

JAN 7 1963

CRPL-F 220 PART B

FOR OFFICIAL USE

**PART B**  
**SOLAR - GEOPHYSICAL DATA**

**ISSUED**  
**DECEMBER 1962**

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



## SOLAR - GEOPHYSICAL DATA

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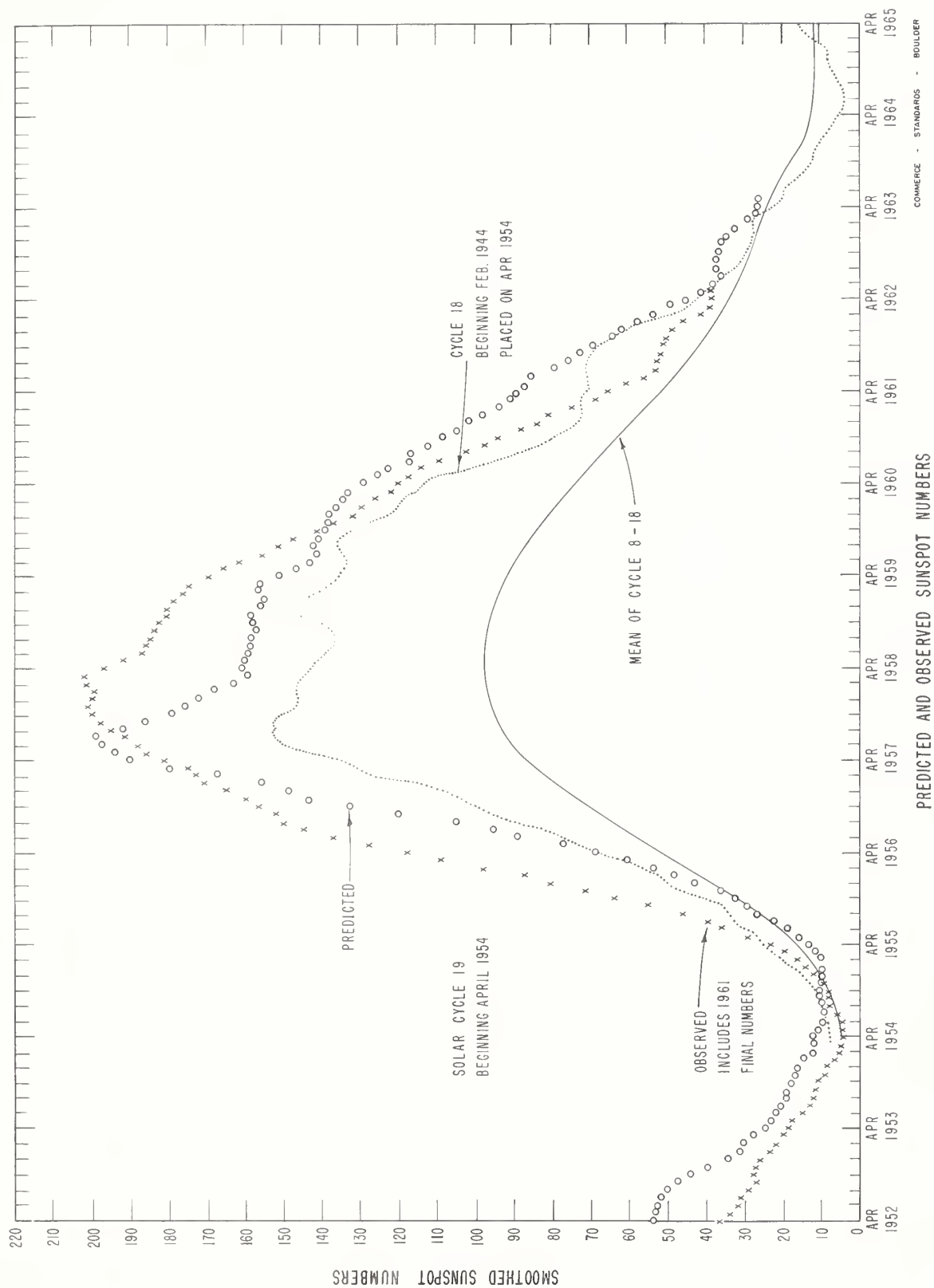


The text was republished in November 1962.

Revision: On page 20 under V COSMIC RAY INDICES change final two sentences to read "The horizontal scale lines are at intervals of 5% based upon 555,000 counts per hour, arbitrary taken as 100%. The measured standard deviation of the hourly totals is 0.2%." In July 1962 a change in monitors was made at Deep River increasing the rate to ten times the previous one.

| Oct.<br>1962 | American Relative<br>Sunspot Numbers<br>$R_A'$ |
|--------------|--|
| 1            | 38   |
| 2            | 31   |
| 3            | 23   |
| 4            | 20   |
| 5            | 14   |
| 6            | 21   |
| 7            | 21   |
| 8            | 34   |
| 9            | 47   |
| 10           | 52   |
| 11           | 56   |
| 12           | 58   |
| 13           | 68   |
| 14           | 64   |
| 15           | 55   |
| 16           | 50   |
| 17           | 47   |
| 18           | 35   |
| 19           | 24   |
| 20           | 24   |
| 21           | 24   |
| 22           | 27   |
| 23           | 38   |
| 24           | 44   |
| 25           | 29   |
| 26           | 37   |
| 27           | 26   |
| 28           | 19   |
| 29           | 14   |
| 30           | 17   |
| 31           | 21   |
| Mean:        | 34.8   |

| Nov.<br>1962 | Zürich Provisional<br>Relative Sunspot<br>Numbers<br>$R_Z$ | Daily Values Solar<br>Flux at 2800 Mc,<br>Ottawa, Canada<br>Flux |
|--------------|--|--|
| 1            | 16   | 80   |
| 2            | 13   | 80   |
| 3            | 16   | 80   |
| 4            | 12   | 82   |
| 5            | 0  | 82   |
| 6            | 9  | 83   |
| 7            | 12   | 84   |
| 8            | 18   | 85   |
| 9            | 14   | 86   |
| 10           | 14   | --   |
| 11           | 25   | 87   |
| 12           | 25   | 88   |
| 13           | 45   | 93   |
| 14           | 50   | 99   |
| 15           | 58   | 95   |
| 16           | 84   | 99   |
| 17           | 62   | 94   |
| 18           | 44   | 88   |
| 19           | 40   | 89   |
| 20           | 24   | 86   |
| 21           | 17   | 81   |
| 22           | 8  | 79   |
| 23           | 0  | 77   |
| 24           | 12   | 80   |
| 25           | 21   | 77   |
| 26           | 21   | 77   |
| 27           | 16   | 75   |
| 28           | 13   | 74   |
| 29           | 8  | 75   |
| 30           | 10   | 77   |
| Mean:        | 23.6   | 83.9   |



## CALCIUM PLAGE AND SUNSPOT REGIONS

NOVEMBER 1962

| CMP<br>Nov.<br>1962 | Lat | McMath<br>Plage<br>Number | Return<br>of<br>Region | Calcium Plage Data |             |                 |   | Sunspot Data |       |                 |
|---------------------|-----|---------------------------|------------------------|--------------------|-------------|-----------------|---|--------------|-------|-----------------|
|                     |     |                           |                        | CMP Values         |             | History, Age    |   | CMP Values   |       | History         |
|                     |     |                           |                        | Area               | Int.        |                 |   | Area         | Count |                 |
| 01.2                | N06 | 6602                      | *                      | (500)              | 3           | b — $\ell$      | 1 |              |       |                 |
| 01.6                | S13 | 6600                      | New                    | 500                | 3           | $\ell$ / $\ell$ | 1 |              |       |                 |
| 02.3                | N12 | 6601                      | **                     | (700)              | (2)         | b \ d           | 1 |              |       |                 |
| 04.4                | N01 | 6612                      | New                    | (200)              | (2.5)       | b — $\ell$      | 1 |              |       |                 |
| 08.0                | N05 | 6605                      | ***                    | 1400               | 2           | $\ell$ / $\ell$ | 2 |              |       |                 |
| 08.3                | S11 | 6606                      | ****                   | 1500               | 3           | $\ell$ \ $\ell$ | 1 |              |       |                 |
| 10.7                | S13 | 6608                      |                        | 6579               | (900) (1.5) | $\ell$ ^ $\ell$ | 2 |              |       |                 |
| 11.0                | N23 | 6610                      |                        | 6578               | (600) (1.5) | b — d           | 3 |              |       |                 |
| 11.5                | N12 | 6609                      | New                    | (500)              | (2)         | $\ell$ — d      | 1 |              |       |                 |
| 12.7                | S13 | 6611                      | New                    | 1500               | 3           | $\ell$ ^ $\ell$ | 1 | 340          | 1     | $\ell$ — $\ell$ |
| 12.7                | N10 | 6619                      | +                      | (200)              | (2.5)       | b — d           | 1 |              |       |                 |
| 13.0                | N19 | 6613                      | New                    | 1200               | 3           | b / $\ell$      | 1 | 270          | 7     | b \ d           |
| 14.0                | N04 | 6614                      | 6581                   | 700                | 2.5         | $\ell$ \ $\ell$ | 3 |              |       |                 |
| 14.4                | S18 | 6615                      | 6580                   | 1000               | 2.5         | $\ell$ \ $\ell$ | 4 |              |       |                 |
| 17.1                | S15 | 6616                      | 6593                   | (2000)             | (3)         | $\ell$ — $\ell$ | 2 | 80           | 4     | b ^ $\ell$      |
| 17.1                | N14 | 6617                      | New                    | (1200)             | (3)         | $\ell$ / $\ell$ | 1 | 240          | 7     | b ^ $\ell$      |
| 20.5                | N11 | 6618                      | 6586                   | 1100               | 2           | $\ell$ ^ $\ell$ | 5 |              |       |                 |
| 22.7                | N12 | 6621                      | 6591                   | 1700               | 2           | $\ell$ \ $\ell$ | 4 |              |       |                 |
| 24.4                | N15 | 6624                      | ++                     | 1100               | 2           | b / d           | 1 |              |       |                 |
| 24.6                | N20 | 6630                      | New                    | (600)              | (3)         | b — $\ell$      | 1 |              |       |                 |
| 25.1                | S12 | 6622                      | 6604                   | 800                | 2.5         | $\ell$ — $\ell$ | 2 |              |       |                 |
| 25.7                | N07 | 6625                      | ++                     | 200                | 2           | b — d           | 1 |              |       |                 |
| 26.6                | S02 | 6633                      | New                    | (500)              | (2.5)       | b — d           | 1 |              |       |                 |
| 28.4                | N16 | 6628                      | 6597                   | 1000               | 1.5         | b / d           | 2 |              |       |                 |
| 28.5                | S18 | 6623                      | 6600                   | 900                | 2           | $\ell$ \ d      | 2 |              |       |                 |
| 28.5                | N00 | 6635                      | New                    | (200)              | (1.5)       | b — d           | 1 |              |       |                 |
| 29.0                | N19 | 6640                      | New                    | (200)              | (2)         | b — $\ell$      | 1 |              |       |                 |
| 29.4                | S12 | 6627                      | New                    | 500                | 2           | b — d           | 1 |              |       |                 |
| 29.9                | S12 | 6636                      | New                    | (200)              | (2)         | b — d           | 1 |              |       |                 |

\* New in position of part of 6566

\*\* New in position of 6569

\*\*\* New in position of 6570, 6571

\*\*\*\* New, near position of 6575

+ New in position of 6582

++ New and ephemeral

COMMERCE - STANDARDS - BOULGER



# MT. WILSON MAGNETIC CLASSIFICATIONS OF SUNSPOTS

11b

NOVEMBER 1962

| Nov.<br>1962 | Time<br>Meas. | Lat.              | Mer.<br>Dist.     | Type                                |  | Nov.<br>1962 | Time<br>Meas. | Lat.       | Mer.<br>Dist. | Type                    |
|--------------|---------------|-------------------|-------------------|-------------------------------------|--|--------------|---------------|------------|---------------|-------------------------|
| 2            | 2245          | S16               | W20               | $\beta$                             |  | 15           | 1610          | S13<br>N20 | W43<br>W36    | $\alpha$ p<br>$\beta$ f |
| 3            | 1615          | S16               | W30               | $\beta$ p                           |  |              |               | S15<br>N13 | E18<br>E19    | $\beta$<br>$\beta$ p    |
| 7            | 1700          | S14               | E61               | $\alpha$ p                          |  | 17           | 1710          | S14<br>N19 | W70<br>W60    | $\alpha$ p<br>$\beta$   |
| 8            | 1610          | S14               | E48               | $\alpha$ p                          |  |              |               | N11<br>S17 | W 7<br>W 9    | $\beta$ f<br>$\beta$ f  |
| 9            | 1630          | S14               | E35               | $\alpha$ p                          |  | 19           | 2245          | N13<br>S17 | W37<br>W37    | $\beta$ p<br>$\beta$    |
| 10           | 1700          | S14               | E22               | $\alpha$ p                          |  | 20           | 1640          | N12<br>S17 | W50<br>W48    | $\alpha$ p<br>$\beta$ p |
| 11           | 1635          | S14<br>S15<br>N12 | E 9<br>E75<br>E75 | $\alpha$ p<br>$\alpha$ f<br>$\beta$ |  | 30           | 1705          | N01<br>N16 | E 7<br>E33    | $\alpha$ p<br>$\beta$   |

COMMERCE - STANDARDS - BOULDER

# FINAL CORONAL LINE EMISSION INDICES

JULY 1962

| QMF<br>Jul<br>1962 | North East quadrant<br>(observed 7 days earlier) |                |                |                | South East quadrant<br>(observed 7 days earlier) |                |                |                | South West quadrant<br>(observed 7 days later) |                |                |                | North West quadrant<br>(observed 7 days later) |                |                |                |
|--------------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|
|                    | G <sub>6</sub>                                   | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> | G <sub>6</sub>                                   | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> | G <sub>6</sub>                                 | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> | G <sub>6</sub>                                 | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> |
| 1                  | x  | x              | x              | x              | x  | x              | x              | x              | 35   | 81             | 17             | 40             | 27   | 50             | 21             | 40             |
| 2                  | 15   | 54             | 25a            | 72a            | 9  | 20             | 45a            | 81a            | x  | x              | x              | x              | x  | x              | x              | x              |
| 3                  | 37   | 104            | 16a            | 28a            | 17   | 25             | 19a            | 25a            | 4a   | 6a             | 3a             | 4a             | 12a  | 24a            | 4a             | 6a             |
| 4                  | 16   | 28             | 13a            | 16a            | 5  | 8              | 14a            | 18a            | 6  | 8              | 8a             | 14a            | 24   | 36             | 9a             | 22a            |
| 5                  | 60   | 82             | 4a             | 5a             | 12   | 30             | 6a             | 7a             | x  | x              | 8a             | 10a            | x  | x              | 9a             | 10a            |
| 6                  | 30   | 38             | x              | x              | 20   | 26             | x              | x              | 27   | 64             | 9a             | 16a            | 21   | 22             | 6a             | 18a            |
| 7                  | 32   | 47             | 2              | 3              | 30   | 51             | 5              | 14             | 35   | 78             | 7a             | 8a             | 21   | 25             | 6a             | 18a            |
| 8                  | 33   | 42             | 4a             | 8a             | 48   | 95             | 10a            | 12a            | 17   | 36             | 8              | 10             | 22   | 34             | 6              | 7              |
| 9                  | 39   | 59             | 6a             | 17a            | 28   | 48             | 6a             | 7a             | 30   | 39             | 8a             | 11a            | 28   | 39             | 4a             | 6a             |
| 10                 | 70   | 137            | 6a             | 22a            | 38   | 70             | 6a             | 20a            | 33   | 54             | 5              | 8              | 36   | 47             | 4              | 9              |
| 11                 | 52   | 67             | 13a            | 28a            | 44   | 92             | 10a            | 44a            | 35   | 53             | 3              | 6              | 45   | 56             | 3              | 9              |
| 12                 | 61   | 87             | x              | x              | 44   | 93             | x              | x              | 34   | 53             | 3              | 4              | 48   | 67             | 3              | 8              |
| 13                 | 62   | 72             | 3              | 9              | 44   | 72             | 5              | 8              | 27   | 44             | 3              | 4              | 51   | 73             | 2              | 9              |
| 14                 | 29   | 38             | 5              | 15             | 22   | 48             | 5              | 13             | x  | x              | x              | x              | x  | x              | x              | x              |
| 15                 | 26   | 36             | 6              | 10             | 12   | 17             | 11             | 18             | 5  | 8              | 15             | 17             | 10   | 14             | 7              | 10             |
| 16                 | x  | x              | x              | x              | x  | x              | x              | x              | 3  | 6              | 13             | 15             | 4  | 4              | 7              | 10             |
| 17                 | 9a   | 30a            | 7a             | 12a            | 4a   | 6a             | 3a             | 4a             | 24   | 32             | x              | x              | 37   | 42             | x              | x              |
| 18                 | 33   | 53             | 6a             | 12a            | 12   | 17             | 14a            | 16a            | x  | x              | x              | x              | x  | x              | x              | x              |
| 19                 | x  | x              | 14a            | 28a            | x  | 48             | 22a            | 30a            | x  | x              | x              | x              | x  | x              | x              | x              |
| 20                 | 71   | 101            | 3a             | 4a             | 21   | 21             | 13a            | 18a            | 88   | 114            | 11a            | 31a            | 33   | 62             | 3a             | 4a             |
| 21                 | 54   | 67             | 8              | 16             | 21   | 48             | 9              | 12             | 12   | 22             | 17a            | 25a            | 56   | 95             | 11a            | 20a            |
| 22                 | 36   | 70             | 8              | 15             | 7  | 14             | 7              | 7              | 4  | 8              | x              | x              | 31   | 62             | x              | x              |
| 23                 | 19   | 34             | 16a            | 40a            | 5  | 8              | 17a            | 28a            | 14   | 20             | 11a            | 17a            | 29   | 39             | 9a             | 15a            |
| 24                 | 18   | 21             | 11             | 22             | 10   | 14             | 9              | 13             | 3  | 4              | 8              | 10             | 5  | 8              | 10             | 20             |
| 25                 | 12   | 22             | 6              | 8              | 8  | 11             | 8              | 12             | 11   | 20             | 18a            | 24a            | 9  | 14             | 18a            | 38a            |
| 26                 | 24   | 34             | 5              | 10             | 15   | 20             | 3              | 5              | 33   | 53             | 10a            | 16a            | 18   | 53             | 16a            | 30a            |
| 27                 | 28   | 49             | 7              | 9              | 26   | 43             | 0              | 0              | 15   | 28             | 5              | 13             | 4  | 10             | 8              | 19             |
| 28                 | x  | x              | x              | x              | x  | x              | x              | x              | 4  | 6              | 9              | 18             | 18   | 31             | 11             | 17             |
| 29                 | 8  | 12             | 12             | 30             | 6  | 10             | 11             | 17             | 9  | 11             | 8a             | 17a            | 16   | 17             | 8a             | 12a            |
| 30                 | 17   | 40             | 15             | 35             | 5  | 10             | 8              | 10             | 3  | 4              | 5              | 5              | 4  | 6              | 5              | 10             |
| 31                 | 41   | 58             | x              | x              | 26   | 31             | x              | x              | 2  | 2              | 3              | 7              | 4  | 6              | 2              | 10             |

