

PART B
SOLAR - GEOPHYSICAL DATA

ISSUED
JULY 1960

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

SOLAR - GEOPHYSICAL DATA

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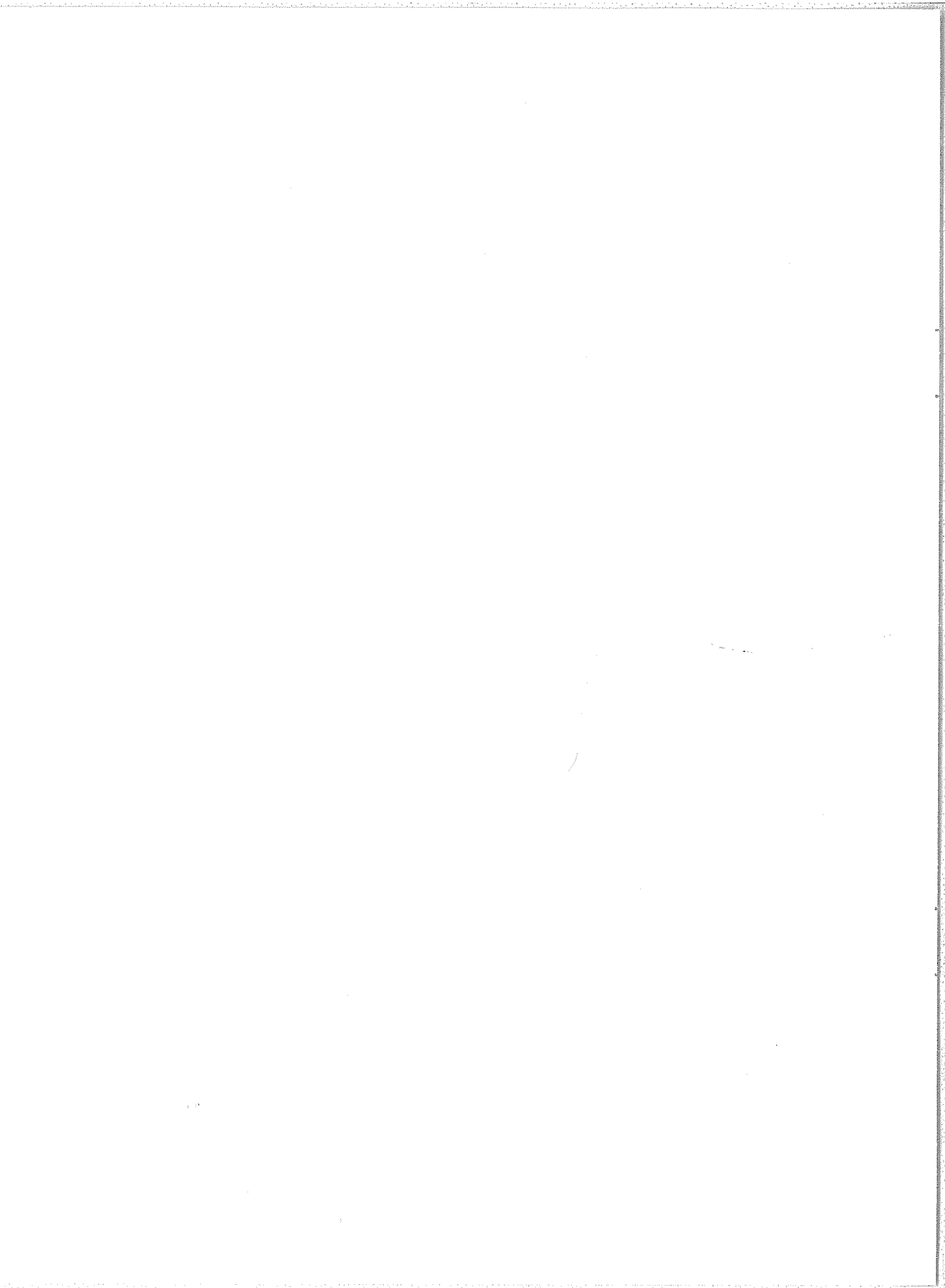
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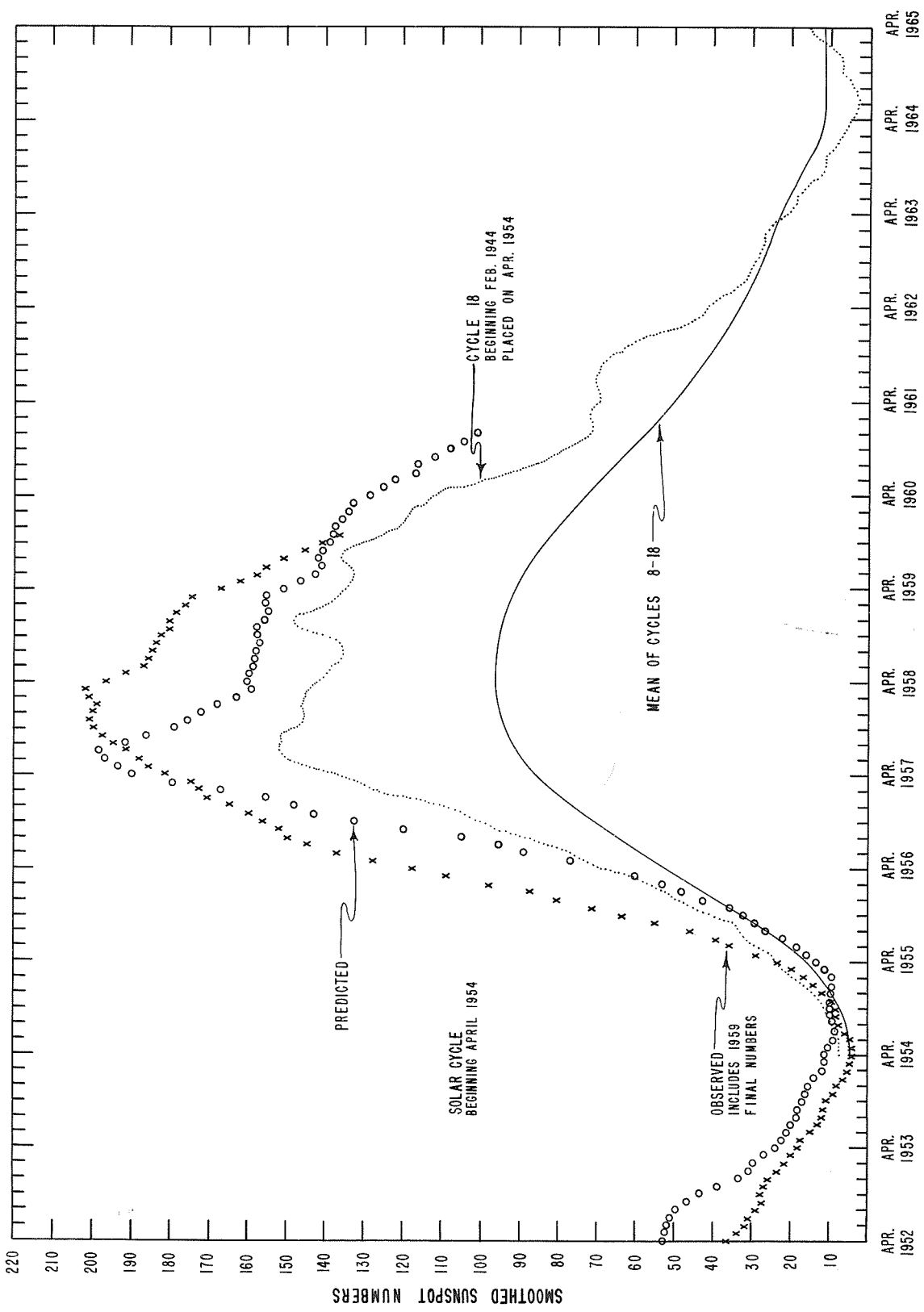
INTRODUCTION

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

DAILY SOLAR INDICES

May 1960	American Relative Sunspot Numbers R_A'
1	96
2	96
3	102
4	93
5	90
6	90
7	105
8	117
9	144
10	123
11	126
12	111
13	95
14	79
15	89
16	106
17	89
18	89
19	92
20	100
21	84
22	116
23	129
24	127
25	107
26	122
27	118
28	102
29	98
30	96
31	95
Mean:	104.1

June 1960	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	100	166
2	90	167
3	109	167
4	113	172
5	99	170
6	109	175
7	123	185
8	113	185
9	118	181
10	147	178
11	142	171
12	155	167
13	131	162
14	131	166
15	144	166
16	138	157
17	105	153
18	91	139
19	81	140
20	60	133
21	56	131
22	50	130
23	58	136
24	68	132
25	80	140
26	99	155
27	116	164
28	140	184
29	147	190
30	165	194
Mean:	109.3	161.9



PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

JUNE 1960

CMP June 1960	Lat	McMath Plage Number	Return of Region	Calcium Plage Data				Sunspot Data		
				CMP Values Area Int.		History, Age		CMP Values Area Count		History
30.5+	S14	5686	New	(200)	(1)	b / l	1	(50)	(1)	b ^ d
01.3	S18	5677	New	1200	2.5	b / l	1	220	3	b ^ d
02.0	N12	5678	*	2500	2.5	l - l	2	150	3	b ^ d
03.0	S12	5679	5653	4000	3.5	l - l	3	570	7	l - l
04.0	N06	5687	New	600	3.5	b / l	1	680	12	b / l
04.2	S16	5681	5653	(500)	(2)	l \ d	3			
04.6	N29	5680	5654	6800	3	l - l	2	240	11	l - l
05.5	S13	5682	5655	(1000)	(1.5)	l \ d	2			
06.2	N13	5683	5656	(900)	(1)	l \ d	3			
06.5	N28	5684	5654	(600)	(1)	l \ d	2			
06.7	N08	5688	5656	700	2.5	l - l	3	160	6	l \ d
07.0	N28	5699	New	(1000)	(2.5)	b / l	1			
07.9	N12	5689	5656	1000	1.5	l \ l	3			
08.1	S08	5690	5657	1000	1.5	l - l	4			
09.5	S13	5691	5657	2200	2.5	l - l	4			
10.0	N12	5692	5658	1400	2.5	l - l	8	20	1	b ^ d
11.8	S14	5696	New	1200	2.5	b / l	1	120	6	b ^ d
11.8	S11	5708	New	(600)	(3)	b / l	1	(120)	(2)	b / l
12.3	N16	5693	5660	5000	2.5	l - l	3	200	18	l - l
14.1	N18	5694	New	3900	2.5	l - l	1	630	10	l - l
14.5	N08	5698	5661	300	1.5	l / l	3			
15.7	S13	5695	5663	8600	3	l - l	2	1010	9	l \ l
16.9	N13	5718	New	(800)	(2.5)	b / l	1			
17.7	N23	5700	5664	(1200)	(1)	l \ d	2			
18.3	N01	5702	5668	600	2	l \ d	2			
18.5	N18	5701	5671	1100	2	l - l	2	120	3	b ^ d
18.5	S15	5703	5667	500	1.5	l \ d	7			
19.0	N00	5704	5673	500	2	l \ d	2			
19.1	S07	5705	5667	200	1.5	l \ d	7			
19.5	S15	5709	5667	(100)	(1.5)	l \ d	7			
21.1	N17	5706	5669	4100	3	l - l	4	70	1	l / l
21.8	S16	5707	New	900	2.5	l - l	1	(20)	(1)	b ^ d
22.1	N10	5710	5672	300	2.5	l ^ d	2	20	1	l \ d
23.1	S12	5711	5670	1600	2	l \ l	4			
23.3	N05	5712	5670	700	1.5	l \ d	4			
24.8	S03	5714	5670	200	1	l \ d	4			
25.1	N11	5723	New	200	2	b / l	1			
26.4	N18	5713	New	2400	3.5	l - l	1	730	5	l - l
27.0	N03	5716	5676	600	2	l \ d	2	(20)	(1)	l \ d
27.7	N07	5733	New	300	2	b / l	1			
29.5	N08	5720	5678	2800	3	l - l	3	190	2	l \ d
29.6	S08	5719	5679	3000	3	l - l	4	220	1	l - l
30.4	N08	5721	5687	2200	3	l - l	2			
30.4	S16	5725	New	1800	3.5	b / l	1	290	8	b / l

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+ born on disk CMP in May.

* 5649 and 5652.

PROVISIONAL CORONAL LINE EMISSION INDICES

JUNE 1960

CMP Jun 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 ₁	G ₆	G ₁	R ₁	G ₆	G ₁	R ₁	G ₆	G ₁	R ₁
1	81	126	41	40	63	11	x	x	x	x	x	x
2	42a	64a	25a	20a	26a	18a	x	x	x	x	x	x
3	x	x	34a	16a	x	29a	x	x	x	x	x	x
4	64	89	21	51	8	10	34	52	10	16	157	25
5	x	x	x	x	x	x	14	24	x	x	66*	x
6	x	x	x	x	x	x	47	70	6	8	113	16
7	61a	74a	20a	72a	100a	13a	51	67	x	x	65	x
8	46	66	25	55	72	13	x	x	x	x	91	x
9	x	x	x	61	100	x	39	76	16a	26a	38	8a
10	78	94	x	61	100	x	40a	63a	15a	22a	56a	19a
11	83	94	24	51	60	11	42	77	17	22	53	66
12	100	128	x	51	85	x	78	115a	x	x	113a	x
13	x	x	x	51	x	x	64a	102a	x	x	207a	x
14	91	123	20	51	96	13	79a	146a	35a	65a	102a	161a
15	x	x	x	x	x	x	73	127	x	x	101a	17a
16	x	x	x	x	x	x	65	94	x	x	66	x
17	x	x	x	x	x	x	71	83	13	17	54	x
18	45	68	12	59	80	9	36	40	x	x	65	20
19	33	46	x	12	18	x	32a	40a	15	25	48	64
20	128	170	24	60	69	5	33a	50a	27a	40a	42a	18
21	x	x	x	x	x	x	58a	101a	x	x	44a	19a
22	x	x	x	71	96	17a	32	44	9	15	52a	x
23	40	57	32a	71	96	23a	61	116	17	40	21	20
24	23a	27a	37a	44a	57a	49a	68	122	x	x	27	34
25	30	45	51	36	46	26	46	x	x	x	63*	x
26	73a	99a	x	61a	76a	x	x	x	x	x	x	x
27	66a	94a	x	69a	125a	x	60	95	27a	x	x	x
28	80	139	38a	98	162	22a	x	x	30a	50a	55	80a
29	99	190	x	109	144	x	102	166	x	40a	x	x
30	86	133	x	95	123	x	x	x	x	x	183	40a

x = no observations. a = index computed from low weight data. * = yellow line observed. COMMERCE - STANDARDS - BOULDER

Note: These coronal line intensities, expressed in millionths of equivalent angstroms are believed to be correct to ± 10 per cent, probable error, according to the calibrations of February-March 1960. All intensities from the Climax and Sacramento Peak Observatories during the years 1956-1959, inclusive, if multiplied by the factor 0.60, will be expressed in the same scale to a somewhat lower precision.

Intensities prior to 1956 cannot be compared precisely with those obtained later because of changes in observing and reduction techniques. They may be converted roughly to millionths of equivalent angstroms by use of the table given by Billings and Varsavsky, 1955, Es. f. Ap. 38, 160.

SOLAR FLARES

JUNE 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION - MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.				MCNATH PLACE REGION	TIME U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH Hg
CAPRI S	01 0824	1340		0905	N28 E46	E46	5680	3+	3	0903	18.00	31.00			
	01 0833	1003			N26 E44	E44	5680	3							
	01 0834	1009	D		N30 E48	E48	5680	3+	3	0904	20.60	32.60			
	01 0835	1030	D		N30 E50	E50	5680	3							
	01 0841	1308	D		N27 E47	E47	5680	3+	3						
	01 0848	1040		0900 U	N29 E43	E43	5680	3+	3	0907	15.00	60.00	24.00	2.94	140
	01 0855	0945	D		N29 E48	E48	5680	3+	3						
	01 0945	1135	D		N29 E39	E39	5680	2+	1	1118	5.00	7.50		2.30	
	01 1037	1154	D		N29 E45	E45	5680	2	3	1154	7.00	7.00			
	01 1106	1220	D		N27 E44	E44	5680	2	3	1115	6.34				
01 1247	1600	U		N29 E43	E43	5680	2	2							
01 1646	1711		1247 E	N30 E45	E45	5680	1+	3	1655	1.80	3.20		2.60	18	
01 1649	1728		1657	N32 E45	E45	5680	39 D	2	1657	2.10	2.20		3.80		
01 1649	1700		1651	N13 E02	E02	5678	11 D	1	1652	2.10			2.70		
01 1804	1815	D		N07 W90	W90	5672	11 D	1							
01 2039	2150	D		N18 W90	W90	5672	71 D	1							
WENDEL	03 0536	0603	D		S18 W30	W30	5677	27 D	1						
	03 1107	1119	D		S08 W07	W07	5679	12 D	1	1111	3.00	3.00			
	03 1109	1125	D		S12 W06	W06	5679	16 D	1	1110					
STOCKHOLM	03 1212	1223	D		N15 E35	E35	5688	11 D	1	1214	1.80	2.50			
	03 1244	1302	D		N15 E35	E35	5688	18 D	1	1247	2.10	2.90			
	03 1900	1915	D	1903	N29 E15	E15	5680	15	3	1903	2.00				
HAWAII	03 1902	1914	D	1904	N34 E12	E12	5680	12	2	1904	1.10				
	04 1426	1508		1438	N27 W04	W04	5680	42	3	2.72					
WENDEL	05 1351	1413	D		N27 W18	W18	5680	22 D	1						
	05 2217	2346	U	2224	N26 W24	W24	5680	89 U	2	5.84					
ONDREJOV	06 0455	0605		0458	N33 W10	W10	5680	70 D	2	0458					
	06 0551	0608		0553	S12 W36	W36	5679	17	3	0553				3.40	
WENDEL	06 0858	0929	D		N07 W50	W50	5687	31 D	1					2.70	
	06 1410	1420	D		N08 W59	W59	5678	10 D	1	1410				2.20	
WENDEL	06 1732	1744	D		S08 W50	W50	5679	12 D	1						
	06 2232	2234	D		N29 W23	W23	5680	2	2	2232	1.20				
ONDREJOV	07 0610	0622			N33 W22	W22	5680	12 D	1	0610				1.50	
	07 0829	0846			N10 E64	E64	5693	17	3	0832				2.60	
CAPRI S	07 0831	0842			N12 E66	E66	5693	11 D	1	0834	1.50	3.60			
	07 0958	1150			N27 W45	W45	5680	112	2	1040	2.50	3.30		2.60	
CAPRI S	07 1002	1158			N25 W38	W38	5680	116	3	1015	2.50	3.70			
	07 1015	1032	D		N26 W46	W46	5680	17 D	1	1050	3.00	3.90			
STOCKHOLM	07 1046	1103	D		N26 W28	W28	5680	17 D	1						
	08 0732	0828	D		N29 W37	W37	5680	56 D	2+					15.00	
CAPRI S	08 0736	0827			N33 W37	W37	5680	51	3	0750	7.00	11.20			
	08 0802	0823	D		S10 W36	W36	5680	21 D	1+						
WENDEL	08 0759	0828	D		N32 W74	W74	5679	29 D	1					4.00	
	08 0956	1038	D		N12 E52	E52	5693	42 D	1					3.00	
CAPRI S	08 1125	1205			N29 W33	W33	5680	40	3	1137	3.50	5.30			

