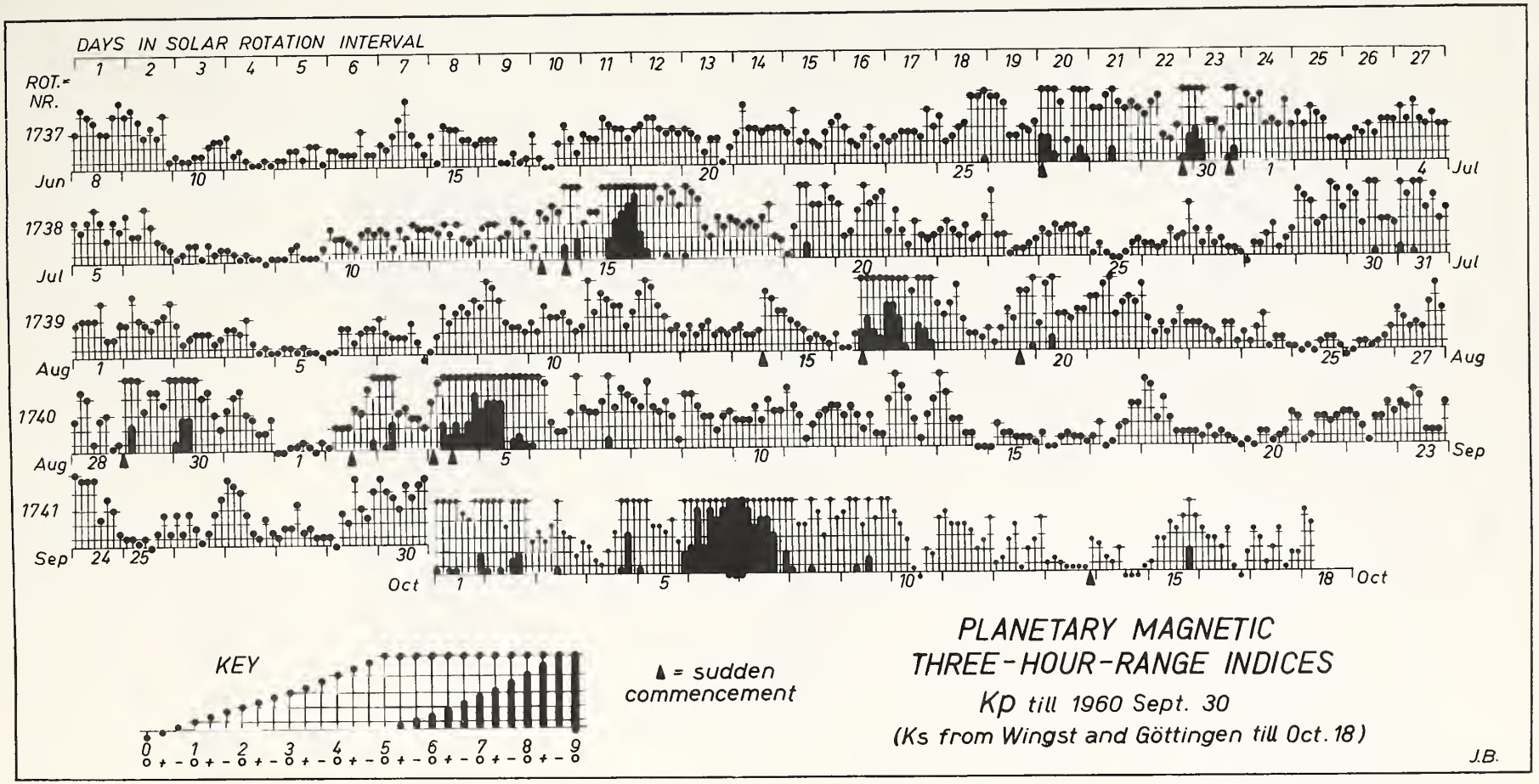


GEOMAGNETIC ACTIVITY INDICES

SEPTEMBER 1960

Sept. 1960	C	Values Kp Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	0.0	0+ 0+ 1- 1-	1o 1- 0+ 1o	5o	3	Five
2	1.2	1- 2o 2o 2o	3+ 3o 4+ 6-	23o	20	Quiet
3	1.3	5o 5+ 7- 3o	3+ 3- 3- 2o	31-	35	
4	1.8	4- 5- 7- 6o	7- 6o 7- 8o	48+	95	1
5	1.9	7+ 8- 8- 8-	5o 6- 6o 5+	52+	118	15
						16
6	1.3	5+ 5o 5- 2+	2- 2- 3o 5o	29-	28	19
7	1.2	3+ 3o 3o 4-	6- 3+ 4+ 4o	30+	27	25
8	1.0	4- 3+ 5- 3+	3o 4- 3- 1o	25+	19	
9	0.7	4o 4o 3+ 3-	3- 2- 3- 3o	24o	16	
10	0.8	2+ 2+ 2+ 3+	2+ 4- 3o 3o	22+	13	
11	0.8	4+ 3+ 3- 1o	2o 3- 3o 3+	22+	15	Five
12	0.4	3+ 3- 3+ 3-	2- 3- 1+ 1+	19o	11	Disturbed
13	1.0	4- 5o 4+ 4-	2+ 1o 3- 4-	26+	21	
14	0.7	5o 4o 2+ 2+	1+ 1+ 0+ 0+	17o	13	3
15	0.1	0+ 2o 1+ 1+	1o 1o 1o 1-	9-	4	4
						5
16	0.1	1+ 0+ 0+ 1o	1+ 1o 1o 1-	7o	4	7
17	0.4	1o 2o 0+ 1-	2- 2o 3+ 3+	14+	8	30
18	0.7	5- 4+ 2+ 4-	2+ 1+ 1+ 1+	21+	16	
19	0.0	1+ 1o 2- 1o	1+ 1o 1- 0+	8+	4	
20	0.2	1- 0+ 1+ 1+	1- 1o 1+ 3-	9+	5	
21	0.5	2+ 1- 1o 2+	2+ 2o 2+ 3-	16-	8	Ten
22	0.6	3- 2+ 2- 1-	2+ 2+ 3+ 3-	18o	10	Quiet
23	0.7	3+ 3o 4o 4-	1+ 1+ 1+ 3+	21+	14	
24	1.2	5o 5- 5- 5-	2+ 4- 3o 1+	29+	27	1
25	0.2	1o 1o 1- 1o	0+ 1+ 3- 1+	9+	5	15
						16
26	0.7	3- 1+ 3- 2-	1- 1+ 3- 4-	17-	10	17
27	0.8	5- 4+ 4o 3-	1+ 1o 2+ 1+	22-	17	19
28	0.3	1o 2- 2- 3+	1+ 2- 1o 1o	13-	7	20
29	0.9	1o 0+ 3- 2o	5- 3o 2+ 4o	20o	14	21
30	1.3	5- 4o 4- 3o	4+ 4- 4+ 5-	32+	28	25
						26
						28
Mean:	0.76			Mean:	20	

