

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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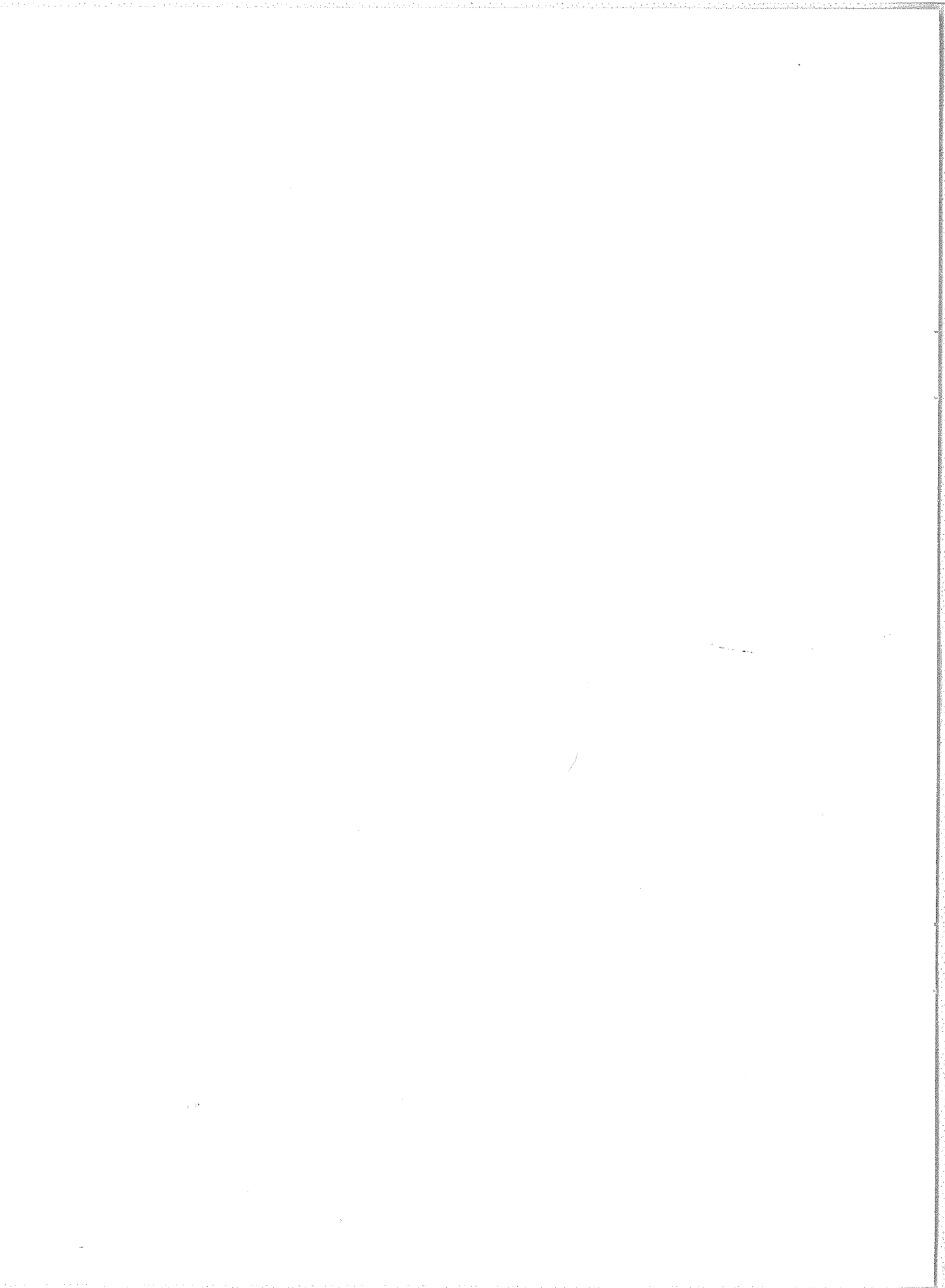
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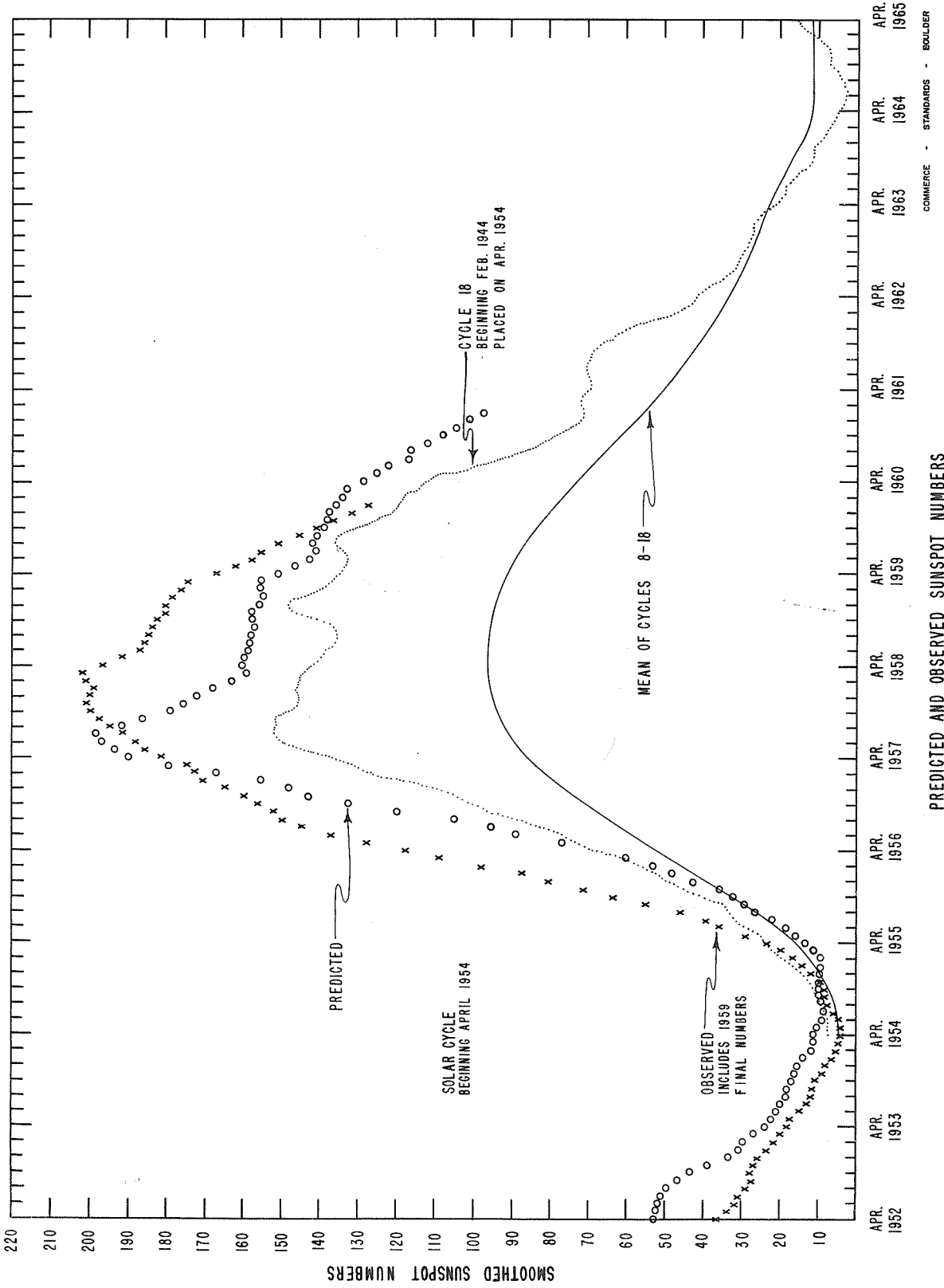


INTRODUCT ION

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' | July 1960 | Zürich Provisional Relative Sunspot Numbers R_Z | Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux |
|--------------|--|--------------|--|--|
| 1 | 91 | 1 | 167 | 208 |
| 2 | 80 | 2 | 154 | 207 |
| 3 | 101 | 3 | 161 | 210 |
| 4 | 72 | 4 | 203 | 212 |
| 5 | 95 | 5 | 168 | 209 |
| 6 | 106 | 6 | 139 | 200 |
| 7 | 113 | 7 | 119 | 187 |
| 8 | 110 | 8 | 124 | 176 |
| 9 | 126 | 9 | 120 | 176 |
| 10 | 129 | 10 | 97 | 166 |
| 11 | 129 | 11 | 93 | 153 |
| 12 | 112 | 12 | 74 | 142 |
| 13 | 112 | 13 | 83 | 135 |
| 14 | 120 | 14 | 93 | 139 |
| 15 | 171 | 15 | 105 | 146 |
| 16 | 119 | 16 | 138 | 144 |
| 17 | 98 | 17 | 131 | 153 |
| 18 | 94 | 18 | 122 | 159 |
| 19 | 78 | 19 | 143 | 156 |
| 20 | 51 | 20 | 137 | 152 |
| 21 | 48 | 21 | 139 | 153 |
| 22 | 42 | 22 | 135 | 148 |
| 23 | 62 | 23 | 127 | 151 |
| 24 | 74 | 24 | 105 | 159 |
| 25 | 82 | 25 | 111 | 148 |
| 26 | 92 | 26 | 92 | 149 |
| 27 | 95 | 27 | 90 | 150 |
| 28 | 119 | 28 | 73 | 149 |
| 29 | 128 | 29 | 94 | 154 |
| 30 | 128 | 30 | 82 | 146 |
| | | 31 | 83 | 145 |
| Mean: | 99.2 | 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 | | History, Age | CMP Values | | History | |
| | | | Area | Int. | | | Area | Count | | |
| 02.6 | N31 | 5724 | 5680 | 7000 | 3 | l / l | 3 | 920 | 17 | l - l |
| 03.7 | N10 | 5726 | * | 5400 | 3 | l - l | 1 | 2300 | 23 | l - l |
| 03.7 | S04 | 5447 | New | (1000) | (2.5) | b / l | 1 | | | |
| 04.2 | N24 | 5730 | 5680 | 1600 | 2.5 | l - l | 3 | | | |
| 04.8 | S12 | 5729 | 5690 | 800 | 1.5 | l \ d | 5 | | | |
| 04.9 | N17 | 5728 | 5689 | 1100 | 2 | l \ d | 4 | | | |
| 05.3 | N33 | 5731 | 5680 | 500 | 2 | l - l | 3 | | | |
| 06.4 | N05 | 5732 | New | 700 | 2.5 | l - l | 1 | | | |
| 07.0 | S21 | 5734 | 5691 | 1200 | 2 | l - l | 5 | (40) | (1) | b / l |
| 07.1 | N11 | 5739 | 5692 | 700 | 1.5 | b / l | 9 | | | |
| 07.4 | N23 | 5735 | New | 600 | 1.5 | l - l | 1 | 10 | 1 | l \ d |
| 08.2 | S12 | 5738 | 5696 | 300 | 1 | l \ d | 2 | | | |
| 08.4 | S21 | 5750 | New | (400) | (2) | b \ d | 1 | | | |
| 08.6 | N13 | 5737 | 5693 | 6000 | 3 | l - l | 4 | 60 | 2 | l \ d |
| 09.0 | S08 | 5744 | New | 700 | 3 | b / l | 1 | 20 | 2 | b \ d |
| 10.5 | N18 | 5740 | 5694 | 2400 | 3 | l - l | 2 | 720 | 32 | l - l |
| 11.8 | S14 | 5741 | 5695 | 2600 | 2.5 | l - l | 3 | | | |
| 12.5 | N29 | 5743 | New | 300 | 2 | l - l | 1 | | | |
| 13.1 | N15 | 5755 | New | (400) | (2) | b / l | 1 | | | |
| 13.2 | S10 | 5745 | 5695 | 2800 | 3 | l - l | 3 | | | |
| 13.8 | N20 | 5746 | New | 1100 | 3 | l - l | 1 | 170 | 1 | l - l |
| 14.3 | S24 | 5751 | New | 200 | 1.5 | b \ d | 1 | | | |
| 15.9 | S01 | 5748 | ** | 200 | 1.5 | l \ d | 3 | | | |
| 17.0 | N20 | 5749 | New | 4600 | 3.5 | l - l | 1 | 1480 | 42 | l - l |
| 18.3 | N12 | 5752 | 5706 | 1100 | 2.5 | l - l | 5 | | | |
| 18.7 | N23 | 5753 | 5706 | 700 | 2 | l - l | 5 | | | |
| 18.7 | S15 | 5754 | 5707 | 1300 | 2.5 | l - l | 2 | 70 | 1 | l - l |
| 19.4 | N09 | 5768 | New | 100 | 2 | b / l | 1 | (160) | (4) | b \ d |
| 19.9 | S06 | 5756 | 5711 | 800 | 2 | l - l | 5 | | | |
| 20.0 | N44 | 5773 | + | (100) | (1.5) | b \ d | 1 | | | |
| 20.7 | S16 | 5757 | 5711 | 400 | 2.5 | l - l | 5 | | | |
| 21.0 | N12 | 5761 | New | 900 | 2.5 | l - l | 1 | (50) | (2) | l \ d |
| 21.2 | S10 | 5760 | 5711 | 400 | 2.5 | l - l | 5 | | | |
| 21.1 | N14 | 5766 | 5723 | 1100 | 3.5 | b / l | 2 | | | |
| 21.2 | S10 | 5760 | 5711 | 400 | 2.5 | l - l | 5 | | | |
| 22.6 | N51 | 5772 | + | 200 | 2 | b \ d | | | | |
| 22.7 | N38 | 5762 | New | 1200 | 2.5 | l \ l | 1 | | | |
| 23.2 | S12 | 5764 | New | 1800 | 2.5 | l - l | 1 | 70 | 2 | l - l |
| 23.3 | N23 | 5763 | 5713 | 2200 | 2.5 | l \ l | 2 | 140 | 1 | l \ l |
| 23.3 | N01 | 5777 | New | (500) | (2) | b / l | 1 | | | |
| 24.6 | N12 | 5765 | *** | 3000 | 3 | l / l | 1 | 190 | 5 | l \ d |
| 25.9 | S07 | 5767 | 5719 | 2100 | 3 | l - l | 4 | 50 | 1 | l \ d |
| 26.8 | N02 | 5769 | **** | 700 | 2 | l - l | 3 | | | |
| 27.0 | N23 | 5779 | New | (100) | (2) | b / l | 1 | | | |
| 27.3 | N15 | 5770 | **** | 400 | 2 | l - l | 3 | | | |
| 27.5 | S16 | 5771 | 5725 | 1500 | 3 | l - l | 2 | 240 | 2 | l - l |
| 30.4 | N29 | 5774 | 5724 | 2400 | 3 | l - l | 4 | 60 | 1 | l \ d |
| 30.5 | N10 | 5775 | 5726 | 7200 | 3.5 | l - l | 2 | | | |
| 31.0 | S09 | 5783 | 5729 | 1100 | 2 | b \ d | 6 | | | |
| 31.7 | N28 | 5776 | 5730 | 1600 | 2.5 | l - l | 2 | | | |

COMMERCE - STANDARDS - BOULDER

*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 ₁ | G ₆ | G ₁ | R ₁ | G ₆ | G ₁ | R ₁ | G ₆ | G ₁ | R ₁ |
| 1 | 69 | 89 | 26 | 27 | 35 | 20 | 35a | 51a | x | 56a | 68a | x |
| 2 | 156 | 241 | x | 45 | 62 | x | 26a | 43a | 44a | 53a | 59a | x |
| 3 | 75 | 96 | 35 | 22 | 34 | 15 | x | x | 20a | x | x | 38a |
| 4 | 80 | 106 | x | 57 | 78 | x | 62 | 72 | x | 73 | 88 | x |
| 5 | 104a | 144a | 60a | 73a | 112a | 30a | 71 | 126 | x | 95 | 122 | x |
| 6 | 45 | 66 | 14 | 48 | 70 | 9 | x | x | x | x | x | x |
| 7 | 81 | 100 | 15 | 76 | 116 | 20 | x | x | x | x | x | x |
| 8 | 104a | 130a | x | 85a | 115a | x | 28 | 41 | x | 68 | 102 | x |
| 9 | x | x | x | x | x | x | 47a | 56a | x | 74a | 103a | x |
| 10 | x | x | x | x | x | x | 50 | 80 | x | 72 | 112 | x |
| 11 | 88 | 119 | 12a | 73 | 93 | 60a | 66 | 96 | x | 58 | 75 | x |
| 12 | x | x | x | x | x | x | 101 | 172 | x | 84 | 130 | x |
| 13 | 88 | 148 | 7 | 93 | 208 | 20 | 66 | 96 | 14 | 61 | 107 | x |
| 14 | x | x | x | x | x | x | 38 | 72 | 21 | 84 | 114 | 12 |
| 15 | 48a | 82a | x | 43a | 50a | x | 27 | 43 | x | 85 | 102 | 64 |
| 16 | 76a | 111a | 60 | 41a | 55a | 31 | 38a | 46a | 17 | 63a | 104a | x |
| 17 | x | x | 24a | x | x | 20a | 30 | 40 | 8 | 54 | 84 | 57 |
| 18 | 43 | 64 | x | 39 | 56 | x | 56a | 85a | x | 68a | 109a | 32 |
| 19 | 48 | 86 | x | 77 | 104 | x | 88a | 120a | x | 69a | 106a | x |
| 20 | x | x | x | x | x | x | 55 | 78 | 16 | 39 | 44 | 48a |
| 21 | x | x | x | x | x | x | x | x | x | x | x | 18 |
| 22 | 110 | 146 | x | 78 | 132 | x | 44a | 77a | x | 58a | 89a | x |
| 23 | 103a | 142a | 40a | 66a | 142a | 64a | x | x | 31a | x | 47a | 90a |
| 24 | 84 | 118 | 64 | 53 | 85 | 62 | 53 | 81 | x | 68 | 82 | x |
| 25 | 96 | 159 | x | 73 | 97 | x | 55 | 86 | 16 | 54 | 60 | 27a |
| 26 | 82 | 136 | x | 75 | 101 | x | 68 | 108 | x | 54 | 72 | 15 |
| 27 | 74 | 156 | 47 | 57 | 110 | 48 | 33 | 50 | x | 63 | 72 | x |
| 28 | 63 | 72 | 38 | 38 | 62 | 46 | 20 | 34 | 43 | 52 | 59 | 98 |
| 29 | 84 | 103 | x | 28 | 49 | x | x | x | 11 | 63 | 78 | 30 |
| 30 | 97a | 136a | 48a | 22a | 28a | 26a | 43a | 60a | x | x | x | x |
| 31 | 60 | 68 | 15 | 27 | 40 | 8 | 39 | 53 | 6 | x | x | 28a |
| | | | | | | | | | | | | 10 |
| | | | | | | | | | | | | 20 |

