



**U.S. DEPARTMENT OF COMMERCE**

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**ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION**

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**ENVIRONMENTAL DATA SERVICE**

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INSTITUTES FOR ENVIRONMENTAL RESEARCH

# **Solar-Geophysical Data**

**Number 272**

**for March 1967**

**February 1967**

**October 1966**

**& Miscellanea**

DATA COMPILED BY THE INSTITUTE FOR TELECOMMUNICATION SCIENCES AND AERONOMY  
BOULDER, COLORADO

WASHINGTON, D.C.

APRIL 1967

S O L A R - G E O P H Y S I C A L D A T A

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For explanations of the data contained herein see "Descriptive Text" published in February 1967.

For obtaining bulletins on a data exchange basis, send request to World Data Center A, Upper Atmosphere Geophysics, ESSA, Boulder, Colorado 80302.

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ALERT PERIODS

INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE

MARCH 1967

| Mar.<br>1967 | TIME<br>OF ISSUE<br>UT | ADVANCE GEOPHYSICAL ALERT                              | WORLDWIDE GEOPHYSICAL ALERT |              |            |               |
|--------------|------------------------|--|-----------------------------|--------------|------------|---------------|
|              |                        |  | NO.                         | TYPE         | TIMING     | ELABORATION   |
| 1            | 0400                   |  | 484                         | Solar Flares | Expected   | N23W25        |
| 2            | 0400<br>1620           | ADALERTPRESTO TENFLARE Ottawa<br>190 percent 021559Z   | 485                         | Solar Flares | Expected   | N23W37 N16W08 |
| 3            | 0400                   |  | 486                         | Solar Flares | Expected   | N23W50 N16W21 |
| 4            | 0400<br>1900           | ADALERTPRESTO TENFLARE Ottawa<br>330 percent 041716Z   | 487                         | Solar Flares | Expected   | N23W63        |
| 5            | 0400                   |  | 488                         | Solar Flares | Expected   | N23W76 S21E63 |
| 6            | 0400                   |  | 489                         | Solar Flares | Alert Ends |               |
| 22           | 0130                   | Manila, Solar Flare 3B<br>N23E62 220025Z               |                             |              |            |               |
|              | 0220+                  | ADALERTPRESTO TENFLARE Toyokawa<br>410 percent 220026Z |                             |              |            |               |
|              | 0400                   |  | 490                         | Solar Flares | Expected   | N23E69        |
| 23           | 0400<br>2005           | McMath, Solar Flare 2N<br>N21E45 231925Z               | 491                         | Solar Flares | Expected   | N24E55        |
| 24           | 0400                   |  | 492                         | Solar Flares | Expected   | N22E39        |
| 25           | 0400                   |  | 493                         | Solar Flares | Expected   | N21E25        |
| 26           | 0400<br>1725           | Sac Peak, Solar Flare 3N<br>N22E14 261635Z             | 494                         | Solar Flares | Expected   | N22E15        |
| 27           | 0400                   |  | 495                         | Solar Flares | Expected   | N22E02        |
| 28           | 0400                   |  | 496                         | Solar Flares | Expected   | N22W12        |
| 29           | 0400                   |  | 497                         | Solar Flares | Expected   | N21W25        |
| 30           | 0400                   |  | 498                         | Solar Flares | Expected   | N21W38        |
| 31           | 0400                   |  | 499                         | Solar Flares | Expected   | N21W52        |

+ Time when Alert was relayed  
by AGIWARN



# RELATIVE SUNSPOT NUMBERS

ZURICH, R<sub>Z</sub>

1966 (FINAL)

1967 (PROVISIONAL)

| DAY  | APR. | MAY  | JUNE | JULY | AUG. | SEPT. | OCT. | NOV. | DEC. | JAN.  | FEB. | MAR.  |
|------|------|------|------|------|------|-------|------|------|------|-------|------|-------|
| 1    | 64   | 50   | 71   | 49   | 78   | 44    | 57   | 43   | 35   | 60    | 93   | 172   |
| 2    | 58   | 52   | 74   | 49   | 74   | 44    | 55   | 42   | 33   | 93    | 88   | 179   |
| 3    | 74   | 57   | 41   | 54   | 72   | 25    | 50   | 38   | 30   | 124   | 92   | 191   |
| 4    | 74   | 61   | 60   | 53   | 68   | 18    | 36   | 38   | 57   | 148   | 100  | 172   |
| 5    | 59   | 43   | 48   | 48   | 60   | 26    | 40   | 20   | 69   | 150   | 72   | 164   |
| 6    | 63   | 32   | 47   | 46   | 50   | 30    | 44   | 32   | 68   | 148   | 89   | 148   |
| 7    | 70   | 29   | 40   | 58   | 33   | 36    | 53   | 48   | 64   | 134   | 138  | 137   |
| 8    | 65   | 17   | 35   | 68   | 13   | 38    | 48   | 55   | 88   | 116   | 109  | 98    |
| 9    | 49   | 8    | 33   | 60   | 13   | 39    | 44   | 59   | 86   | 111   | 112  | 85    |
| 10   | 37   | 0    | 25   | 65   | 0    | 37    | 65   | 63   | 112  | 111   | 97   | 86    |
| 11   | 29   | 14   | 43   | 52   | 16   | 42    | 66   | 72   | 125  | 104   | 96   | 74    |
| 12   | 27   | 14   | 34   | 62   | 36   | 38    | 64   | 80   | 130  | 90    | 79   | 65    |
| 13   | 24   | 23   | 34   | 56   | 30   | 33    | 72   | 68   | 118  | 86    | 77   | 49    |
| 14   | 29   | 50   | 31   | 42   | 37   | 35    | 64   | 66   | 113  | 85    | 58   | 44    |
| 15   | 29   | 46   | 22   | 34   | 41   | 38    | 60   | 66   | 107  | 56    | 58   | 49    |
| 16   | 35   | 47   | 40   | 48   | 40   | 57    | 70   | 52   | 116  | 56    | 60   | 58    |
| 17   | 40   | 35   | 46   | 42   | 41   | 76    | 70   | 59   | 88   | 59    | 60   | 70    |
| 18   | 40   | 28   | 40   | 49   | 39   | 83    | 70   | 57   | 76   | 72    | 70   | 73    |
| 19   | 30   | 35   | 36   | 38   | 33   | 76    | 76   | 65   | 57   | 82    | 57   | 58    |
| 20   | 41   | 58   | 42   | 65   | 28   | 78    | 96   | 74   | 46   | 82    | 60   | 73    |
| 21   | 44   | 80   | 33   | 55   | 22   | 89    | 91   | 77   | 37   | 102   | 71   | 88    |
| 22   | 56   | 72   | 35   | 66   | 38   | 86    | 83   | 78   | 34   | 134   | 86   | 108   |
| 23   | 69   | 68   | 62   | 56   | 65   | 71    | 75   | 76   | 38   | 152   | 84   | 111   |
| 24   | 58   | 68   | 66   | 70   | 71   | 67    | 64   | 72   | 45   | 122   | 100  | 121   |
| 25   | 61   | 64   | 80   | 67   | 89   | 68    | 50   | 74   | 60   | 133   | 106  | 131   |
| 26   | 54   | 70   | 82   | 74   | 95   | 54    | 47   | 67   | 65   | 136   | 123  | 137   |
| 27   | 40   | 66   | 76   | 65   | 90   | 48    | 39   | 59   | 48   | 130   | 186  | 122   |
| 28   | 40   | 60   | 52   | 70   | 84   | 42    | 36   | 41   | 48   | 125   | 166  | 120   |
| 29   | 48   | 42   | 47   | 76   | 89   | 45    | 27   | 37   | 51   | 122   | 130  | 130   |
| 30   | 53   | 56   | 55   | 59   | 76   | 42    | 27   | 37   | 70   | 132   | 130  | 130   |
| 31   |      | 58   |      | 62   | 66   |       | 35   |      | 68   | 108   |      | 115   |
| MEAN | 48.7 | 45.3 | 47.7 | 56.7 | 51.2 | 50.2  | 57.2 | 57.2 | 70.4 | 108.5 | 92.4 | 108.3 |

1966 Yearly Mean = 47.0

## DAILY SOLAR FLUX AT 2800 Mc/s OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S<sub>a</sub>

1966

1967

| DAY  | APR.   | MAY    | JUNE   | JULY   | AUG.   | SEPT.  | OCT.   | NOV.   | DEC.   | JAN.   | FEB.   | MAR.  |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 1    | 106.8* | 91.7   | 104.8  | 100.1  | 125.9  | 116.6  | 101.4  | 94.6   | 92.2   | 124.4  | 151.6  | 194.2 |
| 2    | 106.3  | 94.0   | 103.9  | 98.2   | 119.6  | 106.3  | 102.0  | 96.7   | 95.1   | 143.0* | 143.5  | 197.8 |
| 3    | 102.1  | 94.0   | 102.6  | 99.3   | 118.2* | 103.2  | 103.2  | 93.1   |        | 154.0  | 138.7  | 196.4 |
| 4    | 102.6  | 92.5   | 102.0  | 104.8  | 116.0* | 101.9  | 100.6* | 91.7   | 104.8  | 160.7  | 137.3* | 205.9 |
| 5    | 102.0  | 88.6   | 101.7  | 105.0  | 110.5  | 100.5  | 100.0  | 97.9   | 110.9* | 168.2  | 146.8* | 179.2 |
| 6    | 104.2  | 87.5   | 101.9  | 109.7  | 106.0  | 97.9   | 101.9* | 104.7  | 115.6* | 160.5  | 148.8  | 177.4 |
| 7    | 102.8* | 89.9   | 96.9   | 112.6  | 101.5  | 95.8*  | 103.1  | 113.4  | 117.7  | 153.6  | 162.5  | 163.8 |
| 8    | 107.3* | 87.8   | 99.5   | 114.4  | 97.7   | 96.2*  | 99.4   | 116.9  | 123.7  | 142.9  | 148.3  | 156.1 |
| 9    | 100.3  | 87.5   | 98.9   | 107.8  | 96.4   | 95.3   | 103.5  | 117.2  | 146.2  | 144.7  | 145.9  | 157.9 |
| 10   | 94.8   | 86.6   | 96.8   | 108.1* | 94.3   | 93.9   | 106.5  | 121.9  | 157.3* | 145.6  | 140.5  | 148.4 |
| 11   | 93.9   | 88.3   | 96.1   | 109.0  | 92.5   | 96.6   | 109.8  | 126.1  | 162.8* | 139.8  | 133.7  | 141.6 |
| 12   | 94.8   | 92.6   | 95.9   | 102.7  | 92.8   | 100.8* | 114.8  | 126.2  | 157.6  | 139.1  | 132.9  | 134.3 |
| 13   | 93.1   | 92.9   | 96.1   | 100.4  | 93.2   | 102.4  | 122.8* | 126.4  | 155.5  | 138.1  | 130.0  | 129.1 |
| 14   | 91.0   | 97.2   | 96.9   | 99.8   | 92.8   | 107.4  | 120.3  | 124.0  | 149.5  | 135.2  | 129.2  | 127.2 |
| 15   | 96.3   | 99.2   | 94.7   | 101.1  | 93.7   | 112.0  | 120.6  | 122.6  | 144.9  | 126.6  | 126.4  | 132.4 |
| 16   | 93.2   | 100.1  | 97.9   | 102.8  | 95.1   | 124.6* | 120.3* | 121.2  | 135.1  | 120.2  | 124.9  | 132.1 |
| 17   | 95.2   | 98.9   | 99.5   | 101.2  | 96.8   | 129.1  | 120.5* | 113.2  | 124.9* | 116.9  | 122.2* | 132.6 |
| 18   | 92.9   | 98.7   | 98.2   | 101.3  | 97.5   | 142.6  | 118.5* | 113.4  | 111.2  | 117.4  | 124.2  | 132.2 |
| 19   | 89.0   | 107.1* | 96.9   | 101.5  | 100.0  | 146.6  | 115.6* | 111.0  | 112.3  | 116.4  | 121.0  | 136.0 |
| 20   | 93.5   | 115.5* | 94.3   | 101.8  | 101.6  | 146.0* | 124.1  | 110.9  | 107.6  | 127.0  | 128.6  | 140.4 |
| 21   | 91.7   | 123.6  | 93.5   | 103.7  | 102.7  | 137.2  | 120.9* | 110.7* | 106.5  | 138.2  | 131.8* | 147.2 |
| 22   | 93.4   | 121.0  | 96.1   | 106.5  | 105.5  | 131.5* | 119.8* | 116.5  | 105.5* | 139.9  | 146.0  | 149.5 |
| 23   | 98.8   | 113.9  | 99.2   | 114.9  | 114.7  | 127.5* | 111.1  | 114.7* | 110.6* | 148.8* | 149.3* | 155.7 |
| 24   | 103.7  | 117.7  | 103.5  | 120.6  | 122.0* | 126.0  | 106.1  | 113.8  | 110.5  | 146.8  | 162.2  | 161.9 |
| 25   | 103.8* | 115.1  | 104.8* | 126.0  | 126.3* | 118.8* | 100.8  | 110.7  | 111.6  | 142.7* | 159.5* | 169.2 |
| 26   | 101.3* | 112.3  | 105.6* | 127.6  | 130.2  | 109.4  | 97.7   | 107.3  | 110.9  | 154.3  | 173.3* | 163.9 |
| 27   | 96.0   | 108.5  | 100.8  | 123.8  | 133.4  | 102.9  | 92.0   | 111.1* | 109.6  | 158.3  | 176.7  | 162.8 |
| 28   | 94.9   | **     | 101.4  | 124.2  | 132.6* | 97.9   | 94.1   | 104.1  | 107.5  | 156.2  | 180.2  | 180.7 |
| 29   | 94.5   | 106.8  | 99.8   | 132.9  | 129.8  | 98.6   | 99.7   | 98.0   | 109.3  | 158.2* | 178.4  | 178.4 |
| 30   | 93.3   | 101.6  | 100.7  | 128.0  | 126.1  | 95.7   | 95.7   | 94.6*  | 115.1  | 159.0  | 175.8  | 175.8 |
| 31   |        | 105.6  |        | 124.6  | 120.9  |        | 97.1   |        | 120.5* | 156.4  |        | 167.6 |
| MEAN | 97.8   | 100.6  | 99.4   | 110.1  | 109.2  | 112.4  | 107.9  | 110.8  | 121.4  | 143.0  | 143.4  | 159.0 |

