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PART B
SOLAR - GEOPHYSICAL DATA

ISSUED
AUGUST 1960

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

SOLAR - GEOPHYSICAL DATA

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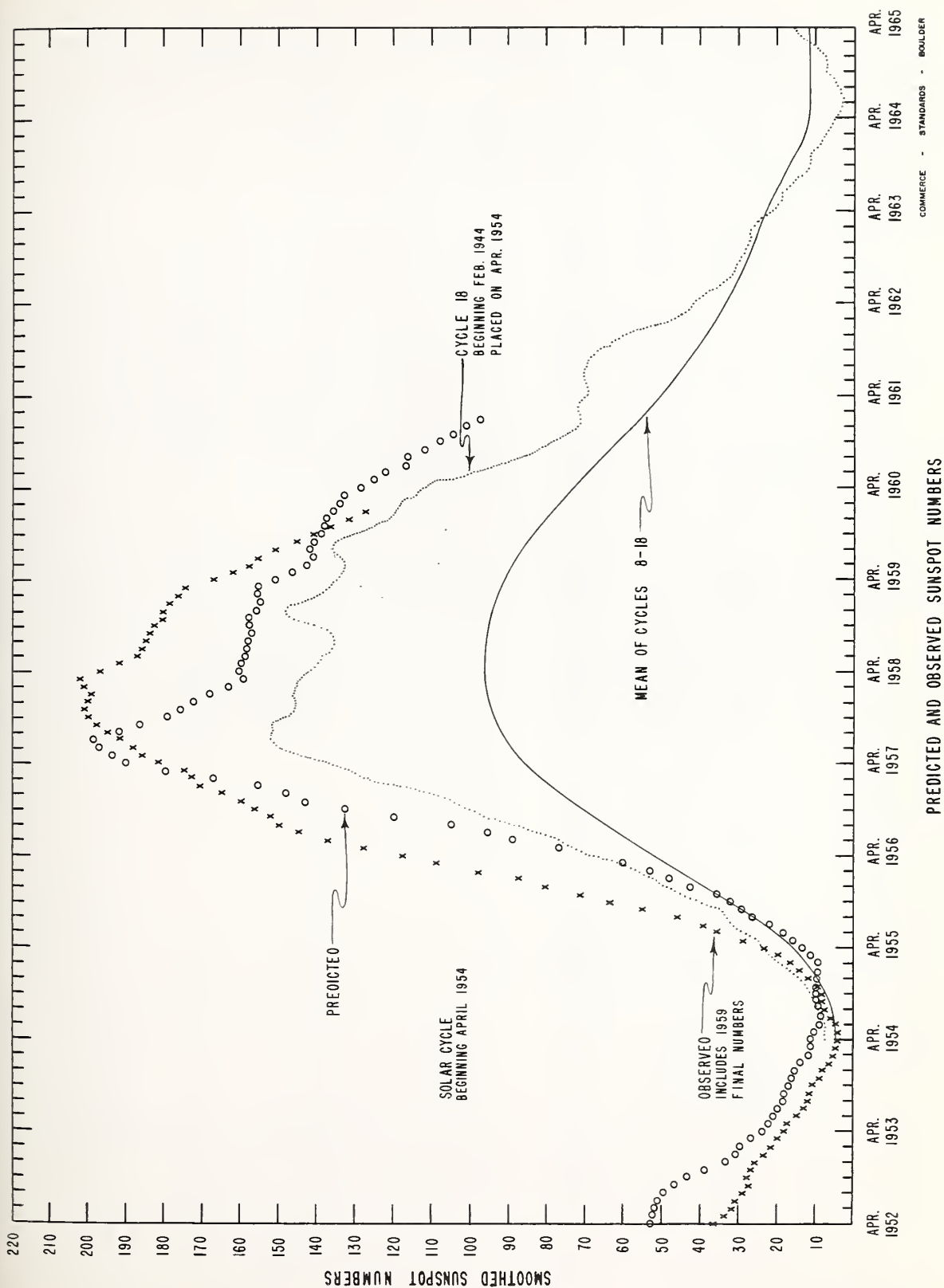
INTRODUCT ION

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

June 1960	American Relative Sunspot Numbers R_A'
1	91
2	80
3	101
4	72
5	95
6	106
7	113
8	110
9	126
10	129
11	129
12	112
13	112
14	120
15	171
16	119
17	98
18	94
19	78
20	51
21	48
22	42
23	62
24	74
25	82
26	92
27	95
28	119
29	128
30	128
Mean:	99.2

July 1960	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	167	208
2	154	207
3	161	210
4	203	212
5	168	209
6	139	200
7	119	187
8	124	176
9	120	176
10	97	166
11	93	153
12	74	142
13	83	135
14	93	139
15	105	146
16	138	144
17	131	153
18	122	159
19	143	156
20	137	152
21	139	153
22	135	148
23	127	151
24	105	159
25	111	148
26	92	149
27	90	150
28	73	149
29	94	154
30	82	146
31	83	145
Mean:	119.4	163.9



CALCIUM PLAGE AND SUNSPOT REGIONS

JULY 1960

CMP July 1960	Lat	McMath Plage Number	Return of Region	Calcium Plage Data				Sunspot Data		
				CMP Values Area Int.		History, Age		CMP Values Area Count		History
02.6	N31	5724	5680	7000	3	ℓ / ℓ	3	920	17	$\ell - \ell$
03.7	N10	5726	*	5400	3	$\ell - \ell$	1	2300	23	$\ell - \ell$
04.2	S04	5447	New	(1000)	(2.5)	$b \nearrow \ell$	1			
04.8	N24	5730	5680	1600	2.5	$\ell - \ell$	3			
	S12	5729	5690	800	1.5	$\ell \searrow d$	5			
04.9	N17	5728	5689	1100	2	$\ell \searrow d$	4			
05.3	N33	5731	5680	500	2	$\ell - \ell$	3			
06.4	N05	5732	New	700	2.5	$\ell - \ell$	1			
07.0	S21	5734	5691	1200	2	$\ell - \ell$	5	(40)	(1)	$b \nearrow \ell$
07.1	N11	5739	5692	700	1.5	$b \nearrow \ell$	9			
07.4	N23	5735	New	600	1.5	$\ell - \ell$	1	10	1	$\ell \searrow d$
08.2	S12	5738	5696	300	1	$\ell \searrow d$	2			
08.4	S21	5750	New	(400)	(2)	$b \wedge d$	1			
08.6	N13	5737	5693	6000	3	$\ell - \ell$	4	60	2	$\ell \searrow d$
09.0	S08	5744	New	700	3	$b \nearrow \ell$	1	20	2	$b \wedge d$
10.5	N18	5740	5694	2400	3	$\ell - \ell$	2	720	32	$\ell - \ell$
11.8	S14	5741	5695	2600	2.5	$\ell - \ell$	3			
12.5	N29	5743	New	300	2	$\ell - \ell$	1			
13.1	N15	5755	New	(400)	(2)	$b \nearrow \ell$	1			
13.2	S10	5745	5695	2800	3	$\ell - \ell$	3			
13.8	N20	5746	New	1100	3	$\ell - \ell$	1	170	1	$\ell - \ell$
14.3	S24	5751	New	200	1.5	$b \wedge d$	1			
15.9	S01	5748	**	200	1.5	$\ell \searrow d$	3			
17.0	N20	5749	New	4600	3.5	$\ell - \ell$	1	1480	42	$\ell - \ell$
18.3	N12	5752	5706	1100	2.5	$\ell - \ell$	5			
18.7	N23	5753	5706	700	2	$\ell - \ell$	5			
18.7	S15	5754	5707	1300	2.5	$\ell - \ell$	2	70	1	$\ell - \ell$
19.4	N09	5768	New	100	2	$b \nearrow \ell$	1	(160)	(4)	$b \wedge d$
19.9	S06	5756	5711	800	2	$\ell - \ell$	5			
20.0	N44	5773	+	(100)	(1.5)	$b \wedge d$	1			
20.7	S16	5757	5711	400	2.5	$\ell - \ell$	5			
21.0	N12	5761	New	900	2.5	$\ell - \ell$	1	(50)	(2)	$\ell \searrow d$
21.2	S10	5760	5711	400	2.5	$\ell - \ell$	5			
21.1	N14	5766	5723	1100	3.5	$b \nearrow \ell$	2			
21.2	S10	5760	5711	400	2.5	$\ell - \ell$	5			
22.6	N51	5772	+	200	2	$b \wedge d$				
22.7	N38	5762	New	1200	2.5	$\ell \searrow \ell$	1			
23.2	S12	5764	New	1800	2.5	$\ell - \ell$	1	70	2	$\ell - \ell$
23.3	N23	5763	5713	2200	2.5	$\ell \searrow \ell$	2	140	1	$\ell \searrow \ell$
23.3	N01	5777	New	(500)	(2)	$b \nearrow \ell$	1			
24.6	N12	5765	***	3000	3	ℓ / ℓ	1	190	5	$\ell \searrow d$
25.9	S07	5767	5719	2100	3	$\ell - \ell$	4	50	1	$\ell \searrow d$
26.8	N02	5769	****	700	2	$\ell - \ell$	3			
27.0	N23	5779	New	(100)	(2)	$b \nearrow \ell$	1			
27.3	N15	5770	****	400	2	$\ell - \ell$	3			
27.5	S16	5771	5725	1500	3	$\ell - \ell$	2	240	2	$\ell - \ell$
30.4	N29	5774	5724	2400	3	$\ell - \ell$	4	60	1	$\ell \searrow d$
30.5	N10	5775	5726	7200	3.5	$\ell - \ell$	2			
31.0	S09	5783	5729	1100	2	$b \wedge d$	6			
31.7	N28	5776	5730	1600	2.5	$\ell - \ell$	2			

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*New in position of 5688.

**5702, 5704.

***New in position of 5716.

****5720, 5721

+New, ephemeral.

PROVISIONAL CORONAL LINE EMISSION INDICES

JULY 1960

CMP Jul 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	69	89	15	26	27	35	13	20	35a	51a	x	x	56a	68a	x	x
2	156	241	x	x	45	62	x	x	26a	43a	34a	44a	53a	59a	38a	54a
3	75	96	21	35	22	34	10	15	x	x	20a	30a	x	x	16a	20a
4	80	106	x	x	57	78	x	x	62	72	x	x	73	88	x	x
5	104a	144a	26a	60a	73a	112a	23a	30a	71	126	x	x	95	122	x	x
6	45	66	14	23	48	70	9	12	x	x	x	x	x	x	x	x
7	81	100	15	20	76	116	15	20	x	x	x	x	x	x	x	x
8	104a	130a	x	x	85a	115a	x	x	28	41	x	x	68	102	x	x
9	x	x	x	x	x	x	x	x	47a	56a	x	x	74a	103a	x	x
10	x	x	x	x	x	x	x	x	50	80	23	28	72	112	29	51
11	88	119	12a	50a	73	93	20a	60a	66	96	x	x	58	75	x	x
12	x	x	x	x	x	208	3	20	101	172	x	x	84	130	x	x
13	88	148	7	20	93	x	x	x	66	96	14	18	61	107	12	16
14	x	x	x	x	x	50a	x	x	38	72	21	24	84	114	42	64
15	48a	82a	x	x	43a	x	x	x	27	43	x	x	85	102	x	x
16	76a	111a	47	60	41a	55a	27	31	38a	46a	17	24	63a	104a	36	57
17	x	x	19a	24a	x	x	17a	20a	30	40	8	10	54	84	32	60
18	43	64	x	x	39	56	x	x	56a	85a	x	x	68a	109a	x	x
19	48	86	x	x	77	104	x	x	88a	120a	36a	56a	69a	106a	33a	48a
20	x	x	x	x	x	x	x	x	55	78	16	32	39	44	13	18
21	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
22	110	146	32	50	78	132	21	30	44a	77a	31a	40a	58a	89a	47a	90a
23	103a	142a	29a	40a	66a	142a	22a	64a	x	x	x	x	x	x	x	x
24	84	118	42	64	53	85	50	62	53	81	12a	15a	68	82	16a	27a
25	96	159	x	x	73	97	x	x	55	86	16	30	54	60	10	15
26	82	136	x	x	75	101	x	x	68	108	x	x	63	72	x	x
27	74	156	47	90	57	110	35	48	33	50	43	55	52	59	41	98
28	63	72	38	80	38	62	31	46	20	34	11	15	63	78	19	30
29	84	103	x	x	28	49	x	x	x	x	x	x	x	x	x	x
30	97a	136a	37a	48a	22a	28a	14a	26a	43a	60a	11a	16a	x	x	28a	36a
31	60	68	15	20	27	40	8	10	39	53	6	8	x	x	10	20

x - no observations.

a - index computed from low weight data.

* - yellow line observed.

COMMERCE - STANDARDS - BOLDER

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, Za. f. Ap. 38, 160.

SOLAR FLARES

JULY 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURATION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX. LAT.	APPROX. LONG. DIST.	MC-MATH PLACE REGION			TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH H _z	MAX. INT. %
{ HAWAII ZURICH CAPRI S CAPRI S ZURICH WENDEL ZURICH CAPRI S WENDEL ZURICH	01	0058	0112	N13	W70	5713	1	3	0104	1.00			
	01	0824	0843	N21	W75	5713	1	3	0824	1.00	1.00		
	01	0941	0945 D	N20	E80	5755	4 D	3	0943	.50	.50		
	01	1012	1032	N20	W75	5713	1	1	1012	.70	2.80		
	01	1015	1027	N21	W76	5713	1	3	1015		2.00		
	01	1042	1050 D	N11	E34	5726	8 D	3	1015		4.00		
	01	1042	1051	N11	E34	5726	9	3	1042		2.00		
	01	1151	1323	N18	W76	5713	92 D	1	1215	.80	2.90		
	01	1154	1344 D	N18	W77	5713	110 D	2	1208		8.00	2.80	
	01	1205	1210 D	N18	W75	5713	5 D	1	1242		5.00		
{ ONDREJOV ZURICH WENDEL SAC PEAK WENDEL ZURICH LOCKHEED MCMATH HAWAII	01	1242	1330	N18	W84	5713	48 D	1					
	01	1336	1355 D	N10	W37	5720	19 D	1		2.70	3.00		15
	01	1406	1416	N22	W86	5713	10	3			4.00		
	01	1410	1434 D	N22	W80	5713	24 D	1			3.00		
	01	1524	1528	N21	W79	5713	4	3	1524	.50			
	01	1702	1714	N21	W85	5713	12	4	1711				20
	01	1843	1903 D	N22	W87	5713	20 D	1	1847		4.10		
	01	2008	2022	N13	W90	5713	14	3	2014	.80			
	02	0732	0742 D	N11	E21	5726	10 D	1			3.00		
	02	1222	1307 D	S13	W27	5725	45 D	1			3.00		
{ UCCEL ZURICH MCMATH CAPRI S ZURICH LOCKHEED	03	1020	1033 D	N25	W21	5724	13 D	1			3.00		
	03	1432	1440	N26	W27	5724	8	2	1432		2.00		
	03	2038	2044 D	N22	W33	5724	6 D	1	2040	1.20			
	04	0914	0916 D	N33	W35	5724	2 D	1			4.50		
	04	1054	1058 D	N27	W40	5724	4 D	2	0916	3.00	2.00		
	04	1220	1332	N14	E60	5737	72	2	1054		7.50		
	04	1232	1251 D	N14	E60	5737	19 D	1	1247		4.40		
	04	1233	1246 D	N14	E60	5737	13 D	2	1240	2.00	5.00		
	04	2358	0130	N15	E55	5737	92	2	1233	2.60			10
	04	2358	0130	N15	E55	5737	92	2	0030				
{ HAWAII CAPRI S CAPRI S UCCEL ARCETRI UCCEL HAWAII HAWAII HAWAII	05	0030	0104 D	N23	E50	5737	34 D	2	0048	3.00			
	06	0802	0814	N25	W59	5724	12	3	0811	1.00	2.50		
	06	0920	0955	N06	W29	5726	35	3	0931	3.50	4.00		
	06	0921	0926 D	N09	W35	5726	5 D	2	0926	6.00	7.50		
	06	0923	0945 D	N10	W41	5726	22 D	1					
	06	1221	1223 D	N25	W65	5724	2 D	4	1223	2.00	5.00		
	06	1758	1810	N02	W41	5726	12 D	3	1800	1.40			
	06	1918	1946	N01	W40	5726	28	3	1918	1.30			
	06	2314	2322	S01	W47	5726	8	3	2316	1.00			
	07	0200	0245 D	N24	E13	5737	45 D	2	0210	5.20	2.00		20
{ WENDEL MCMATH HAWAII SAC PEAK	07	2004	2033 D	N12	E35	5740	29 D	1	2007				
	08	0746	0802	N18	E66	5746	16	1			4.00		
	08	1927	1959	N06	W76	5726	32	3	1931		3.10		
	08	2328	0010	N04	W33	5732	42	2	2332	6.40			
	08	2331	2354 D	N08	W33	5732	23 D	2	2332	6.54			23
	08	2331	2354 D	N08	W33	5732	23 D	2					
	08	2331	2354 D	N08	W33	5732	23 D	2					
	08	2331	2354 D	N08	W33	5732	23 D	2					
	08	2331	2354 D	N08	W33	5732	23 D	2					
	08	2331	2354 D	N08	W33	5732	23 D	2					

SOLAR FLARES

JULY 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURATION — MINUTES	IM-PORTANCE	ORIG. COND.	MEASUREMENTS				PROVISIONAL LONGSPHERIC EFFECT		
		START	END	APPROX. LAT.	MER. DIST.				MC-MATH PLAGE REGION	TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH H _g	MAX. INT. %
{ MCMATH LOCKHEED HAWAII HAWAII }	09 JULY 1960	1730	1913 D	1819	S16 E32	5741	103 D	2	3	1819	2.30	6.00		20	G-SWF
	09	1813	1910	1824	S15 E30	5741	57	1	2	1824	2.50				
	09	1816 E	1904	1820	S09 E31	5741	48 D	2	2	1820	1.20				
	09	2024 E	2028 D	2024	N15 E05	5740	4 D	1	2	2024					
{ WENDEL CAPRI S WENDEL CAPRI S }	10	0715	0745 D		N20 W01	5740	30 D	1+				7.00			
	10	0725 E	0745		N15 E00	5740	20 D	1	3	0735	4.50	4.50			
	10	0739	0816 D		S10 W15	5744	37 D	2				8.00			
	10	0743	0826		S09 W15	5744	43	1	3	0757	3.50	3.50			
{ ZURICH ONDREJOV WENDEL CAPRI S }	10	0746 E	0807 D		S12 W18	5744	21 D	1	1	0746		4.00			
	10	0750 E	0818		S13 W15	5744	28 D	1	3	0754			2.10		
	10	0806 E	0816 D		N17 E80	5749	10 D	1				3.00			
	10	0937	1030		N15 W01	5740	53	1	3	1000	3.00	3.10			
{ CAPRI S CAPRI S HAWAII }	10	1435 E	1505		N13 W03	5740	30 D	1	1	1452	4.50	4.50			
	10	1858	1922	1904	N12 W05	5740	24	1	2		3.84			16	
	10	1858	1938 D		N13 W07	5740	40 D	1	2	1908	1.50				
	10	2307	2345	2320	S19 E17	5741	38	1	2	2320	2.00			20	
{ LOCKHEED SAC PEAK HAWAII }	10	2310	2332 D		S15 E13	5741	22 D	1	2	2341	3.05	3.05		18	
	10	2312	2340	2320	S13 E15	5741	28	1+	3	2320	2.00				
	11	0030	0038 D	0030	S13 E14	5741	8 D	1	2	0030	1.30				
	11	0710 E	0748 D		S10 W30	5744	38 D	1				3.00			
{ CAPRI S UCCLE UCCLE CAPRI S }	11	0716 E	0755 D		S13 W65	5734	39 D	1				3.00			
	11	1001 E	1106		N15 W25	5740	5 D	2	3	1034	5.00	5.50			
	11	1009 E	1200		N16 W35	5737	111 D	1+	4	1028	9.00	11.00			
	11	1022	1040	1028	N13 W14	5740	18	1	4	1028	5.00	5.00			
{ CAPRI S CAPRI S CAPRI S MCMATH }	11	1336	1412		N14 W15	5740	36	1	3	1342	2.00	2.10			
	11	1356 E	1410		S18 E13	5741	14 D	1	3	1358	3.00	3.30			
	11	1828	1836	1830	N14 E62	5749	8	1	3	1830		2.50			
	12	1648	1722 D		N14 W30	5740	34 D	1	1	1653		1.80			slow S-SWF
{ WENDEL CAPRI S UCCLE R O HERST NEDERHORST HAWAII SAC PEAK }	12	2028 E	2115 D		N14 W31	5740	47 D	1+	1	2038		3.50			S-SWF
	12	2338 E	0010 D	2354	N09 W32	5740	32 D	1	2	2354	1.20				S-SWF
	14	1054 E	1151		N13 W51	5740	57 D	1+				7.00			
	14	1056	1145 D		N13 W52	5740	49 D	2	3	1105	6.00	10.00			
{ CAPRI S WENDEL HAWAII NIZAMIAH }	14	1101 E	1230 D		N15 W54	5740	89 D	2	4	1120	8.00	12.00			
	14	1102 E	1113 D	1102 U	N16 W48	5740	11 D	1	4	1102	1.40	2.40		72	
	14	1110 E	1113 D		N15 W15	5746	3 D	2	1						
	14	2126	2200	2138	N04 W90	5737	34	1+	3	2138	2.00	2.16		17	
{ CAPRI S HAWAII HAWAII NIZAMIAH }	14	2148 E	2152 D	2148 U	N14 W90	5737	4 D	1	1						
	15	0002 E	0006	0004	N29 E24	5749	4 D	1	3	0004	1.60				
	15	0048 E	0100 D		N25 E22	5749	12 D	1+	2	0048	1.90				
	15	0534 E	0546 D	0544	N18 W64	5740	12 D	1+	1	0544	1.82	4.07	2.90		
{ CAPRI S ZURICH MCMATH }	16	0958 E	1010		N25 E85	5763	12 D	1	3	1000	.50	.50			
	16	1003 E	1006		N26 E82	5763	3 D	1	2	1003		2.00			
	16	1828 E	1836 D	1833	N12 E68	5766	8 D	1	3	1833		3.00			
	17	0811 E	0828		S12 W74	5741	17 D	1				3.00			