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

COMMENCE - STANDARDS - BOULDER

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

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

SOLAR FLARES

1960
JULY

| 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. | | | | APPROX. LONG. — REGION | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH H _z | |
| { HAWAII ZURICH CAPRI S CAPRI S ZURICH ZURICH WENDEL ZURICH CAPRI S WENDEL ONDREJOV ZURICH WENDEL SAC PEAK WENDEL ZURICH LOCKHEED MCMATH HAWAII | 01 | 0058 | 0112 | 0104 | N13 W70 | 5713 | 14 | 3 | 1.00 | 1.00 | 1.00 | 0104 | S-SWF |
| | 01 | 0824 | 0843 | | N21 W75 | 5713 | 19 | 3 | .50 | .50 | .50 | 0824 | |
| | 01 | 0941 E | 0945 D | | N20 E80 | 5735 | 4 | D | .70 | .70 | .70 | 0943 | |
| | 01 | 1012 | 1032 | | N20 W75 | 5713 | 20 | 1 | 2.00 | 2.00 | 2.00 | 1025 | |
| | 01 | 1015 | 1027 | | N21 W76 | 5713 | 12 | 1 | 4.00 | 4.00 | 4.00 | 1015 | |
| | 01 | 1042 E | 1050 D | | N11 E34 | 5726 | 8 | D | 2.90 | 2.90 | 2.90 | 1042 | |
| | 01 | 1151 E | 1323 | | N11 E34 | 5726 | 9 | 1 | 8.00 | 8.00 | 8.00 | 1215 | |
| | 01 | 1154 | 1344 D | | N18 W76 | 5713 | 92 | D | 3.00 | 3.00 | 3.00 | 1208 | |
| | 01 | 1205 E | 1210 D | | N18 W77 | 5713 | 110 | D | 3.00 | 3.00 | 3.00 | 1242 | |
| | 01 | 1242 E | 1330 | | N18 W75 | 5713 | 5 | D | 4.00 | 4.00 | 4.00 | 1524 | |
| 01 | 1336 E | 1355 D | 1410 | N18 W84 | 5713 | 48 | D | 3.00 | 3.00 | 3.00 | 1711 | | |
| 01 | 1406 E | 1416 | | N10 W37 | 5720 | 19 | D | 4.10 | 4.10 | 4.10 | 1847 | | |
| 01 | 1410 E | 1434 D | | N22 W86 | 5713 | 10 | 1 | .80 | .80 | .80 | 2014 | | |
| 01 | 1524 | 1528 | | N22 W80 | 5713 | 24 | D | 3.00 | 3.00 | 3.00 | 2040 | | |
| 01 | 1702 | 1714 | 1711 | N21 W79 | 5713 | 4 | 1 | 3.00 | 3.00 | 3.00 | 0916 | | |
| 01 | 1843 E | 1903 D | 1847 | N21 W85 | 5713 | 12 | 1 | 2.00 | 2.00 | 2.00 | 0811 | | |
| 01 | 2008 | 2022 | 2014 | N22 W87 | 5713 | 20 | D | 1.20 | 1.20 | 1.20 | 0931 | | |
| 02 | 0732 E | 0742 D | | N13 W90 | 5713 | 14 | 1 | 3.00 | 3.00 | 3.00 | 0926 | | |
| 02 | 1222 | 1307 D | | N11 E21 | 5726 | 10 | D | 2.00 | 2.00 | 2.00 | 1223 | | |
| 03 | 1020 E | 1033 D | | S13 W27 | 5725 | 45 | D | 3.00 | 3.00 | 3.00 | 1800 | | |
| 03 | 1432 | 1440 | | N25 W21 | 5724 | 13 | D | 1.00 | 1.00 | 1.00 | 1918 | | |
| 03 | 2038 E | 2044 D | | N26 W27 | 5724 | 8 | 1 | 1.00 | 1.00 | 1.00 | 2316 | | |
| 04 | 0914 | 0916 D | 0916 | N22 W33 | 5724 | 6 | D | 5.20 | 5.20 | 5.20 | 0210 | | |
| 04 | 1054 | 1058 D | | N23 E50 | 5737 | 34 | D | 2.00 | 2.00 | 2.00 | 2007 | | |
| 04 | 1220 | 1232 | 1247 | N25 W59 | 5724 | 12 | 1 | 4.00 | 4.00 | 4.00 | 1931 | | |
| 04 | 1232 | 1251 D | | N06 W29 | 5726 | 35 | 1 | 6.00 | 6.00 | 6.00 | 2332 | | |
| 04 | 1233 | 1246 D | | N09 W35 | 5726 | 5 | D | 2.00 | 2.00 | 2.00 | 2332 | | |
| 04 | 2358 | 0130 | 0030 | N10 W41 | 5726 | 22 | D | 6.54 | 6.54 | 6.54 | 2332 | | |
| 05 | 0030 E | 0104 D | | N25 W65 | 5724 | 2 | D | 2.00 | 2.00 | 2.00 | 0210 | | |
| 06 | 0802 | 0814 | | N25 W65 | 5724 | 2 | D | 2.00 | 2.00 | 2.00 | 0210 | | |
| 06 | 0920 | 0955 | | N02 W41 | 5726 | 12 | D | 5.20 | 5.20 | 5.20 | 0210 | | |
| 06 | 0921 | 0926 D | 0926 | N01 W40 | 5726 | 28 | 1 | 2.00 | 2.00 | 2.00 | 0210 | | |
| 06 | 0923 E | 0945 D | | S01 W47 | 5726 | 8 | 1 | 2.00 | 2.00 | 2.00 | 0210 | | |
| 06 | 1221 | 1223 D | 1223 | N24 E13 | 5737 | 45 | D | 2.00 | 2.00 | 2.00 | 0210 | | |
| 06 | 1758 E | 1810 | 1800 | N12 E35 | 5740 | 29 | D | 4.00 | 4.00 | 4.00 | 0210 | | |
| 06 | 1918 | 1946 | 1918 | N18 E66 | 5746 | 16 | 1 | 3.10 | 3.10 | 3.10 | 0210 | | |
| 06 | 2314 | 2322 | 2316 | N06 W76 | 5726 | 32 | 1 | 6.40 | 6.40 | 6.40 | 0210 | | |
| 07 | 0200 | 0245 D | 0210 | N04 W33 | 5732 | 42 | 2+ | 6.54 | 6.54 | 6.54 | 0210 | | |
| 07 | 2004 | 2033 D | 2007 | N08 W33 | 5732 | 23 | D | 2.00 | 2.00 | 2.00 | 0210 | | |
| 08 | 0746 | 0802 | | | | | | | | | | 23 | |
| 08 | 1927 | 1959 | 1931 | | | | | | | | | | |
| 08 | 2328 | 0010 | 2332 | | | | | | | | | | |
| 08 | 2331 E | 2354 D | 2333 U | | | | | | | | | | |

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

SOLAR FLARES

1960

JULY

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

SOLAR FLARES

JULY 1960

| OBSERVATORY | DATE | OBSERVED UNIVERSAL TIME | | LOCATION | | | DURA-TION - MINUTES | IM-PORTANCE | OBS. COND. | MEASUREMENTS | | | PROVISIONAL IONOSPHERIC EFFECT | |
|-------------------|------|-------------------------|--------|--------------|------------|--------------|---------------------|-------------|------------|--------------|-----------------------|-----------------------|--------------------------------|-----------------|
| | | START | END | APPROX. LAT. | MER. DIST. | PLAGE REGION | | | | TIME - U T | MEAS. AREA - Sq. Deg. | COOR. AREA - Sq. Deg. | | MAX. WIDTH - Ha |
| { LOCKHEED HAWAII | 24 | 1450 E | 1510 | N08 W12 | | 5765 | 20 D | 1 | 1 | 1450 | 2.50 | | | 10 |
| | 24 | 2150 E | 2248 D | N07 W13 | | 5765 | 58 D | 2 | 2 | 2214 | 1.40 | | | |
| HAWAII | 25 | 2124 | 2206 | N05 W28 | | 5765 | 42 | 1 | 3 | 2126 | 1.50 | | | |
| HAWAII | 26 | 0054 | 0114 | N04 W30 | | 5765 | 20 | 1 | 3 | 0056 | 1.00 | | | |
| CAPRI S | 26 | 1146 E | 1225 | N03 E53 | | 5775 | 39 D | 1 | 3 | 1200 | 1.50 | 2.60 | | 26 |
| { SAC PEAK | 26 | 1702 | 1732 | N03 E50 | | 5775 | 30 | 1+ | 2 | 1200 | 4.15 | 7.00 | | |
| { WENDEL | 26 | 1705 E | 1723 D | N04 E50 | | 5775 | 18 D | 1+ | 2 | 1705 | 1.40 | | | S-SWF |
| HAWAII | 26 | 2220 | 2232 D | N13 E43 | | 5775 | 12 D | 1 | 2 | 2228 | 1.40 | | | |
| ISTANBUL | 27 | 0722 | 0733 | N06 E43 | | 5775 | 11 | 1 | | | | | | |
| ISTANBUL | 27 | 0743 | 0759 | N09 W50 | | 5765 | 16 | 1 | | | | | | |
| ISTANBUL | 27 | 0825 | 0830 D | N06 E43 | | 5775 | 5 D | 1 | | | | | | |
| { MCMATH | 27 | 1122 | 1216 | N12 W36 | | 5765 | 54 | 1+ | 3 | 1135 | | 3.60 | 1.80 | 16 |
| { ONDREJOV | 27 | 1126 | 1222 | N10 W36 | | 5765 | 56 | 1 | 3 | 1136 | | | | |
| ISTANBUL | 28 | 0710 | 0730 | N06 E31 | | 5775 | 20 | 1 | 2 | | | 3.00 | | |
| WENDEL | 28 | 1240 E | 1253 D | N11 E31 | | 5775 | 13 D | 1 | | | | | | |
| SAC PEAK | 28 | 1632 | 1710 | S09 W89 | | 5764 | 38 | 1 | | | | | | |
| { MCMATH | 29 | 1215 | 1256 D | N05 E14 | | 5775 | 41 D | 1+ | 2 | 1228 | | 4.60 | | 16 |
| { CAPRI S | 29 | 1216 | 1247 | N04 E12 | | 5775 | 31 | 1 | 2 | 1231 | 4.00 | 7.00 | | |
| { WENDEL | 29 | 1217 | 1244 | N06 E10 | | 5775 | 27 | 1+ | 3 | 1231 | | | | |
| { WENDEL | 30 | 0644 | 0716 | N08 E04 | | 5775 | 32 | 1 | | | | 3.00 | | 20 |
| { WENDEL | 30 | 0644 | 0718 | N10 E09 | | 5775 | 34 | 1 | | | | 3.00 | | |
| ZURICH | 30 | 0651 E | 0705 | N09 E05 | | 5775 | 14 D | 1 | | | | 4.00 | | |
| WENDEL | 30 | 1225 E | 1246 D | N09 E03 | | 5775 | 21 D | 1+ | 2 | 0651 | | 6.00 | | |
| { WENDEL | 30 | 1359 | 1436 | N09 E02 | | 5775 | 37 | 1+ | | | | 5.00 | | 1.90 |
| { ONDREJOV | 30 | 1404 | 1440 | N06 E01 | | 5775 | 36 | 1 | 3 | 1412 | | | 1.90 | |
| LOCKHEED | 31 | 0218 | 0237 D | N08 W07 | | 5775 | 19 D | 1 | 1 | 0230 | 2.10 | 3.00 | | 20 |
| ONDREJOV | 31 | 0500 E | 0510 | N10 W15 | | 5775 | 10 D | 1 | 3 | 0501 | | 2.30 | | |
| ONDREJOV | 31 | 1045 | 1111 | N07 W17 | | 5775 | 26 | 1 | 3 | 1046 | | 2.80 | | |
| WENDEL | 31 | 1150 E | 1206 D | N10 W16 | | 5775 | 16 D | 1 | | | | 3.00 | | |
| MCMATH | 31 | 1642 | 1700 | N24 W23 | | 5774 | 18 | 1 | 3 | 1650 | | 2.00 | | |

COMMENCE - STANDARDS - BOULDER

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

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

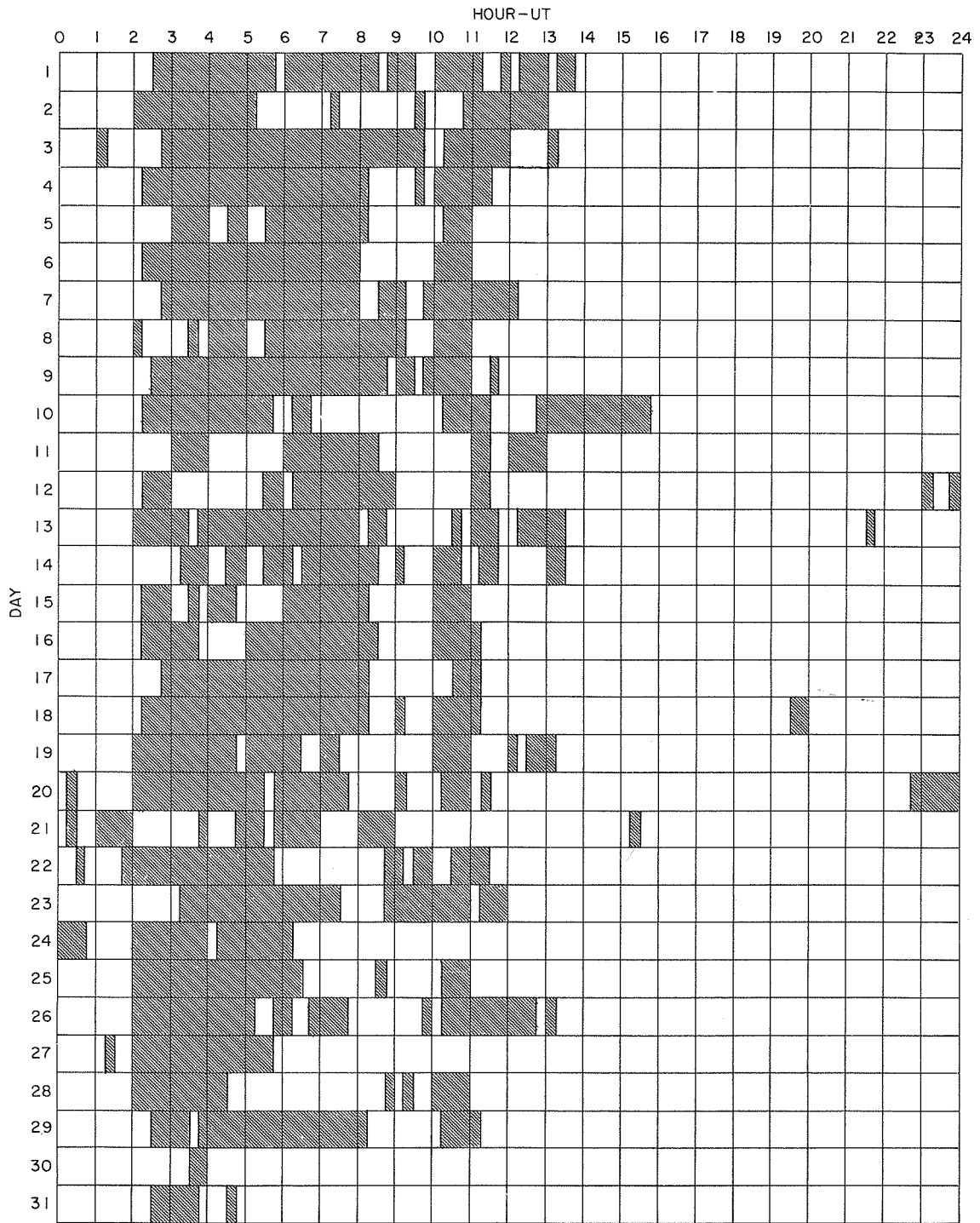
LOCKHEED OBSERVATIONS: ALL VALUES IN THE MAXIMUM INTENSITY COLUMN ARE ARBITRARY UNITS ON A SCALE OF 10 TO 40 - NOT PERCENT OF THE CONTINUOUS SPECTRUM.