\* Adjusted for Burst

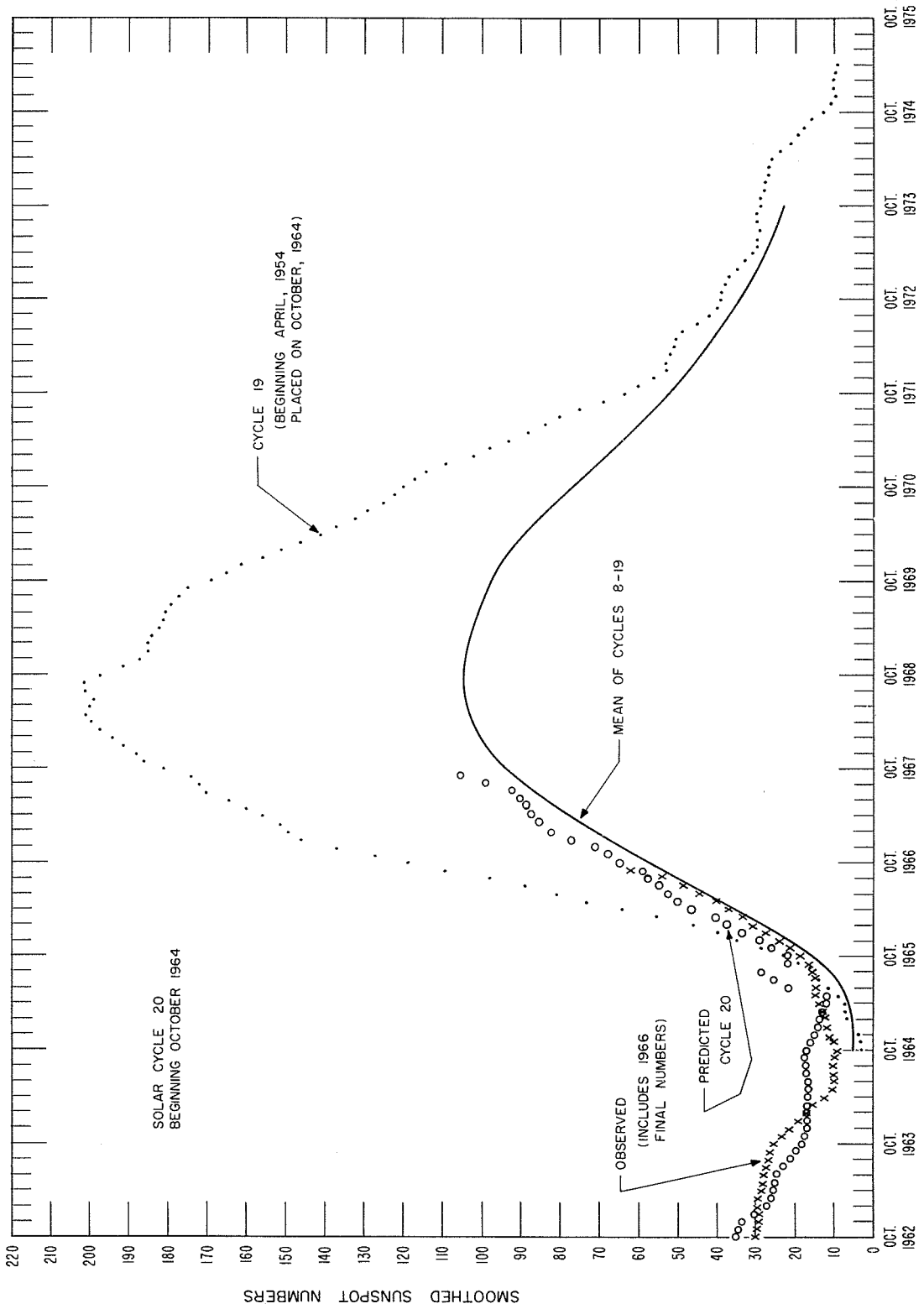
\*\* Burst in Progress

# DAILY SOLAR INDICES

MARCH 1967

| MARCH<br>1967 | YEAR<br>DAY | BARTELS<br>27-DAY<br>CYCLE<br>NUMBER | SUNSPOT NUMBERS |     | OBSERVED<br>FLUX<br>OTTAWA<br>2800 | SOLAR FLUX ADJUSTED TO 1 A.U. |                |                |                |                |               |
|---------------|-------------|--------------------------------------|-----------------|-----|------------------------------------|-------------------------------|----------------|----------------|----------------|----------------|---------------|
|               |             |                                      | RZ              | RA' |                                    | AFCRIL<br>8800                | AFCRIL<br>4995 | OTTAWA<br>2800 | AFCRIL<br>2695 | AFCRIL<br>1415 | AFCRIL<br>606 |
| 01            | 60          | 1                                    | 172             | 173 | 197.8                              | 371                           | 262            | 194.2          | 200.4          | 116.6          | 70.1          |
| 02            | 61          | 2                                    | 179             | 149 | 201.2 *                            | 375                           | 275            | 197.8          | *205.2         | 121.8          | 70.1          |
| 03            | 62          | 3                                    | 191             | 160 | 199.8 *                            | 362                           | 270            | 196.4          | *199.9         | 122.0          | 69.7          |
| 04            | 63          | 4                                    | 172             | 140 | 209.3 *                            | 370                           | 264            | 205.9          | *206.2         | 120.9          | 69.8          |
| 05            | 64          | 5                                    | 164             | 135 | 182.1 *                            | 350                           | 246            | 179.2          | *190.6         | 121.2          | 69.5          |
| 06            | 65          | 6                                    | 148             | 103 | 180.1 *                            | 339                           | 209            | 177.4          | *180.5         | 128.9          | 60.3          |
| 07            | 66          | 7                                    | 137             | 98  | 166.3                              | 321                           | 191            | 163.8          | 164.1          | 117.0          | 57.4          |
| 08            | 67          | 8                                    | 98              | 84  | 158.3                              | 312                           | 188            | 156.1          | 154.0          | 101.1          | 58.4          |
| 09            | 68          | 9                                    | 85              | 82  | 160.2                              | 306                           | 189            | 157.9          | 153.2          | 94.2           | 61.2          |
| 10            | 69          | 10                                   | 86              | 82  | 150.4                              | 300                           | 171            | 148.4          | 140.2          | 89.1           | 59.2          |
| 11            | 70          | 11                                   | 74              | 70  | 143.5                              | 293                           | 159            | 141.6          | 131.4          | 84.7           | 57.3          |
| 12            | 71          | 12                                   | 65              | 57  | 135.9                              | 293                           | 159            | 134.3          | 128.7          | 81.9           | 56.5          |
| 13            | 72          | 13                                   | 49              | 61  | 130.7                              | 299                           | 162            | 129.1          | 125.2          | 81.5           | 56.6          |
| 14            | 73          | 14                                   | 44              | 65  | 128.6                              | 295                           | 161            | 127.2          | 122.3          | 79.6           | 56.1          |
| 15            | 74          | 15                                   | 49              | 48  | 133.9                              | 302                           | 172            | 132.4          | 130.8          | 82.8           | 57.0          |
| 16            | 75          | 16                                   | 58              | 78  | 133.4                              | 302                           | 172            | 132.1          | 129.6          | 84.2           | 58.4          |
| 17            | 76          | 17                                   | 70              | 67  | 133.9                              | 307                           | 176            | 132.6          | 134.6          | 86.7           | 58.6          |
| 18            | 77          | 18                                   | 73              | 68  | 133.4                              | 307                           | 176            | 132.2          | 134.3          | 86.7           | 58.8          |
| 19            | 78          | 19                                   | 58              | 63  | 137.1                              | 305                           | 172            | 136.0          | 132.9          | 90.3           | 61.0          |
| 20            | 79          | 20                                   | 73              | 78  | 141.5                              | 305                           | 182            | 140.4          | 135.2          | 90.0           | 61.5          |
| 21            | 80          | 21                                   | 88              | 83  | 148.2                              | 314                           | 194            | 147.2          | 142.6          | 91.5           | 60.3          |
| 22            | 81          | 22                                   | 108             | 104 | 150.6 *                            | 326                           | 201            | 149.5          | *151.4         | 96.0           | 60.7          |
| 23            | 82          | 23                                   | 111             | 129 | 156.6                              | 323                           | 203            | 155.7          | 159.0          | 98.5           | 62.4          |
| 24            | 83          | 24                                   | 121             | 130 | 162.9                              | 320                           | 208            | 161.9          | 154.5          | 98.9           | 62.8          |
| 25            | 84          | 25                                   | 131             | 146 | 170.1                              | 314                           | 212            | 169.2          | 157.1          | 99.0           | 63.6          |
| 26            | 85          | 26                                   | 137             | 133 | 164.6 *                            | 322                           | 214            | 163.9          | *168.4         | 101.9          | 65.4          |
| 27            | 86          | 27                                   | 122             | 120 | 163.5 *                            | 319                           | 213            | 162.8          | *164.2         | 98.9           | 65.0          |
| 28            | 87          | 1                                    | 120             | 158 | 181.3                              | 328                           | 225            | 180.7          | 175.5          | 109.1          | 70.7          |
| 29            | 88          | 2                                    | 130             | 127 | 179.0                              | 346                           | 237            | 178.4          | 179.9          | 110.5          | 75.1          |
| 30            | 89          | 3                                    | 130             | 135 | 176.2                              | 337                           | 230            | 175.8          | 171.9          | 106.1          | 73.3          |
| 31            | 90          | 4                                    | 115             | 129 | 168.0 *                            | 325                           | 204            | 167.6          | *158.4         | 100.9          | 71.4          |
| MEAN          |             |                                      | 108.3           | 105 | 160.6                              | 322                           | 203            | 159.0          | 160.7          | 99.8           | 63.2          |

\* Adjusted for Burst



PREDICTED AND OBSERVED SUNSPOT NUMBERS

SMOOTHED OBSERVED SUNSPOT NUMBERS  
ZURICH,  $R_z$ 

|     | 1964 | 1965 | 1966 |
|-----|------|------|------|
| JAN |      | 11.7 | 27.7 |
| FEB |      | 12.0 | 31.3 |
| MAR |      | 12.5 | 34.5 |
| APR |      | 13.6 | 37.4 |
| MAY |      | 14.6 | 40.7 |
| JUN |      | 15.0 | 44.6 |
| JUL |      | 15.5 | 48.8 |
| AUG |      | 16.4 | 55.0 |
| SEP |      | 17.4 | 62.7 |
| OCT | 9.6  | 19.7 |      |
| NOV | 10.2 | 22.3 |      |
| DEC | 11.0 | 24.5 |      |

# CALCIUM PLAGE AND SUNSPOT REGIONS

MARCH 1967

| MAR.<br>1967 | LAT. | MCMATH<br>PLAGE<br>NUMBER | RETURN<br>OF<br>REGION | CALCIUM PLAGE DATA |       |         |                         |                       |                         | SUNSPOT DATA |       |         |
|--------------|------|---------------------------|------------------------|--------------------|-------|---------|-------------------------|-----------------------|-------------------------|--------------|-------|---------|
|              |      |                           |                        | CMP VALUES         |       | HISTORY | AGE<br>(ROTA-<br>TIONS) | DATE<br>FIRST<br>SEEN | DURA-<br>TION<br>(DAYS) | CMP VALUES   |       | HISTORY |
|              |      |                           |                        | AREA               | INT.  |         |                         |                       |                         | AREA         | COUNT |         |
| 1.4          | S18  | 8706 (1)                  | 8672                   | 2200               | 3.5   | l A l   | 1&4                     | 2/23                  | 13                      | 30           | 10    | b A d   |
| 1.5          | N17  | 8707 (2)                  | New                    | 2500               | 3.5   | l Γ l   | 1                       | 2/23                  | 13                      | 410          | 45    | b A l   |
| 3.2          | S28  | 8709                      | 8673                   | 1300               | 3.0   | l A l   | 4                       | 2/24                  | 14                      | 30           | 14    | b A d   |
| 3.4          | N17  | 8708                      | 8674                   | 1900               | 2.0   | l A l   | 3                       | 2/24                  | 14                      | (10)         | (2)   | b A l   |
| 4.4          | N32  | 8712                      | New                    | 600                | 1.0   | b \ d   | 1                       | 2/28                  | 8                       |              |       |         |
| 5.2          | S23  | 8711                      | 8681                   | (4300)             | 2.5   | l Γ l   | 2                       | 2/26                  | 14                      | 280          | 36    | l A l   |
| 6.0          | N16  | 8714 (3)                  | New                    | (6400)             | 3.0   | l A l   | 1                       | ≤2/28                 | ≥12                     | 140          | 18    | l A l   |
| 6.2          | N29  | 8713                      | 8680                   | 2400               | 2.0   | l A l   | 3                       | <2/28                 | >12                     |              |       |         |
| 8.2          | N31  | 8717                      | 8680                   | 1300               | 2.0   | l \ d   | 4                       | <3/3                  | >10                     |              |       |         |
| 8.9          | N22  | 8715                      | 8684                   | 6700               | 3.5   | l Γ l   | 2                       | 3/2                   | 13                      | 60           | 9     | l A d   |
| 9.7          | S22  | 8716 (4)                  | New                    | 4500               | 3.5   | l A l   | 1                       | 3/2                   | 15                      | 580          | 75    | l Γ l   |
| 11.0         | S16  | 8723                      | New                    | (600)              | (1.5) | b \ d   | 1                       | 3/11                  | 6                       |              |       |         |
| 11.4         | N36  | 8718                      | New                    | 400                | 1.0   | b A d   | 1                       | ≤3/6                  | ≥10                     |              |       |         |
| 12.1         | S22  | 8724                      | 8686                   | 400                | 1.5   | l - d   | 3                       | <3/11                 | >5                      | 10           | 1     | b - d   |
| 12.4         | N24  | 8719                      | 8687                   | 1600               | 2.0   | l A l   | 2                       | 3/6                   | 13                      |              |       |         |
| 13.4         | N19  | 8720                      | 8688                   | 1200               | 2.5   | l A d   | 2                       | 3/7                   | 12                      |              |       |         |
| 13.5         | N38  | 8728                      | New                    | 400                | 2.5   | b \ d   | 1                       | 3/13                  | 2                       |              |       |         |
| 14.2         | S23  | 8721                      | New                    | 900                | 3.0   | b Γ d   | 1                       | 3/9                   | 10                      |              |       |         |
| 15.2         | N20  | 8722                      | New                    | 2000               | 2.5   | l Γ ?   | 1                       | 3/9                   | >11                     | (10)         | (4)   | b - d   |
| 16.0         | N29  | 8729                      | New                    | 1000               | 3.0   | b / ?   | 1                       | 3/13                  | >7                      | 40           | 9     | b A d   |
| 17.1         | N16  | 8725                      | 8693                   | 1100               | 2.0   | l \ l   | 3                       | 3/11                  | 12                      |              |       |         |
| 18.8         | N21  | 8731                      | New                    | 800                | 2.0   | b / l   | 1                       | 3/14                  | 11                      |              |       |         |
| 19.1         | S15  | 8727 (5)                  | New                    | 3200               | 3.0   | l Γ l   | 1                       | 3/12                  | 14                      | 140          | 44    | l A d   |
| 20.2         | N16  | 8730                      | 8695                   | (3300)             | (2.5) | l Γ l   | 5                       | 3/14                  | 13                      | (10)         | (5)   | b - d   |
| 22.5         | N23  | 8733                      | 8698                   | 7600               | 3.5   | l Γ l   | 5                       | 3/15                  | 15                      | 70           | 7     | l Γ d   |
| 22.9         | N35  | 8734                      | New                    | 500                | 2.0   | l \ d   | 1                       | 3/16                  | 11                      |              |       |         |
| 23.0         | S23  | 8736                      | 8700a                  | 1200               | 2.5   | l Γ l   | 2                       | 3/16                  | 14                      |              |       |         |
| 23.9         | N15  | 8738                      | New                    | 600                | 3.5   | b - l   | 1                       | ≤3/22                 | ≥7                      |              |       |         |
| 24.7         | S22  | 8747                      | New                    | (200)              | 1.5   | b - d   | 1                       | 3/26                  | 4                       |              |       |         |
| 26.1         | S23  | 8739 (6)                  | New                    | 600                | 2.5   | l / l   | 1                       | <3/22                 | >13                     | (10)         | (8)   | b Γ l   |
| 26.5         | S11  | 8748                      | New                    | (300)              | 2.0   | b - d   | 1                       | ≤3/28                 | ≥2                      |              |       |         |
| 27.4         | N22  | 8740                      | 8704                   | (9800)             | 3.5   | l Γ l   | 3                       | <3/22                 | >13                     | 500          | 2     | l Γ l   |
| 27.5         | S29  | 8742                      | 8703                   | (900)              | 1.5   | l - d   | 4                       | 3/22                  | 10                      | 340          | 39    | l A l   |
| 28.5         | S17  | 8743                      | 8706                   | 600                | 2.5   | l Γ d   | 2                       | 3/23                  | 11                      |              |       |         |
| 29.3         | N18  | 8741                      | 8707                   | 4000               | 3.0   | l A l   | 2                       | 3/22                  | 14                      | 10           | 17    | b A d   |
| 30.1         | S15  | 8750                      | New                    | 500                | 1.0   | b A d   | 1                       | ≤3/28                 | ≥6                      |              |       |         |
| 30.4         | S29  | 8749                      | New                    | 800                | 1.5   | b - d   | 1                       | ≤3/28                 | ≥4                      |              |       |         |
| 31.3         | S32  | 8755                      | New                    | (700)              | (1.0) | b \ d   | 1                       | 4/2                   | ≥3                      |              |       |         |