SOLAR FLARES

JULY 1960

OBSERVATORY	DATE JULY 1960	OBSERVED UNIVERSAL TIME		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	MAX. PHASE	APPROX. LAT.	MER. DIST.				MCNATH PLACE REGION	TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.		MAX. WIDTH Hq
CAPRI S	17	0827 E	0900 D		N22 E78	5763	33 D	1	3	0836	1.00	2.80			
CAPRI S	18	1041 E	1100		N20 E64	5763	19 D	2	3	1045	3.50	7.70		16	
{ SAC PEAK	18	2238	2300	2244	N04 W53	5759	22	1	2		2.83				
{ HAWAII	18	2240	2304 D		S03 W54	5759	24 D	1	2	2256	1.30				
{ LOCKHEED	19	0013	0120	0045	N24 W28	5749	67	1+	1	0045	3.40			30	G-SWF
{ HAWAII	19	0052 E	0108 D		N18 W30	5749	16 D	1	2	0052	1.00				
{ TASHKENT	19	0318	0550	0450	N22 W29	5749	152	2							
{ NIZAMIAH	19	0447 E	0454 D		N22 W30	5749	7 D	1+	1	0447	2.73	3.29	1.60		
{ WENDEL	19	0530 E	0553		N21 W31	5749	23 D	1+				7.00			
{ ISTANBUL	19	0810	0830		N25 W29	5749	20	1							
{ WENDEL	19	0821	0844		N11 E62	5765	23	1				3.00			
{ ISTANBUL	19	0822	0830 D		N11 E63	5765	8 D	1							
{ WENDEL	19	1256	1310 D		N21 W31	5749	14 D	1				3.00			
{ SAC PEAK	19	1350	1432	1354	N22 W33	5749	42	1	2		3.32			15	
{ CAPRI S	19	1350	1503		N20 W31	5749	73	1	3	1400	2.00	2.50			
{ SAC PEAK	19	1816 U	1822 D	1822	N18 W41	5749	6 D	1	3		2.18			20	S-SWF
{ LOCKHEED	19	1817	1833	1818	N19 W42	5749	16	1	2	1819	2.20			30	
{ HAWAII	19	1818	1828 D		N10 W44	5749	10 D	1	1	1822	1.10				
{ MCMATH	19	1818 E	1835 D	1819	N18 W42	5749	17 D	1+	2	1819		4.50			
KODAIKNL	20	0530 E	0540 D		N20 W48	5749	10 D	1		0530			1.80		S-SWF
{ ZURICH	20	1020	1116 D	1027	N21 W46	5749	56 D	2	2	1020		8.00			
{ CAPRI S	20	1020 E	1120		N22 W44	5749	60 D	2	3	1033	6.50	9.70			
ZURICH	21	1637	1645		N19 W63	5749	8	1	3	1637		2.00			
MCMATH	21	1931 E	1957	1935	N18 W77	5749	26 D	1+	1	1935		3.00			
HAWAII	22	0054 E	0116 D		N09 W50	5752	22 D	1+	1	0054	2.40				
NEDERHORST	22	0803	0813		N19 W76	5749	10	2	3						
CAPRI S	22	0901	1030 D		N13 W02	5766	89 D	1	2	0922	2.50				
ZURICH	22	0906	0913		S06 E39	5767	7	1	2	0906	2.00				
{ CAPRI S	22	1242	1326		N24 W73	5749	44	1	3	1303	1.50	4.80			
{ MCMATH	22	1245 E	1332 D		N22 W80	5749	47 D	2	1	1256	7.40				Slow S-SWF
{ UCCLE	22	1304 E	1323 D		N24 W74	5749	19 D	1	4	1308	4.00				
{ WENDEL	22	1308 E	1335		N22 W71	5749	27 D	1+	3	1725		7.00			
{ MCMATH	22	1722	1743		N14 W55	5752	21	1	3	1832		2.00			
{ MCMATH	22	1831	1844		N23 W79	5749	13	1+	3			4.00			
{ MCMATH	23	1227	1242	1229	N13 W68	5752	22	2	2	1229		5.00			
{ CAPRI S	23	1231 E	1252		N15 W65	5752	21 D	2	3	1235	2.50	6.10			
{ LOCKHEED	23	1704	1915	1714	N11 E09	5765	131	1	2	1714	2.70			10	
{ MCMATH	23	1705	1758 D		N10 E08	5765	53 D	1	2	1713					
{ MCMATH	23	1808	1828	1812	N04 E87	5775	20	1+	2		2.00				S-SWF
{ HAWAII	23	2258	2322	2302	N09 W04	5765	24	1	2	2302	1.00	4.00			
ISTANBUL	24	0620 E	0841		N08 W05	5765	141 D	1+							
{ SAC PEAK	24	1408	1518	1434	N10 W10	5765	70	1	2		2.60	5.50		17	
{ CAPRI S	24	1410	1512	1430	N08 W07	5765	62	2	3	1444					
{ MCMATH	24	1424	1515 D	1434	N09 W10	5765	51 D	1	2	1432		2.00			

SOLAR FLARES

JULY 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT	
		START	END	APPROX. LAT.	APPROX. MLR. DIST.				McMATH FLARE REGION	TIME — U T	MEAS. AREA Sq. Deg.	COHR. AREA Sq. Deg.		MAX. WIDTH Ha
{ LOCKHEED HAWAII	24	1450 E	1510	N08 W12		5765	1	1	1450	2.50			10	S-SWF
	24	2150 E	2248 D	N07 W13		5765	1	2	2214	1.40				
	25	2124	2206	N05 W28		5765	1	3	2126	1.50				
{ HAWAII CAPRI S	26	0054	0114	N04 W30		5765	1	3	0056	1.00				
	26	1146 E	1225	N03 E53		5775	1	3	1200	1.50	2.60			
	{ SAC PEAK WENDEL HAWAII	26	1702	1732	N03 E50		5775	1+	2		4.15	7.00		
26		1705 E	1723 D	N04 E50		5775	1+							
26		2220	2232 D	N13 E43		5775	1	2	2228	1.40				
{ ISTANBUL ISTANBUL ISTANBUL	27	0722	0733	N06 E43		5775	1							
	27	0743	0759	N09 W50		5765	1							
	27	0825	0830 D	N06 E43		5775	5							
{ MCMATH ONDREJOV	27	1122	1216	N12 W36		5765	1+	3	1135		3.60	1.80		
	27	1126	1222	N10 W36		5765	1	3	1136					
	28	0710	0730	N06 E31		5775	1							
{ ISTANBUL WENDEL SAC PEAK	28	1240 E	1253 D	N11 E31		5775	1	2		3.95	3.00		16	
	28	1632	1710	S09 W89		5764	1							
	29	1215	1256 D	N05 E14		5775	1+	2	1228	4.00	4.60			
{ CAPRI S WENDEL	29	1216	1247	N04 E12		5775	1	3	1231		4.00			
	29	1217	1244	N06 E10		5775	1+				7.00			
	30	0644	0716	N08 E04		5775	1				3.00			
{ WENDEL WENDEL	30	0644	0718	N10 E09		5775	1				3.00			
	30	0651 E	0705	N09 E05		5775	1	2	0651		4.00			
	30	1225 E	1246 D	N09 E03		5775	1+				6.00			
{ WENDEL ONDREJOV	30	1359	1436	N09 E02		5775	1+				5.00			
	30	1404	1440	N06 E01		5775	1	3	1412			1.90		
	31	0218	0237 D	N08 W07		5775	1	1	0230	2.10			20	
{ LOCKHEED ONDREJOV ONDREJOV	31	0500 E	0510	N10 W15		5775	1	3	0501			2.30		
	31	1045	1111	N07 W17		5775	1	3	1046			2.80		
	31	1150 E	1206 D	N10 W16		5775	1				3.00			
{ WENDEL MCMATH	31	1642	1700	N24 W23		5774	1	3	1650		2.00			

COMMERCE - STANDARDS - BOULDER

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

MOSCOW-C MOSCOW - GAISH
 R O EDIN ROYAL OBSERVATORY, EDINBURCH
 R O HERST GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
 SAC PEAK SACRAMENTO PEAK
 SCHAUNS SCHAUNSLAND
 USNRL UNITED STATES NAVAL RESEARCH LABORATORY

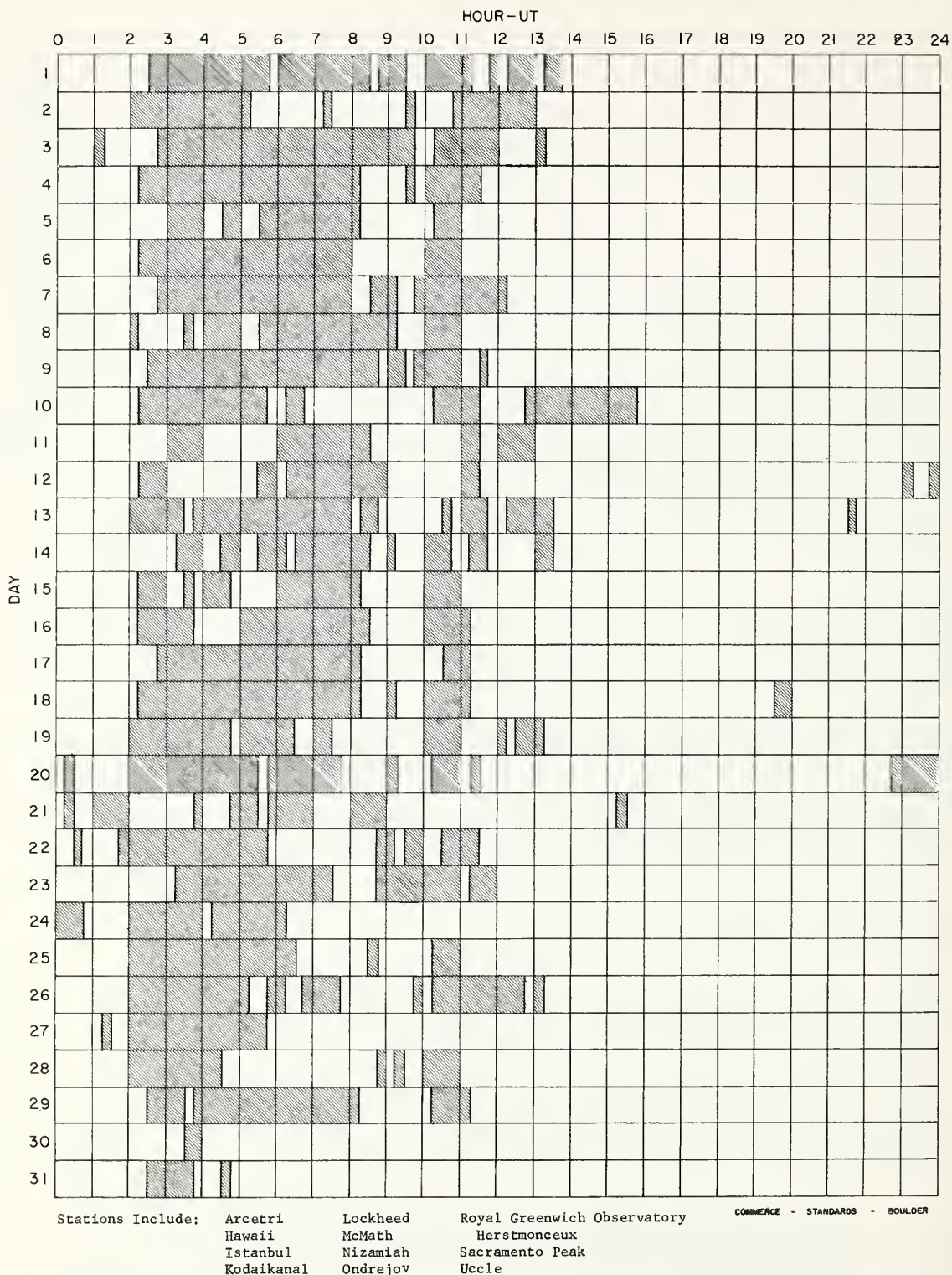
SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

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

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

INTERVALS OF NO FLARE PATROL OBSERVATIONS

JULY 1960



Noted as follows: Date-Universal Time - Coordinates

JUNE 1960

WENDEL	01 0635 E	N14 E12	SAC PEAK	08 1942	N17 E76	* LOCKHEED	12 2323	N20 E18
WENDEL	01 0711 E	N14 E08	SAC PEAK	08 2006	N31 W42	* LOCKHEED	13 0013	S11 E41
* HUANCAYO	01 1431	N30 E42	* SAC PEAK	08 2032	S13 E90	* ARCTERI	13 0808 E	N12 W15
SAC PEAK	01 1646	N15 E01	* LOCKHEED	08 2032	S13 E90	ARCTERI	13 0847 E	N29 W88
* SAC PEAK	01 1648	N32 E45	* MCNATH	08 2033	S14 E90	CAPRI S	13 0910	S12 E31
* MCNATH	01 1649	N13 E02	SAC PEAK	08 2038	N08 W90	ARCTERI	13 0913 E	S12 E36
* MCNATH	01 1652	N30 E46	LOCKHEED	08 2045	N17 E74	* HUANCAYO	13 1715 E	N12 W28
* SAC PEAK	01 1802	N07 W70	SAC PEAK	08 2102	N07 W90	* HAWAII	13 1744 E	N14 W35
* SAC PEAK	01 2040	N17 W90	LOCKHEED	08 2106	N31 W43	* LOCKHEED	13 1748 E	N19 W35
* LOCKHEED	01 2045	N17 W90	* SAC PEAK	08 2116	S11 E90	LOCKHEED	13 2120	N10 W45
LOCKHEED	01 2108	N21 E33	HAWAII	08 2118	S04 E89	SAC PEAK	13 2122	N08 W46
LOCKHEED	01 2138	N13 W05	* MCNATH	08 2118	S12 E90	LOCKHEED	13 2145	N20 E90
HAWAII	01 2140	N13 W05	MCNATH	08 2125	N28 W58	LOCKHEED	13 2300	N18 W37
SAC PEAK	01 2140	N13 W03	SAC PEAK	08 2128	N27 W59	LOCKHEED	14 1544	S11 E20
LOCKHEED	01 2145	S22 W01	LOCKHEED	08 2128	N27 W58	LOCKHEED	14 1559	S12 E12
LOCKHEED	01 2222	N26 E31	HAWAII	08 2130	N21 W60	LOCKHEED	14 1626	S12 E20
LOCKHEED	01 2322	S18 W15	SAC PEAK	08 2136	N15 E72	LOCKHEED	14 1658	S09 E15
			LOCKHEED	08 2141	S13 W75	* HAWAII	14 1740 E	N10 E21
			LOCKHEED	08 2206	N31 W44	LOCKHEED	1A 2013	S09 E15
CAPRI S	02 0737	N08 W04	SAC PEAK	08 2208	N30 W44	LOCKHEED	1A 2036	N21 E78
WENDEL	02 0838 E	S16 W19	HAWAII	08 2210	N26 W45	LOCKHEED	1A 2038	S10 E17
ARCTERI	02 0907 E	N32 E20	LOCKHEED	08 2212	S07 W78	LOCKHEED	1A 2138	N20 W05
SAC PEAK	02 1430	N31 E34	LOCKHEED	08 2307	S13 E90	LOCKHEED	1A 2151	S21 W42
SAC PEAK	02 1430	N32 E34	SAC PEAK	08 2308 E	S12 E90	HAWAII	1A 2154	S14 W38
SAC PEAK	02 1452	N07 E19	SAC PEAK	08 2314	S14 E90	LOCKHEED	14 2320	N17 E50
SAC PEAK	02 1530	N07 E19	HAWAII	08 2316	S07 E90			
LOCKHEED	02 1925 E	S17 W27	LOCKHEED	08 2355	S08 W70			
LOCKHEED	02 1930	N07 E13	HAWAII	08 2358	S16 W90			
HUANCAYO	02 1930 E	S10 W36						
LOCKHEED	02 1936	N12 W01	HAWAII	09 0026 E	S05 E90	LOCKHEED	15 0013 U	N18 E49
MCNATH	02 1937	N10 W10	LOCKHEED	09 0105	N33 W55	LOCKHEED	15 0013 U	S09 W41
LOCKHEED	02 1939	N30 E26	ARCTERI	09 0831 E	N32 W48	LOCKHEED	15 1151 E	N12 W28
LOCKHEED	02 2030	N24 E32	* STOCKHOLM	09 0909 E	N32 W50	SAC PEAK	15 1340	S12 E00
LOCKHEED	02 2059	N09 E12	* ARCTERI	09 1140	S19 E31	SAC PEAK	15 1756	S13 E10
LOCKHEED	02 2120	S18 W28	MCNATH	09 1232	S19 E31	HAWAII	15 1758	S10 E11
LOCKHEED	02 2315	N05 E14	STOCKHOLM	09 1245 E	N12 E48	HAWAII	15 1816 E	S11 E07
			MCNATH	09 1345	N31 W49	SAC PEAK	15 1940	S17 E04
LOCKHEED	03 0014	N33 E33	MCNATH	09 1428	N07 E35	HAWAII	15 2148	S16 E04
LOCKHEED	03 0043	N04 E13	MCNATH	09 1525	N12 E35	HAWAII	15 2204 E	N16 W21
LOCKHEED	03 0052	N31 E27	MCNATH	09 1618	S15 W80			
STOCKHOLM	03 1029	N29 E12	MCNATH	09 1700	N10 E33	LOCKHEED	16 0024	N17 E67
* CAPRI S	03 1108 E	S10 W06	SAC PEAK	09 1708	S13 E80	LOCKHEED	16 0118	N13 W56
SAC PEAK	03 1346	S11 W11	MCNATH	09 1722	N12 E48	HAWAII	16 0121	N18 W56
SAC PEAK	03 1518	S11 E64	MCNATH	09 1750 E	S04 E76	ONOREJOV	16 0512 E	N17 W64
MCNATH	03 1827	N32 E14	HAWAII	09 1755 E	S17 W83	* ONOREJOV	16 0729	N18 E63
HAWAII	03 1828	N36 E09	LOCKHEED	09 1920	N33 W58	* MCNATH	16 1341 E	N21 W70
SAC PEAK	03 1828 E	N33 E14	SAC PEAK	09 1922	N33 W58	* MCNATH	16 1555	N18 W56
SAC PEAK	03 1900	N32 E18	HUANCAYO	09 1927 E	N31 W51	* SAC PEAK	16 1526	N22 E55
LOCKHEED	03 2220	N07 E02	* SAC PEAK	09 2042 E	S10 E75	* WENDEL	16 1528 E	N18 E57
LOCKHEED	03 2230	N32 E22	LOCKHEED	09 2155	N12 E31	LOCKHEED	16 1945	S12 W16
LOCKHEED	03 2302	N07 E02				LOCKHEED	16 2042	S12 W16
SAC PEAK	03 2306	N07 E03				LOCKHEED	16 2055	N11 E60
HAWAII	03 2308	N07 E01				LOCKHEED	16 2112	S11 W14
			LOCKHEED	10 0005	N16 E57	LOCKHEED	16 2112	S11 W14
HAWAII	04 0044	N33 E14	LOCKHEED	10 0125 U	N12 E29	LOCKHEED	16 2115	S11 W36
SAC PEAK	04 1256	N30 E14	LOCKHEED	10 0130 U	N32 W60	LOCKHEED	16 2135	N18 W36
* SAC PEAK	04 1426	N26 W03	LOCKHEED	10 0140	N26 W61	LOCKHEED	16 2333	N18 E54
SAC PEAK	04 1558	N31 E13	MCNATH	10 1157	S12 E66			
MCNATH	04 1559	N29 E12	MCNATH	10 1159	N10 W90	WENDEL	17 0641 E	N18 W41
MCNATH	04 1617	N29 E12	CAPRI S	10 1200 E	S13 E66	* STOCKHOLM	17 0931 E	N21 E50
MCNATH	04 2000	N30 E11	MCNATH	10 1220 E	S16 W90	* WENDEL	17 0950 E	N12 E55
HAWAII	04 2002 E	N13 E05	SAC PEAK	10 1346	N08 W90	SAC PEAK	17 1514	N18 W46
SAC PEAK	04 2100	N33 E07	SAC PEAK	10 1426	N09 W90	* SAC PEAK	17 1558	N18 W46
MCNATH	04 2100	N30 E18	* SAC PEAK	10 1434	S11 E65	LOCKHEED	17 2035	N17 E43
HAWAII	04 2102	N34 E03	* CAPRI S	10 1444 E	S13 E65	LOCKHEED	17 2123	S12 W31
			* LOCKHEED	10 1610 E	S13 E33	* LOCKHEED	17 2156	N19 W48
HAWAII	05 0054 E	N25 W10	LOCKHEED	10 1645	S09 E72	HAWAII	17 2200	N33 W50
* SAC PEAK	05 1352	N26 W17	LOCKHEED	10 1645	S12 E67			
WENDEL	05 1429 E	N06 W31	* LOCKHEED	10 1703	N33 W70	LOCKHEED	18 0005	N09 E57
SAC PEAK	05 1548	N06 W26	LOCKHEED	10 1729	N24 W74	LOCKHEED	18 0149	S13 E33
SAC PEAK	05 1724	N06 W25	LOCKHEED	10 1804	N28 W74	SAC PEAK	18 1322	N10 W90
* HAWAII	05 2220	N23 W25	LOCKHEED	10 1804	N28 W74	* LOCKHEED	18 1410 E	N23 W56
			MCNATH	10 1823	N04 E72	LOCKHEED	18 1458	N23 W56
ONOREJOV	06 0451	N06 W35	LOCKHEED	10 1862	N04 E78	LOCKHEED	18 1540	N24 W57
ONOREJOV	06 0755	S10 W47	LOCKHEED	10 1931	N09 W90	LOCKHEED	18 1540	N24 W57
ONOREJOV	06 0808	N09 W34	LOCKHEED	10 1957	N10 E18	LOCKHEED	18 1616	N19 W90
WENDEL	06 1155 E	S09 W47	LOCKHEED	10 2036	N14 E19	LOCKHEED	18 1623	N19 W90
MCNATH	06 1221	N30 W10	LOCKHEED	10 2247	S11 E48	LOCKHEED	18 1723	N25 W56
SAC PEAK	06 1456	S09 W51	LOCKHEED	10 2338	N11 E13	SAC PEAK	18 1726	N23 W58
MCNATH	06 1604 E	N10 E13	LOCKHEED	10 2338	N11 E13	* LOCKHEED	18 1752 E	S14 W43
HUANCAYO	06 1612 E	N09 E25				* SAC PEAK	18 1752 E	S14 W43
WENDEL	06 1638 E	N06 W55	LOCKHEED	11 0024	N28 W74	LOCKHEED	18 1843	N23 W57
MCNATH	06 1710	N06 W41	LOCKHEED	11 0137	N29 W74	LOCKHEED	18 1901	S13 W34
HAWAII	06 1851	N31 W28	ARCTERI	11 0830 E	S10 E40	LOCKHEED	18 1901	S13 W34
SAC PEAK	06 1936 E	S09 W53	SAC PEAK	11 1322	S13 E58	LOCKHEED	18 2015	N21 W58
HAWAII	06 1938	S14 W54	LOCKHEED	11 1627	N28 W66	LOCKHEED	18 2033	N19 W58
HAWAII	06 1958	S14 W55	LOCKHEED	11 1633	N07 E33	LOCKHEED	18 2050	N19 W58
HAWAII	06 2112 E	N19 E48	LOCKHEED	11 1720	S12 E54	LOCKHEED	18 2050	N19 W58
SAC PEAK	06 2128	S09 W55	LOCKHEED	11 1753	S12 E54	LOCKHEED	18 2208	N19 W59
MCNATH	06 2132 E	S08 W55	HAWAII	11 1802 E	S05 E54	SAC PEAK	18 2246	N19 W63
HAWAII	06 2142	S15 W56	LOCKHEED	11 1827	N34 W80			
SAC PEAK	06 2156	N36 W19	LOCKHEED	11 1832	N13 E02	LOCKHEED	19 0103 E	S12 W46
MCNATH	06 2157	N33 W19	LOCKHEED	11 1845	N29 W80	HAWAII	19 0104 E	N07 W49
HAWAII	06 2202 E	N34 W24	LOCKHEED	11 1845	N14 E07	LOCKHEED	19 0118	S13 W47
* SAC PEAK	06 2230	S12 W18	MCNATH	11 1846	N14 E07	WENDEL	19 0808 E	E148
			HAWAII	11 1848	N23 W81	ARCTERI	19 0838 E	S11 W26
* STOCKHOLM	07 1007	N26 W30	HAWAII	11 1856	N20 W90	* MCNATH	19 1540	S09 W52
MCNATH	07 1108 E	N26 W40	LOCKHEED	11 1856	N17 E17	* LOCKHEED	19 1605 E	N10 W53
STOCKHOLM	07 1113 E	N26 W28	MCNATH	11 1859	N15 E18	* LOCKHEED	19 1712	S10 W53
MCNATH	07 1138	N13 E62	HAWAII	11 1900	N19 E14	LOCKHEED	19 1710	N19 E84
MCNATH	07 1150	N08 W46	* MCNATH	11 1933 E	N11 E06	LOCKHEED	19 1711	S15 E29
MCNATH	07 1225	N18 E90	LOCKHEED	11 1940	N06 E31	MCNATH	19 1712	N16 E90
STOCKHOLM	07 1228 E	N12 E90	LOCKHEED	11 1940	N08 E33	MCNATH	19 1712	S17 E30
SAC PEAK	07 1252	N31 W24	* HAWAII	11 1948 E	N12 E02	LOCKHEED	19 1717	S11 W35
SAC PEAK	07 1342	N22 E90	* LOCKHEED	11 1950	N32 W90	LOCKHEED	19 1717	S11 W55
MCNATH	07 1501	N08 W75	* MCNATH	11 1951	N33 W90	LOCKHEED	19 1717	S11 W55
MCNATH	07 1630	N09 W49	LOCKHEED	11 2002	S13 E53	MCNATH	19 1740	S09 W52
SAC PEAK	07 1632	N07 W48	* LOCKHEED	11 2025	N32 W90	MCNATH	19 1801	S09 W52
MCNATH	07 1906 E	N10 E45	* MCNATH	11 2042	S13 W90	HAWAII	19 1802	S11 W51
MCNATH	07 1923	N31 W30	LOCKHEED	11 2056	S11 E52	LOCKHEED	19 1828	S11 W55
HAWAII	07 2002	N28 W29	LOCKHEED	11 2124	S17 E43	LOCKHEED	19 1836	S14 E29
MCNATH	07 2002 E	N29 W26	LOCKHEED	11 2131	N29 W80	LOCKHEED	19 1848	N20 W85
SAC PEAK	07 2002 E	N29 W27	HAWAII	11 2130	N23 W84	LOCKHEED	19 1912	S10 W51
MCNATH	07 2020	N08 W75	LOCKHEED	11 2145	S09 E55	LOCKHEED	19 1912	S10 W51
LOCKHEED	07 2210 U	S15 E23	HAWAII	11 2242 E	S08 E45	MCNATH	19 1915 E	S09 W50
LOCKHEED	07 2220 U	S11 W18				HAWAII	19 1922	S18 W54
LOCKHEED	07 2230	N13 E36	LOCKHEED	12 0202	N15 E15	HAWAII	19 1944	S18 W53
LOCKHEED	07 2230	N07 W76	SAC PEAK	12 1334	N19 W16	LOCKHEED	19 201A	S15 E27
LOCKHEED	07 2230	N07 W76	SAC PEAK	12 1440	N13 W05	LOCKHEED	19 2020	S11 W56
			WENDEL	12 1442 E	N13 W05	LOCKHEED	19 2020	S11 W56
LOCKHEED	08 0002	N28 W29	SAC PEAK	12 1510	S13 E48	LOCKHEED	19 2020	S11 W56
HAWAII	08 0028	N17 W32	SAC PEAK	12 1600	S15 E45	MCNATH	19 2025	S09 W56
LOCKHEED	08 011A	N32 W28	SAC PEAK	12 1610	S13 W90	HAWAII	19 2040	S17 W57
HAWAII	08 0116	N17 W31	LOCKHEED	12 1742	N12 W08	MCNATH	19 2135 E	N12 E90
* CAPRI S	08 0759 E	S10 W68	LOCKHEED	12 1746	N33 W90	* MCNATH	19 2138 E	S14 E27
CAPRI S	08 1239 E	N05 W85	LOCKHEED	12 1816	S13 E49	LOCKHEED	19 2138 E	S14 E27
WENDEL	08 1325 E	N11 E43	SAC PEAK	12 1818	S14 E52	LOCKHEED	19 2150	S10 W57
SAC PEAK	08 1344	N3A W41	* SAC PEAK	12 1910	N36 W90	LOCKHEED	19 2150	S10 W57
MCNATH	08 1345	N36 W40	* HAWAII	12 1916	N22 E07	LOCKHEED	19 2232	S14 E25
HUANCAYO	08 1348 E	N35 W41	HAWAII	12 1945	S07 E40	MCNATH	19 2232	S14 E25
SAC PEAK	08 1416							