SOLAR FLARES

JUNE 1960

OBSERVATORY	DATE JUNE 1960	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.				MCMATH PLACE REGION	TIME — UT	MEAS. AREA Sq. Deg.	
{ MCMATH WENDEL SAC PEAK MCMATH HUANCAYO HAWAII HAWAII LOCKHEED	08	1125	1220 D	1138	N30 W35	5680	55 D	1	2	1138	2.00	2.00	SLOW S-SWF
	08	1135 E	1215 D		N29 W37	5680	40 D	1+			8.00		
	08	1746	1906 U	1756	N29 W39	5680	80 U	2	2		7.35		
	08	1748	1900	1756	N30 W36	5680	72	2	2	1756	6.00	4.50	
	08	1750	1837	1755	N28 W36	5680	47	2	3	1755	7.20		
	08	1750	1826	1758	N26 W41	5680	96	3	3	1758	4.30		
	08	2034	2038	2036	S06 E83	5695	4	1	3	2036	.90		
	08	2055	2205	2120	S12 E90	5695	70	1	2	2120	2.00	10	
	09	0145	0230 D	0200	N32 W48	5680	45 D	1	1	0200	2.20	20	
	{ HAWAII HAWAII ONDREJOV ONDREJOV CAPRI S CAPRI S ONDREJOV ONDREJOV NDERHORST ONDREJOV ARCETRI MCMATH LOCKHEED MCMATH HAWAII SAC PEAK LOCKHEED MCMATH HAWAII HAWAII LOCKHEED	09	0156	0200 D		N28 W48	5680	4 D	1	3	0158	1.00	
09	0437	0547	0453	N31 W48	5680	70	2	2	0453	2.70			
09	0624 E	0638		N31 W50	5680	14 D	1	2	0626	2.30			
09	0626 E	0636 D		N33 W46	5680	10 D	1	3	0628	1.20	2.30		
09	0927 E	0954 D		N31 W49	5680	27 D	1+	2	0927	2.20	2.90		
09	1004 E	1014		N28 W48	5680	10 D	1+	3	1005	2.90			
09	1015 E	1022 D		N11 E78	5698	7 D	1	2	1017	5.20			
09	1015 E	1032		S10 E74	5695	17 D	1+	1	1017				
09	1018 E			S11 E79	5695	17 D	1	3					
09	1745	1815	1752	S13 E75	5695	30	1	1	1752	2.00	20		
09	2010	2130	2037	N30 W57	5680	80	1	2	2037	2.10			
09	2015	2150 D	2031	N31 W57	5680	95 D	1	1	2031	3.00			
09	2024 E	2122	2034	N25 W58	5680	58 D	1+	3	2034	2.10	18		
09	2042 E	2116	2044	N32 W57	5680	34 D	1	1	2043	2.41	20		
09	2035	2200	2043	S09 E73	5695	85	1	1	2043	3.20			
09	2036	2210	2040	S12 E75	5695	94	1+	2	2040	4.00			
09	2038	2058	2043	S05 E72	5695	20	1+	3	2043	2.00	20		
09	2314	2345	2320	N33 W57	5680	31	1	1	2320	2.40			
09	2316 E	2336	2318	N27 W59	5680	20 D	1+	3	2318	1.80			
{ HAWAII CAPRI S R O HERST CAPRI S STOCKHOLM MCMATH ARCETRI MCMATH SAC PEAK MCMATH LOCKHEED HAWAII HAWAII CAPRI S WENDEL CAPRI S HAWAII HAWAII LOCKHEED	10	0132	0200 D	0144	N15 E27	5693	28 D	1+	3	0144	2.00		
	10	0635 E	0730		N30 W60	5680	55 D	2	3	0640	3.00		
	10	0932 E	1000	0936 U	N30 W65	5680	28 D	1	2	0936	1.40		
	10	0935 E	1049 D		N30 W62	5680	74 D	2	1	1001	4.00		
	10	0937 E	0947 D		N29 W55	5680	10 D	2+	1	0947	5.00		
	10	1435	1500 D	1443	S12 E65	5695	25 D	1	1	1443	10.00		
	10	1505 E			N09 W90	5687	10 D	1	3	1505	.50	G-SWF	
	10	1546	1640	1602	N12 E25	5693	54	1	1	1602	2.40	G-SWF	
	10	1552 E	1616 D	1606 D	N12 E27	5693	24 D	1	1	1602	2.00	18	
	10	1702	1720	1708	N32 W70	5680	18	1	1	1708	2.50	S-SWF	
10	1949	2130	1955	N30 W70	5680	101	1	1	1955	2.00	30		
10	1956 E	2024 D	2000	N30 W70	5680	28 D	1	2	1955	2.08	18		
10	2004 E	2110		N30 W70	5680	66 D	1	1	2015	3.00			
{ HAWAII LOCKHEED WENDEL CAPRI S HAWAII HAWAII LOCKHEED	11	0112	0200 D	0124	N18 E16	5693	48 D	2+	2	0124	5.60		
	11	0115 E	0235 D	0115 E	N16 E17	5693	80 D	2	1	0115	8.20	30	
	11	1422 E	1444 D		S08 E58	5695	22 D	1	1	0115			
	11	1507 E	1913		N26 W75	5680	6 D	1	3	1511	.70		
	11	1928	2010	1928	N15 E05	5693	42	1	1	1950	1.00		
	11	1952	2038	1954	N27 W90	5680	46	1	3	1954	1.00		
	11	2220	2315	2237	S11 E54	5695	55	1	2	2237	2.00	20	

SOLAR FLARES

1960

OBSERVATORY	DATE JUNE 1960	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	DI- PO- RANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX. LAT.	APPROX. MER. DIST.				MGRATH PLACE REGION	TIME — UT	MERIS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH Hc
{ MCWATH HAWAII CAPRI S SAC PEAK LOCKHEED HAWAII LOCKHEED SAC PEAK LOCKHEED WENDEL ONDREJOV ONDREJOV WENDEL CAPRI S WENDEL CAPRI S CAPRI S ONDREJOV WENDEL ONDREJOV CAPRI S SAC PEAK	11	2225	2300 D	S13 E52	E52	5695	35 D	1	2230	1.00	2.00			
	11	2242 E	2308	S04 E54	E54	5695	26 D	3	2242					
	12	0600 E	0720	S14 E53	E53	5695	80 D	3	0605	6.00	10.20			
	12	1356	1442	N30 W90	W90	5680	46	2		3.93				24
	12	1900	1955	N35 W90	W90	5680	55	3	1927	2.00				20
	12	1924	1934	N32 W90	W90	5680	10	3	1928	4.0				
	12	1905	2000	N21 E04	E04	5693	55	1	1916	2.20				10
	12	2326	2340 D	N20 E20	E20	5694	14 D	3		3.16				18
	13	0023	0054	S14 E36	E36	5695	31	1	0030	1.20	4.00			10
	13	0547 E	0633 D	S17 W18	W18	5696	46 D	1						
	13	0556 E	0645	S20 W20	W20	5696	49 D	1	3	0559		2.30		
	13	0725	0755	N18 W30	W30	5693	30	2	3	0736		3.80		
13	0731	0813	N18 W27	W27	5693	42	2			11.00				
13	0731	0834	N18 W27	W27	5693	63	2	3	0740	5.80				
13	0759	0818	N12 W16	W16	5693	19	1+			7.00				
13	0759	0818	N08 W21	W21	5693	19	1	3	0808	3.00				
13	1028	1051	S12 W30	W30	5691	23	1	3	1038	2.50				
13	1036 E	1048 D	S09 E32	E32	5695	12 D	1+	3	1040		4.00			
13	1237 E	1305 D	N18 W30	W30	5693	28 D	1	3	1239		2.30			
13	1238	1257	N17 W29	W29	5693	19	1	3	1242	2.00				
13	1239 E	1250	N18 W29	W29	5693	11 D	1	3		4.36				
13	1708	1800	N17 W34	W34	5693	52	2	3						
14	0001	0045	N08 W36	W36	5693	44	1	2	0015	2.30				
14	0014 E	0042	N14 W38	W38	5693	28 D	1	2	0014	1.70				
14	1048 E	1104	N15 W28	W28	5693	16 D	1	2	1049	2.00	2.40			
14	1055 E	1103 D	N10 W30	W30	5693	8 D	1	1	1057	3.50				
14	1337 E	1408	S10 E16	E16	5695	31 D	1	3	1345	2.00				
14	1338 E	1446	S10 E18	E18	5695	68 D	1	3	1340	2.30	2.40			
14	1727	1740 D	S13 E20	E20	5695	13 D	1	1	1736	2.70				
14	1730	1749	S11 E24	E24	5695	19	1	1	1737	2.20	2.40			
14	1825	1850	S12 E19	E19	5695	25	1+	2	1828	4.20	4.40			
14	1826 E	1838 D	S08 E20	E20	5695	12 D	1	2	1826	1.90				
14	1831 E	1834 D	S13 E20	E20	5695	3 D	1	1	1832	2.30				
14	1838 E	1842 D	S11 E19	E19	5695	4 D	1	1	1838		2.00			
14	2200	2323	S14 E08	E08	5695	83	1+	2	2228	4.20				
14	2202	2316	S10 E11	E11	5695	74	2	2	2226	2.50				
15	0635 E	0749	S09 E08	E08	5695	74 D	2	2	0702	5.50	5.50			
15	2347	0030	N18 E35	E35	5701	43	1	1	2356	2.00				
15	2348	0036	N23 E33	E33	5701	48	1+	3	2354	2.00				
16	0647	0719	S12 W02	W02	5695	23	2	3	0700	5.50	5.50			
16	0649 E	0719	S11 E01	E01	5695	30 D	2	3	0650		2.80			
16	0730	0736	N15 E67	E67	5706	6	1	3	0733	1.00	2.60			
16	0808	0950	S12 E65	E65	5706	102	2	3	0908	3.00	6.90			
16	1037 E	1044	N13 W05	W05	5695	7 D	1	3	1039	2.00	2.10			
16	1338	1406	N20 W70	W70	5693	28	1	2						
16	1339	1402	N20 W65	W65	5693	23	2	3	1342	2.83	3.80			

SOLAR FLARES

1960

JUNE

OBSERVATORY	DATE JUNE 1960	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	TIME — U T	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	APPROX. MER. DIST.					MCNATH PLACE REGION	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	
CAPRI S	16	1344 E	1351	N12	W67	5693	1	3	1347	1.20	3.40	2.20	
	16	1527 E	1537	N21	E59	5706	1	3	1532				
MCNATH	16	1848	1900 D	N18	E34	5701	1	1	1900	2.50			
	16	1854 E	1924	N14	W36	5694	2	2	1900	3.50			
LOCKHEED	16	2250	0000	S12	W17	5695	1	2	2310	3.20			30
	16	2252	2342	S14	W16	5695	1	2	2314	1.50			
LOCKHEED	17	0010	0108 U	N17	W37	5694	1	2	0035	2.30			20
	17	0024	0054 D	N12	W39	5694	1	2	0028	1.60			
CAPRI S	17	0935	1110 D	N17	E55	5706	2	3	1006	3.00			
	17	0936	1039 D	N18	E56	5706	2	3		5.40			
STOCKHOLM	17	0947 E	1129 D	N21	E50	5706	1+	2	1000	2.30			
	17	1005 E	1024 D	N17	E56	5706	1	3	1009	1.70			
ARCETRI	17	1520 E	1535 D	N18	W45	5694	1	3		4.00			
	17	1602	1636 D	N18	W46	5694	1	3		4.00			
LOCKHEED	18	0010	0145	S12	W33	5695	1	2	0042	3.70			10
	18	0026 E	0040 D	S15	W31	5695	1	1	0040	1.10			
ONDREJOV	18	0537 E	0557	N20	W50	5694	1+	3	0543			3.10	
	18	1402 E	1417 D	N22	W53	5694	1	3	1404			2.00	
WENDEL	18	1751	1808 D	S13	W45	5695	1	3		4.00			G-SWF
	19	0153	0230	N19	W65	5694	1	1	0208	2.50			
CAPRI S	19	1001	1108	S12	W47	5695	1	3	1007	3.00			20
	19	1039	1354 D	N24	E90	5713	1	3	1043	.40			
WENDEL	19	1330 E	1354 D	S12	W51	5695	1+	3		5.00			S-SWF
	19	1333 E	1353	S15	W50	5695	1	3	1335	2.00			
MCNATH	19	1334 E	1352	S11	W53	5695	1	1	1335	3.40			
	19	1541 E	1614	S11	W49	5695	2	2	1544	3.50			
HUANCAYO	19	1545 E	1616	S12	W50	5695	1	3	1547	3.00		3.50	
	19	2127	2205	N15	E84	5713	1	3	2138	2.00			10
LOCKHEED	20	0126	0205	S13	W59	5695	2	2	0129	5.00			40
	20	0642 E	0652 D	S13	W63	5695	1	1	0647	1.50			
WENDEL	22	0815	0845 D	N22	W45	5701	1	3		4.00			
	23	1627 E	1643	N22	E30	5713	1	3		3.00			
WENDEL	24	0921 E	0939 D	N13	W40	5706	1	2		4.00			
	24	0927 E	1004	N11	W38	5706	1	2	0928			3.10	
ONDREJOV	24	1307 E	1313 D	N20	E14	5713	1	3	1309			2.60	
	24	1307 E	1316	N08	E64	5720	1	3	1308			2.60	
WENDEL	24	1606 E	1615 D	N11	W45	5706	1	3		4.00			
	25	0709	0728	N20	E09	5713	2	2	0717	7.00			
CAPRI S	25	0709 E	0743 D	N20	E09	5713	2	3	0712	4.00			
	25	1026 E	1045	N18	E03	5713	1+	3	1030			3.00	
MOSCOW G	25	1027 E	1046	N18	E04	5713	1	3		4.00			
	25	1028 E	1046	N19	E02	5713	2	3	1029			3.70	
ONDREJOV	25	1133 E	1300	N19	E09	5713	2+	3					
	25												

SOLAR FLARES

JUNE 1960

OBSERVATORY	DATE	OBSERVED TIME		MAX. PHASE	LOCATION			DURATION - MINUTES	IM-PORTANCE	OBS. COND.	TIME - UT	MEASUREMENTS		PROVISIONAL IONOSPHERIC EFFECT
		START	END		APPROX. LAT.	MER. DIST.	PLACE REGION					MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	
CAPRI S WENDEL MCMATH ONDREJOV KRASNAYA CAPRI S STOCKHOLM STOCKHOLM SAC PEAK LOCKHEED HAWAII	25	1136	1330		N20 E06	5713	114	3	3	1217	12.00	12.60		
	25	1136	1330	D	N22 E06	5713	116	3	3	1215		23.00		
	25	1136	1330	D	N20 E05	5713	234	2+	2+	1222		8.00	3.80	
	25	1143	1458	D	N22 E05	5713	195	3	1					
	25	1232	1333	D	N26 E04	5713	61	D	2+					
	25	1259	1518	E	N20 E07	5713	139	D	2+					
	25	1659	1739		N19 E00	5713	40	1	1	1706	7.48			27
	25	1700	1736		N19 W01	5713	36	1+	2	1709	4.55	2.00		30
	25	1740	1709		N19 W01	5713	40	1	1					30
	25	1948	2024		N20 W03	5713	36	1	2					19
MCMATH LOCKHEED SAC PEAK MCMATH HAWAII	25	2039	2128	2046	N19 W03	5713	49	2	3	2046	7.00			30
	25	2042	2130	2046	N18 W04	5713	48	3	2		13.29			34
	25	2042	2140	2047	N20 W04	5713	58	2+	2	2047		9.00		
	25	2105	2123	D	N18 W04	5713	18	D	1	2106	1.50			
	25	2158	2202	2200	N07 W58	5706	4	1	2	2200	1.10			
	26	0124	0134	0128	N38 E90	5724	10	1	3	0128	1.00			
	26	0805	0830	D	N20 W07	5713	25	D	1			3.00		
	26	1110	1215		N27 E75	5724	65	1+	2	1136				
	26	1115	1212		N27 E71	5724	57	D	1	1118	2.00			
	26	1304	1314	D	N12 W66	5706	10	D	1					
WENDEL CAPRI S WENDEL MCMATH LOCKHEED SAC PEAK MCMATH HAWAII	26	1326	1440	1404	N20 W14	5713	74	2+	3	1412	10.26	6.00		25
	26	1349	1442		N17 W11	5713	53	2	3		6.00	14.00		
	26	1350	1443	1400	N20 W13	5713	53	2	2			9.00		
	26	1350	1445	1404	N19 W14	5713	55	2+	2	1404	3.40			20
	26	1425	1525	1425	N19 W13	5713	60	D	1	1425	4.50			20
	26	2032	2142	2100	N19 W16	5713	70	1+	2	2100	8.48			26
	26	2044	2124	2056	N20 W15	5713	40	2	3	2102		3.50		
	26	2049	2220		N19 W16	5713	91	D	1	0010	16.00			20
	26	2358	0200	0010	S10 E33	5719	122	3	2					
	27	0002	0057	0023	S07 E35	5719	55	D	2	0023	7.60			
ONDREJOV CAPRI S KRASNAYA CAPRI S STOCKHOLM STOCKHOLM SAC PEAK LOCKHEED MCMATH HUANCAYO LOCKHEED LSAC PEAK HAWAII LOCKHEED SAC PEAK LOCKHEED MCMATH CLIMAX MT WILSON	27	0756	0810	0758	N09 E25	5720	14	D	1+	0758				
	27	0800	0821		N08 E24	5720	21	D	1	0801	2.50	2.70	5.80	
	27	0758	0821		S10 E30	5719	14	D	1					
	27	1119	1140	1140	N20 W24	5713	21	D	1	1120	2.40	2.60		
	27	1140	1225	D	N13 W82	5706	45	D	2	1152	1.50	9.00		
	27	1158	1238	D	N12 W75	5706	40	D	1+	1213	1.80	5.40		
	27	1238	1314	D	N07 E90	5726	36	D	2	1247	1.80			
	27	1758	1858	1828	N20 W27	5713	60	2	3	5.82	2.00			20
	27	1812	1856	1824	N19 W27	5713	44	1	2	1824		3.50		20
	27	1812	1915	1830	N19 W28	5713	63	1+	2	1830	1.50	1.70		
HUANCAYO LOCKHEED LSAC PEAK HAWAII LOCKHEED SAC PEAK LOCKHEED MCMATH CLIMAX MT WILSON	27	1841	1903	1841	N18 W27	5713	22	D	1	1844	1.50		2.60	
	27	1955	2025	2004	N28 E63	5724	30	1	2	2004	2.00			20
	27	1956	2022	2008	N28 E60	5724	26	1	3	2.78				18
	27	2140	2244	D	N17 W28	5713	64	D	3	2154	6.20			
	27	2140	2340	2158	N23 W23	5713	120	3	2					30
	27	2140	2345	2150	N21 W25	5713	125	2	2	2150	15.16			30
	27	2141	2251	D	N22 W24	5713	70	D	2+	2200	7.00			
	27	2200	2222	D	N22 W38	5713	22	D	2	2200		9.00		
	27	2204	2304	D	N20 W28	5713	60	D	2+					
	27	2204	2304	D	N20 W28	5713	60	D	2+					