- (1) Region 8706 is primarily a new region, although it contains remnants of region 8672 of the previous rotation. There is a resurgence on the disk after Feb. 26th.
- (2) Region 8707 is mostly a new plage, with a resurgence on the disk after Feb. 26th, among remnants of old plage related to region 8671
- (3) Region 8714 is a new region, although it also contains some weak remnants of region 8682 of the previous rotation.
- (4) Region 8716 is a new plage that has developed near the location of region 8685 of the previous rotation, but at a lower latitude.
- (5) Region 8727 has developed near the location of 8694, but at a lower latitude.
- (6) Region 8739 began its transit across the disk as the return of part of region 8703. A rapid development occurred after Mar. 27th with the appearance and growth of a spot, making its subsequent behavior like that of an active new region.

No calcium spectroheliograms were secured at the McMath-Hulbert Observatory on Mar. 5, 20, 21 and 27, 1967.

MT. WILSON MAGNETIC CLASSIFICATIONS OF SUNSPOTS

MARCH 1967

| Mar. 1967 | TIME MEAS. UT | LAT. | MER. DIST. | TYPE                 | No.   | Mar. 1967  | TIME MEAS. UT | LAT.             | MER. DIST. | TYPE             | No.   |                  |       |                  |       |
|-----------|---------------|------|------------|----------------------|-------|------------|---------------|------------------|------------|------------------|-------|------------------|-------|------------------|-------|
| 1         | 2320          | S23  | W47        | ( $\alpha p$ ) 2     | 16270 | 6          | 2225          | S21              | W25        | ( $\beta f$ ) 4  | 16280 |                  |       |                  |       |
|           |               | N24  | W37        | ( $\delta$ ) 6       | 16272 |            |               | S16              | W17        | $\alpha p$       | 16283 |                  |       |                  |       |
|           |               | S20  | W13        | ( $\beta f$ ) 2      | 16278 |            |               | N16              | W67        | ( $\beta p$ ) 4  | 16285 |                  |       |                  |       |
|           |               | S16  | W02        | ( $\beta f$ ) 1      | 16279 |            |               | N16              | W19        | ( $\beta p$ ) 3  | 16288 |                  |       |                  |       |
|           |               | S21  | E41        | ( $\gamma$ ) 5       | 16280 |            |               | N23              | E26        | ( $\beta p$ ) 3  | 16290 |                  |       |                  |       |
|           |               | N11  | E55        | ( $\beta \gamma$ ) 2 | 16282 |            |               | S19              | E36        | ( $\beta p$ ) 5  | 16291 |                  |       |                  |       |
|           |               | S16  | E45        | ( $\beta p$ ) 2      | 16283 |            |               | N18              | W42        | ( $\alpha p$ ) 2 | 16293 |                  |       |                  |       |
|           |               | S26  | E16        | ( $\beta f$ ) 2      | 16284 |            |               | 7                | 1745       | S22              | W35   | ( $\beta f$ ) 4  | 16280 |                  |       |
|           |               | N16  | W04        | ( $\beta \gamma$ ) 5 | 16285 |            |               |                  |            | N14              | W79   | ( $\beta p$ ) 2  | 16285 |                  |       |
|           |               | S10  | W24        | ( $\beta p$ ) 2      | 16287 |            |               |                  |            | N15              | W30   | ( $\beta p$ ) 4  | 16288 |                  |       |
|           |               | N14  | E46        | ( $\beta$ ) 2        | 16288 |            |               |                  |            | N23              | E15   | ( $\beta p$ ) 3  | 16290 |                  |       |
|           |               | N20  | W27        | ( $\beta \gamma$ ) 5 | 16289 |            |               |                  |            | S19              | E26   | ( $\beta p$ ) 5  | 16291 |                  |       |
|           |               | 2    | 2020       | S23                  | W57   |            |               |                  |            | ( $\alpha p$ ) 2 | 16270 | N17              | W55   | ( $\alpha p$ ) 2 | 16293 |
|           |               |      |            | N24                  | W49   |            |               |                  |            | ( $\delta$ ) 6   | 16272 | N14              | W01   | ( $\alpha p$ ) 1 | 16294 |
| S20       | W24           |      |            | ( $\beta f$ ) 1      | 16278 | N17        | E06           | ( $\alpha p$ ) 1 | 16295      |                  |       |                  |       |                  |       |
| S21       | E30           |      |            | ( $\beta f$ ) 4      | 16280 | 8          | 2200          | S22              | W50        | ( $\beta p$ ) 4  | 16280 |                  |       |                  |       |
| N11       | E44           |      |            | ( $\beta \gamma$ ) 2 | 16282 |            |               | N15              | W46        | ( $\beta p$ ) 3  | 16288 |                  |       |                  |       |
| S16       | E34           |      |            | ( $\alpha p$ ) 2     | 16283 |            |               | N22              | W0E        | ( $\beta$ ) 2    | 16290 |                  |       |                  |       |
| S27       | E04           |      |            | ( $\beta f$ ) 2      | 16284 |            |               | S20              | E11        | ( $\beta p$ ) 4  | 16291 |                  |       |                  |       |
| N17       | W14           |      |            | ( $\beta \gamma$ ) 5 | 16285 |            |               | N18              | W08        | ( $\alpha p$ ) 1 | 16295 |                  |       |                  |       |
| S10       | W40           |      |            | ( $\beta p$ ) 2      | 16287 |            |               | 9                | 1535       | S22              | W60   | ( $\beta f$ ) 4  | 16280 |                  |       |
| N15       | E34           |      |            | ( $\beta p$ ) 4      | 16288 |            |               |                  |            | N15              | W58   | ( $\beta p$ ) 4  | 16288 |                  |       |
| N20       | W39           |      |            | ( $\beta f$ ) 3      | 16289 | N23        | W08           |                  |            | ( $\beta p$ ) 4  | 16290 |                  |       |                  |       |
| N22       | E78           |      |            | ( $\alpha f$ ) 3     | 16290 | S21        | E01           |                  |            | ( $\beta p$ ) 5  | 16291 |                  |       |                  |       |
| S18       | E89           |      |            | $\alpha p$           | 16291 | N17        | W20           |                  |            | ( $\alpha p$ ) 1 | 16295 |                  |       |                  |       |
| 3         | 1520          |      |            | S23                  | W68   | $\alpha p$ | 16270         |                  |            | S16              | E20   | ( $\alpha p$ ) 1 | 16296 |                  |       |
|           |               | N24  | W59        | $\delta$             | 16272 | 10         | No Obs.       |                  |            |                  |       |                  |       |                  |       |
|           |               | S20  | W33        | $\alpha f$           | 16278 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | S20  | E18        | $\beta f$            | 16280 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | N10  | E33        | $\beta p$            | 16282 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | S15  | E24        | $\alpha p$           | 16283 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | S26  | W06        | $\beta$              | 16284 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | N17  | W24        | $\beta \gamma$       | 16285 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | S09  | W50        | $\beta p$            | 16287 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | N14  | E25        | $\beta p$            | 16288 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | N20  | W49        | $\beta f$            | 16289 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | N21  | E67        | $\alpha f$           | 16290 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | S18  | E77        | $\beta p$            | 16291 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | S16  | W22        | $\beta$              | 16292 |            |               |                  |            |                  |       |                  |       |                  |       |
| 4         | No Obs.       |      |            |                      |       |            |               | 16               | No Obs.    |                  |       |                  |       |                  |       |
|           |               |      |            |                      |       | 17         | 1827          |                  |            | N28              | W25   | ( $\beta p$ ) 3  |       |                  |       |
| 5         | 1755          | N25  | W79        | ( $\alpha f$ ) 3     | 16272 |            |               | S17              | E15        | ( $\beta p$ ) 4  | 16298 |                  |       |                  |       |
|           |               | S20  | W09        | ( $\beta \gamma$ ) 4 | 16280 | N24        | E53           | ( $\beta p$ ) 3  | 16300      |                  |       |                  |       |                  |       |
|           |               | N12  | E05        | ( $\beta$ ) 2        | 16282 | N18        | E67           | ( $\beta p$ ) 4  | 16301      |                  |       |                  |       |                  |       |
|           |               | S16  | W02        | ( $\alpha p$ ) 2     | 16283 | N22        | W62           | ( $\alpha f$ ) 1 | 16302      |                  |       |                  |       |                  |       |
|           |               | N17  | W52        | ( $\beta p$ ) 5      | 16285 | N18        | E11           | ( $\alpha p$ ) 1 | 16303      |                  |       |                  |       |                  |       |
|           |               | N15  | W03        | ( $\beta p$ ) 4      | 16288 | 18-19      | No Obs.       |                  |            |                  |       |                  |       |                  |       |
|           |               | N20  | W26        | ( $\alpha f$ ) 2     | 16289 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | N24  | E42        | ( $\beta p$ ) 4      | 16290 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | S19  | E52        | ( $\beta p$ ) 5      | 16291 |            |               |                  |            |                  |       |                  |       |                  |       |
|           |               | S16  | W52        | ( $\alpha f$ ) 1     | 16292 |            |               |                  |            |                  |       |                  |       |                  |       |

\*Reversed polarities for cycle 20.