COMMERCE - STANDARDS - BOULDER



COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS
NORTH ATLANTIC

SEPTEMBER 1960

Sept. 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:				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	1-3 days SDW	1-7 days J	Half (1)	Day (2)
1	6-	5+	7-	7-	5	4	6	6	6o	5			5	0	1
2	6+	6-	6+	6o	6	6	6	7	6o	6			6	2	3
3	5o	4-	5o	5o	5	4	6	5	(4+)	6			6	(5)	3
4	4+	2+	4-	3o	5	3	4	4	(3+)	4		4	6	(5)	(6)
5	2-	1o	3+	3o	2	1	2	5	(2+)	3		3	6	(7)	(5)
6	2+	3-	5+	6o	2	2	4	4	4-	5		5	6	(4)	3
7	6-	5o	6-	6-	5	5	6	6	6-	6			6	3	(4)
8	5+	5+	5+	6o	5	5	6	6	6-	6			6	3	2
9	4+	4+	6-	6+	6	4	6	6	5-	6			6	(4)	2
10	6-	5o	6+	6+	6	5	6	7	6-	7			7	3	3
11	5+	5-	6o	6+	6	5	6	6	6-	7			7	3	3
12	6-	5-	6+	6+	6	5	6	7	6-	6			6	3	2
13	6-	4+	6o	6+	6	5	6	6	5+	6			6	(4)	2
14	6o	5+	6+	7-	5	5	6	6	6o	6			6	3	1
15	7-	6+	7-	7-	6	6	6	7	7-	6			6	2	1
16	6+	7-	7o	7o	7	6	7	7	7-	6			6	0	1
17	7-	6+	7-	7-	7	6	6	5	7-	5		5	6	1	2
18	5+	5+	6+	7-	4	3	6	6	6o	3		3	6	(4)	2
19	7-	6+	7-	7-	6	6	7	7	7-	4		4	6	1	1
20	7-	6+	7o	7-	7	6	7	7	7-	7	7		6	1	2
21	7-	6+	7-	7o	7	6	7	7	7-	7	7		6	2	2
22	6o	6+	7o	7-	7	6	7	7	7-	7			7	2	2
23	6-	6-	6+	6+	6	6	7	7	6o	7			7	3	2
24	5+	4o	6+	7-	6	5	6	7	5+	7			7	(5)	2
25	6+	6+	7o	7o	6	6	7	7	7-	6			6	1	1
26	6+	6+	7o	7-	7	6	7	7	7-	5			5	2	2
27	5+	5+	7-	7-	6	4	6	7	6o	5			5	(4)	2
28	6+	6-	7o	7-	6	6	6	7	7-	6			6	3	1
29	7-	6o	7o	6+	7	6	7	7	6+	6			6	2	3
30	4+	5-	6-	5+	5	4	6	6	5o	6			6	(4)	(4)
31															