x = no observations

\* = yellow line

a = index computed from low weight data

# FINAL CORONAL LINE EMISSION INDICES

AUGUST 1962

| CMP<br>Aug<br>1962 | North East quadrant<br>(observed 7 days earlier) |                |                |                | South East quadrant<br>(observed 7 days earlier) |                |                |                | South West quadrant<br>(observed 7 days later) |                |                |                | North West quadrant<br>(observed 7 days later) |                |                |                |
|--------------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|
|                    | G <sub>6</sub>                                   | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> | G <sub>6</sub>                                   | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> | G <sub>6</sub>                                 | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> | G <sub>6</sub>                                 | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> |
| 1                  | x  | x              | x              | x              | x  | x              | x              | x              | 11   | 15             | 9              | 10             | 24   | 28             | 8              | 11             |
| 2                  | x  | x              | x              | x              | x  | x              | x              | x              | 10   | 12             | 10             | 15             | 11   | 16             | 9              | 12             |
| 3                  | 34   | 77             | 8a             | 17a            | 21   | 26             | 6a             | 9a             | 17   | 31             | x              | x              | 17   | 28             | 4              | 6              |
| 4                  | 21   | 28             | 4a             | 8a             | 17   | 36             | 5a             | 10a            | 22   | 28             | 23             | 28             | 12   | 15             | 12             | 18             |
| 5                  | 17   | 25             | x              | x              | 18   | 34             | x              | x              | x  | x              | x              | x              | x  | x              | x              | x              |
| 6                  | 52   | 62             | 12a            | 22a            | 58   | 82             | 10a            | 25a            | 14a  | 20a            | 15a            | 22a            | 20a  | 20a            | 9a             | 12a            |
| 7                  | 23   | 48             | 10             | 27             | 4  | 10             | 6              | 10             | 17   | 28             | 10             | 16             | 24   | 34             | 7              | 14             |
| 8                  | 49   | 87             | 10a            | 40a            | 18   | 31             | 5a             | 10a            | 17   | 34             | 18a            | 23a            | 37   | 47             | 5a             | 15a            |
| 9                  | 48   | 70             | 6a             | 8a             | 22   | 34             | 8a             | 12a            | 14   | 20             | 15             | 19             | 36   | 42             | 13             | 16             |
| 10                 | 7  | 12             | 3              | 11             | 3  | 4              | 6              | 8              | 16   | 22             | 14             | 16             | 27   | 34             | 9              | 12             |
| 11                 | 17   | 25             | 5              | 6              | 10   | 14             | 6              | 8              | 28   | 34             | 24             | 29             | 48   | 55             | 11             | 14             |
| 12                 | 16   | 20             | 5a             | 6a             | 9  | 17             | 7a             | 10a            | 5  | 9              | 12             | 13             | 12   | 26             | 14             | 25             |
| 13                 | 5  | 8              | 5              | 5              | 3  | 8              | 6              | 7              | 20   | 52             | x              | x              | 51   | 75             | x              | x              |
| 14                 | 6  | 8              | 3              | 6              | 3  | 4              | 6              | 10             | 18   | 21             | x              | x              | 42   | 50             | x              | x              |
| 15                 | 13   | 17             | 8              | 9              | 36   | 45             | 11             | 15             | 9  | 14             | 8              | 9              | 43   | 70             | 8              | 10             |
| 16                 | 34   | 71             | 12             | 22             | 9  | 17             | 15             | 19             | 13   | 25             | 10             | 14             | 47   | 92             | 12             | 16             |
| 17                 | 55   | 87             | 8              | 16             | 13   | 14             | 8              | 12             | 18   | 28             | 30a            | 42a            | 48   | 70             | 34a            | 52a            |
| 18                 | 44   | 73             | 30             | 68             | 13   | 17             | 16             | 23             | 34   | 112            | 38a            | 68a            | 64   | 92             | 53a            | 118a           |
| 19                 | 35   | 78             | x              | x              | 9  | 17             | x              | x              | 13   | 34             | 47a            | 66a            | 58   | 129            | 77a            | 157a           |
| 20                 | 11   | 20             | 15a            | 24a            | 1  | 3              | 26a            | 42a            | 17   | 28             | 36a            | 41a            | 72   | 171            | 51a            | 123a           |
| 21                 | 15   | 20             | 19             | 28             | 10   | 20             | 26             | 34             | 18   | 28             | 16a            | 18a            | 24   | 42             | 24a            | 36a            |
| 22                 | 15   | 20             | 23a            | 33a            | 6  | 17             | 23a            | 32a            | 13   | 22             | 26a            | 35a            | 20   | 31             | 29a            | 33a            |
| 23                 | 33   | 78             | 17             | 25             | 20   | 25             | 13             | 33             | x  | x              | x              | x              | x  | x              | x              | x              |
| 24                 | 32   | 59             | 26             | 43             | 18   | 25             | 15             | 25             | 20   | 59             | 15a            | 20a            | 17   | 48             | 19a            | 27a            |
| 25                 | 28   | 76             | 23             | 51             | 12   | 17             | 13             | 19             | 6  | 8              | 14a            | 16a            | 13   | 17             | 13a            | 15a            |
| 26                 | 7  | 10             | 14             | 18             | 5  | 7              | 10             | 13             | 9  | 11             | 11             | 14             | 13   | 14             | 13             | 17             |
| 27                 | 26   | 66             | x              | x              | 10   | 19             | x              | x              | 6  | 8              | 8              | 10             | 12   | 22             | 13             | 16             |
| 28                 | 37   | 42             | x              | x              | 19   | 24             | x              | x              | 9  | 13             | 9              | 13             | 21   | 26             | 20             | 26             |
| 29                 | 14   | 20             | 7              | 10             | 15   | 22             | 8              | 9              | 15   | 19             | 16a            | 20a            | 20   | 28             | 25a            | 29a            |
| 30                 | 24   | 42             | 12             | 20             | 12   | 15             | 9              | 11             | 10   | 15             | 13             | 15             | 8  | 10             | 13             | 16             |
| 31                 | 22   | 34             | 23a            | 33a            | 14   | 22             | 11a            | 30a            | 25   | 31             | 11             | 12             | 12   | 16             | 7              | 10             |

x = no observations

\* = yellow line

a = index computed from low weight data

# FINAL CORONAL LINE EMISSION INDICES

SEPTEMBER 1962

| CMF<br>Sep<br>1962 | North East quadrant<br>(observed 7 days earlier) |                |                |                | South East quadrant<br>(observed 7 days earlier) |                |                |                | South West quadrant<br>(observed 7 days later) |                |                |                | North West quadrant<br>(observed 7 days later) |                |                |                |
|--------------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|
|                    | G <sub>6</sub>                                   | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> | G <sub>6</sub>                                   | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> | G <sub>6</sub>                                 | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> | G <sub>6</sub>                                 | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> |
| 1                  | 33   | 81             | 24a            | 43a            | 14   | 25             | 26a            | 41a            | 20   | 40             | 5              | 8              | 17   | 23             | 6              | 11             |
| 2                  | 13   | 22             | 26             | 35             | 15   | 28             | 24             | 25             | 34   | 64             | 29             | 61             | 45   | 64             | 16             | 20             |
| 3                  | 23   | 36             | 11             | 15             | 29   | 56             | 21             | 30             | 22   | 31             | 14             | 20             | 39   | 73             | 16             | 20             |
| 4                  | 27   | 39             | 11             | 15             | 15   | 22             | 17             | 20             | 10   | 11             | 28a            | 35a            | 36   | 39             | 18a            | 25a            |
| 5                  | 36   | 39             | 12             | 15             | 17   | 28             | 22             | 30             | 11   | 22             | 22a            | 34a            | 37   | 53             | 11a            | 21a            |
| 6                  | 48a  | 60a            | 25a            | 30a            | 21a  | 25a            | 20a            | 21a            | 16   | 22             | 4              | 5              | 26   | 36             | 3              | 12             |
| 7                  | 38   | 67             | 23a            | 60a            | 14   | 22             | 17a            | 20a            | 37   | 33             | 11             | 13             | 41   | 49             | 19             | 34             |
| 8                  | 50   | 120            | 34             | 64             | 21   | 48             | 20             | 25             | 45   | 67             | 15             | 19             | 32   | 62             | 13             | 25             |
| 9                  | 41   | 92             | 24             | 40             | 35   | 70             | 21             | 36             | 49   | 80             | 14             | 22             | 23   | 35             | 15             | 25             |
| 10                 | 17   | 22             | 5              | 10             | 27   | 64             | 6              | 8              | 22   | 34             | 13             | 16             | 16   | 20             | 10             | 14             |
| 11                 | 25   | 29             | 5              | 8              | 33   | 51             | 8              | 13             | 16   | 36             | 22a            | 29a            | 20   | 31             | 15a            | 18a            |
| 12                 | 43   | 49             | 15             | 30             | 23   | 35             | 26             | 34             | 29   | 40             | 29             | 33             | 26   | 31             | 9              | 11             |
| 13                 | 25   | 30             | 16             | 27             | 11   | 25             | 19             | 21             | 29   | 44             | 21             | 25             | 20   | 25             | 12             | 14             |
| 14                 | 41   | 78             | 13             | 30             | 40   | 78             | 11             | 18             | 45   | 69             | 7              | 9              | 28   | 32             | 7              | 10             |
| 15                 | 25   | 48             | x              | x              | 22   | 43             | x              | x              | 31   | 56             | 8              | 12             | 39   | 50             | 13             | 16             |
| 16                 | 28   | 53             | 36             | 88             | 22   | 39             | 41             | 60             | 33   | 70             | 12             | 16             | 56   | 70             | 26             | 41             |
| 17                 | 12   | 17             | 31             | 38             | 10   | 20             | 21             | 34             | 42   | 58             | x              | x              | 97   | 147            | x              | x              |
| 18                 | 14   | 22             | 36             | 58             | 12   | 17             | 24             | 31             | 8  | 20             | 20             | 23             | 36   | 64             | 27             | 42             |
| 19                 | 19   | 31             | 22a            | 35a            | 13   | 17             | 16a            | 24a            | 20   | 39             | 14             | 23             | 9  | 11             | 22             | 30             |
| 20                 | 21   | 28             | 4              | 5              | 22   | 33             | 3              | 14             | 18   | 48             | x              | x              | 9  | 11             | x              | x              |
| 21                 | 18   | 22             | 13             | 16             | 31   | 45             | 13             | 18             | x  | x              | x              | x              | x  | x              | x              | x              |
| 22                 | 6  | 8              | 11             | 14             | 8  | 20             | 11             | 15             | 9  | 1              | 12             | 15             | 11   | 16             | 19             | 22             |
| 23                 | 10   | 12             | 13             | 15             | 8  | 10             | 12             | 15             | 5  | 8              | 12             | 15             | 19   | 36             | 22             | 57             |
| 24                 | 11   | 17             | 16             | 24             | 7  | 8              | 7              | 8              | 11   | 17             | 14             | 16             | 22   | 76             | 28             | 42             |
| 25                 | 8  | 14             | 15a            | 20a            | 8  | 11             | 14a            | 16a            | 2  | 6              | x              | x              | 42   | 73             | x              | x              |
| 26                 | 17   | 21             | 16             | 20             | 11   | 17             | 11             | 12             | 13   | 20             | 15             | 18             | 58   | 126            | 35             | 82             |
| 27                 | 19   | 28             | 13             | 17             | 9  | 15             | 13             | 18             | 21   | 42             | 20             | 23             | 44   | 92             | 45             | 87             |
| 28                 | 43   | 67             | 17             | 28             | 22   | 31             | 4              | 7              | 15   | 40             | x              | x              | 51   | 102            | x              | x              |
| 29                 | 53   | 76             | 20             | 33             | 16   | 45             | 6              | 9              | 24   | 58             | 10             | 12             | 57   | 114            | 22             | 50             |
| 30                 | 95   | 117            | 22             | 48             | 40   | 102            | 12             | 15             | 19   | 34             | 30             | 40             | 36   | 45             | 32             | 77             |

x = no observations

\* = yellow line

a = index computed from low weight data

# PROVISIONAL CORONAL LINE EMISSION INDICES

NOVEMBER 1962

| CMF<br>Nov<br>1962 | North East quadrant<br>(observed 7 days earlier) |                |                |                | South East quadrant<br>(observed 7 days earlier) |                |                |                | South West quadrant<br>(observed 7 days later) |                |                |                | North West quadrant<br>(observed 7 days later) |                |                |                |
|--------------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|--|----------------|----------------|----------------|
|                    | G <sub>6</sub>                                   | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> | G <sub>6</sub>                                   | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> | G <sub>6</sub>                                 | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> | G <sub>6</sub>                                 | G <sub>1</sub> | R <sub>6</sub> | R <sub>1</sub> |
| 1                  | 48   | 85             | 7              | 10             | 18   | 40             | 19             | 27             | 20   | 39             | 22             | 59             | 28   | 42             | 8              | 13             |
| 2                  | 38   | 56             | 11             | 16             | 18   | 41             | 16             | 18             | 17   | 24             | 22             | 32             | 21   | 27             | 11             | 12             |
| 3                  | 21   | 31             | 10             | 18             | 9  | 18             | 20             | 25             | 7  | 10             | 7              | 9              | 9  | 11             | 4              | 6              |
| 4                  | 14   | 23             | 15             | 19             | 9  | 12             | 14             | 25             | 7  | 12             | 15             | 21             | 7  | 9              | 8              | 11             |
| 5                  | 20   | 25             | 9              | 10             | 9  | 13             | 17             | 29             | 10   | 13             | 12             | 16             | 12   | 24             | 7              | 10             |
| 6                  | 31   | 48             | 26             | 41             | 15   | 19             | 25             | 28             | 16   | 28             | 11             | 17             | 22   | 40             | 7              | 9              |
| 7                  | 36   | 69             | 10             | 18             | 24   | 39             | 16             | 30             | x  | x              | x              | x              | x  | x              | x              | x              |
| 8                  | 22   | 43             | 6              | 8              | 33   | 79             | 10             | 20             | x  | x              | x              | x              | x  | x              | x              | x              |
| 9                  | 22   | 28             | 18             | 20             | 27   | 48             | 22             | 51             | x  | x              | x              | x              | x  | x              | x              | x              |
| 10                 | 32   | 64             | 24             | 32             | 43   | 77             | 24             | 29             | x  | x              | x              | x              | x  | x              | x              | x              |
| 11                 | x  | x              | x              | x              | x  | x              | x              | x              | x  | x              | x              | x              | x  | x              | x              | x              |
| 12                 | 30   | 39             | 21             | 37             | 62   | 119            | 25             | 48             | x  | x              | x              | x              | x  | x              | x              | x              |
| 13                 | 21   | 55             | 25             | 49             | 63   | 105            | 31             | 67             | 39   | 60             | 25             | 43             | 33   | 46             | 30             | 40             |
| 14                 | 37   | 84             | 18             | 24             | 40   | 73             | 37             | 55             | 29   | 53             | 18             | 24             | 19   | 25             | 14             | 19             |
| 15                 | 21   | 76             | 12             | 30             | 20   | 32             | 30             | 48             | 41   | 71             | 30             | 45             | 29   | 52             | 25             | 35             |
| 16                 | 13   | 16             | 14             | 20             | 34   | 57             | 33             | 54             | x  | x              | x              | x              | x  | x              | x              | x              |
| 17                 | 7  | 12             | 5              | 7              | 18   | 36             | 12             | 33             | 33   | 90             | 38             | 68             | 32   | 52             | 29             | 40             |
| 18                 | 12   | 17             | 13             | 17             | 8  | 11             | 24             | 46             | x  | x              | x              | x              | x  | x              | x              | x              |
| 19                 | 16   | 30             | 9              | 12             | 6  | 8              | 9              | 12             | 5  | 6              | 14             | 15             | 14   | 25             | 12             | 12             |
| 20                 | 24   | 41             | 9              | 12             | 8  | 9              | 10             | 16             | 8  | 20             | 9              | 10             | 18   | 33             | 9              | 14             |
| 21                 | x  | x              | x              | x              | x  | x              | x              | x              | 7  | 11             | 14             | 16             | 25   | 43             | 12             | 20             |
| 22                 | x  | x              | x              | x              | x  | x              | x              | x              | 19   | 31             | x              | x              | 61   | 84             | x              | x              |
| 23                 | x  | x              | x              | x              | x  | x              | x              | x              | x  | x              | x              | x              | x  | x              | x              | x              |
| 24                 | x  | x              | x              | x              | x  | x              | x              | x              | x  | x              | x              | x              | x  | x              | x              | x              |
| 25                 | x  | x              | x              | x              | x  | x              | x              | x              | 14   | 22             | 27             | 28             | 21   | 34             | 27             | 40             |
| 26                 | x  | x              | x              | x              | x  | x              | x              | x              | 5  | 6              | 12             | 15             | 23   | 27             | 10             | 13             |
| 27                 | 21   | 33             | 8              | 10             | 13   | 17             | 12             | 15             | 7  | 11             | 10             | 12             | 16   | 18             | 8              | 10             |
| 28                 | 15   | 25             | 5              | 8              | 12   | 24             | 8              | 9              | 7  | 17             | 17             | 19             | 20   | 22             | 8              | 14             |
| 29                 | 30   | 36             | 9              | 14             | 19   | 45             | 16             | 17             | 7  | 10             | 12             | 16             | 14   | 18             | 7              | 8              |
| 30                 | x  | x              | x              | x              | x  | x              | x              | x              | 11   | 14             | 14             | 17             | 24   | 40             | 10             | 13             |

x = no observations

u = index computed from low weight data

\* = yellow line

# SOLAR FLARES

## NOVEMBER 1962

| OBSERVATORY                   | DATE        | OBSERVED UNIVERSAL TIME |        | LOCATION       |                         | DURATION<br>—<br>MINUTES | IM-<br>PORTANCE | OBS<br>COND | TIME |  | MEASUREMENTS           |                        | PROVISIONAL<br>IONOSPHERIC<br>EFFECT |
|-------------------------------|-------------|-------------------------|--------|----------------|-------------------------|--------------------------|-----------------|-------------|------|--|------------------------|------------------------|--------------------------------------|
|                               |             | START                   | END    | APPROX<br>LAT. | MATH<br>FLARE<br>REGION |                          |                 |             | U T  |  | MEAS<br>AREA<br>Sq Deg | CORR<br>AREA<br>Sq Deg |                                      |
|                               | NOV<br>1962 |                         |        |                |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 01          | 0255                    | 0430   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 01          | 0600                    | 0730   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 01          | 0805                    | 0850   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 01          | 0920                    | 0930   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 01          | 0940                    | 1005   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 01          | 1025                    | 1035   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 01          | 1045                    | 1050   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 01          | 1125                    | 1135   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 01          | 1205                    | 1210   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 01          | 1220                    | 1230   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 01          | 1240                    | 1255   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 01          | 1325                    | 1400   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 01          | 1410                    | 1435   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
| SAC PEAK<br>MCMATH            | 01          | 1616 E                  | 1652 D | N17 W13        |                         |                          | 1-              | 3           |      |  | 1.82                   | 1.79                   | 17                                   |
|                               | 01          | 1620                    | 1640   | N17 W12        | 6597                    |                          | 1-              | 2           | 1622 |  | 1.50                   | 1.60                   |                                      |
|                               | 02          | 0150                    | 0155   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 02          | 0205                    | 0605   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 02          | 0615                    | 0725   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 02          | 0735                    | 0740   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 02          | 0905                    | 0920   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 02          | 1040                    | 1045   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 02          | 1050                    | 1125   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 02          | 1130                    | 1215   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
| ATHENES                       | 03          | 0045                    | 0050   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 03          | 0125                    | 0700   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 03          | 1005                    | 1030   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 03          | 1125 E                  | 1130   | S15 W27        |                         |                          | 1-              | 3           |      |  | .50                    | .60                    |                                      |
|                               | 03          | 1245                    | 1330   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 03          | 1340                    | 1440   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 03          | 2220                    | 2250   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 03          | 2310                    | 2315   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
| ATHENES<br>ATHENES<br>ATHENES | 04          | 0110                    | 0545   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 04          | 0628 E                  | 0635   | S14 W39        |                         |                          | 1-              | 3           |      |  | .50                    | .60                    |                                      |
|                               | 04          | 0631                    | 0655   | S12 W82        |                         |                          | 1-              | 3           |      |  | .30                    | 1.50                   |                                      |
|                               | 04          | 0817 E                  | 0835 D | S12 W85        |                         |                          | 1               | 3           |      |  | .40                    | 2.60                   |                                      |
|                               | 04          | 1110                    | 1120   | PATROL         |                         |                          | 18 D            |             |      |  |                        |                        |                                      |
|                               | 04          | 1225                    | 1250   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 04          | 1255                    | 1315   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 04          | 1340                    | 1400   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 04          | 1420                    | 1435   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 04          | 2010                    | 2015   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 05          | 0555                    | 0800   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 05          | 0940                    | 1710   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 06          | 0245                    | 0420   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 06          | 0550                    | 0730   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |
|                               | 06          | 0745                    | 0840   | PATROL         |                         |                          |                 |             |      |  |                        |                        |                                      |