MT. WILSON MAGNETIC CLASSIFICATIONS OF SUNSPOTS

MARCH 1967

| Mar. 1967 | TIME MEAS. UT | LAT.             | MER. DIST. | TYPE                 | No.   | Mar. 1967 | TIME MEAS. UT   | LAT. | MER. DIST. | TYPE                 | No.    |
|-----------|---------------|------------------|------------|----------------------|-------|-----------|-----------------|------|------------|----------------------|--------|
| 20        | 1834          | S17              | W27        | ( $\beta f$ ) 3      | 16298 | 26<br>27  | No Obs.<br>1610 | -    | -          | -                    | -      |
|           |               | N24              | E10        | ( $\alpha p$ ) 4     | 16300 |           |                 | N26  | W56        | ( $\beta$ ) 3        | 16304  |
|           |               | N18              | E22        | ( $\alpha p$ ) 5     | 16301 |           |                 | N22  | W17        | ( $\beta f$ ) 6      | 16305* |
|           |               | N18              | W30        | ( $\beta f$ ) 1      | 16303 |           |                 | N18  | W63        | ( $\beta p$ ) 3      | 16306  |
|           |               | N22              | E36        | ( $\beta f$ ) 2      | 16304 |           |                 | N20  | W03        | ( $\beta \gamma$ ) 5 | 16307  |
|           |               | N23              | E76        | ( $\alpha p$ ) 4     | 16305 |           |                 | N14  | W52        | ( $\alpha p$ ) 2     | 16309  |
|           |               | N17              | E31        | ( $\beta f$ ) 4      | 16306 |           |                 | N15  | E19        | ( $\beta p$ ) 3      | 16310  |
|           |               | N11              | W13        | ( $\beta$ ) 1        | No #  |           |                 | S17  | E08        | ( $\alpha p$ ) 1     | 16311  |
| 21        | 1842          | S17              | W39        | ( $\beta f$ ) 2      | 16298 | 28        | 1905            | N23  | E12        | ( $\alpha f$ ) 1     | 16312  |
|           |               | N23              | W0E        | ( $\beta p$ ) 2      | 16300 |           |                 | S23  | W12        | ( $\beta f$ ) 2      | 16313  |
|           |               | N18              | E08        | ( $\alpha p$ ) 4     | 16301 |           |                 | S20  | E53        | ( $\beta \gamma$ ) 4 | 16314  |
|           |               | N17              | W44        | ( $\beta$ ) 1        | 16303 |           |                 | S27  | W17        | ( $\beta$ ) 1        | 16315  |
|           |               | N22              | E21        | ( $\beta f$ ) 2      | 16304 |           |                 | N26  | W70        | $\beta$              | 16304  |
|           |               | N23              | E71        | ( $\beta p$ ) 5      | 16305 |           |                 | N22  | W32        | $\beta f$            | 16305  |
|           |               | N18              | E16        | ( $\beta f$ ) 3      | 16306 |           |                 | N20  | W19        | $\beta p$            | 16307  |
| 22        | 1805          | S15              | W50        | $\beta f$            | 16298 | 29        | 2355            | N13  | W68        | $\alpha p$           | 16309  |
|           |               | N24              | W17        | $\beta p$            | 16300 |           |                 | N14  | E03        | $\beta f$            | 16310  |
|           |               | N17              | W10        | $\alpha p$           | 16301 |           |                 | S18  | W03        | $\alpha p$           | 16311  |
|           |               | N17              | W55        | $\alpha f$           | 16303 |           |                 | S22  | W28        | $\beta$              | 16313  |
|           |               | N21              | E10        | $\alpha f$           | 16304 |           |                 | S20  | E38        | $\beta \gamma$       | 16314  |
|           |               | N23              | E47        | ( $\alpha p$ ) 6     | 16305 |           |                 | S22  | E51        | $\beta p$            | 16316  |
|           |               | N17              | E07        | $\alpha p$           | 16306 |           |                 | N17  | W06        | $\beta p$            | 16317  |
|           |               | N20              | E60        | ( $\beta \gamma$ ) 3 | 16307 |           |                 | N26  | E73        | $\alpha p$           | 16318  |
|           |               | N25              | E60        | ( $\beta p$ ) 2      | 16308 |           |                 | N22  | W47        | ( $\beta \gamma$ ) 5 | 16305  |
|           |               | N16              | E17        | $\beta p$            | 16309 |           |                 | N20  | W36        | ( $\beta$ ) 5        | 16307  |
| 23        | 2230          | N23              | W33        | ( $\alpha p$ ) 3     | 16300 | 30        | 1535            | N16  | W10        | ( $\beta p$ ) 2      | 16310  |
|           |               | N18              | W20        | ( $\beta p$ ) 4      | 16301 |           |                 | S22  | W42        | ( $\beta p$ ) 3      | 16313  |
|           |               | N18              | W70        | ( $\alpha f$ ) 1     | 16303 |           |                 | S19  | E23        | ( $\beta p$ ) 3      | 16314  |
|           |               | N22              | E32        | ( $\alpha p$ ) 6     | 16305 |           |                 | N17  | W21        | ( $\beta p$ ) 2      | 16317  |
|           |               | N18              | W09        | ( $\alpha f$ ) 2     | 16306 |           |                 | N26  | E59        | ( $\beta f$ ) 1      | 16318  |
|           |               | N21              | E49        | ( $\beta p$ ) 3      | 16307 |           |                 | N16  | E68        | ( $\alpha p$ ) 1     | 16319  |
|           |               | N26              | E48        | ( $\beta f$ ) 2      | 16308 |           |                 | N21  | W56        | $\beta \gamma$       | 16305  |
|           |               | N14              | W0E        | ( $\beta p$ ) 3      | 16309 |           |                 | N20  | W45        | $\beta$              | 16307  |
| 24        | 2130          | N15              | E69        | $\beta p$            | 16310 | 31        | No Obs.         | N15  | W19        | $\beta p$            | 16310  |
|           |               | N23              | W46        | ( $\alpha p$ ) 3     | 16300 |           |                 | N21  | W27        | $\alpha p$           | 16312  |
|           |               | N18              | W36        | ( $\alpha p$ ) 4     | 16301 |           |                 | S23  | W51        | $\beta p$            | 16313  |
|           |               | N24              | W20        | ( $\beta f$ ) 2      | 16304 |           |                 | S20  | E13        | $\beta p$            | 16314  |
|           |               | N22              | E19        | ( $\beta f$ ) 6      | 16305 |           |                 | S22  | E25        | $\alpha p$           | 16316  |
|           |               | N18              | W28        | ( $\beta f$ ) 2      | 16306 |           |                 | N16  | W31        | $\beta p$            | 16317  |
|           |               | N21              | E34        | ( $\beta p$ ) 4      | 16307 |           |                 | N26  | E50        | $\beta$              | 16318  |
|           |               | N26              | E34        | ( $\beta$ ) 2        | 16308 |           |                 | N16  | E58        | $\beta$              | 16319  |
|           |               | N15              | W13        | ( $\beta p$ ) 3      | 16309 |           |                 | N23  | E71        | $\alpha p$           | 16320  |
|           |               | N14              | E56        | ( $\beta p$ ) 2      | 16310 |           |                 | N33  | E36        | $\alpha p$           | 16321  |
| 25        | 1900          | S17              | E43        | ( $\alpha p$ ) 1     | 16311 | 31        | No Obs.         |      |            |                      |        |
|           |               | N23              | E45        | ( $\beta f$ ) 2      | 16312 |           |                 |      |            |                      |        |
|           |               | N24              | W58        | ( $\alpha p$ ) 2     | 16300 |           |                 |      |            |                      |        |
|           |               | N18              | W48        | ( $\alpha p$ ) 5     | 16301 |           |                 |      |            |                      |        |
|           |               | N25              | W33        | ( $\beta f$ ) 2      | 16304 |           |                 |      |            |                      |        |
|           |               | N22              | E08        | ( $\alpha p$ ) 7     | 16305 |           |                 |      |            |                      |        |
|           |               | N18              | W40        | ( $\alpha f$ ) 2     | 16306 |           |                 |      |            |                      |        |
|           |               | N21              | E23        | ( $\beta \gamma$ ) 4 | 16307 |           |                 |      |            |                      |        |
|           |               | N25              | E21        | ( $\beta f$ ) 1      | 16308 |           |                 |      |            |                      |        |
|           |               | N14              | W27        | ( $\alpha p$ ) 2     | 16309 |           |                 |      |            |                      |        |
|           |               | N14              | E45        | ( $\beta \gamma$ ) 3 | 16310 |           |                 |      |            |                      |        |
|           |               | N23              | E33        | ( $\beta f$ ) 3      | 16312 |           |                 |      |            |                      |        |
|           |               | S25              | W02        | ( $\beta p$ ) 1      | 16313 |           |                 |      |            |                      |        |
| S20       | E76           | ( $\alpha p$ ) 3 | 16314      |                      |       |           |                 |      |            |                      |        |

SOLAR FLARES  
PRELIMINARY  
MARCH 1967

| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION |            |                  |                     |         | DURATION<br>MIN. | IM-<br>POR-<br>TANCE | OBS.  |      | MEASUREMENTS |                     |                     |                       |             | REMARKS |
|-------------|-------------|-------|-------|------------|----------|------------|------------------|---------------------|---------|------------------|----------------------|-------|------|--------------|---------------------|---------------------|-----------------------|-------------|---------|
|             | DATE        | START | END   | MAX. PHASE | APPROX.  |            | CENTRAL DISTANCE | MCMATH PLAGE REGION | CMP DAY |                  |                      | COND. | TYPE | TIME UT      | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH H $\alpha$ | MAX. INT. % |         |
|             |             |       |       |            | LAT.     | NER. DIST. |                  |                     |         |                  |                      |       |      |              |                     |                     |                       |             |         |
|             | 1967        |       |       |            |          |            |                  |                     |         |                  |                      |       |      |              |                     |                     |                       |             |         |
|             | MAR         |       |       |            |          |            |                  |                     |         |                  |                      |       |      |              |                     |                     |                       |             |         |
| SACP        | 01          | 1441  | 1525  | 1452       | N13      | E57        | .867             | 8714                | 5.9     | 44               | 1N                   |       |      | 1.45         | 2.16                |                     |                       |             |         |
| SACP        | 01          | 1547  | 1734  | 1712       | N15      | E48        | .793             | 8714                | 5.3     | 107              | 1N                   |       |      | 2.34         | 3.07                |                     |                       |             |         |
| SACP        | 01          | 1600  | 1631  | 1618       | N24      | W31        | .688             | 8704                | 27.3    | 31               | 1F                   |       |      | 1.82         | 2.10                |                     |                       |             |         |
| MCMA        | 01          | 1605  | 1613  | 1609       | N26      | W30        | .697             | 8704                | 27.4    | 8                | -F                   |       | 1609 | .31          | 1.40                |                     | D                     |             |         |
| LOCK        | 01          | 1640  | 1651  | 1644       | N23      | W34        | .706             |                     | 27.1    | 11               | -F                   |       | 1644 | 1.00         | 1.40                |                     | 10                    |             |         |
| HUAN        | 01          | 1641  | 1650  | 1644       | N24      | W33        | .705             |                     | 27.2    | 9                | -N                   | 2     | 1644 | 1.00         | 1.17                |                     | E                     |             |         |
| MCMA        | 01          | 1643  | 1649  | 1644       | N25      | W32        | .705             | 8704                | 27.3    | 6                | -N                   |       | 1644 | .72          | 1.00                |                     | E                     |             |         |
| SACP        | 01          | 1655  | 1713  | 1705       | N23      | W33        | .697             | 8704                | 27.2    | 18               | 1N                   |       |      | 2.70         | 3.17                |                     |                       |             |         |
| HUAN        | 01          | 1658  | 1713  | 1703       | N24      | W35        | .723             | 8704                | 27.1    | 15               | 1N                   | 1     | 1703 | 2.06         | 2.46                |                     |                       |             |         |
| HALE        | 01          | 1858  | 2042  | 1909       | N15      | E46        | .774             |                     | 5.2     | 104              | -N                   | 2     | 1909 | .36          | .60                 |                     | K                     |             |         |
| HALE        | 01          |       |       | 2013       | N16      | E46        | .778             |                     |         |                  |                      |       | 2013 | .21          | .30                 |                     | K                     |             |         |
| SACP        | 01          | 1859  | 1936  | 1911       | N15      | E47        | .784             | 8714                | 5.3     | 37               | 1N                   |       |      | 1.72         | 2.22                |                     |                       |             |         |
| LOCK        | 01          | 1904  | 1917  | 1909       | N16      | E49        | .807             |                     | 5.5     | 13               | -F                   |       | 1909 | .50          | .90                 |                     | 10                    |             |         |
| LOCK        | 01          | 1949  | 1956  | 1951       | N22      | W30        | .662             |                     | 27.6    | 7                | -N                   |       | 1951 | .40          | .60                 |                     | 20                    |             |         |
| SACP        | 01          | 1949  | 2005  | 1950       | N25      | W30        | .688             | 8704                | 27.6    | 16               | 1B                   |       |      | 2.82         | 3.26                |                     |                       |             |         |
| SACP        | 01          |       |       |            |          |            |                  |                     |         |                  |                      |       |      |              |                     |                     |                       |             |         |
| SACP        | 01          | 1949  | 2040  | 2012       | N14      | E55        | .853             | 8714                | 6.0     | 51               | 1N                   |       |      | 1.63         | 2.36                |                     |                       |             |         |
| HALE        | 01          | 1950  | 1956  | 1951       | N23      | W28        | .653             |                     | 27.7    | 6                | -B                   | 2     | 1951 | .36          | .50                 |                     |                       |             |         |
| MCMA        | 01          | 1950  | 1957D | 1952       | N25      | W29        | .680             | 8704                | 27.7    | 7D               | -B                   |       | 1952 | .26          | .40                 |                     | D                     |             |         |