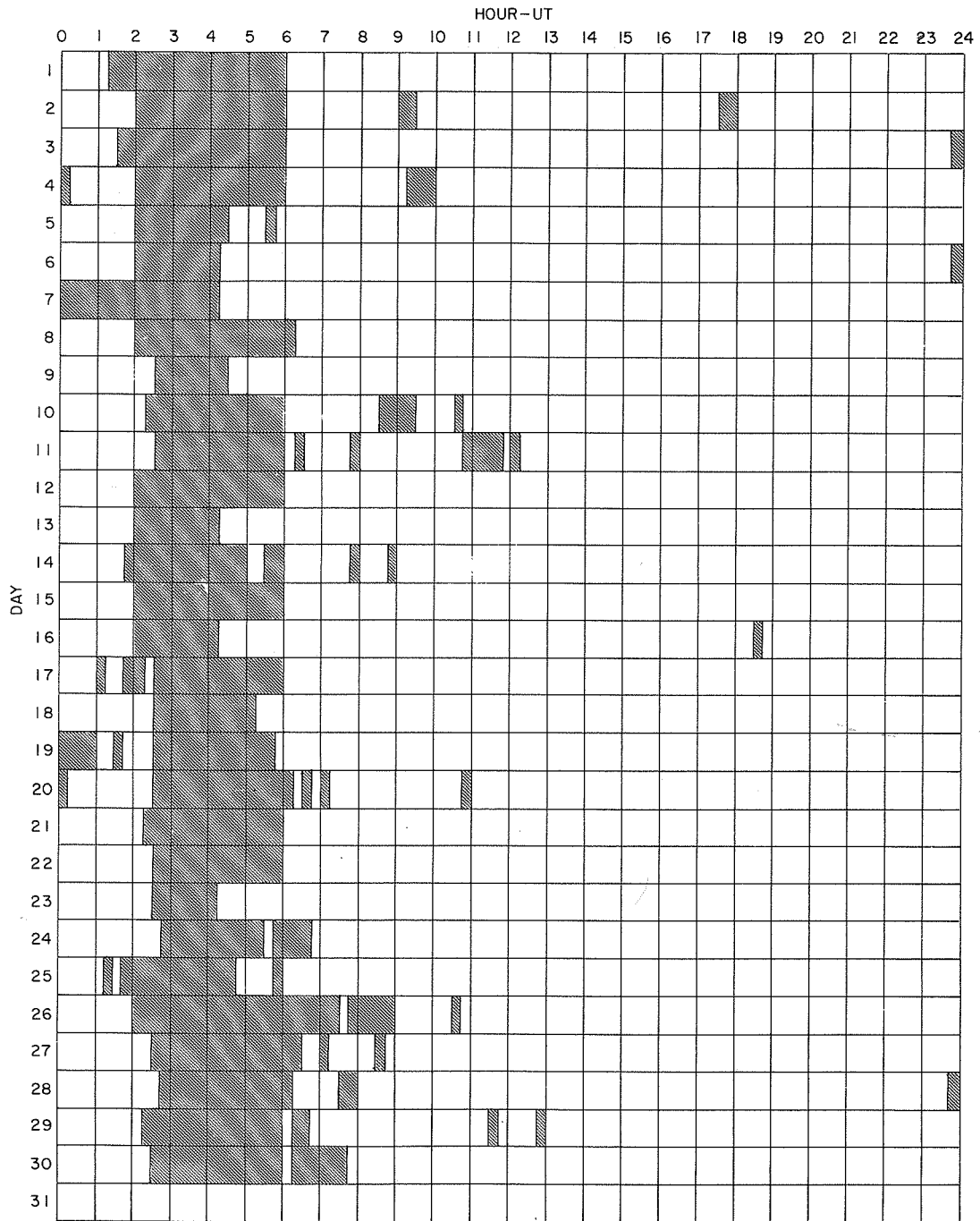
SOLAR FLARES

1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURA-TION - MINUTES	IM-POR-TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX. LAT.	MAGNETIC PLAGE REGION				TIME - U T	MEAS. AREA - Sq. Deg.	CORR. AREA - Sq. Deg.	MAX. WIDTH - Hg		MAX. INT. - %
{ HAWAII LOCKHEED SAC PEAK	27	2240	2244 D	N33 E52	5724	4 D	1	2	2244	1.60				
	27	2241	2310	N26 E54	5724	29	1	2	2250	2.90			20	
	27	2244	2246	N26 E53	5724	6	1	3	2250	2.70			18	
{ CAPRI S ONDREJOV	28	1215 E	1228	N21 W36	5713	13 D	1	3	1217	1.70	2.30			
	28	1215	1235	N21 W37	5713	20	1+	3	1216			3.30		
	28	1216 E	1229	N19 W38	5713	13 D	1	3	1218	2.50	3.50			
{ LOCKHEED LOCKHEED HUANCAYO	28	1815	1942	N10 E69	5726	87	1	3	1907	3.10			20	
	28	1815	1942	N10 E69	5726	87	1	2	1907	3.10			20	
	28	1822	1838	N08 E68	5726	16	1	2	1825	1.50	3.50			
{ MCMATH HUANCAYO HAWAII	28	1849 E	1914 D	N07 E69	5726	25 D	1	1	1853	4.00	5.80			Slow S-SWF
	28	1900 E	1925	N08 E68	5726	25 D	1+	2	1900	2.40		2.80		
	28	1922 E	1952 D	N19 E63	5726	30 D	2+	2	1923	5.20				
LOCKHEED	29	0100	0140	N12 E02	5720	40	1	2	0106	2.50			10	
	29	0125	0220 D	N23 W56	5713	55	1	2	0144	3.00			20	S-SWF
	29	0719 E	0752	N28 E41	5724	33 D	1	2	0722	3.00	4.50			
CAPRI S	29	1045 F	1059	N28 E38	5724	14 D	1	2	1048	1.50	2.40			
	29	1312	1322	N08 E60	5726	10	1	3	1501	2.91			15	
	29	1451	1520	S15 E72	5729	29	1	2	1501	1.50	4.70	2.80		
HUANCAYO	29	1620 E	1642	N17 W48	5713	22 D	1	2	1625	2.70	4.10	3.40		
	29	1810	1902	N26 E34	5724	52	1	3	1625	3.64			16	
	29	1810	1920	N25 E32	5724	70	1	1	1824	2.00			14	G-SWF
SAC PEAK	29	2150	2210	N28 E26	5724	20	1	3	1824	3.32				
	30	0220	0227 D	N21 W55	5713	7 D	1	1	0225	2.50			20	
	30	1029 E	1158 D	N19 W54	5713	89 D	1	3	1046	2.20	4.80			
CAPRI S	30	1114 E	1120 D	N10 E41	5724	6 D	1	2	1116	2.50	3.20			
	30	1920	2000	N31 E27	5724	40 D	1	3	1922	1.20				
	30	2136	2151	N19 W65	5713	15	1	2	2137	1.20		3.30		
SAC PEAK	30	2222	2232	N23 W70	5713	10	1	2	2137	2.49			18	

CAPRI G ANACAPRI - GERMAN
 CAPRI S ANACAPRI - SWEDISH
 GOOD HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE
 KIEV* KIEV UNIVERSITY
 KODAIKANAL KODAIKANAL
 KRASNAYA KRASNAYA PAKHRA
 LOCKHEED LOS ANGELES
 MOSCOW-G MOSCOW - GAISH
 R O EDIN ROYAL OBSERVATORY, EDINBURGH
 R O HERST GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
 SAC PEAK SACRAMENTO PEAK
 SCHAUNIS SCHAUNISLAND
 USNRL UNITED STATES NAVAL RESEARCH LABORATORY
 COMMERCIAL STANDARDS - BOULDER
 SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.
 E - LESS THAN & - PLUS
 D - GREATER THAN - - MINUS
 U - APPROXIMATE □ - NOT REPORTED
 LOCKHEED OBSERVATIONS: ALL VALUES IN THE MAXIMUM INTENSITY COLUMN ARE ARBITRARY UNITS ON A SCALE OF 10 TO 40-NOT PERCENT OF THE CONTINUOUS SPECTRUM.

INTERVALS OF NO FLARE PATROL OBSERVATIONS
 JUNE 1960



Stations Include:

COMMERCE - STANDARDS - BOULDER

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

SUBFLARES

IIIj

Noted as follows: Date-Universal Time - Coordinates
MAY 1960

LOCKHEED	27	1534	N05 E03
LOCKHEED	27	1610	N05 E05
ONDRE JOV	27	1625	E N04 E05
LOCKHEED	27	1630	N15 W34
LOCKHEED	27	1630	N15 W34
LOCKHEED	27	1640	N14 E70
ONDRE JOV	27	1646	N10 E60
ONDRE JOV	27	1706	N16 E39
LOCKHEED	27	1719	N19 W34
* SAC PEAK	27	1720	N19 W71
* LOCKHEED	27	1725	N18 W70
LOCKHEED	27	1757	N19 W37
LOCKHEED	27	1751	N13 W34
LOCKHEED	27	1803	N18 W70
HAWAII	27	1816	E N20 E67
* LOCKHEED	27	1820	N16 W30
* SAC PEAK	27	1850	N15 W30
LOCKHEED	27	1917	N15 E70
HAWAII	27	1922	N19 E66
LOCKHEED	27	1929	N16 W35
LOCKHEED	27	1935	S21 E70
MCMATH	27	2011	E N12 E67
LOCKHEED	27	2012	N17 E74
LOCKHEED	27	2012	N17 E74
HAWAII	27	2044	N19 E65
HUANCAYO	27	2045	N13 E70
LOCKHEED	27	2047	N03 E00
HAWAII	27	2050	N04 W01
LOCKHEED	27	2104	N09 W20
HAWAII	27	2106	N08 W32
LOCKHEED	27	2137	N04 W02
* LOCKHEED	27	2153	N15 E64
* HAWAII	27	2200	N18 E66
LOCKHEED	27	2211	N16 E51
LOCKHEED	27	2355	N15 E64
LOCKHEED	28	0030	N15 E64
HAWAII	28	0030	N15 E63
LOCKHEED	28	0041	N17 W43
LOCKHEED	28	0130	N17 W43
LOCKHEED	28	0217	N31 E90
CAPRI S	28	0828	E N12 E58
WENDEL	28	0832	E N13 E60
CAPRI S	28	1301	N12 E54
* WENDEL	28	1354	E N13 E56
* HUANCAYO	28	1508	E N13 E55
LOCKHEED	28	1529	N14 E56
MCMATH	28	1532	N12 E56
LOCKHEED	28	1552	N14 E56
LOCKHEED	28	1558	N33 E90
LOCKHEED	28	1715	N14 E56
LOCKHEED	28	1745	N05 W12
LOCKHEED	28	1807	N25 E87
LOCKHEED	28	1818	N16 W46
LOCKHEED	28	1850	N15 W48
LOCKHEED	28	1905	S07 E61
SAC PEAK	28	1906	S09 E61
HAWAII	28	1908	S03 E64
LOCKHEED	28	1917	N16 E53
HAWAII	28	1922	E N18 E51
LOCKHEED	28	2010	N27 E90
LOCKHEED	28	2023	N16 E53
LOCKHEED	28	2115	S07 E41
MCMATH	28	2115	S09 E60
HAWAII	28	2116	S05 E63
* LOCKHEED	28	2130	N05 W14
* LOCKHEED	28	2130	N14 W14
* MCMATH	28	2150	N04 W14
* HAWAII	28	2152	N02 W14
LOCKHEED	28	2329	N15 W47
LOCKHEED	29	0010	N16 E51
LOCKHEED	29	0058	S12 E61
LOCKHEED	29	0102	S16 E37
HAWAII	29	0114	E S13 E39
HAWAII	29	0122	N19 E47
LOCKHEED	29	0123	N14 E48
* SAC PEAK	29	1542	N12 E43
* SAC PEAK	29	1552	N13 E47
* MCMATH	29	1554	E N12 E44
HUANCAYO	29	1700	N12 E41
SAC PEAK	29	1714	N11 E39
HAWAII	29	1810	N16 E39
* LOCKHEED	29	1840	E N14 E40
LOCKHEED	29	2050	N15 W63
LOCKHEED	29	2140	U N13 E41
HAWAII	29	2144	N17 E39
HAWAII	29	2220	E N18 E36
SAC PEAK	29	2242	S18 E26
HAWAII	29	2244	S15 E26
WENDEL	30	1548	E N15 E24
WENDEL	30	1705	E N16 E24
* SAC PEAK	30	1809	D N13 E27
HAWAII	30	1906	N36 E65
LOCKHEED	30	2039	N16 W72
HAWAII	30	2042	N09 W70
LOCKHEED	30	2042	N31 E65
HAWAII	30	2044	N36 E65
LOCKHEED	30	2132	N26 E60
SAC PEAK	30	2200	N27 E64
* LOCKHEED	30	2201	N31 E65
LOCKHEED	30	2241	N16 W75
LOCKHEED	30	2312	N10 W74
* CAPRI S	31	0750	E N12 E21
* MCMATH	31	1321	E N17 W90
* MCMATH	31	1511	E N12 E16
WENDEL	31	1635	E N28 E46
HAWAII	31	1946	N14 E11
LOCKHEED	31	2005	N16 W90
MCMATH	31	2010	N18 W90
LOCKHEED	31	2034	N31 E50
LOCKHEED	31	2038	N14 E15
LOCKHEED	31	2200	S17 W02
SAC PEAK	31	2206	S17 W02
LOCKHEED	31	2212	N32 E50
HAWAII	31	2212	S16 W02
LOCKHEED	31	2245	N17 W90
LOCKHEED	31	2314	N13 E08
LOCKHEED	31	2322	S15 W04
SAC PEAK	31	2324	S17 W02

*Rated as flare of importance ≥ 1 by other observatories (see CRPL-F-190 Part B) page IIII.