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

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

INTERVALS OF NO FLARE PATROL OBSERVATIONS

JULY 1960



Stations Include: Arcetri Lockheed Royal Greenwich Observatory
 Hawaii McMath Herstmonceux
 Istanbul Nizamiah Sacramento Peak
 Kodaikanal Ondrejov Uccle

COMMERCE - STANDARDS - BOULDER

SUBFLARES

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 | 2002 | N31 | W42 | LOCKHEED | 13 | 0013 | S11 | E41 | | |
| * HUANCAYO | 01 | 1431 | N30 | E42 | * SAC PEAK | 08 | 2032 | S13 | E90 | * ARCETRI | 13 | 0808 | E | N12 | W51 | | |
| * SAC PEAK | 01 | 1646 | N15 | E01 | * LOCKHEED | 08 | 2033 | S14 | E90 | * ARCETRI | 13 | 0847 | E | N29 | W88 | | |
| * SAC PEAK | 01 | 1649 | N15 | E05 | * MCMATH | 08 | 2033 | S14 | E90 | CAPRI S | 13 | 0910 | E | S12 | E31 | | |
| * MCMATH | 01 | 1649 | N13 | E02 | SAC PEAK | 08 | 2045 | N17 | E74 | * ARCETRI | 13 | 0913 | E | S12 | E36 | | |
| * MCMATH | 01 | 1652 | N30 | E46 | LOCKHEED | 08 | 2045 | N17 | E74 | * HUANCAYO | 13 | 1715 | E | N18 | W26 | | |
| * SAC PEAK | 01 | 1802 | N07 | W90 | SAC PEAK | 08 | 2102 | N07 | W90 | LOCKHEED | 13 | 1744 | N14 | W55 | | | |
| * SAC PEAK | 01 | 2040 | N17 | W90 | LOCKHEED | 08 | 2106 | N31 | W43 | * LOCKHEED | 13 | 1748 | E | N19 | W55 | | |
| * LOCKHEED | 01 | 2045 | N17 | W90 | * SAC PEAK | 08 | 2106 | N31 | W43 | LOCKHEED | 13 | 1835 | N20 | E90 | | | |
| LOCKHEED | 01 | 2108 | N25 | E32 | HAWAII | 08 | 2118 | S04 | E83 | SAC PEAK | 13 | 2120 | N10 | W45 | | | |
| LOCKHEED | 01 | 2138 | N13 | W05 | * MCMATH | 08 | 2118 | S12 | E90 | LOCKHEED | 14 | 1658 | N08 | W46 | | | |
| HAWAII | 01 | 2140 | N13 | W05 | MCMATH | 08 | 2125 | N28 | W58 | LOCKHEED | 13 | 2145 | N20 | E90 | | | |
| SAC PEAK | 01 | 2140 | N13 | W03 | SAC PEAK | 08 | 2128 | N27 | W99 | LOCKHEED | 13 | 2300 | N18 | W37 | | | |
| LOCKHEED | 01 | 2145 | S22 | W01 | LOCKHEED | 08 | 2128 | N27 | W58 | SAC PEAK | 13 | 2308 | N25 | W90 | | | |
| LOCKHEED | 01 | 2222 | N26 | E31 | HAWAII | 08 | 2130 | N21 | W60 | LOCKHEED | 14 | 1544 | S11 | E20 | | | |
| LOCKHEED | 01 | 2322 | S18 | W15 | SAC PEAK | 08 | 2134 | N15 | E72 | LOCKHEED | 14 | 1559 | S12 | E12 | | | |
| CAPRI S | 02 | 0737 | N08 | W04 | LOCKHEED | 08 | 2161 | S17 | E77 | LOCKHEED | 14 | 1626 | S12 | E20 | | | |
| WENDEL | 02 | 0838 | E | S16 | W54 | LOCKHEED | 08 | 2206 | N31 | W44 | LOCKHEED | 14 | 1658 | S09 | E15 | | |
| ARCETRI | 02 | 0907 | E | N32 | E20 | SAC PEAK | 08 | 2208 | N30 | W44 | HAWAII | 14 | 1740 | E | S10 | E21 | |
| SAC PEAK | 02 | 1430 | N31 | E34 | HAWAII | 08 | 2210 | N27 | W99 | LOCKHEED | 14 | 2013 | S09 | E15 | | | |
| SAC PEAK | 02 | 1438 | N32 | E34 | LOCKHEED | 08 | 2307 | S13 | E90 | LOCKHEED | 14 | 2036 | N21 | E76 | | | |
| SAC PEAK | 02 | 1452 | N07 | E19 | SAC PEAK | 08 | 2308 | E | S12 | E90 | LOCKHEED | 14 | 2038 | S10 | E17 | | |
| SAC PEAK | 02 | 1530 | N07 | E19 | SAC PEAK | 08 | 2316 | S16 | E90 | LOCKHEED | 14 | 2138 | N20 | W60 | | | |
| LOCKHEED | 02 | 1925 | E | S17 | W27 | HAWAII | 08 | 2355 | S08 | W90 | LOCKHEED | 14 | 2151 | S21 | W42 | | |
| LOCKHEED | 02 | 1930 | N07 | E13 | LOCKHEED | 08 | 2358 | S16 | W90 | HAWAII | 14 | 2204 | E | N16 | W21 | | |
| HUANCAYO | 02 | 1930 | E | S10 | W46 | HAWAII | 09 | 0026 | E | S05 | E90 | LOCKHEED | 15 | 0013 | U | N18 | E49 |
| LOCKHEED | 02 | 1936 | N12 | W10 | LOCKHEED | 09 | 0105 | N39 | W55 | LOCKHEED | 15 | 0113 | U | N01 | W30 | | |
| MCMATH | 02 | 1937 | N10 | W10 | ARCETRI | 09 | 0101 | E | N33 | W48 | STOCKHOLM | 15 | 1142 | E | N17 | E45 | |
| LOCKHEED | 02 | 2030 | N24 | E32 | * STOCKHOLM | 09 | 0902 | E | N30 | W46 | SAC PEAK | 15 | 1340 | S12 | E00 | | |
| LOCKHEED | 02 | 2055 | N06 | E15 | * ARCETRI | 09 | 0909 | E | N32 | W50 | SAC PEAK | 15 | 1756 | S13 | E10 | | |
| LOCKHEED | 02 | 2120 | S18 | W28 | * MCMATH | 09 | 1232 | S19 | E31 | LOCKHEED | 15 | 1751 | S10 | E16 | | | |
| LOCKHEED | 02 | 2315 | N05 | E14 | MCMATH | 09 | 1245 | E | N12 | E48 | HAWAII | 15 | 1816 | E | S11 | E07 | |
| LOCKHEED | 03 | 0014 | N33 | E33 | STOCKHOLM | 09 | 1345 | N31 | W49 | SAC PEAK | 15 | 1940 | S17 | E04 | | | |
| LOCKHEED | 03 | 0043 | N04 | E13 | MCMATH | 09 | 1428 | N24 | E35 | HAWAII | 15 | 2148 | S16 | E04 | | | |
| LOCKHEED | 03 | 0052 | N31 | E27 | MCMATH | 09 | 1525 | N12 | E35 | HAWAII | 15 | 2204 | E | N16 | W21 | | |
| STOCKHOLM | 03 | 1029 | N29 | E14 | MCMATH | 09 | 1618 | S15 | W80 | LOCKHEED | 16 | 0024 | N17 | E67 | | | |
| * CAPRI S | 03 | 1108 | E | S10 | W06 | LOCKHEED | 09 | 1700 | N10 | E33 | LOCKHEED | 16 | 0119 | N16 | W50 | | |
| SAC PEAK | 03 | 1346 | S11 | W11 | SAC PEAK | 09 | 1720 | N32 | W50 | HAWAII | 16 | 0124 | N16 | E67 | | | |
| SAC PEAK | 03 | 1511 | E | S10 | E44 | HAWAII | 09 | 1720 | N32 | W50 | ONDREJOV | 16 | 0512 | E | N17 | W66 | |
| MCMATH | 03 | 1827 | N32 | E14 | MCMATH | 09 | 1750 | E | S04 | E76 | LOCKHEED | 16 | 0729 | N18 | E63 | | |
| HAWAII | 03 | 1828 | N36 | E09 | HAWAII | 09 | 1755 | E | S17 | W83 | * ONDREJOV | 16 | 1341 | E | N21 | W66 | |
| SAC PEAK | 03 | 1828 | N36 | E14 | LOCKHEED | 09 | 1924 | N34 | W58 | * MCMATH | 16 | 1526 | N18 | E56 | | | |
| * SAC PEAK | 03 | 1900 | N32 | E18 | LOCKHEED | 09 | 1927 | E | N31 | W51 | * SAC PEAK | 16 | 1526 | N22 | E55 | | |
| LOCKHEED | 03 | 2220 | N07 | E02 | HUANCAYO | 09 | 2042 | E | S10 | E72 | * WENDEL | 16 | 1528 | E | N18 | E57 | |
| LOCKHEED | 03 | 2220 | N32 | E22 | * SAC PEAK | 09 | 2155 | N12 | E31 | LOCKHEED | 16 | 1544 | S12 | W44 | | | |
| LOCKHEED | 03 | 2302 | N07 | E02 | LOCKHEED | 09 | 2155 | N12 | E31 | LOCKHEED | 16 | 2042 | S12 | E16 | | | |
| SAC PEAK | 03 | 2306 | N07 | E03 | LOCKHEED | 10 | 0005 | N16 | E57 | LOCKHEED | 16 | 2055 | N11 | E60 | | | |
| HAWAII | 03 | 2308 | N07 | E01 | LOCKHEED | 10 | 0125 | U | N12 | W10 | LOCKHEED | 16 | 2122 | S11 | W14 | | |
| HAWAII | 04 | 0044 | N33 | E16 | LOCKHEED | 10 | 0130 | U | N32 | W60 | LOCKHEED | 16 | 2131 | N18 | W44 | | |
| SAC PEAK | 04 | 1256 | N30 | E14 | LOCKHEED | 10 | 0130 | U | N32 | W60 | LOCKHEED | 16 | 2115 | N18 | W36 | | |
| * MCMATH | 04 | 1426 | N26 | W05 | HAWAII | 10 | 0140 | N26 | W61 | LOCKHEED | 16 | 2333 | N18 | E54 | | | |
| SAC PEAK | 04 | 1558 | N31 | E13 | MCMATH | 10 | 1517 | S12 | E66 | WENDEL | 17 | 0641 | E | N20 | E41 | | |
| MCMATH | 04 | 1559 | N29 | E12 | MCMATH | 10 | 1159 | N10 | W90 | WENDEL | 17 | 0931 | E | N21 | E50 | | |
| MCMATH | 04 | 1617 | N29 | E12 | CAPRI S | 10 | 1200 | E | S13 | E66 | * STOCKHOLM | 17 | 0950 | E | N12 | E55 | |
| MCMATH | 04 | 2000 | N30 | E11 | LOCKHEED | 10 | 1226 | N09 | W90 | * SAC PEAK | 17 | 1514 | N18 | W46 | | | |
| HAWAII | 04 | 2002 | E | N33 | E05 | SAC PEAK | 10 | 1344 | N08 | W90 | * SAC PEAK | 17 | 1558 | N18 | W46 | | |
| SAC PEAK | 04 | 2100 | N33 | E07 | SAC PEAK | 10 | 1426 | N09 | W90 | LOCKHEED | 17 | 2035 | N17 | E43 | | | |
| MCMATH | 04 | 2100 | N30 | E18 | * SAC PEAK | 10 | 1434 | S11 | E65 | LOCKHEED | 17 | 2036 | S12 | E58 | | | |
| HAWAII | 04 | 2102 | N34 | E03 | CAPRI S | 10 | 1444 | E | N12 | E55 | LOCKHEED | 17 | 2156 | N19 | W48 | | |
| HAWAII | 05 | 0054 | E | N25 | W10 | LOCKHEED | 10 | 1610 | E | N15 | E33 | HAWAII | 17 | 2200 | N13 | W50 | |
| * SAC PEAK | 05 | 1252 | N21 | W11 | LOCKHEED | 10 | 1645 | S09 | E72 | LOCKHEED | 18 | 0005 | N09 | E57 | | | |
| WENDEL | 05 | 1429 | E | N06 | W31 | MCMATH | 10 | 1645 | S12 | E67 | LOCKHEED | 18 | 0149 | S13 | W33 | | |
| SAC PEAK | 05 | 1548 | N09 | W26 | LOCKHEED | 10 | 1703 | N33 | W70 | LOCKHEED | 18 | 0132 | N10 | W90 | | | |
| SAC PEAK | 05 | 1724 | N06 | W25 | LOCKHEED | 10 | 1737 | N11 | E16 | * LOCKHEED | 18 | 0410 | E | N23 | W56 | | |
| * HAWAII | 05 | 2220 | N23 | W29 | LOCKHEED | 10 | 1804 | N28 | W74 | LOCKHEED | 18 | 0447 | N52 | W66 | | | |
| ONDREJOV | 06 | 0451 | N06 | W35 | LOCKHEED | 10 | 1823 | N30 | W72 | LOCKHEED | 18 | 0540 | N24 | W57 | | | |
| ONDREJOV | 06 | 0755 | S10 | W47 | LOCKHEED | 10 | 1852 | N04 | E78 | LOCKHEED | 18 | 0540 | N24 | W57 | | | |
| ONDREJOV | 06 | 0808 | N09 | W44 | LOCKHEED | 10 | 1931 | N09 | W90 | LOCKHEED | 18 | 0618 | N24 | W57 | | | |
| WENDEL | 06 | 1155 | E | S08 | W47 | LOCKHEED | 10 | 2036 | N16 | E19 | LOCKHEED | 18 | 0621 | N21 | E27 | | |
| MCMATH | 06 | 1221 | N30 | W10 | LOCKHEED | 10 | 2247 | S11 | E48 | LOCKHEED | 18 | 0723 | N25 | W56 | | | |
| SAC PEAK | 06 | 1456 | S02 | W48 | LOCKHEED | 10 | 2338 | N11 | E13 | SAC PEAK | 18 | 0726 | N22 | W58 | | | |
| MCMATH | 06 | 1604 | E | N10 | E19 | LOCKHEED | 10 | 2338 | N11 | E13 | * LOCKHEED | 18 | 0745 | S14 | W42 | | |
| HUANCAYO | 06 | 1612 | E | N09 | E25 | LOCKHEED | 11 | 0024 | N28 | W74 | * SAC PEAK | 18 | 0752 | E | S14 | W43 | |
| WENDEL | 06 | 1638 | E | N06 | W55 | LOCKHEED | 11 | 0127 | N37 | W74 | LOCKHEED | 18 | 0843 | N23 | W57 | | |
| MCMATH | 06 | 1711 | N06 | W41 | LOCKHEED | 11 | 0131 | N36 | W74 | LOCKHEED | 18 | 0901 | N21 | E30 | | | |
| HAWAII | 06 | 1856 | N31 | W22 | ARCETRI | 11 | 0830 | E | S10 | E60 | LOCKHEED | 18 | 1930 | N19 | W58 | | |
| 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 | 1938 | S14 | W55 | LOCKHEED | 11 | 1633 | N27 | W63 | LOCKHEED | 18 | 2039 | N19 | W58 | | | |
| HAWAII | 06 | 2112 | E | N19 | E68 | 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 | | | |
| MCMATH | 06 | 2132 | S08 | W55 | HAWAII | 11 | 1802 | E | S05 | E54 | SAC PEAK | 18 | 2246 | N19 | W63 | | |
| HAWAII | 06 | 2142 | S15 | W56 | LOCKHEED | 11 | 1927 | N34 | W80 | * LOCKHEED | 18 | 1752 | E | S14 | W43 | | |
| SAC PEAK | 06 | 2156 | N36 | W19 | LOCKHEED | 11 | 1932 | N13 | E02 | LOCKHEED | 18 | 1843 | N23 | W57 | | | |
| MCMATH | 06 | 2157 | N33 | W19 | LOCKHEED | 11 | 1845 | N29 | W80 | LOCKHEED | 19 | 0104 | E | N07 | W49 | | |
| HAWAII | 06 | 2202 | E | N34 | W26 | LOCKHEED | 11 | 1848 | N31 | E07 | LOCKHEED | 19 | 0110 | N16 | W48 | | |
| * SAC PEAK | 06 | 2230 | N32 | W18 | LOCKHEED | 11 | 1848 | N31 | W80 | WENDEL | 19 | 0828 | E | S11 | E48 | | |
| * STOCKHOLM | 07 | 1007 | N26 | W30 | HAWAII | 11 | 1848 | N23 | W81 | ARCETRI | 19 | 0838 | E | S11 | W26 | | |
| MCMATH | 07 | 1108 | E | N26 | W40 | HAWAII | 11 | 1856 | N20 | W90 | * MCMATH | 19 | 1340 | S09 | W52 | | |
| STOCKHOLM | 07 | 1113 | E | N26 | W28 | LOCKHEED | 11 | 1856 | N20 | W90 | LOCKHEED | 19 | 1603 | E | N12 | W40 | |
| MCMATH | 07 | 1138 | N13 | E62 | LOCKHEED | 11 | 1859 | N15 | E18 | * LOCKHEED | 19 | 1605 | E | S10 | W53 | | |
| MCMATH | 07 | 1150 | N08 | W46 | HAWAII | 11 | 1900 | N19 | E14 | LOCKHEED | 19 | 1710 | N19 | E84 | | | |
| MCMATH | 07 | 1225 | N18 | E90 | * MCMATH | 11 | 1935 | E | N11 | E06 | LOCKHEED | 19 | 1711 | S15 | E29 | | |
| STOCKHOLM | 07 | 1228 | E | N12 | E9 | | | | | | | | | | | | |

Noted as follows: Date-Universal Time - Coordinates

JUNE 1960

Table listing subflare observations from June 1960, including station names (e.g., ARCETRI, CAPRI S, MCMATH, LOCKHEED), times, coordinates (e.g., 20 0944 E S12 W66), and flare importance ratings (e.g., *).