| MCMA        | 01          | 1952  | 2003  | 1958       | N27      | W33        | .729             | 8704                | 27.4    | 11               | -N                   |       | 1958 | .41          | .60                 |                     | E                     |             |         |
| HALE        | 01          | 1954  | 2006  | 2001       | N25      | W31        | .696             |                     | 27.5    | 12               | -N                   | 1     | 2001 | .52          | .70                 |                     |                       |             |         |
| LOCK        | 01          | 1957  | 2006  | 2001       | N26      | W33        | .721             |                     | 27.4    | 9                | -F                   |       | 2001 | .60          | .90                 |                     | 10                    |             |         |
| SACP        | 01          | 2034  | 2111  | 2040       | N26      | W32        | .713             | 8704                | 27.5    | 37               | 1N                   |       |      | 2.27         | 2.69                |                     |                       |             |         |
| LOCK        | 01          | 2038  | 2052  | 2043       | N25      | W34        | .722             |                     | 27.3    | 14               | -F                   |       | 2043 | .50          | .90                 |                     | 10                    |             |         |
| HALE        | 01          | 2039  | 2107  | 2043       | N25      | W31        | .696             |                     | 27.5    | 28               | -N                   | 1     | 2043 | .41          | .60                 |                     | L                     |             |         |
| SACP        | 01          | 2119  | 2234  | 2212       | N26      | W33        | .721             | 8704                | 27.4    | 75               | 1N                   |       |      | 2.28         | 2.71                |                     |                       |             |         |
| LOCK        | 01          | 2203  | 2215  | 2205       | N25      | W34        | .722             |                     | 27.4    | 12               | -N                   |       | 2205 | .50          | .80                 |                     | 20                    |             |         |
| HALE        | 01          | 2204  | 2229  | 2205U      | N25      | W33        | .713             |                     | 27.4    | 25               | -N                   | 1     | 2205 | .62          | .90                 |                     |                       |             |         |
| SACP        | 01          | 2238  | 2354D | 2351       | N13      | E51        | .815             | 8714                | 5.8     | 76D              | 2N                   |       |      | 5.03         | 6.74                |                     |                       |             |         |
| HALE        | 02          | 0028E | 0110D | 0040       | N14      | E42        | .729             | 8714                | 5.2     | 42D              | 1N                   | 1     | 0040 | 1.55         | 2.30                |                     |                       |             |         |
| MONT        | 02          | 1010  | 1030D |            | N19      | E90        | 1.001            |                     | 9.2     | 200              |                      |       |      |              |                     |                     |                       |             |         |
| ARCE        | 02          | 1010  | 1030D |            | N19      | E90        | 1.001            | 8715                | 9.2     | 200              | 1B                   |       | 1013 | .51          | 2.90                |                     | A                     |             |         |
| HERS        | 02          | 1010E | 1032D |            | N23      | E90        | 1.001            | 8715                | 9.2     | 220              | 1N                   |       |      |              |                     |                     | H                     |             |         |
| CAPS        | 02          | 1111E | 1120D |            | N25      | W38        | .755             | 8704                | 27.6    | 90               | 1B                   | 1     |      |              |                     |                     | D                     |             |         |
| CAPF        | 02          | 1158E | 1211  |            | N21      | W52        | .851             | 8704                | 26.6    | 130              | 1N                   |       | 1159 | 1.18         | 2.16                |                     |                       |             |         |
| CAPF        | 02          | 1206E | 1214  |            | N12      | W05        | .340             | 8707                | 2.1     | 80               | 1N                   |       | 1210 | 2.35         | .50                 |                     |                       |             |         |
| MONT        | 02          | 1317E | 1408D |            | N27      | W38        | .769             | 8704                | 27.7    | 51D              | 1B                   |       | 1330 | 2.06         |                     |                     | O                     |             |         |
| HUAN        | 02          | 1326  | 1333  | 1327       | N27      | W42        | .800             |                     | 27.4    | 7                | -N                   | 2     | 1327 | .25          | .32                 |                     | D                     |             |         |
| SACP        | 02          | 1424  | 1447  | 1425       | S26      | E10        | .359             | 8709                | 3.3     | 23               | 1N                   |       |      | 2.44         | 2.43                |                     |                       |             |         |
| CAPS        | 02          | 1425E | 1436  |            | S27      | E10        | .374             |                     | 3.4     | 11D              | -N                   | 2     | 1428 | 1.50         | 1.60                |                     | 185                   |             |         |
| CAPF        | 02          | 1425E | 1502  |            | S26      | E10        | .359             |                     | 3.4     | 37D              | -N                   |       | 1428 | 1.18         | 1.25                |                     |                       |             |         |
| HUAN        | 02          | 1429E | 1449  |            | S27      | E11        | .380             |                     | 3.4     | 20D              | -B                   | 1     | 1430 | .67          | .67                 |                     | E                     |             |         |
| CAPS        | 02          | 1436  | 1443  |            | S21      | E35        | .595             | 8711                | 5.2     | 7                | 1N                   | 2     | 1439 | 3.00         | 3.60                |                     | 189                   |             |         |
| HUAN        | 02          | 1436  | 1444  |            | S19      | E34        | .574             |                     | 5.2     | 8                | -N                   | 1     | 1437 | 1.12         | 1.20                |                     | E                     |             |         |
| SACP        | 02          | 1436  | 1450  | 1437       | S20      | E33        | .565             |                     | 5.1     | 14               | -B                   |       |      | 1.35         | 1.44                |                     |                       |             |         |
| CAPS        | 02          | 1543E | 1620D |            | N28      | W38        | .776             | 8704                | 27.8    | 37D              | 1N                   | 2     | 1554 | 3.00         | 4.80                |                     | 176                   |             |         |
| CAPS        | 02          |       |       |            |          |            |                  |                     |         |                  |                      |       | 1605 | 4.50         | 7.20                |                     | HL                    |             |         |
| SACP        | 02          | 1543  | 1628  | 1552       | N28      | W38        | .776             | 8704                | 27.8    | 45               | 2N                   |       |      | 6.48         | 8.25                |                     | W                     |             |         |
| MCMA        | 02          | 1546E | 1627D | 1553       | N26      | W35        | .738             | 8704                | 28.0    | 41D              | 1B                   |       | 1553 | 1.19         | 2.10                |                     | FHK                   |             |         |
| CAPF        | 02          | 1555E | 1615D |            | N29      | W36        | .768             | 8704                | 28.0    | 20D              | 2N                   |       | 1557 | 3.53         | 5.47                |                     | H                     |             |         |
| SACP        | 02          | 1606  | 1633  | 1613       | N15      | W10        | .412             |                     | 1.9     | 27               | -N                   |       |      | 1.36         | 1.37                |                     |                       |             |         |
| CAPF        | 02          | 1607  | 1615D |            | N16      | W10        | .427             |                     | 1.9     | 8D               | -N                   |       | 1611 | 1.76         | 1.96                |                     |                       |             |         |
| CAPS        | 02          | 1607  | 1620D |            | N13      | W10        | .383             | 8707                | 1.9     | 13D              | 1N                   | 2     | 1614 | 2.00         | 2.10                |                     | 164                   |             |         |
| MCMA        | 02          | 1607  | 1634  | 1610       | N16      | W07        | .411             | 8707                | 2.1     | 27               | -N                   |       | 1610 | .83          | .90                 |                     | E                     |             |         |
| LOCK        | 02          | 1620E | 1625  | 1620E      | N16      | W12        | .440             |                     | 1.8     | 5D               | -F                   |       | 1620 | .90          | 1.00                |                     | 10                    |             |         |
| LOCK        | 02          | 2055  | 2145  | 2105       | S18      | E90        | .999             | 8716                | 9.6     | 50               | 1N                   |       | 2105 | .90          | 3.60                |                     | 20                    |             |         |
| HUAN        | 02          | 2058  | 2106  |            | S19      | E90        | .999             |                     | 9.6     | 8                | -F                   | 1     | 2103 | .25          |                     |                     | D                     |             |         |
| CATA        | 03          | 0730E | 0900D | 0820       | S20      | E90        | .999             | 8716                | 10.1    | 90D              | 1B                   |       | 0820 | 1.64         |                     |                     | 204                   |             |         |
| MONT        | 03          | 0815  | 0835  |            | S19      | E90        | .999             |                     | 10.1    | 20               |                      |       |      |              |                     |                     | O                     |             |         |
| MONT        | 03          | 0900  | 0940  | 0903       | N18      | W20        | .531             |                     | 1.9     | 40               | -B                   |       | 0903 | 1.55         |                     |                     | O                     |             |         |
| CAPS        | 03          | 0901E | 0924  |            | N16      | W15        | .463             | 8707                | 2.3     | 23D              | 1N                   | 3     | 0904 | 2.00         | 2.30                |                     | 200                   |             |         |
| ARCE        | 03          | 0902  | 0919  | 0903       | N18      | W18        | .513             | 8707                | 2.0     | 17               | 1N                   |       | 0903 | 1.79         | 2.10                |                     | CE                    |             |         |
| CATA        | 03          | 0902E | 0945D | 0905       | N16      | W20        | .508             | 8707                | 1.9     | 43D              | 1B                   |       | 0905 | 2.64         | 3.10                |                     | 309                   |             |         |
| ARCE        | 03          | 0902  | 1000D | 0922       | N16      | W25        | .558             |                     | 1.5     | 58D              | -N                   |       | 0922 | 1.13         | 1.40                |                     | Z                     |             |         |
| CAPS        | 03          | 0903  | 0928  |            | N14      | W20        | .486             |                     | 1.9     | 25               | -F                   | 3     | 0908 | 1.20         | 1.40                |                     | 152                   |             |         |
| CAPF        | 03          | 0911  | 0952D |            | N16      | W20        | .508             | 8707                | 1.9     | 41D              | 1N                   |       | 0916 | 4.22         | 4.90                |                     |                       |             |         |
| HERS        | 03          | 0920E | 0925D |            | N16      | W22        | .528             |                     | 1.7     | 5D               | -N                   |       | 0921 | .31          | .60                 |                     | E                     |             |         |
| CAPF        | 03          | 0940  | 1000D |            | S22      | E24        | .461             | 8711                | 5.2     | 20D              | 1N                   |       | 0946 | 2.94         | 3.28                |                     |                       |             |         |
| MONT        | 03          | 0943  | 1020  | 0950       | S20      | E20        | .394             |                     | 4.9     | 37               | -N                   |       | 0950 | 1.03         |                     |                     | OE                    |             |         |
| ARCE        | 03          | 0945  | 1000D |            | S24      | E25        | .488             | 8711                | 5.3     | 15D              | 1N                   |       | 0949 | 2.77         | 3.20                |                     | F                     |             |         |
| CAPS        | 03          | 0952E | 1002  |            | S22      | E26        | .486             | 8711                | 5.4     | 10D              | 1F                   | 2     | 0954 | 2.20         | 2.50                |                     | E                     |             |         |
| MCMA        | 03          | 1527  | 1539  | 1535       | N21      | W66        | .943             | 8704                | 26.7    | 12               | -N                   |       | 1535 | .62          | 1.80                |                     | E                     |             |         |
| SACP        | 03          | 1528  | 1543  | 1535       | N21      | W66        | .943             | 8704                | 26.7    | 15               | 1N                   |       |      | 1.26         | 2.44                |                     |                       |             |         |
| SACP        | 03          | 1636  | 1651  | 1641       | N21      | W67        | .949             |                     | 26.7    | 15               | -N                   |       |      | .55          | 1.08                |                     |                       |             |         |
| SACP        | 03          | 1658  | 1712  | 1704       | N28      | W58        | .914             | 8704                | 27.4    | 14               | 1N                   |       |      | 1.91         | 3.22                |                     |                       |             |         |
| MCMA        | 03          | 1705E | 1708D |            | N28      | W58        | .914             | 8704                | 27.4    | 3D               | -B                   |       | 1705 | .62          | 1.60                |                     | EH                    |             |         |
| SACP        | 03          | 1740  | 1756  | 1747       | N21      | W67        | .949             | 8704                | 26.7    | 16               | 1N                   |       |      | 1.08         | 2.12                |                     |                       |             |         |
| MCMA        | 03          | 1743  | 1757  | 1748       | N21      | W75        | .981             | 8704                | 26.1    | 14               | -N                   |       | 1748 |              |                     |                     | E                     |             |         |