# SOLAR FLARES

NOVEMBER 1962

| OBSERVATORY | DATE     | OBSERVED UNIVERSAL TIME |        | LOCATION        |               | DURATION<br>—<br>MINUTES | IM-<br>POR-<br>TANCE | OBS.<br>COND. | MEASUREMENTS |                          |                         |                     | PROVISIONAL<br>IONOSPHERIC<br>EFFECT |
|-------------|----------|-------------------------|--------|-----------------|---------------|--------------------------|----------------------|---------------|--------------|--------------------------|-------------------------|---------------------|--------------------------------------|
|             |          | START                   | END    | APPROX.<br>LAT. | MER.<br>DIST. |                          |                      |               | TIME<br>U T  | MEAS.<br>AREA<br>Sq Deg. | CORR<br>AREA<br>Sq Deg. | MAX.<br>WIDTH<br>Ha | MAX<br>INT<br>°                      |
|             | NOV 1962 |                         |        |                 |               |                          |                      |               |              |                          |                         |                     |                                      |
| ATHENES     | 06       | 0845                    | 0945   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 06       | 0950                    | 1000   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 06       | 1030                    | 1040   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 06       | 1045                    | 1055   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 06       | 1100                    | 1130   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 06       | 1150                    | 1315   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 06       | 1340                    | 1400   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 06       | 1455                    | 1510   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
| WENDEL      | 06       | 1525                    | 1600   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 07       | 0240                    | 0415   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 07       | 0500                    | 0600   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 07       | 0625 E                  | 0658   | NO FLARE        | S02 E70       |                          | 1-                   | 2             |              | .40                      | 1.10                    |                     |                                      |
|             | 07       | 0755                    | 0805   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 07       | 0910                    | 0945   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 07       | 1025                    | 1045   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 07       | 1050                    | 1325   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
| SAC PEAK    | 07       | 1141                    | 1203   | NO FLARE        | S13 E69       | 6611                     | 1+                   |               |              |                          | 5.00                    |                     |                                      |
|             | 07       | 1410                    | 1440   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 07       | 1510                    | 1630   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 07       | 1836 E                  | 1844 D | NO FLARE        | S12 E63       |                          | 1-                   | 2             |              | .56                      | .91                     |                     | 16                                   |
|             | 08       | 0130                    | 0430   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 08       | 0530                    | 0800   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 08       | 0805                    | 0820   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 08       | 0910                    | 1410   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
| WENDEL      | 08       | 1420                    | 1435   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 09       | 0155                    | 0205   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 09       | 0215                    | 0225   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 09       | 0305                    | 0500   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 09       | 0540                    | 0600   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 09       | 0735                    | 0810   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 09       | 0736 E                  | 0758 D | NO FLARE        | S15 E41       |                          | 1-                   |               |              |                          |                         |                     |                                      |
|             | 09       | 0845                    | 0915   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
| WENDEL      | 09       | 0900 E                  | 0906 D | NO FLARE        | S15 E40       |                          | 1-                   |               |              |                          |                         |                     |                                      |
|             | 09       | 0920                    | 0925   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 09       | 0923 E                  | 0927 D | NO FLARE        | S15 E40       |                          | 1-                   |               |              |                          |                         |                     |                                      |
|             | 09       | 0930                    | 0935   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 09       | 1050                    | 1100   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 09       | 1105                    | 1125   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 09       | 1320                    | 1340   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 09       | 1321 E                  | 1349 D | NO FLARE        | S14 E36       | 6611                     | 1+                   |               |              |                          | 5.00                    |                     |                                      |
| SAC PEAK    | 09       | 1345                    | 1435   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 09       | 2133 E                  | 2152 D | NO FLARE        | N12 E25       |                          | 1-                   | 3             |              | 1.16                     | 1.18                    |                     | 16                                   |
|             | 10       | 0155                    | 0725   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 10       | 0735                    | 0745   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 10       | 1320                    | 1340   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 10       | 1400                    | 1425   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |
|             | 10       | 1430                    | 1435   | NO FLARE        | PATROL        |                          |                      |               |              |                          |                         |                     |                                      |

# SOLAR FLARES

## NOVEMBER 1962

| OBSERVATORY        | DATE     | OBSERVED UNIVERSAL TIME |        | LOCATION       |             | DURATION<br>—<br>MINUTES   | IM-<br>POR-<br>TANCE | OBS<br>COND | MEASUREMENTS |                          |                         |                                | PROVISIONAL<br>IONOSPHERIC<br>EFFECT |
|--------------------|----------|-------------------------|--------|----------------|-------------|----------------------------|----------------------|-------------|--------------|--------------------------|-------------------------|--------------------------------|--------------------------------------|
|                    |          | START                   | END    | APPROX<br>LAT. | MER<br>DIST | MC-MATH<br>PLAGE<br>REGION |                      |             | TIME<br>U T  | MEAS.<br>AREA<br>Sq. Deg | CORR<br>AREA<br>Sq. Deg | MAX<br>WIDTH<br>H <sub>g</sub> | MAX<br>INT.                          |
| WENDEL             | NOV 1962 |                         |        |                |             |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 11       | 0545                    | 0715   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 11       | 0750                    | 0830   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 11       | 0807 E                  | 0835 D |                | S14 E73     | 6616                       | 1                    |             |              |                          | 3.00                    |                                |                                      |
|                    | 11       | 0835                    | 1005   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 11       | 1010                    | 1025   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 11       | 1040                    | 1440   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 12       | 0000                    | 0010   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 12       | 0210                    | 0420   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 12       | 0600                    | 0725   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
| WENDEL             | 12       | 1113 E                  | 1126 D |                | S14 W40     |                            | 1-                   |             |              |                          |                         |                                |                                      |
|                    | 12       | 1119 E                  | 1132 D |                | N12 E60     |                            | 1-                   |             |              |                          |                         |                                |                                      |
|                    | 12       | 1144 E                  | 1154 D |                | N14 E60     |                            | 1-                   |             |              |                          |                         |                                |                                      |
|                    | 12       | 1225                    | 1345   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
| SAC PEAK           | 12       | 1355                    | 1440   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 13       | 0320                    | 0330   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 13       | 0420                    | 0925   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 13       | 0930                    | 0955   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
| MCMATH<br>WENDEL   | 13       | 1010                    | 1025   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 13       | 1030                    | 1135   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 13       | 1140                    | 1155   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 13       | 1300                    | 1315   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 13       | 2038 E                  | 2043 D |                | N17 W13     |                            | 1-                   | 2           |              | .62                      | .62                     |                                | 16                                   |
|                    | 14       | 0100                    | 0915   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 14       | 0920                    | 1125   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 14       | 1200                    | 1330   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 14       | 1337                    | 1358   | 1341           | N21 W18     | 6613                       | 1-                   | 1           | 1341         | .70                      | .80                     |                                |                                      |
|                    | 14       | 1338                    | 1359   |                | N22 W18     | 6613                       | 1                    |             |              |                          | 4.00                    |                                |                                      |
| HERSTMENCEL        | 14       | 1425                    | 1430   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 14       | 1455                    | 1500   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 14       | 1555                    | 1620   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 14       | 2305                    | 2400   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 15       | 0000                    | 0030   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 15       | 0045                    | 0125   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 15       | 0205                    | 0720   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 15       | 0920                    | 0935   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 15       | 0936 E                  | 1012   | 0943           | N20 W27     |                            | 1-                   | 2           | 0943         | 1.10                     | 1.30                    |                                |                                      |
|                    | 15       | 1030                    | 1110   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
| MCMATH<br>LOCKHEED | 15       | 1115                    | 1210   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 15       | 1215                    | 1345   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 15       | 1350                    | 1410   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 15       | 1548                    | 1605   | 1552           | N21 W29     | 6613                       | 1-                   | 1           | 1552         | .30                      | .30                     |                                |                                      |
|                    | 15       | 1805                    | 1810   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |
|                    | 15       | 1853                    | 1915   | 1905           | N17 W39     |                            | 1-                   | 2           | 1905         | .30                      | .30                     |                                | 10                                   |
|                    | 15       | 2220                    | 2236   | 2226           | N17 W40     |                            | 1-                   | 1           | 2226         | .40                      | .40                     |                                | 10                                   |
|                    | 15       | 2338                    | 2356   | 2344           | N20 W36     |                            | 1-                   | 1           | 2344         | .20                      | .20                     |                                | 10                                   |
|                    | 16       | 0035                    | 0115   | NO FLARE       | PATROL      |                            |                      |             |              |                          |                         |                                |                                      |



# SOLAR FLARES

NOVEMBER 1962

| OBSERVATORY           | DATE        | OBSERVED TIME |        | LOCATION        |              |                            | DURATION<br>—<br>MINUTES | IM-<br>POR-<br>TANCE | OBS.<br>COND. | MEASUREMENTS              |                           |                                | PROVISIONAL<br>IONOSPHERIC<br>EFFECT |
|-----------------------|-------------|---------------|--------|-----------------|--------------|----------------------------|--------------------------|----------------------|---------------|---------------------------|---------------------------|--------------------------------|--------------------------------------|
|                       |             | START         | END    | APPROX.<br>LAT. | MER<br>DIST. | MC MATH<br>PLAGE<br>REGION |                          |                      |               | MEAS.<br>AREA<br>Sq. Deg. | CORR.<br>AREA<br>Sq. Deg. | MAX<br>WIDTH<br>H <sub>g</sub> | MAX<br>INT<br>%                      |
| SALTSJOBAD<br>ATHENES | NOV<br>1962 |               |        |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | G135          | 0850   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 0855          | 0945   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 0904 E        | 1030 D |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 0943 E        | 1014 D |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 1015          | 1025   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 1030          | 1110   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 1120          | 1135   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 1200 E        | 1228 D |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 1200 E        | 1240   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
| CAPRI-S<br>LOCARNO    | 16          | 1230          | 1245   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 1237 E        | 1258   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 1320          | 1340   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 1345          | 1650   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
| LOCKHEED<br>HONOLULU  | 16          | 1820          | 1858   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 1826          | 1856   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 2338          | 2358 D |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 16          | 2343          | 2355 U |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
| WENDEL                | 17          | 0440          | 0445   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 17          | 0550          | 0740   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 17          | 0755          | 0810   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 17          | 0900          | 1040   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
| WENDEL                | 17          | 0945 E        | 1000 D |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 17          | 1125          | 1225   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 17          | 1235          | 1600   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 17          | 1235          | 1600   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
| WENDEL                | 18          | 0020          | 0610   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 18          | 0900          | 0925   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 18          | 0955          | 1600   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 18          | 0955          | 1600   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
| WENDEL                | 19          | 0235          | 0245   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 19          | 0630          | 0805   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 19          | 0832 E        | 0845 D |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 19          | 0905          | 0930   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
| WENDEL                | 19          | 1010          | 1025   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 19          | 1055          | 1140   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 19          | 1210          | 1225   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 19          | 1235          | 1350   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
| MCMATH                | 19          | 1355          | 1415   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 19          | 1440          | 1445   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 19          | 1440 E        | 1518   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 19          | 1455          | 1515   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
| MCMATH                | 19          | 1605          | 1610   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 19          | 1605          | 1610   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 19          | 1605          | 1610   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 19          | 1605          | 1610   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
| MCMATH                | 20          | 0000          | 0755   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 20          | 0800          | 0820   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 20          | 0830          | 0910   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 20          | 0930          | 0945   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
| MCMATH                | 20          | 0950          | 1000   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 20          | 1005          | 1040   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 20          | 1330          | 1340   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |
|                       | 20          | 1330          | 1340   |                 |              |                            |                          |                      |               |                           |                           |                                |                                      |

COMMERCE - STANDARDS - BOULDER

# SOLAR FLARES

NOVEMBER 1962

| OBSERVATORY  | DATE     | OBSERVED TIME |        | LOCATION |         |              | DURA-<br>TION<br>—<br>MINUTES | IM-<br>POR-<br>TANCE | OBS<br>COND. | TIME<br>—<br>U T | MEASUREMENTS            |                         |                    | PROVISIONAL<br>IONOSPHERIC<br>EFFECT |
|--|----------|---------------|--------|----------|---------|--------------|-------------------------------|----------------------|--------------|------------------|-------------------------|-------------------------|--------------------|--------------------------------------|
|  |          | START         | END    | APPROX.  | LAT.    | MER<br>DIST. |                               |                      |              |                  | MEAS.<br>AREA<br>Sq Deg | CORR.<br>AREA<br>Sq Deg | MAX<br>WIDTH<br>He | MAX<br>INT<br>°                      |
| HONOLULU<br>SAC PEAK   | NOV 1962 |               |        |          |         |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 20       | 1345          | 1440   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 21       | 0155          | 0715   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 21       | 2106 E        | 2136 D | 2116     | S16 W70 |              |                               | 1-1-                 | 2            | 2116             | 1.03                    | 1.96                    |                    | 16                                   |
|  | 21       | 2108 E        | 2133 D | 2119     | S16 W65 |              |                               | 1-1-                 | 3            |                  | 0.70                    | 1.18                    |                    |                                      |
|  | 22       | 0205          | 0600   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 22       | 0635 E        | 0650   |          | N19 E70 |              |                               | 1-1-                 | 2            |                  | 0.10                    | 0.20                    |                    |                                      |
|  | 22       | 0910          | 1100   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 22       | 1105          | 1200   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 22       | 1210          | 1440   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
| SAC PEAK   | 22       | 1749 E        | 1813 D | 1804     | S12 W85 |              |                               | 1-1-                 | 2            |                  | 0.41                    |                         |                    | 16                                   |
|  | 22       | 2315          | 2325   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 22       | 2355          | 2400   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 0000          | 0015   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
| WENDEL<br>WENDEL<br>WENDEL<br>WENDEL<br>HONOLULU<br>HONOLULU<br>HONOLULU<br>HONOLULU<br>HONOLULU<br>HONOLULU<br>ATHENES<br>ATHENES<br>WENDEL | 23       | 0025          | 0035   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 0100          | 0115   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 0150          | 0215   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 0220          | 0255   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 0320          | 0325   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 0335          | 0400   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 0420          | 0710   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 0805          | 0845   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 0955          | 1010   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 1020          | 1235   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 1400          | 1440   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 1450          | 1615   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 1820          | 1850   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 23       | 2340          | 2350   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 24       | 0510          | 0750   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 24       | 0945          | 1000   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 24       | 1005          | 1340   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 24       | 1246 E        | 1258 D |          | N09 W19 |              |                               | 1-1-                 |              |                  |                         |                         |                    |                                      |
| WENDEL<br>WENDEL<br>WENDEL<br>WENDEL<br>HONOLULU<br>HONOLULU<br>HONOLULU<br>HONOLULU<br>HONOLULU<br>HONOLULU<br>ATHENES<br>ATHENES<br>WENDEL | 24       | 1308 E        | 1321 D |          | N10 W19 |              |                               | 1-1-                 |              |                  |                         |                         |                    |                                      |
|  | 24       | 1410 E        | 1422 D |          | N09 W21 |              |                               | 1-1-                 |              |                  |                         |                         |                    |                                      |
|  | 24       | 1415 E        | 1427 D |          | N11 W20 |              |                               | 1-1-                 |              |                  |                         |                         |                    |                                      |
|  | 24       | 1459 E        | 1505 D |          | N09 W19 |              |                               | 1-1-                 |              |                  |                         |                         |                    |                                      |
|  | 24       | 2034          | 2040 D | 2036     | N11 W24 |              |                               | 1-1-                 | 3            | 2036             | 1.03                    | 1.04                    |                    |                                      |
|  | 24       | 2140          | 2220   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 24       | 2224 E        | 2236 D | 2226     | N11 W25 |              |                               | 1-1-                 | 2            | 2226             | 1.45                    | 1.47                    |                    |                                      |
|  | 24       | 2356          | 0008   | 0002     | N11 W25 |              |                               | 1-1-                 | 2            | 0002             | 1.03                    | 1.04                    |                    |                                      |
|  | 25       | 0110          | 0122 D | 0118     | N12 W25 |              |                               | 1-1-                 | 2            | 0118             | 1.24                    | 1.24                    | 1.50               | 100                                  |
|  | 25       | 0115 E        | 0121 D |          | N08 W26 |              | 6 D                           | 1-1-                 |              | 0115             | 1.20                    |                         |                    |                                      |
| ATHENES<br>ATHENES<br>WENDEL<br>WENDEL   | 25       | 0200          | 0720   | NO FLARE | PATROL  |              |                               |                      |              |                  |                         |                         |                    |                                      |
|  | 25       | 0624 E        | 0626 D |          | N09 W27 |              |                               | 1-1-                 | 3            |                  | 0.20                    | 0.30                    |                    |                                      |
|  | 25       | 0720 E        | 0739   |          | N08 W30 |              |                               | 1-1-                 | 3            |                  | 0.40                    | 0.50                    |                    |                                      |
|  | 25       | 0931 E        | 0946 D |          | N09 W29 |              |                               | 1-1-                 |              |                  |                         |                         |                    |                                      |
| WENDEL   | 25       | 1045 E        | 1051 D |          | N09 W28 |              |                               | 1-1-                 |              |                  |                         |                         |                    |                                      |

SOLAR FLARES  
NOVEMBER 1962

| OBSERVATORY  | DATE     | OBSERVED UNIVERSAL TIME |      | LOCATION   |                 |                           | DURATION<br>—<br>MINUTES | IM. POR-<br>TANCE | OBS.<br>COND. | MEASUREMENTS |                           |                           |                                    | PROVISIONAL<br>IONOSPHERIC<br>EFFECT |
|--|----------|-------------------------|------|------------|-----------------|---------------------------|--------------------------|-------------------|---------------|--------------|---------------------------|---------------------------|------------------------------------|--------------------------------------|
|  |          | START                   | END  | MAX. PHASE | APPROX.<br>LAT. | MCMATH<br>PLACE<br>REGION |                          |                   |               | TIME<br>U T  | MEAS.<br>AREA<br>Sq. Deg. | CORR.<br>AREA<br>Sq. Deg. | MAX.<br>WIDTH<br>H <sub>3000</sub> |                                      |
| LOCKHEED<br>SAC PEAK   | NOV 1962 |                         |      |            |                 |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 26       | 0145                    | 0640 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 26       | 0910                    | 1110 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 26       | 2015                    | 2036 | 2020       | N01 E63         |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 26       | 2018                    | 2032 | 2021       | N01 E66         |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 26       | 2210                    | 2255 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 26       | 2315                    | 2400 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 27       | 0000                    | 0740 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 27       | 0810                    | 0830 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 28       | 0205                    | 0755 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
| WENDEL   | 28       | 0848                    | 0902 | D          | N08 W68         |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 28       | 1215                    | 1325 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 28       | 1427                    | 1435 | 1431       | N02 E35         | 6626                      |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 28       | 1535                    | 1545 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
| MCMATH   | 28       | 1600                    | 1605 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 28       | 1610                    | 1645 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 28       | 2100                    | 2112 | D          | N02 E29         |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 28       | 2245                    | 2250 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
| SAC PEAK   | 28       | 2305                    | 2320 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 0120                    | 0135 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 0200                    | 0310 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 0425                    | 0435 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
| MCMATH<br>WENDEL<br>MCMATH<br>MCMATH   | 29       | 0525                    | 0805 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 0830                    | 0850 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 0905                    | 0950 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 0955                    | 1115 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 1140                    | 1145 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 1150                    | 1200 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 1210                    | 1220 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 1235                    | 1240 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 1250                    | 1255 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 1310                    | 1325 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 1407                    | 1434 | NO FLARE   | PATROL          | 6630                      |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 1418                    | 1430 | D          | N19 W71         |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 1615                    | 1625 | 1617       | N19 W72         | 6630                      |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 1705                    | 1815 | D          | N19 W72         | 6630                      |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 29       | 1846                    | 1922 | 1848       | N19 W72         | 6630                      |                          |                   |               |              |                           |                           |                                    |                                      |
| ATHENES<br>ARCTRI<br>NERA<br>ATHENES<br>SALTSJOBAD<br>WENDEL<br>MCMATH<br>MCMATH | 30       | 0215                    | 0615 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 30       | 0750                    | 0755 | NO FLARE   | PATROL          |                           |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 30       | 0805                    | 0945 | E          | N19 W81         | 6630                      |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 30       | 0820                    | 1145 | D          | N22 W82         | 6630                      |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 30       | 0945                    | 1000 | 15 D       | N15 W85         | 6630                      |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 30       | 1036                    | 1224 | D          | N19 W84         | 6630                      |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 30       | 1037                    | 1130 | D          | N17 W80         | 6630                      |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 30       | 1256                    | 1315 | 1315       | N18 W86         | 6630                      |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 30       | 1348                    | 1430 | D          | N19 W89         | 6630                      |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 30       | 1443                    | 1506 | 1458       | N19 W89         | 6630                      |                          |                   |               |              |                           |                           |                                    |                                      |
| MCMATH   | 30       | 1536                    | 1620 | 1553       | N19 W89         | 6630                      |                          |                   |               |              |                           |                           |                                    |                                      |
|  | 30       |                         |      |            |                 |                           |                          |                   |               |              |                           |                           |                                    |                                      |