*Rated as flare of importance ≥ 4 by other observatories (see CRPL-F 191 Part B).

SOLAR FLARES

APRIL 1960

| OBSERVATORY | DATE | OBSERVED UNIVERSAL TIME | | LOCATION | | DURA- TION — MINUTES | IM- POR- TANCE | OBS. COND. | MEASUREMENTS | | | PROVISIONAL IONOSPHERIC EFFECT |
|--|---|-------------------------|---------|-----------------|---------------------------|-------------------------------|----------------------|---------------|---------------------------|---------------------------|---------------------------------|--------------------------------------|
| | | START | END | APPROX. LAT. | MGRATH PLAGE REGION | | | | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH R _g | |
| KODAIKNL ALMA-ATA ALMA-ATA ALMA-ATA GOOD HOPE ALMA-ATA GOOD HOPE SIMEIZ KHARKOV | 01 | 0242 | 0300 | N11 W02 | 5615 | 18 | 1 | 2 | 5.20 | 5.20 | 1.70 | 122 |
| | 01 | 0553 | | S06 E37 | 5618 | | 2 | 1 | 9.97 | 9.97 | | 58 |
| | 01 | 0644 | | N12 W10 | 5615 | | 1 | 1 | 2.34 | 2.34 | | 60 |
| | 01 | 0649 | | N09 W14 | 5615 | | 1 | 1 | 4.67 | 4.67 | | 66 |
| | 01 | 0649 | 0710 | N11 W10 | 5615 | 21 | 1 | 1 | 1.90 | 2.00 | | 53 |
| | 01 | 0721 | | N10 E70 | 5619 | | 1 | 1 | 2.34 | 2.34 | | |
| | 01 | 0843 | 1240 | N15 W09 | 5615 | 237 | 3 | 2 | 12.30 | 13.30 | | |
| | 01 | 0844 | 0858 | N15 W11 | 5615 | 14 | 3 | 2 | 19.04 | 20.30 | | S-SWF |
| | 01 | 0900 | 1215 | N12 W12 | 5615 | 195 | 2 | 3 | 8.00 | 13.60 | 3.40 | |
| | 02 | 0019 | 0023 | N10 W17 | 5615 | 4 | 1 | 1 | 3.02 | 3.26 | 1.43 | 131 |
| | 02 | 0214 | 0223 | N10 W23 | 5615 | 9 | 1 | 1 | 1.01 | 1.11 | 2.60 | 183 |
| NIZAMIAH ALMA-ATA ALMA-ATA ALMA-ATA SIMEIZ KYOTO GOOD HOPE MEUDON ALMA-ATA ALMA-ATA MEUDON SIMEIZ SIMEIZ GOOD HOPE UCCLE | 02 | 0522 | 0529 | N11 W22 | 5615 | 7 | 1 | 2 | 3.65 | 4.09 | 1.70 | 94 |
| | 02 | 0536 | | N13 W25 | 5615 | | 1 | 2 | 0.536 | 0.536 | | 66 |
| | 02 | 0538 | | N15 W20 | 5615 | | 1 | 2 | 3.64 | 3.64 | | 62 |
| | 02 | 0549 | | N09 W21 | 5615 | | 1 | 2 | 2.34 | 2.34 | | 159 |
| | 02 | 0640 | 0711 | N09 W22 | 5615 | 31 | 1 | 1 | 3.89 | 4.30 | 2.51 | 140 |
| | 02 | 0650 | 0703 | N07 W20 | 5615 | 13 | 2 | 1 | 3.32 | 3.32 | | |
| | 02 | 0654 | | N09 W20 | 5615 | 15 | 1 | 2 | 2.10 | 2.30 | | |
| | 02 | 0655 | 0710 | N13 W25 | 5615 | 15 | 1 | 2 | 2.34 | 4.00 | | 92 |
| | 02 | 0747 | | N18 E41 | 5619 | | 1 | 2 | 9.97 | 9.97 | | 58 |
| | 02 | 0801 | | S08 E23 | 5618 | | 1 | 2 | 3.00 | 4.50 | | 159 |
| | 02 | 0835 | 0910 | N14 W30 | 5615 | 35 | 1 | 1 | 3.89 | 4.50 | | 66 |
| KODAIKNL KODAIKNL ABASTUMANI SIMEIZ VOROSHILOV KODAIKNL NIZAMIAH ALMA-ATA ALMA-ATA ALMA-ATA KHARKOV KRASNAYA MOSCOW G GOOD HOPE | 02 | 0855 | 0912 | S21 E82 | 5622 | 17 | 1 | 1 | 2.80 | 2.80 | | 110 |
| | 02 | 0900 | 0918 | N12 W25 | 5615 | 18 | 1 | 1 | 2.40 | 2.40 | | 82 |
| | 02 | 1149 | | N09 W30 | 5615 | | 1 | 3 | 6.80 | 8.80 | 1.40 | 122 |
| | 03 | 0317 | 0322 | N12 W33 | 5615 | 5 | 2 | 2 | 3.30 | 4.30 | 1.60 | 135 |
| | 03 | 0542 | 0552 | N12 W35 | 5615 | 10 | 1 | 2 | 5.97 | 5.97 | 2.60 | 61 |
| | 03 | 0547 | 0807 | N11 W36 | 5615 | 140 | 2 | 2 | 4.67 | 4.67 | 3.50 | 86 |
| | 03 | 0558 | 0700 | N12 W38 | 5615 | 62 | 1 | 1 | 6.35 | 8.30 | | 110 |
| | 03 | 2204 | 0107 | N12 W46 | 5615 | 183 | 2 | 3 | 4.06 | 4.06 | | 82 |
| | 04 | 0218 | 0234 | N12 W50 | 5615 | 16 | 2 | 2 | 5.20 | 8.80 | 1.40 | 122 |
| | 04 | 0410 | 0422 | N08 W48 | 5615 | 12 | 1 | 1 | 1.82 | 2.81 | 2.60 | 135 |
| | VOROSHILOV KODAIKNL NIZAMIAH KYOTO ALMA-ATA ALMA-ATA KYOTO ALMA-ATA KYOTO | 04 | 0523 | 0523 | N13 W47 | 5615 | | 1 | 2 | 5.97 | 5.97 | |
| 04 | | 0637 | 0637 | N06 W54 | 5615 | | 1 | 2 | 4.67 | 4.67 | | 58 |
| 04 | | 0850 | 1014 | N14 W52 | 5615 | 84 | 1 | 2 | 2.65 | 2.65 | | 58 |
| 04 | | 0854 | 0901 | N14 W51 | 5615 | | 2 | 2 | 12.67 | 20.40 | 2.00 | 85 |
| 04 | | 0857 | 1124 | N12 W53 | 5615 | 147 | 1 | 1 | 9.04 | 8.46 | 1.74 | 140 |
| 04 | | 0937 | 1017 | N12 W52 | 5615 | 40 | 1 | 1 | 2.20 | 3.80 | | |
| 05 | | 0026 | 0040 | N10 W66 | 5615 | 14 | 1 | 3 | 1.00 | 1.00 | 1.40 | 83 |
| 05 | | 0215 | 0308 | N12 W62 | 5615 | 53 | 2 | 1 | 9.80 | 20.60 | 2.50 | 122 |
| 05 | | 0255 | 0301 | N12 W60 | 5615 | 6 | 3 | 1 | 12.15 | 24.56 | | |
| 05 | | 0430 | 0530 | N11 W60 | 5615 | 60 | 1 | 2 | 4.78 | 4.78 | | 80 |
| 05 | | 0456 | 0456 | S06 W21 | 5618 | | 1 | 2 | 3.32 | 3.32 | | 62 |
| 05 | 0457 | 0457 | N23 W46 | 5615 | | 1 | 2 | 1.97 | 1.97 | | 71 | |
| 05 | 0510 | 0530 | S07 W20 | 5618 | 20 | 1 | 1 | 3.74 | 3.74 | 1.68 | 100 | |

SOLAR FLARES

APRIL 1960

| OBSERVATORY | DATE APR 1960 | OBSERVED UNIVERSAL TIME | | LOCATION | | | DURA- TION — MINUTES | IM- POR- TANCE | OBS. COND. | TIME — U T | MEASUREMENTS | | | PROVISIONAL IONOSPHERIC EFFECT |
|-------------|------------------|-------------------------|--------|-----------------|---------------|--------------------------|-------------------------------|----------------------|---------------|------------------|---------------------------|---------------------------|---------------------------------|--------------------------------------|
| | | START | END | APPROX. LAT. | MER. DIST. | MAGN. PLAGE REGION | | | | | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH R _z | |
| ALMA-ATA | 05 | 0700 E | 0700 | N16 W05 | | S619 | | 1 | 2 | 0700 | 2.34 | | | 55 |
| ALMA-ATA | 05 | 0706 E | 0706 | N09 E17 | | S623 | | 1 | 2 | 0706 | 3.32 | | | 55 |
| MEUDON | 05 | 1058 | 1120 | S10 W28 | | S618 | 22 | 1 | | | | 4.00 | | 65 |
| VOROSHILOV | 05 | 2241 | 2251 | N10 W79 | | S615 | 10 | 1 | 3 | | .73 | | | |
| MITAKA | 06 | 0030 E | 0038 D | N08 W79 | | S615 | 8 D | 1 | 1 | 0031 | 1.21 | | | 96 |
| KYOTO | 06 | 0540 | 0546 D | N10 W73 | | S615 | 6 D | 1 | | 0541 | 2.91 | | | 120 |
| ALMA-ATA | 06 | 0554 E | | S11 E08 | | S620 | | 2 | 2 | 0554 | 4.67 | | | 54 |
| ALMA-ATA | 06 | 0556 E | | S09 E67 | | S625 | | 1+ | 2 | 0556 | 2.65 | | | 56 |
| ALMA-ATA | 06 | 0700 E | | S08 W37 | | S618 | | 1+ | 2 | 0700 | 8.31 | | | 71 |
| GOOD HOPE | 06 | 0939 | 0958 | N18 W78 | | S615 | 19 | 1 | 2 | 0941 | .60 | | | |
| UCCLE | 06 | 0951 E | 1021 D | N06 W58 | | S616 | 30 D | 1 | 3 | 1009 | 2.50 | 5.00 | | |
| { MEUDON | 06 | 1130 | 1145 | N13 W80 | | S615 | 15 | 2 | | | | | | |
| { GOOD HOPE | 06 | 1132 | 1134 D | N12 W77 | | S615 | 2 D | 1 | 1 | 1134 | 1.20 | | | 81 |
| { KIEV | 06 | 1133 E | 1145 D | N12 W87 | | S615 | 12 D | 1+ | 1 | 1134 | 2.08 | | | |
| { UCCLC | 06 | 1136 E | 1145 D | N12 W85 | | S615 | 9 D | 2 | 4 | 1136 | 3.50 | | | |
| UCCLC | 06 | 1315 E | | N08 W83 | | S615 | | 1 | 3 | | | | | |
| UCCLC | 06 | 1404 E | | N08 W83 | | S615 | | 1 | | | | | | |
| UCCLC | 07 | 1251 E | | N07 W50 | | S619 | | 1 | 1 | 1251 | 1.50 | | | |
| MITAKA | 09 | 0123 E | 0134 | N15 E68 | | S627 | 11 D | 2+ | 1 | 0123 | 4.83 | 13.04 | | 172 |
| NIZAMIAH | 09 | 0400 | 0412 | N08 E57 | | S627 | 12 | 1 | 2 | 0405 | 1.22 | 2.34 | | |
| { GOOD HOPE | 09 | 1044 | 1104 | N11 E58 | | S627 | 20 | 1 | | 1053 | 1.90 | 3.80 | | |
| { MEUDON | 09 | 1047 | 1100 | N10 E60 | | S627 | 13 | 1 | | | | 9.00 | | |
| { GOOD HOPE | 09 | 1140 | 1235 | N17 E64 | | S627 | 55 | 1 | | 1149 | 1.80 | 4.60 | | |
| { MEUDON | 09 | 1143 | 1310 | N17 E64 | | S627 | 87 | 2 | | | | 25.00 | | |
| { MEUDON | 09 | 1300 | 1355 | S08 E22 | | S625 | 55 | 1 | | | | | | |
| { GOOD HOPE | 10 | 0833 | 0846 | N11 E45 | | S627 | 13 | 1 | | 0837 | 1.60 | 2.40 | | |
| { MEUDON | 10 | 0835 | 0905 | N10 E45 | | S627 | 30 | 1 | | | | | | |
| VOROSHILOV | 10 | 2317 | 0004 | S07 W03 | | S625 | 47 | 2 | 3 | | 5.25 | | | 142 |
| GOOD HOPE | 11 | 0943 U | | N10 E30 | | S627 | | | | | | | | |
| ALMA-ATA | 12 | 0551 E | | S10 W16 | | S625 | | 1+ | 1 | 0551 | 5.97 | | | 66 |
| ALMA-ATA | 12 | 0643 E | | N12 E22 | | S627 | | 1 | 1 | 0643 | 9.97 | | | 55 |
| { GOOD HOPE | 12 | 0844 | 0904 | N12 E20 | | S627 | 20 | 1 | | 0853 | 2.10 | 2.30 | | |
| { UCCLC | 12 | 0855 E | 0904 D | N12 E23 | | S627 | 9 D | 1 | 2 | 0855 | 3.50 | 7.00 | | |
| { UCCLC | 12 | 0925 E | 1010 D | N13 E22 | | S627 | 45 D | 2 | 2 | 0928 | 6.50 | | | |
| { KRASNVA | 12 | 0926 | 0957 | N15 E18 | | S627 | 36 | 1+ | 2 | 0928 | 4.20 | 4.70 | | 90 |
| { GOOD HOPE | 12 | 0926 | 1002 | N16 E18 | | S627 | 22 | 1 | | | | | | |
| { MEUDON | 12 | 0930 | 0952 | N14 E20 | | S627 | 22 | 1+ | 2 | 0947 | 1.16 | 1.40 | | |
| { KHARKOV | 12 | 0941 E | 1010 D | N11 E18 | | S627 | 28 D | 1 | 2 | 1214 | 2.50 | 2.80 | | 84 |
| { GOOD HOPE | 12 | 1205 | 1233 | N12 E18 | | S627 | 28 | 1 | 1 | 1214 | 4.15 | | | |
| { KIEV | 12 | 1207 E | 1235 D | N11 E17 | | S627 | 48 D | 1+ | 2 | 1210 | 2.29 | 2.40 | | |
| { KHARKOV | 12 | 1210 E | 1235 D | N10 E18 | | S627 | 25 D | 1 | 2 | 1210 | 2.29 | 2.40 | | |
| ALMA-ATA | 14 | 0305 E | 0305 | N07 W04 | | S627 | | 1+ | 2 | 0305 | 6.65 | | | 68 |
| GOOD HOPE | 14 | 0636 E | 0646 | S15 W90 | | S622 | 10 D | 1? | | 0636 | .50 | | | |
| GOOD HOPE | 14 | 0655 | 0720 | S15 W90 | | S622 | 25 | 1 | | 0704 | .60 | | | |