SOLAR FLARES  
PRELIMINARY  
MARCH 1967

| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION     |            |                  |                     |         | DURATION<br>MIN. | IM-<br>POR-<br>TANCE | OBS.  |      | MEASUREMENTS |                     |                     |                           | REMARKS |
|-------------|-------------|-------|-------|------------|--------------|------------|------------------|---------------------|---------|------------------|----------------------|-------|------|--------------|---------------------|---------------------|---------------------------|---------|
|             | DATE        | START | END   | MAX. PHASE | APPROX. LAT. | MER. DIST. | CENTRAL DISTANCE | MCMATH PLAGE REGION | CMP DAY |                  |                      | COND. | TYPE | TIME UT      | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH H <sub>0</sub> |         |
|             | 1967        |       |       |            |              |            |                  |                     |         |                  |                      |       |      |              |                     |                     |                           |         |
|             | MAR         |       |       |            |              |            |                  |                     |         |                  |                      |       |      |              |                     |                     |                           |         |
| SACP        | 03          | 1755  | 1806  | 1759       | S20          | E78        | .972             |                     | 9.6     | 11               | -F                   | C     |      |              | .72                 | 1.68                |                           |         |
| MCMA        | 03          | 1755  | 1815  | 1808       | S20          | E78        | .972             | 8716                | 9.6     | 20               | 1N                   | C     | 1808 |              |                     |                     |                           | E       |
| HUAN        | 03          | 1925  | 1936  |            | N20          | W70        | .961             |                     | 26.6    | 11               | -F                   | 1 C   | 1930 | .31          |                     |                     |                           | D       |
| MCMA        | 03          | 1958  | 2007  | 2000       | N20          | W78        | .989             | 8704                | 26.0    | 9                | -F                   | C     | 2000 |              |                     |                     |                           | E       |
| SACP        | 03          | 1958  | 2009  | 2000       | N19          | W67        | .946             | 8704                | 26.8    | 11               | 1N                   | C     |      | 1.18         | 2.31                |                     |                           |         |
| SACP        | 03          | 2044  | 2056  | 2048       | N22          | W70        | .964             | 8704                | 26.6    | 12               | 1N                   | C     |      | 1.26         | 2.76                |                     |                           |         |
| MCMA        | 03          | 2045E | 2053  | 2047       | N20          | W78        | .989             | 8704                | 26.0    | 80               | -B                   | C     | 2047 |              |                     |                     |                           | E       |
| SACP        | 03          | 2108  | 2114  | 2110       | S20          | E75        | .959             | 8716                | 9.5     | 6                | 1N                   | C     |      | 1.19         | 2.48                |                     |                           |         |
| HUAN        | 03          | 2137E | 2150D |            | N20          | W70        | .961             |                     | 26.7    | 130              | -B                   | 1 P   | 2141 | 1.20         |                     |                     |                           | E       |
| SACP        | 03          | 2138  | 2148  | 2142       | N19          | W68        | .951             | 8704                | 26.8    | 10               | 1N                   | C     |      | 1.64         | 3.31                |                     |                           |         |
| HALE        | 03          | 2142E | 2202D | 2145U      | N20          | W62        | .919             |                     | 27.3    | 200              | -B                   | 1 P   | 2145 | .72          |                     |                     |                           |         |
| SACP        | 03          | 2303  | 2323  | 2309       | N23          | W72        | .972             | 8704                | 26.6    | 20               | 1N                   | C     |      | 2.02         | 4.66                |                     |                           |         |
| MONT        | 04          | 0717E | 0730  |            | S20          | E76        | .963             | 8716                | 10.0    | 130              | 1N                   | C     | 0717 | 2.06         |                     |                     |                           | O       |
| WEND        | 04          | 0718E | 0733  |            | N22          | W74        | .978             | 8704                | 26.8    | 150              | 1N                   | V     |      | 4.13         |                     |                     |                           |         |
| MONT        | 04          | 0721  | 0732  | 0724       | N21          | W76        | .984             | 8704                | 26.6    | 11               | 1B                   | C     | 0724 | 1.03         |                     |                     |                           | OH      |
| WEND        | 04          | 0746  | 0813  |            | N23          | W65        | .942             | 8704                | 27.4    | 27               | 2N                   | V     |      | 6.19         |                     |                     |                           |         |
| CATA        | 04          | 0750E | 0805D | 0756       | N28          | W70        | .971             | 8704                | 27.1    | 150              | 1B                   | V     | 0756 | .70          |                     |                     | 204                       |         |
| MONT        | 04          | 0823  | 0831  |            | N21          | W76        | .984             | 8704                | 26.6    | 8                | 1N                   | C     | 0828 | 1.03         |                     |                     |                           | OH      |
| WEND        | 04          | 0824E | 0852  |            | N22          | W74        | .978             | 8704                | 26.8    | 280              | 2N                   | V     |      | 10.31        |                     |                     |                           |         |
| CATA        | 04          | 0830E | 0845D | 0830       | N24          | W80        | .994             | 8704                | 26.4    | 150              | 2B                   | V     | 0830 | 1.92         |                     |                     | 207                       |         |
| ARCE        | 04          | 0830  | 0845  | 0833       | N14          | W85        | .999             | 8704                | 26.0    | 15               | 1N                   | C     | 0833 | .57          | 2.30                |                     |                           | A       |
| CAPF        | 04          | 0831  | 0917D |            | N21          | W80        | .993             | 8704                | 26.4    | 460              | 2N                   | V     | 0836 | 1.76         |                     |                     |                           | H       |
| MONT        | 04          | 0833  | 0850  | 0837       | S20          | E76        | .963             | 8716                | 10.1    | 17               | 1F                   | C     | 0837 | 1.55         |                     |                     |                           | O       |
| CATA        | 04          | 0835E | 0845D | 0836       | S22          | E73        | .949             |                     | 9.8     | 100              | -B                   | C     | 0836 | .51          |                     |                     | 254                       |         |
| CAPF        | 04          | 0837  | 0850  |            | S22          | E78        | .971             | 8716                | 10.2    | 13               | 1N                   | V     | 0838 | 1.76         |                     |                     |                           |         |
| ARCE        | 04          | 0840  | 0845  |            | S22          | E71        | .938             | 8716                | 9.7     | 5                | 1N                   | C     | 0840 | 1.52         |                     |                     |                           |         |
| ARCE        | 04          |       |       |            |              |            |                  |                     |         |                  |                      |       |      | .95          | 2.20                |                     |                           |         |
| MONT        | 04          | 0920  | 0925  | 0922       | N21          | W77        | .987             | 8704                | 26.6    | 5                | 1N                   | C     | 0922 | .83          |                     |                     |                           | O       |
| WEND        | 04          | 0953E | 1007  |            | N16          | W34        | .655             | 8707                | 1.9     | 140              | 1F                   | V     |      | 3.09         |                     |                     |                           |         |
| MONT        | 04          | 0954  | 1005  | 0956       | N17          | W37        | .693             | 8707                | 1.6     | 11               | 1N                   | C     | 0956 | 1.03         |                     |                     |                           | O       |
| WEND        | 04          | 0956  | 1120  |            | S21          | E08        | .272             | 8711                | 5.0     | 84               | 2N                   | V     |      | 7.22         |                     |                     |                           |         |
| WEND        | 04          | 0959  | 1023  |            | N23          | W67        | .952             | 8704                | 27.4    | 24               | 1F                   | V     |      | 3.09         |                     |                     |                           |         |
| CAPF        | 04          | 1003E | 1030D |            | N21          | W85        | .999             | 8704                | 26.0    | 270              | 1N                   | V     | 1006 | .88          |                     |                     |                           | H       |
| MONT        | 04          | 1014  | 1120  | 1050       | S21          | E09        | .280             |                     | 5.1     | 66               | -B                   | C     | 1050 | 1.55         |                     |                     |                           | O       |
| CAPS        | 04          | 1019E | 1034D |            | S22          | E11        | .312             |                     | 5.3     | 150              | -F                   | 3 C   | 1022 | .70          | .70                 |                     | 146                       | C       |
| CAPS        | 04          | 1043  | 1107  |            | S20          | E08        | .258             | 8711                | 5.0     | 24               | 1B                   | 3 C   | 1045 | 2.50         | 2.50                |                     | 204                       |         |
| CAPF        | 04          | 1058E | 1115D |            | S21          | E12        | .309             |                     | 5.4     | 170              | -N                   | V     | 1101 | 2.35         | .25                 |                     |                           |         |
| CATA        | 04          | 1100E | 1200D | 1104       | S21          | E10        | .289             | 8711                | 5.2     | 600              | 1N                   | V     | 1104 | 2.56         | 2.70                |                     | 158                       |         |
| WEND        | 04          | 1210  | 1223  | 1213       | S25          | W66        | .908             | 8703                | 27.6    | 13               | 1B                   | V     |      | 4.64         |                     |                     |                           |         |
| CAPS        | 04          | 1213  | 1220  |            | N23          | W61        | .919             |                     | 27.9    | 7                | -B                   | 3 C   | 1215 | 1.00         |                     |                     | 208                       | DV      |
| MONT        | 04          | 1213  | 1300  | 1225       | N26          | W62        | .932             | 8704                | 27.9    | 47               | 1N                   | C     | 1225 | 1.55         |                     |                     |                           | O       |
| MONT        | 04          | 1240  | 1310  | 1247       | S20          | E75        | .959             | 8716                | 10.2    | 30               | 1N                   | C     | 1247 | 1.03         |                     |                     |                           | O       |
| WEND        | 04          | 1314  | 1342  |            | N14          | E12        | .412             | 8714                | 5.5     | 28               | 1N                   | C     |      | 4.13         |                     |                     |                           |         |
| WEND        | 04          | 1320  | 1420  |            | S18          | E68        | .920             | 8716                | 9.7     | 60               | 2B                   | V     |      | 12.38        |                     |                     |                           |         |
| MCMA        | 04          | 1321  | 1341D | 1327       | S17          | E66        | .906             | 8716                | 9.5     | 200              | -B                   | C     | 1327 | .72          | 1.70                |                     |                           | E       |
| CAPS        | 04          | 1322E | 1352  |            | S16          | E67        | .913             | 8716                | 9.6     | 300              | 1B                   | 3 C   | 1326 | 2.00         |                     |                     | 234                       | C       |
| MONT        | 04          | 1322  | 1358  | 1328       | S20          | E74        | .954             | 8716                | 10.1    | 36               | 1B                   | C     | 1328 | 1.24         |                     |                     |                           |         |
| WEND        | 04          | 1332  | 1357  |            | N16          | W34        | .655             | 8707                | 2.0     | 25               | 1F                   | V     |      | 3.09         |                     |                     |                           |         |
| MONT        | 04          | 1340  | 1347  |            | N17          | W37        | .693             |                     | 1.8     | 7                | -N                   | C     | 1344 | .41          |                     |                     |                           | O       |
| HUAN        | 04          | 1345E | 1352D |            | N17          | W36        | .683             |                     | 1.9     | 70               | -F                   | 1 P   | 1345 | .90          | 1.01                |                     |                           |         |
| SACP        | 04          | 1355E | 1518U | 1402E      | S19          | E68        | .920             | 8716                | 9.7     | 83U              | 1F                   | C     |      | 1.66         | 2.86                |                     |                           |         |
| MONT        | 04          | 1421  | 1430D |            | S20          | E74        | .954             | 8716                | 10.1    | 90               | 1N                   | C     | 1425 | 1.03         |                     |                     |                           | O       |
| SACP        | 04          | 1424  | 1510  | 1427       | N20          | W79        | .991             | 8704                | 26.7    | 46               | 1N                   | C     |      | 1.63         |                     |                     |                           |         |
| WEND        | 04          | 1425  | 1500  |            | N22          | W80        | .994             | 8704                | 26.6    | 35               | 2N                   | V     |      | 8.25         |                     |                     |                           |         |
| HUAN        | 04          | 1446  | 1507  |            | N20          | W88        | 1.000            |                     | 26.0    | 21               | -F                   | 1 C   | 1455 | .50          |                     |                     |                           | D       |
| HUAN        | 04          | 1643  | 1646D |            | N20          | W88        | 1.000            |                     | 26.1    | 30               | -F                   | 1 P   | 1644 | .52          |                     |                     |                           | D       |
| SACP        | 04          | 1656  | 1706  | 1700       | N23          | W82        | .997             | 8704                | 26.6    | 10               | 1N                   | C     |      | .81          |                     |                     |                           |         |
| HUAN        | 04          | 1657  | 1702D |            | N23          | W88        | 1.000            |                     | 26.1    | 50               | -F                   | 1 P   | 1658 | .31          |                     |                     |                           | D       |
| SACP        | 04          | 1715  | 1734  | 1716       | N25          | W69        | .963             | 8704                | 27.5    | 19               | 1B                   | C     |      | 1.54         | 3.28                |                     |                           |         |
| HALE        | 04          | 1717  | 1734  | 1718       | N23          | W67        | .952             | 8704                | 27.7    | 17               | 1B                   | 5 C   | 1718 | 1.03         |                     |                     |                           |         |
| HALE        | 04          |       |       |            |              |            |                  |                     |         |                  |                      | 2 C   | 1723 | 1.24         |                     |                     |                           |         |
| LOCK        | 04          | 1906  | 1955  | 1923       | S21          | E08        | .272             | 8711                | 5.4     | 49               | 1N                   | C     | 1923 | 4.00         | 4.40                |                     | 20                        |         |
| HALE        | 04          | 1911  | 2000  | 1918       | S23          | E05        | .284             |                     | 5.2     | 49               | -B                   | 2 C   | 1918 | 1.75         | 1.80                |                     |                           | F       |
| SACP        | 04          | 1913  | 1952  | 1922       | S23          | E05        | .284             | 8711                | 5.2     | 39               | 2N                   | C     |      | 7.18         | 7.06                |                     |                           |         |
| SACP        | 04          | 2102  | 2126  | 2107       | S25          | E03        | .309             | 8711                | 5.1     | 24               | 1B                   | C     |      | 4.64         | 4.57                |                     |                           |         |
| HALE        | 04          | 2104  | 2130  | 2108       | S23          | E02        | .274             | 8711                | 5.0     | 26               | 1B                   | 2 C   | 2108 | 2.06         | 2.10                |                     |                           |         |
| CATA        | 05          | 0716E | 0720D | 0716       | S24          | W01        | .289             | 8711                | 5.2     | 40               | 1B                   | C     | 0716 | 2.29         | 2.40                |                     | 302                       |         |
| CAPS        | 05          | 0717E | 0723  |            | S23          | E03        | .276             |                     | 5.5     | 60               | -F                   | 2 C   | 0719 | 1.20         | 1.20                |                     | 142                       | C       |
| WEND        | 05          | 0727E | 0747  |            | S21          | W03        | .243             | 8711                | 5.1     | 200              | 1N                   | V     |      | 5.16         |                     |                     |                           |         |
| CAPS        | 05          | 0731  | 0742  |            | S19          | W01        | .204             |                     | 5.2     | 11               | -B                   | 3 C   | 0734 | 1.40         | 1.40                |                     | 152                       |         |
| CATA        | 05          | 0731E | 0750D | 0740       | S20          | W00        | .221             |                     | 5.3     | 190              | -B                   | C     | 0740 | 1.42         | 1.40                |                     | 245                       |         |
| WEND        | 05          | 0826  | 0846  |            | S23          | W02        | .273             | 8711                | 5.2     | 20               | 1F                   | V     |      | 3.09         |                     |                     |                           |         |
| CAPF        | 05          | 0841  | 0905  |            | S19          | W10        | .263             | 8711                | 4.6     | 24               | 1N                   | V     | 0842 | 4.22         | 4.29                |                     |                           |         |
| WEND        | 05          | 0847  | 0903  |            | S19          | W09        | .253             | 8711                | 4.7     | 16               | 1N                   | V     |      | 3.09         |                     |                     |                           |         |
| CAPS        | 05          | 0850E | 0900  |            | S18          | W07        | .220             |                     | 4.8     | 100              | -N                   | 3 C   | 0853 | 1.30         | 1.30                |                     |                           | CE      |
| ARCE        | 05          | 0850  | 0900  | 0852       | S18          | W11        | .262             |                     | 4.5     | 10               | -N                   | C     | 0852 | .72          | .80                 |                     |                           | H       |
| CATA        | 05          | 0851E | 0905D | 0852       | S19          | W11        | .2               |                     |         |                  |                      |       |      |              |                     |                     |                           |         |



