PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
JANUARY 1961

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

CRPL-F 197
PART B

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31 Jan. 1961

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CONTENTS

Spectrum Observations

Data are presented on solar radio emission in the spectral range 450-1000 Mc recorded by the Convair Radio Astronomy Project, C. L. Spencer, at Owens Valley Observatory, Bigpine, Calif. The equipment used is a swept frequency spectrum analyzer. The quiet sun can be seen above receiver noise level.

The types listed in the table are as described for the Ft. Davis spectrum observations. The intensities 1, 2, and 3 correspond roughly to 2, 4, and 8 times the quiet sun power of the day, at the frequency given for the activity. The symbols used in the table are:

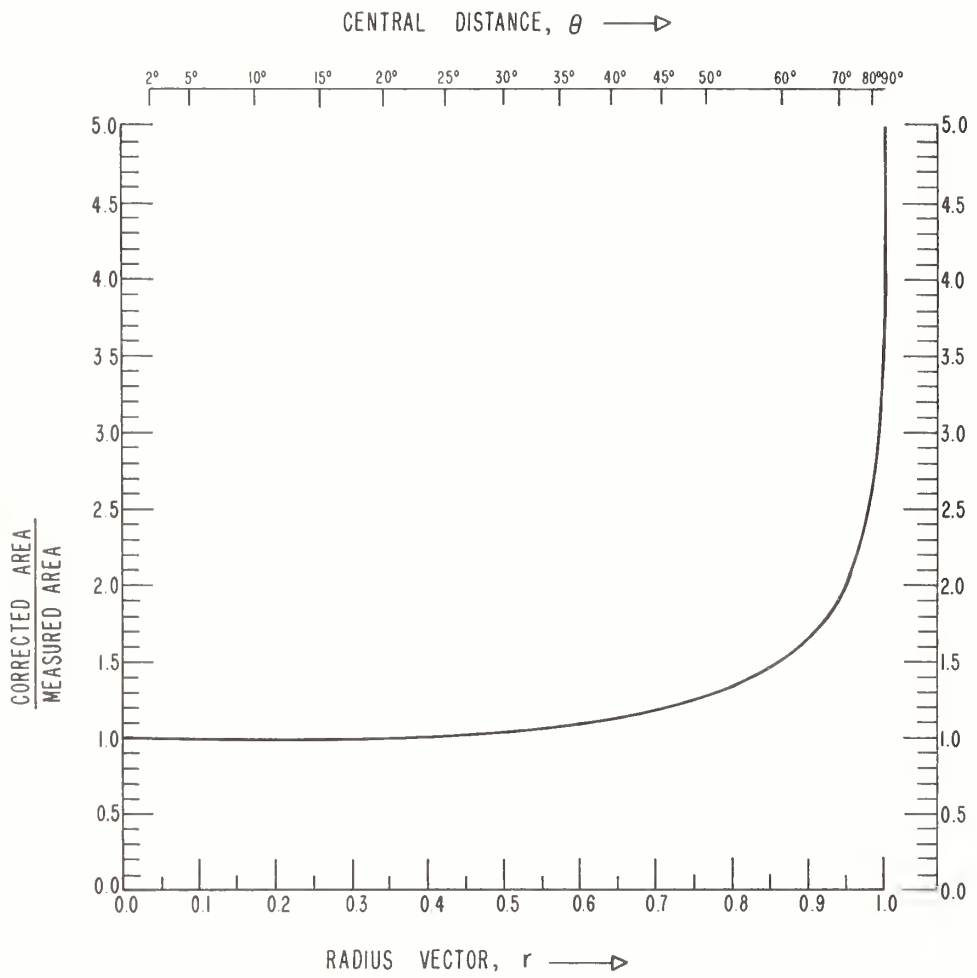
b = single burst
g = small group (<10) of bursts
G = large group (⩾10) of bursts

The times are given in Universal Time (UT) to the nearest half minute. The frequency range over which the activity was observed is also given. The remarks column gives further details.

FLARE AREA AND IMPORTANCE

(METHOD USED BY CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK AS OF OCTOBER 1, 1960)

$$\text{CORRECTED AREA} = \frac{\text{MEASURED AREA}}{(\sqrt{1-r^2} + 0.2r)} = \frac{\text{MEASURED AREA}}{(\cos\theta + 0.2\sin\theta)}$$



IMPORTANCE VALUES RECOMMENDED BY IAU

AREA IN SQUARE DEGREES	AREA IN MILLIONTHS OF SOLAR HEMISPHERE	AREA IN MILLIONTHS OF SOLAR DISK	IMPORTANCE
< 2.06	<100	< 200	1-
2.06 – 5.15	100 – 250	200 – 500	1
5.15 – 12.4	250 – 600	500 – 1200	2
12.4 – 24.7	600 – 1200	1200 – 2400	3
> 24.7	> 1200	> 2400	3+

AREA IN SQUARE DEGREES = 0.020626 x AREA IN MILLIONTHS OF SOLAR HEMISPHERE

= 0.010313 x AREA IN MILLIONTHS OF SOLAR DISK

The descriptive text was published separately, November 1960.

DAILY SOLAR INDICES

Nov. 1960	American Relative Sunspot Numbers $R_{A'}$
1	70
2	69
3	72
4	52
5	69
6	86
7	105
8	121
9	120
10	116
11	137
12	100
13	101
14	97
15	81
16	98
17	83
18	93
19	81
20	86
21	66
22	57
23	34
24	39
25	47
26	53
27	53
28	58
29	51
30	68
Mean:	78.8

Dec. 1960	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	74	136
2	92	145
3	101	152
4	96	163
5	92	159
6	98	161
7	94	152
8	91	154
9	97	150
10	103	151
11	102	144
12	101	140
13	92	136
14	101	132
15	104	138
16	99	134
17	87	125
18	76	118
19	70	115
20	62	118
21	56	116
22	35	106
23	35	103
24	37	106
25	57	111
26	48	116
27	70	125
28	86	136
29	94	145
30	103	159
31	130	163
Mean:	83.3	135.8

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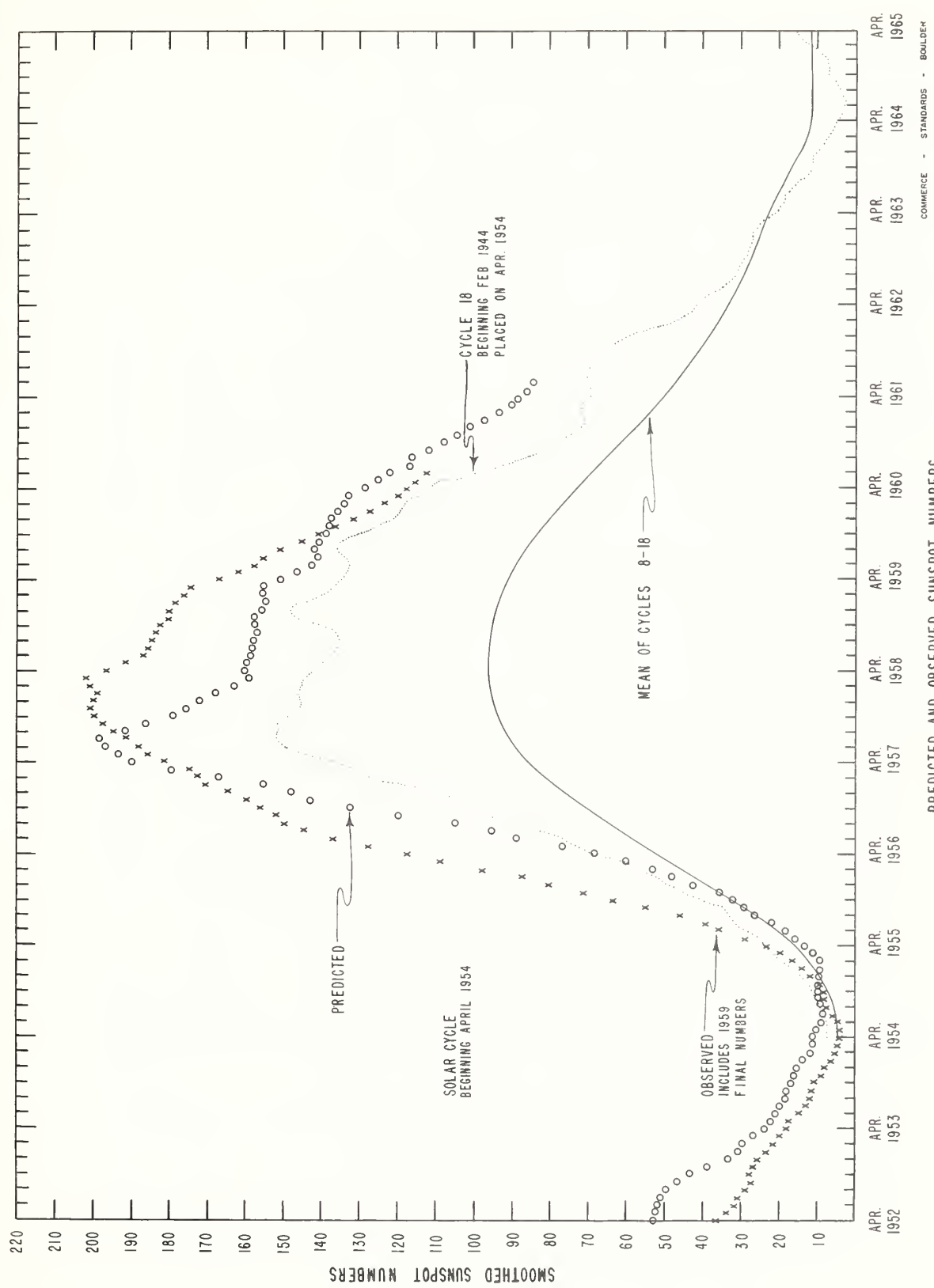

PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

DECEMBER 1960

CMP Dec. 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	N10	5950	New	1700	3	ℓ — ℓ	1	50	1	b ⌒ d
02.8	N10	5951	5921	800	2	ℓ \ ℓ	5			
02.8	S17	5952	5920	1200	1.5	ℓ — ℓ	4,6			
04.2	S09	5953	New	3400	3	ℓ — ℓ	1	340	4	ℓ — ℓ
04.4	N15	5954	5921	2900	2.5	ℓ — ℓ	5	10	1	b ⌒ d
05.9	S17	5955	5923	1800	3	ℓ — ℓ	2			
08.0	N25	5956	5925	2100	2.5	ℓ — ℓ	2			
08.6	N08	5957	5936	600	2.5	ℓ — ℓ	2	10	1	b ⌒ d
09.3	S12	5958	5927	2300	3	ℓ — ℓ	7	160	2	ℓ — ℓ
10.5	N30	5959	5925	6800	3	ℓ — ℓ	2	120	3	ℓ — ℓ
11.9	N12	5963	New	300	2	b ⌒ ℓ	1			
12.8	N24	5968	New	200	1.5	b ⌒ ℓ	1	90	2	b ⌒ d
13.2	S12	5960	*	4800	3	ℓ — ℓ	1	320	4	ℓ — ℓ
14.2	N12	5961	5932	4500	3	ℓ — ℓ	7	160	5	ℓ ¬ d
14.9	S04	5969	New	400	3	b ⌒ ℓ	1	110	2	b ⌒ ℓ
15.8	N27	5962	5932	1700	2.5	ℓ \ ℓ	7	100	3	b ⌒ d
17.3	S17	5967	5935	800	2.5	ℓ / ℓ	5	100	2	b ⌒ d
18.6	N06	5965	5938	600	2	ℓ — ℓ	2			
19.0	N27	5966	5937	1000	1.5	ℓ \ ℓ	4			
20.2	N11	5970	New	1400	3	ℓ — ℓ	1	160	6	ℓ — ℓ
20.4	S20	5973	New	1300	3.5	b ⌒ ℓ	1	170	6	b ⌒ ℓ
23.0	S22	5972	5941	1200	2	ℓ \ ℓ	2			
25.8	N22	5974	5945	1300	2	ℓ \ ℓ	3			
25.8	N03	5975	5948	900	2	ℓ — ℓ	2			
27.4	N18	5976	5948	2500	3	ℓ — ℓ	2	140	2	ℓ \ ℓ
28.4	N13	5977	5950	200	2.5	ℓ / ℓ	2	20	1	b ⌒ ℓ
30.4	S14	5978	5953	1900	2.5	ℓ — ℓ	2	80	3	ℓ ¬ d

*New in position of 5931, 5934

PROVISIONAL CORONAL LINE EMISSION INDICES

DECEMBER 1960

CMP Dec. 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	79	149	x	x	40	58	x	x	x	x	x	x	x	x	x	x
2	x	x	x	x	x	x	x	x	60a	93a	x	x	111a	146a	x	x
3	87*	111	x	x	60	101	x	x	x	x	x	x	x	x	x	x
4	x	x	x	x	x	x	x	x	34	50	13	25	32	44	8	14
5	53*	84	x	x	54	135	x	x	x	x	x	x	x	x	x	x
6	49	59	42	57	50	87	25	52	x	x	x	x	x	x	x	x
7	x	x	x	x	x	x	x	x	65	91	x	x	85	160	x	x
8	x	x	x	x	x	x	x	x	84	136	7	12	81*	144	16	38
9	101	124	68	104	67	103	31	72	55	76	18a	32a	92*	170	37a	91a
10	202	252	x	x	60	82	x	x	x	x	x	x	x	x	x	x
11	48	60	9	20	26	36	5	9	51	70	8	12	105	144	11	32
12	64	80	13	18	29	40	7	15	22	30	x	x	37	64	x	x
13	68	100	x	x	39	60	x	x	55	85	x	x	69	92	x	x
14	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
15	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
16	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
17	x	x	x	x	x	x	x	x	30	58	31	72	42	48	22	46
18	20	40	10	17	4	6	7	10	20	31	23a	28a	40	52	25a	40a
19	x	x	x	x	x	x	x	x	13	28	12	20	26	46	13	23
20	x	x	x	x	x	x	x	x	38	80	3	4	38	80	8	13
21	x	x	x	x	28	40	x	x	27	46	22	36	24	32	26	44
22	25	32	9	11	38	58	5	7	28	39	7	12	25	36	12	18
23	25	36	24	30	23	42	18	28	27	32	15a	20a	26	33	19a	33a
24	x	x	x	x	x	x	x	x	24	30	7	13	24	30	7	10
25	59	73	3	12	25	32	3	4	22	26	4	5	37	64	8	14
26	23	28	x	x	13	18	x	x	14	20	6	8	22	42	11	15
27	71	78	12	20	28	38	5	7	27	36	10	14	71	120	36	70
28	x	x	x	x	x	x	x	x	45	63	28	40	79	123	60	109
29	x	x	x	x	x	x	x	x	69	97	x	x	75	104	x	x
30	x	x	x	x	x	x	x	x	62	137	23	42	73	117	47	120
31	70*	109	18	28	63	114	27	72	60	92	24	68	75*	116	45	93

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x = no observations a = index computed from low weight data * = yellow line observed

SOLAR FLARES

DECEMBER 1960

OBSERVATORY	DATE DEC 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 Ha	MAX INT.	PROVISIONAL IONOSPHERIC EFFECT
ARCETRI	01	0832 E	0854 D		N26	E80	5956	22 D	1	2	0841	.60	2.00			
WENDEL	01	0940	1038 D		N26	E90	5956	58 D	1+				5.00			
ARCETRI	01	1010 E	1018 D		N26	E80	5956	8 D	1	2						
LOCARNO	01	1124	1210	1135	N10	W24	5948	46	1+	1	1135		3.00			
WENDEL	01	1124	1215		N09	W24	5948	51	1+				7.00			
ONDREJOV	01	1130 E	1200	1143 U	N10	W21	5948	30 D	1+	3	1143			2.30		
CLIMAX	01	2009	2045	2026	N17	E26	5954	36	1		2026	2.20	2.40			
HAWAII	02	0142 E	0150 D	0142	N35	E90	5959	8 D	2	2	0142	2.50	12.40			
LOCARNO	02	1115	1135		N14	W32	5948	20	1	1						
CLIMAX	02	1746	1800	1752	N43	E90	5959	24	2		1752	1.80	9.00			
ZURICH	03	1049	1106		N11	W26	5950	17	1	2	1049		1.00			
LOCKHEED	03	1954	2003	1957	N30	E90	5959	9	1	2	1957	.60	3.00		10	
LOCKHEED	03	2308	2330	2312	S07	W03	5953	22	1	1	2312	2.10	2.10		20	
ISTANBUL	04	0813	0836		N13	W36	5950	23	1+							
CAPRI S	04	0919 E	0959 D		N05	W39	5950	40 D	1	3	0934	1.80	2.30			
WENDEL	04	1219 E	1234 D		N15	W60	5948	15 D	1				3.00			
LOCKHEED	04	1930 U	2012 U	1955 U	N41	E63	5959	42 D	1	1	1955	1.20	2.20		10	
CAPRI S	05	1159 E	1237 D		N14	W70	5948	38 D	1	3	1159	1.40	4.20			
LOCKHEED	05	1825	2350	1840	N27	E68	5959	325	3+	2	1840	13.60	25.70		30	
HUANCAYO	05	1829	2037 D	1835	N26	E70	5959	128 D	3+	2	1835	7.80	17.60	6.30		S-SWF
SAC PEAK	05	1832	2158 D	1838	N30	E90	5959	206 D	3+	3		27.42	136.13		35	
HAWAII	05	2012 E	2122	2014	N20	E69	5959	70 D	1	2	2014	2.20	2.50			
LOCKHEED	05	2155	2220	2205	N09	W80	5948	25	1	2	2205	.70	2.10		10	
ISTANBUL	07	0805	0815		S09	W29	5953	10	1							
LOCARNO	12	1430	1455		S09	E02	5960	25	1	2						
CLIMAX	12	1514 E	1615		N25	W27	5959	61 D	1		1514	3.70	4.10			
WENDEL	13	1335 E	1355 D		S11	W59	5958	20 D	1				3.00			
CAPRI S	14	1138 E	1240 D		N27	W43	5959	62 D	1	2	1145	2.90	4.40			
WENDEL	14	1145 E	1236		N24	W46	5959	51 D	1+				6.00			
WENDEL	14	1145 E	1240 D		N26	W50	5959	55 D	1+				7.00			
WENDEL	14	1159	1238		N25	E55	5966	39	1				3.00			
WENDEL	14	1312 E	1354	1326	N26	W51	5959	42 D	2				10.00			
ISTANBUL	15	0851	0925 D		N18	W10	5961	34 D	1							
ISTANBUL	15	0855	0925 D		S03	W08	5969	30 D	1							
CLIMAX	16	1517	1630	1532	N18	W32	5961	73	2		1532	5.90	6.50			
SAC PEAK	16	1520	1612	1531	N20	W34	5961	52	2	3		5.92	6.42		24	
HUANCAYO	16	1525	1623	1530	N13	W39	5961	58	2	2	1530	5.40	7.00	2.60		Slow S-SWF
WENDEL	17	1258	1323 D		N13	E33	5970	25 D	1				3.00			
MCMATH	17	1502 E	1519 D		N13	W50	5961	17 D	1	1	1507		2.50			
WENDEL	20	0841 E	0909		S18	W75	5960	28 D	2				10.00			