SOLAR FLARES

APRIL 1960

| OBSERVATORY | DATE | OBSERVED UNIVERSAL TIME | | LOCATION | | DURA- TION — MINUTES | IM- POR- TANCE | OBS. COND. | MEASUREMENTS | | | PROVISIONAL IONOSPHERIC EFFECT |
|--|--------|-------------------------|---------|----------|---------------|-------------------------------|----------------------|---------------|---------------|---------------------------|-----------------|--------------------------------------|
| | | START | END | LAT. | APPR. LAT. | | | | MER. DIST. | MCNATH FLAGE REGION | TIME — UT | |
| { ABASTUMANI SIMEIZ ABASTUMANI SIMEIZ K HARKOV K HARKOV KIEV | 15 | 0656 E | 0705 D | S06 W67 | S06 W67 | 5625 | 1 | 2 | 0658 | 0.90 | 2.10 | 66 |
| | 15 | 0656 E | 0707 D | S08 W68 | S08 W68 | 5625 | 1 | 2 | 0658 | 1.17 | 2.80 | 60 |
| | 15 | 0717 E | 0725 D | N11 W28 | N11 W28 | 5627 | 1 | 2 | 0658 | 1.09 | 1.20 | 73 |
| | 15 | 0717 E | 0730 D | N13 W18 | N13 W18 | 5627 | 1 | 2 | 0721 | 1.00 | 1.10 | 82 |
| | 15 | 0718 E | 0725 D | N10 W29 | N10 W29 | 5627 | 1 | 2 | 0721 | 1.305 | 1.60 | 73 |
| | 15 | 0718 E | 0740 D | N12 W18 | N12 W18 | 5627 | 1 | 2 | 0721 | 1.00 | 1.10 | 71 |
| | 15 | 0721 E | 0719 D | N11 W24 | N11 W24 | 5627 | 1 | 3 | 0721 | 1.16 | 1.50 | 71 |
| | 15 | 0955 E | 1020 D | N26 E69 | N26 E69 | 5634 | 1 | 3 | 0958 | 2.29 | 5.10 | 51 |
| | 15 | 1025 E | 1332 D | N12 W25 | N12 W25 | 5627 | 1 | 1 | 1332 | 1.77 | | |
| | 16 | 0343 E | 0343 D | N21 E27 | N21 E27 | 5631 | 1 | 1 | 0343 | 3.02 | | 48 |
| | 16 | 0410 E | 0421 D | S09 E03 | S09 E03 | 5630 | 1+ | 1 | 0414 | 2.43 | 1.70 | 59 |
| | 16 | 0422 E | 0916 D | S10 E01 | S10 E01 | 5630 | 1 | 2 | 0422 | 4.32 | | 75 |
| | 16 | 0909 E | 0917 D | S09 W77 | S09 W77 | 5625 | 1 | 2 | 0925 | 2.72 | 4.30 | 80 |
| | 16 | 0909 E | 0917 D | N17 E42 | N17 E42 | 5634 | 1+ | 2 | 0912 | 3.18 | | 64 |
| | 16 | 0910 E | 0933 D | N13 E44 | N13 E44 | 5633 | 1 | 2 | 0925 | 2.29 | 1.70 | 56 |
| 16 | 0910 E | 0928 D | N13 E42 | N13 E42 | 5633 | 1 | 2 | 1152 | 2.01 | 1.50 | 77 | |
| 16 | 0912 E | 0939 D | N15 E42 | N15 E42 | 5633 | 1 | 2 | | 2.69 | | 51 | |
| 16 | 0913 E | 0950 D | N24 E53 | N24 E53 | 5634 | 1 | 2 | | 9.97 | | 73 | |
| 16 | 0935 E | 1209 D | N18 E17 | N18 E17 | 5631 | 1 | 2 | | 9.97 | | 62 | |
| 16 | 1150 E | 0051 D | N06 E44 | N06 E44 | 5633 | 1 | 2 | | 4.80 | | | |
| 17 | 0034 E | 0039 D | S10 W10 | S10 W10 | 5630 | 1 | 2 | 0309 | 4.25 | | 77 | |
| 17 | 0309 E | 0333 D | N10 W44 | N10 W44 | 5627 | 1+ | 2 | 0333 | 2.69 | | 51 | |
| 17 | 0333 E | 0410 D | N09 E49 | N09 E49 | 5633 | 1+ | 2 | 0410 | 9.97 | | 73 | |
| 17 | 0410 E | 0922 D | S09 W13 | S09 W13 | 5630 | 1 | 2 | 0540 | 4.80 | | 62 | |
| 17 | 0540 E | 0939 D | N31 W88 | N31 W88 | 5629 | 1 | 2 | 0915 | 4.80 | 3.30 | | |
| 17 | 0910 E | 1151 D | N31 W90 | N31 W90 | 5629 | 1 | 2 | 0938 | 1.14 | 1.80 | | |
| 17 | 0936 E | 1204 D | N15 W49 | N15 W49 | 5627 | 1 | 2 | 1103 | 3.43 | 1.60 | | |
| 17 | 1101 E | 1239 D | N12 W52 | N12 W52 | 5627 | 1 | 2 | 1201 | 1.14 | 1.80 | | |
| 17 | 1158 E | 1037 D | N15 W52 | N15 W52 | 5627 | 1 | 2 | 1218 | 1.70 | 2.50 | | |
| 17 | 1214 E | 1059 D | N22 E38 | N22 E38 | 5634 | 1 | 2 | 1037 | 2.86 | 2.90 | | |
| { K HARKOV | 18 | 1021 E | 1037 D | N06 E13 | N06 E13 | 5633 | 1 | 1 | 1037 | 1.14 | 1.20 | |
| { K HARKOV | 18 | 1034 E | 1355 D | N07 E16 | N07 E16 | 5633 | 1 | 1 | 1316 | 3.55 | | 75 |
| UCCLE | 20 | 0950 E | 1322 D | S18 E62 | S18 E62 | 5641 | 1? | 1 | | | | |
| UCCLE | 20 | 1300 E | 0110 D | N21 E05 | N21 E05 | 5634 | 1? | 1 | | | | |
| KIEV | 20 | 1314 E | 0335 D | N13 W17 | N13 W17 | 5633 | 1+ | 1 | | | | |
| { KYOTO | 21 | 0020 E | 0730 D | N23 W03 | N23 W03 | 5634 | 1 | 1 | 0035 | 1.66 | 2.17 | 90 |
| PIRCULI | 21 | 0024 E | 0656 D | N24 W05 | N24 W05 | 5634 | 1+ | 1 | 0041 | 5.53 | 131 | 131 |
| PIRCULI | 21 | 0628 E | 0832 D | S16 E56 | S16 E56 | 5641 | 1+ | 1 | | 3.68 | 72 | 72 |
| PIRCULI | 21 | 0639 E | 0825 D | N23 W05 | N23 W05 | 5634 | 1 | 1 | | 1.84 | 56 | 56 |
| PIRCULI | 21 | 0816 E | 0421 D | S15 W66 | S15 W66 | 5630 | 1 | 1 | | 1.84 | 52 | 52 |
| MITAKA | 22 | 0415 E | 0417 D | N25 W19 | N25 W19 | 5634 | 1 | 1 | 0415 | 1.11 | 1.76 | 96 |
| UCCLE | 22 | 0840 E | 2348 D | N06 W08 | N06 W08 | 5636 | 1? | 1 | | | | |
| UCCLE | 22 | 1445 E | | N06 W08 | N06 W08 | 5636 | 1? | 1 | | | | |
| UCCLE | 22 | 1445 E | | S15 E40 | S15 E40 | 5641 | 1+ | 1 | | | | |
| VOROSHILOV | 22 | 2337 E | | S15 W85 | S15 W85 | 5630 | 1+ | 3 | | 0.63 | | 138 |

SOLAR FLARES

APRIL 1960

| OBSERVATORY | DATE | OBSERVED TIME | | LOCATION | | | DURA- TION MINUTES | IM- POR- TANCE | OBS. COND. | MEASUREMENTS | | | | PROVISIONAL IONOSPHERIC EFFECT |
|-------------|------|---------------|--------|---------------|-----------------|--------------------------|--------------------------|----------------------|---------------|------------------|-------------|---------------------------|---------------------------|--------------------------------------|
| | | START | END | MAX. PHASE | APPROX. LAT. | APPROX. MER. DIST. | | | | MCNATH REGION | TIME U T | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | |
| VOROSHILOV | 22 | 2356 | 0014 | 2358 | N24 | W29 | 5634 | 1+ | 3 | 1.63 | | | | 80 |
| VOROSHILOV | 23 | 0011 | 0047 | 0026 | S15 | W87 | 5630 | 2 | 3 | .81 | | | | 87 |
| MITAKA | 23 | 0407 E | 0412 | 0808 | S13 | W90 | 5630 | 1 | 1 | 1.15 | | | 7.46 | |
| GOOD HOPE | 23 | 0808 | 0824 | 0808 | N16 | E57 | 5642 | 1 | 1 | 1.60 | 3.20 | | | |
| { GOOD HOPE | 23 | 0936 | 1022 | 0942 | N23 | W34 | 5634 | 1 | 1 | 3.30 | 4.40 | | | S-SWF |
| { KHARKOV | 23 | 0938 | 1005 D | 0940 | N22 | W34 | 5634 | 1+ | 1 | 4.00 | 5.30 | | 2.00 | |
| GOOD HOPE | 24 | 1423 | 1438 | 1424 | N09 | E77 | 5644 | 1 | 1 | 1.00 | | | | |
| ALMA-ATA | 26 | 0304 E | 0304 | 0304 | S09 | E61 | 5645 | 2 | 2 | 8.64 | | | | 50 |
| ALMA-ATA | 26 | 0421 E | 0421 | 0421 | N14 | E21 | 5642 | 1 | 2 | 4.65 | | | | 45 |
| ALMA-ATA | 26 | 0605 E | 0605 | 0605 | N08 | W61 | 5636 | 1+ | 1 | 5.98 | | | 1.30 | 45 |
| KHARKOV | 26 | 1041 | 1108 | | N07 | E46 | 5644 | 1 | 1 | 1.043 | | | | |
| VOROSHILOV | 29 | 0138 | 0259 D | 0214 | N12 | W21 | 5642 | 2 | 2 | 7.59 | | | | 115 |
| MITAKA | 29 | 0208 E | 0304 D | 0223 | N09 | W20 | 5642 | 1+ | 1 | 11.06 | 11.83 | | 2.29 | 149 |
| KODAIKUN | 29 | 0209 E | 0505 | 0404 | N10 | W22 | 5642 | 3 | 3 | 16.50 | 20.40 | | 2.04 | 154 |
| ABASTUMANI | 29 | 0443 E | 0857 D | 0446 | N11 | W22 | 5642 | 3 | 3 | 29.02 | 58.70 | | 2.70 | 96 |
| SIMEIZ | 29 | 0453 E | 0908 D | | N13 | W20 | 5642 | 2+ | 2 | 27.20 | 30.40 | | | 82 |
| NIZAMIAH | 29 | 0454 E | 0502 D | | N17 | W18 | 5642 | 2 | 1 | 4.86 | 5.53 | | 1.70 | 80 |
| PIRCULI | 29 | 0532 E | 0710 | 0554 | N16 | W22 | 5642 | 2+ | 3 | 11.93 | | | | 64 |
| PIRCULI | 29 | 0540 E | 0754 D | 0617 U | N10 | W22 | 5642 | 1 | 3 | 1.84 | | | 4.90 | 75 |
| GOOD HOPE | 29 | 0639 E | 0742 | 1235 U | N17 | W20 | 5642 | 1 | 1 | 4.30 | | | | |
| KIEV | 29 | 1232 E | 1302 D | | N14 | W26 | 5642 | 1+ | 2 | 0641 | | | | |
| MEUDON | 29 | 1623 | 1635 | | N16 | W25 | 5642 | 1 | 1 | 3.64 | | | | |
| MEUDON | 29 | 1718 | 1745 | | N16 | W18 | 5642 | 1 | 1 | 0726 | | | 2.00 | |
| KHARKOV | 30 | 0725 E | 0730 D | | N11 | E88 | 5652 | 1 | 1 | .58 | 4.40 | | | |
| KHARKOV | 30 | 0725 E | 0736 D | | S08 | E85 | 5653 | 1+ | 1 | 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 CRL-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
 KODAIKUNAL KODAIKUNAL
 KRASNAYA KRASNAYA PAKHRA
 LOCKHEED LOS ANGELES

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

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-60), NOT PERCENT OF CONTINUOUS SPECTRUM.

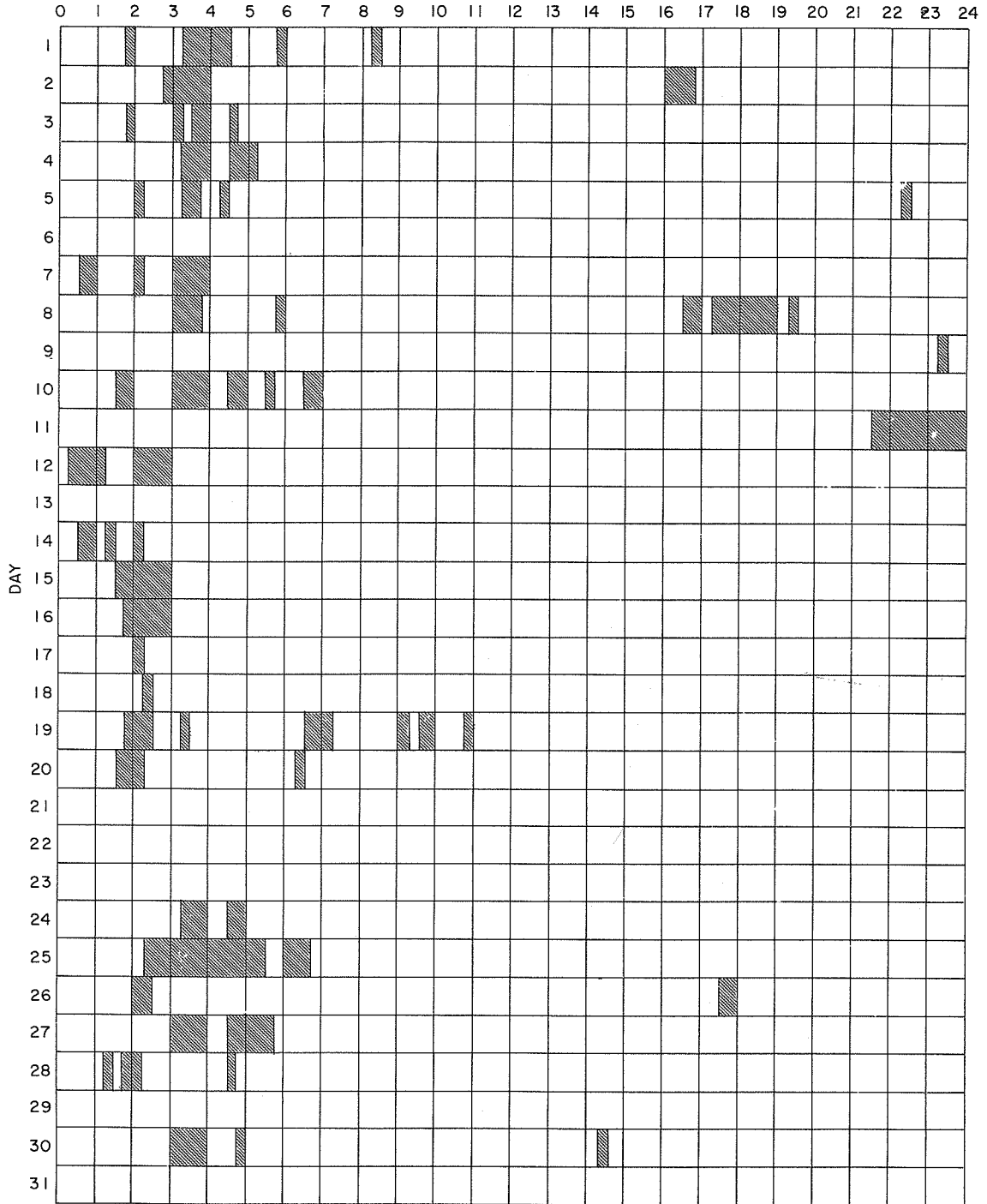
E - LESS THAN & - PLUS
 D - GREATER THAN - - MINUS
 U - APPROXIMATE □ - NOT REPORTED