# SOLAR FLARES

PRELIMINARY

MARCH 1967

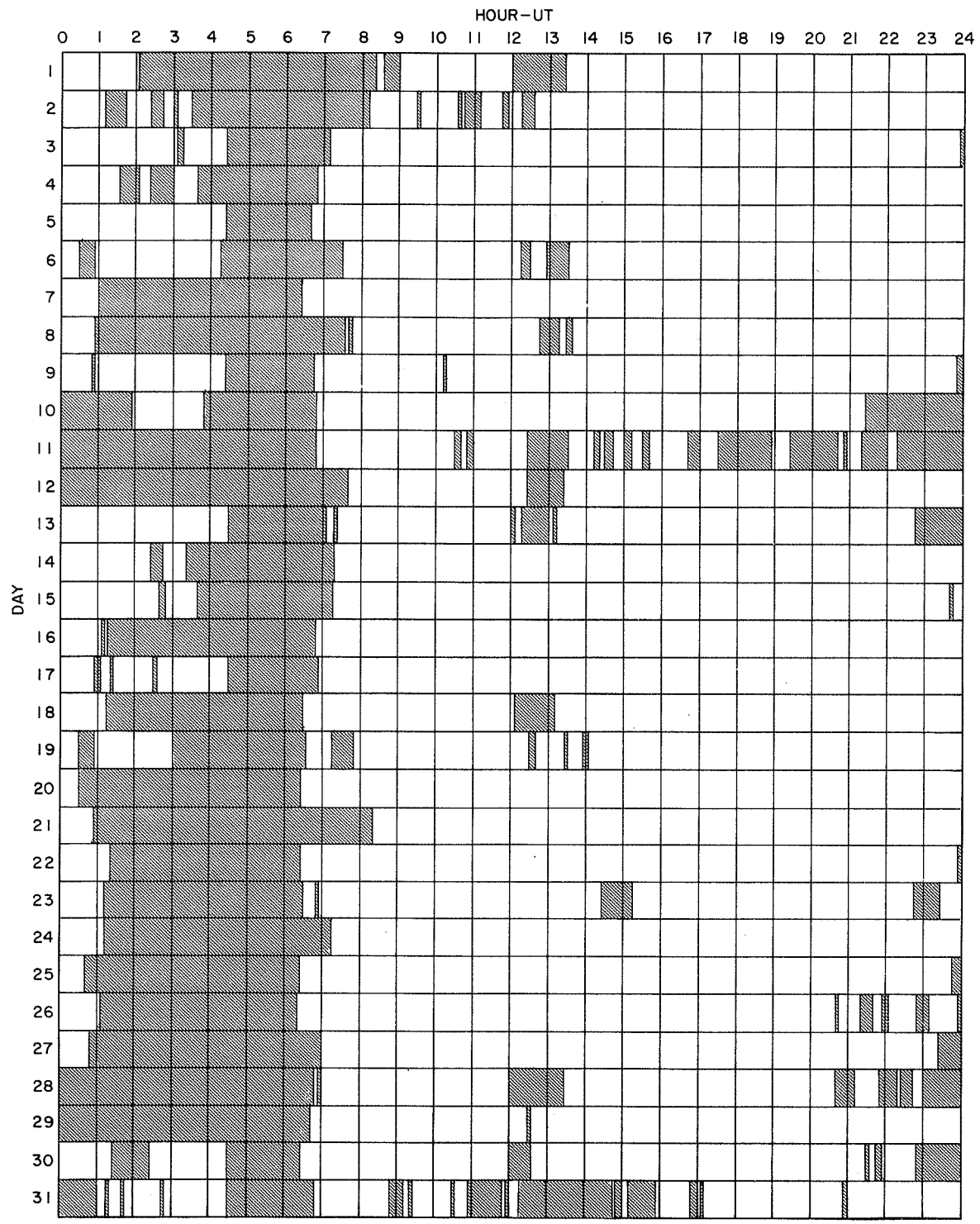
| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION |            |                  |                      |         | DURATION<br>MIN. | IM-POR-TANCE | OBS. COND. TYPE | MEASUREMENTS |                     |                     |               |             | REMARKS |
|-------------|-------------|-------|-------|------------|----------|------------|------------------|----------------------|---------|------------------|--------------|-----------------|--------------|---------------------|---------------------|---------------|-------------|---------|
|             | DATE        | START | END   | MAX. PHASE | APPROX.  |            | CENTRAL DISTANCE | MC MATH PLAGE REGION | CMP DAY |                  |              |                 | TIME UT      | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH Ha | MAX. INT. % |         |
|             |             |       |       |            | LAT.     | MER. DIST. |                  |                      |         |                  |              |                 |              |                     |                     |               |             |         |
|             | 1967        |       |       |            |          |            |                  |                      |         |                  |              |                 |              |                     |                     |               |             |         |
|             | MAR         |       |       |            |          |            |                  |                      |         |                  |              |                 |              |                     |                     |               |             |         |
| LOCK ARCE   | 22          | 0025  | 0120D | 0033       | N25      | E68        | .958             | 8740                 | 27.1    | 55D              | 3B           | C               | 0033         | 4.70                | 12.70               |               | 30          | L       |
|             | 22          | 0942E | 1005D |            | N25      | E51        | .857             | 8740                 | 26.2    | 23D              | 1N           | C               | 1005         | 1.04                | 2.00                |               |             | Z       |
| MCMA        | 23          | 1827  | 1910D | 1853       | N22      | E46        | .804             | 8740                 | 27.2    | 43D              | 1N           | C               | 1853         | 1.29                | 2.10                |               |             | EH      |
| HUAN        | 23          | 1849E | 2007D |            | N24      | E30        | .677             | 8740                 | 26.0    | 78D              | 1B           | 1 P             | 1931         | 4.02                | 4.65                |               |             | H       |
| LOCK        | 23          | 1915  | 2018  | 1934       | N26      | E31        | .702             | 8740                 | 26.1    | 63               | 1B           | C               | 1934         | 2.50                | 3.10                |               | 30          | H       |
| MCMA        | 23          | 1920  | 2015  | 1930       | N22      | E46        | .804             | 8740                 | 27.3    | 55               | 2B           | C               | 1930         | 3.09                | 5.00                |               |             | F       |
| SACP        | 23          | 2327  | 2358  | 2333       | N26      | E42        | .792             | 8740                 | 27.1    | 31               | 1B           | C               |              | 3.30                | 4.26                |               |             |         |
| ISTA        | 24          | 0715E | 0835  |            | N22      | W90        | 1.001            | 8731                 | 17.6    | 80D              | 1N           |                 |              |                     |                     |               |             |         |
| ISTA        | 24          | 0730  | 0805  |            | N27      | E40        | .782             |                      | 27.3    | 35               | -N           |                 |              |                     |                     |               |             |         |
| MONT        | 24          | 0734E | 0900  | 0845       | N23      | E40        | .757             | 8740                 | 27.3    | 86D              | 1N           |                 | 0845         | 2.06                |                     |               |             | OE      |
| ISTA        | 24          | 0735  | 0800  |            | N26      | E41        | .784             |                      | 27.4    | 25               | -N           |                 |              |                     |                     |               |             |         |
| CATA        | 24          | 0745E | 0810D | 0750       | N22      | E36        | .715             | 8740                 | 27.0    | 25D              | 1B           |                 | 0750         | 2.55                | 3.60                |               | 296         |         |
| ARCE        | 24          | 0800E | 0835D |            | N27      | E41        | .790             | 8740                 | 27.4    | 35D              | 1N           | C               | 0800         | 1.93                | 3.10                |               |             |         |
| ARCE        | 24          | 0800E | 1000D |            | N18      | W85        | .999             |                      | 18.0    | 120D             | -N           | C               | 0800         | .35                 | 1.50                |               |             |         |
| ARCE        | 24          |       |       |            |          |            |                  |                      |         |                  |              |                 | 0950         | 1.26                |                     |               |             |         |
| CATA        | 24          | 0810E | 1020D | 0810       | N20      | W85        | .999             | 8731                 | 18.0    | 130D             | 1B           |                 | 0810         | .78                 |                     |               |             | 269     |
| WEND        | 25          | 0706E | 0731  |            | N23      | E26        | .632             | 8740                 | 27.2    | 25D              | 1N           | V               |              | 4.13                |                     |               |             |         |
| CAPS        | 25          | 0711E | 0725  |            | N20      | E30        | .642             | 8740                 | 27.5    | 14D              | 1F           | 3               | 0715         | 4.00                | 5.00                |               | 152         | CE      |
| WEND        | 25          | 1007E | 1026  |            | S19      | W87        | .996             | 8727                 | 18.9    | 19D              | 1N           | V               |              | 4.13                |                     |               |             |         |
| MONT        | 25          | 1031E | 1034D |            | N25      | W27        | .660             |                      | 23.4    | 3D               | -B           |                 | 1031         | .62                 |                     |               |             | O       |
| CAPS        | 25          | 1032E | 1039  |            | N22      | W26        | .623             | 8733                 | 23.5    | 7D               | 1F           | 3               | 1035         | 1.70                | 2.20                |               | 152         | C       |
| CAPS        | 25          | 1135E | 1154D |            | N25      | E12        | .559             | 8740                 | 26.4    | 19D              | 1N           | 3               | 1149         | 2.90                | 3.50                |               | 164         | CEH     |
| MONT        | 25          | 1145  | 1210  | 1148       | N28      | E13        | .603             |                      | 26.5    | 25               | -B           |                 | 1148         | 1.03                |                     |               |             | O       |
| CAPS        | 25          | 1226E | 1238  |            | S17      | E77        | .969             | 8745                 | 31.3    | 12D              | 1N           | 3               | 1229         | .90                 |                     |               |             | CE      |
| WEND        | 25          | 1246E | 1312  |            | N27      | E09        | .573             | 8740                 | 26.2    | 26D              | 1F           | V               |              | 3.09                |                     |               |             |         |
| CAPF        | 25          | 1246E | 1313  |            | N26      | E18        | .605             |                      | 26.9    | 27D              | -F           | V               | 1250         | .59                 | .74                 |               |             |         |
| CAPF        | 25          | 1246  | 1315D |            | S27      | E90        | .999             | 8727                 | 1.3     | 29D              | 1N           | V               | 1250         | .59                 |                     |               |             | L       |
| LOCK        | 25          | 1852  | 2020  | 1915       | N27      | E16        | .605             | 8740                 | 27.0    | 88               | 1B           | C               | 1915         | 2.70                | 3.50                |               | 20          | L       |
| MCMA        | 25          | 1856  | 2027  | 1914       | N25      | E24        | .636             | 8740                 | 27.6    | 91               | 1N           | C               | 1914         | 1.86                | 2.50                |               |             | FL      |
| HUAN        | 25          | 1900  | 1932  |            | N28      | E22        | .654             |                      | 27.4    | 32               | -N           | 1 C             | 1910         | 1.28                | 1.43                |               |             | E       |
| SACP        | 25          | 1929E | 2024D | 1929U      | N26      | E19        | .612             | 8740                 | 27.2    | 55D              | 1N           | C               |              | 3.28                | 3.58                |               |             |         |
| HUAN        | 25          | 1934  | 1953  | 1939       | N26      | E12        | .572             |                      | 26.7    | 19               | -N           | 2 C             | 1939         | .41                 | .44                 |               |             | D       |
| HUAN        | 25          | 1947  | 2000D |            | N24      | E12        | .545             |                      | 26.7    | 13D              | -F           | 1 C             | 1948         | .25                 | .26                 |               |             | D       |
| CAPS        | 26          | 0634E | 0657  |            | N23      | E13        | .536             | 8740                 | 27.2    | 23D              | 1N           | 2               | 0639         | 1.70                | 2.00                |               | 182         | CE      |
| CAPS        | 26          | 0656E | 0725  |            | N25      | W41        | .778             | 8733                 | 23.2    | 29D              | 1F           | 3               | 0710         | 3.00                | 4.50                |               | 149         |         |
| WEND        | 26          | 0658E | 0726  |            | N25      | W36        | .735             | 8733                 | 23.6    | 28D              | 1F           | V               |              | 5.16                |                     |               |             |         |
| CAPS        | 26          | 0702E | 0717  |            | S19      | E71        | .939             | 8745                 | 31.6    | 15D              | 1N           | 3               | 0705         | 1.60                |                     |               | 166         | CE      |
| CATA        | 26          | 0705E | 0720D | 0710       | S20      | E68        | .921             |                      | 31.4    | 15D              | -B           |                 | 0710         | .57                 |                     |               |             | 224     |
| WEND        | 26          | 0707E | 0723  |            | S19      | E67        | .914             | 8745                 | 31.3    | 16D              | 1N           | V               |              | 3.09                |                     |               |             |         |
| CAPS        | 26          | 0743E | 0755  |            | N21      | E05        | .474             |                      | 26.7    | 12D              | -B           | 3               | 0748         | 1.60                | 1.80                |               | 204         | C       |
| CATA        | 26          | 0743E | 0755D | 0745       | N22      | E08        | .498             |                      | 26.9    | 12D              | -B           |                 | 0745         | .94                 | 1.00                |               | 313         |         |
| CAPF        | 26          | 0745E | 0758  |            | N20      | E13        | .496             | 8740                 | 27.3    | 13D              | 1N           | V               | 0747         | 1.76                | 2.05                |               |             |         |
| ISTA        | 26          | 0745E | 0805  |            | N23      | E06        | .506             |                      | 26.8    | 20D              | -N           |                 |              |                     |                     |               |             |         |
| ISTA        | 26          | 0800  | 0945D |            | N22      | W03        | .485             |                      | 26.1    | 105D             | -N           |                 |              |                     |                     |               |             |         |
| MONT        | 26          | 0828E | 0930  |            | N23      | E00        | .498             |                      | 26.4    | 62D              | -B           |                 | 0830         | .41                 |                     |               |             | O       |
| CAPS        | 26          | 0915E | 0951  |            | N21      | W02        | .468             | 8740                 | 26.2    | 36D              | 1N           | 3               | 0930         | 2.00                | 2.20                |               | 164         | CE      |
| CATA        | 26          | 0915E | 0955D | 0930       | N21      | E01        | .467             |                      | 26.5    | 40D              | -B           |                 | 0930         | 1.55                | 1.70                |               | 327         |         |
| WEND        | 26          | 0918  | 0955  |            | N21      | W03        | .469             | 8740                 | 26.2    | 37               | 1N           | V               |              | 3.09                |                     |               |             |         |
| WEND        | 26          | 1400E | 1420D |            | S19      | E65        | .900             | 8745                 | 31.5    | 20D              | 1N           | V               |              | 4.13                |                     |               |             |         |
| SACP        | 26          | 1400  | 1428  | 1412       | S19      | E66        | .907             | 8745                 | 31.5    | 28               | 1F           | C               |              | 1.91                | 3.16                |               |             |         |
| MCMA        | 26          | 1403  | 1425  | 1415       | S19      | E67        | .914             | 8745                 | 31.6    | 22               | -N           | C               | 1415         | .62                 | 1.60                |               |             | E       |
| CAPS        | 26          | 1405E | 1428  |            | S15      | E68        | .921             | 8745                 | 31.7    | 23D              | 1N           | 3               | 1418         | 1.50                |                     |               | 170         | C       |
| CAPF        | 26          | 1416E | 1426D |            | S20      | E64        | .893             | 8745                 | 31.4    | 10D              | 1N           | V               | 1417         | 1.18                | 2.51                |               |             |         |
| SACP        | 26          | 1413  | 1429  | 1422       | N25      | W02        | .528             | 8740                 | 26.4    | 16               | 1F           | C               |              | 2.38                | 2.49                |               |             |         |
| MCMA        | 26          | 1415  | 1425  | 1420       | N26      | W03        | .544             | 8740                 | 26.4    | 10               | -N           | C               | 1420         | .52                 | .60                 |               |             | E       |
| HUAN        | 26          | 1416  | 1426  | 1421       | N26      | W03        | .544             |                      | 26.4    | 10               | -N           | 2 C             | 1421         | .58                 | .60                 |               |             | E       |
| CAPS        | 26          | 1420  | 1425  |            | N24      | W04        | .516             |                      | 26.3    | 5                | 1F           | 3               | 1421         | 2.20                | 2.50                |               | 142         |         |
| SACP        | 26          | 1446  | 1514  | 1451       | N21      | W07        | .480             | 8740                 | 26.1    | 28               | 1N           | C               |              | 4.65                | 4.78                |               |             |         |
| HUAN        | 26          | 1448  | 1512  | 1451       | N21      | W07        | .480             | 8740                 | 26.1    | 24               | 1N           | 2 C             | 1451         | 2.27                | 2.33                |               |             | H       |
| CAPS        | 26          | 1450E | 1502  |            | N20      | W09        | .474             |                      | 25.9    | 12D              | 1B           | 3               | 1452         | 4.00                | 4.60                |               |             | CV      |
| SACP        | 26          | 1541  | 1758  | 1655       | N25      | E05        | .533             | 8740                 | 27.0    | 137              | 3B           | C               |              | 16.43               | 17.26               |               |             |         |
| HUAN        | 26          | 1542  | 1623  | 1606       | N24      | E02        | .514             | 8740                 | 26.8    | 41               | 1N           | 2 C             | 1606         | 2.51                | 2.60                |               |             | E       |
| CAPS        | 26          | 1546  | 1559  |            | N24      | E01        | .513             |                      | 26.7    | 13               | -N           | 3               | 1555         |                     |                     |               | 170         | E       |
| MCMA        | 26          | 1603  | 1620  | 1605       | N24      | E04        | .516             | 8740                 | 27.0    | 17               | -B           | C               | 1605         | 1.55                | 1.80                |               |             | EL      |
| CAPS        | 26          | 1604  | 1619  |            | N24      | E01        | .513             | 8740                 | 26.7    | 15               | 1B           | 3               | 1607         | 3.00                | 3.50                |               | 220         | F       |
| MCMA        | 26          | 1630  | 1743  | 1650       | N28      | E07        | .581             | 8740                 | 27.2    | 73               | 3N           | C               | 1650         | 10.31               | 13.00               |               |             | FIL     |
| HUAN        | 26          | 1638E | 1723D |            | N25      | E03        | .530             | 8740                 | 26.9    | 45D              | 2N           | 1 P             | 1700         | 9.02                | 9.55                |               |             | L       |
| HALE        | 26          | 1711E | 1815  | 1711U      | N26      | E05        | .548             | 8740                 | 27.1    | 64D              | 2N           | 1 P             | 1711         | 8.66                | 10.40               |               |             | FI      |
| SACP        | 26          | 1830  | 1843  | 1835       | N25      | W64        | .939             | 8733                 | 22.0    | 13               | 1F           | C               |              | 2.37                | 4.45                |               |             |         |
| LOCK        | 26          | 1830  | 1850  | 1835       | N24      | W66        | .947             | 8733                 | 21.8    | 20               | 1N           | C               | 1835         | 1.40                | 3.50                |               | 20          | L       |
| HUAN        | 26          | 1832  | 1837  |            | N27      | W68        | .961             |                      | 21.7    | 5                | -N           | 1 C             | 1834         | .93                 | 1.50                |               |             | E       |
| CAPS        | 27          | 1233  | 1308  |            | S19      | E52        | .787             | 8745                 | 31.4    | 35               | 1N           | 3               | 1247         | 1.50                | 2.60                |               | 170         | E       |
| CAPF        | 27          | 1243E | 1308D |            | S19      | E53        | .797             |                      | 31.5    | 25D              | -N           | V               | 1244         | 1.76                | 1.37                |               |             |         |
| SACP        | 27          | 1443  | 1508  | 1455       | N24      | W05        | .518             | 8740                 | 27.2    | 25               | 1N           | C               |              | 2.02                | 2.11                |               |             |         |
| CAPS        | 27          | 1445  |       |            |          |            |                  |                      |         |                  |              |                 |              |                     |                     |               |             |         |