SUBFLARES

Noted as follows: Date-Universal Time- Coordinates

JUNE 1960

ARCETRI	20 0944 E	S12 W66	HAWAII	25 2322	N20 W04	LOCKHEED	29 2216	N10 E51
CAPRI S	20 0950	S12 W69	HAWAII	25 2322	N07 W60	LOCKHEED	29 2232	N02 W56
MCNATH	20 1121	S11 W68	HAWAII	25 2326	N25 W02	LOCKHEED	29 2324	N08 E50
MCNATH	20 1316	S11 W70				SAC PEAK	29 2326	N10 E52
SAC PEAK	20 1530	S12 W71	LOCKHEED	26 0015	N15 W59	LOCKHEED	29 2351	N28 E28
MCNATH	20 1555	S11 W70	LOCKHEED	26 0015	N15 W59			
LOCKHEED	20 1555	S12 W68	LOCKHEED	26 0050 E	N14 W60	LOCKHEED	30 0044	N28 E33
SAC PEAK	20 1556	S12 W71	HAWAII	26 0104 E	N06 W62	LOCKHEED	30 0103	N21 W56
SAC PEAK	20 1632	S11 E70	LOCKHEED	26 0110 U	N07 E60	LOCKHEED	30 0120	N05 E50
SAC PEAK	20 1744 U	S12 W70	CAPRI S	26 1043	N21 W08	MCNATH	30 1047 E	N19 W62
LOCKHEED	20 1756	S13 W70	* MCNATH	26 1200	N14 W74	R O HERST	30 1054 E	N18 W60
MCNATH	20 1758	S11 W72	* CAPRI S	26 1201 E	N14 W67	* MCNATH	30 1109	N11 E40
LOCKHEED	20 1833	S12 W70	MCNATH	26 1212	N07 E77	MCNATH	30 1220	S15 E04
LOCKHEED	20 1840	N21 E00	CAPRI S	26 1302 E	N07 E35	MCNATH	30 1235	N07 E47
SAC PEAK	20 1848	S11 W70	SAC PEAK	26 1303 E	N08 E37	SAC PEAK	30 1318	N22 W64
SAC PEAK	20 1936	S12 W73	* SAC PEAK	26 1303 E	N15 W70	SAC PEAK	30 1430	N02 E77
HAWAII	20 2014	S19 W70	WENDEL	26 1312 E	N07 W67	LOCKHEED	30 1502	N08 E44
HUANCAYO	20 2018 E	S12 W65	LOCKHEED	26 1458	N12 W70	LOCKHEED	30 1524	N22 W66
SAC PEAK	20 2040	N01 E90	SAC PEAK	26 1522	N21 W10	SAC PEAK	30 1526	N22 W65
LOCKHEED	20 2103	S13 W72	LOCKHEED	26 1525	N21 W10	SAC PEAK	30 1536	N10 E40
LOCKHEED	20 2105	S13 W72	MCNATH	26 1526	N21 W11	LOCKHEED	30 1536	N11 E40
SAC PEAK	20 2106	S12 W74	SAC PEAK	26 1528	N13 W70	MCNATH	30 1537	N10 E40
SAC PEAK	20 2240	S12 W64	LOCKHEED	26 1535	N15 W72	MCNATH	30 1547	N27 E17
LOCKHEED	20 2241	S12 W65	MCNATH	26 1539	N15 W75	LOCKHEED	30 1547	N28 E18
LOCKHEED	20 2315	S13 W74	SAC PEAK	26 1628	N13 W70	LOCKHEED	30 1550	N04 E76
SAC PEAK	20 2322	S12 W78	LOCKHEED	26 1630	N15 W72	LOCKHEED	30 1550	S15 E02
			SAC PEAK	26 1732	N20 W15	LOCKHEED	30 1550	N29 E18
SAC PEAK	21 1434	N11 W01	LOCKHEED	26 1734	N19 W14	CAPRI S	30 1550 E	N28 E20
SAC PEAK	21 1448	S13 W90	MCNATH	26 1736	N19 W14	LOCKHEED	30 1604	N07 E44
SAC PEAK	21 1508	N12 W02	SAC PEAK	26 1802 E	N17 W17	LOCKHEED	30 1650	N08 E44
LOCKHEED	21 1510	N12 W01	MCNATH	26 1802	N27 W75	HAWAII	30 1652 E	N14 E37
MCNATH	21 1510	N11 E02	LOCKHEED	26 1802	N27 E76	LOCKHEED	30 1805	N23 W68
MCNATH	21 1620	N11 E03	HAWAII	26 1806 E	N37 E75	HAWAII	30 1818	N13 W66
LOCKHEED	21 1720	N12 W01	LOCKHEED	26 1840	N15 W74	MCNATH	30 1820 E	N21 W71
LOCKHEED	21 1821	N12 E31	LOCKHEED	26 1845	N08 E66	LOCKHEED	30 1840 E	N23 W67
MCNATH	21 1821	N11 E04	LOCKHEED	26 1910	N21 W13	LOCKHEED	30 1915	N10 E43
MCNATH	21 2101	N11 E05	LOCKHEED	26 1910	N28 E66	LOCKHEED	30 1935	N06 E36
HAWAII	21 2220	N28 E48	LOCKHEED	26 1930	N19 W15	MCNATH	30 2000	N07 E42
HAWAII	21 2312	N12 E13	MCNATH	26 1948	N12 W70	LOCKHEED	30 2022	N20 W68
HAWAII	21 2314 E	N28 E48	LOCKHEED	26 1949	N12 W70	MCNATH	30 2025	N20 W71
			LOCKHEED	26 1949	N12 W70	HAWAII	30 2026	N10 W68
LOCKHEED	22 0108	N22 E48	LOCKHEED	26 2017	N10 E31	LOCKHEED	30 2056	N27 E22
CAPRI S	22 0819 E	N21 E43	MCNATH	26 2018	N07 E39	HAWAII	30 2058	N30 E16
ARCETRI	22 0824 E	N21 E45	LOCKHEED	26 2022	S16 E52	LOCKHEED	30 2122	N06 E35
WENDEL	22 1017 E	N22 W46	LOCKHEED	26 2236	N14 W76	* LOCKHEED	30 2133	N20 W68
STOCKHOLM	22 1315 E	N15 E55	MCNATH	26 2238	N08 W60	HAWAII	30 2134 E	N10 W68
SAC PEAK	22 1426	N11 W16	LOCKHEED	26 2242	N26 E66	* SAC PEAK	30 2140 E	N19 W67
SAC PEAK	22 1450	N12 W15	LOCKHEED	26 2256	N11 W72	SAC PEAK	30 2214	N05 E36
SAC PEAK	22 1556	N22 E41	LOCKHEED	26 2305	N09 E30	LOCKHEED	30 2214	N06 E35
WENDEL	22 1557	N22 E35	LOCKHEED	26 2317	N27 E66	LOCKHEED	30 2222	N23 W68
LOCKHEED	22 1557	N22 E40				LOCKHEED	30 2240	S14 E53
LOCKHEED	22 1707	S18 E22	LOCKHEED	27 0004	N13 W75	LOCKHEED	30 2241	N10 E39
SAC PEAK	22 1728	N11 W17	LOCKHEED	27 0007	N26 E65	SAC PEAK	30 2244 E	S16 E54
HAWAII	22 1800 E	N29 E41	LOCKHEED	27 0019	N20 W17	HAWAII	30 2312	N13 E37
LOCKHEED	22 1820	N12 W17	LOCKHEED	27 0050	N12 W75	LOCKHEED	30 2330	N05 E34
SAC PEAK	22 1820	N12 W17	HAWAII	27 0053 E	N17 W30	HAWAII	30 2336	N10 E33
MCNATH	22 1832	N12 W17	HAWAII	27 0111	N00 E12			
MCNATH	22 1838 E	N12 W17	LOCKHEED	27 0156	N26 E65			
HAWAII	22 1856 E	N10 W18	LOCKHEED	27 0156	N28 W19			
MCNATH	22 1912	N22 E37	CAPRI S	27 0848 E	N13 W80			
SAC PEAK	22 1914 U	N21 E38	CAPRI S	27 0952	N10 E30			
LOCKHEED	22 1914	N23 E38	ARCETRI	27 1016 E	N28 E60			
MCNATH	22 1915	N12 W17	* MCNATH	27 1110	N22 W22			
HAWAII	22 1916	N27 E35	MCNATH	27 1113	N20 W68			
SAC PEAK	22 1916	N12 W17	MCNATH	27 1140	N17 E43			
HAWAII	22 1918	N10 W18	* MCNATH	27 1150	N12 W90			
LOCKHEED	22 1945	N12 W18	MCNATH	27 1209	N18 W22			
MCNATH	22 1946	N12 E37	MCNATH	27 1223	N18 W22			
HAWAII	22 1948	N10 W19	MCNATH	27 1252	N27 E57			
SAC PEAK	22 1956	N12 W18	STOCKHOLM	27 1253	N27 E56			
LOCKHEED	22 2341	N13 W73	MCNATH	27 1647	N07 E20			
			LOCKHEED	27 1648	N08 E21			
LOCKHEED	23 0051	N18 E37	SAC PEAK	27 1712	N12 W88			
LOCKHEED	23 0111	N10 W20	LOCKHEED	27 1721	N07 E80			
LOCKHEED	23 0113	N23 E35	MCNATH	27 1922	N22 E56			
LOCKHEED	23 0148	N21 E34	MCNATH	27 1932	N27 E56			
WENDEL	23 0959 E	N11 E26	* HUANCAYO	27 1951 E	N29 E63			
STOCKHOLM	23 1000 E	N12 W23	* MCNATH	27 1956	N27 E60			
ARCETRI	23 1001	N11 W18	SAC PEAK	27 2004	N20 W28			
WENDEL	23 1237 E	N10 W27	LOCKHEED	27 2006	N22 W26			
SAC PEAK	23 1448	N22 E27	MCNATH	27 2007	N22 W27			
LOCKHEED	23 1507	N08 W28	SAC PEAK	27 2034	N07 E90			
SAC PEAK	23 1604	N20 E27	LOCKHEED	27 2127	N07 E80			
LOCKHEED	23 1625	N16 E23	HAWAII	27 2158	N16 E76			
LOCKHEED	23 1706	N15 E24	LOCKHEED	27 2158	N07 E80			
LOCKHEED	23 1807	N16 E23	HAWAII	27 2203	N35 E52			
WENDEL	23 1809 E	N21 E29	* MCNATH	27 2243	N07 E60			
LOCKHEED	23 1824	S09 E76	LOCKHEED	27 2314	N07 E80			
LOCKHEED	23 1858	N16 E23	LOCKHEED	27 2330	S16 E34			
SAC PEAK	23 2040	N20 E23						
LOCKHEED	23 2040	N17 E22	LOCKHEED	28 0155	S13 W90			
LOCKHEED	23 2208	N18 E22	LOCKHEED	28 0208	N27 E53			
MCNATH	23 2210 E	N21 E26	LOCKHEED	28 0215	N07 E80			
LOCKHEED	23 2256	N18 E24	CAPRI S	28 0645 E	N18 E31			
LOCKHEED	23 2313	N18 E22	ARCETRI	28 0910 E	N21 W33			
HAWAII	23 2332	N19 E22	SAC PEAK	28 1346	S15 W90			
HAWAII	23 2342	N23 E19	SAC PEAK	28 1450	N27 E49			
			SAC PEAK	28 1532	S15 E90			
LOCKHEED	24 0003	N17 E19	LOCKHEED	28 1554	N08 E74			
LOCKHEED	24 0043	N20 E20	LOCKHEED	28 1701	N27 E44			
LOCKHEED	24 0102	N17 E21	LOCKHEED	28 1809	S21 E25			
ONOREJOV	24 0701 E	N20 E20	LOCKHEED	28 1810	N27 E43			
WENDEL	24 0705 E	N20 E18	HUANCAYO	28 1812	S17 E24			
WENDEL	24 0749 E	N22 E22	LOCKHEED	28 1857	N27 E46			
ONOREJOV	24 0842 E	N10 W41	MCNATH	28 1908 E	N26 E47			
* CAPRI S	24 0922	N12 W34	HAWAII	28 1940	N33 E38			
* ARCETRI	24 0927 E	N11 W38	LOCKHEED	28 2015	N06 E70			
* CAPRI S	24 1305	N08 E60	LOCKHEED	28 2035	N25 E39			
MCNATH	24 1345	N20 W45	HUANCAYO	28 2049	N26 E43			
WENDEL	24 1347 E	N22 W45	LOCKHEED	28 2105	N22 W43			
* LOCKHEED	24 1602	N11 W47	LOCKHEED	28 2240	N24 W40			
LOCKHEED	24 1842	N24 E16	LOCKHEED	28 2355	N25 E44			
HAWAII	24 1846	N27 E13						
LOCKHEED	24 2005	N15 W46	LOCKHEED	29 0013	N21 W45			
LOCKHEED	24 2100	N12 W49	LOCKHEED	29 0058	N23 W39			
LOCKHEED	24 2218	N13 W59	LOCKHEED	29 0138	N27 E43			
			MCNATH	29 1156 E	N07 E57			
ONOREJOV	25 0830	S09 E55	* SAC PEAK	29 1255 U	N18 W48			
SAC PEAK	25 1338	N25 E90	SAC PEAK	29 1446	N22 W46			
SAC PEAK	25 1422	S09 E47	* CAPRI S	29 1458 E	S22 E70			
MCNATH	25 1445	N24 E85	* LOCKHEED	29 1500 E	S15 E70			
SAC PEAK	25 1502	N22 E80	SAC PEAK	29 1512	N25 E31			
MCNATH	25 1636	S09 E52	LOCKHEED	29 1515 U	N28 E28			
LOCKHEED	25 1657	S09 E52	MCNATH	29 1528 E	N23 E31			
SAC PEAK	25 1658	N10 W60	* LOCKHEED	29 1611	N19 W50			
LOCKHEED	25 1659	N08 E68	* SAC PEAK	29 1612	N19 W52			
LOCKHEED	25 1936	N08 E46	* MCNATH	29 1612	N19 W52			
* LOCKHEED	25 1945	N21 W02	MCNATH	29 1630	N17 E60			
* MCNATH	25 1954 E	N21 W03	LOCKHEED	29 1708	N30 E49			
SAC PEAK	25 2008	N22 E80	LOCKHEED	29 1810	N05 E57			
SAC PEAK	25 2026	N14 W58	* LOCKHEED	29 1810	N26 E34			
MCNATH	25 2030	N15 W60	LOCKHEED	29 1936	N26 E34			
LOCKHEED	25 2032	N13 W57	SAC PEAK	29 1946	N06 E57			
LOCKHEED	25 2135	N15 W57	LOCKHEED	29 2034	N11 E48			
LOCKHEED	25 2250	N15 W59	SAC PEAK	29 2042	N12 E50			
LOCKHEED	25 2307	S14 W58	SAC PEAK	29 2044	N21 W56			
LOCKHEED	25 2309	N28 E77	MCNATH	29 2054 E	N10 E49			
LOCKHEED	25 2316	N20 W03	* LOCKHEED	29 2150	N29 E25			
SAC PEAK	25 2318	N15 W59	* MCNATH	29 2159 E	N27 E26			
SAC PEAK	25 2320	N20 W02						

*Rated as flare of importance 2, by other observatories (see CRPL-F 191 Part B).