Score:								
Quiet Periods	P	13	18	19	17	9		8
	S	12	4	9	9	12		16
	U	0	1	0	1	3		2
	F	0	0	0	1	2		0
Disturbed Periods	P	2	3	1	0	0		0
	S	2	4	1	1	3		0
	U	0	0	0	1	0		0
	F	1	0	0	0	1		4

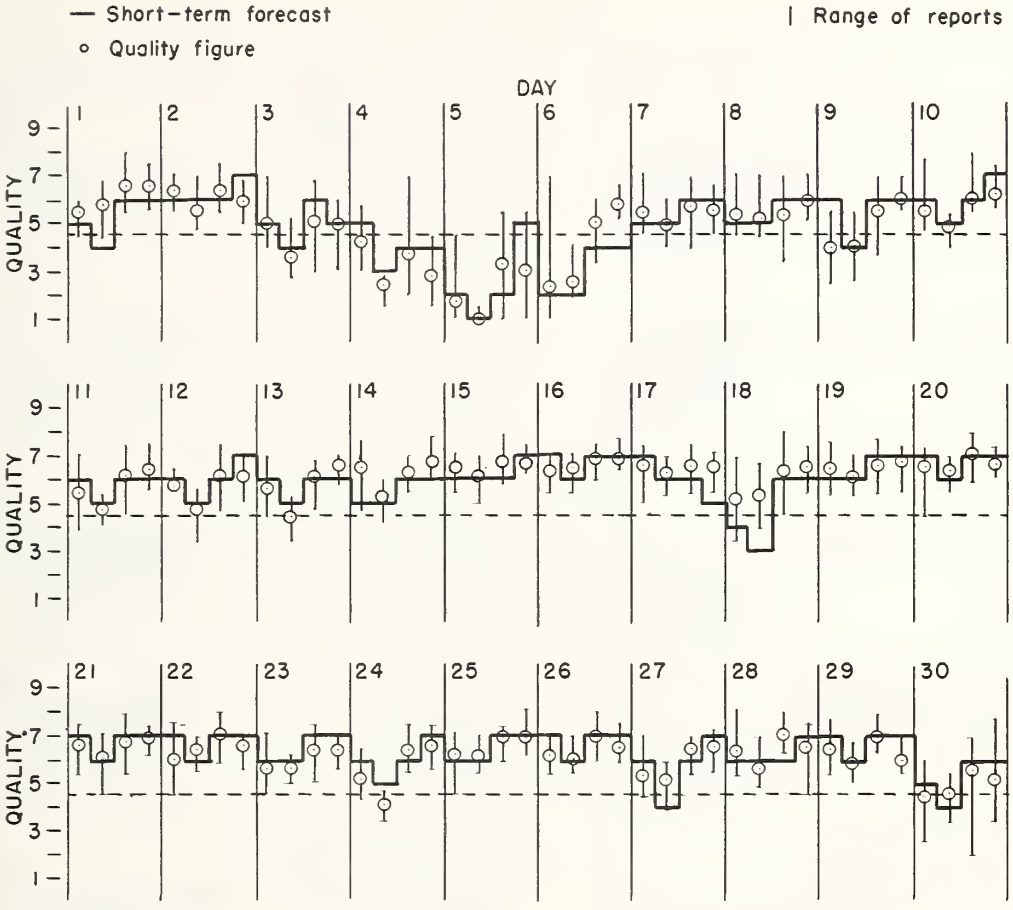
( ) represent disturbed values.
All times are Universal time (UT).