SOLAR FLARES

DECEMBER 1960

OBSERVATORY	DATE DEC 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 Ho	MAX. INT. %	
CAPRI S	20	1221 E	1240 D		S17	W73	5960	19 D	1	2	1224	2.00				
SAC PEAK	20	1627	1647	1635	N11	E90	5976	20	1	2		.85	4.26		15	
HAWAII	20	1852	1900 D		S16	W75	5960	8 D	1	2	1900	.80	4.10			
SAC PEAK	20	1853	1908	1858	S16	W90	5960	15	1	2		.87	4.36		19	
SAC PEAK	20	2104	2113	2108	S16	W90	5960	9	1	2		.71	3.53		17	
HAWAII	20	2144 E	2150	2146	S15	W90	5960	6 D	1	2	2146	.40	2.10			
LOCKHEED	20	2145 E	2207	2147 U	S15	W85	5960	22 D	1	1	2147	.70	2.10		10	
LOCKHEED	20	2202	2216	2205	N15	W79	5961	14	1	1	2205	.70	2.10		10	
LOCKHEED	21	1610 U	1657	1615 U	S16	W90	5960	47 D	1	1	1615	.60	3.00		10	
MCMATH	21	1612 E	1742 D		S05	W90	5969	90 D	1	1						
LOCKHEED	21	1857	1918	1905	S16	W90	5960	21	1	1	1905	.40	2.00		10	
LOCKHEED	21	1940	2019 D	1952	S16	W90	5960	39 D	1	1	1952	.40	2.00		10	
LOCKHEED	21	1940	2019 D	2015	S16	W90	5960	39 D	1	1	1952	.40	2.00		10	
ARCETRI	24	0920 E	0945 D		N17	E38	5976	25 D	1	2						
WENDEL	24	0931 E	0957		N16	E42	5976	26 D	1+				6.00			
LOCKHEED	24	2043	2049	2045	N17	E90	5983	6	1	2	2045	.40	2.00		10	
LOCKHEED	24	2128	2143	2135	S10	E90	5978	15	1	2	2135	.50	2.50		10	
WENDEL	25	1219 E	1236		S09	W65	5973	17 D	1				3.00			
LOCKHEED	25	1733	1750	1742	N17	E87	5983	17	1	2	1742	.70	2.10		20	
SAC PEAK	25	1740	1746	1741	N16	E90	5983	6	1	1		.54	2.70		18	
WENDEL	26	1033	1105		N15	E74	5983	32	1				4.00			
WENDEL	26	1407 E	1441 D		N18	E72	5983	34 D	1				3.00			
SAC PEAK	27	1536	1544 D	1539 U	N15	E53	5983	8 D	1	2		2.08	2.70		15	
LOCARNO	28	1422	1440		N16	E44	5983	18	1+	3						
CLIMAX	29	1518	1532 D	1528	N17	E32	5983	14 D	1		1528	2.20	2.40			
LOCKHEED	29	1852	1930	1907	N16	E28	5983	38	1	1	1907	2.00	2.10		10	
HAWAII	29	1854	1956	1858	N13	E29	5983	62	1	2	1858	1.10	1.20			
WENDEL	30	1125 E	1144 D		N16	E20	5983	19 D	1				3.00			
WENDEL	30	1329 E	1413 D		N15	E21	5983	44 D	1+				7.00			
CAPRI S	30	1341 E	1419 D		N13	E19	5983	38 D	1	3	1342	2.80	3.10			
WENDEL	30	1417 E	1443 D		N18	E19	5983	26 D	1+				6.00			
LOCARNO	30	1422	1500 D		S10	E44	5985	38 D	1	3						
WENDEL	30	1426	1443 D		S15	E59	5988	17 D	1				4.00			
LOCKHEED	30	1726	1757	1740	S12	E43	5985	31	1	2	1740	2.10	2.40		20	
LOCKHEED	30	1826	1851	1833	N16	E17	5983	25	1	2	1833	2.00	2.00		30	
CLIMAX	30	1828	1845	1833	N18	E18	5983	17	1		1833	2.10	2.10			
LOCARNO	31	1407	1430		N14	E05	5983	23	1+	3						

E = LESS THAN
D = GREATER THAN
U = APPROXIMATE
□ = NOT REPORTED

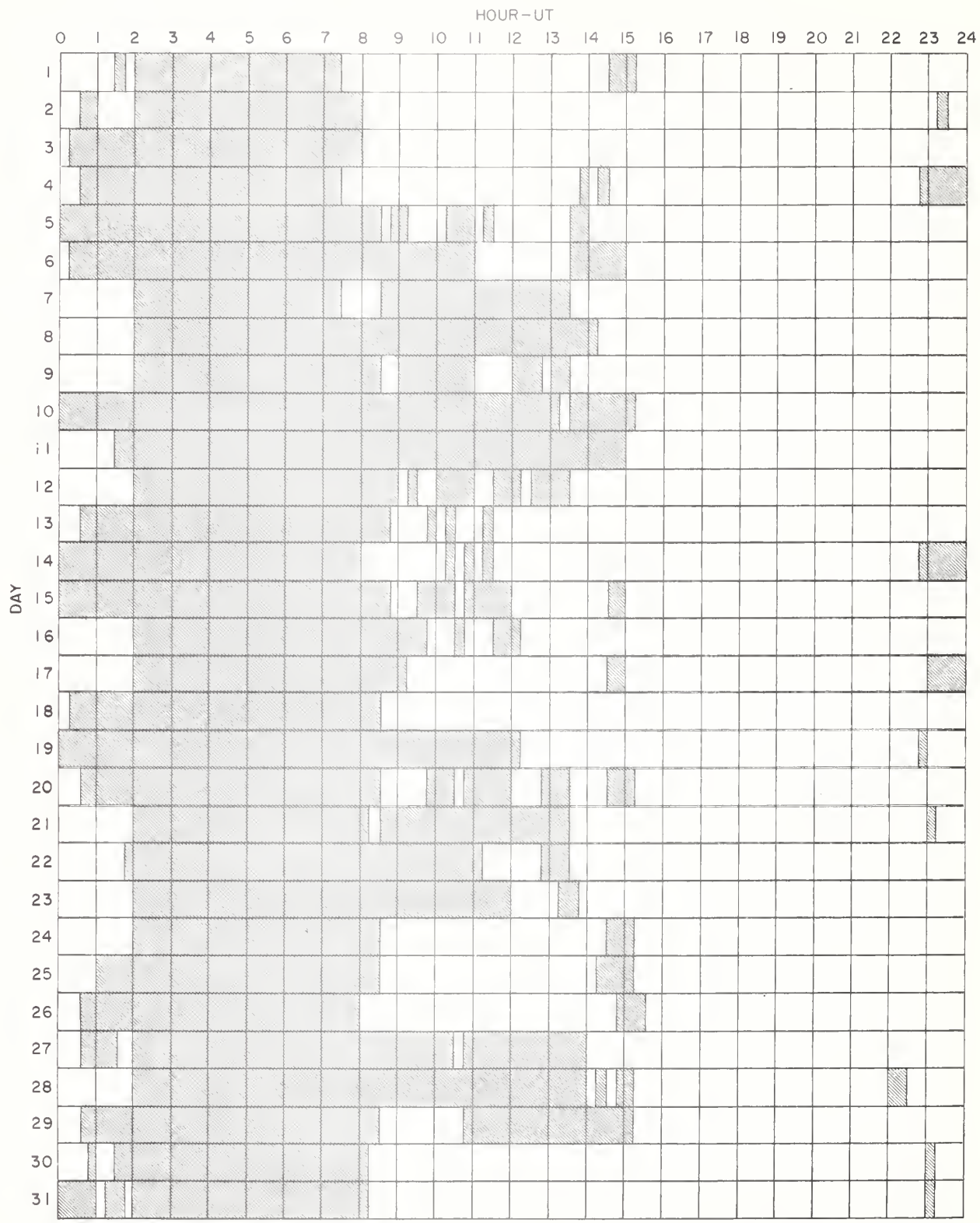
CAPRI G	ANACAPRI - GERMAN
CAPRI S	ANACAPRI - SWEDISH
GOOD HOPE	ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV*	KIEV UNIVERSITY
KODAIKNAL	KODAIKANAL
KRASNYA	KRASNAYA PAKHRA
LOCKHEED	LOS ANGELES
MCMATH	MCMATH-HULBERT
MOSCOW-G	MOSCOW - GAISH
R O HERST	ROYAL GREENWICH OBSERVATORY, HERSTMONCEUX
SAC PEAK	SACRAMENTO PEAK
SCHAUINS	SCHAUINSLAND
WENDEL	WENDELSTEIN

ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1960 FOR DEFINITION OF CORR. AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SAC PEAK.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

DECEMBER 1960



COMMERCE - STANDARDS - BOULDER

Stations Include:

Anacapri (Swedish)
Arcetri
Climax
Hawaii
Huancayo
Istanbul
Lockheed
McMath-Hulbert
Ondrejov
Royal Greenwich Observatory
Herstmonceux
Sacramento Peak
Wendelstein