SOLAR FLARES

NOV - DEC 1959

OBSERVATORY	DATE NOV 1959	OBSERVED UNIVERSAL TIME		MAX PHASE	LOCATION			DURA- TION - MINUTES	IM- POR- TANCE	OBS. COND.	TIME UT	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END		APPROX. LAT.	MER. DIST.	MAGNETH. BLAGE REGION					MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Rd	
KYOTO	14	0146	0153		S08 W23	5454	7	1		0148	3.32			80	
KYOTO	14	0154 E	0203 D		S20 W46	5452	9 D	1+		0154	5.82			1.32	
KYOTO	14	0205	0223 D	0212	S18 W34	5452	18 D	1		0212	2.49			2.00	
KYOTO	14	0453	0521 D		S17 W37	5452	28 D	1		0453	3.32			1.66	
KYOTO	15	0620 E	0636 D		S16 W35	5454	16 D	1		0620	2.08			1.83	
KYOTO	15	0641 E	0704 D		S19 W50	5452	23 D	1+		0641	4.78			2.00	
KYOTO	29	0056 E	0108 D	0101	N10 E29	5476	12 D	1		0101	2.91			1.58	
KYOTO	29	0201	0212 D		N20 E05	5471	11 D	1		0201	2.08			1.73	
KYOTO	29	0536 E	0545		N09 E29	5476	9 D	1		0536	3.74			1.66	
KYOTO	29	0613	0622		N20 E05	5471	9	1		0613	2.28			1.49	
KYOTO	30	0000 E	0008		N08 E21	5476	8 D	1			1.45			1.74	
KYOTO	30	0128	0134	0130	N08 E16	5476	6	1		0130	1.66			2.17	
KYOTO	30	0504	0525		N08 E16	5476	21	1		0504	3.32			1.66	
KYOTO	30	2342	0204		N06 E05	5476	142	1		2350	3.32			2.00	
	DEC 1959														
KYOTO	01	0040 E	0114 D		N07 E02	5476	34 D	1		0040	2.91			100	
KYOTO	02	0141	0147 D		N11 E49	5478	6 D	1		0141	1.66			1.83	
KYOTO	02	0432	0440 D		N07 W12	5476	8 D	1		0432	1.45			3.37	
KYOTO	02	0500 E	0656	0528	N08 W10	5476	116 D	2		0528	8.72			1.83	
KYOTO	10	2355	0032 D		N18 W90	5478	37 D	2		2355	7.27			4.07	
KYOTO	12	0058 E	0126		N18 E42	5491	28 D	1		0058	2.49			1.66	
KYOTO	25	0225	0235 D		N24 W22	5502	10 D	1		0225	1.66			90	

COMMENCE - STANDARDS - BOULDER

E - LESS THAN
D - GREATER THAN
U - APPROXIMATE

& - PLUS
- - - MINUS
□ - NOT REPORTED

FOOTNOTES FOR KYOTO FLARES
NOV.-DEC. 1959

Note: The dates and hours of flare patrol at Kyoto were as follows:

1959 Nov.	4	0540-0645; 0655-0700
	5	0500-0554; 0630-0655
	6	0012-0107
	7	0525-0558
	7-8	2337-2346; 2351-0002; 0126-0131; 0140-0225
	10	0555-0640
	10-11	2345-0055; 0110-0121; 0520-0530
	11-12	2345-0028; 0125-0210
	14	0115-0335; 0407-0635
	15	0603-0710
	19-20	2340-0210; 0340-0615
	21-22	2330-0010; 0205-0240; 0440-0520
	23	0000-0225; 0345-0606; 0645-0730
	24	0023-0215; 0420-0447
	28-29	2340-0010; 0055-0154; 0201-0214; 0430-0625
	30	0000-0050; 0120-0220; 0430-0630
	30	2340-0215
1959 Dec.	1	0415-0635
	2	0012-0240; 0420-0607; 0617-0638; 0643-0700
	7	0115-0223
	8-9	2350-0230
	10-11	2355-0045
	12	0010-0230; 0432-0534
	12-13	2347-0240; 0410-0450
	21-22	2345-0110; 0140-0156
	25	0210-0240; 0420-0515
	26	0200-0220; 0340-0509
	27	0005-0200; 0410-0530; 0545-0645
	28	0215-0235; 0427-0432
	29	0112-0120; 0129-0137; 0415-0447
	30	0058-0125; 0205-0225; 0400-0500

With this information the charts giving intervals of no flare patrol observations in CRPL-F 189 Part B and CRPL-F 190 Part B can be revised.

SOLAR FLARES

JANUARY 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA-TION MINUTES	IM-PORTANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION				TIME U T	MEAS. AREA Sq. Deg.	COBR. AREA Sq. Deg.	MAX. WIDTH Hg	
VOROSHILOV	01	0353	0405 D	S15	W78	5508	12 D	1+	2	0.73				86
PIRCULI	03	1003	1015	S10	W50	5510	12	1		2.17				60
ABASTUMANI	04	0828	0838	S20	E82	5525	10	1	2	0.88	4.47			62
ABASTUMANI	04	0846	0856	S19	E79	5525	10	1	2	1.00	4.14			68
VOROSHILOV	07	0107	0120	N07	W67	5512	13	1+	2	1.54				101
VOROSHILOV	07	0131	0146	N07	W68	5512	15	1+	2	1.00				87
VOROSHILOV	07	2358	0012	N07	W80	5512	14	1	2	1.27				76
VOROSHILOV	07	2359	0005	S13	W85	5510	6	1	2	0.63				68
VOROSHILOV	08	0033	0038	N06	W82	5512	5	1+	2	0.63				102
PIRCULI	09	0636 E	0645	S18	E17	5525	9 D	1		2.48				53
PIRCULI	09	0813	0818	S14	E07	5525	5	1		0.95				53
VOROSHILOV	14	0303	0353	N18	W28	5527	50	1+	2	2.25				89
SIMEIZ	14	0811 E	0830 D	S14	W68	5525	19 D	1	2	0.90	2.30			65
SIMEIZ	14	0819 E	0837 D	N19	W31	5527	18 D	1	2	1.63	1.90			70
VOROSHILOV	17	0027 E	0042 D	N09	E64	5540	15 D	1+	1	0.90				83
PIRCULI	18	0804	0816 D	N08	E38	5540	12 D	1		2.17				62
PIRCULI	18	0925 E	0950	N08	E37	5540	15 D	1		2.17				65
VOROSHILOV	18	2347 E	0149	N14	E54	5541	122 D	1	2	2.71				64
PIRCULI	19	0818	0838	N16	E48	5545	20	1		2.81				54
PIRCULI	23	0646 E	0955 D	N08	W59	5538	189 D	1+	1	4.12				80
SIMEIZ	23	0651 E	0705 D	N09	E88	5550	14 D	1+	1	1.01	7.20			
KYOTO	26	0139 E	0152 D	N07	E47	5550	13 D	1		2.08		1.49		80
VOROSHILOV	27	0037	0043	N13	E48	5550	6	1	3	1.71				68
SIMEIZ	27	0721 E	0810 D	N10	E77	5552	49 D	1	2	0.90	3.00			78
SIMEIZ	27	0722 E	0810	N11	E25	5550	48 D	1	2	1.35				115
SIMEIZ	27	0830 E	0845 D	N09	W02	5549	15 D	1	2	2.72	2.80			98
PIRCULI	28	0633 E	1026	N06	E10	5550	233 D	2+		18.60				89
PIRCULI	28	0738	0749	N09	E61	5552	11	1		2.14				50
PIRCULI	28	0816	0843	S10	E43	5551	27	1		5.06				79
ABASTUMANI	28	0828 E	0856 D	N05	E12	5550	28 D	2	3	7.25	7.62			103
PIRCULI	28	0902	0912	S12	E54	5551	10	1		3.81				52
PIRCULI	28	0904	0917	S16	E55	5551	13	1		2.34				52
PIRCULI	29	0659	0716	N13	E89	5557	17	1+		8.30				56
PIRCULI	29	0738	0750	S06	E61	5554	12	1		2.70				51
KYOTO	30	0525 E	0542 D	S18	E21	5551	17 D	1		2.28				90

SOLAR FLARES

JANUARY 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	MER. DIST.	MAGNETH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _z	
PIRCULI	30	0915 E	0926 D	S14	E20	5551	11 D	1		2.18			51	
VOROSHILOV	31	0155	0205 D	S17	E00	5551	55 D	2	1	5.25			81	
PIRCULI	31	0717 E	0825 U	S18	E07	5551	68 D	1		4.02			52	
PIRCULI	31	0745 E	0805	N03	W21	5550	20 D	1		2.51			53	
PIRCULI	31	0900	0912	N05	W20	5550	12	1		2.00			50	

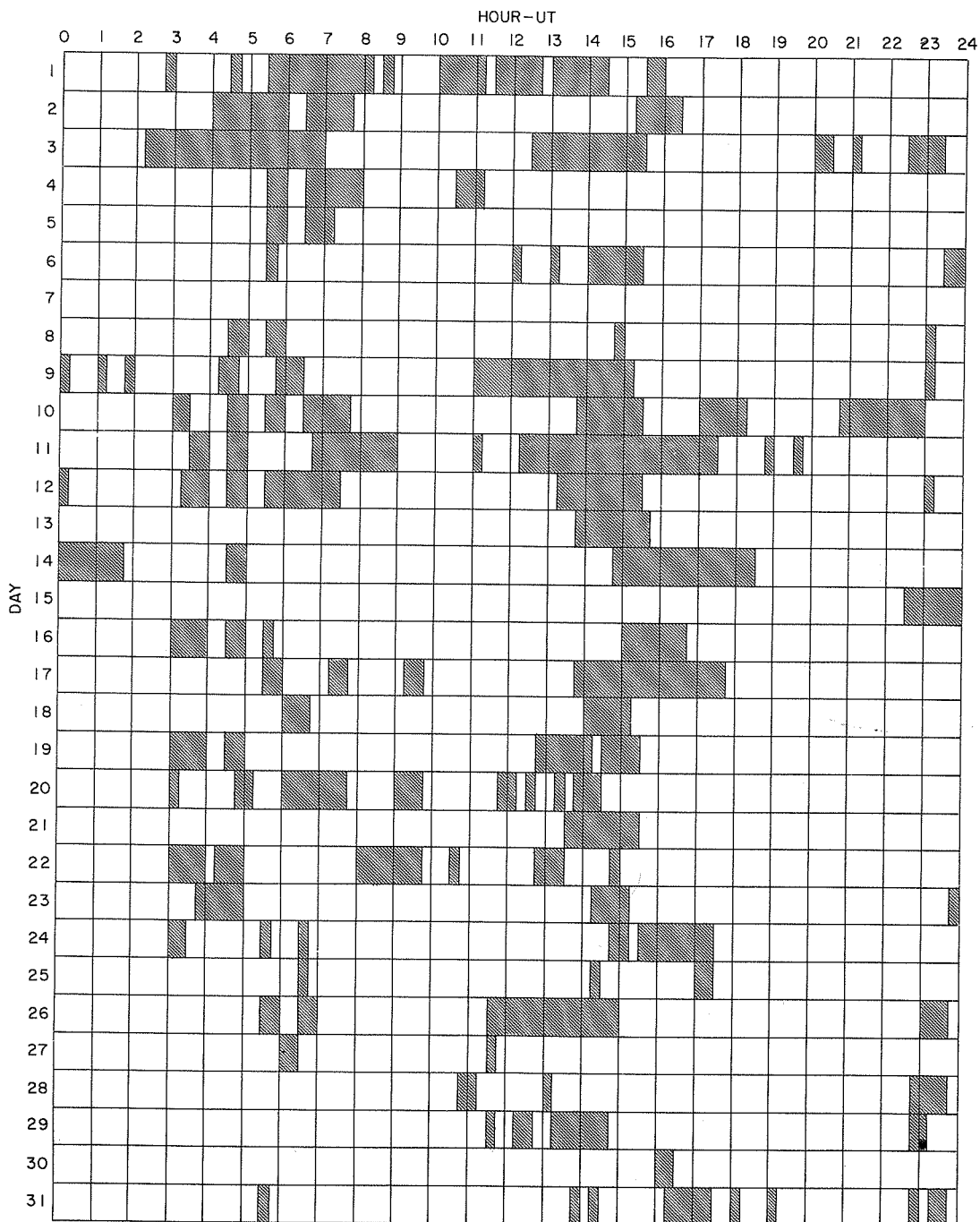
COMMERCE - STANDARDS - BOULDER

These flares are additional addenda to the February 1960 flares published in CRPL-F 187 Part B, March, 1960

- | | | |
|------------|------------------|---|
| ABASTUMANI | PIRCULI, USSR | E - LESS THAN |
| KHARKOV | SIMEIZ | D - GREATER THAN |
| KIEV | VOROSHILOV | U - APPROXIMATE |
| KYOTO | VOROSHILOV, USSR | <input type="checkbox"/> - NOT RECORDED |
| | IKOMA, JAPAN | |

INTERVALS OF NO FLARE PATROL OBSERVATIONS
(AMENDED)

JANUARY 1960



Stations Include:

COMMERCE - STANDARDS - BOULDER

- | | | | |
|--------------------|------------|------------|-----------------------------|
| Alma Ata | Hawaii | McMath | Royal Greenwich Observatory |
| Anacapri (Swedish) | Huancayo | Meudon | Herstmonceux |
| Arcetri | Kharkov | Mitaka | Sacramento Peak |
| Athens | Kiev GAO | Moscow - G | Simeiz |
| Climax | Kodaikanal | Nizamiah | Uccle |
| Dunsink | Kyoto | Ondrejev | Voroshilov |
| Good Hope | Lockheed | Pirculi | |

SOLAR FLARES

FEBRUARY 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	TIME — U T	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT. — — —	MC-MATH PLACE — — —	NER. DIST.					MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _c	
PIRCULI	01	1000	1026	S16	E71	5562	26	1+	3	1012	2.30	6.27	59	
VOROSHILOV	02	0038	0129	S16	W15	5551	51	2	2		4.96		93	
VOROSHILOV	02	0104	0109	S15	E63	5562	5	1	2		2.08		61	
MOSCOW G	03	0955 E	1033 D	S08	W27	5551	38 D	1	1	1004	7.94	9.14	140	
{VOROSHILOV	03	2343 E	0110	S16	W44	5551	87 D	1+	2		3.52		105	
{KYOTO	03	2346	0027 D	S16	W42	5551	41 D	2		2346	7.27		130	S-SWF
VOROSHILOV	04	0027	0108	S13	E34	5562	41	1+	2		2.80		80	
VOROSHILOV	04	0112	0137	N09	W36	5552	25	2			4.21		91	
ABASTUMANI	04	0738 E	0820	S14	W50	5551	42 D	1	1	0815	2.53	3.95	58	
{ABASTUMANI	04	0838 E	0905 D	N08	W39	5552	27 D	2	1	0847	7.25	9.83	92	
{KIEV	04	0848 E	0909	N11	W38	5552	21 D	2			6.00		87	
SIMEIZ	05	0703 E	0725 D	S16	W09	5560	22 D	1	1	0703	2.26	2.30	73	
KYOTO	06	0158 E	0215 D	N10	W57	5552	17 D	1		0158	1.45		58	
ABASTUMANI	06	0720	0734 D	N10	W64	5550	14 D	1	3	0725	1.00	2.31		
KHARKOV	07	1022 E	1119 D	N12	W85	5552	57 D	1	2	0928	2.29	8.70	60	
{KHARKOV	07	1107 E	1138 D	N25	E63	5566	31 D	1	2	1111	5.71	12.00		
{KIEV	07	1134	1146	N13	W85	5552	12	1			3.40			
{KHARKOV	07	1138	1146 D	N12	W85	5552	8 D	1+	2	1142	3.43	13.00		
KYOTO	08	0432 E	0445 D	N10	W85	5552	13 D	1		0432	3.32		120	
VOROSHILOV	09	0018 E	0040	S17	W60	5560	22 D	1	2	0021	1.27		79	
VOROSHILOV	09	0024	0218 D	S15	W37	5562	114 D	1+	2		3.44		100	
PIRCULI	11	0646 E	0720	S19	W63	5562	34 D	1	3	0656	2.48	5.26	52	
PIRCULI	11	0737	0747	S15	W69	5562	10	1	3	0740	1.10	3.01	50	
PIRCULI	12	0620	0643	S19	W76	5562	23	1+	3	0626	1.84	6.27	58	
PIRCULI	12	0710	0750	S23	E40	5572	40	1	3	0717	1.93	2.61	50	
KYOTO	13	0432 E	0505	N12	E26	5570	33 D	1		0436	2.08		140	
PIRCULI	13	0950	1008	N11	E25	5570	18	1	2	0957	2.75	3.28	50	
PIRCULI	13	1000	1033	S25	E23	5572	33	1	2	1017	3.21	3.63	52	
PIRCULI	13	1042 E	1055	N14	E17	5570	13 D	1	2	1044	1.84	2.08	50	
PIRCULI	13	1055	1102	N23	W23	5566	7	1	2	1058	2.30	2.94	52	
PIRCULI	13	1056	1110	S24	E23	5572	14	1	2	1101	1.84	2.08	53	
KYOTO	19	0536	0603 D	N09	W17	5574	27 D	1		0536	9.97	1.49	100	
KYOTO	23	0033	0037 D	N07	E38	5581	4 D	1		0033	2.91	1.33	100	
PIRCULI	23	0712 E	0947 D	S20	E25	5580	155 D	1+	2	0723	9.18	10.40	62	
KYOTO	23	2337	0027	N06	E48	5561	50	1		2347	1.45	1.50	80	
VOROSHILOV	24	0040	0122	S21	E14	5580	42	1	2		2.62		70	

SOLAR FLARES

FEBRUARY 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA-TION MINUTES	IM-FOR-TANCE	OBS. COND.	TIME	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	APPROX. MER. DIST.	MAGNITUDE					MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hc	
	FEB 1960													
KYOTO	24	0048	0058	S21 E13		5580	10	1		0055	4.57		1.58	100
KYOTO	24	0524		N05 E22		5581	□	1		0524	3.74			100
KYOTO	24	2321	0010	S22 E00		5580	49	1		2321	3.12			100
KYOTO	25	0600	0610 D	N11 E35		5584	10 D	1		0600	1.87			100
PIRCULI	25	0755 E	0807 D	S19 W06		5580	12 D	1+	2	0800	9.18	9.56		59
KYOTO	26	0127	0140 D	N08 E22		5584	13 D	1		0127	5.82		1.32	100
PIRCULI	26	0700	0955	S24 W13		5580	175	3	2	0716	22.04	25.10		77
SIMEIZ	26	0713 E	0845 D	S21 W18		5580	92 D	2	1	0713	13.61	14.50		88
PIRCULI	26	0845 E	0945	S10 E76		5587	60 D	1+	2	0849	1.84	6.50		56
PIRCULI	28	1018 E	1037	N14 W10		5584	19 D	1	2	1021	1.84	2.01		60

These flares are additional addenda to the January 1960 flares published in CRPL-F 186 Part B, February 1960.