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

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 | Nizamiyah | 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 | END | | |
| 1 | | 1 | | 1 | 0543 | 0611 | | HO |
| 1 | | 3- | | 5 | 0840E | 0930 | | A3, DU, HO |
| 1 | 1 | | | 4 | 1648 | 1700 | 10 | BO, MC |
| 1 | | 1 | | 4 | 1650 | 1709 | | 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 | 40 | A1, A2, A3, A5, A10, BO, HA, PA |
| 1 | 2 | | | 5 | 2007 | 2020 | | 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 | | 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 | | A1, A3, A5, A9, A10 |
| 3 | | | 1 | 5 | 1300E | 2400D | | BO, HA, MC (Noise Storm) |
| 4 | | 1 | | 5 | 2019 | 2033 | 5 | A2, A5, BO |
| 4 | 1 | | | 5 | 2019 | 2022 | | 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 | 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 | 15 | BO, HA |
| 9 | | | 1 | 5 | 2103 | 2106 | | BO, HA, MC |
| 10 | | 1 | | 1 | 0638 | 0716 | | HO |
| 10 | | □ | | 1 | 0934 | 0939 | | DU |
| 10 | | 1 | | 5 | 1707 | 1735 | | BO, MC, NE |
| 10 | 1+ | | | 5 | 1706 | 1708 | 25 | BO, MC, RE |
| 10 | | 2- | | 5 | 1952 | 1958 | | A1, A3, A5, A10, PA |
| 10 | 2 | | | 5 | 1952 | 1958 | 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 | | A1, A3, A5, A10 |
| 11 | | | 1 | 5 | 1957 | 2015 | | BO, HA, RE |
| 12 | | 2+ | | 1 | 0608 | 0625 | | A11 |
| 12 | | | 1 | 1 | 1335 | 1338 | | 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 | | 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 | | RE |
| 13 | | | 1 | 1 | 1420 | 1423 | | BO |
| 13 | | | 2 | 5 | 1709 | 1717 | | BO, HA, MC, RE |
| 13 | | □ | | 1 | 1712 | 1723 | | 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 |
| 13 | | | 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 MAX. TIME) | | | PERCENT ABSORPTION SCNA | OBSERVATION STATIONS |
|--------------|-------|-----|-------|-------------------------|----------------------------------|-------|-------|-------------------------------|---|
| | SCNA | SEA | Burst | | BEGIN | END | | | |
| 14 | 1 | | | 4 | 1635 | 1637 | 1645 | 5 | <u>BO</u> , <u>MC</u> |
| 14 | | | 1 | 4 | 1658 | | 1700 | | <u>BO</u> , <u>MC</u> |
| 14 | 1 | | | 5 | 2217 | 2225 | 2250 | 20 | <u>BO</u> , <u>HA</u> |
| 15 | | 1 | | 5 | 0254 | | | | A3, <u>HO</u> |
| 15 | | | 1 | 1 | 0252 | | 0254 | | <u>HA</u> |
| 15 | 2 | | | 1 | 0254 | 0255 | 0320 | 30 | <u>HA</u> |
| 15 | | | 1 | 4 | 1636 | | 1638 | | <u>BO</u> , <u>MC</u> |
| 15 | | | 1 | 4 | 1640 | | 1641 | | <u>BO</u> , <u>MC</u> |
| 16 | | 1 | | 1 | 0222 | | 0252 | | <u>HO</u> |
| 16 | | | 2 | 5 | 1338 | | 1343 | | <u>BO</u> , <u>MC</u> , <u>RE</u> |
| 17 | | | 1 | 4 | 1730 | | 1731 | | <u>BO</u> , <u>MC</u> |
| 17 | | | 1 | 4 | 1933 | | 1941 | | <u>BO</u> , <u>MC</u> (Group of Bursts) |
| 18 | | | 1 | 5 | 1223 | | 1226 | | <u>BO</u> , <u>MC</u> , <u>RE</u> |
| 18 | | | 2 | 5 | 1547 | | 1550 | | <u>BO</u> , <u>MC</u> , <u>RE</u> |
| 18 | | | 2 | 5 | 1746 | | 1803 | | <u>BO</u> , <u>MC</u> , <u>RE</u> (Group of Bursts) |
| 18 | | | 1 | 5 | 1902 | | 1904 | | <u>BO</u> , <u>HA</u> , <u>MC</u> |
| 18 | | | 1 | 4 | 2003 | | 2004 | | <u>BO</u> , <u>MC</u> |
| 19 | | | 2 | 4 | 1331 | | 1338 | | <u>BO</u> , <u>MC</u> , <u>RE</u> (Group of Bursts) |
| 19 | 1 | 1+ | | 5 | 1332 | 1337 | 1500 | 15 | A1, A3, A5, <u>BO</u> , <u>DU</u> , <u>NE</u> , <u>PA</u> |
| 19 | | | | 4 | 1338 | 1342 | 1400U | | <u>BO</u> , <u>MC</u> |
| 19 | | | 1 | 4 | 1445 | | 1455 | | <u>BO</u> , <u>MC</u> (Group of Bursts) |
| 19 | | | 1 | 4 | 1541 | | 1543 | | <u>BO</u> , <u>MC</u> |
| 19 | | | 1 | 4 | 1638 | | 1639 | | <u>BO</u> , <u>MC</u> |
| 19 | | | 1 | 4 | 1714 | | 1715 | | <u>BO</u> , <u>MC</u> |
| 19 | | | 1 | 4 | 1727 | | 1730 | | <u>BO</u> , <u>MC</u> |
| 19 | | | 1 | 4 | 1808 | | 1812 | | <u>BO</u> , <u>MC</u> |
| 19 | | | 1 | 4 | 1821 | | 1823 | | <u>BO</u> , <u>MC</u> |
| 19 | | | 1 | 4 | 1856 | | 1857 | | <u>BO</u> , <u>MC</u> |
| 19 | | | 1 | 5 | 1910 | 1911 | 1913 | | <u>BO</u> , <u>HA</u> , <u>MC</u> , <u>RE</u> |
| 19 | | | 1 | 5 | 2148 | | 2155 | | <u>BO</u> , <u>HA</u> (Group of Bursts) |
| 19 | | | 1 | 5 | 2354 | | 2355 | | <u>BO</u> , <u>HA</u> |
| 20 | | | 2 | 5 | 0127 | | 0131 | | <u>BO</u> , <u>HA</u> |
| 20 | | 1 | | 1 | 0130 | | 0200 | | <u>HO</u> |
| 20 | □ | | | 1 | 0131 | 0133 | | | <u>HA</u> |
| 20 | | | 1 | 4 | 1625 | | 1626 | | <u>BO</u> , <u>MC</u> |
| 20 | | | 1 | 4 | 1642 | | 1643 | | <u>BO</u> , <u>MC</u> |
| 20 | | | 1 | 1 | 2112 | | 2113 | | <u>BO</u> |
| 21 | | | 1 | 1 | 1533 | 1537 | 1540 | | <u>RE</u> |
| 21 | | | 1 | 4 | 1819 | | 1820 | | <u>BO</u> , <u>MC</u> |
| 21 | | | 1 | 5 | 2215 | | 2218 | | <u>BO</u> , <u>HA</u> , <u>MC</u> |
| 21 | | | 1 | 1 | 2243 | | 2247 | | <u>HA</u> |
| 25 | | 1 | | 5 | 1025 | | | | A3, <u>NE</u> |
| 25 | | 1 | | 4 | 1200 | 1213 | 1300 | | <u>DU</u> , <u>NE</u> |
| 25 | | | 2 | 4 | 1219 | | 1223 | | <u>BO</u> , <u>MC</u> |
| 25 | | | 1 | 4 | 1459 | | 1501 | | <u>BO</u> , <u>MC</u> |
| 25 | | | 2 | 5 | 1659 | | 0100D | | <u>BO</u> , <u>HA</u> , <u>MC</u> (Noise Storm) |
| 25 | | 2 | | 5 | 1705 | 1718 | 1735 | | A2, A3, A5, <u>BO</u> , <u>MC</u> |
| 25 | | 2+ | | 5 | 2047 | 2050 | 2124 | | A2, A3, A5, <u>BO</u> , <u>PA</u> |
| 26 | | 2 | | 1 | 0433 | | 2110 | | <u>HO</u> |
| 26 | | | 2 | 4 | 1358 | | 1401 | | <u>BO</u> , <u>MC</u> |
| 26 | | 2- | | 5 | 1401 | 1414 | 1440 | | A3, <u>BO</u> , <u>DU</u> , <u>NE</u> , <u>PA</u> |
| 26 | □ | | | 4 | 1401 | 1406 | 1440 | | <u>BO</u> , <u>MC</u> |
| 26 | | | 2 | 5 | 1525 | | 1530 | | <u>BO</u> , <u>MC</u> , <u>RE</u> |
| 26 | | | 2 | 4 | 1645 | | 1702 | | <u>BO</u> , <u>MC</u> , (Group of Bursts) |
| 26 | | | 2 | 5 | 1910 | | 1914 | | <u>BO</u> , <u>HA</u> , <u>MC</u> , <u>RE</u> |
| 26 | | | 2 | 5 | 2027 | | 0239 | | <u>BO</u> , <u>HA</u> , <u>MC</u> (Group of Bursts with strongest peaks at 2029, 2057, 0003, 0036). |
| 26 | | | 1 | 1 | 2028 | | 2032 | | <u>RE</u> |
| 26 | | | 1 | 1 | 2108 | | 2112 | | <u>RE</u> |
| 27 | | 1 | | 3 | 1152 | | 1222 | | <u>DU</u> , <u>NE</u> |
| 27 | | | 1 | 1 | 1403 | | 1405 | | <u>MC</u> |
| 27 | | | 1 | 4 | 1544 | | 1546 | | <u>BO</u> , <u>MC</u> |
| 27 | | | 1+ | 5 | 1713 | 1716 | 1719 | | <u>BO</u> , <u>MC</u> , <u>RE</u> |
| 27 | 1 | | | 5 | 1815 | 1833 | 1850 | 10 | <u>BO</u> , <u>HA</u> , <u>MC</u> |
| 27 | | 1+ | | 4 | 1820 | 1835 | 1855 | | A3, <u>BO</u> |
| 27 | | | 1 | 5 | 1924 | | 1926 | | <u>BO</u> , <u>HA</u> , <u>MC</u> |
| 27 | | 1+ | | 2 | 1958 | 2012U | 2052D | | A3, A5 |
| 27 | | | 2 | 5 | 2004 | | 2011 | | <u>BO</u> , <u>HA</u> , <u>MC</u> , <u>RE</u> (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, HA, MC, RE (Noise Storm with strong peaks at 2147, 2212, 2240, 2346) |
| 27 | | 2+ | | 5 | 2144 | 2158 | 2245 | | A3, A5, A10, PA |
| 27 | 2 | | | 5 | 2148 | 2200 | | 50 | BO, HA, MC |
| 28 | | | 1+ | 5 | 1214 | | 1217 | | BO, MC, PA, RE |
| 28 | | | 1 | 4 | 1741 | | 1754 | | BO, MC (Group of Bursts) |
| 28 | | | 2 | 4 | 1811 | | 1819 | | BO, MC (Group of Bursts) |
| 28 | | 2+ | | 5 | 1854 | 1911 | 2000U | | A1, A3, A5, A10, BO, 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 | | HA |
| 28 | 2 | | | 1 | 0135 | 0150 | 0300 | 30 | HA |
| 29 | | | 1 | 1 | 1230 | 1250 | 1250 | | RE |
| 29 | 1 | | | 1 | 1616 | 1625 | 1640 | 10 | BO |
| 30 | 1 | | | 1 | 0050 | 0055 | 0131 | 20 | HA |
| 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 |

COMMERCE - STANDARDS - BOULDER

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

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, <u>MC</u> , PR | 1546 |
| 10 | 1705 | 1722 | S-SWF | 5 | 1+ | <u>BE</u> , 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 | <u>AD</u> , <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 | <u>AD</u> , AN, WS | 2200 |
| 15 | 0250 | 0325 | S-SWF | 4 | 1 | <u>OK</u> , TO, CW + ⁺ | * |
| 16 | 0225 | 0320 | Slow S-SWF | 5 | 2 | <u>AD</u> , <u>OK</u> , TO, CW+ | * |
| 16 | 0647 | 0714 | Slow S-SWF | 1 | 1- | <u>OK</u> | 0647 |
| 19 | 1335 | 1350 | S-SWF | 5 | 2 | <u>BE</u> , 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 | <u>PU</u> | 1026E |
| 25 | 1203 | 1310 | Slow S-SWF | 1 | 2 | JU, <u>MC</u> | 1143E |
| 25 | 1705 | 1730 | S-SWF | 5 | 1+ | <u>BE</u> , FM, HU, LA, MC, PR, WS | 1659 |
| 25 | 2040 | 2110 | S-SWF | 5 | 2- | AD, AN, <u>BE</u> , 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+ | <u>AD</u> , CA, <u>OK</u> , TO, CW + ⁺ | * |
| 27 | 0453 | 0521 | Slow S-SWF | 5 | 1+ | <u>AD</u> , <u>OK</u> , TO | * |
| 27 | 0837 | 0852 | S-SWF | 1 | 2 | <u>PU</u> | 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+ | <u>AD</u> , <u>OK</u> | * |
| 30 | 0340 | 0422 | G-SWF | 5 | 1+ | <u>AD</u> , <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 | } <u>Doubtful</u> (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 | } In sunrise oscillations. |
| 14 | 2 Simple 2 | 1057 | 5 | 1057.8 | 380 | |
| 4 | 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 | 6 Complex | 1807.5 | 5 | 1809.5 | 45 | |
| 26 | 2 Simple 2 | 1705.5 | 5 | 1706.5 | 15 | |
| 4 | 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 | |

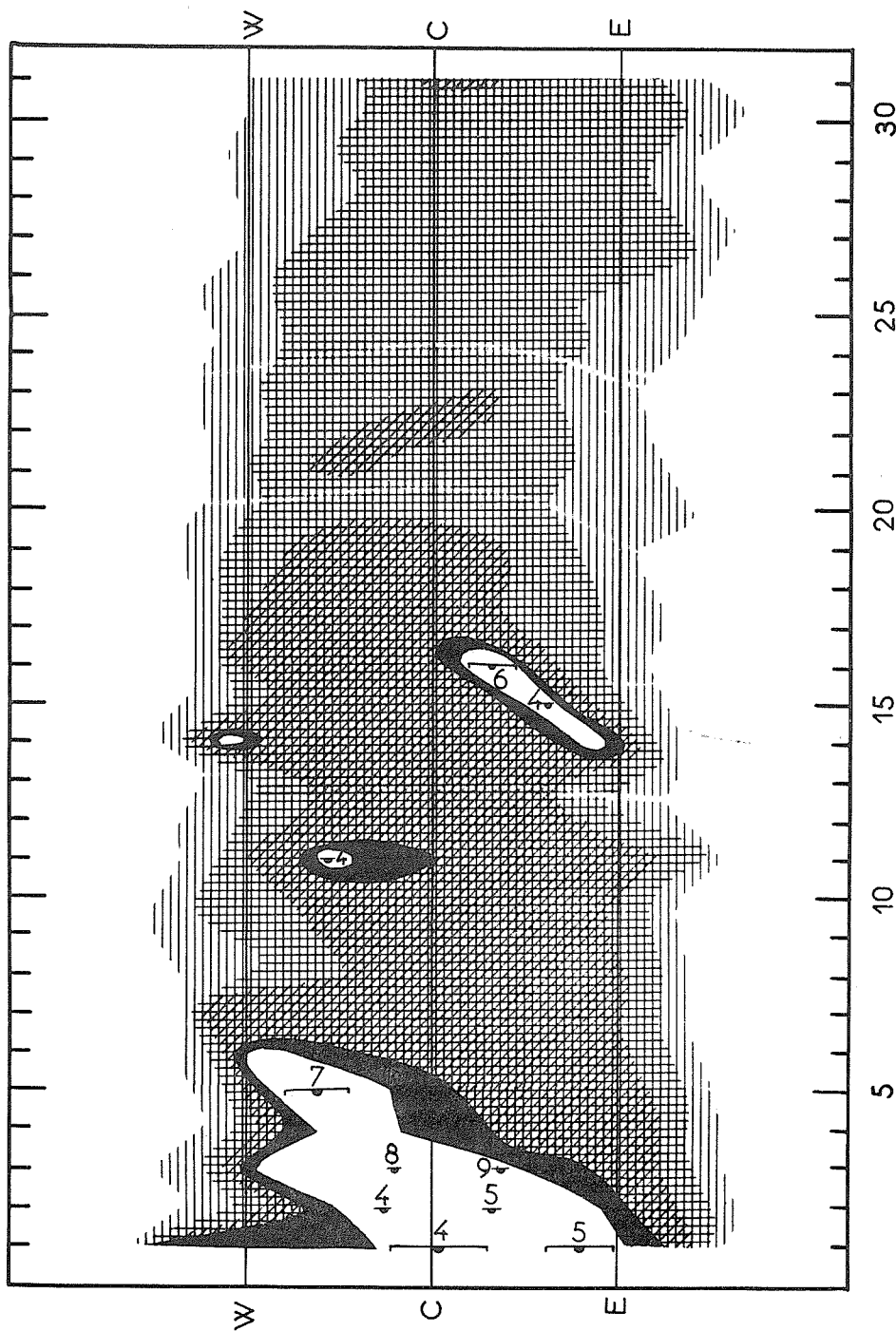
COMBEE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

JULY 1960

Nançay

169 Mc



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 |

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 1930 | 1 1- | | | | g | 1415 | 1- | |
| | | | | | | | b | 1445 | 1- | |
| | | | | | | | g | 1637 | 3 | |
| Oct. 2 0000-0020 1616-2400 | Cont. Cont. | 1748-50 2221 | 3 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 | 2241 | 1 | |
| Oct. 3 0000-0020 1315-2146 2218-2400 | | | | | | | b | 1627 | 1- | |
| Oct. 4 0000-0015 1315-2400 | | 1324 1436 1736 2301-05 2342 → | 1- 1- 1- 1- 1- | | | | g | 1504 | 1- | |
| | | | | | | | g | 1739 | 1- | |
| | | | | | | | g | 2010 | 1- | |
| | | | | | | | g | 2025 | 1- | |
| | | | | | | | g | 2247 | 1 | |
| Oct. 5 0000-0015 1315-2400 | | ← 0002 1758-1831 1859-1947 2035-2101 | 1- 1- 1- 1- | | | | | | | |
| Oct. 6 0000-0015 1315-2400 | | 1341 | 1- | | | | g | 2013 | 1 | |
| Oct. 7 0000-0015 1315-2400 | | 2210 2301 2322 | 1- 1- 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 1741-45 | 1- 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 ~ 1432 | 1- 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 1544-45 1630-32 1702-1722 1748-1814 1840-1900 1900-1905 1905-1918 1950-2002 2027-2148 2236-2400 | 1 1- 1- 1- 1 1- 1 1- 1- 1- 1- 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 1330-1802 1937-2400 | 2 1- 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

Fort Davis

OCTOBER 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 | |
| Oct. 15 cont. | | | | | | | g | 2017 | 1- | |
| | | | | | | | g | 2018 | 1 | |
| | | | | | | | g | 2019-2020 | 1 | |
| | | | | | | | b | 2113 | 1- | |
| Oct. 16 1330-2400 | Cont. | 1454-1520 | 1 | | | | | | | |
| | Cont. | 1552-1606 | 1 | | | | | | | |
| | Cont. | 1613-1625 | 1 | | | | | | | |
| | Cont. | 1634-2220 | 1 | | | | | | | |
| | | 1330-1529 | 1 | | | | g | 1345 | 1 | |
| | | 1529-1548 | 2 | | | | b | 1501 | 3 | |
| | | 1548-1640 | 1 | | | | b | 1936 | 3 | |
| | | 1620-1656 | 2 | | | | b | 2006 | 1- | |
| | | 1656-1738 | 1 | | | | g | 2007 | 2 | |
| | | 1738-1802 | 2 | | | | b | 2102 | 1 | |
| | | 1802-1846 | 1 | | | | g | 2132 | 2 | |
| | | 1846-1849 | 2 | | | | g | 2144 | 1- | |
| | | 1849-2031 | 1 | | | | b | 2150 | 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 | |

IVg

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. 22 1330-2350 | | 1358 | 1- | | | | b | 1828 | 1 | |
| | | 1530-1535 | 1- | | | | b | 2019 | 1 | |
| | | 1741-1757 | 1- | | | | g | 2334 | 2 | |
| | | 1851-1852 | 1- | | | | g | 2336 | 1 | |
| | | 2029 | 1- | | | | | | | |
| | | 2039 | 1- | | | | | | | |
| | | 2130-31 | 1 | | | | | | | |
| | | 2239 | 1- | | | | | | | |
| | | 2334 | 1 | | | | | | | |
| | | 2336 | 1- | | | | | | | |
| Oct. 23 1330-2350 | | 1649 | 1- | | | | b | 1337 | 1- | 2007 U - burst. |
| | | 1907 | 1- | | | | b | 1857-58 | 1 | |
| | | 2110-2211 | 1- | | | | b | 2007-08 | 1- | |
| | | | | | | | b | 2222 | 1- | |
| Oct. 24 1330-2345 | Cont. | 2331 | 2 | | | | b | 1423 | 1 | |
| | | 1425 | 1- | | | | g | 1435 | 2 | |
| | | 1515 | 1- | | | | b | 1538 | 1- | |
| | | 1706-1817 | 1- | | | | g | 1540 | 1- | |
| | | 2330-31 | 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- | | | | b | 1452 | 1- |
| | | 1431-38 | 1- | | | | g | 1458 | 1- | |
| | | 1458 | 1 | | | | g | 1504 | 1 | |
| | | 1525-26 | 2 | | | | b | 1508 | 1 | |
| | | 1530-46 | 1- | | | | g | 1525-26 | 2 | |
| | | 1604-1901 | 1- | | | | b | 1639 | 1 | |
| | | 1918 | 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 | | | | g | 1406-08 | 1 |
| | Cont. | 2002-03 | 2 | | | | g | 1415 | 2 | |
| | Cont. | 2006-09 | 3 | | | | g | 1432-33 | 1 | |
| | | 1448-49 | 1- | | | | g | 1439 | 2 | |
| | | 1642 | 1- | | | | g | 1521-22 | 2 | |
| | | 1656-1703 | 1- | | | | 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 | | | | g | 1348-50 | 1- | |
| | Cont. | 1920 | 3 | | | | g | 1357-58 | 2 | |
| | Cont. | 2053-54 | 2 | | | | b | 1407 | 2 | |
| | | 1530-32 | 1- | | | | 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 | | |

**SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS**

IVh

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 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 | |

SOLAR RADIO EMISSION
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NOVEMBER 1959

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25-580 Mc.