# SOLAR FLARES

## NOVEMBER 1962

| OBSERVATORY | DATE        | OBSERVED UNIVERSAL TIME |      | LOCATION        |                         | DURATION<br>—<br>MINUTES | IM-<br>POR-<br>TANCE | OBS.<br>COND. | MEASUREMENTS |                           |                           |                    | PROVISIONAL<br>IONOSPHERIC<br>EFFECT |
|-------------|-------------|-------------------------|------|-----------------|-------------------------|--------------------------|----------------------|---------------|--------------|---------------------------|---------------------------|--------------------|--------------------------------------|
|             |             | START                   | END  | APPROX.<br>LAT. | APPROX.<br>MER<br>DIST. |                          |                      |               | TIME<br>U.T. | MEAS.<br>AREA<br>Sq. Deg. | CORR.<br>AREA<br>Sq. Deg. | MAX<br>WIDTH<br>Re | MAX<br>INT.                          |
|             | NOV<br>1962 |                         |      |                 |                         |                          |                      |               |              |                           |                           |                    |                                      |
| MCMATH      | 30          | 1644                    | 1652 | N19             | W89                     | 6630                     | 1-                   | 2             | 1648         | .40                       |                           |                    |                                      |
| MCMATH      | 30          | 1757                    | 1839 | N19             | W90                     | 6630                     | 1-                   | 2             | 1829         | 1.50                      |                           |                    |                                      |
| MCMATH      | 30          | 1757                    | 1839 | N19             | W90                     | 6630                     | 1-                   |               |              |                           |                           |                    |                                      |
| LOCKHEED    | 30          | 1823                    | 1843 | N18             | W90                     | 6630                     | 1                    | 2             | 1831         | .90                       | 4.50                      |                    | 10                                   |
| LOCKHEED    | 30          | 1927                    | 1937 | N18             | W90                     | 6630                     | 1                    | 1             | 1932         | .80                       | 4.00                      |                    | 20                                   |
| MCMATH      | 30          | 1928                    | 1936 | N19             | W90                     | 6630                     | 1-                   | 2             | 1931         | .80                       |                           |                    |                                      |

|             |                              |            |                          |              |                             |
|-------------|------------------------------|------------|--------------------------|--------------|-----------------------------|
| ATHENS      | ATHENS, GREECE               | HTE-PROVEN | HAUTE-PROVENCE           | NEW SCHAUIN  | FREIBURG, GFR               |
| BAKOU       | PIRCULI, USSR                | HONOLULU   | HAWAII, USA              | NERA         | NEDERHORST den BERGH,       |
| CAPETOWN    | ROYAL OBSERVATORY,           | IKOMASAN   | KYOTO, JAPAN             |              | NETHERLANDS                 |
|             | CAPE OF GOOD HOPE            | KIEV KO    | KIEV GAO, USSR           | NIZMIR       | KRASNAYA PAKHRA, USSR       |
| CAPRI F     | CAPRI, ITALY (GERMAN)        | LOCKHEED   | KIEV UNIVERSTY, USSR     | SAC PEAK     | SACRAMENTO PEAK, N.MEX. USA |
| CAPRI S     | CAPRI, ITALY (SWEDISH)       | MCNATH     | LOS ANGELES, CALIF., USA | SALTSJÖBADEN | STOCKHOLM, SWEDEN           |
| CRIMÉE      | SIMEIZ, USSR                 |            | MCNATH-HULBERT           | SCHAUINS     | SCHAUTISLAND, GFR           |
| HERSTWONCEU | ROYAL GREENWICH OBSERVATORY, | MOSCOU     | PONTIAC, MICH., USA      | TACHKENT     | TASHKENT, USSR              |
|             | HERSTWONCEUX, ENGLAND        |            | MOSCOU-GAISH, USSR       | WENDEL       | WENDELSTEIN, GFR            |

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

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

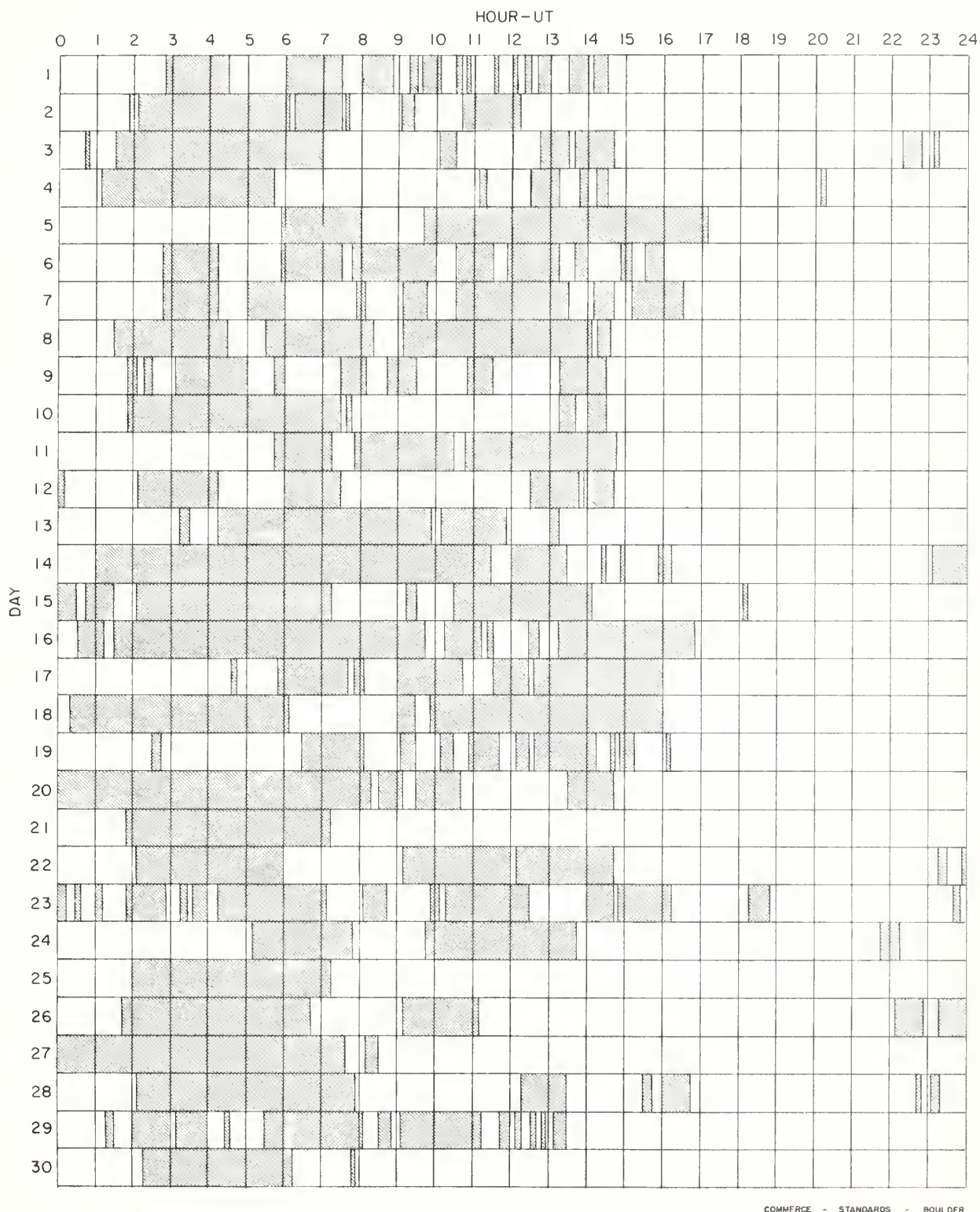
E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

COMMERCE - STANDARDS - BOULDER

# INTERVALS OF NO FLARE PATROL OBSERVATIONS

IIIh

NOVEMBER 1962



Stations Include:

|                   |              |                |                 |
|-------------------|--------------|----------------|-----------------|
| Arcetri           | Herstmonceux | Lockheed       | Ondrejov        |
| Athens            | Honolulu     | McMath-Hulbert | Sacramento Peak |
| Capri-S (Swedish) | Ikomasan     | Mitaka         | Schauinsland    |



# SOLAR FLARES

AUGUST 1962

| OBSERVATORY           | DATE        | OBSERVED UNIVERSAL TIME |        | LOCATION           |                 |              | DURA-<br>TION<br>—<br>MINUTES | IM-<br>POR-<br>TANCE | OBS<br>COND. | MEASUREMENTS              |              |                          |                          | PROVISIONAL<br>IONOSPHERIC<br>EFFECT |                    |            |
|-----------------------|-------------|-------------------------|--------|--------------------|-----------------|--------------|-------------------------------|----------------------|--------------|---------------------------|--------------|--------------------------|--------------------------|--------------------------------------|--------------------|------------|
|                       |             | START                   | END    | MAX<br>PHASE       | APPROX.<br>LAT. | MER<br>DIST  |                               |                      |              | MCNATH<br>PLACE<br>REGION | TIME<br>U.T. | MEAS<br>AREA<br>Sq. Deg. | CORR<br>AREA<br>Sq. Deg. |                                      | MAX<br>WIDTH<br>He | MAX<br>INT |
|                       |             |                         |        |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
| ARCETRI<br>ZURICH     | AUG<br>1962 |                         |        |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 03          | 0935 E                  | 0945 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 03          | 1019 E                  | 1045   | N05 E75<br>S03 W04 | 6507<br>6503    | 10 D<br>26 D | 1<br>1                        | 2<br>2               | 1019         |                           | 3.00         |                          |                          |                                      |                    |            |
|                       | 06          | 0200                    | 0230   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
| SCHAUINS              | 06          | 0235                    | 0240   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 06          | 2240                    | 2245   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 09          | 0140                    | 0145   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 09          | 1545 E                  | 1603 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
| TACHKENT<br>CRIMEE    | 10          | 0050                    | 0055   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 10          | 0155                    | 0205   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 13          | 0416 E                  | 0444 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 13          | 0709 E                  | 0727 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
| CAPRI-F               | 13          | 0710 E                  | 0730 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 13          | 0716 E                  | 0725   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 13          | 0637 E                  | 0808 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 13          | 0709 E                  | 0727 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
| BUCHAREST<br>CAPETOWN | 13          | 0715                    | 0743   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 13          | 0718                    | 0735   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 13          | 0720 E                  | 0727 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 13          | 0813 E                  | 0821 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
| ZURICH                | 13          | 0846                    | 0851   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 13          | 0945 E                  | 1010 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 13          | 0952                    | 1030   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 13          | 1227                    | 1300   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
| CAPETOWN<br>HUANCAYO  | 13          | 2033                    | 2051 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 13          | 2038                    | 2112 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0226                    | 0300   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0237 E                  | 0302 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
| ALMA ATA<br>MITAKA    | 14          | 0244                    | 0310   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0247                    | 0320   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0254 E                  | 0322   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0254 E                  | 0322   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
| TACHKENT<br>TACHKENT  | 14          | 0456                    | 0535   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0550                    | 0600   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0657 E                  | 0723 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0650                    | 0720   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
| CAPETOWN<br>CRIMEE    | 14          | 0652 E                  | 0658 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0652 E                  | 0712 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0655 E                  | 0715   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0655 E                  | 0820 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
| SCHAUINS<br>ZURICH    | 14          | 0700 E                  | 0725   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0703 E                  | 0721   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0740 E                  | 0743 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0824 E                  | 0936 D |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
| BUCHAREST<br>CAPRI-F  | 14          | 0826 E                  | 0838   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0826                    | 1035   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0827                    | 0841   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0827                    | 0841   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
| ZURICH<br>NIZMIR      | 14          | 0827                    | 0841   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0827                    | 0841   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0827                    | 0841   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |
|                       | 14          | 0827                    | 0841   |                    |                 |              |                               |                      |              |                           |              |                          |                          |                                      |                    |            |

# SOLAR FLARES

AUGUST 1962

| OBSERVATORY   | DATE | OBSERVED UNIVERSAL TIME |          | LOCATION     |         |              | DURA-<br>TION<br>—<br>MINUTES | IM-<br>POR-<br>TANCE | OBS.<br>COND. | MEASUREMENTS              |            |                          |                          | PROVISIONAL<br>IONOSPHERIC<br>EFFECT |                    |            |
|---|------|-------------------------|----------|--------------|---------|--------------|-------------------------------|----------------------|---------------|---------------------------|------------|--------------------------|--------------------------|--------------------------------------|--------------------|------------|
|   |      | START                   | END      | MAX<br>PHASE | APPROX. |              |                               |                      |               | MCMATH<br>PLACE<br>REGION | TIME<br>UT | MEAS.<br>AREA<br>Sq Deg. | CORR.<br>AREA<br>Sq Deg. |                                      | MAX<br>WIDTH<br>He | MAX<br>INT |
|   |      |                         |          |              | LAT.    | MER.<br>DIST |                               |                      |               |                           |            |                          |                          |                                      |                    |            |
| CAPETOWN<br>SCHAUINS<br>ARCTRI<br>NIZMIR<br>SCHAUINS<br>BAKOU<br>BAKOU<br>ARCTRI<br>CAPETOWN<br>CAPRI-F<br>CAPETOWN<br>KHARKOV<br>CAPRI-F<br>CAPETOWN<br>SCHAUINS<br>CLIMAX<br>CLIMAX<br>VOROSHILOV | 14   | 0827                    | 0846     | 0832         | N03 E71 | 6516         | 19                            | 1                    |               | 0832                      | 1.00       | 2.00                     |                          |                                      |                    |            |
|   | 14   | 0833                    | 0836     |              | N03 E68 |              | 33 D                          | 1-                   | 1             |                           |            |                          |                          |                                      |                    |            |
|   | 14   | 0838                    | 0911 D   |              | N03 E72 | 6516         | 21                            | 1                    |               |                           | .93        |                          | 1.10                     |                                      |                    |            |
|   | 14   | 0924                    | 0945     | 0926         | N02 E71 | 6516         | 16 D                          | 1                    |               |                           |            | 3.00                     |                          |                                      |                    |            |
|   | 14   | 0925                    | 0941     |              | N03 E67 | 6516         | 46 D                          | 1                    | 1             | 0902                      | 1.44       |                          |                          |                                      | 52                 |            |
|   | 14   | 0856                    | 0942 D   | 0902         | N05 W15 | 6514         | 34 D                          | 1                    | 1             | 0935                      | 1.09       |                          |                          |                                      | 65                 |            |
|   | 14   | 0928                    | 1002 D   | 0935         | N08 W16 | 6514         | 13 D                          | 1                    | 1             |                           |            |                          |                          |                                      |                    |            |
|   | 14   | 0951                    | 1004 D   |              | N03 E72 | 6516         | 32                            | 1                    | 2             | 0957                      | 1.40       | 2.00                     |                          |                                      |                    |            |
|   | 14   | 0953                    | 1025     | 0957         | N03 E71 | 6516         | 35                            | 1-                   |               |                           |            |                          |                          |                                      |                    |            |
|   | 14   | 1107                    | 1124     | 1110         | N08 W12 |              | 43 D                          | 1-                   | 3             | 1110                      | 1.60       | 1.60                     | 1.60                     |                                      |                    |            |
|   | 14   | 1107                    | 1132     |              | N08 W14 | 6514         | 46                            | 1+                   |               | 1113                      | 1.06       | 5.00                     |                          |                                      |                    |            |
|   | 14   | 1110                    | 1145     |              | N07 W13 |              | 40 D                          | 1+                   | 2             | 1222                      | 1.80       | 5.30                     |                          |                                      |                    |            |
|   | 14   | 1202                    | 1245     | 1222         | N02 E68 | 6516         | 1347                          | 1-                   |               |                           | .90        | 4.00                     |                          |                                      |                    |            |
|   | 14   | 1204                    | 1250     |              | N03 E68 |              | 2301                          | 1-                   |               | 1302                      | .60        | .60                      |                          |                                      |                    |            |
| 14  | 1215 | 1255                    |          | N03 E66      | 6516    |              | 1-                            |                      |               | 1.43                      |            |                          |                          |                                      |                    |            |
| 14  | 1255 | 1333                    |          | N01 W67      |         |              | 1-                            |                      |               |                           |            |                          |                          |                                      |                    |            |
| 14  | 1336 | 1356                    |          | N08 W17      |         |              | 1-                            |                      |               |                           |            |                          |                          |                                      |                    |            |
| 14  | 1300 | 2318                    |          | N06 W22      |         |              | 1-                            |                      |               |                           |            |                          |                          |                                      |                    |            |
| 15  | 0200 | 0210                    | NO FLARE | PATROL       |         |              | 7                             | 1                    | 2             | 0858                      | .93        | 2.00                     | 1.20                     | 64                                   |                    |            |
| 15  | 0858 | 0905                    |          | N07 W25      | 6514    |              | 11 D                          | 1                    | 2             | 0903                      | .91        |                          |                          | 80                                   |                    |            |
| 15  | 0858 | 0905 D                  | 0903     | N07 W25      | 6514    |              | 35 D                          | 1+                   | 2             | 1016                      | 2.10       |                          |                          | 60                                   |                    |            |
| 15  | 0901 | 0912 D                  | 0903     | N06 W25      | 6514    |              | 13 D                          | 1                    | 2             | 1002                      | 1.37       | 3.00                     |                          |                                      |                    |            |
| 15  | 0945 | 1020 D                  | 1016     | N05 W55      | 6514    |              | 7                             | 1                    | 2             | 1010                      | 1.10       | 2.00                     |                          |                                      |                    |            |
| 15  | 0959 | 1012 D                  | 1002     | N07 W28      | 6514    |              |                               | 1-                   |               |                           | .90        | .90                      |                          |                                      |                    |            |
| 15  | 1010 | 1017                    | 1013     | N01 E55      | 6516    |              |                               | 1-                   |               |                           | 1.20       | 1.20                     |                          |                                      |                    |            |
| 15  | 1012 | 1018                    | 1708     | N03 E56      |         |              |                               | 1-                   |               |                           | .70        | .70                      |                          |                                      |                    |            |
| 15  | 1703 | 1726                    | 1708     | N08 W30      |         |              |                               | 1-                   |               |                           | .70        | .70                      |                          |                                      |                    |            |
| 15  | 1706 | 1739                    | 1712     | N09 W30      |         |              |                               | 1-                   |               |                           | .62        | .62                      |                          |                                      |                    |            |
| 15  | 1706 | 1739                    | 1819     | N09 W30      |         |              |                               | 1-                   |               |                           |            |                          |                          |                                      |                    |            |
| 15  | 1808 | 1842                    | 1819     | N05 W34      |         |              |                               | 1-                   |               |                           |            |                          |                          |                                      |                    |            |
| 15  | 2227 | 2243                    | 2232     | N06 W36      |         |              | 4 D                           | 1                    |               | 2309                      | .62        |                          |                          | 100                                  |                    |            |
| 15  | 2307 | 2311 D                  |          | N06 W34      | 6514    |              |                               | 1                    |               |                           |            |                          |                          |                                      |                    |            |
| 16  | 0541 | 0545                    |          | N06 W37      | 6514    |              | 4                             | 1                    | 2             |                           |            | 2.30                     |                          |                                      |                    |            |
| 16  | 0618 | 0800 D                  | 0708     | N02 E45      |         |              |                               | 1-                   | 2             |                           |            | .70                      |                          |                                      |                    |            |
| 16  | 0733 | 0739 D                  |          | N06 E36      |         |              |                               | 1-                   | 2             |                           | .90        | 1.20                     |                          |                                      |                    |            |
| 16  | 1019 | 1040                    | 1024     | N08 W42      |         |              |                               | 1-                   | 3             | 1024                      |            |                          |                          |                                      |                    |            |
| 16  | 1227 | 1231 D                  |          | N00 E43      |         |              |                               | 1-                   | 3             |                           |            |                          |                          |                                      |                    |            |
| 16  | 1227 | 1231 D                  |          | N07 W45      |         |              | 7 D                           | 1                    | 2             | 1323                      | .40        | 3.00                     |                          |                                      |                    |            |
| 16  | 1323 | 1330                    |          | N01 E41      | 6516    |              |                               | 1-                   |               |                           | .40        | .40                      |                          |                                      |                    |            |
| 16  | 1335 | 1354                    | 1345     | N05 W42      |         |              |                               | 1-                   |               |                           | .88        | .20                      |                          |                                      |                    |            |
| 16  | 1337 | 1350 D                  | 1344     | N06 W43      |         |              |                               | 1-                   |               | 1344                      | .20        | 1.00                     |                          |                                      | 51                 |            |
| 16  | 1433 | 1450                    | 1442     | N08 W41      |         |              | 17                            | 1                    | 2             | 1435                      | .30        | .50                      |                          |                                      |                    |            |
| 16  | 1435 | 1452                    |          | N06 W42      | 6514    |              |                               | 1                    |               |                           |            | 3.00                     |                          |                                      |                    |            |
| 17  | 1707 | 1749                    | 1722     | N05 W60      |         |              | 10 D                          | 1-                   | 2             | 1710                      | .62        |                          |                          |                                      |                    |            |
| 17  | 1710 | 1720 D                  |          | N05 W58      | 6514    |              |                               | 1                    |               |                           |            |                          |                          |                                      |                    |            |
| 18  | 0024 | 0032 D                  |          | N05 W58      |         |              | 28 D                          | 1-                   |               | 0025                      |            |                          |                          |                                      |                    |            |
| 18  | 1017 | 1045                    | 1045     | N02 E17      | 6516    |              |                               | 1-                   |               |                           |            |                          |                          |                                      |                    |            |
| 18  | 1041 | 1055 D                  |          | N02 E13      |         |              |                               | 1-                   | 2             |                           |            |                          |                          |                                      |                    |            |