COMMERCE - STANDARDS - BOULDER

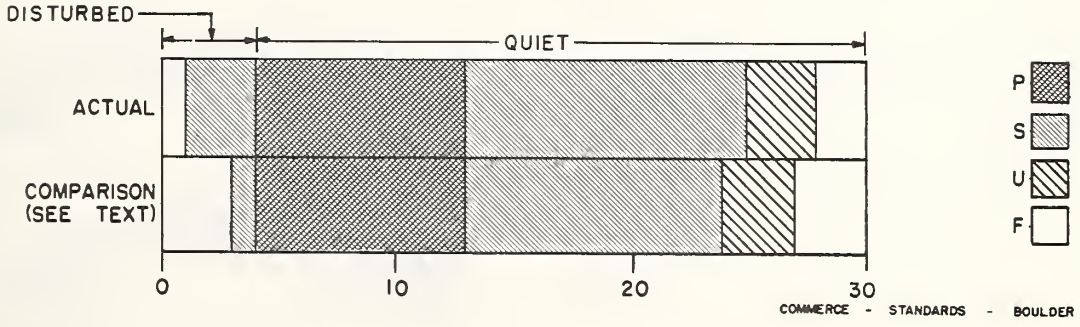
CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

SEPTEMBER 1960

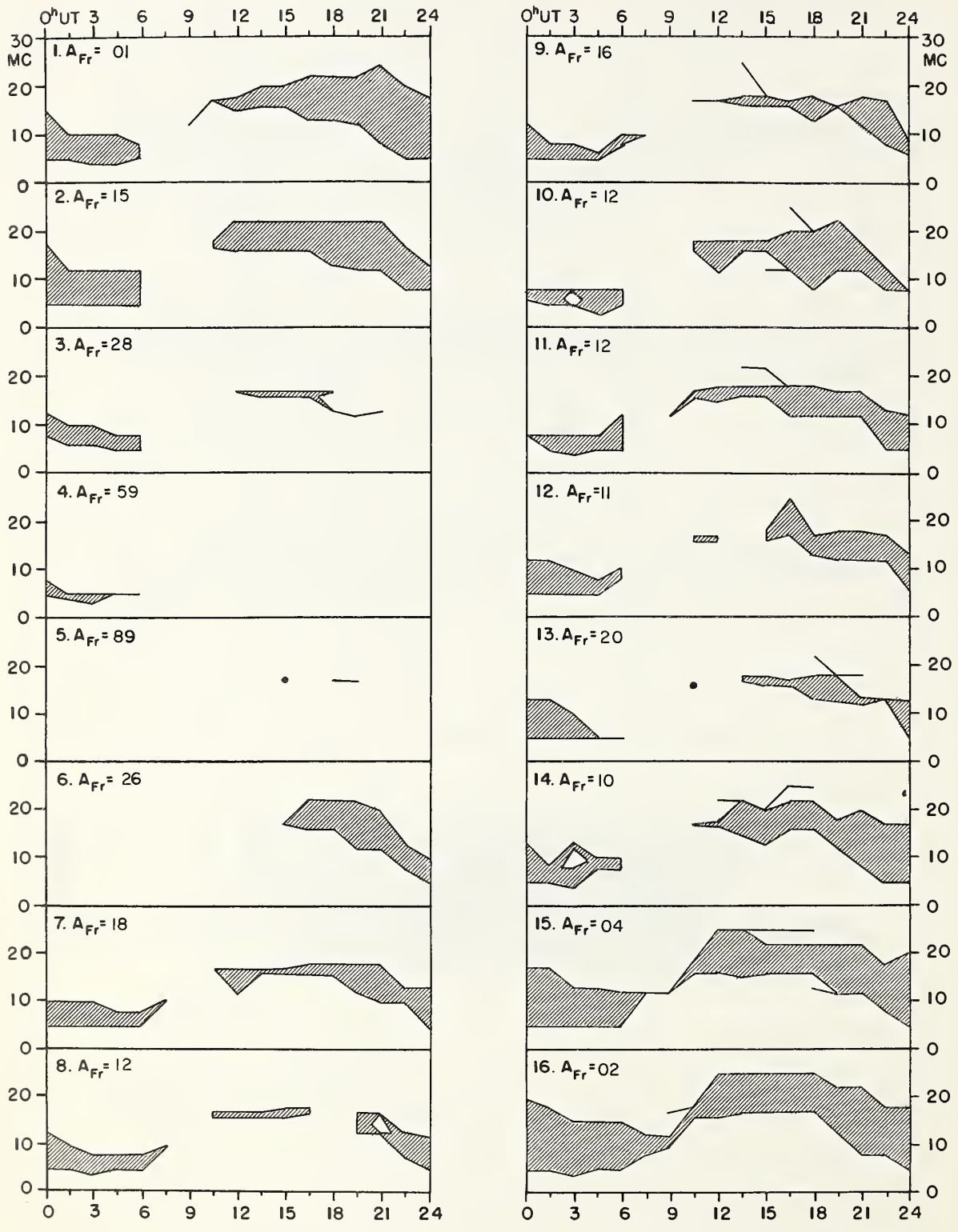