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|--|--|-----------|---------|---|------|-----|---------------------------------|---------|---------|---------|
| | Bursts* or Continuum | Time | Int | II or 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- | | | | G | 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 | |
| | | | | | | b | 2119 | 1 | | |
| Nov. 6 1345-2330 | | 1357-1632 | 1- | | | | g | 1413 | 1- | |
| | | 1815-1950 | 1- | | | | g | 1447-48 | 2 | |
| | | 2150-2203 | 1- | | | | b | 2144 | 1- | |
| | | | | | | | b | 2309 | 1 | |
| | | | | | | | g | 2311 | 1 | |

**SOLAR RADIO EMISSION
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IVj

NOVEMBER 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 | | | |
| Nov. 7 1345-2330 | Cont. | 1851-53 | 3 | | | | b | 1505 | 1 | 1852 U burst. | | |
| | 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 | | | |
| | | | | | | | g | 2016-18 | 2 | | | |
| | | | | | | g | 2249-50 | 3 | | | | |
| Nov. 8 1345-2330 | Cont. | 1852-53 | 2 | | | | g | 1357 | 1 | | 1852 U burst. | |
| | | 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 | | | |
| | | 2203-14 | 1- | | | | | | | | | |
| Nov. 9 1345-2330 | | 1413-23 | 1- | | | | b | 1743 | 1- | No observations. | | |
| | | 1439-50 | 1- | | | | b | 1744 | 1- | | | |
| | | 1519-51 | 1- | | | | g | 2056 | 2 | | | |
| | | 1624-1723 | 1- | | | | | | | | | |
| | | 1723-1909 | 1 | | | | | | | | | |
| | | 1909-2035 | 1- | | | | | | | | | |
| | | 2129-2152 | 1- | | | | | | | | | |
| | | 2222-2312 | 1- | | | | | | | | | |
| Nov. 10 Nov. 11 1345-2325 | | 1423-26 | 1- | | | | b | 1439 | 1- | No observations. | | |
| | | 1659-1738 | 1- | | | | b | 1523 | 1- | | | |
| | | 1818-1838 | 1- | | | | b | 1524 | 1 | | | |
| | | 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 | | | |
| | | | | | | | g | 1838 | 1 | | | |
| | | | | | | | b | 1843 | 1 | | | |
| | | | | | | | g | 1859 | 1 | | | |
| | | | | | | | g | 2001 | 2 | | | |
| | | | | | | | b | 2019 | 1- | | | |
| | | | | | | | G | 2024-28 | 1 | | | |
| | | | | | | | G | 2029-32 | 1 | | | |
| | | | | | | | b | 2157 | 1- | | | |
| | | | | | | g | 2158-59 | 1- | | | | |
| | | | | | | G | 2200-02 | 1- | | | | |
| | | | | | | G | 2241-43 | 1 | | | | |
| Nov. 12 1345-2325 | | 1412 | 1 | | | | b | 1412 | 1- | No observations. | | |
| | | 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 | | | |
| | | 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 | Cont. | 1606-57 | 1 | | | | g | 1424 | | 1 | No observations. |
| | | | 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- | | | |
| | | 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 | | | |
| | | | | | | | b | 1835 | 2 | | | |
| | | | | | | | g | 1900-01 | 2 | | | |
| | | | | | | | g | 1904 | 3 | | | |
| | | | | | | | G | 1906-07 | 2 | | | |
| | | | | | | | g | 1922 | 2 | | | |
| | | | | | | | b | 1925 | 1 | | | |
| | | | | | | | g | 1927-28 | 1 | | | |
| | | | | | | | b | 1929 | 1- | | | |
| | | | | | | | b | 1939 | 1 | | | |
| | | | | | | | g | 1945 | 1 | | | |
| | | | | | | | b | 2040 | 2 | | | |
| | | | | | | | b | 2058 | 1 | | | |
| | | | | | | | b | 2059 | 1 | | | |
| | | | | | | | b | 2100 | 1 | | | |
| | | | | | | | g | 2110-11 | 2 | | | |
| | | | | | | g | 2114 | 3 | | | | |
| | | | | | | b | 2127 | 1- | | | | |
| | | | | | | b | 2128 | 1- | | | | |
| | | | | | | g | 2138-39 | 1 | | | | |
| | | | | | | b | 2155 | 1- | | | | |

IVk

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

NOVEMBER 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 | |
| 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- | |

SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

IVI

NOVEMBER 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 | |
| Nov. 21 1345-2330 | | 1345-2113 | 1- | II | 1741-1752 | 3 | g | 1416 | 1 | |
| | | | 2113-2216 | | | | 1 | | | |
| | | | 2216-2325 | | | | 2 | | | |
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| Nov. 22 1345-2330 | | 1349-1800 | 1- | | | | b | 1630 | 2 | |
| | | | 1800-2010 | 1 | | | | | | |
| | | | 2010-2320 | 1 | | | | | | |
| | | | | | | | | | | |
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| Nov. 23 1345-2330 | | 1358-1632 | 1- | | | | b | 1747 | 1- | |
| | | | 1632-2120 | 2 | | | | | | |
| | | | 2120-2220 | 1 | | | | | | |
| | | | 2220-2325 | 1- | | | | | | |
| | | | | | | | | | | |
| Nov. 24 1345-2330 | Cont. | 2131 | 2 | | | | b | 1421 | 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. |
| | | | 1409 | 1- | | | | | | |
| | | | 1448-1526 | 1- | | | | | | |
| | | | 1526-1643 | 1 | | | | | | |
| | | | 1643-1750 | 1- | | | | | | |
| | | | 1750-1831 | 1 | | | | | | |
| | | | 1831-2325 | 1- | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | | | | | | | | | |
| Nov. 25 1345-2330 | Cont. | 1503-1710 | 2 | | | | b | 1638 | 2 | Reverse - and forward drift pairs over range 25-100 Mc/s, throughout day. |
| | Cont. | | 1710-2010 | 1 | | | | | | |
| | Cont. | | 2010-46 | 2 | | | | | | |
| | Cont. | | 2046-2244 | 1 | | | | | | |
| | | | 1400-1413 | 1- | | | | | | |
| | | | 1413-24 | 1 | | | | | | |
| | | | 1424-42 | 2 | | | | | | |
| | | | 1442-2212 | 3 | | | | | | |
| | | | 2212-2310 | 2 | | | | | | |
| | | | 2310-2325 | 1 | | | | | | |
| | | | | | | | | | | |
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IVm

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

NOVEMBER 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 | |
| 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 | |

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

IVn

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. 1 1400-2330 | IV. Cont. | 1400-1420 | 2 | II | 1733-1734 | 1 | G | 1358-1400 | 2 | 1515 continuum ends in a spray of fast-drift bursts. |
| | | 1420-1515 | 3 | | | | b | 1440 | 1- | |
| | | 1515-1517 | 2 | | | | G | 1512-15 | 3 | |
| | | 1827-28 | 2 | | | | G | 1516-19 | 3 | |
| | | 1828-35 | 3 | | | | G | 1520-23 | 2 | |
| | | 1835-37 | 2 | | | | g | 1720-21 | 1 | |
| | | 2204-2240 | 2 | | | | g | 1722 | 1 | |
| | | 1436 | 1- | | | | G | 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 | | |
| 1517-1716 | 2 | | | b | 1557 | 1 | | | | |
| 1716-1754 | 1 | | | g | 1700 | 1 | | | | |
| 1754-1757 | 2 | | | g | 1748-49 | 1 | | | | |
| 1404-1432 | 1- | | | G | 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 | | | | |
| | | | | G | 1824-25 | 2 | | | | |
| | | | | g | 1844 | 2 | | | | |
| | | | | b | 1845 | 2 | | | | |
| | | | | g | 1848 | 3 | | | | |
| | | | | g | 1901 | 1- | | | | |
| | | | | g | 1902 | 1- | | | | |
| | | | | g | 1903 | 2 | | | | |
| | | | | G | 1904-05 | 2 | | | | |
| | | | | G | 1906-08 | 2 | | | | |
| | | | | g | 1912 | 1- | | | | |
| | | | | g | 1913 | 1- | | | | |
| | | | | g | 2009-10 | 2 | | | | |
| | | | | g | 2011-12 | 2 | | | | |
| | | | | g | 2046-47 | 2 | | | | |
| | | | | g | 2048 | 3 | | | | |
| | | | | G | 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 | | | | | | |
| | | G | 2228-31 | 1 | | | | | | |
| | | g | 2232 | 3 | | | | | | |
| | | g | 2234-35 | 1 | | | | | | |
| | | g | 2236 | 2 | | | | | | |
| | | G | 2319-20 | 2 | | | | | | |
| | | g | 2321 | 1 | | | | | | |
| | | G | 2322 | 3 | | | | | | |
| | | G | 2326-28 | 1 | | | | | | |
| | | g | 2330-31 | 1 | | | | | | |
| | | g | 2332 | 1 | | | | | | |
| | | G | 2334-35 | 2 | | | | | | |

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

DECEMBER 1959

Fort Davis

25-580 Mc.

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|--------------------------------------|-------------------------------------|-----------|-----|--|---------|-----|------------------------------|-----------|-----|---------|
| | 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 | |
| | Cont. | 1517-1744 | 1- | | | | g | 1521 | 1 | |
| | Cont. | 1609-2335 | 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 | |
| | | | | | | | C | 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 Uncl. | 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 | | |
| | | | | | | g | 2326-27 | 1- | | |
| | | | | | | g | 2330 | 1- | | |
| Dec. 15 1415-2335 | | 1704-05 | 1- | | | | g | 1703 | 2 | |
| | | 1930-32 | 1- | | | | b | 1930 | 1 | |
| | | 2323-35 | 1- | | | | b | 2216 | 1- | |

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

IVr

DECEMBER 1959

Fort Davis

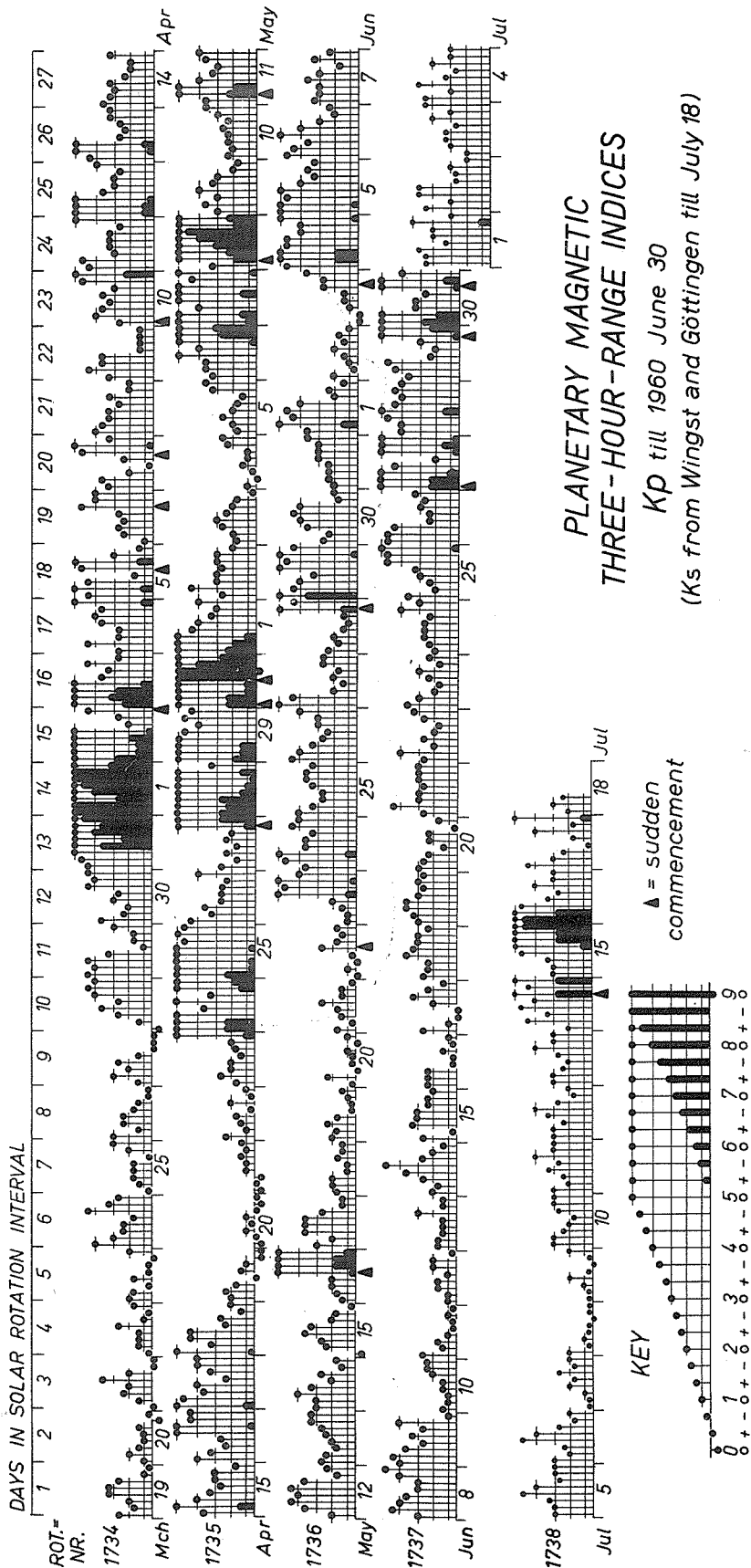
25-580 Mc.

| 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 |
|--|--|-----------|-----|---|------|-----|---------------------------------|---------|-----|---------|
| | Bursta* 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 | |
| Dec. 30 1415-2340 | | 1754-1800 | 1- | | | | g | 1847-48 | 1- | |
| | | 2319-2340 | 1- | | | | b | 1911 | 3 | |
| | | | | | | | g | 1417 | 2 | |
| Dec. 31 1415-2340 | | 1415-2340 | 1- | | | | 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 |
| | | | | | | | | | | | | 11 |
| 6 | 1.2 | 5- | 4+ | 4- | 5o | 4o | 3o | 2o | 2+ | 29o | 25 | 12 |
| 7 | 0.8 | 3+ | 3o | 3o | 4- | 3o | 2- | 3+ | 2+ | 23+ | 15 | 16 |
| 8 | 1.1 | 3o | 4+ | 4o | 4- | 3o | 3o | 4o | 5- | 30- | 24 | |
| 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 |
| | | | | | | | | | | | | 28 |
| 16 | 0.1 | 2+ | 2+ | 2+ | 1- | 1- | 1+ | 1- | 1o | 11+ | 6 | 29 |
| 17 | 0.2 | 3- | 1o | 0+ | 0+ | 2o | 3+ | 2+ | 1+ | 13+ | 7 | 30 |
| 18 | 0.8 | 3- | 2+ | 2+ | 4- | 3+ | 3o | 3o | 2+ | 23- | 14 | |
| 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 |
| | | | | | | | | | | | | 10 |
| 26 | 1.2 | 5- | 5- | 4+ | 2+ | 2+ | 3o | 3- | 3+ | 27+ | 22 | 11 |
| 27 | 1.6 | 7- | 7- | 6- | 4+ | 2o | 5+ | 6o | 5+ | 42o | 65 | 12 |
| 28 | 1.3 | 4o | 4o | 5- | 6o | 4+ | 4o | 4+ | 4o | 35+ | 36 | 13 |
| 29 | 1.4 | 4- | 4+ | 5- | 2+ | 2o | 3o | 5+ | 7- | 32o | 36 | 15 |
| 30 | 1.6 | 7o | 6+ | 3+ | 3+ | 3- | 5+ | 6o | 4o | 38o | 55 | 16 |
| | | | | | | | | | | | | 17 |
| | | | | | | | | | | | | 20 |
| Mean: | 0.82 | | | | | | | | | Mean: | 20 | |