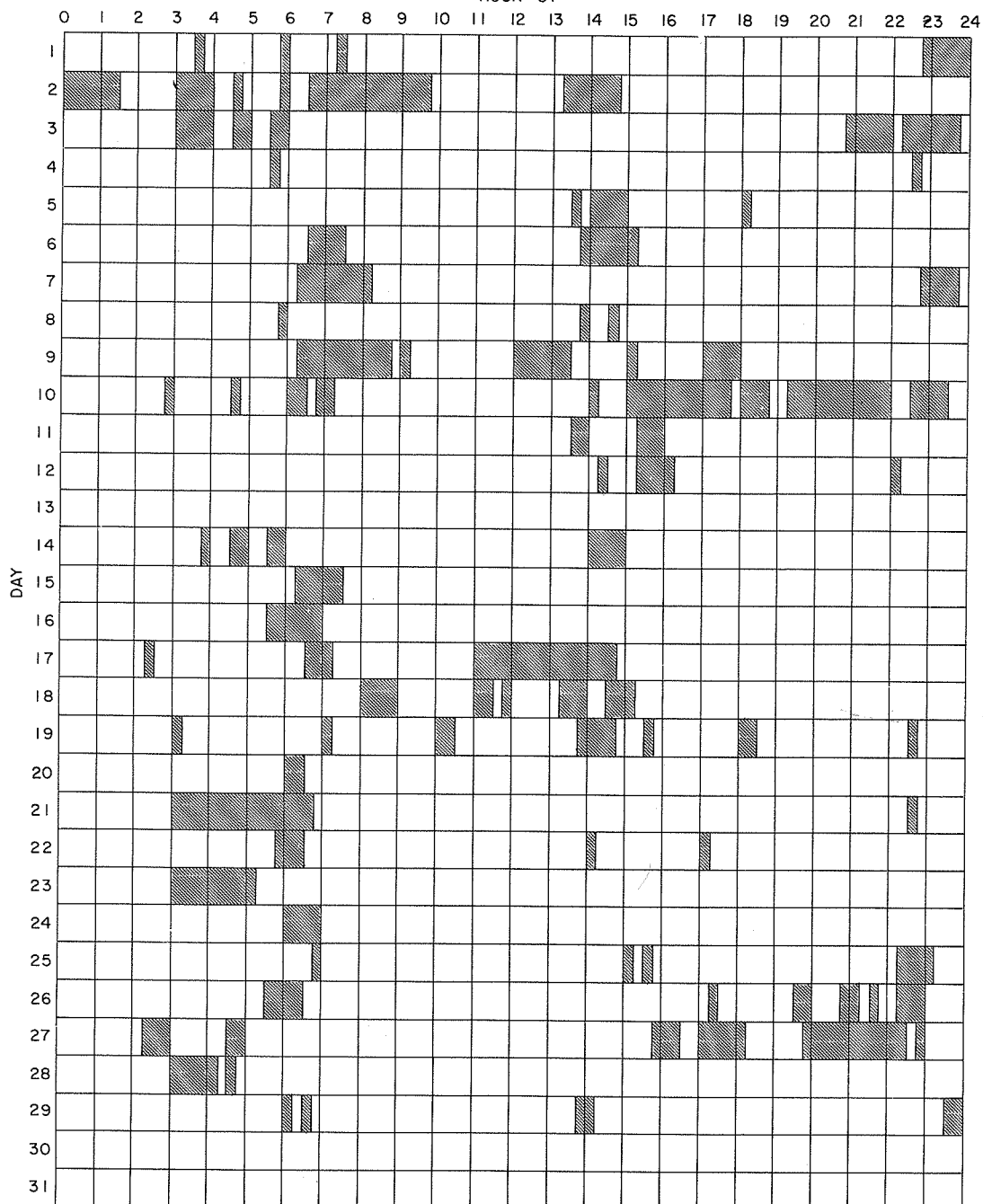
ABASTUMANI, USSR PIRCULI, USSR E - LESS THAN & - PLUS
 KIEV, USSR SIMEIZ, CRIMEA, USSR D - GREATER THAN - - MINUS
 KYOTO, JAPAN VOKOSHILOV, USSR U - APPROXIMATE □ - NOT RECORDED

COMMERCE - STANDARDS - SOULDER

INTERVALS OF NO FLARE PATROL OBSERVATIONS (AMENDED)

IIIr

FEBRUARY 1960
HOUR-UT



Stations Include:

COMMERCE - STANDARDS - BOMLBER

- | | | | |
|--------------------|------------|------------|-----------------------------|
| Alma Ata | Huancayo | McMath | Royal Greenwich Observatory |
| Anacapri (Swedish) | Kharkov | Meudon | Herstmonceux |
| Arcetri | Kiev GAO | Mitaka | Sacramento Peak |
| Athens | Kodaikanal | Moscow - G | Simeiz |
| Dunsink | Kyoto | Nizamiah | Uccle |
| Good Hope | Lockheed | Pirculi | Voroshilov |

SOLAR FLARES

MARCH 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURA-TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT.	MER. DIST.	MAGN. PHASE REGION				TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hc	
{ MEUDON GOOD HOPE	01	1237	1254 D		N22 W08		5586	17 D	1		2.20	2.50	1.66	110	SLOW S-SWF
	01	1241 E	1307		N22 W09		5586	26 D	1				3.49	120	
{ KYOTO MITAKA	02	0033 E	0041		N22 W13		5586	8 D	1	1	1.66	7.30	6.03	63	S-SWF
	02	0037 E	0055		N21 W14		5586	18 D	1+	2	6.03	3.60	2.44	90	
{ VOROSHILOV KRASNAYA	02	0036	0040	0038	N08 W74		5581	4	1+	2	3.60	3.60	5.21	60	S-SWF
	02	0924	1006	1038	S11 E12		5587	42	1+	2	5.21	3.20	9.78	101	
{ PIRCULI PIRCULI	02	0925	1020	0946	S10 E13		5587	55	1+		2.72	3.20	2.72	95	S-SWF
	02	1015	1147 D	1107	N25 W20		5586	92 D	2						
{ KRASNAYA MEUDON	02	1102	1130 D	1105	N20 W21		5586	28 D	1+	2					S-SWF
	04	1505	1525	1510	N03 E75		5591	20	1+						
{ VOROSHILOV PIRCULI	05	0023 E	0044 D		N12 W85		5584	21 D	1+	2	.63	12.00	15.30	85	S-SWF
	05	0910 E	0935 D	0910 U	S07 E80		5593	25 D	2		6.24	6.00	6.24	50	
{ PIRCULI PIRCULI	05	0922	0935 D	0926 U	S00 E65		5591	13 D	1		7.33	2.00	7.33	53	S-SWF
	05	0930 E	1044 D	0930 U	N09 E50		5590	74 D	1+						
{ MEUDON GOOD HOPE	06	0940	1020 D		N22 E60		5592	40 D	1						S-SWF
	06	0950 E	1000	1055	S08 E62		5593	16 D	1		.90	2.20	1.00	77	
{ GOOD HOPE GOOD HOPE	06	1052	1106 D	1059	N23 E62		5592	14 D	1		4.25	2.50	4.25	80	S-SWF
	06	2304	0031	2318	S24 W26		5587	87	1						
{ MEUDON GOOD HOPE	07	0919	0942	0924	N13 E74		5595	23	1	2	1.10	12.00	1.10	80	S-SWF
	07	0921	0930	1228	N09 E73		5595	9	1+	2	4.00	3.00	4.00	74	
{ UCCLLE UCCLLE	07	1228	1244	1228	N09 E72		5595	16	1	4	2.00	6.00	2.00	71	S-SWF
	09	0923	0950	0927	S10 W68		5587	27	1		.90	2.50	.90	80	
{ GOOD HOPE GOOD HOPE	09	1104	1116	1109	S10 W69		5587	12	1		1.00	2.90	1.00	80	S-SWF
	09	1227	1243	1231	S10 W69		5587	16	1		1.00	2.90	1.00	80	
{ GOOD HOPE GOOD HOPE	09	1257	1308 D	1304	S10 W69		5587	11 D	1		1.00	2.90	1.00	80	S-SWF
	10	0816	0836	0818	S06 E01		5593	20	1	2	1.80	3.00	1.80	80	
{ SIMEIZ UCCLLE	10	0926	0945	0928	N27 E38		5595	19	1	3	2.00	3.00	2.00	80	S-SWF
	10	1043	1052		N19 E75		5598	9	1	1					
{ NIZAMIAH KIEV	11	0344 E	0352 D	0347	N22 E04		5592	8 D	1	2	2.43	3.19	2.43	102	S-SWF
	11	1055	1130	1115	N25 W02		5592	35	1		1.96	3.00	1.96	80	
{ KRASNAYA GOOD HOPE	11	1056	1121	1104	N22 W12		5592	25	1	2	2.27	3.00	2.27	80	S-SWF
	12	0815 E	0840	0817	S08 W15		5593	25 D	1		2.30	2.40	2.30	56	
{ GOOD HOPE GOOD HOPE	12	0950	1022	0954	N12 W86		5588	32	1		.50	2.40	.50	74	S-SWF
	13	0032 E	0043		S11 E90		5600	11 D	1	1	1.01	2.20	1.01	74	
{ MITAKA MITAKA	13	0210	0243		S11 E89		5600	33	1	1	1.01	2.20	1.01	74	S-SWF
	13	0750 E	0830 D	0756 U	N03 W33		5591	40 D	1	1	1.90	2.37	1.90	56	
{ ABASTUMANI SIMEIZ	13	0800 E	0845 D		N01 W35		5591	45 D	1	1	1.80	2.20	1.80	56	S-SWF
	14	0010	0045	0014	N10 W42		5591	35	1	2	1.63	2.20	1.63	74	
{ VOROSHILOV VOROSHILOV	14	0052	0124	0057	N10 W43		5591	32	1	2	1.54	2.20	1.54	71	S-SWF

SOLAR FLARES

MARCH 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION			DURA-TION MINUTES	IM-POR-TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT
		START	END	LAT.	APPROX. MER. DIST.	PLAGE REGION				TIME U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _z	
{ PIRCULI SIMEIZ GOOD HOPE	14	0655	0950 D	S11 W43	5593	175 D	2	2	21.50	12.00	1.50	61	S-SWF	
	14	0731 E	0820 D	S10 W44	5593	49 D	1+	1	9.07	4.20	2.22	63		
	14	0740	0817	S09 W42	5593	37	1	1	3.10		2.38			
MITAKA	15	0308	0323	S10 W49	5593	15	1	1	2.51	3.67	96	S-SWF		
	15	0511 E	0526 D	S11 E58	5600	15	1	1	1.50	1.50	96			
	15	0549 E	0627 D	S02 W60	5593	38 D	1+	1	7.87	7.87	51			
{ PIRCULI PIRULI GOOD HOPE	15	0549 E	0740 D	S08 W60	5593	111 D	1+	1	7.87	7.87	50	S-SWF		
	15	0717 E	0928 D	S09 E58	5600	131 D	1	1	5.23	5.23	59			
	15	1240	1248	N23 W60	5592	8	1	1	.90	2.30				
GOOD HOPE	19	0902 E	0915	N12 W90	5595	13 D	1	4	.80			S-SWF		
	19	1446	1520	N24 E58	5607	34	1	1						
KHARKOV	21	1043 E	1051	N25 E37	5607	8 D	1	1	6.00	8.00	1.50	S-SWF		
	21	1520	1547	N19 E33	5607	27	2	4						
{ GOOD HOPE LUCCLE	22	0856	0926	N24 E77	5611	30	1	3	.90			S-SWF		
	22	0909 E	0916	N25 E80	5611	17	1	2	.90	2.10	65			
	22	0901	0911	N19 W60	5599	10	1	2	.90	2.00				
{ KRASNAYA KHARKOV	22	0901	0915 D	N21 W59	5599	14 D	1	2	4.57	10.20	2.00	S-SWF		
	22	0909 E	0936	N20 W60	5599	27 D	1	3						
	22	0633	0743	N09 E05	5606	70	1	2	2.65	2.80	54			
{ ALMA-ATA GOOD HOPE	23	0633	0744	N11 E01	5606	71	1	2	3.64	3.90	54	S-SWF		
	23	0636	0704	N11 E03	5606	28	1	2	2.90	3.00				
	24	0645	0720 D	N20 W32	5604	35 D	2	1	4.31	5.80	84			
ALMA-ATA	24	1003	1040	N18 W33	5604	37	1+	4	1.14	3.20	1.70	S-SWF		
	24	1127	1133 D	S26 E74	5612	6 D	1	4						
	25	0927	0942	N19 W45	5604	15	1	1	1.70	2.70	72			
GOOD HOPE	25	0946	1026	N19 W45	5604	40	1	1	1.70	2.70	120	S-SWF		
	26	0558 E	0611 D	N16 W60	5604	13 D	1	1	6.92	6.14	107			
	26	0558 E	0611 D	S13 E03	5609	13 D	1	1	5.57	2.49	80			
KHARKOV	26	1000 E	1007 D	S13 W82	5600	7 D	1	4	.52	2.70	81	S-SWF		
	26	2240 E	2342	N24 W02	5610	62 D	1	3	2.35	3.00	95			
	27	0153 E	0200	N20 W46	5607	7 D	1+	2	3.72	5.00	85			
MITAKA	27	0407 E	0438	N20 W49	5607	31 D	1	1	1.51	6.10	120	S-SWF		
	27	0557 E	0912 D	N22 W46	5607	135 D	3	1	26.40	2.49	107			
	27	0734 E	0830 D	N20 W52	5607	56 D	1	2	2.26	4.20	81			
{ SIMEIZ KRASNAYA	27	0737 E	0749 D	N20 W53	5607	12 D	1+	2	2.70	5.00	95	S-SWF		
	27	0801 E	0853 D	N22 W44	5607	52 D	1	2	1.82	3.00	85			
	27	0836 E	0923	N23 W48	5607	47 D	2	2	3.10	5.30				
GOOD HOPE	27	0911	0933	S25 E44	5612	22	1	1	1.50	2.10	57	S-SWF		
	28	0555 E	0800 D	N12 E45	5615	125 D	1	2	3.32	5.10				
GOOD HOPE	28	0729	0753	N19 W82	5604	24	1	1	.90			S-SWF		

SOLAR FLARES

MARCH 1960

OBSERVATORY	DATE MAR 1960	OBSERVED UNIVERSAL TIME		LOCATION			DURA TION - MINUTES	IM- POR- TANCE	OBS. CORR.	TIME - UT	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT		
		START	END	APPROX. LAT.	MER. DIST.	MCNATH REGION					MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _z		MAX. INT. %	
SIMEIZ	28	0838	0855	D	0841	N18 W70	5607	1	1	0841	1.08	3.30		70	S-SWF	
	{	29	0640	E	0713	N12 E30	5615	185	D	2+	0703	24.60	4.30			114
		29	0650	D	0703	N13 E33	5615	32	D	1+	0703	3.32	4.30			81
{	29	0656	1016	D	0711	N12 E31	5615	200	2+	0746	10.88	13.86	3.40	108		
	29	0835	0845	D	0837	N12 E30	5615	10	D	2	0837	5.80	7.10		122	
{	29	0804	0820	D	0809	N25 W74	5607	16	1+		9.51	6.74		62		
	29	0837	0847	D	0842	N22 W70	5607	10	D	2	1.63			76		
{	29	0837	0931	E	0851	N22 W77	5607	54	D	2	14.00	9.22		76		
	29	0959	1012	D	1001	N19 W86	5607	13	D	2	1.82			76		
MITAKA	30	0125	0132	E		N17 W86	5607	7	D	1	1.01		2.60	134	S-SWF	
	30	0216	0240	E	0219	N09 E15	5615	24	1+	0218	6.03	6.63	3.57	120		
{	30	0717	0754	D	0725	N12 E22	5615	37	1	0725	4.50	5.10		64		
	30	0719	0800	D	0736	N11 E18	5615	41	D	2	0736	4.71	5.30		118	
{	30	0856	0907	D	0901	N10 E20	5615	11	D	2	0901	2.26	2.50		74	
	31	0442	0543	E	0505	N13 E04	5615	61	D	2	0505	5.66	6.10		66	
{	31	0442	0545	E	0508	N08 E02	5615	63	D	2	0508	2.65	2.80		70	
	31	0655	0715	E	0709	S13 W61	5609	20	1+		8.06			64		
{	31	0700	0716	D	0702	S11 W61	5609	16	1	0702	1.20	2.50		57		
	31	0715	0826	D	0734	N11 E02	5615	71	D	1+	11.80			108		
{	31	0800	0805	D	0805	N09 E01	5615	5	D	1	0805	1.17	1.20		57	
	31	0806	0807	D		N12 E04	5615	1	D	1	0806	3.00	3.10		108	
MEUDON	31	0840	0920	D		N13 E03	5615	40	D	1						
	31	1116	1326	D	1228	N10 W00	5615	130	D	2	10.40			66		

These flare reports are addenda to the March 1960 flares published in CRPL-F #188, Part B, April 1960.