SOLAR FLARES

1960

APRIL

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT			
		START	END	APPROX. LAT.	M-MATH PLACE REGION				TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha		MAX. INT. %		
{ KODAIKNL ALMA-ATA ALMA-ATA ALMA-ATA GOOD HOPE ALMA-ATA SIMEIZ SIMEIZ KHARKOV	01	0242	0300	N11 W02	5615	18	1	2	0247	5.20	5.20	1.70	122	S-SWF		
	01	0553 E		S06 E37	5618		2	1	0553	9.97			58			
	01	0644 E		N12 W10	5615		1	1	0644	2.34			60			
	01	0649 E		N09 W14	5615		1	1	0649	4.67			66			
	01	0649 E	0710	N11 W10	5615	21	1	1	0650	1.90	2.00					
	01	0721 E		N10 E70	5619		1	1	0721	2.34			53			
	01	0843	1240	N15 W09	5615	237	3		0900	12.30	13.30					
	01	0844 E	0858 D	N13 W11	5615	14 D	3	2	0858	19.04	20.30					
	01	0900 E	1215 D	N12 W12	5615	195 D	2	3	0905	8.00	13.60	3.40				
	02	0019	0023 D	N10 W17	5615	4 D	1	1	0019	3.02	3.26	1.43	131			
{ MITAKA NIZAMIAH ALMA-ATA ALMA-ATA ALMA-ATA SIMEIZ SIMEIZ GOOD HOPE MEUDON	02	0214 E	0223 D	N10 W23	5615	9 D	1	1	0216	1.01	1.11	2.60	183	S-SWF		
	02	0522 E	0529 D	N11 W22	5615	7 D	1	1	0522	3.65	4.09	1.70				
	02	0536 E		N13 W25	5615		1	2	0536	1.35			94			
	02	0538 E		N15 W20	5615		1	2	0538	3.64			66			
	02	0549 E		N09 W21	5615		1	2	0549	2.34			62			
	02	0640 E	0711 D	N09 W22	5615	31 D	1	1	0701	3.89	4.30		159			
	02	0650 E	0703 D	N07 W20	5615	13 D	2		0653	3.32	2.30	2.51	140			
	02	0654 E		N09 W20	5615		1		0654	2.10	4.00					
	02	0655	0710	N13 W25	5615	15	1									
	02	0747 E		N18 E41	5619		1	2	0747	2.34			92			
{ ALMA-ATA MEUDON SIMEIZ SIMEIZ GOOD HOPE UCCLE	02	0801 E		S08 E23	5618		1	2	0801	9.97			58	S-SWF		
	02	0835	0910	N14 W30	5615	35	1				3.00					
	02	0838 E	0920 D	N10 W28	5615	42 D	1	1	0845	3.89	4.50		159			
	02	0855 E	0912 D	S21 E82	5622	17 D	1	1	0912	.90	4.00		66			
	02	0900 E	0918 D	N12 W25	5615	18 D	1		0901	2.40	2.80					
	02	1149 E		N09 W30	5615		1									
	03	0317 E	0322	N12 W33	5615	5 D	2	2	0317	6.80	8.80	1.70	135		S-SWF	
	03	0542	0552	N12 W35	5615	10 D	1	2	0544	3.30	4.30	1.60	135			
	{ ABASTUMANI SIMEIZ VOROSHILOV	03	0547 E	0807 D	N11 W36	5615	140 D	2	2	0603	6.35	8.20	3.50		86	S-SWF
		03	0558 E	0700 D	N12 W38	5615	62 D	1	1	0558	6.35	8.30			110	
{ KODAIKNL NIZAMIAH ALMA-ATA ALMA-ATA ALMA-ATA KHARKOV KRASNIA MOSCOW G GOOD HOPE	03	2204 E	0107 D	N12 W46	5615	183 D	2	3	2221	4.06			82	S-SWF		
	04	0218 E	0234	N12 W50	5615	16 D	2	2	0223	5.20	8.80	1.40	122			
	04	0410 E	0422	N08 W48	5615	12 D	1	1	0415	1.82	2.81	2.60				
	04	0522 E		N10 E30	5623		1	2	0522	5.97			61			
	04	0523 E		N13 W47	5615		1	2	0523	4.67			58			
	04	0637 E		N06 W54	5615		1	2	0637	2.65			58			
	04	0850 E	1014	N14 W52	5615	84 D	1	2	0853	12.67	20.40	2.00				
	04	0854	0948	N12 W51	5615		2		0904	9.04			85			
	04	0857 E	1124 D	N12 W53	5615	147 D	1	1	0904	8.46	13.29	1.74	140			
	04	0937 E	1017	N12 W52	5615	40 D	1		0937	2.20	3.80					
{ VOROSHILOV KODAIKNL NIZAMIAH KYOTO ALMA-ATA ALMA-ATA KYOTO	05	0026	0040	N10 W66	5615	14	1	3		1.00			83	S-SWF		
	05	0215 E	0308	N12 W62	5615	53 D	2	1	0218	9.80	20.60	1.40	122			
	05	0255 E	0301 D	N12 W60	5615	6 D	3	1	0255	12.15	24.56	2.50				
	05	0430 E	0530 D	N11 W60	5615	60 D	1	1	0450	4.78			80			
	05	0456 E		S06 W21	5618		1	2	0456	3.32			62			
	05	0457 E		N23 W46	5615		1	2	0457	1.97			71			
	05	0510 E	0530 D	S07 W20	5618	20 D	1		0520	3.74		1.68	100			
	05	0510 E														
	05	0510 E														

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

1960

APRIL

OBSERVATORY	DATE	OBSERVED		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX.					TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	'MAX. WIDTH H _z	MAX. INT. %	
					LAT.	MGMATH PLAGE REGION									
ALMA-ATA	APR 1960	0700 E		0700	N16 W05	5619	1	1	2	0700	2.34			55	S-SWF
ALMA-ATA	05	0706 E		0706	N09 E17	5623	1	1	2	0706	3.32			55	
MEUDON	05	1058	1120		S10 W28	5618	1	1				4.00		65	
VOROSHILOV	05	2241	2251		N10 W79	5615	1	1	3		.73				
MITAKA	06	0030 E	0038 D		N08 W79	5615	1	1	1	0031	1.21		1.96	96	
KYOTO	06	0540	0546 D		N10 W73	5615	1	1		0541	2.91		1.32	120	
ALMA-ATA	06	0554 E			S11 E08	5620	1	1	2	0554	4.67			54	
ALMA-ATA	06	0556 E			S09 E67	5625	1+	1	2	0556	2.65			56	
ALMA-ATA	06	0700 E			S08 W37	5618	1+	1	2	0700	8.31			71	
GOOD HOPE	06	0939	0958		N18 W78	5615	1	1		0941	.60				
UCCLE	06	0951 E	1021 D		N06 W58	5616	1	1	3	1009	2.50	5.00			
MEUDON	06	1130	1145		N13 W80	5615	2	1							
GOOD HOPE	06	1132	1134 D		N12 W77	5615	2	1	1	1134	1.20			81	
KIEV	06	1133 E	1145 D		N12 W87	5615	1+	1	1	1134	2.08				
UCCLE	06	1136 E	1145 D		N12 W85	5615	2	1	4	1136	3.50				
UCCLE	06	1315 E			N08 W83	5615	1	1	3						
UCCLE	06	1404 E			N08 W83	5615	1	1							
UCCLE	07	1251 E			N07 W50	5619	1	1	1	1251	1.50				
MITAKA	09	0123 E	0134		N15 E68	5627	2+	1	1	0123	4.83	13.04	4.26	172	S-SWF S-SWF
NIZAMIAH	09	0400	0412		N08 E57	5627	1	1	2	0405	1.22	2.34	1.60		
GOOD HOPE	09	1044	1104		N11 E58	5627	20	1		1053	1.90	3.80			
MEUDON	09	1047	1100		N10 E60	5627	13	1				9.00			
GOOD HOPE	09	1140	1235		N17 E64	5627	55	1		1149	1.80	4.60			
MEUDON	09	1143	1310		N17 E64	5627	87	2				25.00			
MEUDON	09	1300	1355		S08 E22	5625	55	1							
GOOD HOPE	10	0833	0846		N11 E45	5627	13	1		0837	1.60	2.40			
MEUDON	10	0835	0905		N10 E45	5627	30	1			5.25			142	
VOROSHILOV	10	2317	0004		S07 W03	5625	47	2	3						
GOOD HOPE	11	0943 U			N10 E30	5627									
ALMA-ATA	12	0551 E			S10 W16	5625		1+	1	0551	5.97			66	
ALMA-ATA	12	0643 E			N12 E22	5627		1	1	0643	9.97			55	
GOOD HOPE	12	0844	0904		N12 E20	5627	20	1		0853	2.10	2.30			
UCCLE	12	0855 E	0904 D		N12 E23	5627	9 D	1	2	0855	3.50				
UCCLE	12	0925 E	1010 D		N13 E22	5627	45 D	2	2	0928	6.50	7.00			
KRASNYA	12	0926	0957		N15 E18	5627		1+	2		6.34			90	
GOOD HOPE	12	0926	1002		N16 E18	5627	36	1		0928	4.20	4.70			
MEUDON	12	0930	0952		N14 E20	5627	22	1+							
KHARKOV	12	0941 E	1010 D		N11 E18	5627	29 D	1	2	0947	1.16	1.40	1.50		
GOOD HOPE	12	1205	1233		N12 E18	5627	28	1		1214	2.50	2.80		84	
KIEV	12	1207 E	1255 D		N11 E17	5627	48 D	1+	1	1214	4.15				
KHARKOV	12	1210 E	1235 D		N10 E18	5627	25 D	1	2	1210	2.29	2.40	2.40		
ALMA-ATA	14	0305 E			N07 W04	5627		1+	2	0305	6.65			68	
GOOD HOPE	14	0636 E	0646		S15 W90	5622	10 D	1?		0636	.50				
GOOD HOPE	14	0655	0720		S15 W90	5622	25	1		0704	.60				

SOLAR FLARES

APRIL 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURATION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT	
		START	END	MAX. PHASE	APPROX.				TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %		
					LAT.										LONG. REGION
{ ABASTUMANI SIMEIZ ABASTUMANI SIMEIZ SIMEIZ KARKOV KARKOV KIEV	15	0656 E	0705 D	0659 U	S06 W67	5625	9 D	1	2	0658	.90	2.10		66	
	15	0656 E	0707 D	0658 U	S08 W68	5625	11 D	1	2	0658	1.17	2.80		60	
	15	0717 E	0725 D	0722 U	N11 W28	5627	8 D	1			1.09	1.20		73	
	15	0717 E	0730 D	0719 U	N13 W18	5627	13 D	1			1.00	1.10		82	
	15	0718 E	0725 D	0721 U	N10 W29	5627	7 D	1	2	0721	1.35	1.60		73	
	15	0718 E	0740 D	0719 U	N12 W18	5627	22 D	1	2	0719	1.00	1.10		71	
	15	0721 E	0740 D		N11 W24	5627	25 D	1	3	0721	1.16	1.50			
	15	0955 E	1020 D		N26 E69	5634	25 D	1	3	0958	2.29	5.10	1.80	51	
	15	1025 E	1332 D	1332 U	N12 W25	5627	187 D	1	1	1332	1.77				
	{ ALMA-ATA NIZAMIAH ALMA-ATA KRASNYA KRASNYA KCCLE KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV	16	0343 E	0421	0343	N21 E27	5631		1	1	0343	3.02			48
		16	0410 E	0421	0414	S09 E03	5630	11	1+	1	0414	2.43	2.44	1.70	59
		16	0422 E	0916	0422	S10 E01	5630		1	1	0422	4.32			75
		16	0909	0917	0913	S09 W77	5625	7	1	2		2.72			80
		16	0909	0917	0913	N17 E42	5634	8	1+			3.18			
		16	0910 E	0933		N13 E44	5633	23	1	2	0912	2.29	3.20	1.70	64
16		0912 E	0928 D	0914 U	N13 E42	5633	16 D	1	1		2.01				
16		0913 E	0939 D		N24 E53	5634	26 D	1	2	0925	2.29	4.30	1.50	56	
16		0935	0950	0937	N18 E17	5631	15	1			1.84				
16		1150	1209 D		N06 E44	5633	19 D	1	2	1152	3.43	4.40	1.50		
{ VOROSHILOV ALMA-ATA ALMA-ATA ALMA-ATA KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV		17	0034	0051	0039	S10 W10	5630	17	1	2		4.25			77
		17	0309 E	0309	0309	N10 W44	5627		1+		0309	9.97			51
		17	0333 E	0333	0333	N09 E49	5633		1+	2	0333	2.69			73
		17	0410 E	0410	0410	S09 W13	5630		1+		0410	9.97			62
		17	0540 E	0922 D		N31 W88	5629		1	2	0540	.57	4.80	3.30	
	17	0910 E	0939	0936	N31 W90	5629	12 D	1	2	0915	.57	4.80	1.60		
	17	0936	0939		N15 W49	5627	3	1	2	0938	1.14	1.80	1.60		
	17	1101 E	1151 D		N12 W52	5627	50 D	1	2	1103	3.43	6.30	1.60		
	17	1158	1204 D		N15 W52	5627	6 D	1	2	1201	1.14	1.80			
	17	1214	1239	1218	N22 E38	5634	25	1		1218	1.70	2.50			
	{ KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV KARKOV	18	1021	1037 D		N06 E13	5633	16 D	1	1	1023	2.86	2.90	1.30	
		18	1034	1059 D		N07 E16	5633	25 D	1	1	1037	1.14	1.20	1.60	
		20	0950 E	1355 D		S18 E62	5641		1?	1					75
		20	1300 E	1355 D		N21 E05	5634	55 D	1?	1					
		20	1314 E	1322 D	1316	N13 W17	5633	8 D	1+	1	1316	3.55			
21		0020 E	0110 D	0035	N23 W03	5634	50 D	1		0035	1.66	6.53	2.17	90	
21		0024 E	0050 D	0042	N24 W05	5634	26	1+	1	0041	5.53			131	
21		0628 E	0730 D	0635	S16 E56	5641	62 D	1+	1		3.68			72	
21		0639	0656	0644	N23 W05	5634	17	1	1		1.84			56	
21		0816	0832	0825	S15 W66	5630	16	1	1		1.84			52	
22		0415	0421	0417	N25 W19	5634	6	1	1	0415	1.11	1.76	1.64	96	
22		0840 E			N06 W08	5636		1?	1						
22		1445 E			N06 W08	5636		1?	1						
22		1445 E			S15 E40	5641		1+	1						
22		2337	2348	2339	S15 W85	5630	11	1+	3		.63			138	

COMMENCE - STANDARDS - BOULDER

SOLAR FLARES

APRIL 1960

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME		LOCATION		DURATION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				PROVISIONAL IONOSPHERIC EFFECT
		START	END	APPROX. LAT.	APPROX. MER. DIST.	MC- PLACE REGION			TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %
VOROSHILOV	22	2356	0014	N24	W29	5634	1+	3		1.63			80
VOROSHILOV	23	0011	0047	S15	W87	5630	2	3		.81			87
MITAKA	23	0407 E	0412	S13	W90	5630	5 D	1	0407	1.15		7.46	
GOOD HOPE	23	0808	0824	N16	E57	5642	16	1	0808	1.60	3.20		
{	23	0936	1022	N23	W34	5634	46	1	0942	3.30	4.40		
GOOD HOPE	23	0938	1005 D	N22	W34	5634	27 D	1	0940	4.00	5.30	2.00	S-SWF
GOOD HOPE	24	1423	1438	N09	E77	5644	15	1	1424	1.00			
ALMA-ATA	26	0304 E	0304	S09	E61	5645	2		0304	8.64			50
ALMA-ATA	26	0421 E	0421	N14	E21	5642	1	2	0421	4.65			45
ALMA-ATA	26	0605 E	0605	N08	W61	5636	1+		0605	5.98			45
KHARKOV	26	1041	1108	N07	E46	5644	27	1	1043			1.30	
VOROSHILOV	29	0138	0259 D	N12	W21	5642	81 D	2		7.59			115
MITAKA	29	0208 E	0304 D	N09	W20	5642	56 D	1	0208	11.06	11.83	2.29	149
KODAIKUNL	29	0209 E	0505	N10	W22	5642	176 D	3	0358	16.50	20.40	2.04	154
ABASTUMANI	29	0443 E	0857 D	N11	W22	5642	254 D	3	0348	29.02	58.70	2.70	96
SIMEIZ	29	0453 E	0908 D	N13	W20	5642	255 D	2	0453	27.20	30.40		82
NIZAMIAH	29	0454 E	0502 D	N17	W18	5642	8 D	2	0454	4.86	5.53	1.70	80
PIRCULI	29	0532 E	0710	N16	W22	5642	98 D	3		11.93			64
PIRCULI	29	0540 E	0754 D	N10	W22	5642	134 D	1		1.84			75
GOOD HOPE	29	0639 E	0742	N17	W20	5642	63 D	1	0641	4.30	4.90		
KIEV	29	1232 E	1302 D	N14	W26	5642	30 D	2	1238	3.64			
MEUDON	29	1623	1635	N16	W25	5642	12						
MEUDON	29	1718	1745	N16	W18	5642	27	1					
KHARKOV	30	0725 E	0730 D	N11	E88	5652	5 D	1	0726	.58	4.40	2.00	
KHARKOV	30	0725 E	0736 D	S08	E85	5653	11 D	1	0726	2.29	11.10		

Kharkov: Measured and the corrected areas are the combined areas of two brightenings.

These flare reports are addenda to the April 1960 flares published in CRPL-F 189 Part B, May 1960.

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

MOSCOW-G MOSCOW - GAISH
R O EDIN ROYAL OBSERVATORY, EDINBURGH
R O HERST GREENWICH ROYAL OBSERVATORY, HERSTWONCEUX
SAC PEAK SACRAMENTO PEAK
SCHAUTINS SCHAUTINSLAND
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 MAXI-
MUM INTENSITY COLUMN ARE ARBITRARY UNITS ON A
SCALE OF 10 TO 40 - NOT PERCENT OF THE CONTINUOUS
SPECTRUM.

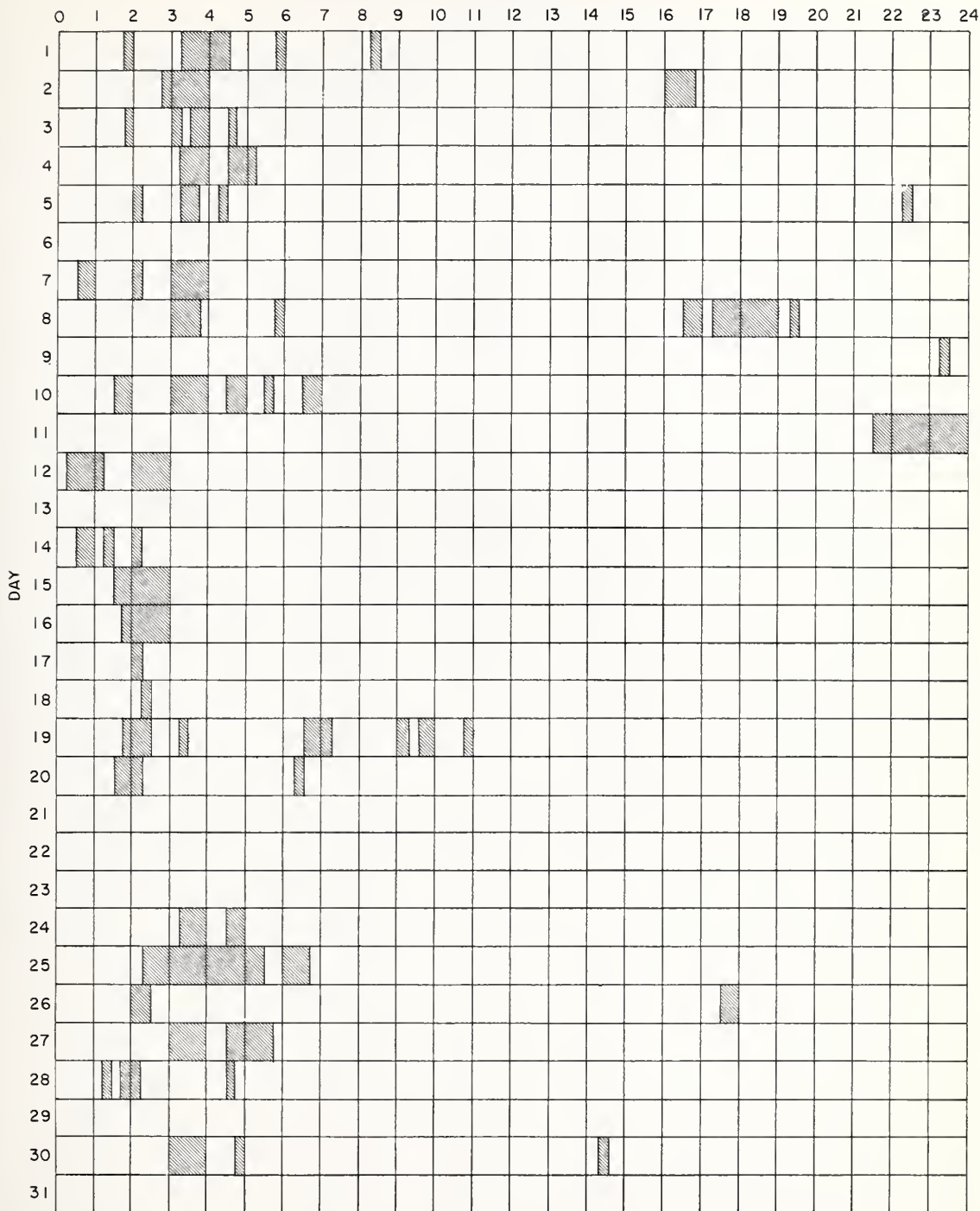
COMMERCE - STANDARDS - BOULDER

INTERVALS OF NO FLARE PATROL OBSERVATIONS

III

APRIL 1960

HOUR-UT



Stations Include:

COMMERCE - STANDARDS - BOULDER

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

IONOSPHERIC EFFECTS OF SOLAR FLARES

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

JUNE 1960

June 1960	CLASS			WIDE SPREAD INDEX	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
1		1		1	0543		0611		HO
1		3-		5	0840E		0930		A3, DU, HO
1	1			4	1648	1700	1720	10	BO, MC
1		1		4	1650	1709	1735		A3, BO
1			1	4	1725		1726		BO, MC
1			1	4	1750		1755		BO, MC
1			1	4	1906		1908		BO, HA
1		1		1	1940	1942			A5
1			1	4	1944		1945		BO, HA
1			2	5	2004		2007		BO, MC, HA
1		3		5	2006	2023	2130	40	A1, A2, A3, A5, A10, BO, HA, PA
1			1	5	2007	2020	2125		BO, HA, MC
1			1	5	2008		2010		BO, HA, MC
1			1	4	2017		2018		BO, HA
1			1	5	2027		2040		BO, HA (Group of Bursts)
2		1-		3	1435	1438	1450		A1, A2
2			1	5	1816		1818		BO, HA
2			1	5	1913		1916		BO, HA
2			1	5	2025		2031		BO, HA
2		1+		5	2309	2321	2400		A1, A3, A5, A9, A10
3			1	5	1300E		2400D		BO, HA, MC (Noise Storm)
4		1		5	2019	2033	2050		A2, A5, BO
4	1			5	2019	2022	2040	5	BO, HA
6			1	4	1711		1714		BO, MC
6			1	4	1737		1740		BO, MC
6			1	5	1922		1925		BO, HA
6			1	5	1957		2005		BO, HA (Group of Bursts)
6			1	5	2141		2145		BO, HA
7			1	4	2119		2125		BO, MC
8		1		1	0739		0844		NE
8	1			4	1749	1821	1835	20	BO, MC
8			1	5	1900		1902		BO, HA, MC
8			1	5	2032		2035		BO, HA, MC
8			2	5	2314		2319		BO, HA
9		1		1	0531		-		NE
9	1			5	2036	2042	2100	15	BO, HA
9			1	5	2103		2106		BO, HA, MC
10		1		1	0638		0716		HO
10		□		1	0934	0939	0952		DU
10		1		5	1707		1735		BO, MC, NE
10	1+			5	1706	1708	1725	25	BO, MC, RE
10		2-		5	1952	1958	2030		A1, A3, A5, A10, PA
10	2			5	1952	1958	2017	30	BO, HA, MC
11			1	5	1730		1733		BO, MC, RE
11			1	5	1846		1858		BO, HA, RE (Group of Bursts)
11		2		5	1949	2000	2047		A1, A3, A5, A10
11			1	5	1957		2015		BO, HA, RE
12		2+		1	0608	0625	0645		A11
12			1	1	1335	1338	1340		RE
12			1	4	1931		1933		BO, MC
12			1	5	1958		2001		BO, MC, HA
12			1	5	2008		2009		BO, MC, HA
12			1	1	2317		2318		HA
12		2+		3	2320	2330	0010		A1, A3, A5, A10
13			1	1	0032		0036		HA
13			1	1	0113		0115		HA
13		2-		5	0737		0847		NE, TO
13			1	1	1239	1240	1242		RE
13			1	1	1420		1423		BO
13			2	5	1709		1717		BO, HA, MC, RE
13		□		1	1712	1723	1759		DU
13			1	5	1735		1739		BO, MC, RE
13			1	4	1818		1821		BO, MC
13			1	5	2010		2012		BO, HA, MC
13			1	4	2101		2102		BO, MC
14		3		5	0004		0012		BO, HA
14		1		1	0008	0017			BO
14				5	0012	0015			BO, HA
14	□		1	1	0016		0028		HA (Group of Bursts)

IONOSPHERIC EFFECTS OF SOLAR FLARES

IIIa

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

JUNE 1960

June 1960	CLASS			WIDE SPREAD INDEX	TIME (UNIVERSAL TIME) MAX.			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN		END		
14	1			4	1635	1637	1645	5	BO, MC
14			1	4	1658		1700		BO, MC
14	1			5	2217	2225	2250	20	BO, HA
15		1		5	0254				A3, HO
15			1	1	0252		0254		HA
15	2			1	0254	0255	0320	30	HA
15			1	4	1636		1638		BO, MC
15			1	4	1640		1641		BO, MC
16		1		1	0222		0252		HO
16			2	5	1338		1343		BO, MC, RE
17			1	4	1730		1731		BO, MC
17			1	4	1933		1941		BO, MC (Group of Bursts)
18			1	5	1223		1226		BO, MC, RE
18			2	5	1547		1550		BO, MC, RE
18			2	5	1746		1803		BO, MC, RE (Group of Bursts)
18			1	5	1902		1904		BO, HA, MC
18			1	4	2003		2004		BO, MC
19		1+	2	4	1331		1338		BO, MC, RE (Group of Bursts)
19	1			5	1332	1337	1500	15	A1, A3, A5, BO, DU, NE, PA
19				4	1338	1342	1400U		BO, MC
19			1	4	1445		1455		BO, MC (Group of Bursts)
19			1	4	1541		1543		BO, MC
19			1	4	1638		1639		BO, MC
19			1	4	1714		1715		BO, MC
19			1	4	1727		1730		BO, MC
19			1	4	1808		1812		BO, MC
19			1	4	1821		1823		BO, MC
19			1	4	1856		1857		BO, MC
19			1	5	1910	1911	1913		BO, HA, MC, RE
19			1	5	2148		2155		BO, HA (Group of Bursts)
19			1	5	2354		2355		BO, HA
20			2	5	0127		0131		BO, HA
20		1		1	0130		0200		HO
20	□			1	0131	0133			HA
20			1	4	1625		1626		BO, MC
20			1	4	1642		1643		BO, MC
20			1	1	2112		2113		BO
21			1	1	1533	1537	1540		RE
21			1	4	1819		1820		BO, MC
21			1	5	2215		2218		BO, HA, MC
21			1	1	2243		2247		HA
25		1		5	1025				A3, NE
25		1		4	1200	1213	1300		DU, NE
25			2	4	1219		1223		BO, MC
25			1	4	1459		1501		BO, MC
25			2	5	1659		0100D		BO, HA, MC (Noise Storm)
25		2		5	1705	1718	1735		A2, A3, A5, BO, MC
25		2+		5	2047	2050	2124		A2, A3, A5, BO, PA
26		2		1	0433		2110		HO
26			2	4	1358		1401		BO, MC
26		2-		5	1401	1414	1440		A3, BO, DU, NE, PA
26	□			4	1401	1406	1440		BO, MC
26			2	5	1525		1530		BO, MC, RE
26			2	4	1645		1702		BO, MC, (Group of Bursts)
26			2	5	1910		1914		BO, HA, MC, RE
26			2	5	2027		0239		BO, HA, MC (Group of Bursts with strongest peaks at 2029, 2057, 0003, 0036).
26			1	1	2028		2032		RE
26			1	1	2108		2112		RE
27		1		3	1152		1222		DU, NE
27			1	1	1403		1405		MC
27			1	4	1544		1546		BO, MC
27			1+	5	1713	1716	1719		BO, MC, RE
27	1			5	1815	1833	1850	10	BO, HA, MC
27		1+		4	1820	1835	1855		A3, BO
27			1	5	1924		1926		BO, HA, MC
27		1+		2	1958	2012U	2052D		A3, A5
27			2	5	2004		2011		BO, HA, MC, RE (Group of Bursts)

IONOSPHERIC EFFECTS OF SOLAR FLARES

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

JUNE 1960

June 1960	CLASS			WIDE SPREAD INDEX	TIME (UNIVERSAL TIME)			PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
	SCNA	SEA	Burst		BEGIN	MAX.	END		
27			3	5	2142		0120		BO, <u>HA</u> , MC, RE (Noise Storm with strong peaks at 2147, 2212, 2240, 2346)
27		2+		5	2144	2158	2245		A3, <u>A5</u> , A10, PA
27	2			5	2148	2200		50	BO, <u>HA</u> , MC
28			1+	5	1214		1217		BO, <u>MC</u> , PA, RE
28			1	4	1741		1754		BO, <u>MC</u> (Group of Bursts)
28			2	4	1811		1819		BO, <u>MC</u> (Group of Bursts)
28		2+		5	1854	1911	2000U		A1, A3, A5, A10, <u>BO</u> , PA
28	2			5	1854	1908	1935	45	BO, HA, MC, RE
28			2	5	2047		2051		BO, MC, RE
28			1	1	0105		0109		<u>HA</u>
28	2			1	0135	0150	0300	30	<u>HA</u>
29			1	1	1230	1250	1250		<u>RE</u>
29	1			1	1616	1625	1640	10	<u>BO</u>
30	1			1	0050	0055	0131	20	<u>HA</u>
30			1	4	1800		1802		BO, MC
30			1	4	1810		1812		BO, MC
30			1	4	1835		1837		BO, MC
30			1	4	1950		1952		BO, MC
30			1	4	2043		2045		BO, MC

Notes: A10 = Blaauvelt, New Jersey
All = Manila, Philippines
TO = Hiraíso Radio Wave Observatory, Japan
Sacramento Peak had no usable record for June 1960.

COMMERCE - STANDARDS - BOULDER

IONOSPHERIC EFFECTS OF SOLAR FLARES

IIIp

(SHORT-WAVE RADIO FADEOUTS)

JUNE 1960

June 1960	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F 191B
1	0837	0952	Slow S-SWF	5	3	DA, BR, JU, NE, <u>OK</u> , SW, TO, CW ⁺⁺ , CW***	0824
1	1655	1717	Slow S-SWF	4	1	HU, <u>MC</u> , PR	1646
1	2007	2110	S-SWF	5	2	AD, <u>BE</u> , BO, FM, HU, LA, MC, PR, WS	2039
2	0420	0720	S-SWF	1	3+	<u>OK</u>	*
5	0320	0415	Slow S-SWF	5	1+	<u>AD</u> , <u>OK</u>	*
6	0455	0510	S-SWF	1	1-	<u>OK</u>	0455
8	0740	0832	Slow S-SWF	5	2-	JU, <u>OK</u> , NE, TO	0732E
8	1752	1830	Slow S-SWF	5	1+	BE, FM, HU, <u>MC</u> , PR, WS	1746
9	2030	2110	Slow S-SWF	5	1+	AD, <u>BE</u> , MC, PR, WS	2010
10	0510	0533	Slow S-SWF	1	1+	<u>OK</u>	*
10	0638	0650	Slow S-SWF	1	1-	<u>OK</u>	0635E
10	0935E	1005	Slow S-SWF	1	1	<u>NE</u>	0935E
10	1450	1515	G-SWF	5	1	AN, <u>MC</u> , PR	1435
10	1558	1626	G-SWF	5	1-	HU, MC, <u>PR</u>	1546
10	1705	1722	S-SWF	5	1+	BE, FM, HU, LA, MC, NE, PR, WS	1702
10	1915	1940	G-SWF	3	1-	<u>MC</u> , WS	
10	1953	2025	S-SWF	5	2	AD, AN, BE, FM, HU, <u>MC</u> , PR, WS	1949
11	0112	0152	G-SWF	5	1	AD, <u>OK</u>	0112
12	0453	0742	G-SWF	1	3+	AN, <u>OK</u>	0600E
13	0738	0820	S-SWF	5	2-	AD, DA, <u>OK</u> , TO	0725
13	1712	1740	Slow S-SWF	5	1	HU, <u>MC</u> , PR, WS	1708
14	0007	0043	S-SWF	5	1+	AD, AN, <u>OK</u> , TO, WS	0001
14	1733	1743	Slow S-SWF	5	1-	<u>MC</u> , PR	1727
14	1827	1842	Slow S-SWF	5	1	AN, <u>MC</u> , WS	1825
14	2220	2250	G-SWF	5	1	AD, BE, <u>MC</u> , TO, WS	2202
14	2250	2345	G-SWF	4	1	AD, AN, WS	2200
15	0250	0325	S-SWF	4	1	<u>OK</u> , TO, CW ⁺⁺	*
16	0225	0320	Slow S-SWF	5	2	AD, <u>OK</u> , TO, CW+	*
16	0647	0714	Slow S-SWF	1	1-	<u>OK</u>	0647
19	1335	1350	S-SWF	5	2	BE, FM, HU, JU, MC, NE	1330E
20	0128	0156	S-SWF	5	1+	AD, AN, LA, <u>OK</u> , TO, CW+	0126
25	1027	1100	S-SWF	1	2	PU	1026E
25	1203	1310	Slow S-SWF	1	2	JU, <u>MC</u>	1143E
25	1705	1730	S-SWF	5	1+	BE, FM, HU, LA, MC, PR, WS	1659
25	2040	2110	S-SWF	5	2-	AD, AN, BE, FM, HU, LA, MC, PR, TO, WS	2039
26	0432	0528	S-SWF	5	1+	AD, NE, <u>OK</u> , TO, CW ⁺⁺	*
26	1402	1440	S-SWF	5	2-	BE, BR, FM, HU, LA, MC, NE, <u>PR</u> , WS	1350
26	2055	2125	Slow S-SWF	5	1	AD, AN, BE, FM, <u>MC</u> , PR, WS	2049E
27	0003	0110	S-SWF	1	2-	<u>OK</u>	0002
27	0417	0453	Slow S-SWF	5	1+	AD, CA, <u>OK</u> , TO, CW ⁺⁺	*
27	0453	0521	Slow S-SWF	5	1+	AD, <u>OK</u> , TO	*
27	0837	0852	S-SWF	1	2	PU	0800E
27	1151	1206	S-SWF	4	2	<u>MC</u> , <u>NE</u> , CW***	1140
27	1815	1850	Slow S-SWF	5	1+	BE, BO, HU, LA, <u>MC</u> , PR, SM, WS	1758
27	2140	2358	Slow S-SWF	5	2+	AD, BE, LA, MC, <u>OK</u> , TO, WS	2140E
28	0217	0300	Slow S-SWF	5	1+	AD, <u>OK</u>	*
28	1823	1845	Slow S-SWF	4	1-	HU, LA, <u>MC</u> , WS	1815
28	1855	1935	Slow S-SWF	5	2-	BE, FM, HU, LA, <u>MC</u> , PR, WS	1857
29	0138	0346	S-SWF	5	2	AD, CA, <u>OK</u>	0125
30	0031	0129	Slow S-SWF	5	1+	AD, <u>OK</u>	
30	0340	0422	G-SWF	5	1+	AD, <u>OK</u>	*
30	1030	1202	S-SWF	3	2-	JU, KU, LI	1029E

BR = Breisach, G.F.R.
 CA = Canberra, Australia
 DA = Darmstadt, G.F.R.
 JU = Juhlesruh, G.D.R.
 KU = Kuhlungsborn, G.D.R.
 LA = Los Angeles, Calif.
 LI = Lindau, G.F.R.
 NE = Nederhorst den Berg, Netherlands
 PU = Prague, Czechoslovakia

SM = San Miguel, Guatemala
 SW = Enköping, Sweden
 TO = Hiraio Radio Wave Observatory, Japan
 CW* = Cable and Wireless, Barbadoes
 CW** = Cable and Wireless, Somerton, England
 CW*** = Cable and Wireless, Brentwood, England
 CW+ = Cable and Wireless, Hong Kong
 CW++ = Cable and Wireless, Singapore

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

Ottawa

JULY 1960

2800 Mc

July 1960	Type	Start UT	Duration Hrs: Mins	Maximum		Remarks
				Time UT	Peak Flux	
1	8 Group (2)	1142	1 37			
	9 Precursor	1142	9		10	
	2 Simple 2	1153	27	1202	100	
	4 Post Increase		20		10	
	2 Simple 2	1249	30	1254.2	35	
2	2 Simple 2 f	1843.3	2	1844	30	
3	1 Simple 1	1728.5	1.5	1729	5	
3	2 Simple 2	2038	2.5	2038.5	30	
4	1 Simple 1	1230	2	1230.5	7	
8	1 Simple 1	1927	1.5	1927.5	6	} Doubtful (Interference Present)
8	6 Complex	1941	6	1943.3	12	
8	6 Complex	2046	4	2046.2	12	
9	3 Simple 3	1820	3 40	1920	5	
10	1 Simple 1	1602	1.5	1602.5	4	
12	2 Simple 2	2029	3.5	2030.5	14	
14	2 Simple 2	1057	5	1057.8	380	} in sunrise oscillations.
	4 Post Increase		1 15		5	
18	6 Complex f	2157	13	2202.5	30	
19	3 Simple 3	1347	1 30	1415	5	
19	6 Complex f	1817.5	15	1819	150	
23	2 Simple 2	1228	5	1228.5	80	
23	2 Simple 2	1345	2.5	1346	33	
23	3 Simple 3 A	1710	1 50	1730	6	
	6 Complex	1807.5	5	1809.5	45	
26	2 Simple 2	1705.5	5	1706.5	15	
	4 Post Increase		25		5	
29	3 Simple 3 f	1224	20	1231	7	
29	3 Simple 3	2114	20	2119	7	
29	6 Complex	2324	7	2328	8	
30	3 Simple 3	1210	25	1215	7	
31	2 Simple 2	1405	1.5	1405.5	8	

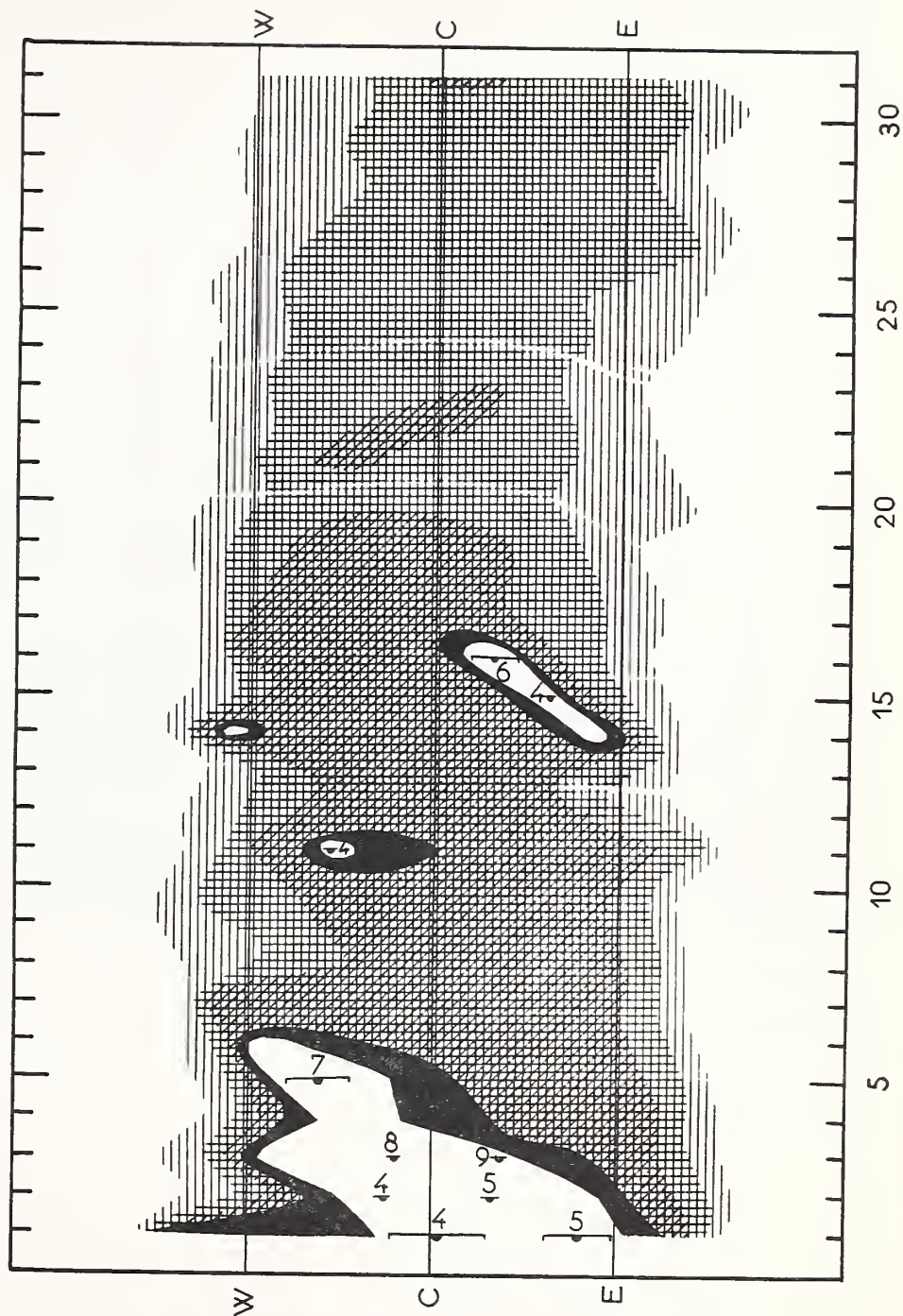
COMMENCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATIONS

JULY 1960

Nançay

169 Mc



JULY 1960

SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

JULY 1960

BOULDER

167 MC

June 1960	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity	June 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	2	0045.0	0047.0	3.0	2**	15	3	1335.9	1335.9	0.2	2
1	6	1134 E		885 D	2	15	3	1436.0	1436.0	0.4	2
2	6	1134 E		884 D	2	21	3	1850.0	1851.0	2.0	2
3	6	1134 E		884 D	2	21	8	1929.0	1931.5	6	2
3	3	1208.0	1209.6	2.0	2*	22	8	1721.0	1721.6	4.0	3
3	3	2038.0	2039.0	1.5	3	22	3	1908.5	1909.0	2.5	2
4	3	1216.5	1217.0	0.7	2*	23	3	1207.8	1207.8	0.2	2*
4	3	1222.0	1223.0	1.0	2*	23	8	1227.0	1228.5	3.0	3*
4	3	1233.8	1233.9	0.7	3*	23	8	1248.0	1248.1	4.0	3*
4	3	1312.7	1313.0	1.3	2	23	8	1343.9	1345.6	3.4	3
4	3	1348.8	1348.8	0.3	2	23	3	1412.8	1412.8	0.4	2
4	3	1607.5	1607.5	0.5	2	23	3	1706.0	1707.0	2.0	2
4	3	1749.5	1749.5	1.5	2	23	3	1715.0	1716.2	1.5	1
4	3	1810.5	1810.5	0.1	2	23	8	1807.0	1810.2	4.0	3
4	3	1916.9	1917.1	1.1	3	23	2	1838.3	1838.6	2.7	2
4	7	2057		118	2	24	3	1738.0	1738.8	1.0	3
5	7	0143		44 D	2	24	2	1806.5	1806.5	0.3	2
5	3	1212.6	1212.6	0.4	2*	25	3	1655.0	1655.8	2.0	2
5	3	1243.6	1244.0	1.8	3*	26	3	1225.0	1225.9	1.0	2*
5	3	1514.8	1514.9	0.3	2	26	3	1249.9	1250.0	0.2	2*
5	3	2019.0	2019.9	1.0	3	26	3	1354.5	1354.5	0.4	2
5	3	2024.2	2024.9	1.8	2	26	3	1456.3	1456.3	0.1	2
6	3	1407.9	1409.0	1.3	3	26	3	1821.5	1821.9	1.5	1
6	3	1434.4	1434.5	0.3	2	26	3	2224.4	2224.9	1.6	2
6	3	1755.7	1756.8	2.2	3	29	3	1208.0	1208.0	0.3	2*
7	8	0157.5	0203.2	8.0	3**	29	3	1217.0	1217.0	0.2	2*
7	2	1332.9	1332.9	4.1	2	29	3	1218.9	1219.2	1.2	2*
7	2	1408.3	1413.7	6	2	29	3	1225.6	1226.6	1.4	3*
8	2	1929.0	1932.1	5	2	30	2	1434.0	1434.0	2.0	2
9	3	0140.6	0140.9	0.1	1**	30	3	1843.0	1843.0	0.2	2
9	3	0146.9	0147.0	0.4	2**	30	2	1952.0	1954.0	4.0	2
9	3	1154.0	1155.1	1.6	1*	30	3	2320.0	2321.2	2.0	2
9	3	1854.5	1854.5	0.2	2	31	3	0102.5	0102.5	0.3	3**
10	3	0205.0	0205.1	0.4	2**	31	3	1719.0	1719.0	0.4	2
10	3	1751.8	1752.2	1.0	2	31	3	1740.0	1740.0	0.2	2
10	3	2016.0	2016.3	0.8	2	31	3	1859.2	1900.0	0.8	1
10	3	2236.5	2237.0	1.5	2	31	3	1922.0	1922.0	0.1	2
14	6	1142 E		223 U	2	31	8	2023.5	2024.9	2.5	3
15	3	0120.8	0121.1	1.0	2**	31	8	2322.0	2323.5	2.1	3
15	3	1251.0	1251.0	0.8	2	31	3	2325.0	2326.0	2.0	2

COMMERCE - STANDARDS - BOULDER

* On sunrise pattern.