## SOLAR FLARES

AUGUST 1962

| OBSERVATORY | DATE | OBSERVED<br>UNIVERSAL TIME |        | LOCATION      |             | DURA-<br>TION<br>—<br>MINUTES | IM-<br>POR-<br>TANCE | OBS<br>COND. | MEASUREMENTS              |             |                        | MAX<br>WIDTH<br>Ha | MAX<br>INT | PROVISIONAL<br>IONOSPHERIC<br>EFFECT |
|-------------|------|----------------------------|--------|---------------|-------------|-------------------------------|----------------------|--------------|---------------------------|-------------|------------------------|--------------------|------------|--------------------------------------|
|             |      | START                      | END    | APPROX<br>LAT | MER<br>DIST |                               |                      |              | M-MATH<br>FLAGE<br>REGION | TIME<br>U T | MEAS<br>AREA<br>Sq Deg |                    |            |                                      |
| CAPRI-F     | 18   | 1100 E                     | 1108   | N06 W64       | 6514        | 8 D                           | 1                    |              |                           |             | 2.00                   |                    |            |                                      |
| CAPRI-F     | 19   | 0701 E                     | 0705 D | N07 W90       | 6514        | 4 D                           | 1                    |              |                           |             |                        |                    |            |                                      |
| CAPRI-F     | 19   | 0701 E                     | 0725 D | N03 E17       |             |                               | 1-                   |              |                           |             | 1.00                   |                    |            |                                      |
| ABASTUMANI  | 19   | 0714 E                     | 0722 D | N03 E15       |             |                               | 1-                   | 2            |                           | 1.53        |                        |                    |            |                                      |
| BUCHAREST   | 19   | 0720 E                     | 0801 D | N00 E16       |             |                               | 1-                   | 3            |                           |             | 1.50                   |                    |            |                                      |
| BUCHAREST   | 19   | 0832 E                     | 0910 D | N00 E14       |             |                               | 1-                   | 3            |                           |             | 1.70                   |                    |            |                                      |
| CRIMEE      | 19   | 0846 E                     | 0911 D | N02 E15       | 6522        | 25 D                          | 1                    | 1            | 0855                      | 1.34        |                        |                    |            |                                      |
| CAPETOWN    | 19   | 0849                       | 0905   | N03 E14       |             |                               | 1-                   |              | 0854                      | 1.00        | 1.00                   |                    |            |                                      |
| SCHAUNIS    | 19   | 0853 E                     | 0901   | N02 E12       |             |                               | 1-                   | 2            |                           |             | 2.00                   |                    |            |                                      |
| NIZMIR      | 19   | 0858 E                     | 0900 D | N00 E11       | 6522        | 2 D                           | 1                    |              |                           | 1.70        |                        | .65                |            |                                      |
| NIZMIR      | 19   | 0945 E                     | 0948 D | N00 E11       | 6522        | 3                             | 1                    |              |                           | 1.80        |                        | .53                |            |                                      |
| CAPETOWN    | 19   | 0945 E                     | 0957   | N03 E14       |             |                               | 1-                   |              | 0947                      | 1.00        |                        |                    |            |                                      |
| SCHAUNIS    | 19   | 0947 E                     | 0951   | N02 E14       |             |                               | 1-                   | 1            |                           |             | 4.00                   |                    |            |                                      |
| CAPRI-F     | 19   | 1000 E                     | 1017 D | N03 E17       | 6522        | 17 D                          | 1                    | 1            |                           |             | 2.00                   |                    |            |                                      |
| UCCLE       | 19   | 1043 E                     | 1055 D | N02 E10       | 6522        | 12 D                          | 1                    | 3            |                           |             |                        |                    |            |                                      |
| UCCLE       | 19   | 1043 E                     | 1055 D | N08 E75       |             |                               | 1-                   | 3            |                           |             |                        |                    |            |                                      |
| CAPRI-F     | 19   | 1129 E                     | 1133   | N07 W90       | 6514        | 4 D                           | 1                    |              |                           |             |                        |                    |            | S-SWF                                |
| SCHAUNIS    | 19   | 1700 E                     | 1703   | N01 E08       | 6522        | 3 D                           | 1                    | 1            |                           |             | 3.00                   |                    |            | S-SWF                                |
| ABASTUMANI  | 20   | 0155                       | 0200   | PATROL        |             |                               |                      |              |                           |             |                        |                    |            |                                      |
| BUCHAREST   | 20   | 0544 E                     | 0623 D | N03 E02       | 6522        | 39 D                          | 1+                   | 1            |                           | 5.40        | 5.50                   |                    |            |                                      |
| UCCLE       | 20   | 0604 E                     | 0630 D | N02 E02       |             |                               | 1-                   | 2            |                           |             | 2.40                   |                    |            |                                      |
| UCCLE       | 20   | 0827 E                     | 0847 D | N02 E02       | 6522        | 20 D                          | 1                    | 3            |                           |             |                        |                    |            |                                      |
| UCCLE       | 20   | 0938 E                     | 1132 D | N02 E02       | 6522        | 114 D                         | 1                    | 3            |                           |             |                        |                    |            |                                      |
| BUCHAREST   | 21   | 0215                       | 0220   | PATROL        |             |                               |                      |              |                           |             |                        |                    |            |                                      |
| BUCHAREST   | 21   | 0250                       | 0300   | PATROL        |             |                               |                      |              |                           |             |                        |                    |            |                                      |
| BUCHAREST   | 21   | 0605 E                     |        | N09 E50       |             |                               | 1-                   | 2            |                           |             | 1.70                   |                    |            |                                      |
| CAPRI-F     | 21   | 1030                       | 1050   | PATROL        |             |                               |                      |              |                           |             |                        |                    |            |                                      |
| CAPRI-F     | 21   | 1545 E                     |        | N02 W26       |             |                               | 1-                   |              |                           |             | 1.00                   |                    |            |                                      |
| OTTAWA      | 22   | 0255                       | 0300   | PATROL        |             |                               |                      |              |                           |             |                        |                    |            |                                      |
| HUANCAYO    | 22   | 1419                       | 1500   | N02 W32       |             |                               | 1-                   |              |                           | 1.10        | 1.10                   |                    |            |                                      |
| ZURICH      | 22   | 1423 E                     | 1504   | S01 W29       | 6522        | 41 D                          | 1                    | 2            | 1435                      | 4.20        | 4.20                   |                    |            |                                      |
| LUCARNO     | 22   | 1427 E                     | 1452   | N03 W28       | 6522        | 25 D                          | 1                    | 3            | 1427                      |             | 4.00                   |                    |            |                                      |
| UCCLE       | 22   | 1430 E                     | 1500   | N03 W29       | 6522        | 30 D                          | 1+                   | 2            |                           |             |                        |                    |            |                                      |
| UCCLE       | 22   | 1518 E                     | 1541 D | N10 E30       | 6525        | 23 D                          | 1                    | 3            |                           |             |                        |                    |            |                                      |
| UCCLE       | 22   | 1518 E                     | 1541 D | N03 W32       | 6522        | 23 D                          | 1                    | 3            |                           |             |                        |                    |            |                                      |
| CAPRI-F     | 23   | 0205                       | 0225   | PATROL        |             |                               |                      |              |                           |             |                        |                    |            |                                      |
| CAPRI-F     | 23   | 1254 E                     | 1318   | S12 W60       | 6529        | 24 D                          | 1                    |              |                           | 2.00        | 2.00                   |                    |            |                                      |
| CAPRI-F     | 23   | 1326 E                     | 1350   | S12 W62       |             |                               | 1-                   |              |                           | 1.00        | 1.00                   |                    |            |                                      |
| CAPRI-F     | 23   | 1450 E                     | 1520 D | S12 W63       |             |                               | 1-                   |              |                           | 1.00        | 1.00                   |                    |            |                                      |
| TACNA-ENT   | 24   | 0328                       | 0347   | S15 W78       | 6529        | 19                            | 1                    | 2            | 0342                      | 1.05        | 4.60                   | 5.70               | 65         |                                      |
| TACNA-ENT   | 24   | 0420                       | 0426   | S15 W78       |             |                               | 1-                   | 2            | 0420                      | .81         | 3.50                   | 4.00               | 70         |                                      |
| BUCHAREST   | 24   | 0605 E                     | 0633 D | S12 E75       |             |                               | 1-                   | 2            |                           |             |                        |                    |            |                                      |
| UCCLE       | 24   | 1435 E                     | 1453   | N03 W60       |             |                               | 1-                   | 3            |                           |             |                        |                    |            |                                      |
| UCCLE       | 24   | 1444                       | 1453   | N12 W88       |             |                               | 1-                   |              |                           |             |                        |                    |            |                                      |
| CLIVAN      | 24   | 2128                       | 2158   | S10 E90       |             |                               | 1-                   | 3            |                           | .40         | 2.00                   |                    |            |                                      |



# SOLAR FLARES

AUGUST 1962

| OBSERVATORY | DATE     | OBSERVED UNIVERSAL TIME |        | LOCATION   |              |            | DURATION — MINUTES | IM. POR. TANCE | OBS. COND. | MEASUREMENTS          |          |                     |                     |               | PROVISIONAL IONOSPHERIC EFFECT |             |
|-------------|----------|-------------------------|--------|------------|--------------|------------|--------------------|----------------|------------|-----------------------|----------|---------------------|---------------------|---------------|--------------------------------|-------------|
|             |          | START                   | END    | MAX. PHASE | APPROX. LAT. | MER. DIST. |                    |                |            | M. MATH. PLAGE REGION | TIME U T | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH Ha |                                | MAX. INT. % |
| HUANCAYO    | AUG 1962 |                         |        |            |              |            |                    |                |            |                       |          |                     |                     |               |                                |             |
|             | 24       | 2130                    | 2155   | 2133       | S12          | W90        |                    | 1-             | 2          |                       |          |                     |                     | 2.40          |                                |             |
|             | 25       | 0245                    | 0250   | NO FLARE   | PATROL       |            |                    |                |            |                       |          |                     |                     |               |                                |             |
|             | 25       | 0455                    | 0515   | NO FLARE   | PATROL       |            |                    |                |            |                       |          |                     |                     |               |                                |             |
|             | 25       | 0614 E                  | 0726 D |            | N03          | E67        |                    | 1-             | 2          |                       |          |                     | .50                 |               |                                |             |
| BUCHAREST   | 25       | 0715 E                  | 0726 D |            | N12          | E05        |                    | 1-             | 2          |                       |          |                     |                     |               |                                |             |
|             | 25       | 0915 E                  | 0920   |            | S12          | W90        | 6529               | 5 D            | 1          |                       |          |                     |                     |               |                                |             |
|             | 25       | 0937 E                  | 1000   |            | S12          | W90        | 6529               | 23 D           | 1          |                       |          |                     |                     |               |                                |             |
|             | 26       | 0200                    | 0255   | NO FLARE   | PATROL       |            |                    |                |            |                       |          |                     |                     |               |                                |             |
|             | 27       | 0144                    | 0148   |            | N09          | E56        | 6535               | 4              | 1          | 1                     | 0146     | 1.03                | 1.94                | 1.43          | 96                             |             |
| CAPRI-F     | 27       | 0900 E                  | 0908   |            | S06          | E82        |                    | 1-             |            |                       |          |                     |                     |               |                                |             |
| IKOMASAN    | 28       | 2252                    | 2257 D |            | N08          | E53        |                    | 1-             |            |                       | 2252     | .62                 |                     |               | 80                             |             |
|             | 30       | 0205                    | 0225   | NO FLARE   | PATROL       |            |                    |                |            |                       |          |                     |                     |               |                                |             |
| UCCLE       | 30       | 1652                    | 1704 D |            | S08          | E40        |                    | 1-             | 3          |                       |          |                     |                     |               |                                |             |
|             | 31       | 0240                    | 0300   | NO FLARE   | PATROL       |            |                    |                |            |                       |          |                     |                     |               |                                |             |
| SCHAUINS    | 31       | 0635 E                  | 0645 D |            | N08          | E33        |                    | 1-             | 2          |                       |          |                     | 2.00                |               |                                |             |
| CAPRI-F     | 31       | 0948 E                  | 1015   |            | N10          | E27        | 6542               | 27 D           | 1+         |                       |          |                     | 5.00                |               |                                |             |
| SCHAUINS    | 31       | 1110 E                  | 1124 D |            | N08          | E31        |                    | 1-             | 2          |                       |          |                     | 2.00                |               |                                |             |
| CAPRI-F     | 31       | 1112 E                  | 1140   |            | N05          | E34        | 6542               | 28 D           | 1          |                       |          |                     |                     |               |                                |             |
| AROSA       | 31       | 1115 E                  | 1130 D |            | N08          | E33        | 6542               | 15 D           | 1          |                       |          |                     |                     |               |                                |             |
| LOCARNO     | 31       | 1118                    | 1130 D |            | N09          | E35        | 6525               | 12 D           | 1          |                       |          |                     |                     |               |                                |             |

COMMERCE - STANDARDS - BOULDER

# SOLAR FLARES

## AUGUST 1962

These flare reports are addenda to the August 1962 flares published in CRPL-F 2178 September 1962.

|             |                              |          |                          |              |                             |
|-------------|------------------------------|----------|--------------------------|--------------|-----------------------------|
| ATHENS      | ATHENS, GREECE               | HONOLULU | HAWAII, USA              | NERA         | NEDERHORST den BERGH,       |
| BAKOU       | PIRCULI, USSR                | IKOMASAN | KYOTO, JAPAN             |              | NETHERLANDS                 |
| CAPETOWN    | ROYAL OBSERVATORY,           | KIEV KO  | KIEV GAO, USSR           | NIZMIR       | KRASNAYA PAKHRA, USSR       |
|             | CAPE OF GOOD HOPE            | KIEV KY  | KIEV UNIVERSITY, USSR    | SAC PEAK     | SACRAMENTO PEAK, N.MEX. USA |
| CAPRI F     | CAPRI, ITALY (GERMAN)        | LOCKHEED | LOS ANGELES, CALIF., USA | SALTSJÖBADEN | STOCKHOLM, SWEDEN           |
| CAPRI S     | CAPRI, ITALY (SWEDISH)       | MCWATH   | MCWATH-HULBERT           | SCHAUTINS    | SCHAUISLAND, GFR            |
| CRIMEE      | SIMEIZ, USSR                 |          | PONTIAC, MICH., USA      | TACHKENT     | TASHKENT, USSR              |
| HERSTMONCEU | ROYAL GREENWICH OBSERVATORY, | MOSCOU   | MOSCOW-GAISH, USSR       | WENDEL       | WENDELSTEIN, GFR            |
|             | HERSTMONCEUX, ENGLAND        |          |                          |              |                             |

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

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

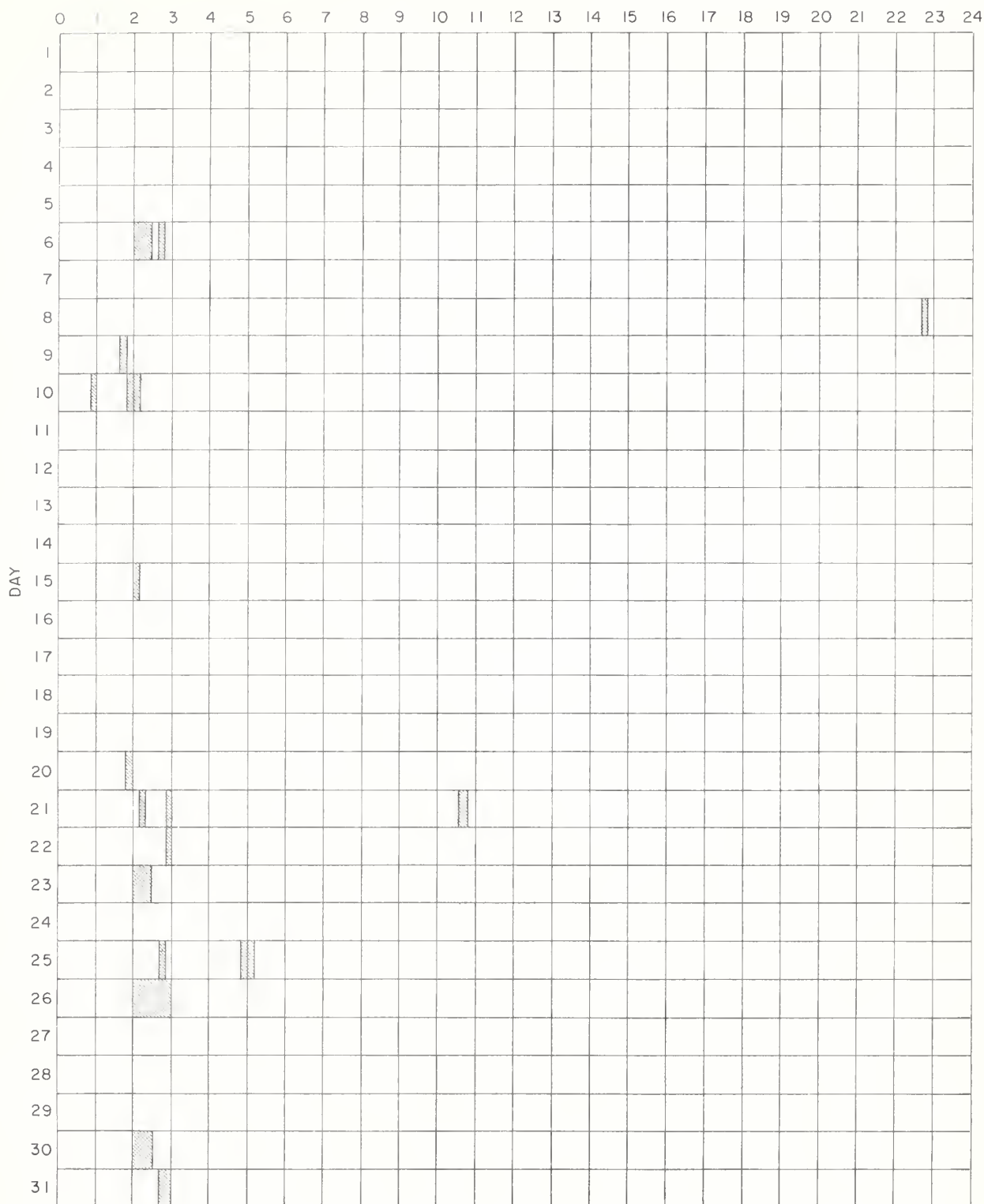
E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

# INTERVALS OF NO FLARE PATROL OBSERVATIONS

IIIa

AUGUST 1962

HOUR-UT



COMMERCE - STANDARDS - BOULDER

## Stations Include:

|            |                   |          |                |                 |               |
|------------|-------------------|----------|----------------|-----------------|---------------|
| Abastumani | Capetown          | Honolulu | Kiev KO        | Nizamiah        | Schaiuinsland |
| Alma-Ata   | Capri-G (German)  | Huancayo | Kodaikanal     | Nizmir          | Tachkent      |
| Arcetri    | Capri-S (Swedish) | Ikomasan | Lockheed       | Ondrejov        | Uccle         |
| Athenes    | Climax            | Istanbul | McMath-Hulbert | Ottawa          | Voroshilov    |
| Bakou      | Crimee            | Kharkov  | Mitaka         | Sacramento Peak | Wendelstein   |
| Pucharest  | Herstmonceux      |          |                |                 |               |

## IONOSPHERIC EFFECTS OF SOLAR FLARES

SHORT WAVE RADIO FADEOUTS  
 SUDDEN COSMIC NOISE ABSORPTION  
 SUDDEN ENHANCEMENTS OF ATMOSPHERICS  
 SUDDEN PHASE ANOMALIES  
 SOLAR NOISE BURSTS AT 18 Mc