COMMENCE - STANDARDS - BOLDER

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

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

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

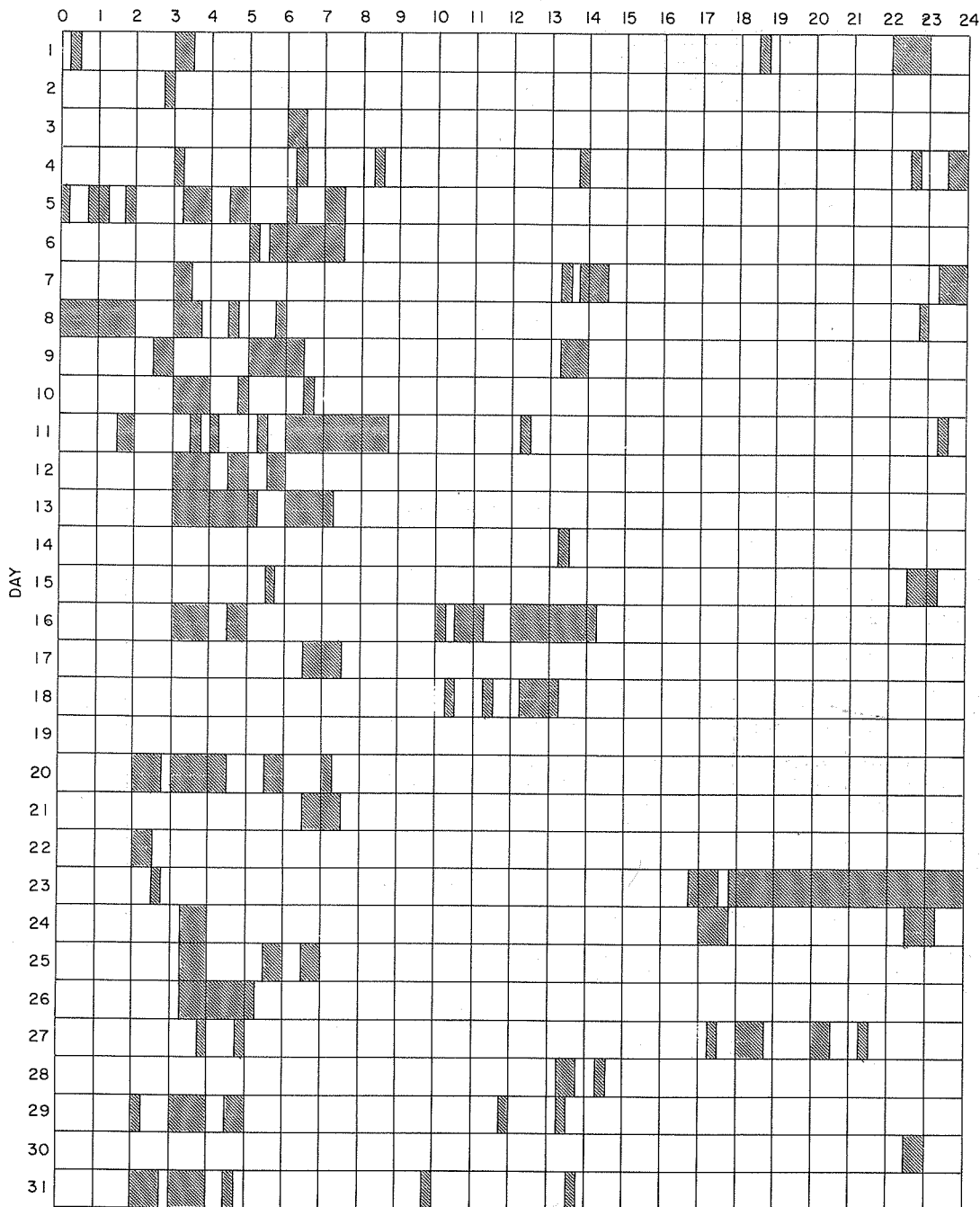
E - LESS THAN & - PLUS
 D - GREATER THAN - - MINUS
 U - APPROXIMATE □ - NOT REPORTED

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
(AMENDED)

MARCH 1960

HOUR-UT



Stations Include:

COMMERCE - STANDARDS - BOULDER

Abastumani
Alma Ata
Anacapri (Swedish)
Arcetri
Athens
Good Hope
Hawaii

Huancayo
Kharkov
Kiev GAO
Kodaikanal
Krasnaya Pakhra
Kyoto
Lockheed

McMath
Meudon
Mitaka
Moscow G
Nizamiyah
Ondrejov
Pirculi

Royal Greenwich Observatory
Herstmonceux
Sacramento Peak
Simeiz
Uccle
Voroshilov

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

MAY 1960

May 1960	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F 190B
4	1015	1050	S-SWF	5	3	KU, <u>NE</u> , SW, CW***	1015
5	0305	0354	Slow S-SWF	5	1+	<u>AD</u> , AN, OK	*
6	1346	1400	S-SWF	5	1	<u>BE</u> , HU, MC, PR	
6	1427	1658	Slow S-SWF	5	3	<u>BE</u> , BO, <u>FM</u> , HU, MC, NE, PR, WS	1404
9	0208	0320	Slow S-SWF	1	2+	<u>OK</u>	*
9	0700	0838	Slow S-SWF	1	2	<u>OK</u>	0704E
9	1220	1315	Slow S-SWF	5	2-	<u>BE</u> , FM, HU, <u>MC</u>	
9	2325	2340	S-SWF	3	1	<u>OK</u> , TO	2310
10	0208	0238	S-SWF	1	1	<u>OK</u>	*
11	1402	1435	Slow S-SWF	5	1	BO, FM, HU, <u>MC</u> , PR	1338
11	2052	2104	S-SWF	5	1	AD, BE, <u>MC</u> , PR	2050
11	2105	2155	Slow S-SWF	5	2+	AD, BE, BO, FM, HU, LA, <u>MC</u> , OK, PR, TO, WS	2050
12	0220	0242	S-SWF	1	1-	<u>OK</u>	*
12	0833	0853	Slow S-SWF	3	2	<u>BR</u> , SW	0817E
12	1120	1132	Slow S-SWF	3	1+	<u>BR</u> , <u>NE</u>	*
12	1348	1722	Slow S-SWF	5	3	FM, HU, LA, MC, NE, PR, SW, WS, CW***, CW***	1310E
13	0512	0853	S-SWF	5	3+	AD, CA, NE, <u>OK</u> , PU, SW, TO, CW***, CW***	0522E
14	0348	0430	S-SWF	1	1-	<u>OK</u>	*
15	0312	0640	S-SWF	5	3	AD, AN, <u>OK</u>	*
15	1518	1530	S-SWF	5	1	BE, BO, FM, HU, <u>MC</u> , PR	1412
16	0510	0550	Slow S-SWF	1	1	<u>OK</u>	*
17	0205	0232	S-SWF	5	1	AD, AN, <u>OK</u>	*
17	0418	0445	S-SWF	1	1	<u>OK</u>	*
24	2225	2253	G-SWF	4	1+	<u>AD</u> , BO, FM	
25	0230	0325	S-SWF	5	2	AD, AN, <u>OK</u> , TO, CW+	*
25	0450	0520	Slow S-SWF	1	1	<u>OK</u>	0454E
25	0647	0728	Slow S-SWF	1	1-	<u>OK</u>	*
25	1755	1920	G-SWF	5	2-	AN, <u>BE</u> , HU, MC, WS	1752
26	0914	1000	S-SWF	5	2	<u>BR</u> , JU, NE, PU, SW, CW***	0818
27	1415	1445	Slow S-SWF	5	1+	<u>BE</u> , FM, MC, PR, PU, WS	1414
27	2128	2140	S-SWF	5	1	AD, AN, BE, BO, LA, <u>MC</u> , OK, PR, WS	2125
28	1410	1440	S-SWF	5	1+	BE, FM, HU, <u>MC</u> , NE, PR	1357
29	0739	0754	S-SWF	5	1	NE, OK, <u>PU</u>	0725E
30	0635	0705	S-SWF	1	1-	<u>OK</u>	*
30	0950	1008	S-SWF	1	2	<u>PU</u>	*
30	1800	1822	S-SWF	4	1-	BE, <u>MC</u> , PR, WS	1802
31	2115	2133	S-SWF	5	1+	AD, <u>BE</u> , HU, LA, MC, PR, WS	2100E

BR = Breisach, G.F.R.

CA = Canberra, Australia

JU = Juhlesruh, G.D.R.

KU = Kuhlungsborn, G.D.R.

LA = Los Angeles, Calif.

NE = Nederhorst den Berg, Netherlands

PU = Prague, Czechoslovakia

SW = Enköping, Sweden

TO = Hiraizo 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

COMMERCE - STANDARDS - BOULDER

IONOSPHERIC EFFECTS OF SOLAR FLARES

IIIx

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

MAY 1960

May 1960	CLASS			WIDE SPREAD INDEX	TIME (UNIVERSAL TIME)		PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN	MAX. END		
1			1	4	1610		1612	<u>BO</u> , MC
1			1	4	1633		1636	<u>BO</u> , MC
1			1	4	1741		1742	<u>BO</u> , MC
1			2	4	1748		1755	<u>BO</u> , MC
1			1	4	1821		1823	<u>BO</u> , MC
2			1	4	1450		1505	<u>BO</u> , MC
3		1		3	1027	1031	1058	<u>A1</u> , A5
3		1+		3	1240	1252		<u>A1</u> , A3, A5
3		2		3	1302	1319	1340	<u>A1</u> , A3, A5
3			1	5	1917		1923	<u>BO</u> , HA, MC
4		1		3	1016	1029	1125	<u>DU</u> , NE
4			1	1	1029		1034	<u>RE</u>
4			2	4	1600		1617	<u>BO</u> , MC
{ 6		2		5	1430	1453	1630D	<u>A1</u> , A2, A3, A9, <u>BO</u> , DU, MC, NE
{ 6			3	4	1431		1440	<u>BO</u> , MC
{ 6	3			4	1440E		1615	<u>BO</u> , MC
6		1-		3	1725	1730	1745	A1, <u>A2</u>
{ 6	2			1	1832	1854	2020	55 <u>BO</u>
{ 6		2		5	1835			<u>A2</u> , <u>BO</u> , MC
{ 6	3			1	2206	2255		75 <u>BO</u>
{ 6		2		1	2208	2305		<u>BO</u>
7			1	4	1829		1830	<u>BO</u> , MC
7			1	5	2028		2029	<u>BO</u> , HA, MC
7			1	5	2046		2048	<u>BO</u> , HA, MC
9			1	4	1855		1857	<u>BO</u> , MC
9			1	5	1928		1931	<u>BO</u> , HA, MC
9			1	4	2148		2150	<u>BO</u> , HA
9			1	5	2158		2202	<u>BO</u> , HA, MC
{ 9	1			4	2326	2332	2345	25 <u>BO</u> , MC
{ 9			1	5	2348		2351	<u>BO</u> , HA
{ 11	3			5	2050	2119	2210	60 <u>BO</u> , HA, MC
{ 11		3		5	2051	2125	2220	A9, <u>BO</u> , MC
12		1+		3	0947	0953	1040	A1, A3, <u>A10</u>
{ 12	2			4	1345	1410		40 <u>BO</u> , MC
{ 12		2		5	1345	1404	1531	<u>A1</u> , <u>BO</u> , <u>DU</u> , MC
12		1+		3	1440	1450	1515D	<u>A1</u> , <u>A10</u>
12			1	1	1455		1500	<u>RE</u>
12			1	4	1640		1651	<u>BO</u> , MC
12			2	5	1748		1751	<u>BO</u> , MC, RE
12			1	5	2212		2214	<u>BO</u> , HA
{ 13				1	0520			<u>CO</u>
{ 13				1	0522	0537	0601	<u>DU</u>
13		2		4	1520		1605	<u>BO</u> , MC (Series of bursts)
13		1		4	1758		1915	<u>BO</u> , MC (Series of bursts)
13			1	5	2035		2048	<u>BO</u> , HA, MC
13			1	5	2138		2144	<u>BO</u> , HA, MC
13		2		5	2153		2202	<u>BO</u> , HA, MC

IONOSPHERIC EFFECTS OF SOLAR FLARES

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

MAY 1960

DATE	CLASS			DEFINITENESS	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	REMARKS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
14			2	5	1300E		0200D		BO, <u>MC</u> , HA (Noise storm) Strong peaks at 1435, 1502, 1522, 1547, 1650, 1827, and 2040.
15			2	5	1300E		0200D		BO, <u>MC</u> , HA (Noise storm) Peaks at: 1520, 1808, 1947, 2152, 2308, and 2320.
15	1			4	1524	1527	1540	20	BO, MC
15		1-		5	1525	1527	1558		<u>A1</u> , A3, A9
16		3		3	1310	1323			<u>A1</u> , A3, <u>A5</u>
16			1	1	1455		1459		<u>RE</u>
16		2+		3	1900	1925			A3, <u>A5</u>
17			2	4	1743		1751		BO, MC
17			3	4	1757		1900		BO, <u>Mc</u> (Noise storm)
18			1	5	1300U		0200U		BO, HA, MC, (Noise storm) peaks at 1752 and 2110.
19			2	4	1610		1615		BO, MC
19			1	4	1801		1803		BO, MC
19			2	5	1914		1921		BO, HA, <u>MC</u>
19			2	5	1957		2011		BO, HA, <u>MC</u>
19			2	5	2245		2300		BO, <u>HA</u>
20			1	5	1300E		0200D		BO, HA, MC, RE (Noise storm)
21			1	5	1300E		0200D		BO, HA, MC (Noise storm)
23			1	5	1938		1943		BO, HA, MC
23			1	5	2043		2045		BO, HA, MC
23			1	4	2132		2134		BO, MC
24		2		1	0627		0742		<u>JU</u>
25			1	1	0226		0228		<u>HA</u>
25	1		1	1	0228	0233	0250	25	<u>HA</u>
25		2		1	0231		0331		<u>HO</u>
25			2	5	1300E		0200D		BO, HA, MC, RE (Noise storm)
26		□		1	0908	0934	1024		<u>DU</u>
26			2	5	1300E		0200D		BO, HA, MC, RE (Noise storm)
27			2	5	1300E		0200D		BO, HA, MC, RE (Noise storm)
27		1+		5	1417	1437			A1, A3, A5, <u>BO</u> , DU
27	1		2	4	1418		1428		BO, MC
27			1	1	1428	1430		10	<u>BO</u>
27		1		3	2017	2022	2045D		A1, A3, <u>A5</u> , A10
27		1+		4	2129	2135U	2200		A2, A3, A5, A6, <u>A10</u>
27	1		5	5	2130	2133	2155	25	BO, HA
28		1		5	1413	1425	1445		A3, <u>BO</u> , DU, MC
28	1		4	4	1414	1420	1440	15	BO, MC
29			1	4	1542		1547		BO, MC
30			1	5	1647		1649		BO, MC, RE
30			2	5	1706		1712		BO, MC, RE
30			2	5	2042		2047		BO, HA, MC, RE
30			3	5	2242		2245		BO, HA, MC, RE
31		□		1	0717	0703	0746		<u>DU</u>
31			1	4	1850		1858		BO, MC
31			1	5	2017		2024		BO, HA, MC
31	1		5	5	2116	2123	2140	20	BO, HA, MC

COMMERCE - STANDARDS - BOULDER

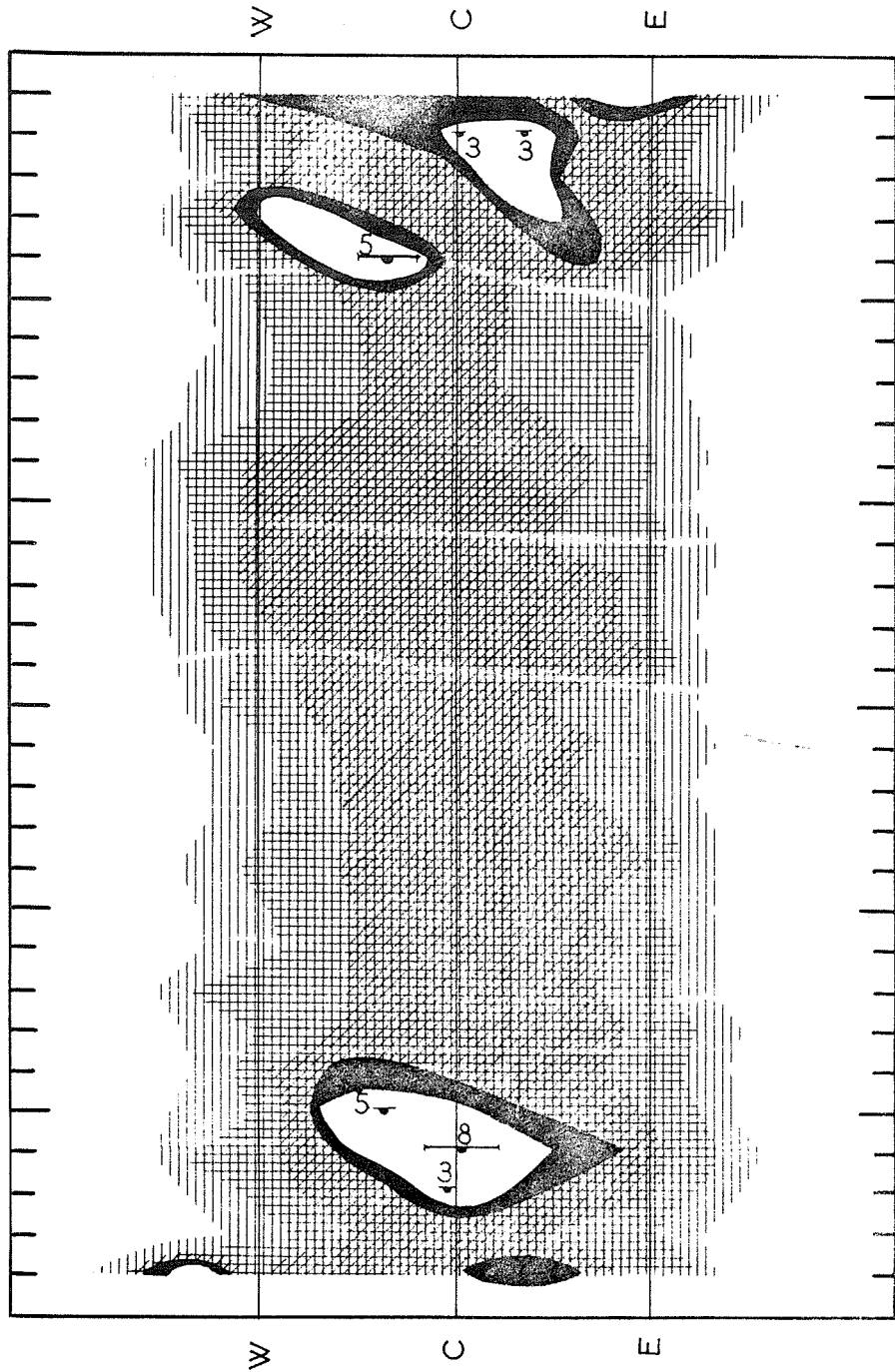
Notes: CO = College, Alaska.
Sacramento Peak had no usable record for May 1960.