OUTCOME OF ADVANCED FORECASTS FINAL ESTIMATE



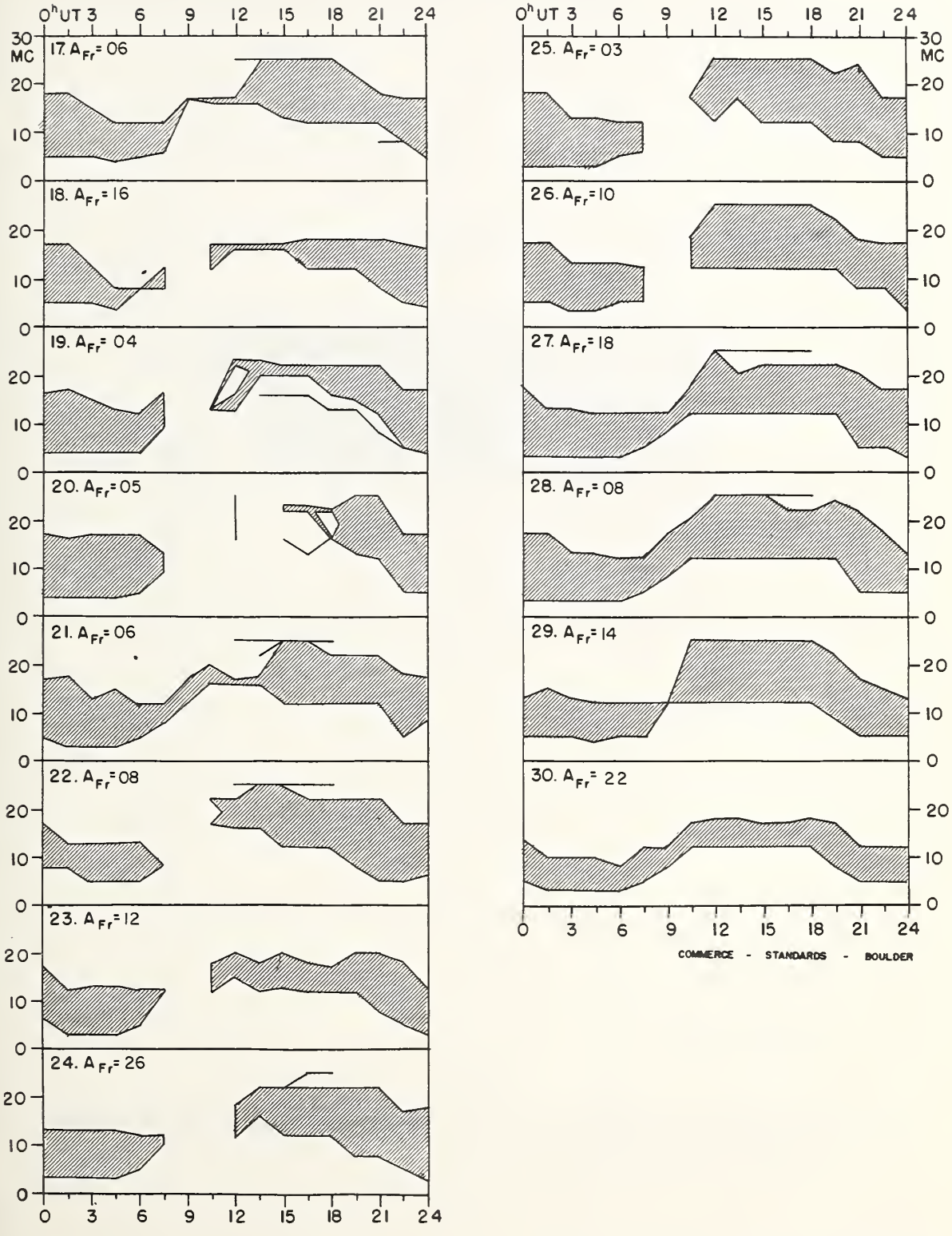
USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