** On sunset pattern.

TIMES OF OBSERVATIONS

BOULDER

June 1960	U. T.	June 1960	U. T.
1	1134-0219 I 1515-0015	15	1140-0213 I 1538-1846
2	1134-0218 I 0027-0127		2130-0213
3	1134-0218 I 1730-0218	16	1144-0211 I 1654-1728
4	1133-0217		2240-2355
5	1135-0217 I 1518-0131	17	1144-0210 I 2000-2215
6	1135-0217 I 1513-2338	18	1144-0209 I 1443-0209
7	1135-0215 I 1512-0215	19	1145-0209 I 1512-0209
8	1137-0215 I 1534-1853	20	1815-0207
	2105-2348	21	1145-0207 I 1515-0030
9	1139-0212	22	1149-0205 I 1450-0205
10	1139-1413 I 1946-2210	23	1149-0203 I 2100-2400
	1640-0215	24	1150-0202 I 1900-2345
11	1140-0215 I 1527-0000	25	1149-0201 I 1640-2315
	0010-0215	26	1150-0201 I 1520-0201
12	1140-0215 I 1515-0045	27	1153-0201
13	1141-0215 I 1527-0215	28	1152-0200 I 2000-2300
14	1142-0215 I 1504-1850	29	1155-0200 I 1800-2400
	2028-0024	30	1156-0200 I 2250-0200
		31	1157-0158

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

OCTOBER 1959

Fort Davis

25-580 Mc.

Date and Observing Times (U.T.) 1959	Type I (Noise Storms and Continuum)	Type II (Slow Drift Bursts) Unclassified	Type III (Fast Drift Bursts)	Remarks
	Bursts* or Continuum Time Int	II or Unclass Time Int	Act Time Int	
Oct. 1 0000-0020 1315-2400	Cont. 1637 1 1930 1-		g 1415 1- b 1445 1- g 1637 3	
Oct. 2 0000-0020 1616-2400	Cont. 1748-50 3 Cont. 2221 1		b 1736 1- G 1748-51 3 G 1752-56 3 g 1839-40 3 g 1845-46 2 b 1855 2 g 1905 1 g 22 41 1	
Oct. 3 0000-0020 1315-2146 2218-2400			b 1627 1-	
Oct. 4 0000-0015 1315-2400	1324 1- 1436 1- 1736 1- 2301-05 1- 2342 → 1-		g 1504 1- g 1739 1- g 2010 1- g 2025 1- g 2247 1	
Oct. 5 0000-0015 1315-2400	← 0002 1- 1758-1831 1- 1859-1947 1- 2035-2101 1-			
Oct. 6 0000-0015 1315-2400	1341 1-		g 2013 1	
Oct. 7 0000-0015 1315-2400	2210 1- 2301 1- 2322 1-		g 1328 1 b 1519 1-	
Oct. 8 0000-0015 1315-2400	1616-33 1-		g 2122 1	
Oct. 9 0000-0015 1315-2400	1616-33 1- 1741-45 1-		g 2122 1	
Oct. 10 0000-0015 1325-2400				No observation
Oct. 11 0000-0015 1320-2400	2306-07 1-		G 1912-1913 2 b 2205 1	
Oct. 12 0000-0010 ~ 1320-2400	~ 1430 1- ~ 1432 1		g ~1430-31 2 g 1922 1- g 2053-54 1 b 2130 2 g 2130-32 1 b 2155 2	
Oct. 13 0000-0010 1330-2400		Uncl. 1511-1512 1	g 1521 1 b 1746 1	
Oct. 14 0000-0010 1330-2400	1522-23 1 1544-45 1- 1630-32 1- 1702-1722 1- 1748-1814 1 1840-1900 1- 1900-1905 1 1905-1918 1- 1950-2002 1- 2027-2148 1- 2236-2400 1-		b 1423 1 b 1424 1- g 1425-1426 1 b 1439 1 b 1445 1 b 1532 2 g 1551 2 g 1647 2 b 1659 1 g 1835 1 g 1840-1841 1 g 2008 1 b 2104 1- g 2107 1- g 2112-2113 1 G 2114-2116 1- b 2121 1- b 2319-2320 1-	
Oct. 15 0000-0005 1330-2400	Cont. 1513-14 2 1330-1802 1- 1937-2400 1-	Uncl. 2124-2125 1-	g 1445-1447 2 g 1508-1509 1 g 1513 2 b 1549 1 g 1551 1 b 1619 1 g 1731 1- b 1912 1	

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

IVf

OCTOBER 1959

Fort Davis

25-580 Mc.

Date and Observing Times (U.T.) 1959	Type I (Noise Storms) and Continuum			Type II (Slow Drift Bursts) Unclassified			Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
Oct. 15 cont.							g 2017		1-	
							g 2018		1	
							g 2019-2020		1	
							b 2113		1-	
Oct. 16 1330-2400	Cont.	1454-1520	1				g 1345		1	
	Cont.	1552-1606	1				b 1501		3	
	Cont.	1613-1625	1				b 1936		3	
	Cont.	1634-2220	1				b 2006		1-	
		1330-1529	1				g 2007		2	
		1529-1548	2				b 2102		1	
		1548-1640	1				g 2132		2	
		1620-1656	2				g 2144		1-	
		1656-1738	1				b 2150		1-	
		1738-1802	2							
		1802-1846	1							
		1846-1849	2							
		1849-2031	1							
		2031-2114	1-							
		2114-2124	1							
		2124-2141	1-							
		2141-2200	1							
		2200-2400	1-							
Oct. 17 1330-1518 1628-2400		1330-1518	1-				g 1407		3	
		1648-49	1-				g 1701-1702		1	
		1705-1800	1-				b 1932		1	
		1922	1-				g 2110		2	
							g 2111		2	
							g 2112		1	
							g 2113		2	
							g 2114		1	
Oct. 18 1330-2355	Cont.	1830-1831	2				g 1336		2	
	Cont.	2150-52	2				b 1340		1	
		1552	1-				g 1429		2	
		1759-1820	1-				G 1627-28		2	
		2027-2047	1-				b 1654		2	
		2101	1-				g 1713-14		2	
							g 1737-38		2	
							g 1739		2	
							g 1743		1-	
							g 1745		1	
							g 1747		1-	
							g 1748		1	
							b 1749		1-	
							g 1825		1-	
							g 1830		3	
							b 1936		1	
							g 1942		1	
							g 2148-49		2	
							g 2150-51		3	
							b 2247		1-	
							G 2254-55		2	
							g 2329		1	
Oct. 19 1330-2350		1647	1-				g 1355		1-	
		1659	1-				g 1549-50		1	
		1721-28	1-				g 1556-57		1	
		1756-1816	1-				g 1701-02		1	
		1849-1851	1-				G 1707-09		2	
		1908-1918	1-				b 2009		1	
		1938-39	1-				g 2333-34		1	
		2008-11	1-							
		2034	1-							
		2055-58	1-							
		2141	1-							
		2218-2350	1-							
Oct. 20 1330-1450 1700-2350		1330-1450	1-				b 1707		1	
		1700-2350	1-				g 1711		2	
							g 1724-25		2	
							b 1844		1	
							b 1845		1	
Oct. 21 1330-2345		1752-1806	1-				b 1404		1-	
		2003-06	1-				b 1407		1	
							b 1417		1-	
							b 1634		1	
							G 1928-32		2	
							b 1933		1	
							g 1935		2	
							b 1937		1	
							g 2003-04		1	
							b 2022		1	
							g 2023		1	
							g 2024		1-	
							b 2100		1	
							g 2111		3	
							g 2129		2	

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Date and Observing Times (U.T.) 1959	Type I (Noise Storms) and Continuum	Type II (Slow Drift Bursts) Unclassified	Type III (Fast Drift Bursts)	Remarks
	Bursts* or Continuum Time Int	II or Unclass Time Int	Act Time Int	
Oct. 22 1330-2350	1358 1- 1530-1535 1- 1741-1757 1- 1851-1852 1- 2029 1- 2039 1- 2130-31 1 2239 1- 2334 1 2336 1-		b 1828 1 b 2019 1 g 2334 2 g 2336 1	
Oct. 23 1330-2350	1649 1- 1907 1- 2110-2211 1-		b 1337 1- b 1857-58 1 b 2007-08 1- b 2222 1-	2007 U - burst.
Oct. 24 1330-2345	Cont. 2331 2 1425 1- 1515 1- 1706-1817 1- 2330-31 1		b 1423 1 g 1435 2 b 1538 1- g 1540 1- g 1543-44 2 b 1659 2 b 1719-20 1 b 1801 1- G 1811-13 1 G 1848-50 2 G 2047 2 G 2049-50 2 g 2330-31 2	
Oct. 25 1330-2345	1330-1350 1- 1431-38 1- 1458 1 1525-26 2 1530-46 1- 1604-1901 1- 1918 1-		b 1452 1- g 1458 1- g 1504 1 b 1508 1 g 1525-26 2 b 1639 1 b 1724 1- b 1810 1 b 1854 1 b 1932 3 b 2221 1 b 2223 1	
Oct. 26 1330-2340	Cont. 1556 3 Cont. 2002-03 2 Cont. 2006-09 3 1448-49 1- 1642 1- 1656-1703 1-		g 1406-08 1 g 1415 2 g 1432-33 1 g 1439 2 g 1521-22 2 g 1523-24 1 b 1525 1 g 1528 1 g 1552 2 g 1553 1- b 1554 1- g 1555-56 3 g 1559-1600 1- g 1609 1 G 1652-54 2 g 1701 3 g 1705 2 b 1707 2 g 1711 1 b 1719 1 g 1720 1 g 1722 1 g 1724 1 g 1725-26 2 b 1749 1 b 1815 1 b 1835 1 g 2000 1 G 2001-02 2 G 2003-04 2 G 2004-10 3	
Oct. 27 1330-2340	Cont. 1756-58 3 Cont. 1920 3 Cont. 2053-54 2 1530-32 1-		g 1348-50 1- g 1357-58 2 b 1407 2 g 1522 2 g 1526-27 2 b 1538 1- b 1553 1- b 1559 1 g 1629 1 G 1756-57 3 b 1824 1- g 1831-32 1 b 1833 1- b 1849 1- b 1850 2 g 1900-01 2	

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	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
Oct 27 cont.							b	1902	1	
							g	1920	2	
							g	2003	1	
							g	2006	1-	
							b	2007	1	
							g	2008-09	1-	
							G	2052-53	2	
							g	2054	1	
							g	2115	3	
							g	2121-22	2	
							b	2123	1	
							G	2124-28	3	
							G	2129-30	2	
							g	2131	1	
Oct. 28 1330-2340	1411		1-				b	1827	1	
	2121-23		1-				b	1830	1	
	2146-47		1-							
	2225		1-							
Oct. 29 1330-2340							g	1457	1	
							G	1458-1500	3	
							g	1504	3	
							b	1945	2	
							g	1950	2	
							G	1951-53	2	
Oct. 30 1330-2340	1422-27		1-				b	2009	1	
	1526-27		1-				g	2010	1	
							g	2013-15	2	
Oct. 31 1400-2335	1740-54		1-				g	1402-04	1	
							g	1615	2	
							b	1742	1	
							b	1814	1	
							b	1919	1	
							b	2118	1	

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Date and Observing Times (U.T.) 1959	Type I (Noise Storms) and Continuum			Type II (Slow Drift Bursts) Unclassified			Type III (Fast Drift Bursts)			Remarks
	Bursts* or			II or						
	Continuum	Time	Int	Unclass	Time	Int	Act	Time	Int	
Nov. 1 1345-2335		1619-20	1-				b	1619	3	
		1955-57	1-				b	1643	1	
		2016-2119	1-				g	1730	3	
							b	1814	1	
							b	1956	1-	
							b	2038	1-	
							b	2049	1	
							g	2059	1-	
							g	2146	1	
Nov. 2 1345-2335		1345-57	1				g	1345-48	1	
		1357-1421	1-				g	1428	2	
		1421-1501	1				b	1510	1	
		1501-2335	1-				G	1520-22	2	
							g	1636	1	
							b	1639	1	
							b	1652	1-	
							g	1715	2	
							g	1722	2	
							b	1723	1-	
							b	1724	1	
							b	1725	1-	
							b	1730	1	
							b	1733	1-	
							b	1812	1	
							b	1816	1	
							b	1818	1	
							g	1827-28	2	
							g	1829-31	1	
							b	1837	1-	
							b	1843	1	
							g	1932	1	
							g	1933-34	1	
							b	1946	1	
							b	1948	1	
							b	1950	1	
							b	2009	3	
							b	2113	1	
							b	2245	1-	
							b	2255	1-	
							g	2257	1-	
Nov. 3 1345-2335		1345-1427	1-				g	1428	3	
		1504-1521	1-				g	1429	1	
		1627-1859	1-				g	1430	2	
		1859-1906	1				b	1433	1	
		1906-1910	1-				b	1434	1-	
		1910-1912	1				g	1511-13	1-	
		1912-1916	1-				b	1515	2	
		1916-1918	1				g	1547	1	
		1918-1933	1-				g	1646	1	
		1933-2014	1				g	1704	2	
		2014-2152	1-				C	1706-11	2	
		2152-2258	1				g	1714-15	2	
		2258-2335	1-				b	1717	1	
							b	1808	1	
							b	1942	1	
							b	1943	1	
							b	1945	1	
							g	2032	1	
							g	2033	1-	
							g	2130-31	3	
							b	2156	1-	
							g	2157	2	
							g	2247-48	2	
Nov. 4 1345-2335		1345-1746	1-				b	1648	1-	
		1804-2332	1-				b	1742	1	
							b	2159	1-	
							b	2202	2	
Nov. 5 1345-2335		1409-1421	1-				b	1458	1	
		1452	1-				b	1503	1-	
		1654	1-				g	1645-47	1-	
		1859-1900	1-				b	1839	1-	
		1930-1936	1-				b	1843	1-	
		2001-2012	1-				g	1909	2	
							b	1930	2	
							b	2116	2	
Nov. 6 1345-2330		1357-1632	1-				b	2119	1	
		1815-1950	1-				g	1413	1-	
		2150-2203	1-				g	1447-48	2	
							b	2144	1-	
							b	2309	1	
							g	2311	1	

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	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
Nov. 7 1345-2330	Cont.	1851-53	3				b	1505	1	
	Cont.	2249-50	3				b	1531	2	
		1410-15	1-				g	1809	2	
		1742-43	1				g	1833-34	1	
		2105-06	2				b	1835	1	
							g	1851-52	3	
Nov. 8 1345-2330	Cont.	1852-53	2				g	1357	1	
		1345-1825	1-				b	1802	1	
		1858-59	1				g	1809-10	2	
		2005	1-				g	1823	2	
		2112	1-				g	1852	3	
		2142-43	1-				g	1905	2	1852 U burst.
Nov. 9 1345-2330		2203-14	1-							
		1413-23	1-				b	1743	1-	
		1439-50	1-				b	1744	1-	
		1519-51	1-				g	2056	2	
		1624-1723	1-							
		1723-1909	1							
Nov. 10 1345-2325		1909-2035	1-							
		2129-2152	1-							
		2222-2312	1-							No observations.
		1423-26	1-				b	1439	1-	
		1659-1738	1-				b	1523	1-	
		1818-1838	1-				b	1524	1	
Nov. 11 1345-2325		2025-40	1-				b	1525	1	
		2103-40	1-				g	1703	2	
							b	1742	1-	
							b	1744	1	
							G	1800-1803	2	
							b	1834	1	
Nov. 12 1345-2325							g	1838	1	
							b	1843	1	
							g	1859	1	
							g	2001	2	
							b	2019	1-	
							G	2024-28	1	
Nov. 13 1345-1640 1648-2330							G	2029-32	1	
							b	2157	1-	
							g	2158-59	1-	
							G	2200-02	1-	
							G	2241-43	1	
Nov. 13 1345-1640 1648-2330	Cont.	1412	1				b	1412	1-	
		1416	1-				b	1419	3	
		1515-18	1-				b	1424	2	
		1534-1740	1-				b	1437	1	
		1740-1800	1				g	1518-19	2	
		1800-1918	1-				g	1524	1	
Nov. 13 1345-1640 1648-2330		1955-2018	1-				g	1824-25	1	
		2018-2129	1				g	2230	1	
		2129-2200	1-							
		2200-2233	1							
		2233-2325	1-							
Nov. 13 1345-1640 1648-2330		1606-57	1				g	1424	1	
		1345-1535	1				g	1425	2	
		1535-1620	1-				b	1452	2	
		1620-1640	1				b	1545	3	
		1648-1708	1				b	1556	1	
		1708-1808	1-				b	1607	1-	
Nov. 13 1345-1640 1648-2330		1808-1830	1				g	1617	2	
		1830-2026	1-				b	1654	1-	
		2026-2155	1				g	1655-56	1	
		2155-2325	1-				b	1711	1	
							g	1830	2	
							b	1834	1	
Nov. 13 1345-1640 1648-2330							b	1835	2	
							g	1900-01	2	
							g	1904	3	
							G	1906-07	2	
							g	1922	2	
							b	1925	1	
Nov. 13 1345-1640 1648-2330							g	1927-28	1	
							b	1929	1-	
							b	1939	1	
							g	1945	1	
							b	2040	2	
							b	2058	1	
Nov. 13 1345-1640 1648-2330							b	2059	1	
							b	2100	1	
							g	2110-11	2	
							g	2114	3	
							b	2127	1-	
							b	2128	1-	
Nov. 13 1345-1640 1648-2330							g	2138-39	1	
							b	2155	1-	

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	Bursta* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
Nov. 13 cont.							b	2157	1-	
							g	2202	3	
							g	2203	1	
							b	2233	2	
Nov. 14 1345-2330		1345-1443	1-				g	1356-57	2	
		1518-2010	1-				g	1400-01	2	
		2040-2143	1-				g	1445	1	
		2209-2325	1-				b	1631	2	
							b	1717	1	
							b	1743	1	
							b	2039	1-	
							b	2051	1-	
							b	2127	2	
							b	2213	2	
							b	2215	1	
							g	2234	1	
							b	2235	1-	
							g	2237	1-	
							b	2241	1	
							b	2250	1	
							b	2300	1	
Nov. 15 1345-2330		1345-1621	1-				G	1407-11	2	
		1645-1709	1-				g	1537	2	
		1727-1829	1-				b	1539	1-	
		1829-1924	1				b	1541	1	
		1924-1955	1-				b	1738	2	
		2040-2335	1-				g	1825	1	
							b	2025	1	
							g	2027	1	
							b	2319	1	
Nov. 16 1345-2330	Cont.	1829-30	1				b	1616	1-	
		1345-1552	1-				b	1700	1	
		1619-1716	1-				G	1750-51	2	
		1749-1753	1-				b	1834	1	
		1832-43	1-				b	1929	1	
		1901-2033	1-				g	1933	2	
		2123-25	1-				G	1934-36	2	
		2320-25	1-							
Nov. 17 1345-2330		1346-1410	1-				b	1512	1-	
		1445-1533	1-				b	1515	1-	
		1606-1612	1-				b	1711	1-	
		1644-1900	1-				g	1749-50	1	
		1900-2136	1				g	1753	1	
		2136-2220	1-				g	1830	2	
		2220-2325	1				b	1831	2	
							b	1932	1	
							g	2158-59	1-	
							g	2250	1	
Nov. 18 1345-2330		1352-53	1-				b	1354	1-	
		1555-2140	1-				g	1434	1	
							g	1629	3+	
							g	1704-05	2	
							b	1913	1-	
							g	2015-16	1	
							b	2046	1	
							g	2328-30	2	
Nov. 19 1345-2330		1345-1559	1-				b	1407	1-	
		1559-1703	1				b	1416	2	
		1703-2103	1-				g	1430	1	
		2103-2240	1				b	1505	1-	
		2240-2325	1-				b	1506	1	
							b	2010	1	
							b	2221	1	
							g	2222-24	1-	
							b	2227	1	
							b	2228	1-	
							b	2229	1	
							b	2231	1	
							g	2232-33	1-	
Nov. 20 1345-2330		1347-1824	1-				b	1503	1	
		1824-1844	1				b	1539	1-	
		1844-2203	1-				b	1544	3	
		2225-2325	1-				b	1551	1-	
							b	1616	1-	
							g	1639	1	
							b	1723	1	
							b	1735	1	
							b	1759-1800	3	
							g	1925-26	1-	
							b	2106	1-	