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

Nancay

JUNE 1960

169 Mc



JUNE 1960

30

25

20

15

10

5

W

C

E

W

C

E

W

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

Ottawa

JUNE 1960

2800 Mc

June 1960	Type*	Start UT	Duration (minutes)	Peak Flux		Remarks
				TLV UT	Peak Flux	
1	4 Post Increase	b1045	>3 15		25*	*Maximum reached during this period
1	6 Complex	2003	16	2005.5	9	
1	1 Simple 1	2149	5	2151	3	
3	1 Simple 1	1348	3	1349	3	
4	2 Simple 2	2100.5	2	2101.3	9	
5	8 Group (2)	2218	>1 34			
	1 Simple 1	2218	7	2221.5	7	
	6 Complex	2241	16	2245	25	
	4 Post Increase		>55		5	
6	2 Simple 2	2231	4	2232.7	9	
8	8 Group (2)	1750	1 54			
	3 Simple 3A	1750	50	1817	10	
	2 Simple 2	1753	3.5	1754	35	
	3 Simple 3	1854	50	1918	5	
8	1 Simple 1	2032.5	1.5	2033	7	
8	1 Simple 1	2118.5	3.5	2119.5	6	
9	3 Simple 3	1615	15	1620	4	
9	6 Complex	2023	20	2039	50	
	4 Post Increase		2 10		10	
9	2 Simple 2 f	2315	5	2315.8	23	
	5 Absorption	2320	35		-5	
10	2 Simple 2	1439.5	5	1441	10	
10	1 Simple 1	1933	3	1933.5	7	
10	3 Simple 3A	1949	40	indet.	5	
	2 Simple 2	1952.5	7	1954	12	
11	1 Simple 1	2025.5	1	2026	4	
11	3 Simple 3	2220	25	2230	5	
13	2 Simple 2	1709.5	6	1712	77	
	4 Post Increase		45		5	
14	6 Complex f	0004.5	12	0010	235	
	4 Post Increase		>10		7	In sunset oscillations.
14	2 Simple 2	1043	4	1044.5	35	In sunrise oscillations.
	4 Post Increase		10		8	
14	3 Simple 3	2215	25	2222	5	
18	1 Simple 1	1750.5	4	1751.5	5	
19	6 Complex f	1331	14	1332	110	
21	1 Simple 1	2314	3	2315.5	5	
25	2 Simple 2f	1026	5	1026.9	650	In sunrise oscillations.
25	6 Complex f	1148	1 28	1208.5	425	
	4 Post Increase		3 44		20	
25	2 Simple 2f	1701	15	1705	160	
	4 Post Increase		1 00		8	
25	2 Simple 2	1950	6	1951.3	13	
25	7 Period Irregular Activity	2037	40	2046	700	
26	3 Simple 3 A	1350	1 10	1417	8	
	6 Complex f	1358.8	14	1408	200	
26	1 Simple 1	1649	2.5	1650	4	
26	2 Simple 2	1802	5	1803.5	55	
26	3 Simple 3 f	2045	1 00	2053.3	10	
26	8 Group (2)	2259.5	8.5			
	2 Simple 2	2259.5	3	2300.5	12	In Interference
	2 Simple 2	2303	5	2305	12	
27	3 Simple 3A	0002	>28	indet.	13	In sunset oscillations
	2 Simple 2	0012	4	0012.8	30	
27	8 Group (2)	1118	9			
	1 Simple 1	1118	2	1118.8	7	In sunrise oscillations
	2 Simple 2	1124	3	1124.5	10	
27	3 Simple 3 A	1148	24	1157	7	
	6 Complex	1149	5	1150.2	30	
	2 Simple 2	1200	2.5	1201	11	
27	1 Simple 1	1713.5	3.5	1715.2	7	
27	2 Simple 2 f	2140	38	2154	140	
	4 Post Increase		>2 00		30	
28	6 Complex f	1215	10	1216.5	30	
28	3 Simple 3 A	1855	1 15	1915	14	
	7 Period Irregular Activity	1858	10	1859	35	
28	2 Simple 2 f	2045	3.5	2047.5	55	

TIMES OF OBSERVATION

OTTAWA

HOURS OF OBSERVATION: APRIL, MAY, JUNE 1960

OBSERVING PERIOD:

April 1200 UT - 2320 UT (approx.)
May 1130 UT - 2345 UT (approx.)
June 1120 UT - 2410 UT (approx.)

with the following exceptions:

- (1) No observations: April 4 - 1825 - 2050
- (2) Observations commenced:
 - April 5 - 1515
 - April 20 - 1520
 - April 21 - 1525
 - April 22 - 1525
 - May 28 - 1445
 - June 13 - 1455
 - June 29 - 1500
 - June 30 - 1505
- (3) Continuous observations on all days have been interrupted for receiver calibration and by sporadic interference.

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
JUNE 1960

BOULDER

167 MC

June 1960	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity	June 1960	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	3	1234.4	1234.8	1.5	2*	19	3	0054.0	0054.0	1.1	2
1	2	1328.9	1328.9	1.6	2	19	3	0056.3	0056.3	0.3	2
1	3	1916.8	1916.8	0.4	2	19	8	1330.0	1332.0	3.0	3
1	3	1919.6	1919.6	0.3	2	19	8	1333.0	1335.8	5.0	3
1	9a	2003.4	2004.3	4.2	2	19	3	1339.2	1339.5	1.0	2
1	9b	2014.0	2019.4	36	2	19	2	1341.0	1344.9	4.5	2
2	3	0023.3	0023.3	0.2	2	19	2	1541.4	1541.4	2.0	2
2	3	1816.8	1817.2	1.5	2	20	3	0128.0	0128.5	2.0	3**
3	3	0040.0	0040.1	0.2	2	20	3	0134.5	0135.9	2.0	2**
3	2	1158.6	1158.6	2.4	2*	20	3	0152.0	0152.3	1.8	2**
3	3	1204.3	1204.7	0.7	2*	22	3	1744.0	1744.0	0.2	2
3	3	1933.6	1933.6	0.3	2	22	2	1752.0	1752.2	1.5	1
3	3	1940.5	1940.5	0.1	2	23	3	0149.0	0149.5	2.0	2**
4	3	0006.5	0006.5	0.1	2	23	3	0151.0	0151.2	1.0	2**
4	6	1130 E		882 D	2	23	2	1240.0	1241.5	4.0	1
6	3	1155.2	1155.2	0.4	2*	23	3	1556.5	1557.0	1.5	3
6	3	1243.0	1243.0	1.0	2*	24	3	1449.0	1449.0	0.8	2
6	3	1458.0	1458.0	0.3	2	24	3	1740.5	1740.5	0.3	2
6	3	1741.1	1741.1	0.1	2	25	3	0116.2	0117.2	1.6	2**
6	3	1823.2	1823.2	0.2	3	25	3	0120.0	0120.0	1.4	2**
6	3	1940.0	1940.0	0.2	2	25	3	1135.9	1135.9	0.9	2*
6	3	1957.0	1957.6	1.1	3	25	9	1156.0	1237.6	209	3*
6	3	2002.5	2002.5	0.3	2	25	9	1700.0	1709.3	37	3
6	3	2141.2	2141.2	0.6	2	25	2	1810.0	1814.0	15	2
6	3	2143.9	2143.9	0.3	3	25	3	1923.8	1923.8	0.3	2
6	3	2153.1	2153.1	0.1	2	25	3	1950.0	1951.0	2.0	3
7	7	2030.0		228 D	2	25	2	2030.0	2031.0	3.0	3
8	3	2032.0	2032.7	1.2	2	25	2	2039.9	2040.0	4.1	3
11	3	1219.9	1219.9	0.4	2*	25	9a	2045.0	2047.0	11	3
11	3	1306.8	1306.8	0.1	2	25	9b	2056.0	2110.8	51	3
11	3	1318.8	1318.8	0.3	2	25	9c	2146.0	2150.0	29	2
11	3	1452.1	1452.1	0.9	2	26	3	0103.3	0103.3	0.3	2**
11	3	1456.5	1456.5	0.6	2	26	6	1125 E		895 D	3
11	3	1534.1	1534.1	0.8	2	26	3	1159.0	1200.5	2.0	2*
11	3	1644.6	1644.6	0.9	2	26	9a	1350.0	1400.0	16	3
11	3	1730.5	1731.0	1.2	2	26	9b	1406.0	1407.0	5	2
11	3	1758.5	1758.5	0.2	2	26	3	1659.6	1701.0	2.4	3
13	3	0029.0	0029.0	0.4	2	27	9a	0005.0	0013.8	10	3
13	3	0032.2	0032.2	0.2	2	27	9b	0015.0	0019.5	40	3
13	3	1216.0	1217.5	2.0	2*	27	3	1148.0	1149.9	2.6	3
13	3	1606.2	1606.2	0.1	1	27	3	1402.0	1402.5	1.0	3
13	2	1708.9	1709.8	4.9	2	27	3	1433.8	1433.8	0.2	2
14	3	0004.5	0005.0	0.8	2	27	6	1730 E	2204	531 D	3
14	2	0006.5	0009.9	5	3	27	9	2146.0	2155.5	74	2
14	3	0205.9	0206.2	0.5	2**	28	6	1601 E		145 E	2
14	3	1215.0	1215.0	0.6	1*	28	8	1215.0	1216.0	9	2*
16	3	0143.5	0143.5	0.4	2**	30	3	1319.5	1319.8	1.0	3
16	3	0155.6	0155.6	0.2	2**	30	3	1510.0	1511.0	1.5	2
18	3	1745.8	1745.8	0.5	2	30	3	1725.0	1725.0	0.3	2
18	2	1750.0	1750.8	2.0	2						

* On sunrise pattern.

** On sunset pattern.

COMMERCE - STANDARDS - BOULDER

TIMES OF OBSERVATIONS

BOULDER

June 1960	U.T.	June 1960	U.T.
1	1132-0207	18	1300-1423 I 2015-2200
2	1128-1445		1438-2200 I 2324-0130
	1612-0209		2324-0219
3	1131-0209	19	1129-0219 I 2230-0045
4	1130-0212 I 0000-0152	20	1130-0219
5	1130-0212 I 1130-1510	21	1130-0219
	I 1715-2130	22	1130-0220
6	1130-0211	23	1130-2224 I 1925-2224
7	1130-0211		2304-0220 I 2304-0220
8	1130-0215 I 1630-2245	24	1130-0220 I 1130-1915
9	1130-0215 I 1845-0100	25	1130-0220
10	1130-0215 I 1915-2200	26	1125-0220
11	1129-0215 I 1845-0145	27	1132-1452
12	1128-0215 I 1830-2100		1730-0221
13	1128-0216	28	1130-1330
14	1128-0217 I 2115-2200		1601-1826
15	1126-0217	29	1315-1400 I 1600-0219
16	1206-0218 I 2100-2350		1515-0219
17	1132-0218 I 2100-0005	30	1132-0220 I 1515-0220

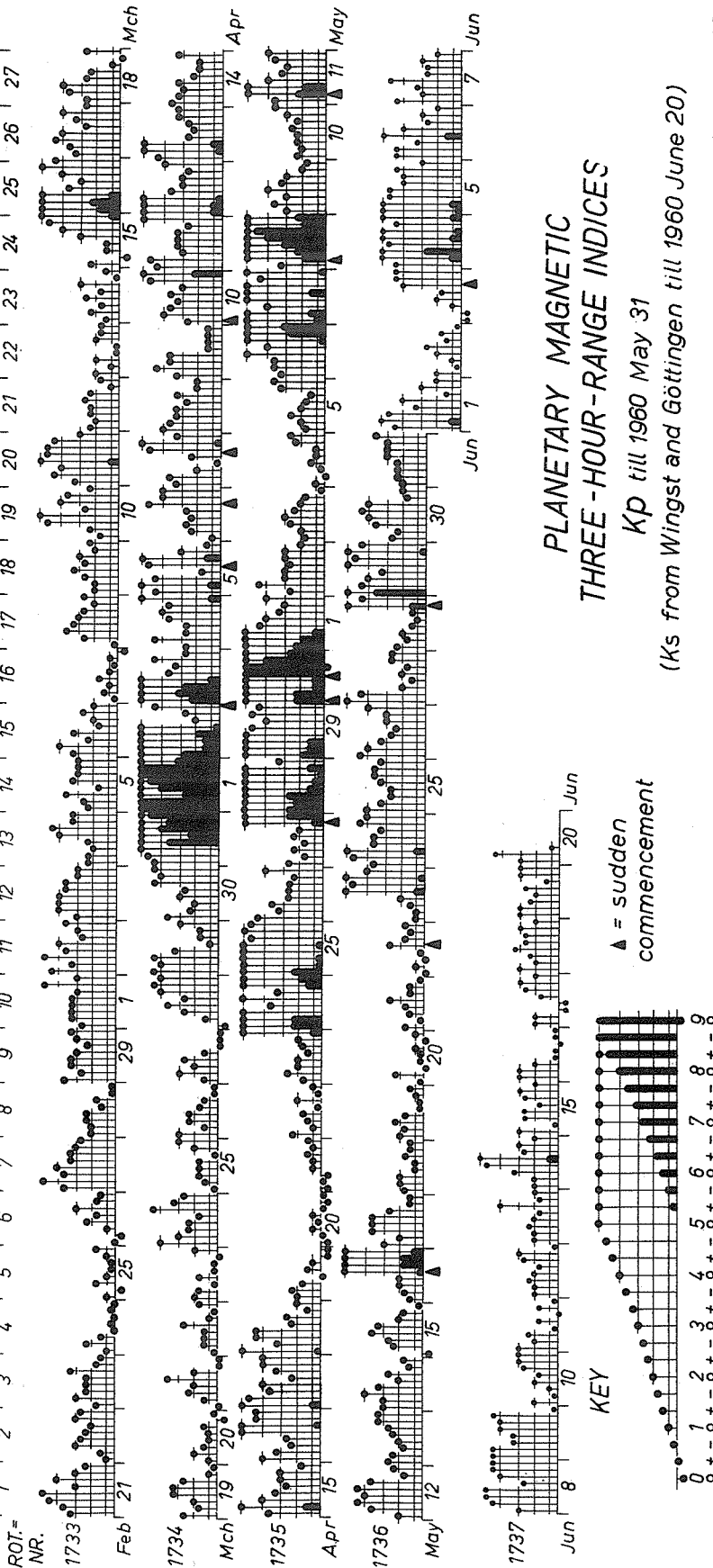
COMMERCE - STANDARDS - BOULDER

GEOMAGNETIC ACTIVITY INDICES

MAY 1960

May 1960	C	Values Kp								Sum	Ap	Final Selected Days
		Three hour Gr. interval										
		1	2	3	4	5	6	7	8			
1	1.4	7-	6+	6-	4+	4o	3+	3o	4o	37+	49	Five Quiet
2	0.7	3-	4+	3o	3o	3-	3o	3o	2o	24-	15	
3	0.3	2-	2o	3-	3o	2+	2o	2-	1-	16o	8	4
4	0.2	1o	0+	1-	1+	1o	1o	2+	3-	10+	5	
5	0.5	2-	2o	3-	2o	2-	1+	3+	4-	18+	10	18
6	1.6	3+	4-	4-	5o	4o	5+	7o	7+	39+	60	19
7	1.5	6-	6o	4o	5o	6o	5o	4+	5+	41+	55	20
8	1.9	3+	6+	7-	7+	8o	8+	6+	7-	53o	128	22
9	1.0	3o	4-	3o	4o	3+	3o	2o	2-	24-	16	Five Disturbed
10	0.7	2+	2o	2+	2+	3-	2+	3o	4-	21-	12	
11	1.3	4-	7-	6+	4o	3+	3o	4-	4o	35-	42	1
12	1.0	2o	4-	4+	4o	4+	4-	2-	2+	26o	20	
13	0.7	3-	2+	2-	2o	2+	3-	3+	3+	20+	11	6
14	0.7	3o	3o	4o	3+	2o	3-	1+	2-	21o	13	
15	0.6	0o	2+	3-	4-	3+	2o	2-	1-	16+	10	7
16	1.3	1+	2-	2o	2o	5+	6+	6+	6-	31-	42	8
17	0.9	3o	2o	4-	4-	4-	3-	1+	1+	21+	14	29
18	0.2	2-	2o	2o	1o	1o	2-	1+	1+	12o	6	5
19	0.2	2o	2-	2+	2-	1-	1-	1o	1+	11+	5	
20	0.1	1-	2+	0+	1-	1-	1o	0+	1o	7o	4	Ten Quiet
21	0.2	2-	1-	1+	2-	3-	1+	1+	1-	11+	6	
22	0.3	0+	1o	0+	1-	3-	2-	1+	2-	10-	5	3
23	1.1	1o	1o	1+	2o	6-	5-	5+	4o	25o	26	
24	1.2	4-	5-	6-	4-	4-	3+	4+	4o	33o	31	4
25	1.1	4o	3+	3-	3-	3+	4-	4-	3+	27-	19	5
26	1.1	4+	4o	3+	3-	2+	3o	3o	4o	27-	19	13
27	0.9	5o	4+	2o	1+	2o	2-	3-	3-	22-	16	15
28	0.9	2+	2-	2o	1+	1o	1+	6o	4+	20o	18	18
29	1.6	8-	4+	4o	3+	5o	5-	5+	4+	39-	54	19
30	1.1	3-	2+	4-	4o	4+	4o	2-	2o	25-	18	20
31	0.9	2o	2+	2+	2+	3o	3o	3o	4-	22-	13	21
												22
Mean:	0.88									Mean:	24	

DAYS IN SOLAR ROTATION INTERVAL



PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES

Kp till 1960 May 31

(Ks from Wingst and Göttingen till 1960 June 20)

J.B.