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: | | | | Geomagnetic K _{Fr} | | |
|----------------------|---|----------|----------|----------|---|----|----|----|-----------------|--|-------------|--------------|------------|-----------------------------|--------------|--|
| | 00 to 06 | 06 to 12 | 12 to 18 | 18 to 24 | 00 | 06 | 12 | 18 | | 1-7 days Final | 1-7 days Js | 1-3 days SDW | 1-7 days J | Half Day (1) | Half Day (2) | |
| 1 | 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 | | |
| | | | | | S | 14 | 5 | 7 | 7 | | | | | 10 | | |
| | | | | | U | 0 | 0 | 0 | 0 | | | | | 1 | | |
| | | | | | F | 1 | 2 | 1 | 1 | | | | | 3 | | |
| Disturbed Periods | | | | | P | 0 | 5 | 1 | 0 | | | | | 1 | | |
| | | | | | S | 1 | 5 | 0 | 0 | | | | | 1 | | |
| | | | | | U | 0 | 1 | 0 | 0 | | | | | 0 | | |
| | | | | | F | 0 | 1 | 0 | 0 | | | | | 1 | | |

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

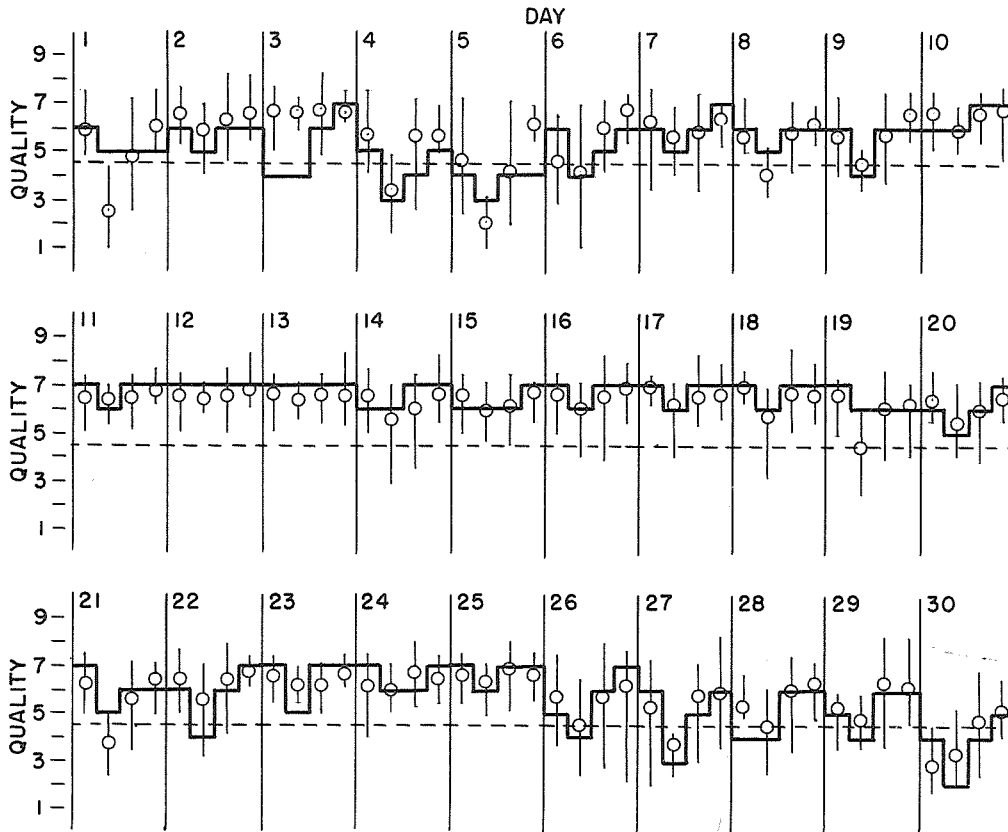
CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS NORTH ATLANTIC

VIb

JUNE 1960

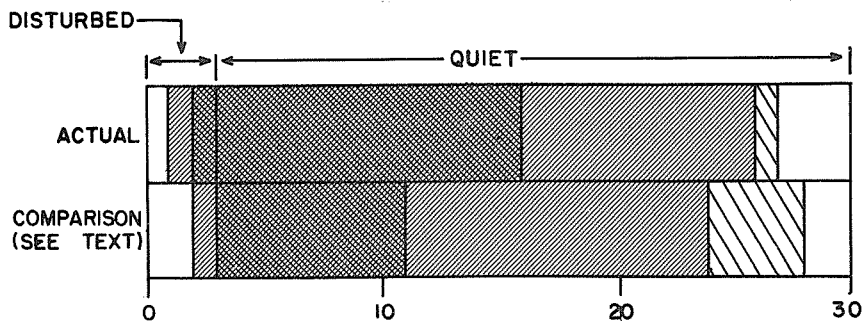
— Short-term forecast
○ Quality figure

| Range of reports



OUTCOME OF ADVANCED FORECASTS

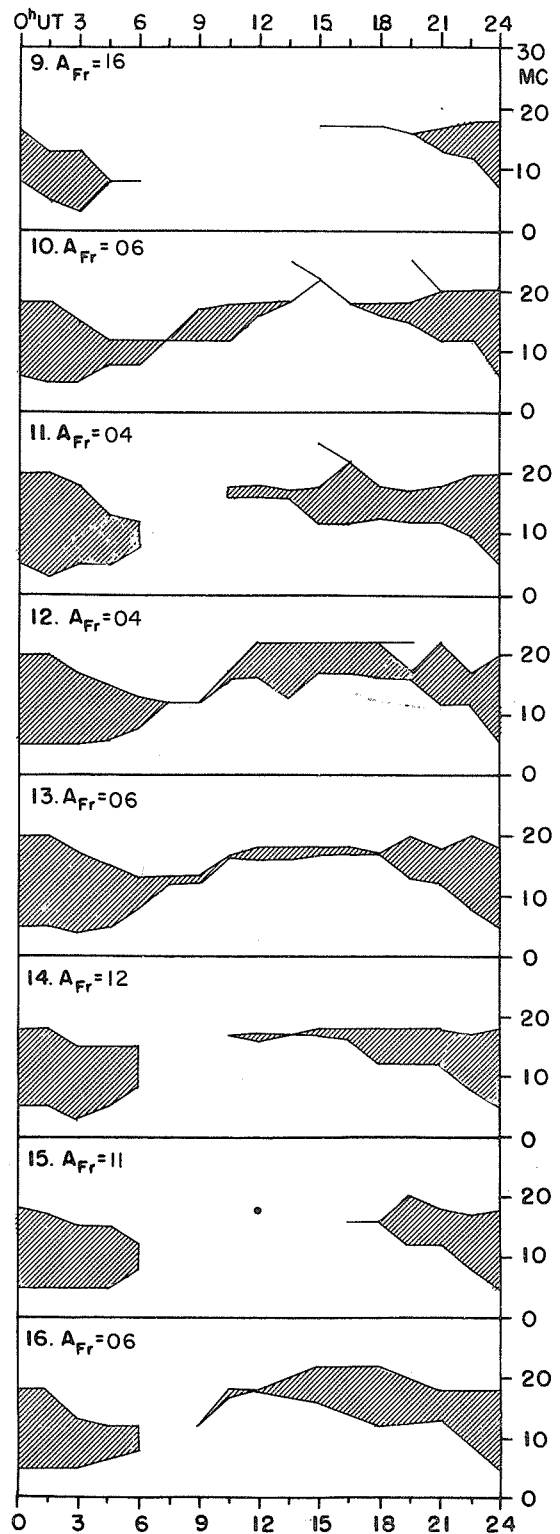
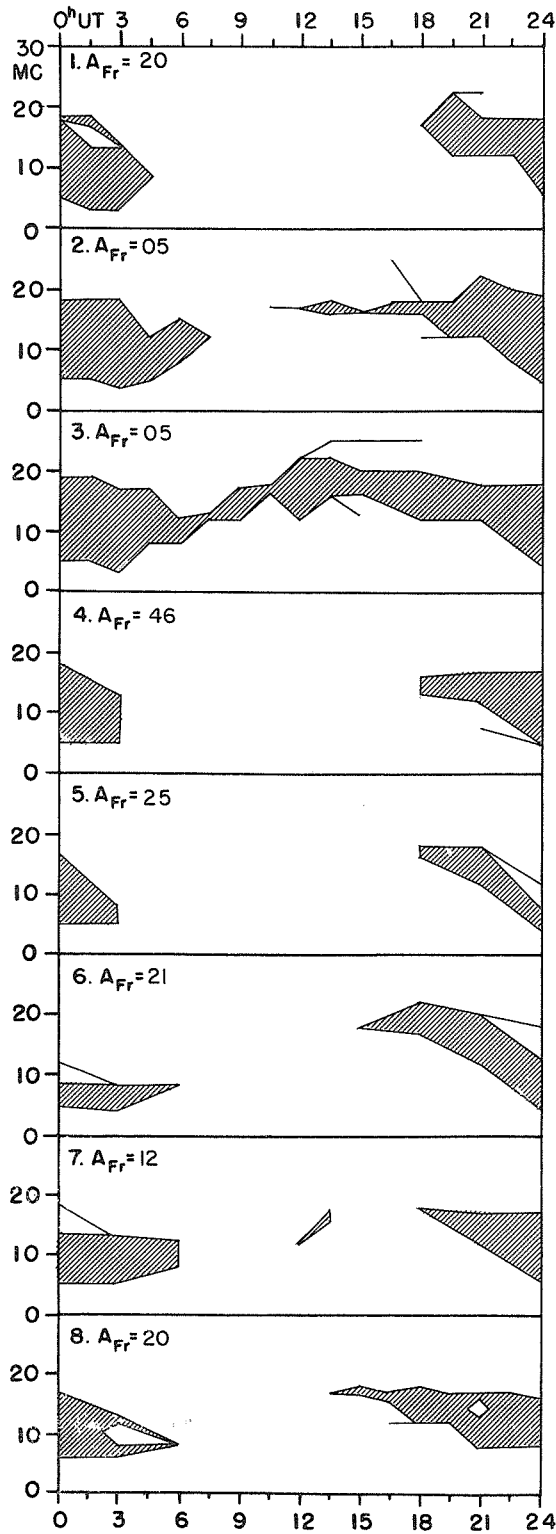
FINAL ESTIMATE



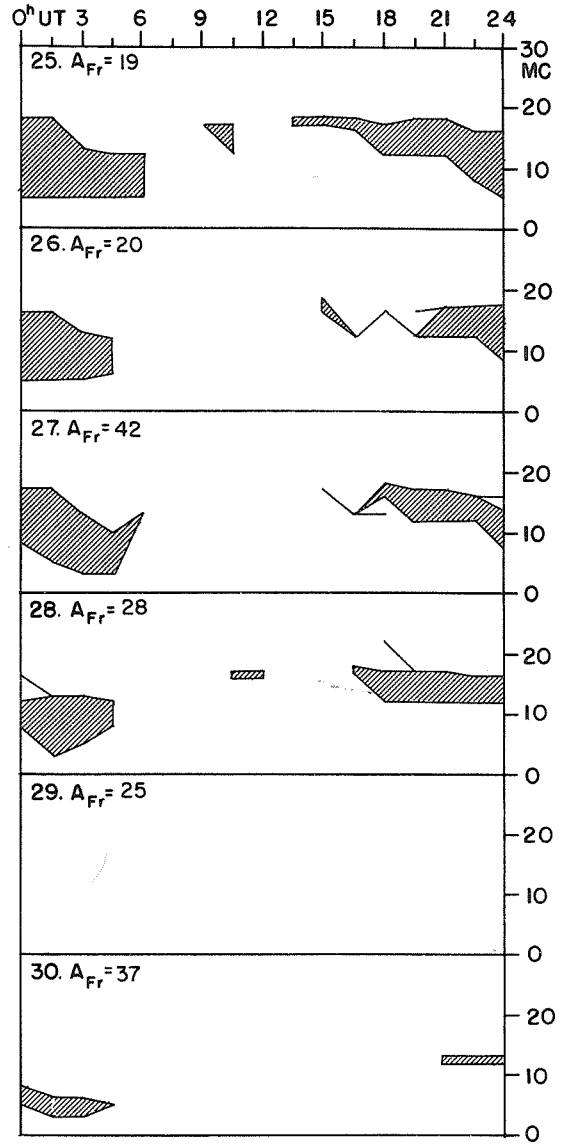
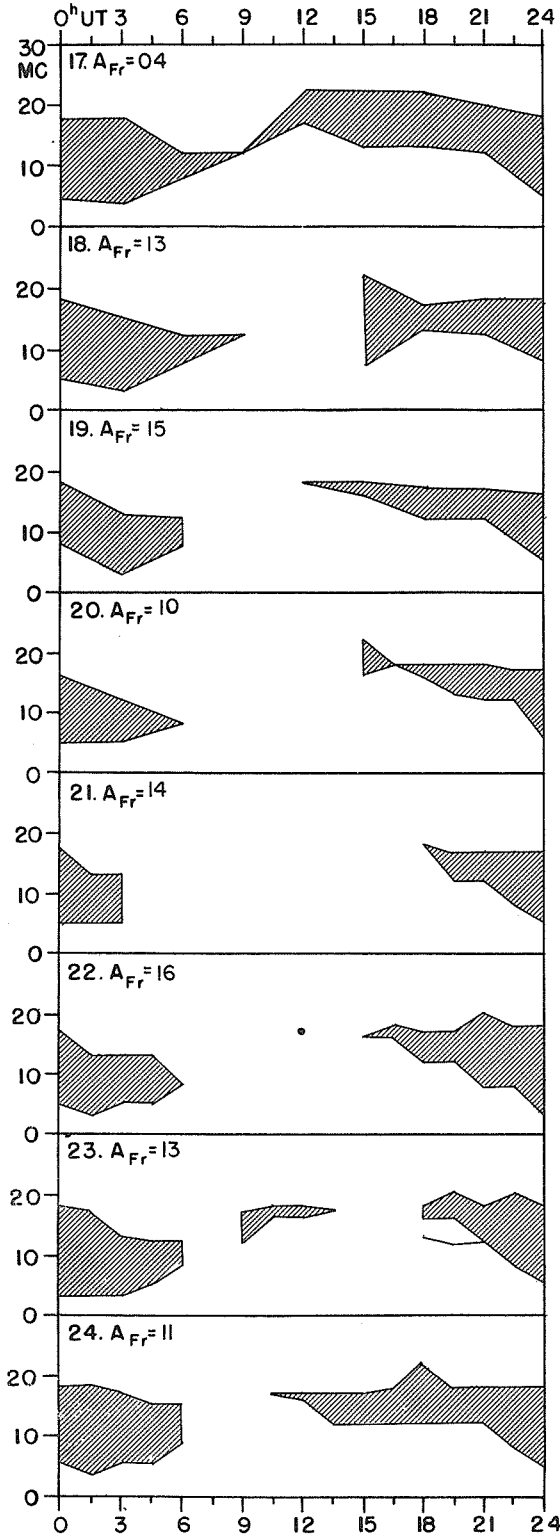
P
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USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

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_{SI} | |
|-----------|---|--------------|--------------------------------|------|-----------------|---|--------------|--------------|-------------|----------------------|-----|
| | 0700 to 1900 | 1900 to 0700 | 0600 | 1800 | | 1-7 days Final | 1-7 days Jps | 1-3 days DSW | 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 | | | | | |

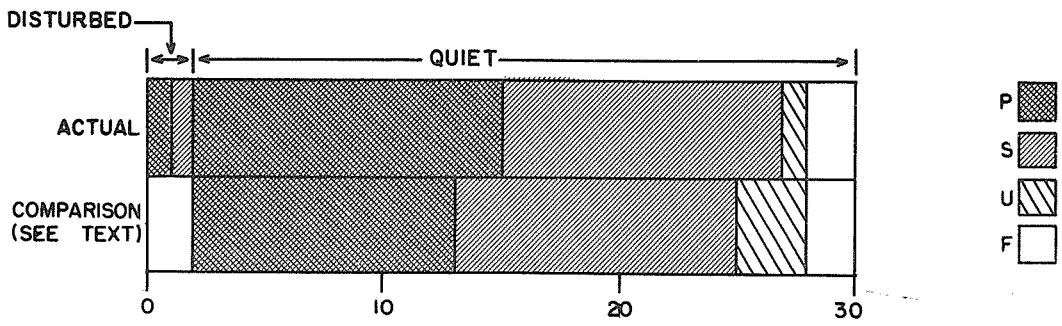
() represent disturbed values.
All times are Universal time (U.T.)

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS
NORTH PACIFIC

VIf

JUNE 1960

OUTCOME OF ADVANCED FORECASTS FINAL ESTIMATE



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 | 76 | Magnetic Storm 14/1701Z | |
| 15/1600 | | | | |
| 19/1230 | Ft. Belvoir, Magnetic Storm 19/06XXZ | 77 | Magnetic Storm 19/06XXZ | |
| 19/1600 | | | | |
| 31/0245 | Ft. Belvoir, Magnetic Storm 29/17XXZ | 78 | Magnetic Storm 29/17XXZ | |
| 31/1600 | | | | |

COMMERCE - STANDARDS - BOULDER