SUBFLARES

Noted as follows: Date - Universal Time - Coordinates

NOVEMBER 1960

	LOCKHEED	01	1701	N21 E02	
	LOCKHEED	01	1710	N13 E73	
	LOCKHEED	01	1710	N13 E73	
	LOCKHEED	01	1724	S19 E60	
	LOCKHEED	01	1738	N22 W18	
	LOCKHEED	01	1807	N22 W18	
	LOCKHEED	01	1808	S07 E30	*
	LOCKHEED	01	1815	N21 E02	*
	LOCKHEED	01	1820	N22 W18	
	LOCKHEED	01	1853	N17 W02	
	LOCKHEED	01	1913	N19 W01	
	LOCKHEED	01	1943	S08 E26	
	LOCKHEED	01	1947	N19 W01	
	LOCKHEED	01	2050	N18 W02	
	HAWAII	01	2246	N11 E18	
	LOCKHEED	01	2247	N01 W18	
	LOCKHEED	01	2334	N19 W05	
	HAWAII	02	0114 E	S08 E24	
*	CARRI S	02	1226 E	S06 E20	
	LOCARNO	02	1247	S07 E15	
	HAWAII	02	1814 E	S11 E14	*
	HAWAII	02	1942 E	N19 W12	
	SAC PEAK	02	1942	N20 W13	
*	CAPRI S	03	0831 E	N13 W23	
	WENDEL	03	0840 E	N14 W23	
	WENDEL	03	1214 E	N14 W25	
	WENDEL	03	1404 E	N15 W26	
	SAC PEAK	03	1819 E	N18 W29	
	CAPRI S	04	0738	S07 W05	
	HAWAII	04	2252 E	S05 W19	*
	HAWAII	05	0100	N10 E39	*
	CARRI S	05	1037 E	N13 E24	
	HAWAII	05	1800 E	S21 E44	*
	HAWAII	05	1826	S10 W34	*
	ISTANBUL	06	0845	N17 E21	
	WENDEL	06	0916 E	N25 E70	
	HAWAII	06	1806	N15 E70	
	HAWAII	06	1807	N05 W66	*
	HAWAII	06	1916 E	N05 W66	
	HAWAII	06	1952	N05 W66	
	HAWAII	06	2322 E	N14 E66	
	ONDREJOV	07	0752	N24 E61	
*	CARRI S	07	0825 E	S02 W75	
*	CAPRI S	07	0903 E	S02 W75	
	CAPRI S	07	0947 E	S02 W75	
	CARRI S	07	1121 E	S02 W75	
	LOCKHEED	07	1550	S12 E18	
	LOCKHEED	07	1740	S11 E18	*
	LOCKHEED	07	1920 E	S03 W77	
	LOCKHEED	07	1920 E	S03 W77	
	HAWAII	07	2022 F	N17 E46	
	ISTANBUL	08	0747	N25 E48	
	ISTANBUL	08	0755	N22 E41	
	LOCARNO	08	1348	S02 W86	
	SAC PEAK	08	1437	S10 E48	
	LOCKHEED	08	1630	N25 E50	
	SAC PEAK	08	1640	N14 W21	
	LOCKHEED	08	1640	N14 W21	
	LOCKHEED	08	1656	N22 E46	
	LOCKHEED	08	1700	S10 E47	
	LOCKHEED	08	1750	N21 E41	
	LOCKHEED	08	1800	S09 E47	
	HAWAII	08	1846	S17 E48	
	LOCKHEED	08	1847	S11 E46	
	SAC PEAK	08	1847	S09 E49	
	LOCKHEED	08	1858	S06 W77	
	LOCKHEED	08	1902	N16 W21	
	LOCKHEED	08	1923	S02 W36	
	LOCKHEED	08	1956	N21 E41	
	LOCKHEED	08	2000	N11 W25	
	LOCKHEED	08	2100	N21 E39	
	LOCKHEED	08	2130	N25 E48	
	LOCKHEED	08	2155	N11 W26	
	LOCKHEED	08	2300	S10 E43	
	LOCKHEED	08	2308	N12 W18	
	HAWAII	09	0140	N21 E29	
	WENDEL	09	0728 E	N12 E44	
	WENDEL	09	0937 E	N31 E43	
*	CARRI S	09	1000	N24 E29	
	WENDEL	09	1020 E	N25 E34	
	WENDEL	09	1149 E	S10 E37	
	ONDREJOV	09	1153 E	S09 E40	
*	ONDREJOV	09	1247	N11 W45	
*	CAPRI S	09	1247 E	N10 W45	
	SAC PEAK	09	1528	N28 E32	
	SAC PEAK	09	1621	N28 E35	
	LOCKHEED	09	1701	N23 E35	
	LOCKHEED	09	1741	N25 E33	
	LOCKHEED	09	1818	S10 E33	
	LOCKHEED	09	1818	S10 E33	
	LOCKHEED	09	2131	N25 E33	
	LOCKHEED	09	2248	N26 E33	
	LOCKHEED	09	2307	N26 E33	
	HAWAII	09	2310	N20 E37	
	WENDEL	10	0746 E	S12 E21	
	WENDEL	10	0929 E	N08 W56	
*	CAPRI S	10	1210 E	N11 W55	
	MCMATH	10	1414	N10 W60	
	SAC PEAK	10	1606 U	S08 E20	
	LOCKHEED	10	1630 U	N13 W52	
	LOCKHEED	10	1630	S09 E17	
	MCMATH	10	1648	S08 E20	
	LOCKHEED	10	1657	N26 E24	
	LOCKHEED	10	1657	N26 E24	
	SAC PEAK	10	1705	N26 E22	
	HUANCAYO	10	1757	N26 E24	
	MCMATH	10	1843 E	S07 E19	
	LOCKHEED	10	1916	N23 E16	
	SAC PEAK	10	1918	N22 E19	
	HAWAII	10	1920	N18 E22	
	LOCKHEED	10	2006	S17 E19	
	SAC PEAK	10	2110	N26 E22	
	HAWAII	10	2146	S10 E11	
*	HAWAII	10	2151	N24 E22	
	LOCKHEED	10	2230 E	N25 E21	
*	CAPRI S	11	1010 E	N27 E14	
	WENDEL	11	1140 E	S07 E10	
*	CARRI S	11	1203 E	N21 E07	
	WENDEL	11	1359 E	S14 E02	
	WENDEL	11	1422 E	N23 E04	
	WENDEL	11	1427 E	N27 E08	
	SAC PEAK	11	1447	E07 S08	
	HUANCAYO	11	1451 E	S07 E08	
*	MCMATH	11	1509	N29 E12	
	LOCKHEED	11	1625 E	N28 E10	
	MCMATH	11	1626	N27 E11	
	SAC PEAK	11	1630	N30 E12	
	LOCKHEED	11	1704	N27 E10	
	MCMATH	11	1709	N27 E11	
	SAC PEAK	11	1709	N28 E11	
*	MCMATH	11	1741	N18 E84	
*	SAC PEAK	11	1746 U	N18 E80	
	LOCKHEED	11	1835	N27 E09	
	LOCKHEED	11	1835	N27 E09	
	MCMATH	11	1842	N27 E09	
	MCMATH	11	1851	N27 E09	
	LOCKHEED	11	1918	N26 E07	
*	SAC PEAK	11	1955	N18 E81	
*	MCMATH	11	1957	N16 E85	
	HAWAII	11	2052	N26 E13	
	LOCKHEED	11	2053	N27 E08	
	LOCKHEED	11	2145	N27 E04	
	LOCKHEED	11	2145	N27 E04	
	LOCKHEED	11	2251	N27 E04	
	LOCKHEED	11	2251	N27 E04	
	HAWAII	11	2256 E	N07 E09	
	MCMATH	12	1608 E	S07 W07	
	SAC PEAK	12	1609	S05 W05	
	SAC PEAK	12	1657	N30 W05	
	MCMATH	12	1722	S07 W07	
	HAWAII	12	2026	N32 W02	
	SAC PEAK	12	2027	N31 W08	
*	HAWAII	12	2120	N08 E64	
	MCMATH	13	1403	N29 W16	
*	MCMATH	13	1515	N30 W17	
	SAC PEAK	13	1636	N30 W18	
	MCMATH	13	1637	N30 W18	
	LOCKHEED	13	1639 E	N30 W18	
	LOCKHEED	13	1655	S07 W21	
	MCMATH	13	1701	S08 W12	
	LOCKHEED	13	1715	N27 W15	
*	LOCKHEED	13	1820 U	N20 F51	
*	MCMATH	13	1824	N20 E55	
	MCMATH	13	1841	N26 W18	
*	MCMATH	13	1856	N27 W13	
	LOCKHEED	13	1900	S08 W23	
*	HAWAII	13	1904 F	N31 W11	
*	MCMATH	13	1934	N27 W14	
	HAWAII	13	2220 E	N01 W27	
	HAWAII	14	0023 E	S01 W29	
	HAWAII	14	0156	N32 W19	
*	CAPRI S	14	0957 E	N25 W26	
	WENDEL	14	1001 E	S06 W33	
	CAPRI S	14	1020 E	N25 W26	
	WENDEL	14	1110 E	N29 W24	
*	WENDEL	14	1420 E	N31 W25	
*	HUANCAYO	14	1553 E	N22 W39	
	HAWAII	14	1848 F	N33 W29	
	HAWAII	14	1852 E	S05 W36	
	HAWAII	14	2036	N11 E38	
	LOCKHEED	14	2138	S06 W39	
*	HAWAII	14	2300 E	N33 W31	
*	LOCKHEED	14	2340	N28 W31	
	LOCKHEED	15	0007	N21 W36	
	LOCKHEED	15	0018	N26 W37	
*	CARRI S	15	0744 E	N28 W36	
	WENDEL	15	0839 E	N23 W64	
	CAPRI S	15	1033 E	N27 W41	
	WENDEL	15	1041 E	N27 W40	
	WENDEL	15	1129 E	N28 W40	
	WENDEL	15	1155 F	N27 W41	
	WENDEL	15	1217 E	N28 W40	
	WENDEL	15	1225 E	N24 W68	
*	CARRI S	15	1237	N27 W38	
	WENDEL	15	1341 E	N23 W68	
	LOCKHEED	15	1657	N26 W44	
	LOCKHEED	15	1708	N10 E21	
	LOCKHEED	15	1716	S06 W45	
	LOCKHEED	15	1727	N26 W46	
	LOCKHEED	15	1814	N23 W70	
	LOCKHEED	15	1838	N17 E27	
	LOCKHEED	15	1855	N23 W72	
	LOCKHEED	15	1918	N18 E21	
	LOCKHEED	15	1924	N05 E74	
	LOCKHEED	15	1928	N23 W76	
	LOCKHEED	15	1943	N17 E22	
	LOCKHEED	15	2016	N15 E21	
	LOCKHEED	15	2048	N28 W19	
	LOCKHEED	15	2048	N16 W39	
	LOCKHEED	15	2052	S10 W47	
	LOCKHEED	15	2100	N20 E17	
	LOCKHEED	15	2120	N26 W49	
	LOCKHEED	15	2240	526 W49	
	LOCKHEED	15	2307	N26 W48	
	LOCKHEED	15	2346	N26 E30	
	LOCKHEED	15	2346	N26 E30	
	LOCARNO	16	1155	S10 W54	
	MCMATH	16	1442 E	N28 W56	
	SAC PEAK	16	1544	N30 W57	
	LOCKHEED	16	1751	S06 W67	
	LOCKHEED	16	1751	S06 W67	
	LOCKHEED	16	1816	S06 W69	
	LOCKHEED	16	1829	S10 W58	
	LOCKHEED	16	1835	N22 E15	
	LOCKHEED	16	1835	N22 E15	
	LOCKHEED	16	1955	N25 W90	
	LOCKHEED	16	2010	S04 W68	
	SAC PEAK	16	2141	N24 W90	
	LOCKHEED	16	2141	N25 W90	
	LOCKHEED	16	2142	N19 E07	
	LOCKHEED	16	2330	N23 E17	
	LOCKHEED	16	2333	N28 W54	
	LOCKHEED	17	1647	N17 W03	
	LOCKHEED	17	1717	N29 W43	
	LOCKHEED	17	1736	N10 W09	
	SAC PEAK	17	1742	N10 W08	
	LOCKHEED	17	1750	N22 W05	
	HAWAII	17	1812 E	N12 W05	
	LOCKHEED	17	1826	N19 W04	
	MCMATH	17	1828	N19 W05	
	SAC PEAK	17	1828	N20 W04	
	SAC PEAK	17	1849	N30 W50	
	LOCKHEED	17	1850	N29 W50	
	HAWAII	17	1852	N37 W44	
	LOCKHEED	17	1915	N26 W69	
	SAC PEAK	17	1920	N29 W70	
	MCMATH	17	1921 E	N26 W75	
	LOCKHEED	17	2032	N26 W73	
	LOCKHEED	17	2109	N26 W70	
*	HAWAII	17	2124 F	N33 W71	
	LOCKHEED	17	2238	N26 W70	
	LOCKHEED	17	2257	N26 W70	
	LOCKHEED	17	2308	N21 E06	
	LOCKHEED	17	2310	N26 W73	
	LOCKHEED	17	2310	N19 W07	
	LOCKHEED	17	2335	N26 W73	
	HAWAII	18	0110	N37 W73	
*	CAPRI S	18	0649 E	N30 W79	
*	CAPRI S	18	1058 E	N30 W80	
	WENDEL	18	1153 E	N22 W04	
	SAC PEAK	18	1508	N18 W19	
	MCMATH	18	1509	N18 W20	
	LOCKHEED	18	1630	N08 W24	
*	SAC PEAK	18	1714	N28 W84	
	LOCKHEED	18	1751	N17 W25	
	LOCKHEED	18	1817	N17 W21	
	LOCKHEED	18	2030	N23 W09	
	LOCKHEED	18	2054	N19 W22	
	LOCKHEED	18	2129	N19 W22	
*	SAC PEAK	18	2208	N27 W90	
	HAWAII	18	2318	N19 W08	
	SAC PEAK	19	1512	N20 W32	
	SAC PEAK	19	1556	N20 W32	
	LOCKHEED	19	1558 U	N20 W32	
	LOCKHEED	19	1605	N09 W24	
*	LOCKHEED	19	1637	N28 W90	
	SAC PEAK	19	1649	N19 W30	
	LOCKHEED	19	1658	N20 W32	
*	SAC PEAK	19	1750	N28 W90	
*	HAWAII	19	1750 E	N28 W27	
	LOCKHEED	19	1913	N05 W39	
	LOCKHEED	19	1942	N20 W33	
	LOCKHEED	19	2017	N21 W22	
	LOCKHEED	19	2049	N22 W33	
	SAC PEAK	19	2049	N32 W23	
	LOCKHEED	19	2145	N09 W39	
	LOCKHEED	19	2145	N09 W39	
	LOCKHEED	19	2213	N20 W35	
	LOCKHEED	19	2220	N07 W37	
	LOCKHEED	19	2220	N07 W37	
	LOCKHEED	19	2220	N07 W37	
	LOCKHEED	19	2349	N20 W35	
*	CAPRI S	20	1107 E	N23 W27	
	CAPRI S	20	1209 E	N08 W46	
	WENDEL	20	1309 E	N09 W47	
	LOCARNO	20	1325	N07 W46	
	LOCARNO	20	1400	N14 W10	
	WENDEL	20	1408 E	N15 W12	
	MCMATH	20	1528	N15 W12	
	SAC PEAK	20	1532	N05 W49	
	MCMATH	20	1534	N10 W50	
	MCMATH	20	1547	N10 W50	
	SAC PEAK	20	1644	N24 W44	
	LOCKHEED	20	1644	N23 W45	
	MCMATH	20	1646	N25 W45	
	LOCKHEED	20	1655	N06 W53	
	MCMATH	20	1658 F	N10 W52	
*	LOCKHEED	20	1730	N08 W52	
*	MCMATH	20	1745	N09 W50	
	LOCKHEED	20	1831	N07 W52	
	LOCKHEED	20	1857	N08 W52	
	MCMATH	20	1858 F	N09 W52	
	HAWAII	20	1902 E	N16 W51	
	LOCKHEED	20	1927	N07 W52	
	MCMATH	20	1936	N08 W53	
	LOCKHEED	20	1955	N07 W52	
	LOCKHEED	20	2009	N18 W48	
	LOCKHEED	20	2016	N07 W52	
*	SAC PEAK	20	2118	N28 W90	
	LOCKHEED	20	2153	N07 W53	
	LOCKHEED	20	2205	N22 W37	
	LOCKHEED	20	2209	N08 W54	
	LOCKHEED	20	2233	N07 W54	
	HAWAII	20	2234	N15 W54	
	LOCKHEED	20	2355	N06 W55	
	LOCKHEED	20	2355	N06 W55	
	LOCKHEED	21	0014	N20 W39	
	HAWAII	21	0016 E	N28 W35	
	WENDEL	21	0839 E	N09 W60	
	WENDEL	21	0858 E	N17 W55	
	CAPRI S	21	0928 E	N24 W37	
	LOCKHEED	21	1632	N20 W54	
	LOCKHEED	21	1728	S12 W62	
	LOCKHEED	21	1855	S11 W63	
	LOCKHEED	21	1920	N22 W60	
	HAWAII	21	1922	N28 W60	
*	MCMATH	21	1925	N21 W61	
	LOCKHEED	21	2140	S04 W48	
	HAWAII	21	2304	N16 W66	
	LOCKHEED	21	2305	N09 W67	
	SAC PEAK	22	1526	N04 W88	
	LOCKHEED	22	1615	S20 E34	
	SAC PEAK	22	1622	N04 W88	
	LOCKHEED	22	2036	N27 E35	
	LOCKHEED	23	1629	N07 W33	
	SAC PEAK	23	1629	N08 W34	
*	MCMATH	23	1714 E	N08 W90	
*	MCMATH	23	1928	N08 W90	
	LOCKHEED	23	2049	N07 W36	
	LOCKHEED	24	1832	S02 E50	
	LOCKHEED	24	1945	S02 E50	
	LOCKHEED	24	2047	S23 E06	
	LOCKHEED	24	2255	S05 E48	
	LOCKHEED	24	2312	N09 E63	
	HAWAII	25	0136 E	S08 E48	
	LOCKHEED	25	1705	S04 E40	
*	LOCKHEED	25	1827	S06 E49	
	LOCKHEED	25	2034	S03 E37	
	HAWAII	25	2044	S07 E39	
	LOCKHEED	25	2157	S06 E37	
	LOCKHEED	25	2254	N11 E49	
*	CAPRI S	26	1028 E	N12 E48	
*	SAC PEAK	26	1556 F	N12 W06	
	SAC PEAK	26	1740	S04 E23	
	MCMATH	26	1740	S03 E23	
	MCMATH	26	1804	N12 E40	
	HAWAII	26	1804	N03 E39	
	MCMATH	26	1935 E	S05 E90	
*	HAWAII	26	2352	N05 E38	
	CAPRI S	27	1331 E	S05 E14	
	CAPRI S	28	1036 E	N09 E16	
	LOCKHEED	28	1730	S04 W02	
	SAC PEAK	28	1823	S07 E62	
	SAC PEAK	28	1852	N10 E13	
	LOCKHEED	28	1852	N10 E13	
	SAC PEAK	28	1956	N10 E12	
	LOCKHEED	28	1956	N10 E13	
	HAWAII	29	0113 E	N09 E09	
	SAC PEAK	29	1734	N10 E00	
	WENDEL	30	0806 E	S07 W69	
	WENDEL	30	0827 E	S07 W69	
	WENDEL	30	0858 E	S07 W69	
	WENDEL	30	0922 E	N13 W06	
	WENDEL	30	1002 E	N13 W06	
	WENDEL	30	1030 E	S07 W71	
	WENDEL	30	1054 E	S07 W71	
	WENDEL	30	1305 E	S07 W72	
	LOCKHEED	30	1630 E	N05 W09	
	LOCKHEED	30	1630 E	N15 W08	
	SAC PEAK	30	1635	N15 W09	
	LOCKHEED	30	2130	N15 W11	
	LOCKHEED	30	2144	S08 E47	
	LOCKHEED	30	2300	S10 E48	
	LOCKHEED	30	2338	N15 W11	
	HAWAII	30	2340	N17 W08	

COMMERCE - STANDARDS - BOULDER

*Rated as flare of importance ≥ 1 by other observatories. (See CRPL-F 196 Part P for December 1960)

SOLAR FLARES

SEPTEMBER 1960

OBSERVATORY	DATE SEPT 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 Ha	MAX INT	PROVISIONAL IONOSPHERIC EFFECT
PIRCULI	01	0757	0954	0812 U	N22	W08	5822	117	1	1		2.94			50	
PIRCULI	01	0854	0902 D	0856 U	N16	E88	5835	8 D	1	1		.91			50	
PIRCULI	01	1001	1022	1005	N19	W09	5822	21	1+	1		1.84			91	
GOOD HOPE	01	1322	1329 D	1325	N19	W16	5822	7 D	1		1325	2.40	2.40			
SCHAUINS	01	1330	1515		N19	W14	5822	105	2			5.00				S-SWF
CAPRI G	01	1501 E	1520		N18	W20	5822	19 D	1	2			5.00			
CAPRI G	01	1501 E	1516		S18	W45	5825	15 D	1	2			3.00			
MITAKA	02	0231	0348	0247	N18	W25	5822	77	1	1	0242	2.51	2.69	1.99	131	
TASHKENT	02	0243 E	0307	0244	S17	W58	5825	24 D	1	2	0244	1.29	2.80		125	S-SWF
MITAKA	02	0250 E	0321	0250	S18	W60	5825	31 D	1+	1	0250	2.01	3.78	2.60	165	
SIMEIZ	02	0609 E	0629 D	0614	S10	W44	5830	20 D	1	1	0674	2.26			67	
KIEV	02	0558 E	0606 D	0606 U	N18	W82	5818	8 D	1	1	0606	1.56			60	
SIMEIZ	02	0618 E		0618	N20	W80	5818	□	1	1	0618	.90			59	
CAPRI G	02	0620 E	0655		N17	W74	5818	35 D	1	2			5.00			Slow S-SWF
PIRCULI	02	0635 E	0653 D	0636 U	N19	W80	5818	18 D	1	2		1.19			58	
ABASTUMANI	02	0526	0906	0724	N18	W23	5822	220	2+	3	0732	12.69	14.10	2.70	84	
CAPRI G	02	0620 E	0855	0735	N18	W22	5822	155 D	3	2			15.00			
PIRCULI	02	0635 E	0820 D	0730 U	N18	W24	5822	105 D	2	2		11.93			166	S-SWF
GOOD HOPE	02	0652 E	0858	0721	N19	W22	5822	126 D	2+		0721	6.60	7.40			
KIEV	02	0702 E	0705 D	0705 U	N18	W22	5822	3 D	1+		0705	5.19			60	
ABASTUMANI	02	0654	0710	0700	S16	W60	5825	16	1	3		.90	2.10		69	
PIRCULI	02	0700	0710	0703 U	S16	W59	5825	10	1+	2		1.29			96	
PIRCULI	02	0748	0804	0751	S17	W59	5825	16	1	2		1.01			66	
GOOD HOPE	02	1226	1242	1229	S16	W62	5825	16	1		1229	1.00	2.60			
CAPRI G	02	1345 E	1412		N18	W25	5822	27 D	1	2			3.00			
KIEV	02	1355 E	1405 D	1356 U	N19	W26	5822	10 D	1		1356	1.87			61	
GOOD HOPE	02	1357	1405 D	1401	S16	W62	5825	8 D	1		1401	1.30	3.30			
KIEV	02	1358 E	1420 D	1358 U	S17	W65	5825	22 D	1		1358	1.56			62	
CAPRI G	03	0625 E	0643		N20	W30	5822	18 D	1	2			4.00			
ABASTUMANI	03	0716	0824	0742	N19	W37	5822	68	□	1		3.62	4.60			
CAPRI G	03	0726	0817		S15	W70	5825	51	1	2			4.00			Slow S-SWF
PIRCULI	03	0724	0810	0749 U	S17	W70	5825	46	2	1		4.59			74	
PIRCULI	03	0727	0800	0741	N21	W35	5822	33	1	1		3.68			73	
ABASTUMANI	03	0724	0824	0742	S19	W80	5825	60	□	1		1.82	13.10			
SIMEIZ	03	0725 E	0732 D	0732	S16	W73	5825	7 D	1	1	0732	1.82			76	
CAPRI G	03	0732	0747		N20	W30	5822	15	1	2			5.00			
CAPRI G	03	0815 E	0833		N20	W30	5822	18 D	1	2			4.00			
PIRCULI	03	0915	0940	0930 U	N18	W40	5822	25	1	1		3.21			74	
PIRCULI	03	0948	1002	0952 U	N15	W90	5818	14	1+	1		1.84			76	
CAPRI G	03	1430 E	1435		N19	W41	5822	5 D	1	2			4.00			
CAPRI G	03	1502 E	1518		N15	W90	5818	16 D	1	2						
CAPRI G	03	1544	1601		N20	W40	5822	17	1	2			4.00			
PIRCULI	04	0700 E	0718	0706 U	S17	W90	5825	18 D	1	1		.91			51	
PIRCULI	04	0745 E	0755	0746 U	N19	W49	5822	10 D	1	1		1.38			50	
PIRCULI	04	0816 E	0826 D	0819 U	N18	W53	5822	10 D	1	1		1.19			51	
CAPRI G	04	0823 E	0835		N20	W50	5822	12 D	1	2			2.00			
KHARKOV	04	0900 E	0935 D	0928	S18	W83	5825	35 D	1+	2	0928	1.14	5.60	2.90		
KHARKOV	04	1015 E	1035 D	1023	S18	W83	5825	20 D	1+	2	1023	1.14	5.60	3.40		

SOLAR FLARES

SEPTEMBER 1960

OBSERVATORY	DATE SEPT 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 Ha	MEASUREMENTS MAX. INT. °₀	PROVISIONAL IONOSPHERIC EFFECT
CAPRI G	04	1031 E	1056		N20	W50	5822	25 D	1+	2			6.00			
KHARKOV	04	1036	1103 D		N19	W57	5822	27 D	1	2	1040	2.29	3.90	2.10		S-SWF
KIEV	04	1052 E	1130 D		N20	W54	5822	38 D	2	1	1054	5.19			61	
KHARKOV	04	1050 E	1105 D		S18	W83	5825	15 D	1+	2	1054	1.14	5.60	3.70		
KIEV	04	1052 E	1115 D		S17	W90	5825	23 D	1		1052	2.08			45	
CAPRI G	04	1053	1107		S16	W90	5825	14	1	2						
CAPRI G	04	1249 E	1303		N20	W50	5822	14 D	2	2			6.00			
GOOD HOPE	04	1301 E	1328		N20	W55	5822	27 D	1		1301	1.60	2.60			
CAPRI G	04	1525	1536		N20	W55	5822	11	1	2			4.00			
VOROSHILOV	04	2211	2216	2214	N20	W59	5822	5	1	2		1.81			62	
CAPRI G	06	1458 E	1511 D		N15	E12	5835	13 D	2	2			8.00			
CAPRI G	07	0832	0844		S16	E61	5843	12	1	2			2.00			
CAPRI G	07	1106	1121		N16	E23	5837	15	1	2			4.00			
CAPRI G	07	1204	1230		N16	E23	5837	26	1	2			4.00			
PIRCULI	08	0617	0630 D	0622 U	S04	W03	5841	13 D	1	1		3.68			55	
CAPRI G	08	0626 E	0630 D		S06	W06	5841	4 D	1	2			2.00			
ABASTUMANI	08	0622	0638	0628	S16	E51	5843	16	1	1		1.36	2.50		69	
PIRCULI	08	0631 E	0632 D	0632 U	S16	E52	5843	1 D	1	1		3.30			65	
PIRCULI	08	0732 E	0748 D	0740 U	S04	W03	5841	16 D	1	1		3.85			60	
CAPRI G	08	0950 E	1008		S16	E46	5843	18 D	1	2			2.00			
KIEV	10	1245 E	1330 D	1310 U	N18	W15	5837	45 D	1+	1	1310	5.19			58	
SCHAUINS	10	1300 E	1335 D	1310	N18	W11	5837	35 D	1			3.00				
CAPRI G	10	1322 E	1337		N18	W11	5837	15 D	2	2			6.00			
PIRCULI	11	0720 E	0732 D	0725 U	S03	E60	5847	12 D	1	1		1.56			57	
CAPRI G	11	0726 E	0740 D		S04	E58	5847	14 D	1	2			2.00			
SCHAUINS	11	1210	1240 D	1210	N17	W25	5837	30 D	1+			3.00				
SIMEIZ	12	0642 E		0642	N18	E55	5848	□	1+	1	0642	9.07			53	
ABASTUMANI	12	0736	0809	0742	N20	E51	5848	33	2	1		4.53	7.30		86	
CAPRI G	12	0737 E	0817		N21	E51	5848	40 D	2	2			6.00			
SCHAUINS	12	0740 E	0810 D	0800	N15	E50	5848	30 D	1			3.00				
GOOD HOPE	12	1126	1155	1131	N19	E21	5844	29	1		1131	2.40	2.70			
CAPRI G	12	1130 E	1207		N19	E07	5844	37 D	1+	2			5.00			
KIEV	13	0624 E	0635 D	0628 U	N20	E11	5844	11 D	1	1	0628	3.12			50	
ABASTUMANI	13	0625	0714	0632 U	N20	E10	5844	49	1	2		2.26	2.40		63	
SIMEIZ	13	0631 E	0649 D	0633	N19	E12	5844	18 D	1	1	0733	3.62			52	
GOOD HOPE	13	0635 E	0646		N20	E11	5844	11 D	1		0636	2.10	2.20			
ABASTUMANI	13	0754	0817	0806	N21	E03	5844	23	1	2		2.72	2.80		66	
GOOD HOPE	13	0755	0842	0805	N21	E02	5844	47	1		0805	2.50	2.60			
SIMEIZ	13	0800 E		0800	N20	W00	5844	□	1	1	0800	7.25			53	
SCHAUINS	13	0800 E	0835 D	0815	N18	E05	5844	35 D	1			3.00				
KHARKOV	13	0807 E	0838 D		N20	E02	5844	31 D	1	2		2.20	2.20			
GOOD HOPE	13	1139	1225	1142	N19	W56	5837	46	1		1142	1.30	2.50			
SCHAUINS	13	1150	1220 D	1200	N18	W50	5837	30 D	1			1.00				
GOOD HOPE	14	1238	1310	1245	N18	W21	5844	32	1		1245	2.00	2.20			