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	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
Nov. 21 1345-2330		1345-2113	1-	II	1741-1752	3	g	1416	1	
		2113-2216	1				b	1609	1	
		2216-2325	2				b	1630	1-	
							b	1648	1	
							g	1805	1	
							b	1815	1-	
							b	1821	1-	
							b	1837	1-	
							b	1853	1-	
							b	1948	1	
							b	2049	1	
							b	2056	1	
							G	2105-08	1	
							b	2159	1	
							g	2204-05	2	
							g	2218-19	1	
Nov. 22 1345-2330		1349-1800	1-				b	1630	2	
		1800-2010	1				b	1747	1-	
		2010-2320	1				g	1751-52	2	
							b	1803	1	
							b	1825	1	
							g	1832	2	
							b	1851	2	
							b	1920	1	
							g	1937	1	
							b	1941	1	
							b	1945	1	
Nov. 23 1345-2330		1358-1632	1-				g	2016	1-	Much activity in band 25- 100 Mc/s throughout day. Many noise storm bursts have characteristics of fast-drift bursts. Reverse and forward-drift pairs throughout day.
		1632-2120	2				b	2017	1	
		2120-2220	1							
		2220-2325	1-							
Nov. 24 1345-2330	Cont.	2131	2				b	1421	1	1600-1900 Reverse and for- ward drift pairs, 25-60 Ms/c.
		1409	1-				b	1424	2	
		1448-1526	1-				b	1528	1	
		1526-1643	1				b	1533	2	
		1643-1750	1-				b	1626	2	
		1750-1831	1				b	1632	2	
		1831-2325	1-				b	1635	2	
							b	1636	2	
							b	1639	3	
							b	1642	1	
							b	1636	2	
							g	1652-53	2	
							g	1659	2	
							b	1701	2	
							g	1705-06	2	
							b	1712	2	
							g	1715	2	
							b	1722	1	
							b	1729	3	
							b	1731	3	
							g	1732-35	2	
							g	1738-39	2	
							g	1750	2	
							b	1753	2	
							G	1802-52	2	
							b	1904	1	
							g	1909	1	
							b	1913	3	
							b	1918	1	
							b	1921	2	
							b	1939	3	
							b	1943	2	
							b	1956	2	
							b	2001	2	
							g	2002	3	
							b	2018	2	
							g	2035	3	
							g	2048	2	
							g	2131	3	
							b	2134	2	
Nov. 25 1345-2330	Cont.	1503-1710	2				b	1638	2	Reverse - and forward drift pairs over range 25-100 Mc/s, through- out day.
		1710-2010	1				b	1639	1	
		2010-46	2				G	1722-2133	2	
		2046-2244	1				b	2146	1	
		1400-1413	1-				g	2156	1	
		1413-24	1				b	2200	1	
		1424-42	2							
		1442-2212	3							
	Cont.	2212-2310	2							
		2310-2325	1							

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	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
Nov. 26 1400-2330		1649	1-				b	1650	3+	
		1813-39	1-				g	1715-16	2	
		1858-1915	1-				b	1852	1	
		2128-2210	1-							
Nov. 27 1400-2330	Cont.	1506-07	1				b	1405	2	
	Cont.	1513-14	3				g	1410-11	1	
		1411-12	1-				G	1449-52	3	
		1517-1618	1-				b	1506	3	
		1647	1-				g	1513-14	3	
		1705-09	1-				b	1516	1-	
		1731-1821	1-				b	1548	1	
		1947	1-				g	1616	1	
							g	1723	1	
							b	1727	1	
							b	1745	1	
							b	1759	1	
							g	1905-06	2	
							b	1935	1	
							b	1936	3	
Nov. 28 1400-2330	Cont.	2014-15	2	II	2017-2045	3	b	1412	1-	
	Cont.	2015-16	1				b	1417	1	
	Cont.	2016-18	3				g	1839-40	1-	
	Cont.	2018-19	2				G	2012-15	3	
		1515	1-				g	2016-17	2	
		1542	1-				g	2018-19	2	
		2013-24	1				g	2020	2	
		2131	1-				g	2025-26	3	
							b	2030	1	
							b	2031	2	
							g	2034	1-	
Nov. 29 1400-2330		1404-1448	1-	II	1854-1904	3	g	1808	1	
		1507-08	1-				g	1843-44	2	
		1851-52	2				g	1845-46	2	
		1854-58	1-				b	2306	1	
		1932-57	1-				g	2307-08	1	
		2012-13	1-				b	2312	2	
Nov. 30 1400-2330	Cont.	1531-33	3	II	1741-1810	3+	g	1409-10	3	
	IV. Cont.	1739-43	1				b	1507	1-	
	IV. Cont.	1743-50	2				G	1531-32	3	
	IV. Cont.	1750-1756	1				g	1543-44	2	
	IV. Cont.	1756-1757	2				g	1630	2	
	IV. Cont.	1757-58	3				b	1643	1	
	IV. Cont.	1758-1807	2				g	1647	2	
	IV. Cont.	1807-1906	3				G	1738-40	2	
	IV. Cont.	1906-1940	2				g	1741-42	3	
	IV. Cont.	2030-45	1				G	1743-46	3	
	IV. Cont.	2142-46	1				b	1858	3	
	IV. Cont.	2146-2330	2				G	2006-07	3	
		1924-59	1-				b	2011	2	
		2040-2124	1-				b	2055	1	
		2330	1-				b	2056	1	
							g	2057-58	1	
							g	2101	1	
							g	2330-31	1	

$$IV_n$$

25 -580 Mc.

Fort Davis

Date and Observing Times (U.T.) 1959	Type I (Noise Storms) and Continuum	Type II (Slow Drift Bursts) Unclassified	Type III (Fast Drift Bursts)	Remarks						
	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
Dec. 1 1400-2330	IV. Cont.	1400-1420	2	II	1733-1734	1	C	1358-1400	2	1515 continuum ends in a spray of fast-drift bursts.
	IV. Cont.	1420-1515	3				b	1440	1-	
	IV. Cont.	1515-1517	2				C	1512-15	3	
	IV. Cont.	1827-28	2				C	1516-19	3	
	IV. Cont.	1828-35	3				C	1520-23	2	
	IV. Cont.	1835-37	2				g	1720-21	1	
	IV. Cont.	2204-2240	2				g	1722	1	
		1436	1-				C	1725-27	1	
		1508-13	1-				b	1758	2	
		1513-17	3				b	1846	1	
		1522-1617	1-				b	1847	1	
		1617-32	1				b	2027	1	
		1632-1717	1-				b	2045	2	
		1717-30	1				b	2124	3	
		1730-40	2				b	2127	1	
		1740-54	1-							
		1754-1845	1							
		1845-2233	1-							
Dec. 2 1400-2330	Cont.	1432-1517	1				b	1424	1-	
	Cont.	1517-1716	2				b	1557	1	
	Cont.	1716-1754	1				g	1700	1	
	Cont.	1754-1757	2				g	1748-49	1	
		1404-1432	1-				C	1754-57	2	
		1432-1601	1				b	1804	1	
		1601-1757	2				b	1811	1	
		1757-2100	1				g	1814	1	
		2100-2330	1-				b	1824	1	
							g	1827	2	
							g	1831-32	2	
							b	1923	1	
							b	2000	1	
							g	2013	2	
							g	2105-06	1	
							b	2110	1	
							b	2239	3	
Dec. 3 1400-2330	Cont.	1502-03	1				g	1501-02	3	
		1424-2327	1-				b	1559	2	
							b	1713	1	
							g	1816	2	
							b	1829	1	
							b	1931	1	
							b	1932	2	
							b	2049	2	
							b	2051	1-	
Dec. 4 1400-2335	Cont.	2046-47	2				g	1412	2	
		1442-1719	1-				g	1523	2	
		2235-39	1-				g	1623	1	
		2327-29	1-				g	1703	1	
							b	1725	1	
							b	1757	1	
							b	1815	1	
							g	1822-23	2	
							C	1824-25	2	
							g	1844	2	
							b	1845	2	
							g	1848	3	
							g	1901	1-	
							g	1902	1-	
							g	1903	2	
							C	1904-05	2	
							C	1906-08	2	
							g	1912	1-	
							g	1913	1-	
							g	2009-10	2	
							g	2011-12	2	
							g	2046-47	2	
							g	2048	3	
							C	2049-50	1	
							b	2051	1	
							b	2128	2	
							b	2130	1	
							g	2137	3	
							g	2201	1-	
							g	2204-05	1-	
							g	2207	1	
							C	2228-31	1	
							g	2232	3	
							g	2234-35	1	
							g	2236	2	
							C	2319-20	2	
							g	2321	1	
							C	2322	3	
							G	2326-28	1	
							g	2330-31	1	
							g	2332	1	
							G	2334-35	2	
										U burst.

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

DECEMBER 1959

Fort Davis

25-580 Mc.

Date and Observing Times (U.T.) 1959	Type I (Noise Storms) and Continuum			Type II (Slow Drift Bursts) Unclassified			Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
Dec. 5 1400-2335	Cont.	1517	3	Uncl.	1612	2	g	1422	3	
	Cont.	1618-19	2	Uncl.	1703-05	3	G	1423-24	2	
	Cont.	1703-05	1	Uncl.	1925	3	b	1425	2	
	Cont.	1819-21	3				b	1432	1	
	Cont.	1909-11	2				g	1457-58	2	
	Cont.	1925	3				b	1501	1-	
	Cont.	1928-29	3				b	1503	1-	
	Cont.	2038	2				g	1504	1	
	Cont.	2320-21	3				g	1517	3	
	Cont.	2321-22	2				b	1520	3	
	1517-1744	1-					g	1521	1	
	1809-2335	1-					b	1525	1-	
							b	1536	3	
							b	1541	2	
							b	1542	2	
							b	1543	2	
							g	1544	3	
							b	1545	2	
							g	1609	3	
							g	1510	2	
							g	1611	2	
							g	1613	2	
							G	1617-20	2	
							g	1622	2	
							g	1623	1	
							g	1624-26	3	
							b	1629	3	
							g	1656	2	
							g	1702	1	
							G	1703-05	3	
							g	1729	1	
							g	1744	2	
							g	1758	2	
							g	1801-02	2	
							G	1807-08	2	
							b	1809	3	
							b	1810	1	
							g	1811	3	
							g	1814	1	
							b	1815	1	
							b	1816	2	
							G	1818-22	3	
							G	1908-10	3	
							g	1911	2	
							b	1912	3	
							b	1915	1-	
							G	1928	2	
							G	1931-32	2	
							G	1932-33	1	
							G	2036-42	2	
							g	2044-46	1-	
							b	2058	1	
							g	2137	3	
							g	2141-42	3	
							G	2200	2	
							g	2201-03	3	
							g	2200	2	
							g	2234-35	2	
							g	2236	1-	
							g	2237	1	
							G	2242	2	
							b	2244	1	
							g	2317-18	2	
							G	2319-22	3	
							g	2323	1	
Dec. 6 1400-2335	1601-14	1-					g	1409	1	
	1635-2033	1-					g	1512-13	1	
	2033-37	1					b	1631	1-	
	2037-2328	1-					b	1727	1	
							g	1740	1	
							g	1903-04	1	
							g	1908-09	1	
							b	1950	1	
							g	1953	2	
							b	1954	2	
							b	1955	2	
							G	1959-2001	2	
							b	2002	2	
							g	2017	1	
							g	2020	1	
							b	2033	1-	
							g	2035	2	
							b	2121	2	
							g	2141	2	
							g	2310-11	2	
							g	2315	1-	
							g	2316	1-	

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

IVp

Fort Davis

DECEMBER 1959

25-580 Mc.

Date and Observing Times (U.T.) 1959	Type I (Noise Storms) and Continuum			Type II (Slow Drift Bursts) Unclassified			Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
Dec. 7 1400-2335		1527-28	1-				g	1437	1-	
		1618-1626	1-				b	1618	1	
		1806-09	1-				g	1623	2	
		1836-45	1-				g	1624-25	2	
		1917	1-				G	1630-32	2	
		2006-2042	1-				b	1645	1	
		2118	1-				g	1757-58	2	
		2142-2157	1-				G	1854-56	3	
		2216-2318	1-				g	1858	2	
							g	1925	2	
							G	1931-35	3	
							b	1957	1	
							g	1958	1-	
							b	2019	1	
							g	2037-38	2	
							g	2039	2	
							g	2112	1-	
							g	2113	1-	
							g	2118	1	
							g	2130	1-	
							g	2139	1-	
							g	2153	1	
							g	2230	3	
							g	2234	1	
							g	2247	2	
							b	2253	1	
							g	2300	2	
							g	2303	1	
							g	2310	1-	
							g	2312	1-	
Dec. 8 1400-2335		1529-36	1-				b	1411	1-	
		1942	1-				g	1416	1	
		2322	1-				G	1422-24	1	
							g	1427-28	2	
							g	1429	1	
							b	1613	1-	
							b	1727	1	
							g	1731	1-	
							g	1732	1-	
							g	1733	2	
							g	1942	2	
							b	2322	1-	
Dec. 9 1400-2335		1852	1-	Uncl.	1738	2	g	1708-10	1	
							g	1735-36	1	
							G	1737-39	2	
							g	1826	1-	
							g	1850-51	1-	
							b	1852	1	
Dec. 10 1415-2335		1513-19	1-				b	1512	2	
		1933-2002	1-				g	1513	1	
		2205-17	1-				g	1514	2	
							g	1516	3	
							g	1518	2	
							b	1606	1	
							b	1859	1	
							b	2002	3	
							b	2059	1	
Dec. 11 1415-2335		1544-50	1-				g	1545	1-	
		2153-54	1-				g	1551	1	
							g	2126-27	1	
							g	2158	2	
							g	2202-03	2	
							g	2239-40	2	
Dec. 12 1415-2335		1750	1-							
Dec. 13 1415-2335										
Dec. 14 1415-2335		1944-2101	1-				g	1928	1	
		2132	1-				b	1929	1-	
		2207-10	1				b	2025	1	
							g	2030	1	
							b	2233	3	
							b	2236	2	
Dec. 15 1415-2335		1704-05	1-				g	2326-27	1-	
		1930-32	1-				g	2330	1-	
		2323-35	1-				b	1703	2	
								1930	1	
								2216	1-	

DECEMBER 1959

Fort Davis

25-580 Mc.

Date and Observing Times (U.T.) 1959	Type I (Noise Storms) and Continuum	Type II (Slow Drift Bursts) Unclassified	Type III (Fast Drift Bursts)	Remarks
	Bursts* or Continuum Time Int	II or Unclass fir Int	Act Time Int	
Dec. 16 1415-2335	1513-16 1- 1534-37 1- 1612-19 1- 1840-1909 1- 2007-28 1-		G 1508-11 1	
Dec. 17 1415-2335	1825-26 1-		b 1644 3 g 1825-26 1- g 2159-2200 2 b 2201 1-	
Dec. 18 1415-2335	1549-50 1- 1809-10 1- 1841-40 1- 2011-12 1-			
Dec. 19 1415-2335	1420 1- 1447-48 1- 1740-54 1- 1939-2004 1- 2141-2250 1-		b 2147 1 g 2157 2	
Dec. 20 1415-2335	1748-49 1- 2020-28 1-		g 1751 1- g 1830 2 g 2143-45 2	
Dec. 21 1415-2335	1415-1557 1 1557-1638 1- 1820-58 1-		G 1432 1- b 1510 1 b 1708 1 b 1753 1 b 1943 1	
Dec. 22 1415-2335	Cont. 1415-1551 1 Cont. 1551-1615 2 Cont. 1615-1930 1 1415-1743 1 1743-1831 2 1831-1929 1 1929-2102 1- 2255 1-		b 1613 1 b 1615 1 b 1639 1 g 1702-03 1 b 1714 1 b 1716 1 b 1717 1 b 1732 1 G 1734-43 1 G 1744-47 1 G 1748-1804 1 b 1807 1 g 1808 1 g 1815 1 g 1817 1 G 1820-30 1 b 1831 1 g 1833-34 1 b 1839 1 g 1840-41 1 g 1843 1 g 1846 1 b 1847 1 g 1848-49 1 g 1850 1 b 1903 1 g 1906-08 1 b 1909 1 g 1910-11 1 g 1913-14 1 g 1915-16 1 b 1920 1 g 1922-23 1 b 1933 1 g 1937 1 g 2105-06 2 b 2222 1- g 2302 1 b 2318 1-	
Dec. 23 1415-1722 1740-2340	1552-54 1- 1640 1- 1655-1714 1- 1742-1802 1- 1914-40 1- 2030-53 1- 2131-2216 1- 2243-50 1-		b 1552 1- b 1704 1 b 2141 1 G 2145-49 1	
Dec. 24 1415-2340	1738-53 1-		b 2101 1 G 2102-17 2	
Dec. 25 1415-2340	1518-2110 1- 2147-57 1- 2311-12 1-		b 1701 1- g 2059 1- g 2110-11 1	
Dec. 26 1415-2340	1519 1-			

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

IVr

DECEMBER 1959

Fort Davis

25-580 Mc.

Date and Observing Times (U.T.) 1959	Type I (Noise Storms) and Continuum			Type II (Slow Drift Bursts) Unclassified			Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Time	Int	Act	Time	Int	
Dec. 27 1415-2340		1415-1556	1-				b	1633	1-	
		1556-1620	1				b	2005	1	
		1620-2340	1-				b	2022	2	
							G	2101-02	2	
Dec. 28 1415-2340		1415-2340	1-	Uncl.	1932	1	g	1530	2	
							b	1631	1	
							b	1703	1	
							G	1752-54	2	
							g	1800	1	
							b	1816	1	
							g	1834	2	
							b	1936	3	
							g	1944-45	1	
							g	1952-53	1	
							b	2022	1	
							b	2026	1	
							g	2119-20	2	
							g	2145	1	
							b	2219	1-	
							b	2232	1-	
							g	2315	1-	
							b	2324	1	
							g	2335	2	
Dec. 29 1415-2340		1415-1603	1				b	1612	1-	
		1603-2111	1-				b	1625	1	
		2151-2219	1-				g	1635	1	
		2243-45	1-				b	1657	1	
		2312-2340	1-				b	1703	1	
							b	1827	2	
							g	1847-48	1-	
Dec. 30 1415-2340		1754-1800	1-				b	1911	3	
		2319-2340	1-				g	1417	2	
Dec. 31 1415-2340							g	2327-28	1	

GEOMAGNETIC ACTIVITY INDICES

JUNE 1960

June 1960	C	Values Kp								Sum	Ap	Final Selected Days	
		Three hour Gr. interval											
		1	2	3	4	5	6	7	8				
1	1.2	4-	6o	4+	5-	4o	2o	2+	1+	28+	28	Five Quiet	
2	0.2	2o	1-	1o	1+	2o	1+	2-	1o	11o	5		
3	0.6	0+	0+	1o	1+	1+	3-	3-	4-	13+	8		
4	1.5	5-	6+	6+	5-	5-	4o	4o	5+	40o	52		2
5	1.3	5o	5+	5-	5o	4o	3+	4-	3+	34+	23		10
6	1.2	5-	4+	4-	5o	4o	3o	2o	2+	29o	25	11	
7	0.8	3+	3o	3o	4-	3o	2-	3+	2+	23+	15	12	
8	1.1	3o	4+	4o	4-	3o	3o	4o	5-	30-	24	16	
9	1.0	4o	4+	4-	3-	3+	3-	4o	1o	26-	19		
10	0.2	1+	1o	1o	1+	1+	2o	2+	2+	13-	6		
11	0.2	3-	1+	2-	1o	1-	1-	1o	1-	10-	5	Five Disturbed	
12	0.2	1o	1o	2-	2-	1o	2o	2o	1-	11o	5		
13	0.2	2-	2-	1+	1+	1+	3o	1+	1+	13o	6		
14	0.8	2o	2-	3-	4-	5-	3-	2o	1+	21-	14		4
15	0.4	3-	1-	3+	3o	3o	2+	2+	2o	19+	11		27
16	0.1	2+	2+	2+	1-	1-	1+	1-	1o	11+	6	28	
17	0.2	3-	1o	0+	0+	2o	3+	2+	1+	13+	7	29	
18	0.8	3-	2+	2+	4-	3+	3o	3o	2+	23-	14	30	
19	0.8	3o	3+	4-	4-	3o	3-	3o	3-	25o	16		
20	0.4	3o	3-	2+	1+	2+	2+	1-	2-	16+	8		
21	0.8	3-	4+	3o	3o	3-	3o	3o	3o	25-	16	Ten Quiet	
22	0.7	3-	4o	2o	3-	2o	2-	3-	3+	21o	13		
23	0.7	4-	3o	2o	2-	2+	3o	2-	2+	20-	11		
24	0.9	2o	2+	3-	3-	3-	2+	4o	3o	22-	13		2
25	1.2	4-	2o	2+	4o	3+	5-	5-	5+	29o	26		3
26	1.2	5-	5-	4+	2+	2+	3o	3-	3+	27+	22	10	
27	1.6	7-	7-	6-	4+	2o	5+	6o	5+	42o	65	11	
28	1.3	4o	4o	5-	6o	4+	4o	4+	4o	35+	36	12	
29	1.4	4-	4+	5-	2+	2o	3o	5+	7-	32o	36	13	
30	1.6	7o	6+	3+	3+	3-	5+	6o	4o	38o	55	15	
Mean: 0.82												16	
Mean: 20												17	
												20	

DAYS IN SOLAR ROTATION INTERVAL

ROT. =
NR.