OCTOBER 1962

| OCTOBER<br>1962 | UNIVERSAL TIME |      |     | SWF<br>TYPE | IMPORTANCE |     |      |     |     |     | WIDE<br>SPREAD<br>INDEX | STATIONS | KNOWN<br>FLARE |
|-----------------|----------------|------|-----|-------------|------------|-----|------|-----|-----|-----|-------------------------|----------|----------------|
|                 | START          | END  | MAX |             | IMP        | ABS | SCNA | SEA | SPA | BUR |                         |          |                |
| 11              | 1822           | 1826 |     |             |            |     |      |     |     | 1   | 5                       | BO HA    |                |
| 12              | 2247           | 2249 |     |             |            |     |      |     |     | 1   | 5                       | HA MA    |                |
| 13              | 1741           | 1743 |     |             |            |     |      |     |     | 1   | 5                       | BO HA    |                |
| 13              | 1808           | 1810 |     |             |            |     |      |     |     | 1   | 5                       | BO HA    |                |
| 13              | 1923           | 1925 |     |             |            |     |      |     |     | 1   | 5                       | BO HA    |                |
| 13              | 2031           | 2034 |     |             |            |     |      |     |     | 1   | 5                       | BO MA    |                |
| 15              | 2013           | 2015 |     |             |            |     |      |     |     | 1-  | 5                       | HA MA    |                |
| 16              | 2031           | 2034 |     |             |            |     |      |     |     | 1   | 5                       | BO HA    |                |
| 19              | 2035           | 2039 |     |             |            |     |      |     |     | 1-  | 5                       | BO HA    |                |
| 27              | 2211           | 2214 |     |             |            |     |      |     |     | 1   | 5                       | HA MA    |                |
| 28              | 1955           | 1957 |     |             |            |     |      |     |     | 1   | 5                       | BO HA    |                |
| 28              | 2043           | 2045 |     |             |            |     |      |     |     | 1   | 5                       | BO HA    |                |
| 29              | 2021           | 2025 |     |             |            |     |      |     |     | 1   | 5                       | BO HA    |                |

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION  
OUTSTANDING OCCURRENCES

IVa

NOVEMBER 1962

ARO - OTTAWA

2800 Mc.

| Nov.<br>1962 | Type                | Start UT | Duration<br>Hrs:Mins | Maximum |              |              | Remarks |
|--------------|---------------------|----------|----------------------|---------|--------------|--------------|---------|
|              |                     |          |                      | Time UT | Peak<br>Flux | Mean<br>Flux |         |
| 19           | 3 Simple 3 f        | 1403     | 2 00                 | 1445    | 4            | 2.5          |         |
| 22           | - Record Incomplete | 2105     | >35                  | Indet.  | >150         | -            |         |
| 30           | 3 Simple 3          | 1830     | 1 48                 | 1918    | 3            | 1.5          |         |

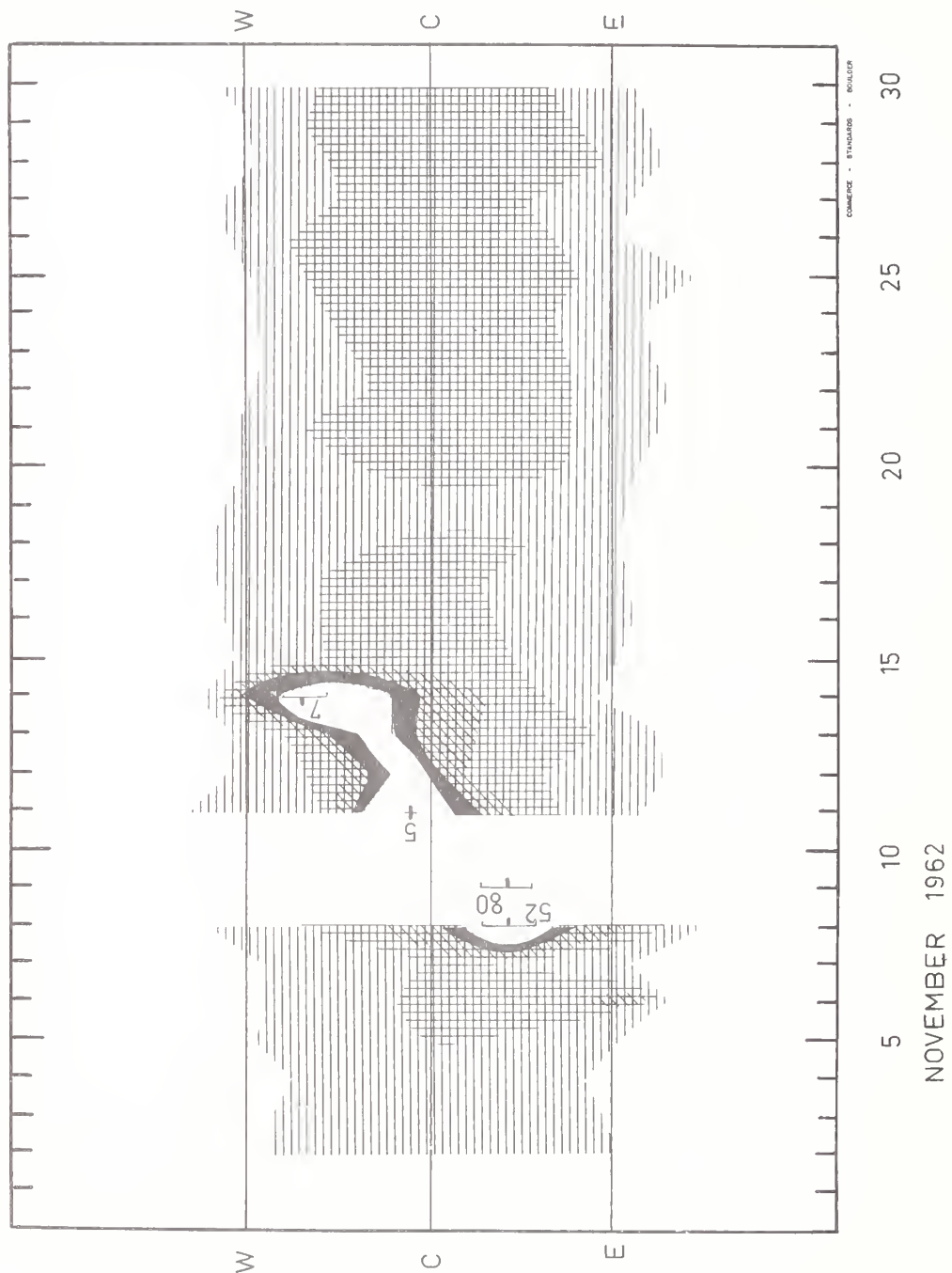
COMMERCE - STANDARDS - BOULDER

# SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATIONS

NOVEMBER 1962

Nancay

169 Mc



# SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

IVc

NOVEMBER 1962

BOULDER

108 Mc.

| Nov.<br>1962 | Type | Start<br>UT | Time of<br>Maximum<br>UT | Duration<br>Minutes | Intensity |
|--------------|------|-------------|--------------------------|---------------------|-----------|
| 7            | 2    | 2044        | 2058                     | 29                  | 1         |
| 10           | 3    | 2102.5      | 2102.9                   | 1.0                 | 2         |
| 10           | 3    | 2115.1      | 2116.2                   | 1.2                 | 2         |
| 10           | 3    | 2306.5      | 2306.6                   | 0.5                 | 3         |

| Nov.<br>1962 | Type | Start<br>UT | Time of<br>Maximum<br>UT | Duration<br>Minutes | Intensity |
|--------------|------|-------------|--------------------------|---------------------|-----------|
| 11           | 3    | 1926.3      | 1927.1                   | 2.7                 | 2         |
| 11           | 3    | 1931.0      | 1932.0                   | 2.0                 | 2         |
| 11           | 7    | 2100        | 2128                     | 109                 | 2         |
| 14           | 6    | 1349 E      | 1443                     | 191 D               | 2         |

COMMERCE - STANDARDS - BOULDER

## NOMINAL TIMES OF OBSERVATION OUTSTANDING OCCURRENCES

NOVEMBER 1962

BOULDER

108 Mc.

| Nov.<br>1962 | U.T.      | Nov.<br>1962 | U.T.      |
|--------------|-----------|--------------|-----------|
| 1            | 1334-2240 | 16           | 1351-2328 |
| 2            | 1335-2342 | 17           | 1352-2327 |
| 3            | 1336-2341 | 18           | 1353-2327 |
| 4            | 1337-2340 | 19           | 1355-2326 |
| 5            | 1338-2338 | 20           | 1356-2325 |
| 6            | 1340-2337 | 21           | 1357-2325 |
| 7            | 1341-2336 | 22           | 1358-2324 |
| 8            | 1342-2335 | 23           | 1359-2324 |
| 9            | 1343-2334 | 24           | 1400-2323 |
| 10           | 1344-2333 | 25           | 1401-2323 |
| 11           | 1345-2333 | 26           | 1402-2322 |
| 12           | 1346-2332 | 27           | 1403-2322 |
| 13           | 1348-2331 | 28           | 1404-2321 |
| 14           | 1349-2330 | 29           | 1405-2321 |
| 15           | 1350-2329 | 30           | 1406-2321 |

COMMERCE - STANDARDS - BOULDER

# SOLAR RADIO EMISSION SPECTRUM OBSERVATIONS

NOVEMBER 1962

HAO BOULDER

7.6 - 41 Mc.

| Date  | Bursts    |                   |                | Frequency<br>Range (mc) | Date   | Bursts    |                 |                | Frequency<br>Range (mc) |
|-------|-----------|-------------------|----------------|-------------------------|--------|-----------|-----------------|----------------|-------------------------|
| 1962  | Type      | Time (U.T.)       | Inten-<br>sity |                         | 1962   | Type      | Time (U.T.)     | Inten-<br>sity |                         |
| 1 Nov | III       | 1354.45-1355.15   | 1              | 27-41                   | 13 Nov | III       | 1610.15-1610.45 | 1-             | 23-41                   |
|       | III       | 1833.45-1834.15   | 1              | 24-39                   |        | III       | 1629-1629.30    | 1-             | 24-40                   |
|       | III       | 1853-1854.15      | 1              | 21-41                   |        | III       | 1643-1643.30    | 1-             | 24-34                   |
|       | III       | 1930.15-1930.30   | 1-             | 24-39                   |        | III       | 1652.30-1653    | 1-             | 23-35                   |
|       | III       | 1957.45-1958.30   | 1-             | 23-41                   |        | III       | 1654.30-1654.45 | 1-             | 24-34                   |
| 7     | III       | 1942-1943         | 1+             | 16-41                   |        | III       | 1717-1717.15    | 1-             | 23-40                   |
|       | III       | 2016-2016.30      | 1              | 23-41                   |        | III       | 1723.30-1723.45 | 1-             | 23-35                   |
|       | III       | 2210.15-2210.45   | 1-             | 26-41                   |        | III       | 2056.15-2057.45 | 2              | 16-41                   |
|       | III       | 2219.15-2219.45   | 1              | 21-41                   |        | III       | 2114.45-2115    | 1-             | 21-41                   |
|       | continuum | 2220-2255         | 1-             | 28-41                   | 14     | III       | 1339.45-1340.45 | 1-             | 25-41                   |
| 8     | III       | 2229.30-2229.45   | 1              | 25-41                   |        | III       | 1341-1341.30    | 1              | 23-41                   |
|       | III       | 1702-1702.30      | 1              | 27-36                   |        | continuum | 1406-1500       | 1              | 24-41                   |
|       | III       | 1713.15-1713.45   | 1              | 21-41                   |        | continuum | 1500-1615       | 1-             | 25-41                   |
|       | III       | 1721.15-1721.30   | 1-             | 22-41                   |        | III       | 2130.30-2130.45 | 1-             | 23-41                   |
|       | III       | d 1932.30-1933.30 | 1              | 23-41                   | 15     | III       | 1409-1409.15    | 1-             | 25-40                   |
| 9     | III       | 2010-2010.30      | 1-             | 28-39                   |        | III       | 1550-1550.15    | 1-             | 30-41                   |
|       | III       | 2015.15-2015.30   | 1-             | 24-41                   |        | III       | 1842.30-1843    | 1              | 21-41                   |
|       | III       | 1557.30-1557.45   | 1              | 22-41                   |        | III       | 1844.15-1844.30 | 1-             | 22-38                   |
|       | III       | 1815-1815.15      | 1-             | 22-38                   |        | III       | 1848-1848.15    | 1              | 22-41                   |
|       | III       | 2135.45-2136.15   | 1              | 22-40                   |        | III       | 1849.30-1850    | 1              | 22-41                   |
| 10    | III       | 2145.30-2145.45   | 1-             | 23-41                   | 16     | III       | 2021.15-2021.30 | 1              | 21-41                   |
|       | III       | 2230.15-2230.45   | 1-             | 23-41                   |        | III       | 1755.30-1756.15 | 1-             | 22-41                   |
|       | III       | 1622-1622.30      | 1              | 23-41                   |        | III       | 1840.30-1840.45 | 1              | 24-41                   |
|       | III       | 2103-2103.30      | 2              | 16-41                   |        | III       | 1907-1907.15    | 1-             | 25-41                   |
|       | III       | 2105.30-2105.45   | 1              | 22-39                   |        | III       | 2020.30-2020.45 | 1-             | 23-41                   |
|       | III       | 2106-2107         | 1+             | 16-41                   | 17     | III       | 1417-1417.30    | 1-             | 33-41                   |
|       | III       | 2116.30-2117      | 2              | 16-41                   |        | III       | 1551.45-1552.30 | 1              | 26-41                   |
|       | III       | 2121-2121.30      | 1              | 21-41                   |        | III       | 2124.30-2125    | 1              | 31-41                   |
|       | III       | 2251.15-2251.45   | 1              | 26-41                   | 18     | III       | 2124-2124.45    | 1              | 24-41                   |
|       | III       | 2306.45-2307.30   | 1+             | 23-41                   | 19     | III       | 1758-1758.15    | 1-             | 28-41                   |
| 11    | continuum | 1910-1925         | 1-             | 27-41                   |        | III       | 2028-2028.30    | 1-             | 29-39                   |
|       | continuum | 2059-2230         | 1-             | 23-41                   | 24     | III       | 2222-2223       | 2              | 19-41                   |
| 12    | III       | 2142.15-2143      | 1              | 24-41                   | 30     | III       | 1958.45-1959.15 | 1-             | 22-41                   |
|       | III       | 2256.15-2256.30   | 1-             | 27-36                   |        | III       | 2158.45-2159.15 | 1-             | 22-41                   |
| 13    | III       | 1545.30-1545.45   | 1-             | 23-39                   |        |           |                 |                |                         |

d = harmonic structure

COMMERCE - STANDARDS - BOULDER

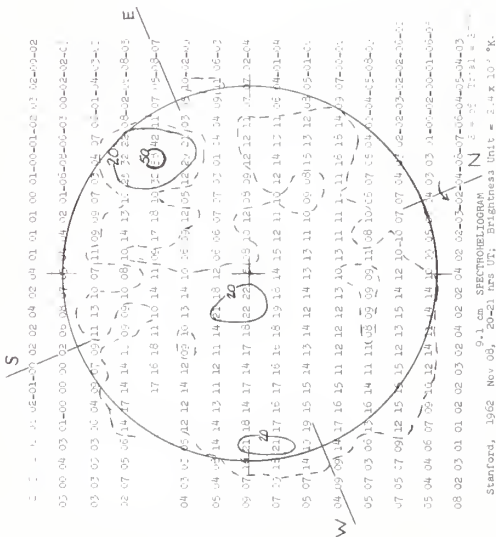
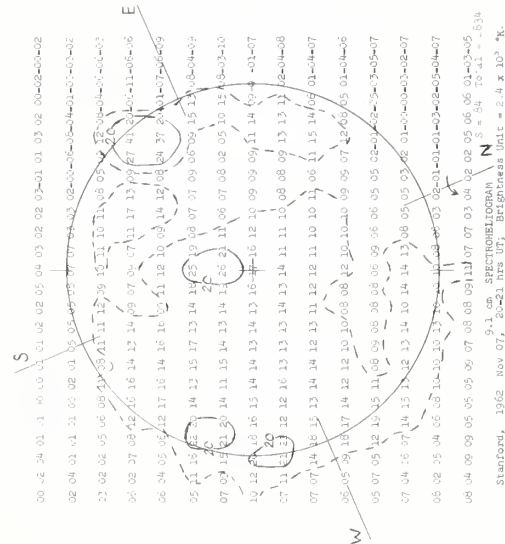




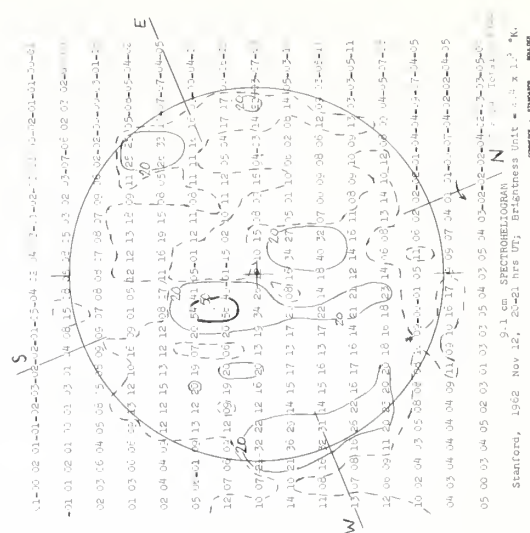
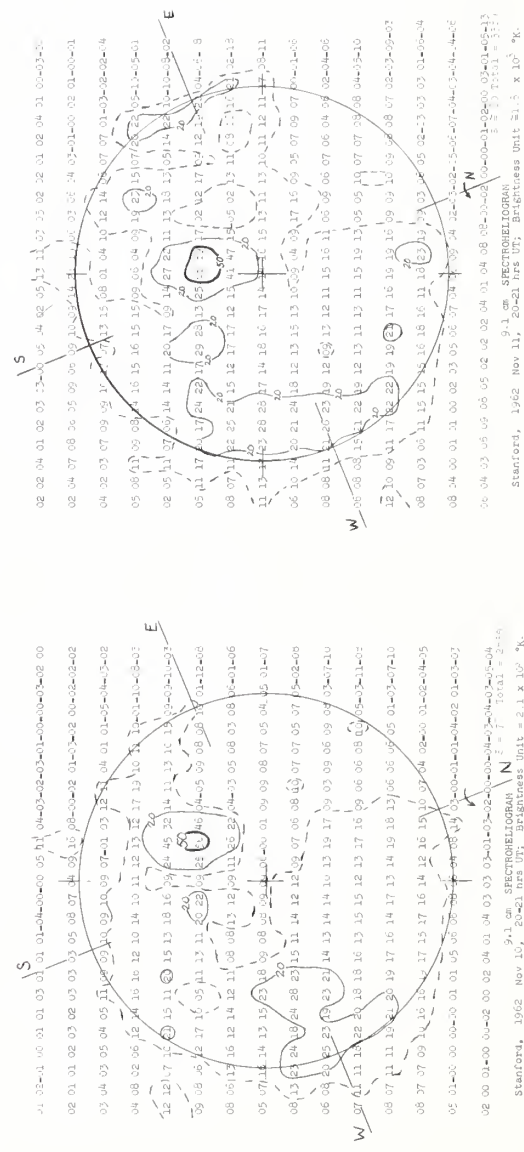
## SOLAR RADIO EMISSION SPECTROHELIOGRAMS