SOLAR FLARES

SEPTEMBER 1960

OBSERVATORY	DATE SEPT 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 Ha	MAX INT. °	PROVISIONAL IONOSPHERIC EFFECT
GOOD HOPE	14	1304	1322 D	1306	N20	W06	5844	18 D	1		1306	2.30	2.40			
VOROSHILOV	14	2316	2335	2323	N19	W70	5837	19	1	2		.81			76	
MITAKA	15	0540 E	0550	0445	N19	W77	5837	10 D	1	1	0540	2.01		4.75	134	
PIRCULI	15	0853	0912	0857	N16	E08	5848	19	1	1		2.20			54	
KIEV	16	1212	1215	1213	N16	W38	5844	3	1	3	1213	1.04			50	
GOOD HOPE	17	0636 E	0643		S20	E52	5858	7 D	1		0636	1.40	2.60			
GOOD HOPE	17	1010	1039	1026	N24	W90	5837	29	1		1026	1.10				
KIEV	17	1224 E	1252 D		N27	E07	5851	28 D	1	1	1224	2.08			53	
VOROSHILOV	18	0033	0135 D	0056	N13	W30	5848	62 D	1+	2		1.98			92	
KHARKOV	18	1112	1132 D	1115	S22	E45	5858	20 D	1	2	1115	2.29	3.60	3.20		S-SWF
KIEV	18	1112	1140 D	1114	S24	E45	5858	28 D	1+	2	1114	1.04			68	
MITAKA	19	0030	0034		S22	E38	5858	4	1	1	0030	.70	1.02	1.96	96	
MITAKA	19	0148 E	0244	0227	S22	E37	5858	56 D	1+	1	0148	4.02	5.87	2.49	113	S-SWF
MITAKA	19	0309	0342	0319	S22	E36	5858	33	1	1	0319	1.21	1.77	2.48	134	
MITAKA	19	0444	0451	0448	S23	E32	5858	7	1	1	0446	.70	1.02	4.43	115	
GOOD HOPE	19	0700	0755	0710	S18	E80	5863	55	2		0710	2.80				S-SWF
KRASNYA	19	0702	0738	0705	S20	E80	5863	36	2	2		5.44			70	
GOOD HOPE	19	0731	0745	0734	S21	E32	5858	14	1		0734	2.20	2.90			
GOOD HOPE	19	0744	0812	0748	N28	W16	5855	28	1		0759	2.30	2.50			
GOOD HOPE	19	0902	0912	0904	S21	E34	5858	10	1		0904	1.60	2.20			
KHARKOV	19	1020 E	1038 D		N21	E86	5866	18 D	1	1	1030			3.70		
KHARKOV	20	0525 E	0605 D		S13	E76	5863	40 D	1+	1	0557	1.14	5.60			
DUNSINK	20	0929 E	0933 D		S22	E18	5858	4 D	1	1	0929	.75	.81	1.65		
KHARKOV	20	0935 E	0956 D		S22	E14	5858	21 D	1	1	0948	2.86	3.30	1.50		
KIEV	20	1213 E	1230 D	1216 U	N22	W31	5855	17 D	1	1	1215	1.56			50	
MITAKA	21	0134 E	0200		N21	E60	5866	26 D	1	2	0134	.80	1.66	1.98	113	
MITAKA	21	0239 E	0242		S08	W26	5856	3 D	1	2	0239	1.01	1.16	1.96	102	
ABASTUMANI	21	0830	0848	0834	N21	E58	5866	18	2	3		3.62	7.00		100	S-SWF
KHARKOV	21	1032	1045 D		S17	E42	5863	13 D	1	2	1037	.57	.90			
ABASTUMANI	22	0737	0749	0740	N22	E42	5866	12	1	3		1.82	2.50		60	
GOOD HOPE	22	0738	0749	0740	N22	E41	5866	11	1		0740	1.60	2.20			
KRASNYA	22	0858	1004	0913	N20	W55	5855	66	1+			8.16			75	
GOOD HOPE	22	0859	0935	0902	N22	W56	5855	36	1		0909	1.90	3.40			
KIEV	22	0907 E			N22	W56	5855	□	□	1	0907	1.87			50	
KIEV	23	1129 E	1140 D	1130 U	S23	E13	5863	11 D	1	2	1130	1.04			61	
GOOD HOPE	24	0712	0727	0716	S22	W01	5863	15	1		0716	2.30	2.60			
KIEV	24	0924 E	0928 D		S21	E01	5863	4 D	1	1	0928	1.56			56	
KHARKOV	24	0924	0942 D		S20	W01	5863	18 D	1	2	0928	2.86	3.10	2.00		
GOOD HOPE	25	0759	0832	0804	N27	E11	5866	33	1		0804	2.40	2.60			
GOOD HOPE	25	1246	1311	1256	S15	W11	5863	25	1		1256	4.00	4.40			

SOLAR FLARES

SEPTEMBER 1960

OBSERVATORY	DATE SEPT 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 Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
MITAKA	26	0353 E	0406		S12	E07	5863	13 D	1	1	0357	1.51	1.62	1.67	115	
TASHKENT	26	0525	0605	0538	S23	W65	5858	40	1	2	0538	6.15	16.90			Slow S-SWF
MITAKA	26	0531 E	0604	0537	S19	W64	5858	33 D	2+	1	0537	6.78	15.32	4.41	165	
GOOD HOPE	26	1142	1144 D		S18	W71	5858	2 D	1		1144	.90				
GOOD HOPE	27	1000	1017	1008	S23	W80	5858	17	1		1008	.90				
MITAKA	29	0500	0531	0502	S23	W66	5863	31	1	1	0505	2.01	5.03	3.61	134	Slow S-SWF
TASHKENT	29	0508 E	0526 D		S22	W66	5863	18 D	1	1		1.29	3.60			

COMMERCE - STANDARDS - BOULDER

These flare reports are addenda to the September 1960 flares published in CRPL-F 194 Part B, October 1960.

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

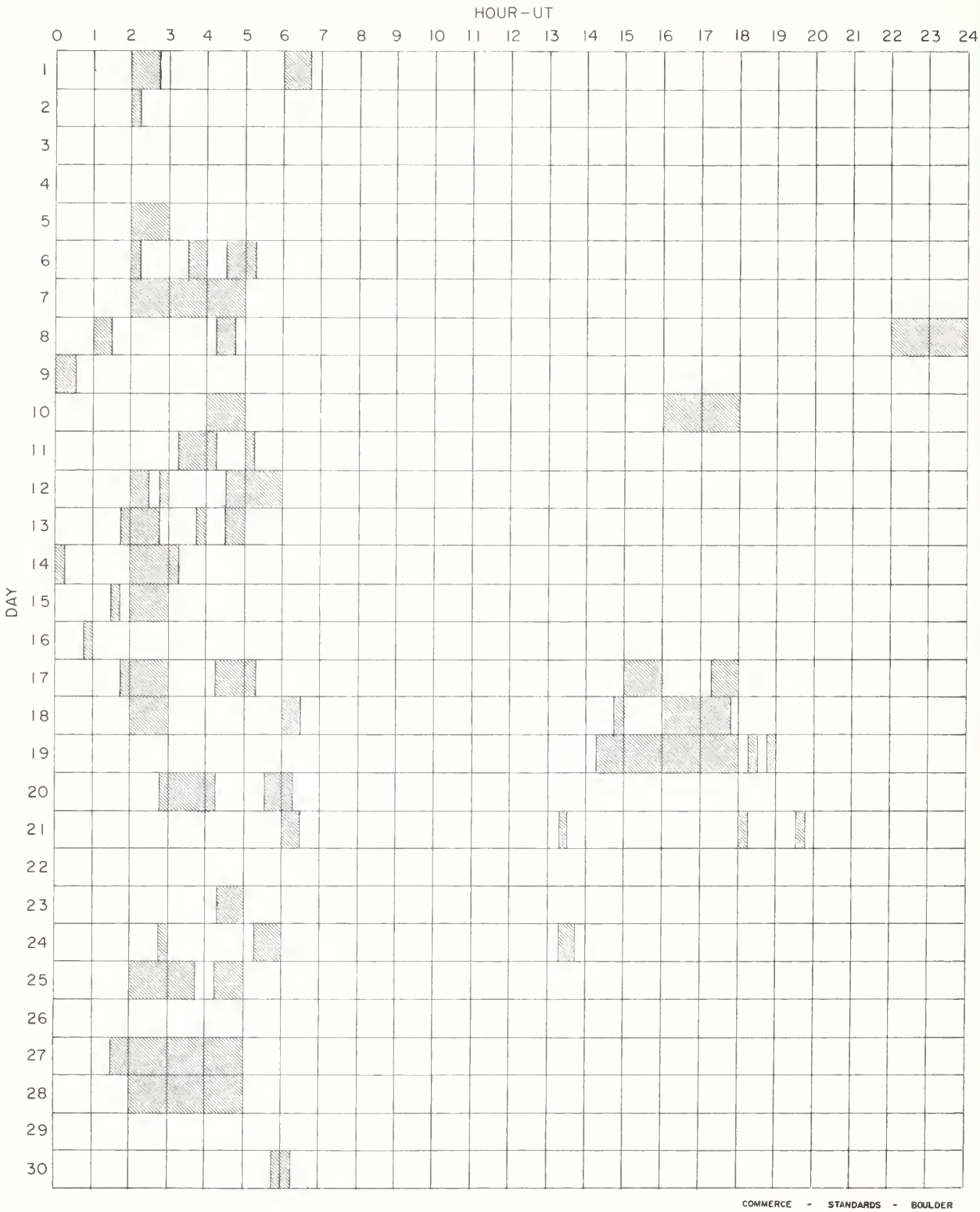
LOCKHEED OBSERVATIONS: ALL VALUES IN THE MAXIMUM INTENSITY COLUMN ARE ARBITRARY UNITS ON A SCALE OF 10 TO 40 - NOT PERCENT OF THE CONTINUOUS SPECTRUM.

ERRATA:

Page IIIb CRPL-F 196 Part B. Please correct the value in CORR. AREA column for the MCMATH Nov. 12, 1960 flare at 1323 E UT to 14 00 sq. deg. through a punch card error the value was given incorrectly as 1.40 sq. deg.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

SEPTEMBER 1960



Stations Include:

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

(SHORT-WAVE RADIO FADEOUTS)

NOVEMBER 1960

Nov. 1960	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F
6	0118	0140	S-SWF	5	1	AD, OK	
6	0230	0317	Slow S-SWF	1	1	OK	0223
6	1708	1815	G-SWF	5	1	HU, MC, PR, WS	1752E
8	1430	1500	Slow S-SWF	4	1	BE, HU, PR **	1429E
10	1022	1152	S-SWF	4	2	NE, SW, CW ***	1009
11	0046	0123	Slow S-SWF	5	1+	CA, OK	0046E
11	0311	0616	S-SWF	5	3+	AD, CA, OK, TO, CW++ *	*
12	1326	1600	S-SWF	5	3+	BE, BO, FM, JU, MC, NE, PR, SW, CW ***	1323E
12	2118	2152	Slow S-SWF	5	1+	BO, PR, WS	2124
14	0010	0103	Slow S-SWF	5	2-	AD, NZ, OK, TO	0015E
14	0300	0500	Slow S-SWF	5	3	AD, NZ, OK, TO, CW++	0246
14	1542	1618	S-SWF	5	2	BE, HU, MC, PR	1605E
15	0217	0630	S-SWF	5	3+	AD, NZ, OK, TO, CW ++	0207
16	0143	0158	S-SWF	1	1	OK	0145E
20	1945	2022	S-SWF	5	1+	AN, FM, HU, PR, WS	2017
20	2023	2145	Slow S-SWF	5	3-	AD, AN, BE, BO, FM, HU, LA, MC, NZ, PR, WS	2106
27	1800	2015	G-SWF	5	1+	BE, FM, HU, MC, PR	

COMMERCE - STANDARDS - BOULDER

CA = Canberra, Australia
JU = Juhlesruh, G. D. R.
LA = Los Angeles, California
NE = Nederhorst den Berg, Netherlands
NZ = New Zealand Post and Telegraph Dept.
SW = Enköping, Sweden

TO = Hiraiso Radio Wave Observatory, Japan
CW* = Cable and Wireless, Barbadoes
CW** = Cable and Wireless, Somerton, England
CW*** = Cable and Wireless, Brentwood, England
CW+ = Cable and Wireless, Hong Kong
CW++ = Cable and Wireless, Singapore

IONOSPHERIC EFFECTS OF SOLAR FLARES

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

NOVEMBER 1960

Nov. 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+		3	2140	2147	2220		A1, A3
5		2		1	1109	1117	1145D		A12
*+ 5		1+		3	1539	1550			A1, A5, A10
*+ 5		1		3	1558	1603	1650D		A1, A5 A10
*+ 5	1			5	1847	1851	1910	10	BO HA
5		2		5	1847	1900	1945		A1, A3, A5, A9, A10, BO, HA
6		1		1	0008	0012	0025		TY
6		1		1	0119	0125	0145		TY
6		1		1	0240	0245	0255		TY
6		1		1	0524	0528	0558		TY
6			1	5	2307		2309		BO, HA, MC
9		1+		1	0720	0730	0741		TY
10		1		5	1019		1044		A3, NE
11		2		1	0048	0108	0136		TY
11		1		1	0145	0157	0205		TY
11		1+		1	0220	0233	0300		TY
11		1+		1	0315	0320	0414		TY
11		1		1	0603	0612	0627		TY
12		2		1	0328	0337	0425		A11
12		2		5	1001		1031		A12, JU
12	3			1	1325	1350			MC
12		2+		5	1325	1345	1530		A1, A3, A5, A10, A12 NE, PA
13		3		5	1208	1237	1421		A1, A3, A5, A10 A12
13		2		5	1625	1635	1702		A1, A3, A5, A10, A12
13		1+		5	1825	1832	1850		A1, A3, A5, A10
14	1			1	0007	0019	0048	20	HA
14		2		1	0009	0021	0053D		TY
14		2		1	0301	0327	0452D		TY
14		1		1	2259	2303	2315		TY
14		1		1	2348	2355	0006		TY
15	3			1	0218	0223	0315	100	HA
15		2		5	0219	0245	0403		A11, HA, HO TY
16		1		1	0146	0150	0212		TY
16		1+		4	0620	0627	0659		A11, TY
16		2		1	1405	1410	1500		A12
20		2		3	1938	1958			A1, A3 A5, A10
20			2	1	1945		1948		HA
20	1			1	1945	1952	2004	15	BO
20		2+		5	2023	2041	2140		A1, A3, A5, A10
20	3			5	2028	2053	2340	80	BO, HA, MC
20			1	1	2042		2044		HA
28		2		3	1558	1620			A1, A5, A10

COMMERCE - STANDARDS - BOULDER

JU = Juhlesruh, G.D.R.
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 (NPA) at Boulder, Colorado (NBA off air Nov. 7 to Nov. 28, 1960).

Notes: No usable McMath record for 13 and 15 November, 1960.
No usable Sacramento Peak record for November, 1960.
No usable Boulder record from 8-18 November, 1960.

Errata to Descriptive Text issued November 1960:

On page 8 lines 7 and 8 Hollandia should be in New Guinea and Paramaribo in Surinam (Dutch Guiana). The countries were mistakenly reversed in the text.

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

DECEMBER 1960

OTTAWA 2800 MC

Dec. 1960	Type*	Start UT	Duration Hrs:Mins	Maximum Time UT	Maximum Peak Flux	Remarks
5	9 Precursor f	1728	1 00		10	
	6 Complex f	1828	27	1837.5	330	
	4 Post Increase f		> 2 00		45	
6	1 Simple 1	1438	5	1439.5	4	
6	2 Simple 2	1616	5	1616.5	17	
12	3 Simple 3 f	1458	1 00	1520	5	
14	2 Simple 2	1322	2	1322.5	45	
16	3 Simple 3 A	1520	1 10	1550	9	
	1 Simple 1	1523	8	1527	6	
20	6 Complex f	1317	8	1319.7	35	
20	1 Simple 1	1658.2	5	1659.8	5	
27	1 Simple 1	1402	7	1404.5	4	

HOURS OF OBSERVATION: OCTOBER, NOVEMBER, DECEMBER 1960

OBSERVING PERIOD:
October 1200 UT - 2145 UT (approx.)
November 1300 UT - 2100 UT (approx.)
December 1320 UT - 2100 UT (approx.)

with the following exceptions:

(1) Observations commenced:
October 5 - 1315
October 28 - 1250

(2) Observations ended:
November 15 - 1940
November 16 - 2020
November 17 - 2020

(3) No observations:
October 4 - 1420-1610

(4) Interference obscuring portions of the records on:
October 4, 5, 14, 18, 24, 25, 27, 28, 31
November 1, 2, 4, 9, 10, 14, 18, 21
December 2, 8, 9, 11, 12 14, 16, 19, 21, 22, 26, 28, 29, 30.