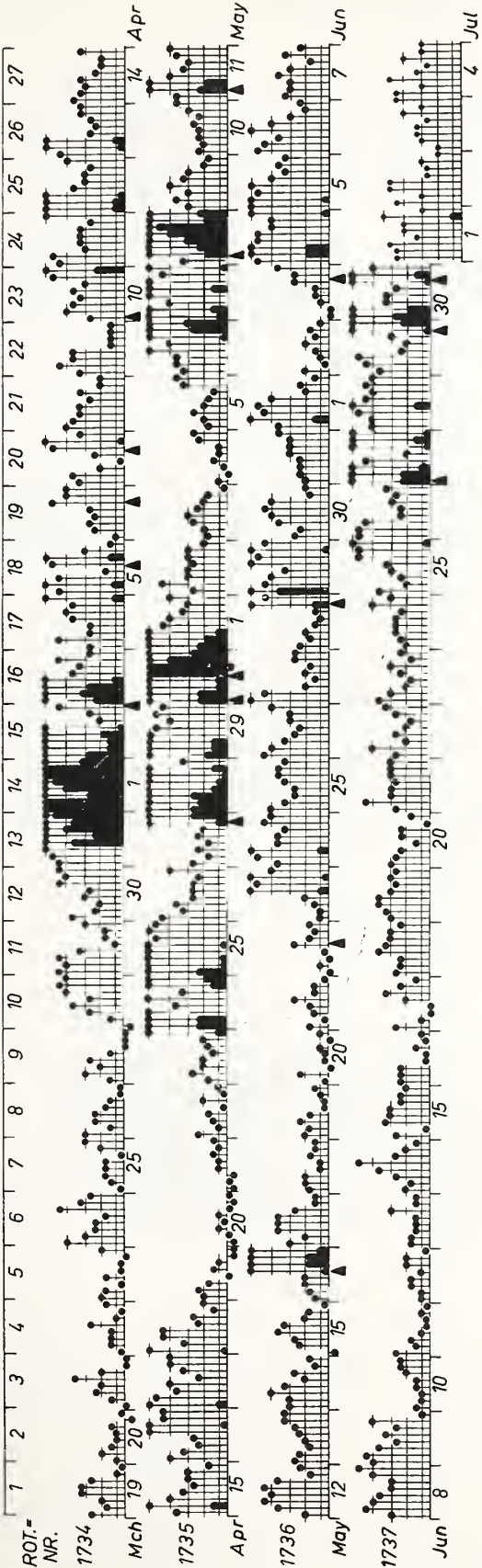
1734

1735

1736

1737

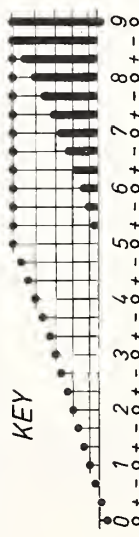
1738



PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp till 1960 June 30
(Ks from Wingst and Göttingen till July 18)

▲ = sudden
commencement



J.B.

COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS NORTH ATLANTIC

JUNE 1960

June 1960	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day index	Advance forecasts (J-reports) for whole day; issued in advance by:				Geomag- netic K _{Fr}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-7 days Final	1-7 days Js	1-3 days SDW	1-7 days J	Half Day (1) (2)	
1	6o	3-	5o	6o	6	5	5	5	(4+)	6		6	(4)	3	
2	7-	6o	6+	7-	6	5	6	6	6+	4		4	1	2	
3	7-	7-	7-	7-	4	4	6	7	7-	3		3	1	2	
4	6-	3+	6-	6-	5	3	4	5	5-	4		4	(5)	(4)	
5	5-	2o	4+	6+	4	3	4	4	(4o)	5		5	(4)	3	
6	5-	4o	6o	7-	6	4	5	6	5o	6		6	(4)	2	
7	6+	6-	6o	6+	6	5	6	7	6o	6		6	3	2	
8	6-	4+	6o	6+	6	5	6	6	5+	6		6	3	(4)	
9	6-	4+	6-	7-	6	4	6	6	5+	6		6	3	3	
10	7-	6o	7-	7-	6	6	7	7	7-	6		6	2	2	
11	7-	7-	7-	7-	7	6	7	7	7-	6		6	2	1	
12	7-	7-	7-	7o	7	7	7	7	7-	6		6	2	1	
13	7-	7-	7-	7-	7	7	7	7	7-	6		6	2	2	
14	7-	6-	6o	7-	6	6	7	7	6+	6		6	3	3	
15	7-	6o	6+	7-	6	6	6	7	6+	6		6	3	2	
16	7-	6o	7-	7o	7	6	7	7	7-	7		7	2	1	
17	7o	6+	7-	7-	7	6	7	7	7-	7		7	1	2	
18	7o	6-	7-	7-	7	6	7	7	7-	7		7	3	3	
19	7-	4+	6+	6+	7	6	6	6	6-	6		6	(4)	2	
20	7-	5+	6o	7-	6	5	6	7	6o	5		5	3	2	
21	6+	4-	6-	6+	7	5	6	6	5+	5		5	3	3	
22	7-	6-	6+	7-	6	4	6	7	6+	6		6	3	3	
23	7-	6+	6+	7-	7	5	7	7	7-	7		7	3	3	
24	6+	6+	7-	7-	7	6	6	7	7-	7		7	2	3	
25	7-	6+	7o	7-	7	6	7	7	7-	7		7	3	(4)	
26	6-	4+	6-	6+	5	4	6	7	5+	7		7	(4)	3	
27	5+	4-	6-	6o	6	3	5	6	5o	5		5	6	(5)	(4)
28	5+	4+	5+	6+	4	4	6	6	5+	4		4	6	(5)	3
29	5+	5-	6+	6+	5	4	6	6	6-	4		4	6	(4)	(4)
30	3-	3+	5-	5o	4	2	4	5	(4-)	4		4	(4)	(4)	
Score: Quiet Periods															
					P	14	11	21	22					13	13
					S	14	5	7	7					10	11
					U	0	0	0	0					1	1
					F	1	2	1	1					3	2
Disturbed Periods															
					P	0	5	1	0					1	1
					S	1	5	0	0					1	1
					U	0	1	0	0					0	0
					F	0	1	0	0					1	1

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

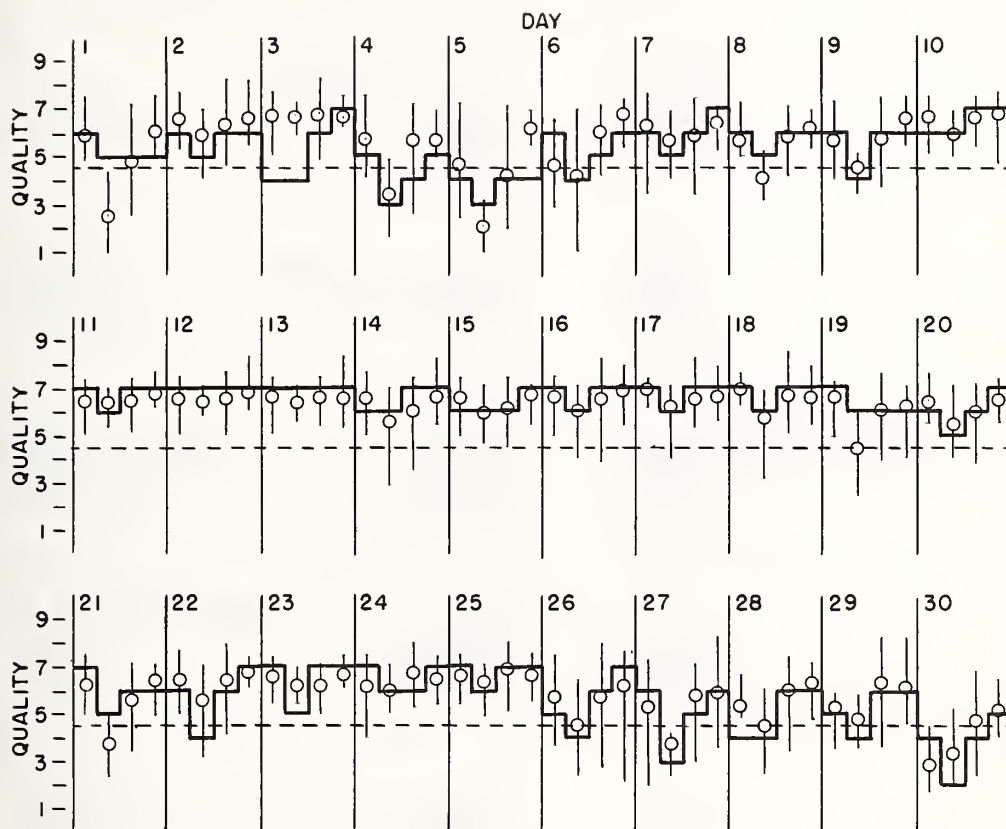
NORTH ATLANTIC

JUNE 1960

— Short-term forecast

| Range of reports

o Quality figure



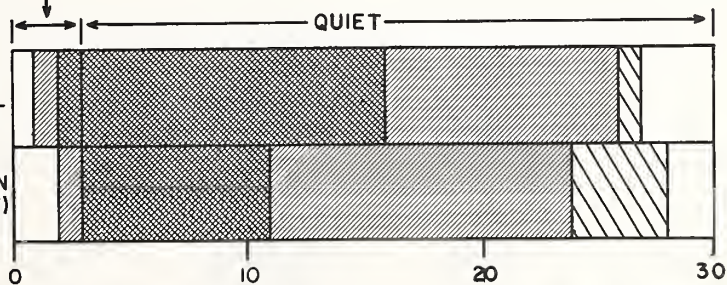
OUTCOME OF ADVANCED FORECASTS

FINAL ESTIMATE

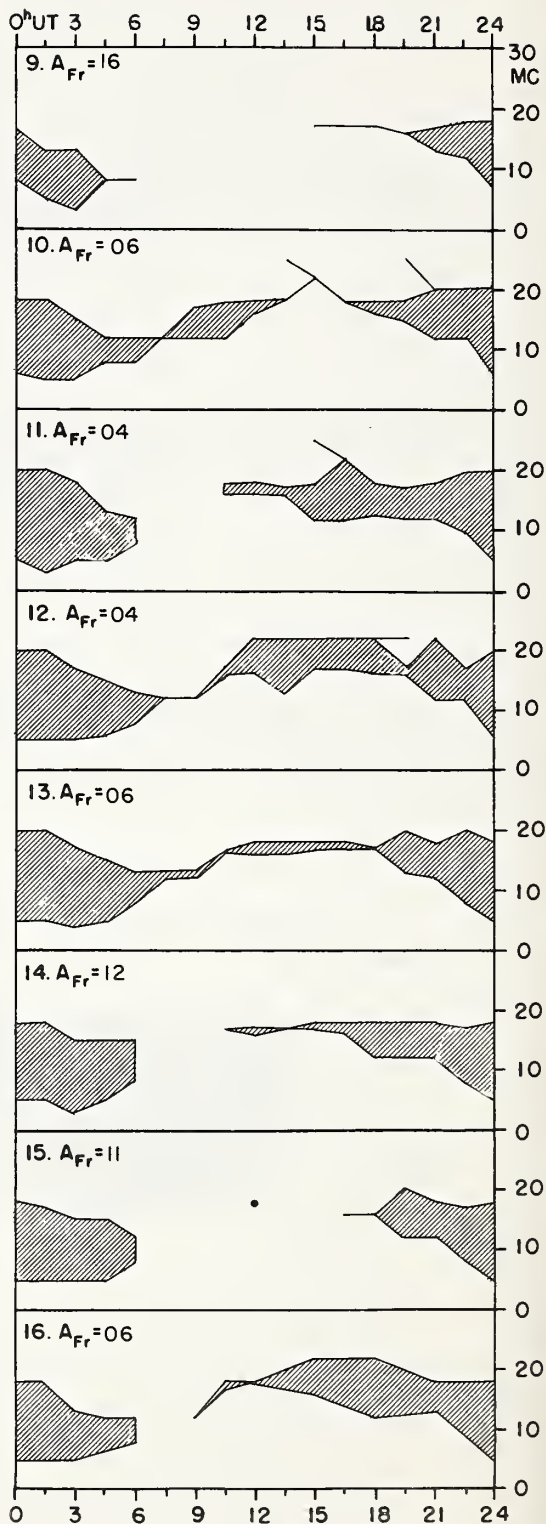
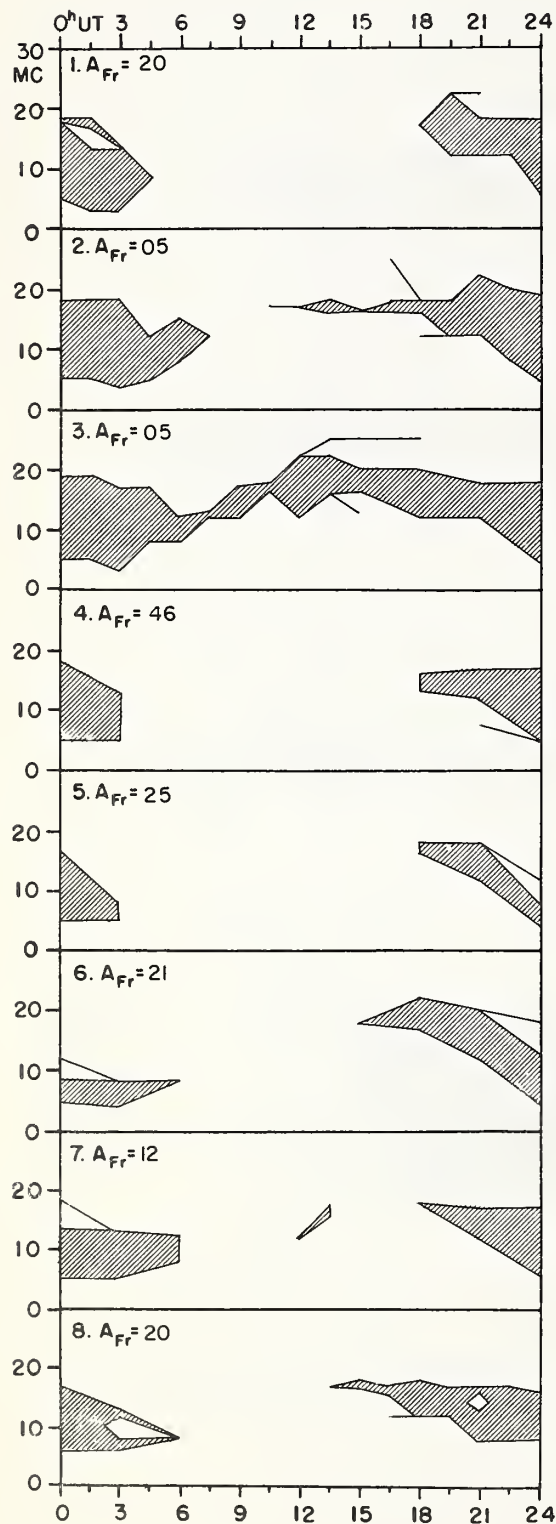
DISTURBED

QUIET

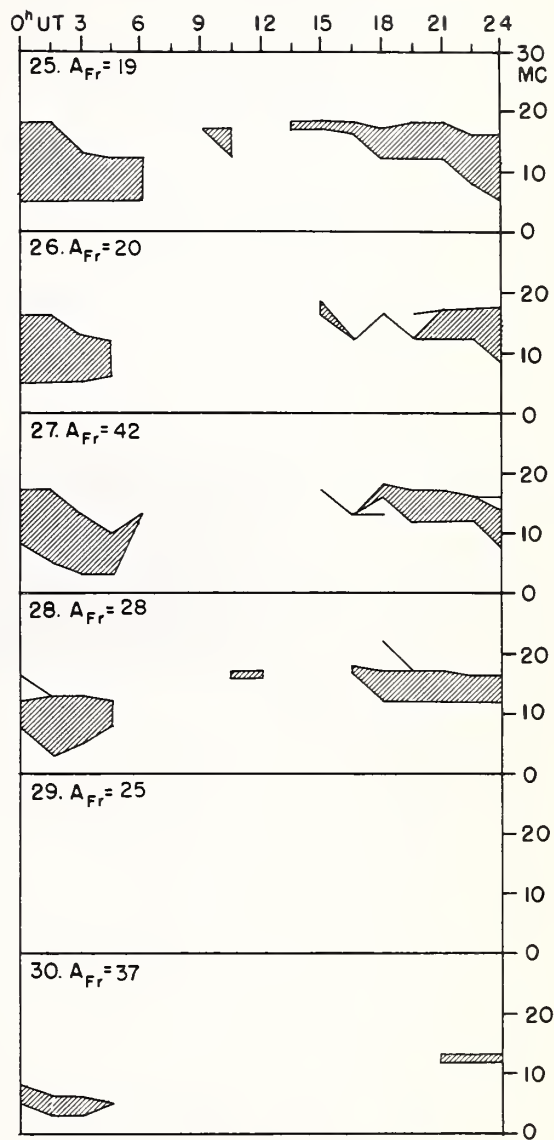
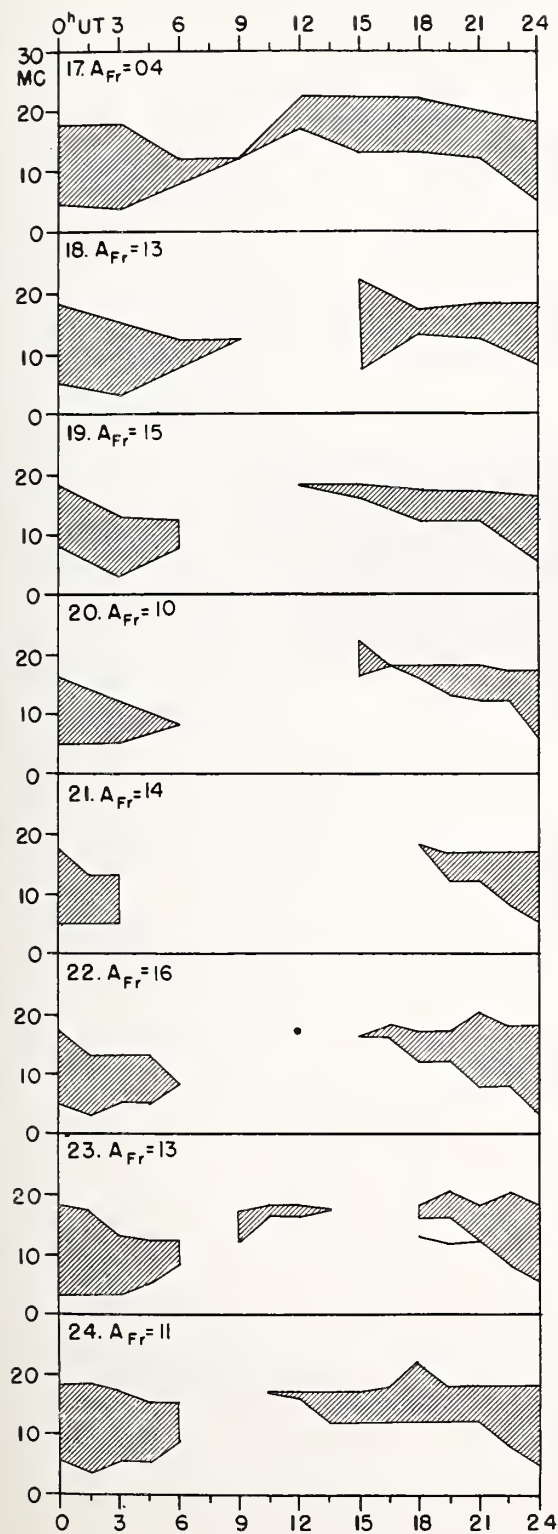
ACTUAL

COMPARISON
(SEE TEXT)

JUNE 1960



JUNE 1960



COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

JUNE 1960

June 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_{S1}
	0700 to 1900	1900 to 0700	0600	1800		1-7 days Final	1-7 days Jps	1-3 days DSJ	1-7 days Jp	Half Day (1) (2)
1	6	6	5	6	5	6			6	(5) 3
2	6	6	5	5	6	5			5	1 2
3	8	7	5	6	7	4			4	1 2
4	4	5	3	5	5	4			4	(6) (4)
5	4	5	4	5	(4)	5			5	(7) (4)
6	6	6	5	6	5	6			6	(5) 3
7	6	7	6	6	6	6			6	3 2
8	6	6	5	6	6	6			6	(4) (4)
9	7	5	5	6	6	6			6	(4) 2
10	7	5	6	6	7	5			5	1 2
11	6	5	6	6	6	5			5	1 1
12	7	8	6	6	7	6			6	1 1
13	7	7	7	6	7	6			6	2 2
14	7	7	6	6	6	6			6	3 3
15	6	6	7	6	6	6			6	2 2
16	6	6	6	6	6	6			6	2 1
17	6	6	6	6	7	6			6	1 2
18	6	5	6	6	6	6			6	3 2
19	4	5	5	6	5	6			6	(4) 3
20	6	5	5	6	6	6			6	2 2
21	4	5	4	5	5	6			6	(4) 2
22	6	6	5	6	6	6			6	3 3
23	5	6	6	6	6	6			6	2 2
24	5	6	6	6	6	6			6	3 2
25	6	5	6	5	6	6			6	2 (4)
26	5	6	5	6	6	6			6	(5) 2
27	5	5	3	5	(4)	5		5	6	(7) (4)
28	4	4	5	5	(3)	3		3	6	(5) (4)
29	6	6	4	6	6	4		4	6	(4) 3
30	4	5	4	5	5	4			4	(6) 3
Score: Quiet Periods P 8 17 13 S 12 11 12 U 1 1 1 F 3 0 2 Disturbed Periods P 3 0 1 S 3 1 1 U 0 0 0 F 0 0 0										

() represent disturbed values.

All times are Universal time (U.T.)

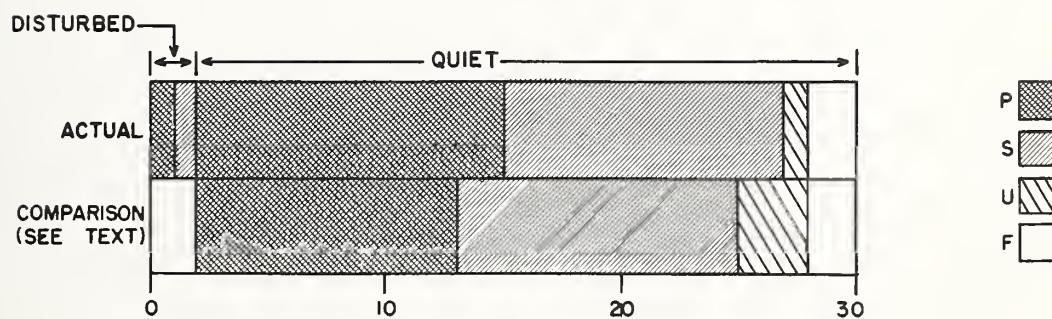
COMMERCE - STANDARDS - BOULDER

NORTH PACIFIC

JUNE 1960

OUTCOME OF ADVANCED FORECASTS

FINAL ESTIMATE



COMMERCE - STANDARDS - BOULDER

ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL WORLD DAY SERVICE

JULY 1960

Issued Day/Time UT July 1960	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Interval
9/0100	Sacramento Peak, Solar Flare 08/2330Z			
14/2000	Ft. Belvoir, Magnetic Storm 14/1701Z			
15/1600		76	Magnetic Storm 14/1701Z	
19/1230	Ft. Belvoir, Magnetic Storm 19/06XXZ			
19/1600		77	Magnetic Storm 19/06XXZ	
31/0245	Ft. Belvoir, Magnetic Storm 29/17XXZ			
31/1600		78	Magnetic Storm 29/17XXZ	

COMMERCE - STANDARDS - BOULDER