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS
NORTH ATLANTIC

MAY 1960

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

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

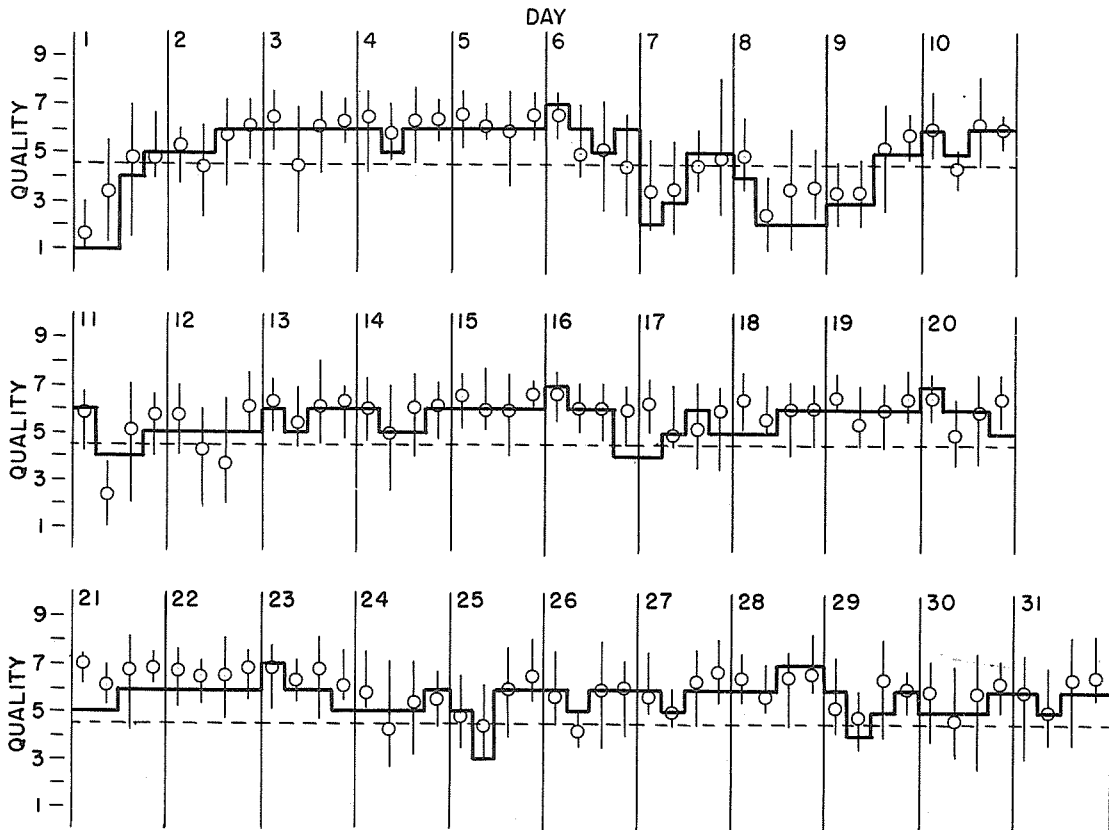
CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS NORTH ATLANTIC

VIb

MAY 1960

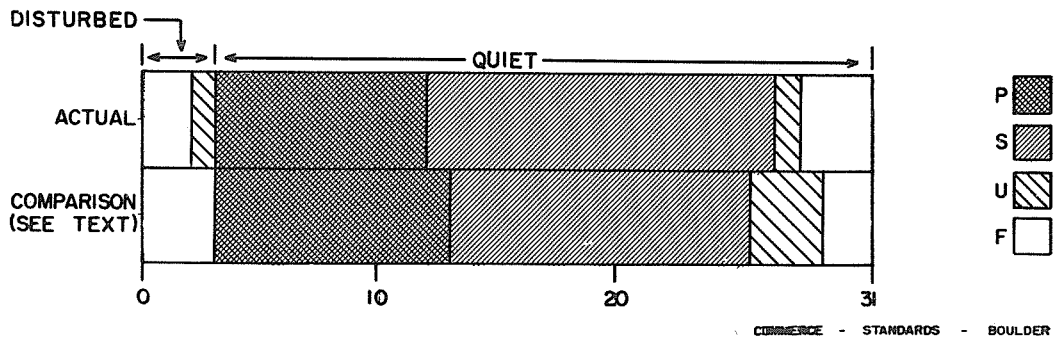
— Short-term forecast
○ Quality figure

| Range of reports



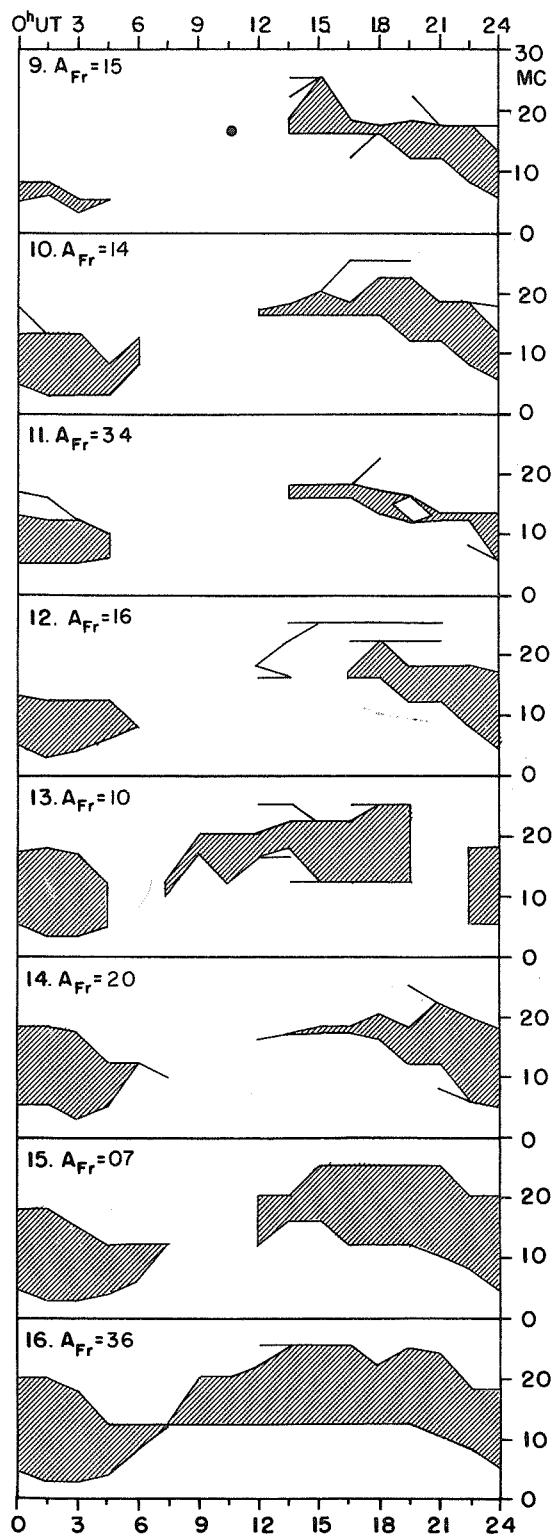
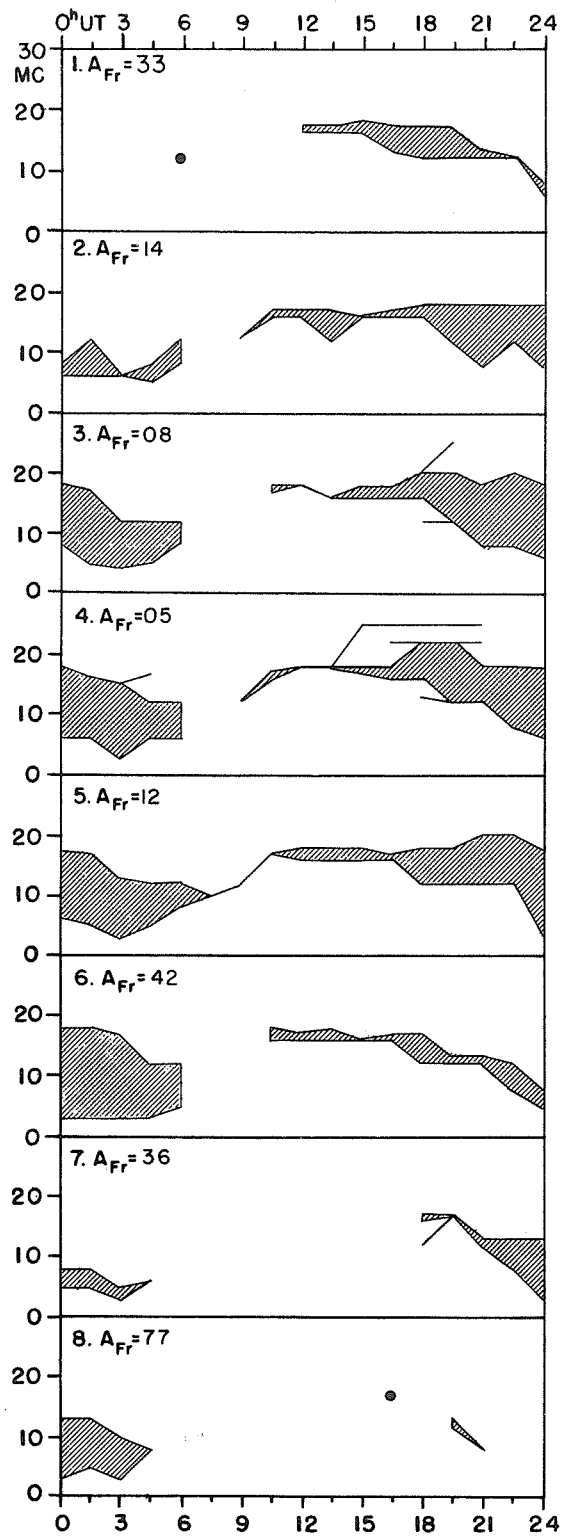
OUTCOME OF ADVANCED FORECASTS

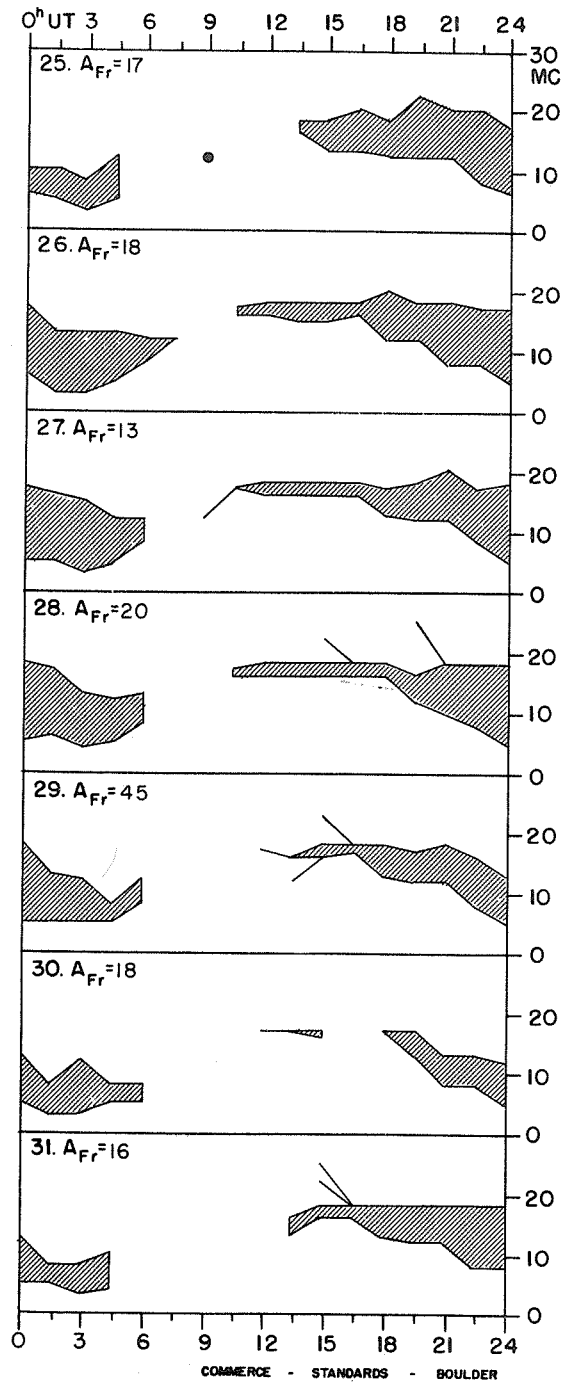
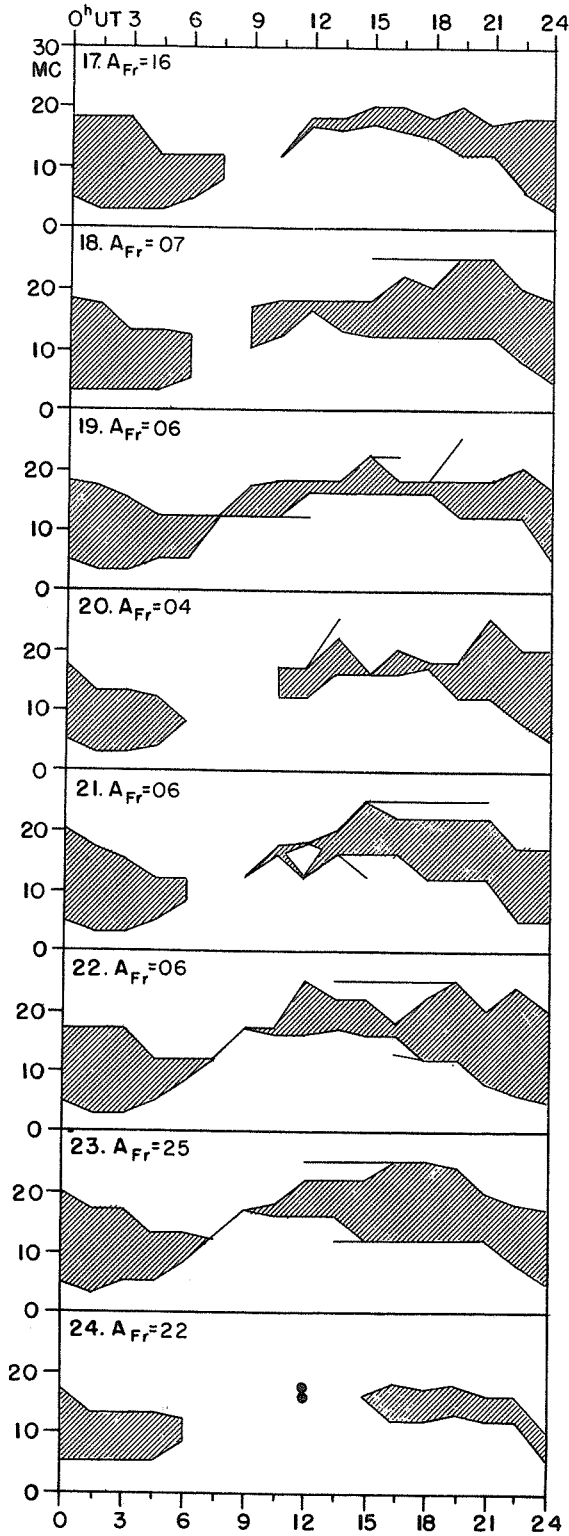
FINAL ESTIMATE



USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

MAY 1960





CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

MAY 1960

May 1960	North Pacific 12-hourly quality figures		Short-term fore- casts issued at		Whole day index	Advance forecasts (Jp reports) for whole day; issued in advance by:				Geomag- netic 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) (2)	
1	5	5	4	5	(4)	2		2	5	(5)	3
2	5	6	5	6	6	4		4	6	3	2
3	6	6	6	5	6	6	6		6	3	1
4	6	6	6	6	6	6	6		6	1	2
5	6	6	6	7	6	5			5	2	3
6	5	4	6	5	5	4			4	(4)	(6)
7	5	5	3	5	(4)	6			6	(6)	(4)
8	2	4	3	3	(2)	6			6	(5)	(7)
9	5	5	5	6	5	6			6	3	3
10	6	5	6	6	6	6			6	2	3
11	5	4	3	6	5	6			6	(6)	3
12	6	5	5	6	5	5			5	(4)	3
13	6	6	6	6	6	5			5	2	2
14	6	6	6	6	6	5		5	6	3	2
15	6	6	6	5	6	3		3	6	2	2
16	6	6	7	7	6	4		4	6	2	(4)
17	6	7	6	7	6	5	5		6	3	2
18	6	5	7	7	7	6	6		6	2	2
19	6	5	7	7	6	7			7	2	1
20	6	7	7	6	6	7			7	0	1
21	7	7	7	7	7	5			5	1	2
22	6	5	7	7	6	5			5	0	2
23	7	6	7	7	7	6			6	1	(4)
24	6	6	5	6	6	6			6	(4)	(4)
25	6	6	6	6	6	6			6	(4)	(4)
26	6	6	5	6	6	6			6	(4)	3
27	6	6	6	7	6	6			6	(4)	2
28	7	7	6	6	7	6			6	2	2
29	4	5	4	5	5	6			6	(4)	(4)
30	5	6	6	5	5	6			6	(4)	3
31	6	6	5	6	6	6			6	2	2
Score:	Quiet Periods		P 14	13		9					
			S 13	12		15					
			U 0	3		1					
			F 2	0		3					
	Disturbed Periods		P 1	0		0					
			S 1	2		0					
			U 0	0		1					
			F 0	1		2					

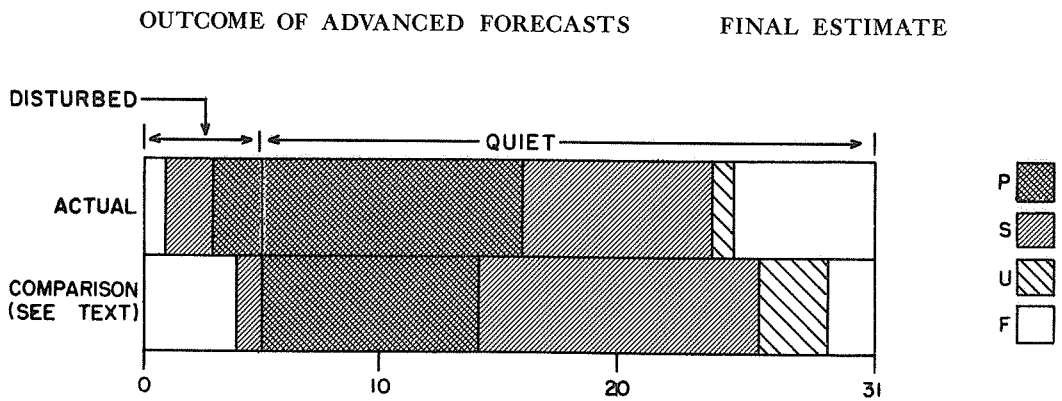
() represent disturbed values.

All times are Universal time (U.T.)

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS
NORTH PACIFIC

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MAY 1960



ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL WORLD DAY SERVICE

JUNE 1960

Issued Day/Time UT June 1960	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Interval
4/0532	Ft. Belvoir, Magnetic Storm 04/02XXZ			
4/1600		71	Magnetic Storm 04/02XXZ	Start Special World Interval
5/1600		72		Continue Special World Interval
6/1600		73		Finish Special World Interval
11/0415	Burbank, Solar Flare 11/0120Z			
25/1445	Sacramento Peak, Solar Flare 25/1250Z			
27/0433	Ft. Belvoir, Magnetic Storm 27/0145Z			
27/1600		74	Magnetic Storm 27/0145Z	
29/1957	Ft. Belvoir, Magnetic Storm 29/1937Z			
29/1600		75	Magnetic Storm 29/1937Z	