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

DECEMBER 1960

BOULDER

108 MC

Dec. 1960	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	6	1408 E		160 D	1
1	3	1833.2	1833.7	0.6	2
3	3	1809.7	1810.1	0.4	1
3	2	1957.6	1958.0	2.4	1
3	8	2042.5	2043.5	1.8	3
3	3	2047.0	2047.6	0.6	1
3	3	2256.6	2257.7	1.1	2
3	3	2305.2	2306.1	1.2	1
4	3	1735.9	1736.3	0.3	1
4	3	1838.8	1839.1	0.3	2
4	3	1910.0	1910.5	1.3	2
4	7	2132.3	2244.5	102 D	2
5	3	1509.9	1511.6	2.0	3
5	9a	1832.0	1837.1	18	3
5	9b	1850.5	1853.8	9	2
5	2	1925.5	1925.7	1.9	2
5	2	2022.3	2024.0	2.2	2
6	2	1537.6	1541.0	3.4	3
6	2	1720.0	1727.2	8	2
6	2	1838.0	1842.5	5	1
6	3	1859.6	1900.4	1.0	3
6	8	2029.0	2030.0	3.4	3
6	2	2116.5	2118.6	3.0	1
7	3	1814.5	1815.0	1.1	2
7	3	1830.3	1831.0	0.7	2
7	3	1901.6	1902.5	0.9	3
7	3	1910.5	1911.0	0.3	2
7	8	1955.0	1956.0	1.5	3
7	2	2028.0	2031.5	3.6	1
8	9	1604.3	1609.6	6	2
8	3	1838.4	1839.3	1.3	2
8	3	2039.2	2039.7	1.0	2
9	3	1748.9	1749.4	0.5	2
9	3	1842.0	1842.6	0.5	2
10	3	1612.8	1613.2	0.5	2
10	3	2241.6	2241.9	0.3	2
10	3	2243.8	2244.0	0.3	2
11	3	1553.7	1554.0	0.3	2
11	3	1610.1	1610.5	0.3	2
11	3	1829.6	1830.0	0.4	2
12	3	1442.4	1442.8	0.4	2
12	3	1559.0	1559.3	0.3	2
12	3	2035.4	2035.6	0.4	2
12	3	2225.7	2226.0	0.3	2
13	3	1449.1	1449.6	0.5	2
13	3	1516.0	1516.6	1.1	2
13	3	1541.1	1541.4	0.3	2
13	3	1628.3	1628.8	0.7	2
13	3	1643.5	1644.1	1.2	2
13	3	1955.5	1956.0	0.4	2
14	3	1447.0	1447.5	0.9	2
14	3	1512.8	1513.3	1.2	2
14	3	2116.2	2116.7	0.5	2
15	3	2214.6	2214.9	0.3	2
15	3	2244.6	2244.8	0.2	2
16	8	1531.0	1532.6	4.5	3
16	3	1853.5	1853.9	0.4	2
17	3	2141.4	2141.6	0.2	1
18	9a	1431.5	1434.9	7	2
18	9b	1438.0	1439.9	4.5	2
18	3	1721.0	1721.6	0.6	2
18	3	1841.2	1841.8	0.6	1
18	3	1914.7	1915.1	1.6	2
18	3	1932.7	1932.9	1.3	2
18	3	2129.1	2129.5	0.4	2
18	8	2150.0	2153.5	4.5	2
18	2	2257.0	2300.5	6	2
19	3	1503.0	1504.5	1.6	3
19	3	1537.5	1538.0	1.3	2
19	2	1550.2	1557.5	12	2
19	3	1659.0	1659.6	1.8	2
19	2	1816.5	1819.0	2.6	2
19	3	1839.3	1840.3	1.7	3
19	2	2021.1	2026.6	6	2
19	2	2118.0	2119.7	4.2	1
19	8	2142.0	2145.2	4.8	3
19	3	2216.7	2217.0	0.4	2
19	3	2220.7	2220.8	0.3	2
19	2	2256.4	2258.5	2.1	2
20	3	1450.1	1450.5	0.4	2
20	3	2203.7	2204.2	0.5	2
21	7	1447		171	1
21	3	1848.6	1849.6	1.0	3
21	3	1945.0	1945.2	0.3	2
21	3	2137.5	2138.0	0.5	2
21	3	2240.0	2240.5	0.3	2
22	3	1749.2	1750.0	0.8	2
22	2	1859.2	1859.6	5	2
22	2	1932.5	1933.2	10	2
22	3	2033.2	2034.6	2.1	3
22	3	2222.5	2223.0	0.3	2
22	2	2258.8	2300.1	2.7	2
23	3	2104.3	2104.8	0.5	2
25	3	1705.8	1705.9	0.4	2
25	3	1842.3	1842.9	0.6	2
25	3	2250.8	2251.1	0.3	2
25	3	2257.5	2258.0	0.4	2
26	2	1447.0	1448.2	2.5	2
26	3	1532.3	1533.3	1.0	3
27	3	1708.8	1709.5	0.6	2
27	3	1804.3	1804.9	0.6	2
27	3	2019.8	2020.1	0.5	2
27	3	2030.7	2031.2	1.3	2
27	3	2142.1	2142.8	0.7	2
28	3	1512.8	1513.3	0.5	2
28	3	2153.8	2154.3	0.5	2
28	3	2231.0	2231.5	0.5	2
29	8	2312.5	2314.5	1.6	3
30	7	1725		347	2
31	3	1703.3	1704.9	1.7	2

COMMERCE - STANDARDS - BOULDER

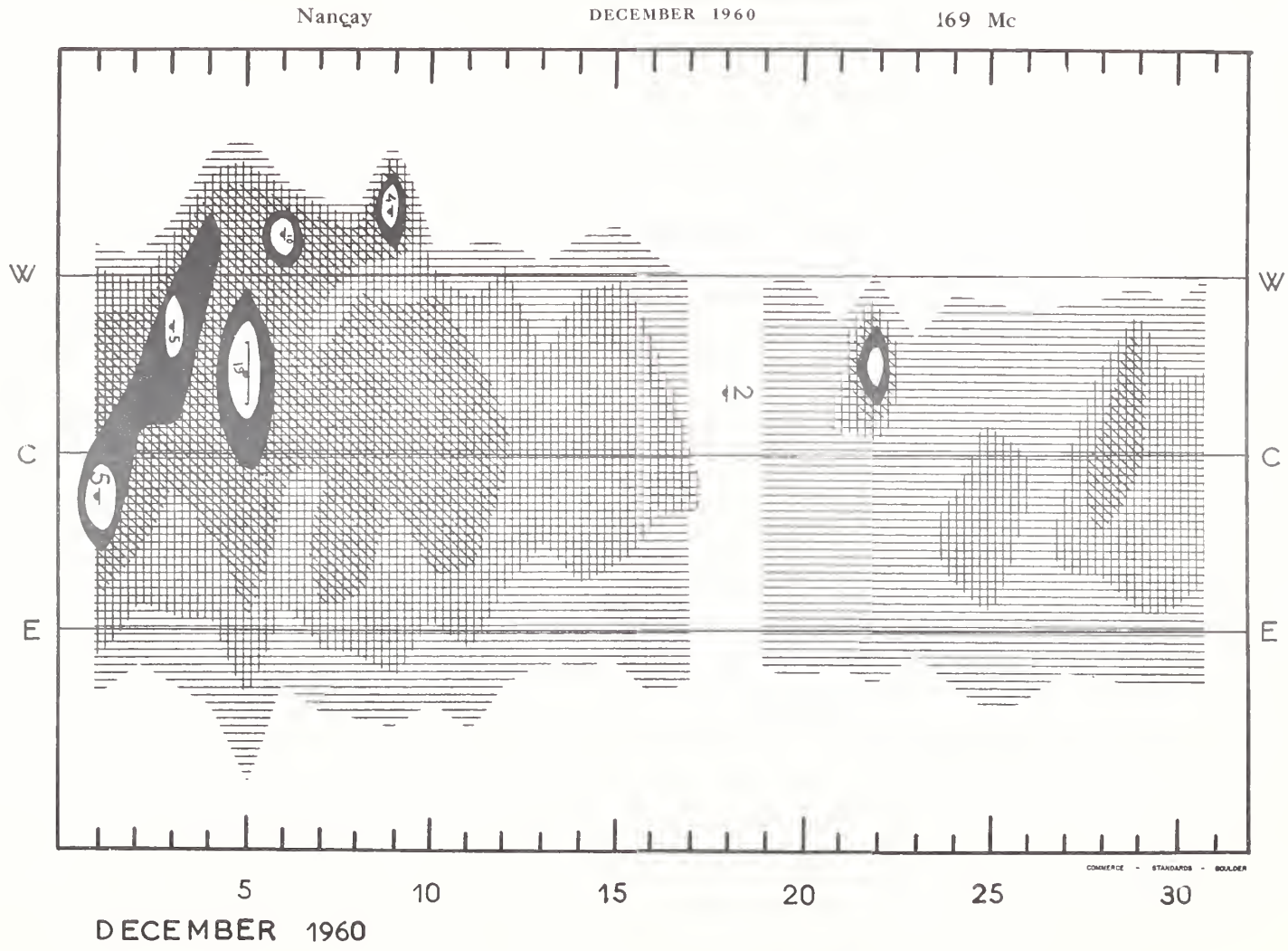
NOMINAL TIMES OF OBSERVATION

BOULDER 108 MC

Dec. 1960	U.T.		Dec. 1960	U.T.	
1	1408-2305	I 1715-1815; 2013-2042	15	1420-1653; 1730-2304	
2	1409-2303	I 1636-1703; 1804-1857; 1945-2145	16	1420-2304	
			17	1421-2304	
			18	1422-2305	
3	1410-2303		19	1422-2305	
4	1411-2303		20	1423-2306	
5	1412-2303		21	1423-2306	
6	1412-2242		22	1423-2308	
7	1705-2303		23	1424-2307	
8	1414-1744; 1812-2303		24	1425-2309	
			25	1425-2308	
9	1415-2303		26	1425-2307	
10	1416-2303		27	1426-2311	
11	1417-2303		28	1426-2310	
12	1418-2303		29	1426-2315	
13	1418-2303		30	1429-2312	
14	1419-2303	I 2039-2050; 2210-2300	31	1429-2314	

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS



SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

Fort Davis — JANUARY 1960 — 25-580 Mc.

Date 1960	Observing Hours	Important Bursts Type	Times U.T.	Int.	Frequency Range	Remarks
Jan. 1	1415-2345					
Jan. 2	1415-2345					
Jan. 3	1415-2350	III G	1922-1925	2	350-25	
Jan. 4	1415-2350	III G	1658-1659	2	420-25	2024: Reverse slopes
		III G	1945-1948	2	180-25	580-320 Mc/s
		III G	1955-2002	2	300-25	2126: UNCL Resembles IV
		III G	2024-2034	3	580-25	
		UNCL	2126-2130	2	580-240	
		III G	2115-2117	2	180-25	
Jan. 5	1415-2350					
Jan. 6	1415-2350					
Jan. 7	1415-2350					
Jan. 8	1415-2350					Weak I throughout day
Jan. 9	1415-2350	III G	2012-2014	2	240-125	
Jan. 10	1415-2350	III G	1617-1619	2	580-320	
		III G	1836-1840	2	320-100	
		I	2100-2350	1-2	320-100	
Jan. 11	1430-2350	II	2103.3-2118	3	150-25	1430-2105 weak I
		IV	2105-2355	1-3	450-50	Intensity of I in-
		I	2105-2355	3	180-50	creases with II
Jan. 12	1430-2355	I	1430-2355	1-2	320-100	1653-2045 many III iso-
		III G	1647-1649	3	490-100	lated in time.
		II	1651.0-1654	2	150-60	100-25 Mc/s
		IV	1653-1704	1-2	320-200	
Jan. 13	1430-2355	III G	1750-1803	1-3	280-25	1857-2048 many III iso-
		I	1900- 2318	1-2	320-50	lated in time 100-25 Mc/s
		I	2315-2355	3	320-100	
Jan. 14	1430-2355	I	1430-1900	2-3	320-100	
		I	1900-2220	2-3	250-50	
		I	2220-2355	1	250-50	
Jan. 15	1430-2355	III G	1856-1859	3	320-25	Weak I throughout day
		III G	1947-1950	2	320-25	Many III throughout day
Jan. 16	1430-2355	II	2243.8-2254	3	450-100	Weak I throughout day
		III G	2244-2251	2	580-150	
Jan. 17	1430-1915 2213-2355					
Jan. 18	1430-2355					
Jan. 19	1415-2400					
Jan. 20	1415-2400	III G	1713-1715	2	250-25	
Jan. 21	1415-2400					
Jan. 22	1415-2400					
Jan. 23	1418-2400					
Jan. 24	1557-2400					1715 Reverse slope IIIs
Jan. 25	1415-2400					450-320 Mc/s
Jan. 26	1415-2400					
Jan. 27	1415-2400	III G	1417-1420	2	350-35	Many III and Weak I
		III G	2240-2243	2	180-25	throughout day
Jan. 28	1610-2400					
Jan. 29	No observations					
Jan. 30	No observations					
Jan. 31	2000-2400	III G	2239-2241	3	280-30	
		III G	2354-2356	2	350-100	
Feb. 1	0000-0005	III G	1415-1419	2	240-100	
	1415-2400	III G	1553-1555	2	560-50	Many III throughout day
		III G	2125-2126	3	200-25	
		III G	2205-2207	3	490-50	
Feb. 2	0000-0005	III G	1520-1522	2	430-125	
	1415-2400	III G	1739-1741	1	420-220	
		III G	1908-1911	3	420-25	
		III G	2111-2112	3	580-25	

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

FEBRUARY 1960

Fort Davis — 25 -580 Mc.

Date 1960	Observing Hours	Important Bursts Type	Times U.T.	Int	Frequency Range	Remarks
Feb. 3	0000-0005	III G	1708-1712	3	490-25	
	1415-2400	II	2022.2-2022.5			2101: reverse slopes
			2022.8-2027	3	300-70	500-400 Mc/s
		IV	2027-2032	2	450-180	
		III	2100-2102	2	500-200	
		III G	2209-2212	3	450-25	Weak I and many III throughout
		III G	2219-2220	1	300-165	day
		III G	2317-2319	2	490-50	
		III G	2345-2347	3	490-50	
Feb. 4	0000-0005	III G	1636-1638	2	240-30	
	1415-2400	III G	1829-1835	2	350-25	
		III G	1927-1932	3+	560-25	Weak I throughout day
		III G	2036-2042	3	580-25	
		II	2046.4-2051			
			2052-2059	3	175-30	
		III G	2144-2147	2	580-170	
		IV	2149-2200	2-3	450-200	
Feb. 5	0000-0005	I	1415-2120	1-2	350-125	
	1415-2400	III G	1856-1905	2	500-25	
		III G	1943-1950	3	350-25	2122.7 UNCL has harmonic
		II	1950.3-1954	2	250-120	and resembles II
		III G	2117-2118	2	400-25	
		Uncl.	2122.7-2125	3	240-10	
		III G	2145-2146	3	200-25	
		III G	2148-2149	2	240-25	
		III G	2257-2259	3	420-30	
		III G	2345-2346	2	320-100	
Feb. 6	0000-0005					Weak I throughout day
	1415-2400					
Feb. 7	0000-0005	I	1400-2400	1-2	320-100	
	1400-2400	II	1612.3-1619	2	175-90	
Feb. 8	0000-0005	I	1400-2400	1-2	320-100	
	1400-2400					
Feb. 9	0000-0005					
	1400-2400					
Feb. 10	0000-0005					Many III throughout day
	1400-2400					100-25 Mc/s
Feb. 11	0000-0010	I	1400-2058	1	320-100	
	1400-2400	I	2058-2400	1-2	350-50	
Feb. 12	0000-0010	I	0000-0010	1-2	350-100	Many III throughout day
	1400-2400					100-25 Mc/s Weak I
						throughout day
Feb. 13	0000-0010	III G	2002-2012	3	350-25	Weak I throughout day
	1400-2400	III G	2252-2253	3	350-110	
Feb. 14	0000-0010					
	1400-2400					
Feb. 15	0000-0010					
	1400-2400					
Feb. 16	0000-0010					
	1400-2400					
Feb. 17	0000-0010					
	1400-2400					
Feb. 18	0000-0010	III G	1507-1509	2	400-25	
	1400-2400					
Feb. 19	0000-0010					
	1400-2400					
Feb. 20	0000-0015					Weak I throughout day
	1400-2400					
Feb. 21	0000-0015	I	1400-1418	1-2	280-50	
	1400-2400					
Feb. 22	0000-0015	II	1357.8-1411	3	240-25	IV drifts from 580-100
	1356-2400	IV	1356-1416	2	580->100	1408 reverse slopes weak I
						throughout day
Feb. 23	0000-0015					
	1356-2400					
Feb. 24	0000-0015					
	1356-2400					
Feb. 25	0000-0020					
	1356-2400					

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

MARCH 1960

25-580 Mc.

Fort Davis

2100-3900 Mc

Date 1960	Observing Hours	Important Bursts Type	Times U.T.	Int.	Frequency Range	Remarks
Feb. 26	0000-0025 1356-2400					
Feb. 27	0000-0025 1357-2400					
Feb. 28	0000-0025 1357-2400					
Feb. 29	0000-0025 1356-2400					
Mar. 1	0000-0025 1356-2400	II	1922.6-1933	3	450-60	
Mar. 2	0000-0025 1356-2400					
Mar. 3	0000-0025 1356-2400					
Mar. 4	0000-0025 1356-2400					
Mar. 5	0000-0030 1356-2400					
Mar. 6	0000-0030 1356-2400					
Mar. 7	0000-0030 1356-2400					
Mar. 8	0000-0030 1356-2400	III G	2014-2016	2	240-25	
Mar. 9	0000-0030 1345-2400	III G III G III G III G III G	0022-0025 1615-1618 1711-1712 1713-1717 2021-2023	3 2-3 3 3 2	580-50 240-25 200-25 200-25 200-25	Many III throughout day
Mar. 10	0000-0035 1345-2400	III G III G III G IV II III G III G	1643-1648 1649-1653 1717-1719 1718-1719 1720.2-1726 1947-1948 2344-2348	3 2 3+ 2 3 3 3	420-25 180-25 450-25 2100-3900 400-60 150-25 200-50	Many III throughout day
Mar. 11	0000-0035 1345-2400					
Mar. 12	0000-0035 1345-2400					
Mar. 13	0000-0035 1345-2400					
Mar. 14	0000-0035 1345-2400					
Mar. 15	0000-0035 1345-2400					
Mar. 16	0000-0035 1345-2400					
Mar. 17	0000-0040 1345-2400	I	~1900-2125	1-2	350-100	
Mar. 18	0000-0040 1345-2400					
Mar. 19	0000-0040 1345-2400	III G	2119-2120	3	170-50	
Mar. 20	0000-0040 1345-2400					
Mar. 21	0000-0045 1345-2400					
Mar. 22	0000-0045 1345-2400	I	1345-2400	1-2	280-100	
Mar. 23	0000-0045	I I	0000-0045 1330-2400	1 1	280-150 300-50	Many III throughout day 100-25 Mc/s

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

MARCH 1960

25-580 Mc.