NOVEMBER 1962

## STANFORD



1962 NOVEMBER 09



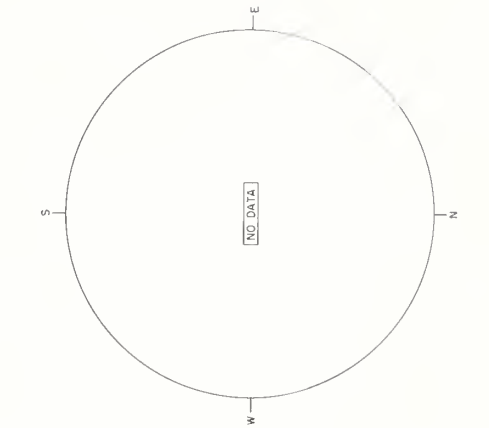
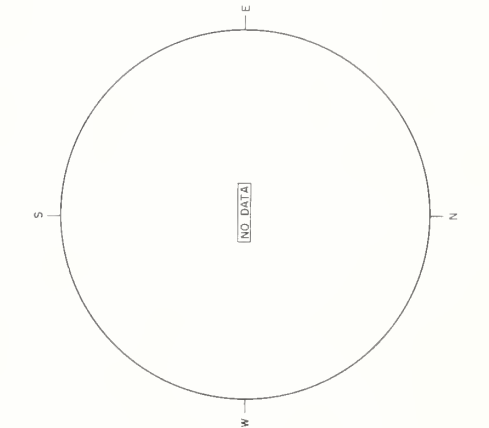
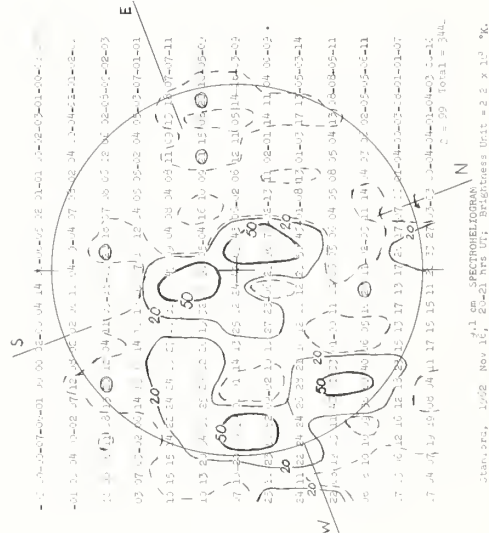
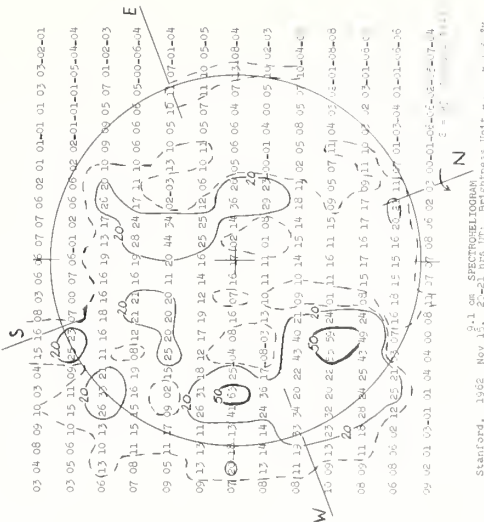
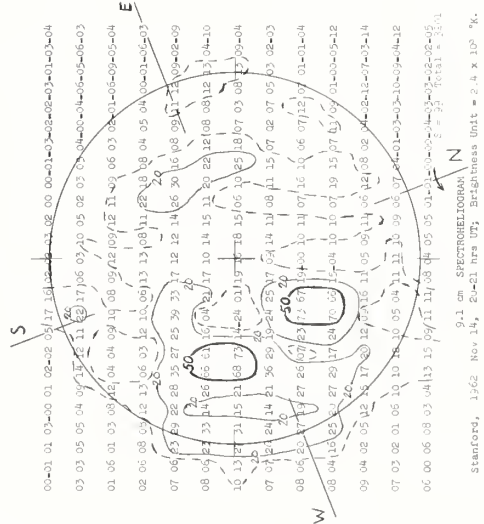
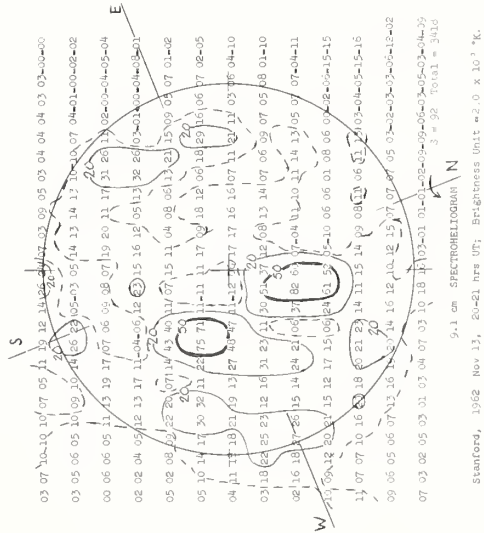
9.1 cm

# SOLAR RADIO EMISSION SPECTROHELIOGRAMS

NOVEMBER 1962

STANFORD

9.1 cm



IV 8

1962 NOVEMBER 18

1962 NOVEMBER 17

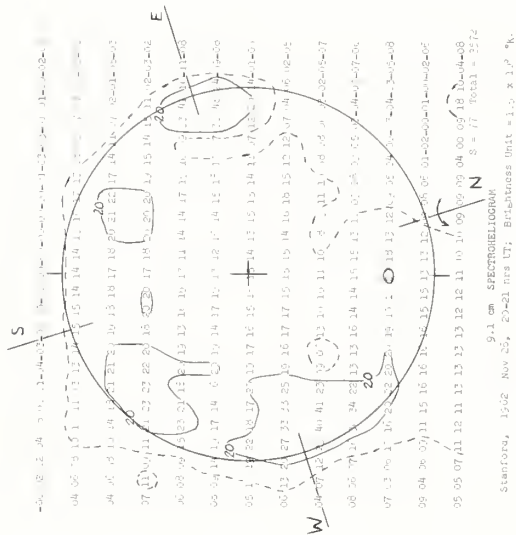
COMETES - PLANETARIUM - RALPH



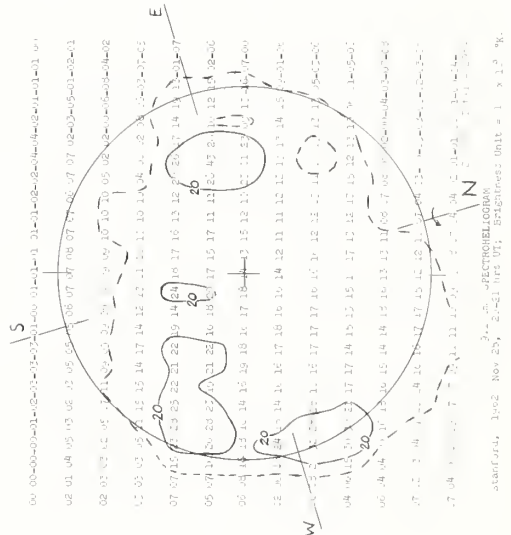
# SOLAR RADIO EMISSION SPECTROHELIOGRAMS

NOVEMBER 1962

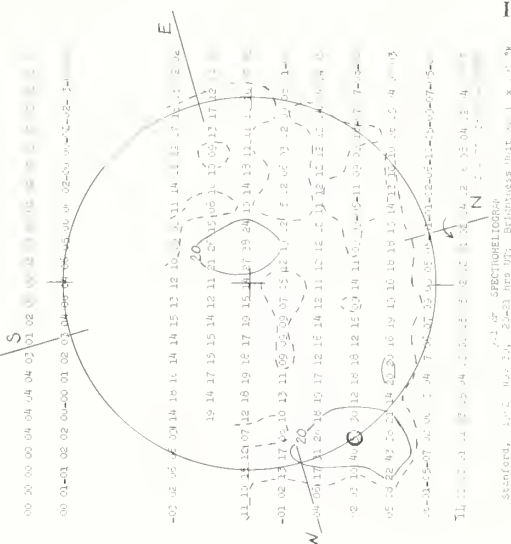
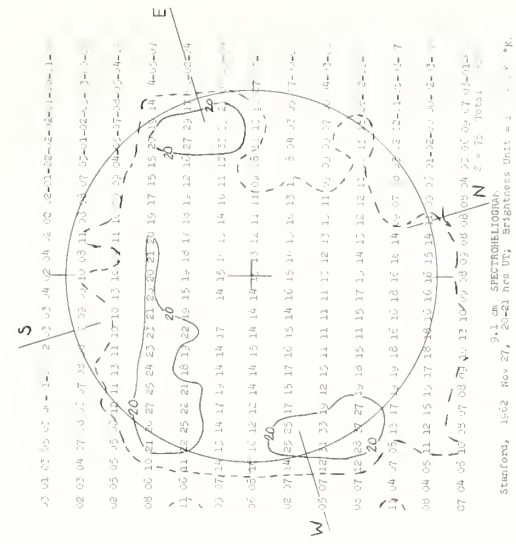
STANFORD



1962 NOVEMBER 25



9.1 cm



IVI

COSMIC RAY INDICES  
(Climax Neutron Monitor)  
IGC STATION B 305

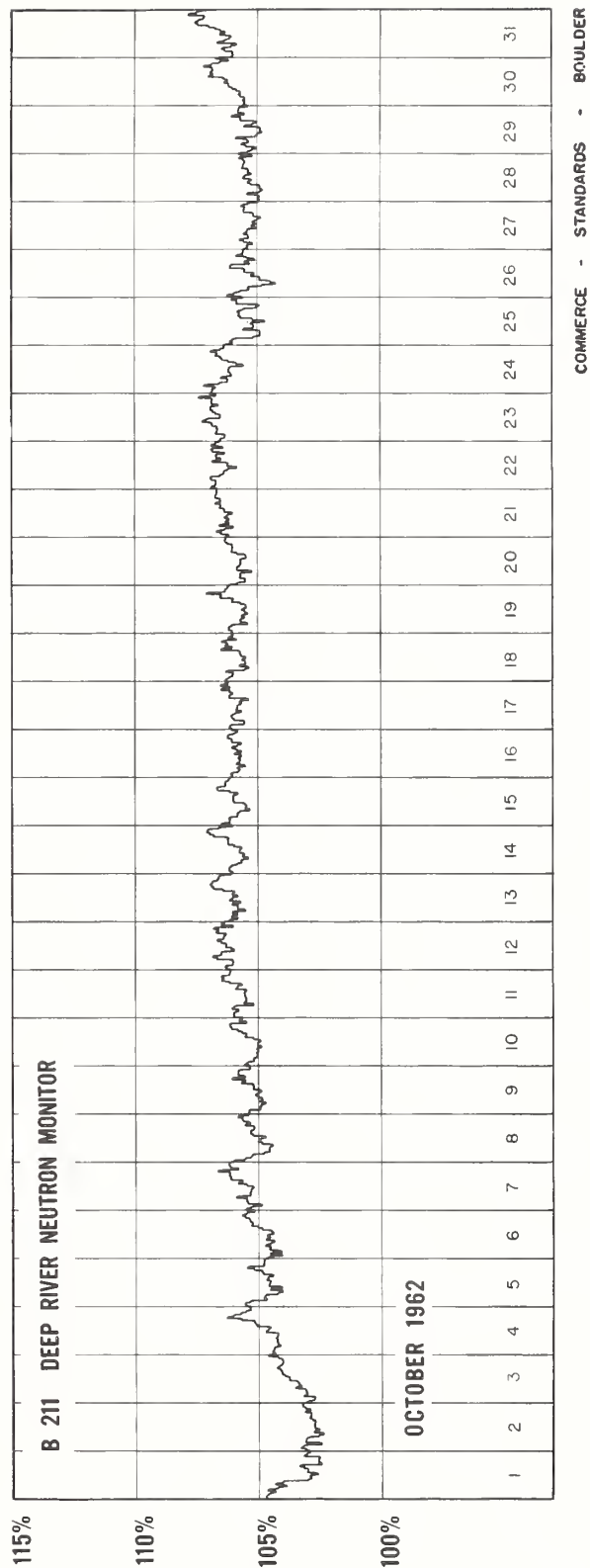
OCTOBER 1962

| Oct.<br>1962 | Daily<br>average<br>counts/hr* | Oct.<br>1962 | Daily<br>average<br>counts/hr* |
|--------------|--------------------------------|--------------|--------------------------------|
| 1            | 3004.7                         | 16           | 3077.7                         |
| 2            | 2995.7                         | 17           | 3066.8                         |
| 3            | 3014.7                         | 18           | 3067.4                         |
| 4            | 3056.2                         | 19           | 3070.4                         |
| 5            | 3054.7                         | 20           | 3067.1                         |
| 6            | 3052.8                         | 21           | 3066.8                         |
| 7            | 3061.1                         | 22           | 3065.4                         |
| 8            | 3046.7                         | 23           | 3072.9                         |
| 9            | 3045.9                         | 24           | 3066.2                         |
| 10           | 3057.7                         | 25           | 3055.4                         |
| 11           | 3077.8                         | 26           | 3053.4                         |
| 12           | 3082.7                         | 27           | 3056.4                         |
| 13           | 3094.8                         | 28           | 3054.7                         |
| 14           | 3116.3                         | 29           | 3061.5                         |
| 15           | 3111.6                         | 30           | 3075.8                         |
|              |                                | 31           | 3096.8                         |

\* Scaling Factor 128

COMMERCE - STANDARDS - BOULDER

# COSMIC RAY INDICES (Pressure Corrected Hourly Totals)





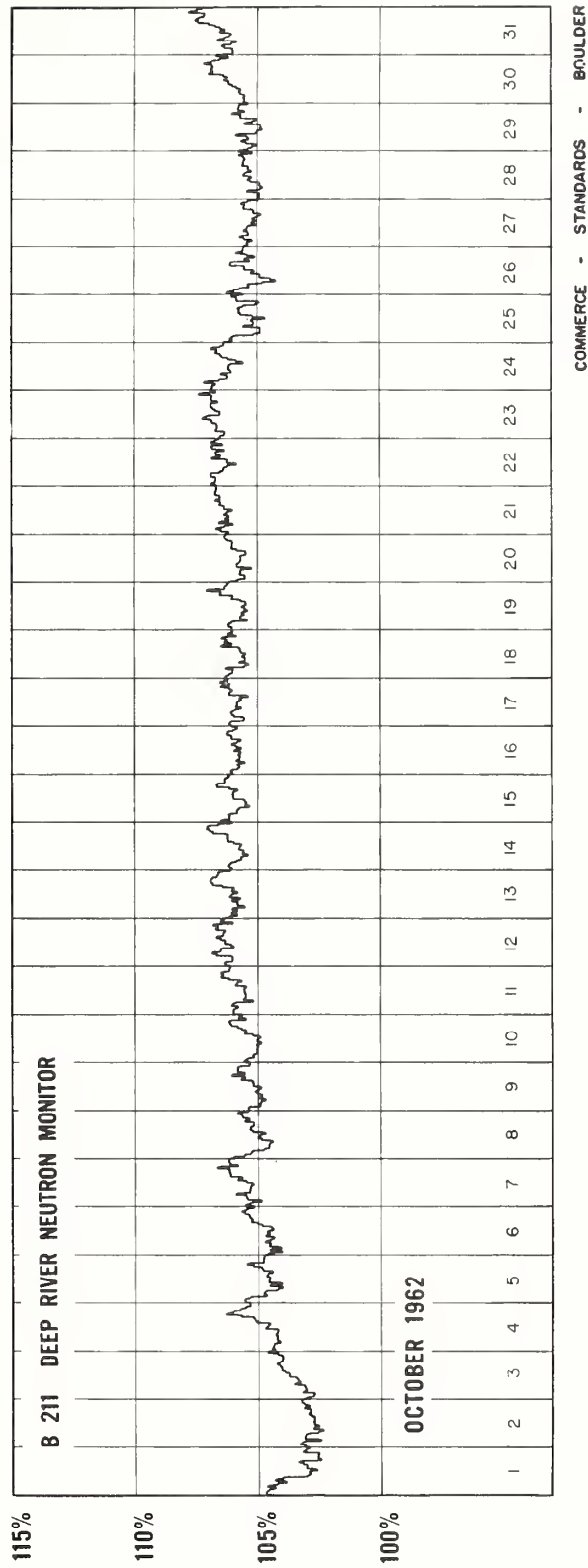
## GEOMAGNETIC ACTIVITY INDICES

OCTOBER 1962

| Oct.<br>1962 | C    | Values Kp               |    |    |    |    |    |    |    | Sum   | Ap | Final<br>Selected<br>Days        |
|--------------|------|-------------------------|----|----|----|----|----|----|----|-------|----|----------------------------------|
|              |      | Three hour Gr. interval |    |    |    |    |    |    |    |       |    |                                  |
|              |      | 1                       | 2  | 3  | 4  | 5  | 6  | 7  | 8  |       |    |                                  |
| 1            | 1.5  | 3+                      | 4+ | 5o | 5o | 5+ | 5- | 6- | 5- | 38o   | 43 | Five<br>Quiet                    |
| 2            | 1.1  | 4+                      | 4- | 5- | 4- | 4- | 4+ | 3- | 1+ | 28+   | 23 |                                  |
| 3            | 0.7  | 2-                      | 3- | 4- | 2+ | 3+ | 2- | 2- | 3- | 20-   | 11 |                                  |
| 4            | 0.6  | 2+                      | 3+ | 3o | 2o | 1- | 2+ | 2o | 3- | 18+   | 10 |                                  |
| 5            | 0.8  | 1o                      | 2- | 1+ | 1o | 1+ | 3- | 5- | 3+ | 17o   | 12 |                                  |
|              |      |                         |    |    |    |    |    |    |    |       |    | 17                               |
| 6            | 0.8  | 5-                      | 4- | 4+ | 1o | 3+ | 3- | 0+ | 2+ | 22+   | 17 | 31                               |
| 7            | 0.8  | 2+                      | 3+ | 1+ | 2o | 1- | 1+ | 3+ | 4+ | 19-   | 12 |                                  |
| 8            | 1.5  | 6+                      | 4- | 3+ | 4+ | 3+ | 5- | 4o | 4o | 34-   | 35 |                                  |
| 9            | 1.3  | 6-                      | 4+ | 5- | 4- | 4+ | 4o | 3o | 4- | 33+   | 32 |                                  |
| 10           | 1.2  | 4-                      | 3+ | 3- | 3+ | 5- | 4- | 4+ | 3- | 28+   | 22 |                                  |
| 11           | 1.1  | 4-                      | 5o | 4+ | 3+ | 4- | 3o | 4- | 3+ | 30o   | 25 | Five<br>Disturbed                |
| 12           | 0.4  | 3o                      | 2+ | 2+ | 4- | 2- | 1+ | 1- | 1- | 16-   | 9  |                                  |
| 13           | 0.7  | 1-                      | 1+ | 1+ | 3+ | 4- | 3- | 2+ | 3o | 18+   | 11 |                                  |
| 14           | 1.3  | 4o                      | 4+ | 5- | 5- | 4o | 3o | 5- | 4- | 33o   | 30 |                                  |
| 15           | 0.5  | 3-                      | 3+ | 2+ | 3- | 2- | 3- | 1- | 2o | 18o   | 10 |                                  |
|              |      |                         |    |    |    |    |    |    |    |       |    | 25                               |
| 16           | 1.1  | 3-                      | 2o | 2o | 6- | 4o | 2o | 4- | 3o | 25o   | 20 | 26                               |
| 17           | 0.3  | 3+                      | 2+ | 3- | 2o | 1- | 0o | 1o | 1+ | 13+   | 7  |                                  |
| 18           | 0.8  | 5-                      | 5- | 2- | 1+ | 2- | 3+ | 3o | 1+ | 22-   | 17 |                                  |
| 19           | 1.4  | 0+                      | 0o | 5o | 5o | 5- | 5o | 4- | 4- | 27+   | 29 |                                  |
| 20           | 0.6  | 2o                      | 2o | 2- | 1o | 3- | 3- | 3o | 4- | 19-   | 11 |                                  |
| 21           | 0.7  | 4-                      | 3+ | 2+ | 2+ | 2o | 4- | 3o | 2o | 22+   | 14 | Ten<br>Quiet                     |
| 22           | 1.1  | 2+                      | 4- | 3o | 4o | 4+ | 3+ | 3+ | 5- | 29-   | 22 |                                  |
| 23           | 1.0  | 5o                      | 4o | 3o | 4- | 3+ | 4- | 3o | 3+ | 29o   | 23 |                                  |
| 24           | 1.3  | 3o                      | 4- | 3- | 3o | 4o | 5o | 5- | 5- | 31-   | 27 |                                  |
| 25           | 1.4  | 4-                      | 4+ | 4+ | 4o | 4+ | 5- | 5- | 5o | 35o   | 34 |                                  |
|              |      |                         |    |    |    |    |    |    |    |       |    | 7                                |
| 26           | 1.3  | 4-                      | 4- | 5- | 4+ | 4+ | 4+ | 5+ | 4o | 34+   | 33 | 12<br>13<br>15<br>17<br>20<br>31 |
| 27           | 1.3  | 4-                      | 4o | 5o | 3o | 5o | 5- | 3- | 3+ | 31+   | 29 |                                  |
| 28           | 0.9  | 3+                      | 4+ | 3+ | 3o | 3o | 3- | 3+ | 3o | 26o   | 18 |                                  |
| 29           | 0.7  | 3o                      | 3- | 3- | 3- | 2+ | 3- | 2+ | 3+ | 22-   | 12 |                                  |
| 30           | 0.7  | 3o                      | 3o | 3o | 3+ | 2+ | 3o | 3+ | 2+ | 23+   | 14 |                                  |
| 31           | 0.7  | 2o                      | 2+ | 2+ | 3- | 2o | 2- | 2+ | 3- | 18o   | 9  |                                  |
| Mean:        | 0.95 |                         |    |    |    |    |    |    |    | Mean: | 20 |                                  |