SEPTEMBER 1960



COMMERCE - STANDARDS - BOULDER

SEPTEMBER 1960



Adapted from Observations by Deutsches Bundespost

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

SEPTEMBER 1960

Sept. 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 (1)	Day (2)
1	5	5	6	6	5	6			6	0	1
2	6	5	6	6	5	6			6	2	(4)
3	5	5	5	5	5	6			6	(5)	3
4	3	2	4	3	(3)	4		4	6	(6)	(6)
5	3	3	2	3	(2)	3		3	6	(8)	(5)
6	4	4	3	5	(4)	3		3	6	(4)	2
7	5	6	5	6	5	6			6	3	(4)
8	6	6	6	5	5	5			5	(4)	2
9	6	6	6	6	6	6			6	(4)	3
10	6	5	6	5	5	6			6	3	3
11	6	6	6	6	6	6			6	2	2
12	6	7	6	6	6	6			6	3	2
13	6	6	5	6	6	5			5	(4)	2
14	6	6	5	6	6	5			5	3	1
15	6	6	6	6	6	5			5	1	0
16	6	6	6	7	6	6			6	0	1
17	7	6	6	6	7	6		6	6	0	2
18	6	6	4	6	6	3		3	6	3	1
19	6	6	6	6	6	4		4	6	0	1
20	7	6	6	6	7	6	6		6	2	1
21	6	7	7	6	6	6	6		6	2	2
22	7	6	7	7	6	7			7	2	2
23	7	6	6	7	6	7			7	(4)	1
24	6	6	5	6	6	6			6	(5)	2
25	6	6	7	6	6	6			6	0	1
26	6	6	6	7	6	6			6	2	2
27	6	7	4	6	6	5			5	(4)	2
28	6	6	6	6	6	5			5	2	2
29	6	6	7	7	6	5			5	2	3
30	5	5	6	5	5	6			6	(4)	(4)

Score:						
Quiet Periods	P	14	16		9	
	S	11	11		16	
	U	0	0		0	
	F	2	0		2	
Disturbed Periods	P	0	1		0	
	S	3	2		3	
	U	0	0		0	
	F	0	0		0	

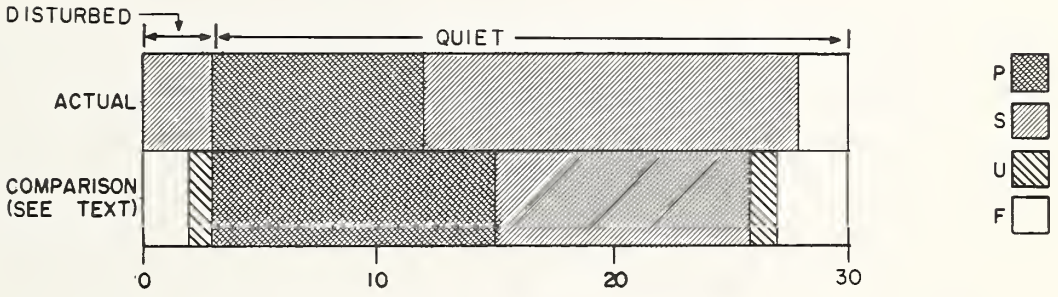
( ), represent disturbed values.
All times are Universal Time (U.T.).

COMMERCE - STANDARDS - BOULDER

NORTH PACIFIC

SEPTEMBER 1960

OUTCOME OF ADVANCED FORECASTS FINAL ESTIMATE



ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL WORLD DAY SERVICE

OCTOBER 1960

Issued Day/Time UT Oct. 1960	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Interval
1/1600		89	Magnetic Storm 9/13XXZ	
4/1915	Ft. Belvoir, Magnetic Storm 04/14XXZ			
6/0500	Ft. Belvoir, Magnetic Storm 06/02XXZ*			
6/1600		90	Magnetic Storm Aurora Probable 05/19XXZ	Start Special World Interval
7/1600		91		Continue Special World Interval
10/1600**		92		Finish Special World Interval 08/2359Z
25/1400	Ft. Belvoir, Magnetic Storm 24/1450Z			
25/1600		93	Magnetic Storm 24/1450Z	

COMMERCE - STANDARDS - BOULDER

*Beginning time later amended to 05/19XXZ.
**Should have been issued October 8.

USCOMM-NBS-BL