Fort Davis

2100-3900 Mc

Date 1960	Observing Hours	Important Bursts Type	Times U.T.	Int.	Frequency Range	Remarks
Mar. 24	0000-0045	I	0000-0045	1	240-150	
	1330-1552	I	1330-2400	1	220-60	
	1554-2400	III G	1454-1455	2	580-30	
		III G	1600-1602	3	350-25	
		III G	1622-1624	3	580-25	
		III G	1950-1953	3+	420-25	
		III G	2200.5-2202	3	320-25	
Mar. 25	0000-0045	I	0000-0036	1	200-100	
	1330-2400	III G	1406-1407	3	260-40	
		III G	2013-2015	1	220-30	
Mar. 26	0000-0045	III G	1710-1713	2	450-25	
	1335-2400					
Mar. 27	0000-0045	III G	1355-1357	2	200-50	
	1335-2400					
Mar. 28	0000-0050	II	2056.3-2112	3	150-25	2059 Weak I follows II burst
	1335-2400	IV	2050.5-2400	2-3	3000-60	
Mar. 29	0000-0050	IV	0000-0047	2	580-100	Note: 0047 Sunset
	1335-2400	I	1335-2400	2-3	240-25	
Mar. 30	0000-0050	I	0000-0050	1-2	240-50	~1730 Intensity of I increases
	1320-2400	I	1320-2400	1-3	300-50	
		II	1528.9-1540	3	160-25	
		IV	1526-2300	1-3+	3900-25	
		III	1553-1557	3	580-25	1553: Reverse bursts
Mar. 31	0000-0050	I	0000-0050	2	240-90	
	1320-2400	I	1320-~2300	1-2	300-50	I Intensity 1- continues until sunset.
		III G	1357-1358	2	150-25	
		III G	1539-1544	3	580-25	Many III throughout day
		III G	1751-1754	3	100-25	100-25 Mc/s

COMMERCE - STANDARDS - BOULDER

Note: Frequency range 25-580 Mc January
25-580 February
25-580 and 2100-3900 March

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

NOVEMBER – DECEMBER 1960

OWENS VALLEY, CALIFORNIA

450–1000 Mc

Date 1960	Observing Hours	Important Bursts Type	Times U.T.	Int.	Frequency Range	Remarks
Nov. 1	1602-2148.5					No activity
Nov. 2	1602.5-2353					No activity
Nov. 3	1606-2345.5					No activity
Nov. 4	2001-2110.5					No activity
Nov. 8	1821-2333.5					No activity
Nov. 9	1618.5-2223.5 2226-2354					No activity
Nov. 10	1618.5-1720					No activity
Nov. 15	1623-2358					No activity
Nov. 16	1641-2355					No activity
Nov. 17	1639-2020 2022-2354	III g	1648.5	1-	500-1000	Very fast drift rate
Nov. 18	1604-2354					No activity
Nov. 19	1608-2355	I	1622.5	1-	650-1000	Lasts five seconds
		III G	1623.5	1	580-1000	
		III g	1655-56	1-	750-950	
		III g	1656-57	1-	700-900	
		III g	1658	1	900-1000	
		III g	2237-38	1-	900-1000	Includes 2 reverse drifts
Nov. 20	1601.5-1854	III g	2016	1	580-770	Reverse drift
	1856-2342	I	2017-2100	2	500-1000	Strong high frequency cut off formed at 690 Mc for several minutes; max. int. at 2018
Nov. 21	1606-2356					No activity
Nov. 22	1619-2356					No activity
Nov. 23	1627-2354	I	2301-2330	1	550-900	Max. int. at 2325
Nov. 24	1633-2354					No activity
Nov. 25	1611-2300					No activity
Nov. 28	1628-2354					No activity
Nov. 29	1615-2352					No activity
Nov. 30	1619-2218 2200-2353					No activity
Dec. 1	1615-2241					No activity
Dec. 2	1608-2351					No activity
Dec. 3	1640-2217					No activity
Dec. 4	1654-0001	I	2258-59	1-	550-700	
		I	2312-25	1-	500-700	
		III G	2320-21	1-	500-575	Intermediate drift rate
Dec. 5	1619-1903	I	1832-42	2	500-1000	In half minute groups, max. int. 1836 and 1837
Dec. 6	1619-2357	I	2030-30.5	1-	500-1000	
		I	2031-31.5	1-	500-1000	
Dec. 7	1603-2351					No activity
Dec. 8	1615-2120					No activity
Dec. 9	1623-2051					No activity
Dec. 12	1739-2045					No activity
Dec. 13	1620-2351	III g	2231-31.5	1-	475-575	
		pairIII	2232	1	450-575	
		III g	2235-35.5	1-	475-575	
Dec. 14	1615-2353					No activity
Dec. 15	1639-2230 2233-2352					No activity

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

DECEMBER 1960

OWENS VALLEY, CALIFORNIA 450-1000 Mc

Date	Observing Hours	Important Bursts Type	Times U.T.	Int.	Frequency Range	Remarks
Dec. 16	1619-2200	pair III	2114	1-	600-750	Very fast drift
		III g	2114.5	1	580-650	Fast rate, reverse drift
Dec. 17	1645-2357					No activity
Dec. 18	1645-2350					No activity
Dec. 19	1626-2328					No activity
Dec. 20	1620-2041	III b	1809	1	625-700	Very fast drift
	2130-2353	III g	1901	1-	850-950	
		III b	2000	1-	550-640	Reverse drift
Dec. 21	1616-2352	III g	2238.5	1+	550-800	
Dec. 22	1638-2047	III g	2033.5	1-	500-550	
		III b	2033.5	1-	450-550	U-burst, turning point 450 Mc
Dec. 23	1614-2322					No activity
Dec. 24	1734-2357					No activity

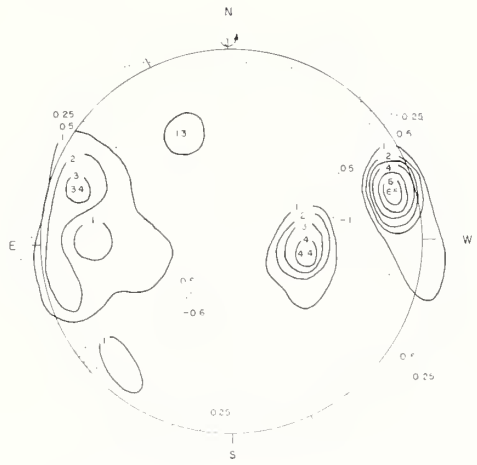
COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

MAY 1960

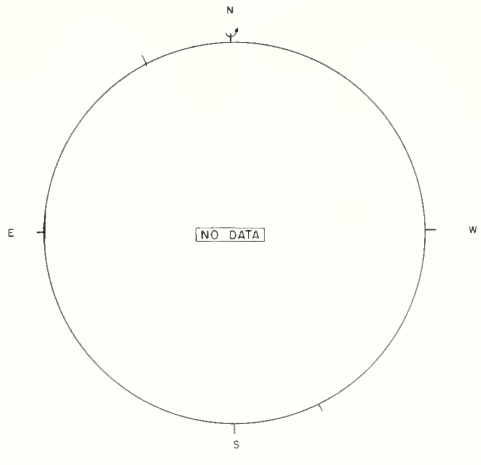
STANFORD

9.1 cm

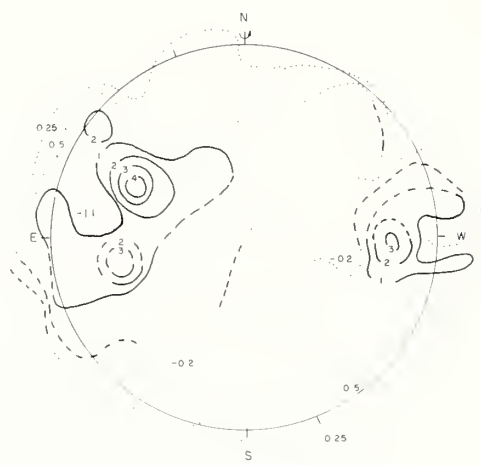


1960 MAY 1^{d} 19^{h}–20^{h} UT

CONTOUR BRIGHTNESS UNIT = 63,000° K



1960 MAY 2



1960 MAY 3^{d}, 19^{h} – 20^{h} UT

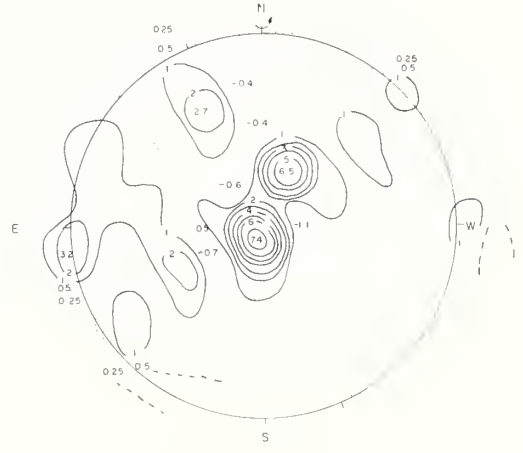
CONTOUR BRIGHTNESS UNIT = 61,000° K

1960 MAY 4, ^{d} 13^{h}– 20^{h} UT

CONTOUR BRIGHTNESS UNIT = 63,000° K

1960 MAY 5^{d}, 19^{h}–20^{h} U T

CONTOUR BRIGHTNESS UNIT = 61,000°K



1960 MAY 6, ^{d} 19^{h} – 20^{h} U T

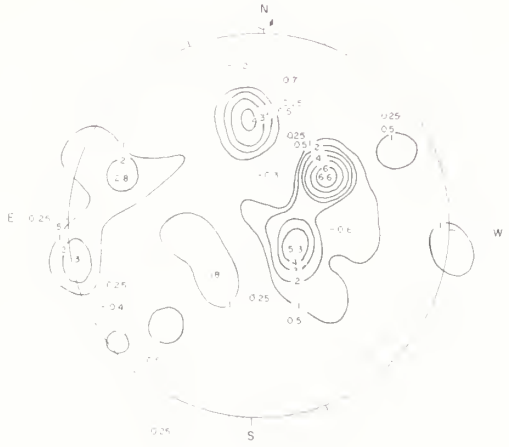
CONTOUR BRIGHTNESS UNIT = 66,000° K

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

STANFORD

MAY 1960

9.1 cm

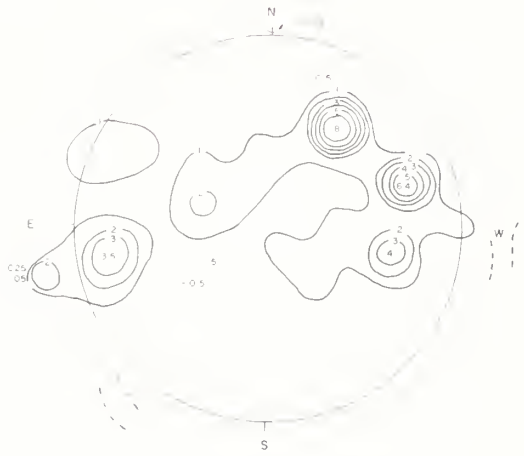


1960 MAY 7^{d}, 19^{h}–20^{h} U T

CONTOUR BRIGHTNESS UNIT = 77,000° K

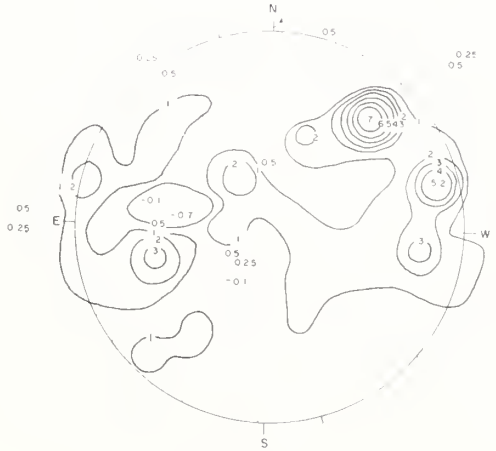
1960 MAY 8^{d}, 19^{h}–20^{h} U T

CONTOUR BRIGHTNESS UNIT = 79,000° K



1960 MAY 9,^{d} 19^{h}–20^{h} U T

CONTOUR BRIGHTNESS UNIT = 67, 000° K



1960 MAY 10,^{d} 19^{h}–20^{h} U T

CONTOUR BRIGHTNESS UNIT = 59,000° K

1960 MAY 11,^{d} 19^{h}–20^{h} U T

CONTOUR BRIGHTNESS UNIT = 65,000° K

1960 MAY 12,^{d} 19^{h}–20^{h} U T

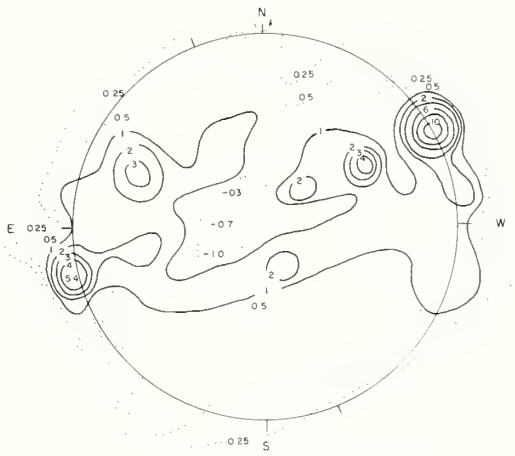
CONTOUR BRIGHTNESS UNIT = 62,000° K

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

MAY 1960

9.1 cm

STANFORD

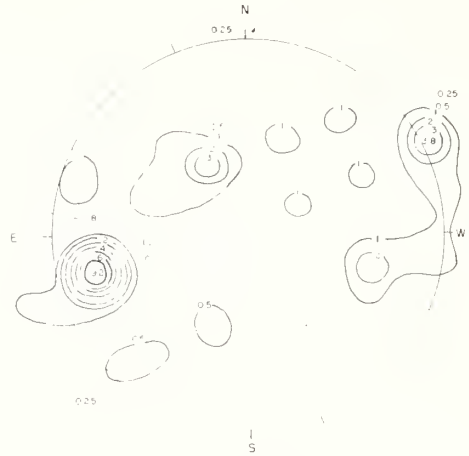


1960 MAY 13, 19h-20h U T

CONTOUR BRIGHTNESS UNIT = 64,000° K

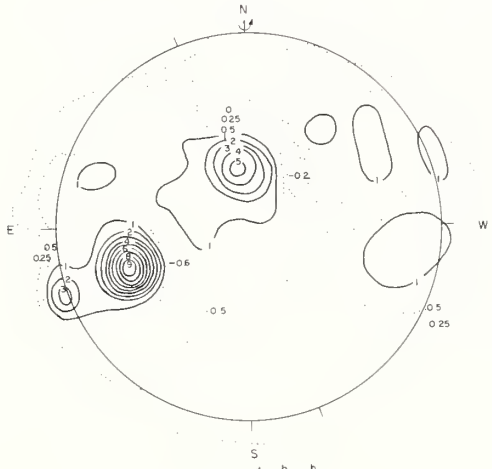
1960 MAY 14, 19h-20h U.T

CONTOUR BRIGHTNESS UNIT = 81,000°K



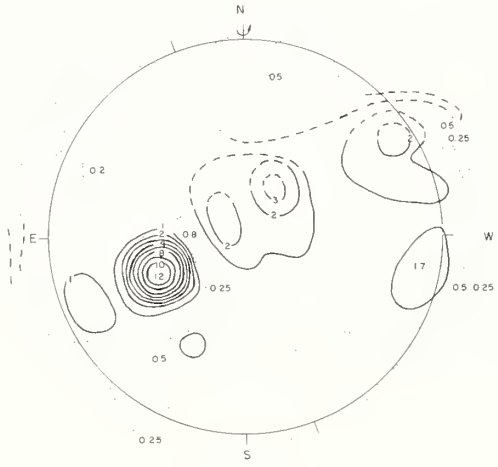
1960 MAY 15, 19h-20h UT

CONTOUR BRIGHTNESS UNIT = 80,000°K



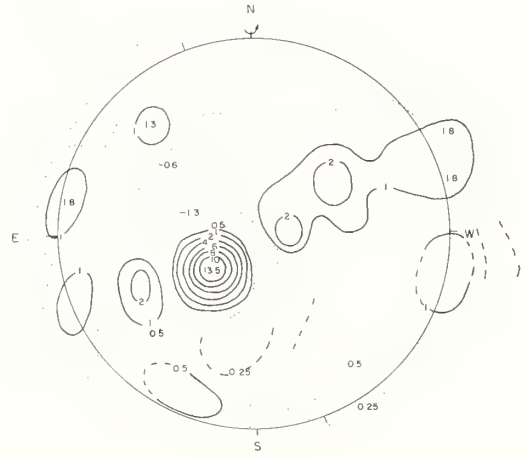
1960 MAY 16, 19h-20h UT

CONTOUR BRIGHTNESS UNIT = 73,000° K



1960 MAY 17, 19h-20h UT

CONTOUR BRIGHTNESS UNIT = 70,000° K



1960 MAY 18, 19h-20h UT

CONTOUR BRIGHTNESS UNIT = 76,000° K

IVm

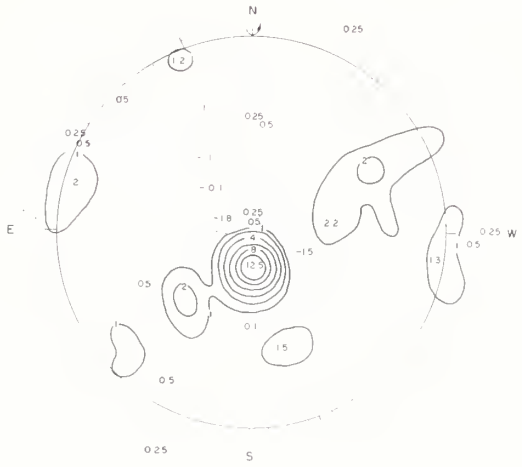
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