# COSMIC RAY INDICES (Pressure Corrected Hourly Totals)



## GEOMAGNETIC ACTIVITY INDICES

OCTOBER 1962

| Oct.<br>1962 | C   | Values Kp               |    |    |    |    |    |    |    | Sum   | Ap | Final<br>Selected<br>Days  |  |
|--------------|-----|-------------------------|----|----|----|----|----|----|----|-------|----|--|--|
|              |     | Three hour Gr. interval |    |    |    |    |    |    |    |       |    |  |  |
|              |     | 1                       | 2  | 3  | 4  | 5  | 6  | 7  | 8  |       |    |  |  |
| 1            | 1.5 | 3+                      | 4+ | 5o | 5o | 5+ | 5- | 6- | 5- | 38o   | 43 | Five<br>Quiet<br>4<br>12<br>15<br>17<br>31                           |  |
| 2            | 1.1 | 4+                      | 4- | 5- | 4- | 4- | 4+ | 3- | 1+ | 28+   | 23 |  |  |
| 3            | 0.7 | 2-                      | 3- | 4- | 2+ | 3+ | 2- | 2- | 3- | 20-   | 11 |  |  |
| 4            | 0.6 | 2+                      | 3+ | 3o | 2o | 1- | 2+ | 2o | 3- | 18+   | 10 |  |  |
| 5            | 0.8 | 1o                      | 2- | 1+ | 1o | 1+ | 3- | 5- | 3+ | 17o   | 12 |  |  |
| 6            | 0.8 | 5-                      | 4- | 4+ | 1o | 3+ | 3- | 0+ | 2+ | 22+   | 17 | 31   |  |
| 7            | 0.8 | 2+                      | 3+ | 1+ | 2o | 1- | 1+ | 3+ | 4+ | 19-   | 12 |  |  |
| 8            | 1.5 | 6+                      | 4- | 3+ | 4+ | 3+ | 5- | 4o | 4o | 34-   | 35 |  |  |
| 9            | 1.3 | 6-                      | 4+ | 5- | 4- | 4+ | 4o | 3o | 4- | 33+   | 32 |  |  |
| 10           | 1.2 | 4-                      | 3+ | 3- | 3+ | 5- | 4- | 4+ | 3- | 28+   | 22 |  |  |
| 11           | 1.1 | 4-                      | 5o | 4+ | 3+ | 4- | 3o | 4- | 3+ | 30o   | 25 | Five<br>Disturbed<br>1<br>8<br>9<br>25<br>26                         |  |
| 12           | 0.4 | 3o                      | 2+ | 2+ | 4- | 2- | 1+ | 1- | 1- | 16-   | 9  |  |  |
| 13           | 0.7 | 1-                      | 1+ | 1+ | 3+ | 4- | 3- | 2+ | 3o | 18+   | 11 |  |  |
| 14           | 1.3 | 4o                      | 4+ | 5- | 5- | 4o | 3o | 5- | 4- | 33o   | 30 |  |  |
| 15           | 0.5 | 3-                      | 3+ | 2+ | 3- | 2- | 3- | 1- | 2o | 18o   | 10 |  |  |
| 16           | 1.1 | 3-                      | 2o | 2o | 6- | 4o | 2o | 4- | 3o | 25o   | 20 | 26   |  |
| 17           | 0.3 | 3+                      | 2+ | 3- | 2o | 1- | 0o | 1o | 1+ | 13+   | 7  |  |  |
| 18           | 0.8 | 5-                      | 5- | 2- | 1+ | 2- | 3+ | 3o | 1+ | 22-   | 17 |  |  |
| 19           | 1.4 | 0+                      | 0o | 5o | 5o | 5- | 5o | 4- | 4- | 27+   | 29 |  |  |
| 20           | 0.6 | 2o                      | 2o | 2- | 1o | 3- | 3- | 3o | 4- | 19-   | 11 |  |  |
| 21           | 0.7 | 4-                      | 3+ | 2+ | 2+ | 2o | 4- | 3o | 2o | 22+   | 14 | Ten<br>Quiet<br>3<br>4<br>5<br>7<br>12<br>13<br>15<br>17<br>20<br>31 |  |
| 22           | 1.1 | 2+                      | 4- | 3o | 4o | 4+ | 3+ | 3+ | 5- | 29-   | 22 |  |  |
| 23           | 1.0 | 5o                      | 4o | 3o | 4- | 3+ | 4- | 3o | 3+ | 29o   | 23 |  |  |
| 24           | 1.3 | 3o                      | 4- | 3- | 3o | 4o | 5o | 5- | 5- | 31-   | 27 |  |  |
| 25           | 1.4 | 4-                      | 4+ | 4+ | 4o | 4+ | 5- | 5- | 5o | 35o   | 34 |  |  |
| 26           | 1.3 | 4-                      | 4- | 5- | 4+ | 4+ | 4+ | 5+ | 4o | 34+   | 33 | 12<br>13<br>15<br>17<br>20<br>31                                     |  |
| 27           | 1.3 | 4-                      | 4o | 5o | 3o | 5o | 5- | 3- | 3+ | 31+   | 29 |  |  |
| 28           | 0.9 | 3+                      | 4+ | 3+ | 3o | 3o | 3- | 3+ | 3o | 26o   | 18 |  |  |
| 29           | 0.7 | 3o                      | 3- | 3- | 3- | 2+ | 3- | 2+ | 3+ | 22-   | 12 |  |  |
| 30           | 0.7 | 3o                      | 3o | 3o | 3+ | 2+ | 3o | 3+ | 2+ | 23+   | 14 |  |  |
| 31           | 0.7 | 2o                      | 2+ | 2+ | 3- | 2o | 2- | 2+ | 3- | 18o   | 9  |  |  |
| Mean:        |     | 0.95                    |    |    |    |    |    |    |    | Mean: |    | 20   |  |

# CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

VIIb

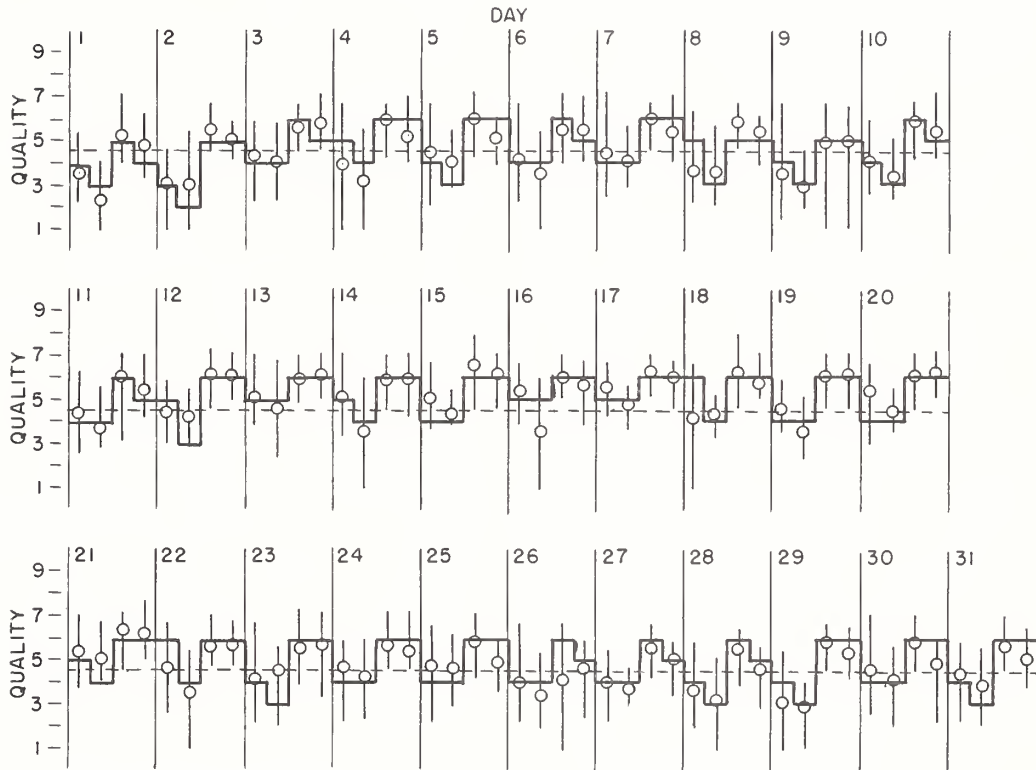
## NORTH ATLANTIC

OCTOBER 1962

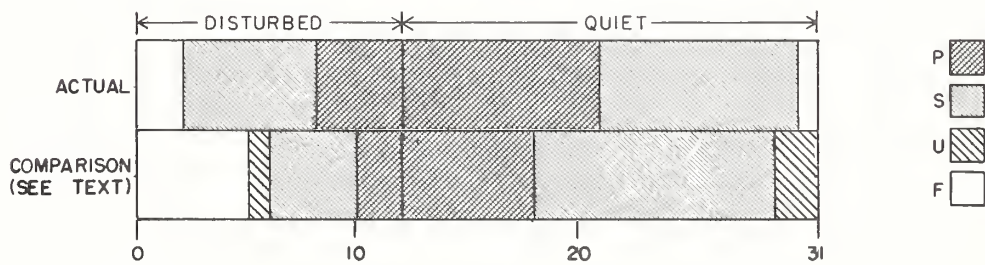
— Short-term forecast

○ Quality figure

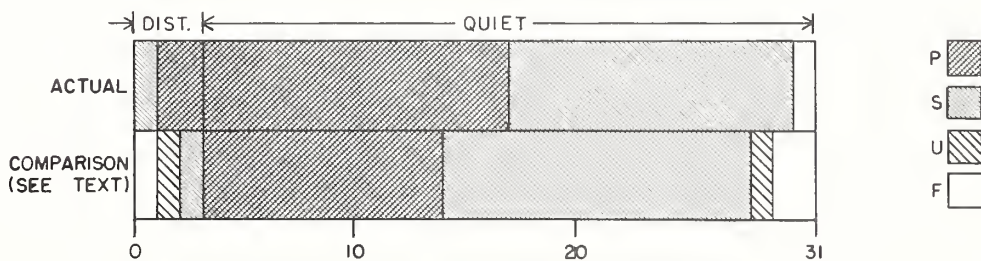
| Range of reports



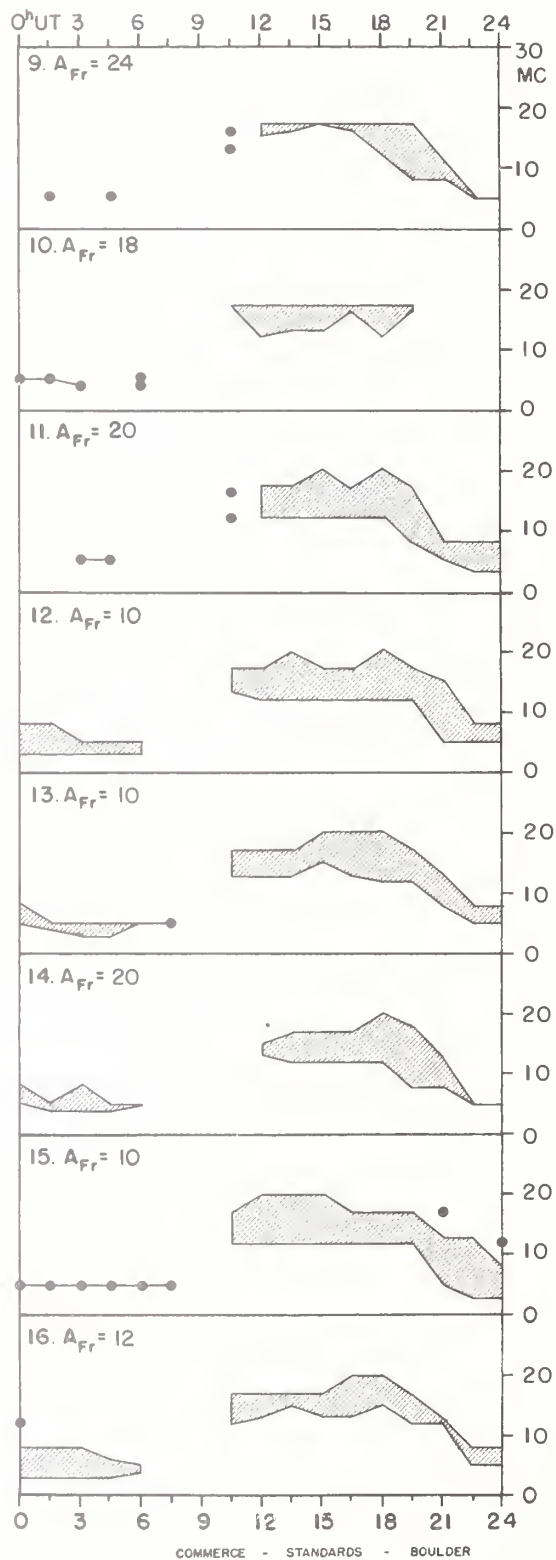
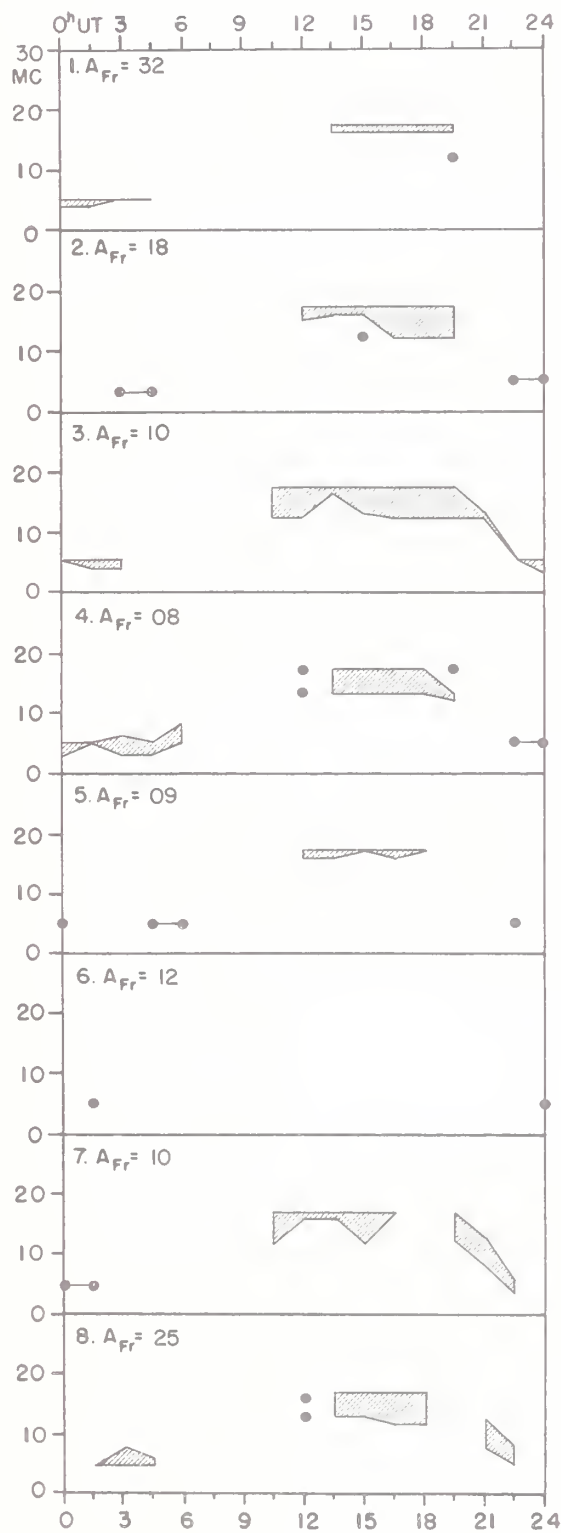
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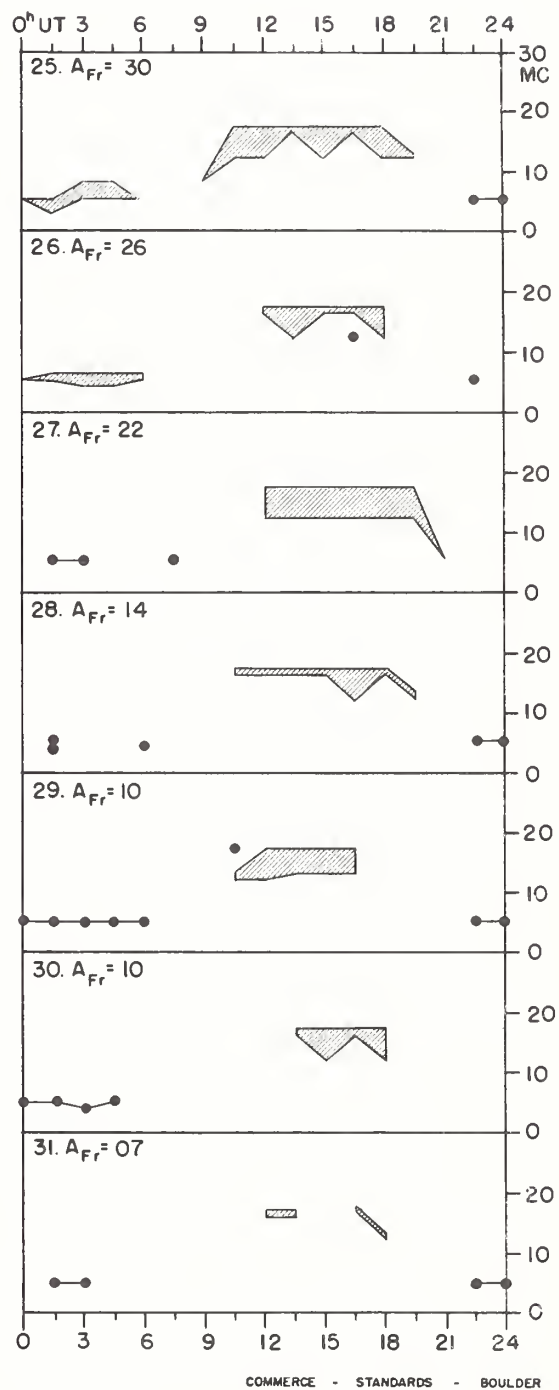
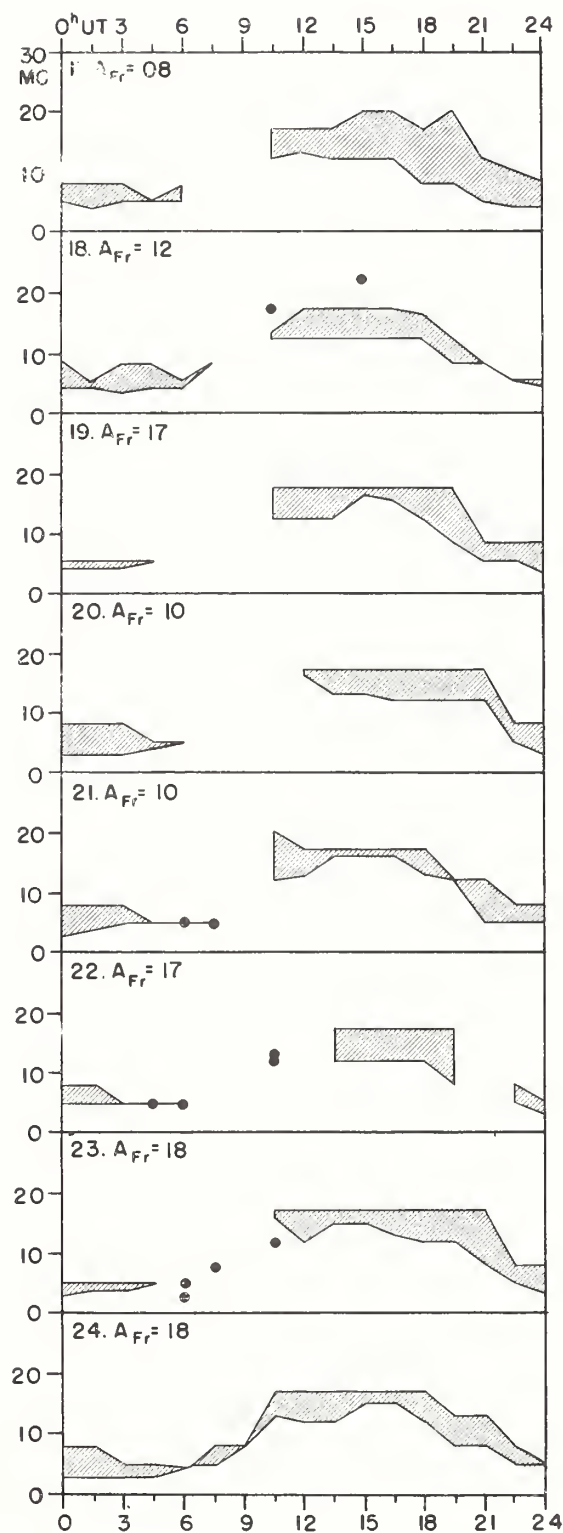
## NORTH PACIFIC



OCTOBER 1962



OCTOBER 1962



## ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE

NOVEMBER 1962

| Issued<br>November 1962<br>Day/Time U.T. | Advance Geophysical Alert              | No. | World-Wide Geophysical Alert | Special World Intervals |
|--|--|-----|------------------------------|-------------------------|
| 16/2000                                  | Climax, Solar Flare, One Plus 16/1830Z |     |                              |                         |
| 30/1340                                  | Ft. Belvoir, Magnetic Storms 30/01XXZ  |     |                              |                         |

COMMERCE - STANDARDS - BOULDER