STANFORD

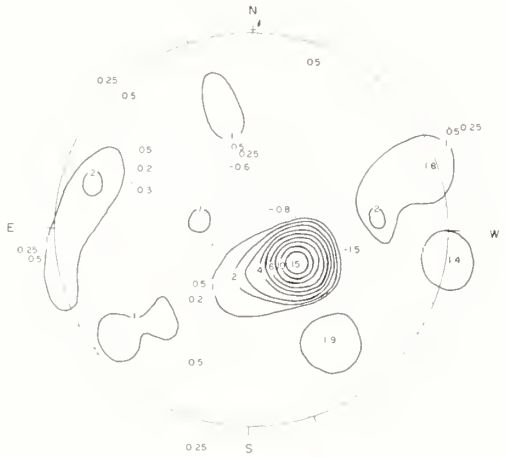
MAY 1960

9.1 cm

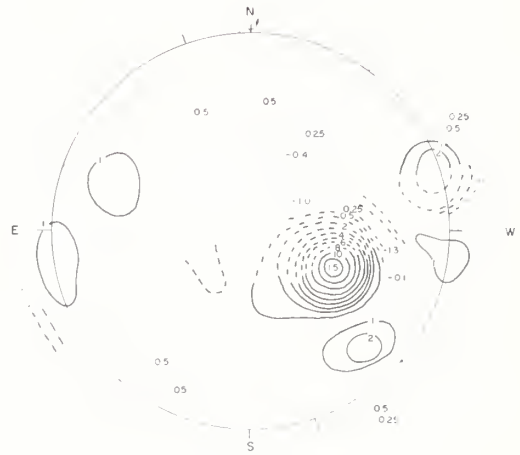
IVa



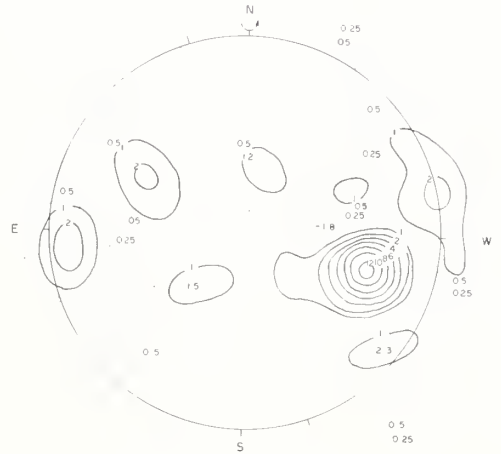
1960 MAY 19,^{d} 19^{h}-20^{h} UT
CONTOUR BRIGHTNESS UNIT = 73,000°K



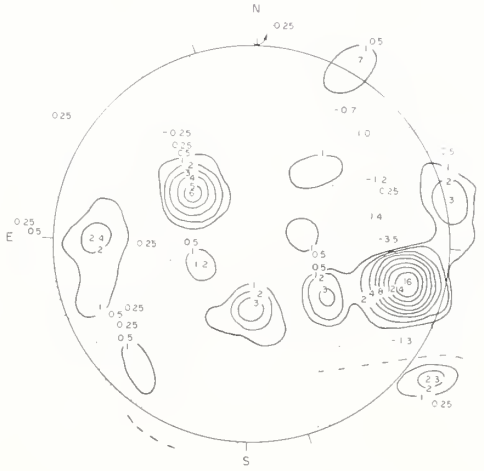
1960 MAY 20,^{d} 19^{h}-20^{h} UT
CONTOUR BRIGHTNESS UNIT = 65,000°K



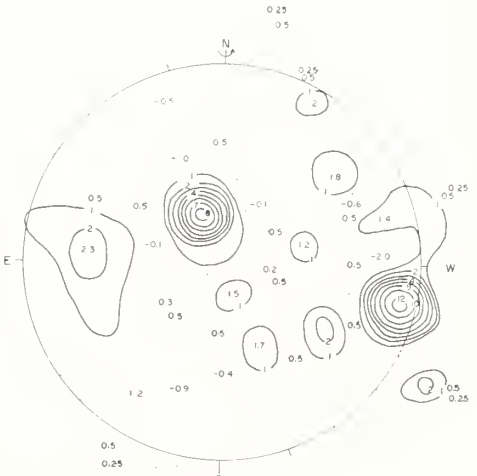
1960 MAY 21,^{d} 19^{h}-20^{h} UT
CONTOUR BRIGHTNESS UNIT = 68,000°K



1960 MAY 22,^{d} 20^{h}-21^{h} UT
CONTOUR BRIGHTNESS UNIT = 65,000°K



1960 MAY 23,^{d} 20^{h}-21^{h} UT
CONTOUR BRIGHTNESS UNIT = 69,000°K



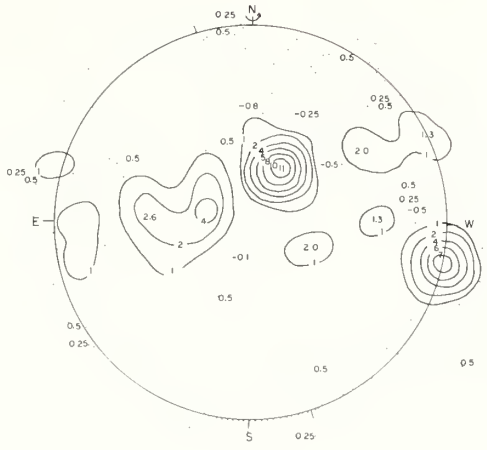
1960 MAY 24,^{d} 19^{h}-20^{h} UT
CONTOUR BRIGHTNESS UNIT = 76,000°K

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

MAY 1960

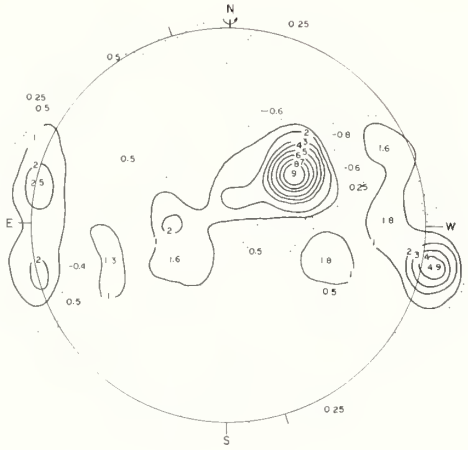
STANFORD

9.1 cm



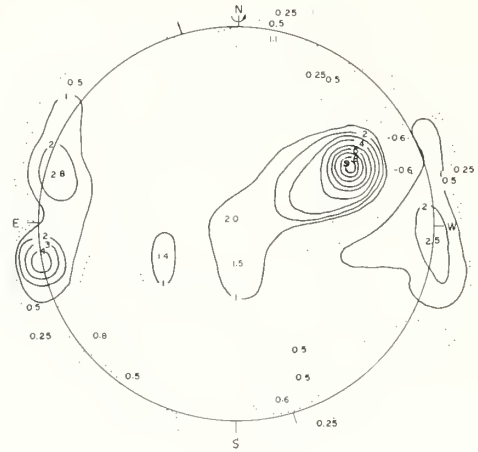
1960 MAY 25^{d}, 19^{h}–20^{h} UT

CONTOUR BRIGHTNESS UNIT = 61,000° K



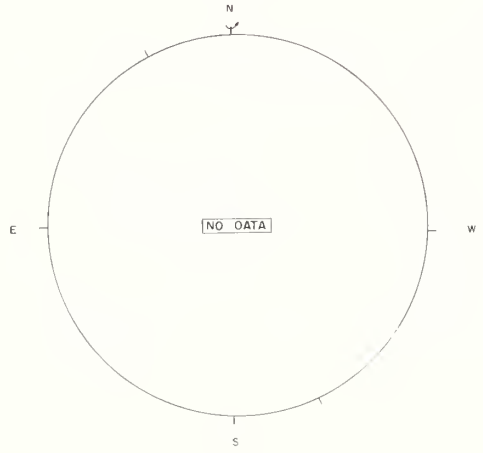
1960 MAY 26^{d}, 19^{h}–20^{h} UT

CONTOUR BRIGHTNESS UNIT = 72,000° K

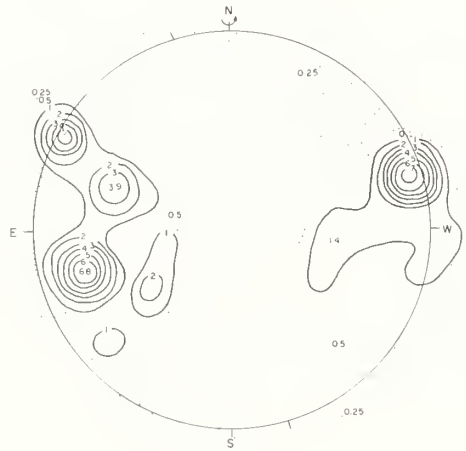


1960 MAY, 27^{d} 19^{h}–20^{h} UT

CONTOUR BRIGHTNESS UNIT = 72,000° K

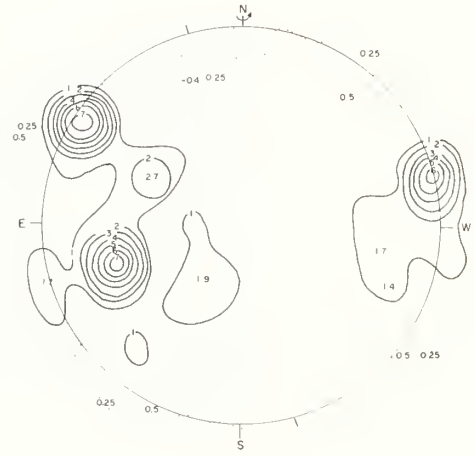


1960 MAY 28



1960 MAY 29^{d}, 19^{h}–20^{h} UT

CONTOUR BRIGHTNESS UNIT = 78,000° K



1960 MAY 30^{d}, 19^{h}–20^{h} UT

CONTOUR BRIGHTNESS UNIT = 70,000° K

IVo

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

MAY 1960

STANFORD

9.1 cm

1960 MAY 31^{d}, 19^{h}-20^{h} UT

CONTOUR BRIGHTNESS UNIT = 70,000°K

COSMIC RAY INDICES
(Climax Neutron Monitor)

Nov. 1960	Daily average counts/hr	Nov. 1960	Daily average counts/hr
1	2888.2	16	2545.9
2	2877.9	17	2623.5
3	2860.1	18	2662.6
4	2881.7	19	2695.5
5	2878.6	20	2726.8
6	2896.1	21	2786.2
7	2917.4	22	2750.3
8	2922.0	23	2744.8
9	2930.8	24	2741.0
10	2927.2	25	2775.4
11	2888.2	26	2845.9
12	3093.7	27	2873.3
13	2724.6	28	2852.7
14	2502.9	29	2831.6
15	2608.2	30	2838.6

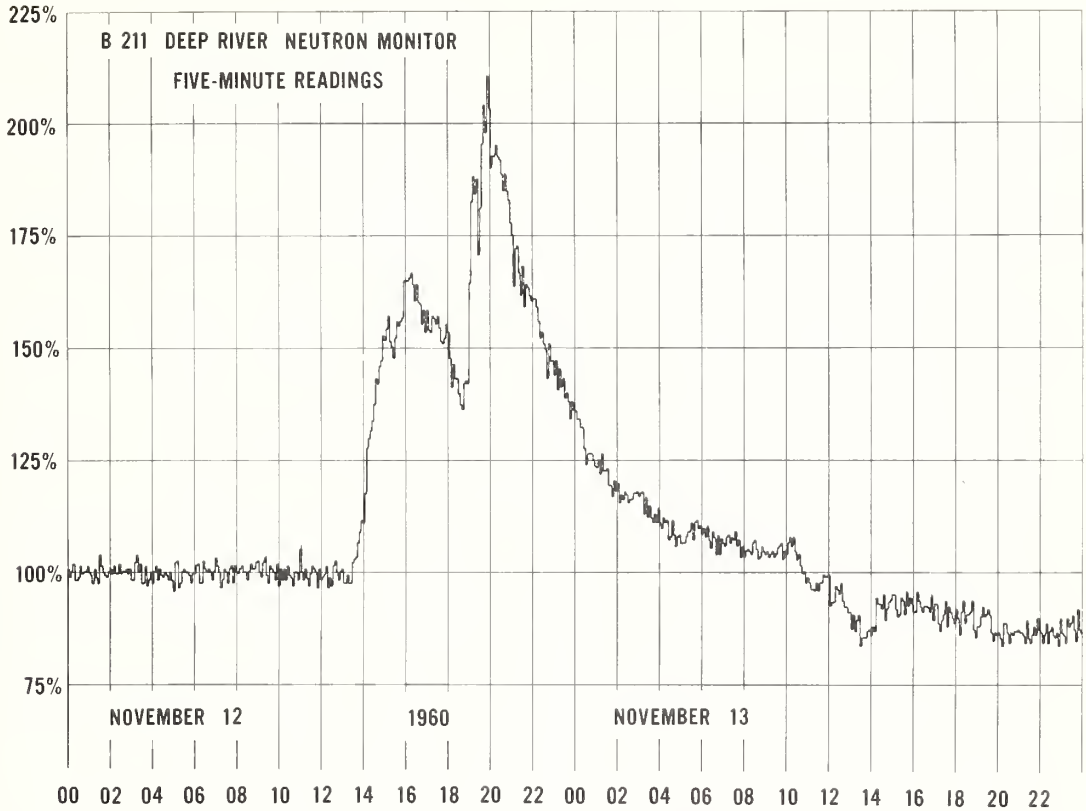
COMMERCE - STANDARDS - BOULDER

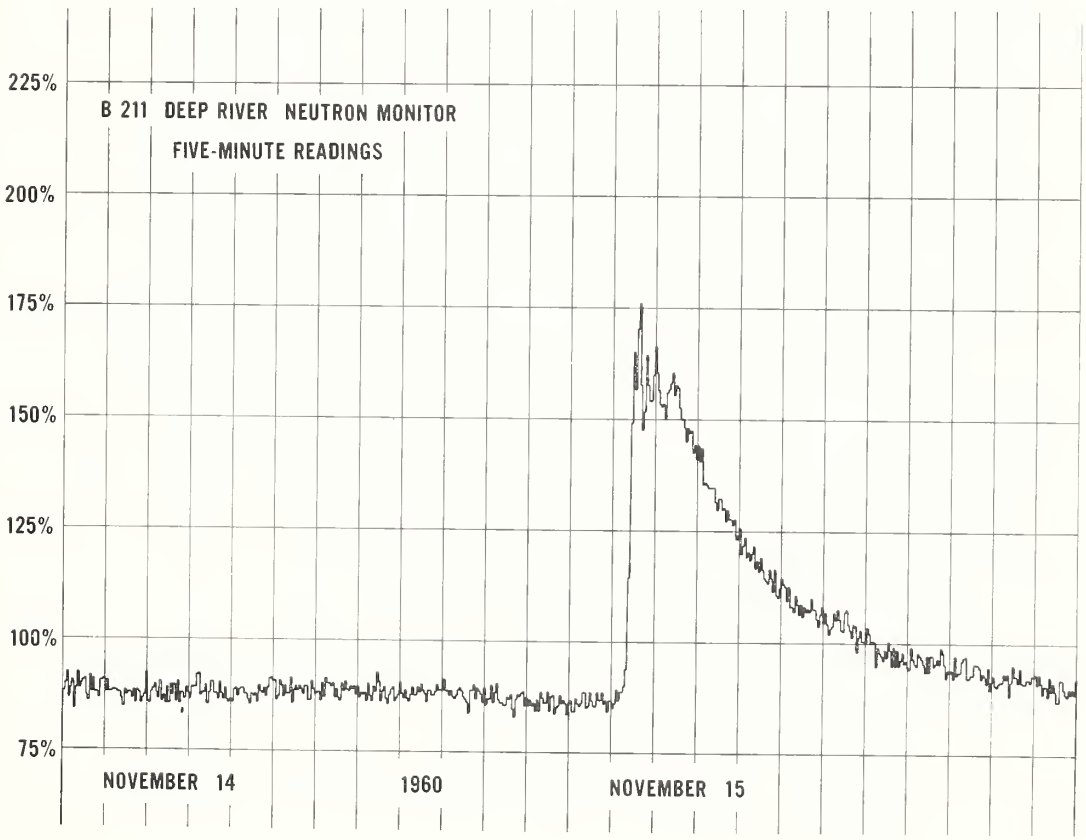
COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)





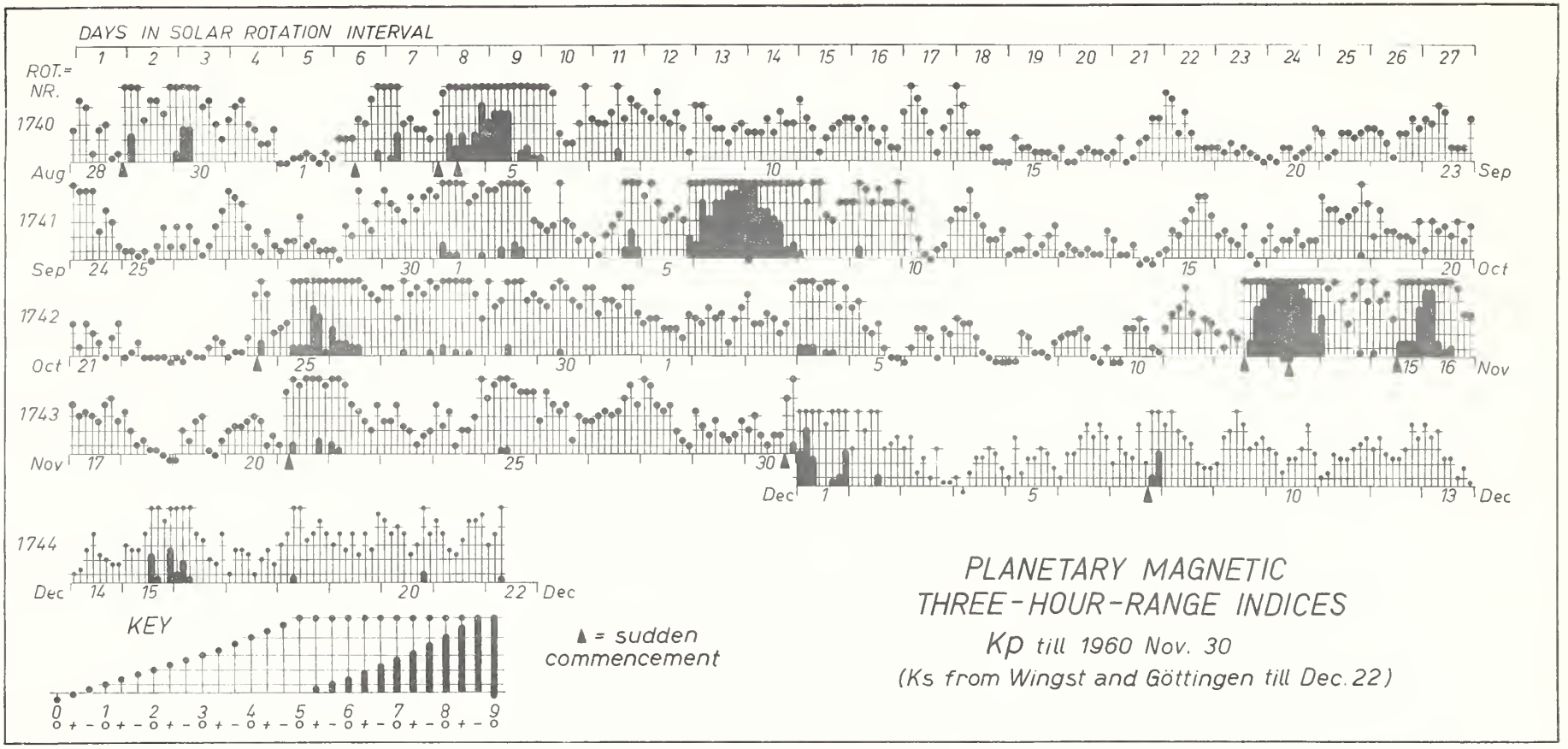
COMMERCE - STANDARDS - BOULDER

GEOMAGNETIC ACTIVITY INDICES

NOVEMBER 1960

Nov. 1960	C	Values Kp Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	0.6	3- 3o 3o 2+	2+ 2+ 2- 3+	21-	12	Five
2	0.8	3o 3- 4- 3o	3+ 1+ 3o 4-	24-	16	Quiet
3	1.0	4+ 3- 3- 3+	3o 2o 3- 5-	25+	18	
4	1.5	6- 6- 6- 5-	5+ 5+ 4- 5-	41-	52	7
5	0.5	4- 4o 2+ 2o	3- 1o 0+ 0+	16+	11	8
						9
6	0.2	0o 1o 2+ 2+	2- 0+ 2+ 2o	12o	6	18
7	0.2	3o 3- 3- 2-	1- 0+ 0o 0o	11o	6	19
8	0.1	0o 0o 2o 2-	1- 1- 0+ 1+	7-	3	
9	0.1	2- 2o 2o 2+	2- 0+ 0o 1o	11o	5	
10	0.3	0o 0o 2+ 2+	3o 2+ 1o 1-	12-	6	
11	1.0	2+ 3+ 4- 5-	3+ 2o 3o 3-	25o	18	Five
12	1.7	2o 1o 2o 2-	5o 6o 8- 8o	33+	67	Disturbed
13	2.0	9- 9- 9o 9o	9- 8+ 8o 6+	67-	280	
14	1.6	7+ 5- 5o 4o	3- 4+ 5+ 4o	37+	49	4
15	1.7	5+ 4o 4+ 3o	6o 6o 6o 8-	42+	69	13
						14
16	1.6	8+ 8+ 6o 5+	6- 5- 3+ 3+	45o	94	15
17	1.0	4- 3o 3+ 3o	3- 4- 4o 3-	26o	18	16
18	0.2	3+ 2o 1o 1+	1- 1- 0+ 0o	9+	5	
19	0.4	0o 2o 1+ 3-	3o 1- 0+ 1+	11+	6	
20	0.6	2o 2+ 2+ 3-	3o 3- 1o 2-	18-	9	
21	1.5	1o 4+ 6- 5-	5o 5o 6o 5-	36+	45	Ten
22	1.3	6- 5+ 5- 4-	3+ 3- 2o 4-	31o	30	Quiet
23	0.5	3- 3- 4- 2+	2o 1o 2- 2o	18o	10	
24	0.9	4- 2+ 3+ 1o	2o 2o 3o 5o	22+	16	5
25	1.4	4o 5- 5+ 5+	5- 4+ 4+ 4+	37o	39	6
						7
26	0.9	3- 4+ 4- 3+	4- 1+ 3o 3-	25-	17	8
27	1.2	3- 3o 3+ 3o	3+ 4o 5- 4-	28-	21	9
28	1.0	5o 5- 4- 3+	4- 2o 1+ 1o	25-	21	10
29	0.4	3+ 2+ 2- 3-	2- 1+ 2- 3-	17+	9	18
30	1.0	2o 3o 2- 1o	2- 2- 4o 6-	21-	17	19
						20
						29
Mean:	0.91			Mean:	32	

COMMERCE - STANDARDS - BOULDER



COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS
NORTH ATLANTIC

NOVEMBER 1960

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

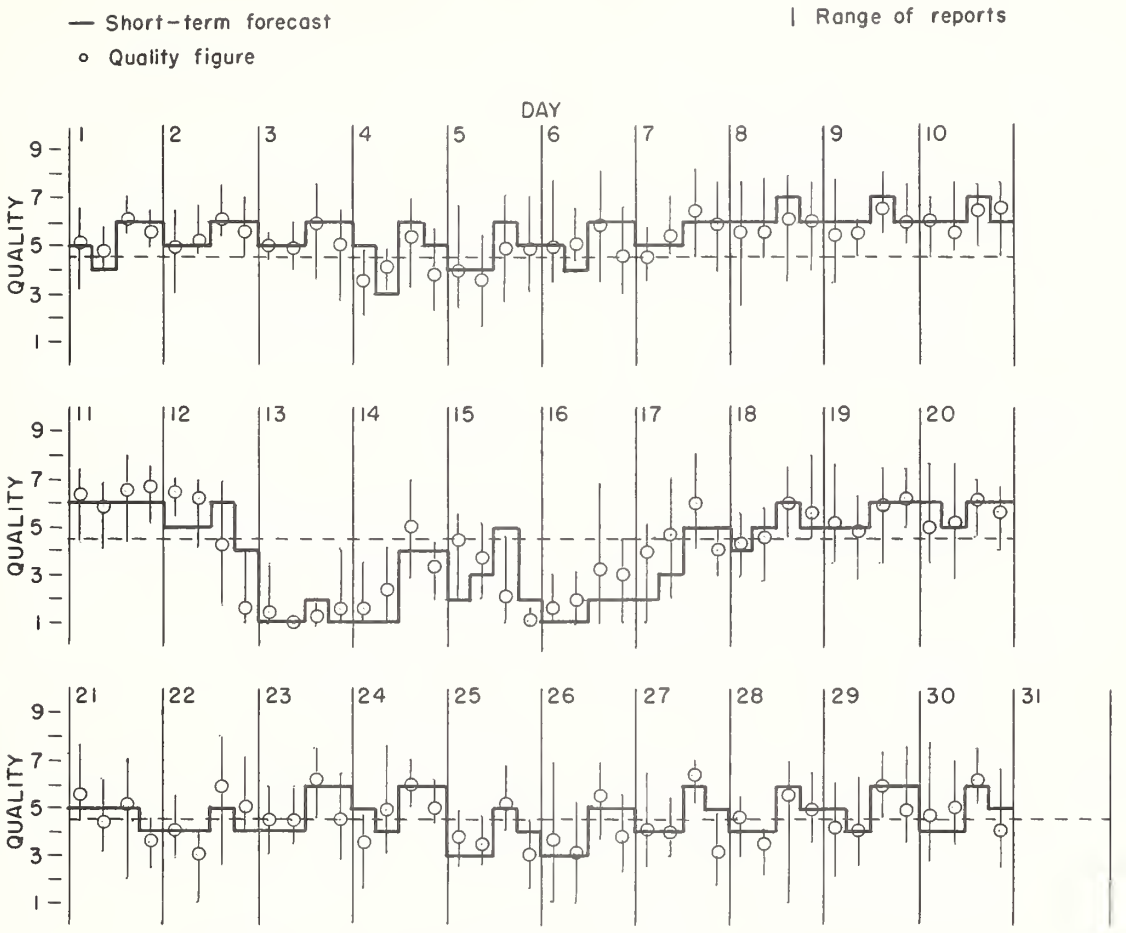
Score:										
Quiet Periods	P	10	10	18	9		4			3
	S	5	5	8	8		9			10
	U	1	1	0	0		3			3
	F	0	0	0	0		0			0
Disturbed Periods	P	6	7	0	1		3			0
	S	6	7	2	9		4			1
	U	2	0	1	2		3			0
	F	0	0	1	1		4			13

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

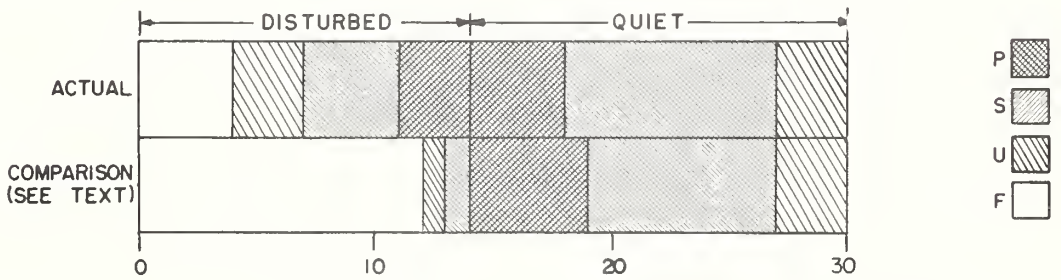
CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

NOVEMBER 1960

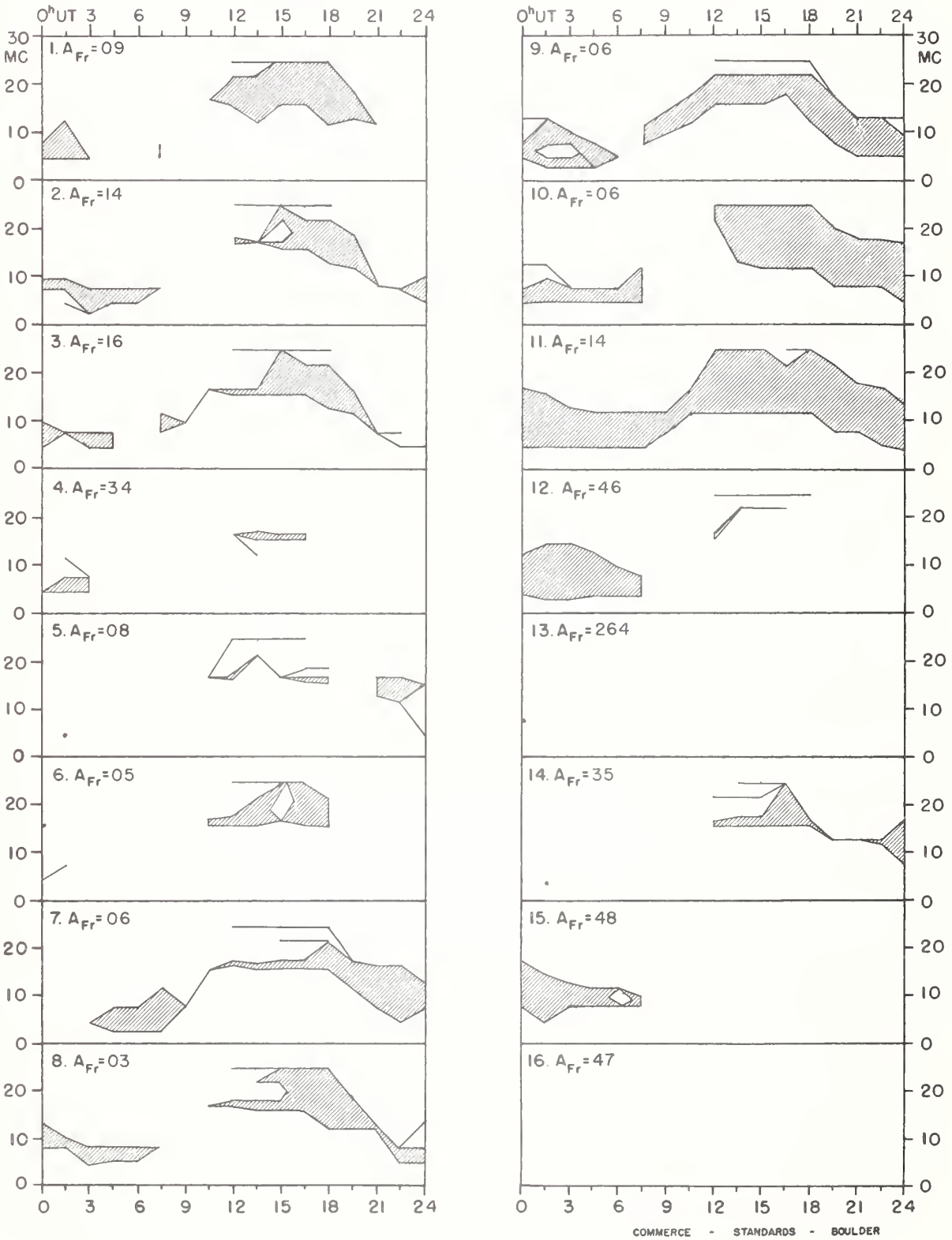


OUTCOME OF ADVANCED FORECASTS FINAL ESTIMATE

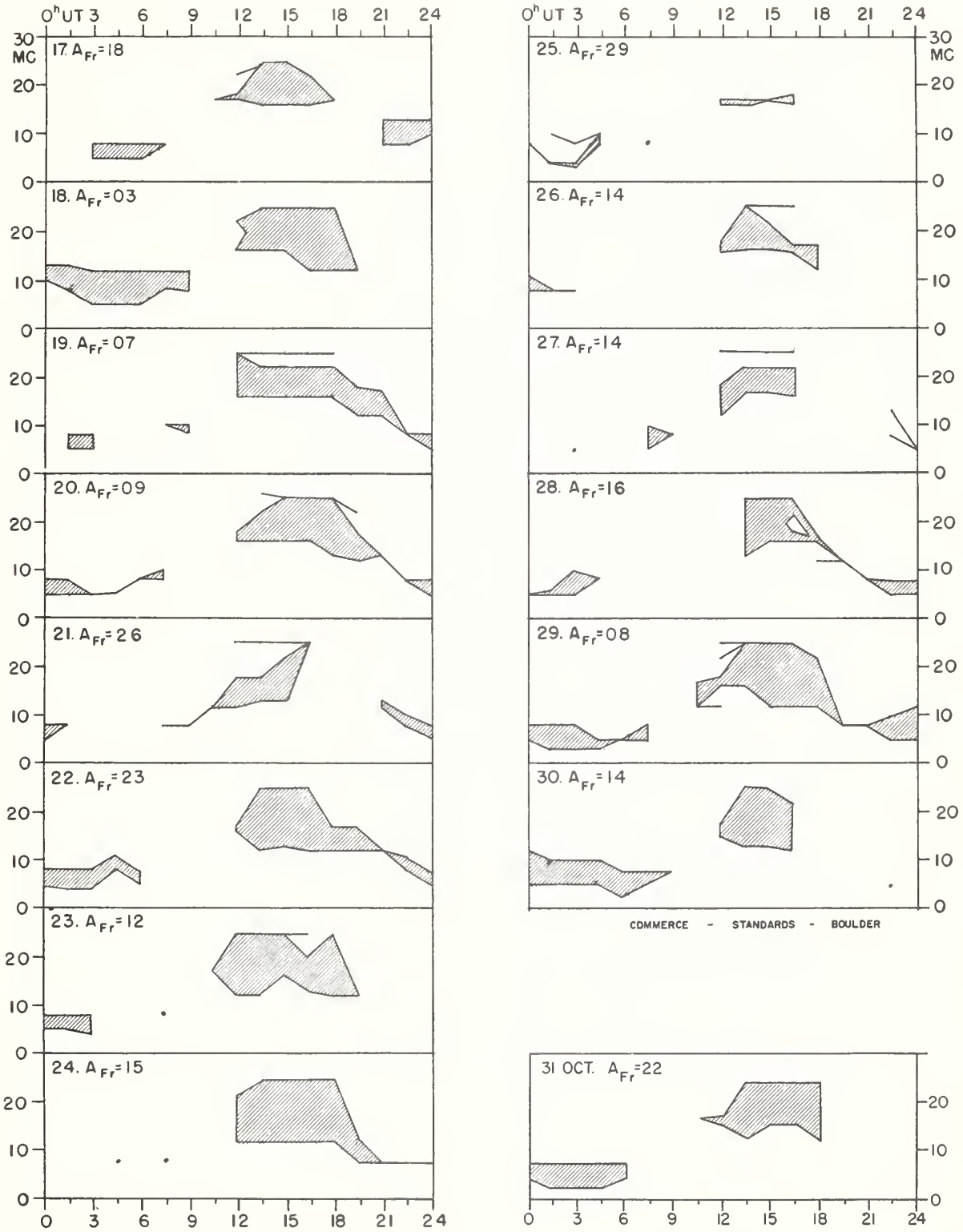


USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

NOVEMBER 1960



NOVEMBER 1960



Adapted from Observations by Deutsches Bundespost

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

NOVEMBER 1960

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

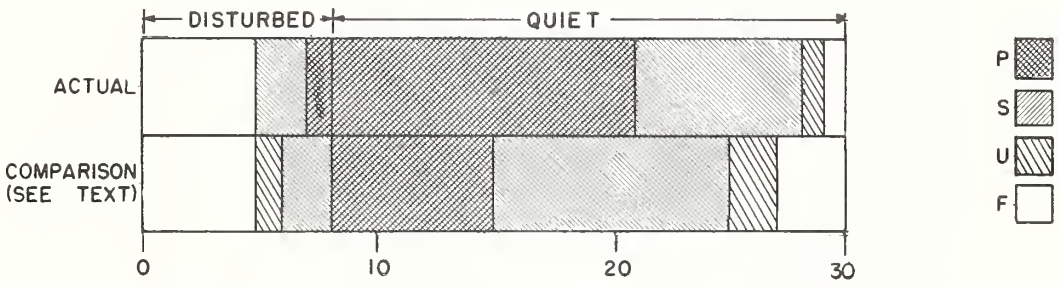
Score:					
Quiet Periods	P	12	7	13	
	S	8	17	7	
	U	1	2	1	
	F	2	0	1	
Disturbed Periods	P	3	1	1	
	S	3	3	2	
	U	1	0	0	
	F	0	0	5	

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

NORTH PACIFIC

NOVEMBER 1960

OUTCOME OF ADVANCED FORECASTS FINAL ESTIMATE



ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL WORLD DAY SERVICE

DECEMBER 1960

Issued Day/Time UT Dec. 1960	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Interval
01/0400	Ft. Belvoir, Magnetic Storm 30/1910Z Aurora Probable			
01/1600		103	Magnetic Storm 30/1910Z	
05/1925	Sacramento Peak, Solar Flare 05/1848Z			
08/1600		104	Magnetic Storm 07/1804Z	
16/0255	Ft. Belvoir, Magnetic Storm 15/07XXZ			
16/1600		105	Magnetic Storm 15/07XXZ	
27/1600		106	Magnetic Storm 27/03XXZ	

COMMERCE - STANDARDS - BOULDER