SOLAR FLARES  
PRELIMINARY  
MARCH 1967

| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION     |            |                  |                     | DURATION<br>MIN. | IM-<br>POR-<br>TANCE | OBS.<br>COND. TYPE | MEASUREMENTS |         |                     |                     |               | REMARKS |             |
|-------------|-------------|-------|-------|------------|--------------|------------|------------------|---------------------|------------------|----------------------|--------------------|--------------|---------|---------------------|---------------------|---------------|---------|-------------|
|             | DATE        | START | END   | MAX. PHASE | APPROX. LAT. | MER. DIST. | CENTRAL DISTANCE | MCMATH PLAGE REGION |                  |                      |                    | CMP DAY      | TIME UT | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH Ha |         | MAX. INT. % |
|             | 1967 MAR    |       |       |            |              |            |                  |                     |                  |                      |                    |              |         |                     |                     |               |         |             |
| CAPS        | 27          | 1551  | 1635D |            | N23          | W08        | .512             | 8740                | 27.1             | 44D                  | 1N                 | 2            | 1631    | 3.20                | 3.80                |               | 170     | FW          |
| CAPF        | 27          | 1558E | 1637  |            | N19          | W01        | .436             |                     | 27.6             | 39D                  | -N                 |              | V       | 1559                | 1.18                | 1.31          |         |             |
| HUAN        | 27          | 1558  | 1649D |            | N25          | W06        | .535             | 8740                | 27.2             | 51D                  | 1N                 | 1            | V       | 1613                | 2.99                | 3.14          |         | E           |
| SACP        | 27          | 1601  | 1653  | 1614       | N24          | W06        | .520             | 8740                | 27.2             | 52                   | 2N                 |              | C       |                     | 8.11                | 8.46          |         |             |
| CAPF        | 27          | 1605E | 1637  |            | N23          | W04        | .501             | 8740                | 27.4             | 32D                  | 1N                 |              | C       | 1617                | 3.53                | 4.11          |         | H           |
| LOCK        | 27          | 1716  | 1815  | 1730       | N22          | W23        | .596             | 8740                | 26.0             | 59                   | 1N                 |              | V       | 1730                | 2.10                | 2.70          |         | 20          |
| SACP        | 27          | 1720  | 1752  | 1730       | N25          | W23        | .628             | 8740                | 26.0             | 32                   | 1N                 |              | C       |                     | 2.38                | 2.62          |         |             |
| HUAN        | 27          | 1740E | 1745D |            | N26          | W24        | .646             |                     | 25.9             | 5D                   | -N                 | 1            | P       | 1740                | 1.00                | 1.13          |         | EH          |
| LOCK        | 27          | 2042  | 2112  | 2052       | N18          | E19        | .516             | 8741                | 29.3             | 30                   | 1F                 |              | C       | 2052                | 1.80                | 2.20          |         | 10          |
| HUAN        | 27          | 2045  | 2057  | 2048       | N19          | E20        | .537             |                     | 29.4             | 12                   | -F                 | 2            | C       | 2048                | .91                 | .96           |         |             |
| LOCK        | 27          | 2107  | 2205  | 2113       | N23          | W23        | .606             | 8740                | 26.2             | 58                   | 1B                 |              | C       | 2113                | 2.50                | 3.30          |         | 30          |
| LOCK        | 27          |       |       |            |              |            |                  |                     |                  |                      |                    |              | C       | 2129                |                     |               |         |             |
| HUAN        | 27          | 2121E | 2127D |            | N24          | W26        | .641             | 8740                | 25.9             | 6D                   | 1N                 | 1            | P       | 2127                | 1.96                | 2.18          |         | H           |
| SACP        | 27          | 2134E | 2136D | 2134E      | N23          | W24        | .615             | 8740                | 26.1             | 20                   | 1N                 |              | P       |                     | 2.63                | 2.87          |         |             |
| CAPS        | 28          | 1531E | 1550D |            | S23          | W25        | .485             | 8739                | 26.8             | 19D                  | 1N                 | 1            |         | 1533                | 3.50                | 4.00          |         | 164         |
| SACP        | 28          | 1731  | 1806  | 1740       | N24          | W36        | .727             | 8740                | 26.0             | 35                   | 1N                 |              | C       |                     | 2.13                | 2.56          |         |             |
| LOCK        | 28          | 1734  | 1752D | 1740       | N21          | W38        | .725             | 8740                | 25.9             | 18D                  | 1B                 |              | C       | 1740                | 2.70                | 4.10          |         | 30          |
| SACP        | 28          | 1909  | 1934  | 1916       | N25          | W33        | .709             | 8740                | 26.3             | 25                   | 1N                 |              | C       |                     | 2.11                | 2.50          |         |             |
| CATA        | 29          | 1156E | 1215D | 1200       | S28          | E36        | .645             | 8745                | 1.2              | 19D                  | 1N                 |              |         | 1200                | 2.72                | 3.60          |         | 191         |
| LOCK        | 29          | 1725  | 1817  | 1740       | N21          | W30        | .649             | 8740                | 27.5             | 52                   | 1B                 |              | C       | 1740                | 3.80                | 4.90          |         | 30          |
| MCMA        | 29          | 1727  | 1809  | 1735       | N21          | W28        | .630             | 8740                | 27.6             | 42                   | 1B                 |              | C       | 1735                | 1.55                | 2.10          |         | EH          |
| HUAN        | 29          | 1731  | 1831  | 1740       | N22          | W30        | .657             | 8740                | 27.5             | 60                   | 1B                 | 2            | C       | 1740                | 3.42                | 3.90          |         |             |
| HALE        | 29          | 1753E | 1835  | 1753U      | N21          | W30        | .649             | 8740                | 27.5             | 42D                  | 1B                 | 2            | C       | 1753                | 2.78                | 3.70          |         | FI          |
| HALE        | 29          | 1830  | 1840  | 1832       | N18          | E68        | .948             | 8752                | 3.9              | 10                   | 1N                 | 2            | C       | 1832                | .62                 |               |         |             |
| HUAN        | 29          | 2124  | 2127D |            | N18          | E68        | .948             |                     | 4.0              | 3D                   | -B                 | 1            | P       | 2127                | .55                 |               |         | D           |
| MCMA        | 29          | 2124  | 2129  | 2126       | N20          | E73        | .972             | 8752                | 4.4              | 5                    | -B                 |              | C       | 2126                | .52                 | 1.70          |         | D           |
| HALE        | 29          | 2125  | 2129  | 2127       | N17          | E67        | .942             | 8752                | 3.9              | 4                    | 1B                 | 2            | C       | 2127                | .93                 |               |         |             |
| LOCK        | 29          | 2125  | 2130  | 2127       | N15          | E66        | .933             | 8752                | 3.8              | 5                    | 1B                 |              | C       | 2127                | 1.00                | 2.30          |         | 30          |
| LOCK        | 29          | 2245  | 2312  | 2251       | N23          | W39        | .747             | 8740                | 27.0             | 27                   | 1B                 |              | C       | 2251                | 2.40                | 3.60          |         | 30          |
| LOCK        | 30          | 0022  | 0045  | 0024       | S25          | W41        | .685             | 8739                | 26.9             | 23                   | 1B                 |              | C       | 0024                | 2.10                | 2.90          |         | 30          |
| WEND        | 30          | 0755E | 0825  |            | N21          | W38        | .725             | 8740                | 27.5             | 30D                  | 1N                 |              | V       |                     | 4.13                |               |         |             |
| ISTA        | 30          | 0755  | 0835  |            | N20          | W37        | .708             | 8740                | 27.6             | 40                   | 1B                 |              |         |                     |                     |               |         |             |
| WEND        | 30          | 0804  | 0850D |            | N22          | W48        | .820             | 8740                | 26.7             | 46D                  | 1N                 |              | V       |                     | 3.09                |               |         |             |
| ISTA        | 30          | 0805  | 0840  |            | N22          | W48        | .820             |                     | 26.7             | 35                   | -N                 |              |         |                     |                     |               |         |             |
| ARCE        | 30          | 0810E | 0840  |            | N21          | W40        | .743             | 8740                | 27.3             | 30D                  | 1N                 |              | C       | 0810                | 1.61                | 2.40          |         | F           |
| ARCE        | 30          | 0814E | 0907D |            | N23          | W48        | .824             | 8740                | 26.7             | 53D                  | 2B                 |              | P       | 0907                | 4.67                | 8.10          |         | FZ          |
| ISTA        | 30          | 0825  | 0835  |            | N23          | W38        | .738             |                     | 27.5             | 10                   | -F                 |              |         |                     |                     |               |         |             |
| WEND        | 30          | 0851  | 0940  | 0901       | N24          | W46        | .812             | 8740                | 26.9             | 49                   | 2N                 |              | V       |                     | 10.31               |               |         |             |
| HERS        | 30          | 0855E | 0935  | 0902       | N23          | W47        | .816             | 8740                | 26.8             | 40D                  | 2B                 |              | C       | 0901                | 3.30                | 5.60          | 3.10    | 110         |
| ARCE        | 30          | 0856E | 0907D |            | N27          | W37        | .756             | 8740                | 27.6             | 11D                  | 1N                 |              | P       | 0907                | 1.73                | 2.70          |         | CF          |
| HALE        | 30          | 1920  | 1932  | 1929       | N18          | W50        | .821             |                     | 27.1             | 12                   | -N                 | 2            | C       | 1929                | .15                 | .30           |         |             |
| LOCK        | 30          | 1924  | 1930  | 1927       | N17          | W52        | .835             |                     | 26.9             | 6                    | -F                 |              | C       | 1927                | .30                 | .50           |         | 10          |
| HALE        | 30          | 1935  | 2015  | 1940       | N21          | W55        | .872             |                     | 26.7             | 40                   | -N                 | 1            | C       | 1940                | .31                 | .60           |         |             |
| LOCK        | 30          | 1936  | 2012  | 1940       | N20          | W54        | .861             | 8740                | 26.8             | 36                   | 1F                 |              | C       | 1940                | 1.20                | 2.20          |         | 10          |
| HALE        | 31          | 0353  | 0430D | 0400       | N27          | W64        | .942             | 8740                | 26.4             | 37D                  | 1B                 | 2            | C       | 0400                | .31                 |               |         | IK          |
| HALE        | 31          |       |       |            | N23          | W63        | .929             |                     |                  |                      | 2                  | P            |         | 0412                | 1.13                |               |         |             |
| HALE        | 31          | 0357  | 0409  | 0358       | S23          | W57        | .840             |                     | 26.9             | 12                   | -N                 | 2            | C       | 0358                | .15                 | .30           |         |             |
| HUAN        | 31          | 1201E | 1213D |            | N25          | E40        | .768             | 8751                | 3.5              | 12D                  | 1B                 | 1            | P       | 1206                | 2.37                | 3.00          |         | C           |
| CAPF        | 31          | 1602E | 1637  |            | S21          | W01        | .249             | 8745                | 31.6             | 35D                  | 1N                 |              | V       | 1622                | 2.58                | 2.63          |         | H           |
| MCMA        | 31          | 1610E | 1627D |            | S20          | W01        | .232             | 8745                | 31.6             | 17D                  | -N                 |              | C       | 1618                | .72                 | .72           |         | E           |
| HUAN        | 31          | 1622E | 1637D |            | N23          | W70        | .963             | 8740                | 26.4             | 15D                  | 1N                 | 1            | P       | 1631                | 1.63                |               |         |             |
| MCMA        | 31          | 1631E | 1648D |            | N20          | W67        | .946             | 8740                | 26.7             | 17D                  | 1B                 |              | P       | 1631                | 1.24                | 3.00          |         | EH          |
| CAPF        | 31          | 1635E | 1645D |            | N24          | W68        | .956             | 8740                | 26.6             | 10D                  | 1N                 |              | V       | 1639                | 1.76                |               |         |             |
| LOCK        | 31          | 1731E | 1732D | 1732U      | N17          | W64        | .924             | 8740                | 26.9             | 10                   | 1N                 |              | C       | 1732                | 1.00                | 2.30          |         | 20          |
| LOCK        | 31          | 1731E | 1732D | 1732U      | N29          | W57        | .909             | 8740                | 27.5             | 1D                   | 1N                 |              | C       | 1732                | 1.20                | 2.50          |         | 20          |
| LOCK        | 31          | 1747  | 1830  | 1756       | N19          | W64        | .927             | 8740                | 26.9             | 43                   | 1N                 |              | C       | 1756                | 1.00                | 2.20          |         | 20          |
| HALE        | 31          | 1757  | 1835  | 1812       | N18          | W62        | .913             |                     | 27.1             | 38                   | -B                 | 2            | C       | 1812                | .15                 |               |         |             |
| LOCK        | 31          | 2059E | 2110  | 2059E      | N19          | W65        | .933             | 8740                | 27.0             | 11D                  | 1N                 |              | C       | 2059                | 1.00                | 2.30          |         | 20          |
| LOCK        | 31          | 2117  | 2200  | 2120       | N19          | W65        | .933             | 8740                | 27.0             | 43                   | 1N                 |              | C       | 2120                | 1.30                | 2.70          |         | 20          |
| HUAN        | 31          | 2132E | 2149D |            | N19          | W68        | .949             |                     | 26.8             | 17D                  | -B                 | 1            | P       | 2145                | .55                 |               |         | D           |
| HALE        | 31          | 2132  | 2210  | 2133       | N18          | W62        | .913             |                     | 27.2             | 38                   | -N                 | 1            | C       | 2133                | .15                 |               |         |             |
| LOCK        | 31          | 2200  | 2330  | 2220       | N19          | W65        | .933             | 8740                | 27.0             | 90                   | 1N                 |              | C       | 2220                | 1.00                | 2.30          |         | 20          |
| LOCK        | 31          | 2212  | 2235D | 2235       | N19          | W65        | .933             | 8740                | 27.0             | 23D                  |                    |              | C       | 2235                | 1.00                | 2.30          |         | 20          |
| LOCK        | 31          | 2212  | 2230  | 2218       | S24          | W68        | .922             | 8739                | 26.8             | 18                   | 1N                 |              | C       | 2218                | 1.40                | 3.20          |         | 20          |
| HALE        | 31          | 2215  | 2233  | 2220       | S23          | W68        | .922             |                     | 26.8             | 18                   | -N                 | 2            | C       | 2220                | .41                 |               |         |             |
| LOCK        | 31          | 2335  | 0103D | 2353       | S24          | W72        | .945             | 8739                | 26.6             | 88D                  | 1N                 |              | C       | 2353                | 1.90                | 4.80          |         | 20          |
| HALE        | 31          | 2348  | 0004D | 0004U      | N20          | W68        | .951             | 8740                | 26.9             | 16D                  | 1B                 | 2            | P       | 0004                | 1.24                |               |         | H           |
| LOCK        | 31          | 2359  | 0050  | 0017       | S23          | W69        | .928             | 8739                | 26.8             | 51                   | 1N                 |              | C       | 0017                | 1.30                | 2.70          |         | 20          |

# INTERVALS OF NO FLARE PATROL OBSERVATIONS PROVISIONAL

MARCH 1967



Observatories included:

- |                  |                   |           |               |                |                 |             |
|------------------|-------------------|-----------|---------------|----------------|-----------------|-------------|
| Arcetri          | Capri-S (Swedish) | Haleakala | Herstmonceaux | Lockheed       | Monte Mario     | Wendelstein |
| Capri-F (German) | Catania           | Huancayo  | Istanbul      | McMath-Hulbert | Sacramento Peak |             |

SOLAR RADIO EMISSION  
OUTSTANDING OCCURRENCES

MARCH 1967

| MAR.<br>1967 | FREQUENCY STATION | TYPE       | STARTING TIME | TIME OF MAXIMUM | DURATION | FLUX DENSITY<br>$10^{22} W_m^{-2} (c/s)^{-1}$ |      | INT  | REMARKS |  |
|--------------|-------------------|------------|---------------|-----------------|----------|---|------|------|---------|--|
|              |                   |            | UT            | UT              | MINUTES  | PEAK  | MEAN |      |         |  |
| 1            | 8800 SGMR         | 3          | 1414.7        | 1415.6          | 4.8      | 9.6   | 3.2  |      |         |  |
|              | 4995 SGMR         | 3          | 1412.9        | 1415.5          | 7.5      | 38.0  | 12.7 |      |         |  |
|              | 606 SGMR          | 40         | 1446.6        | 1447.3          | 3.6      | 9.6   | 2.0  |      |         |  |
|              | 4995 SGMR         | 29         | 1420.4        | 1420.4          | 11.6     | 9.9   | 3.3  |      |         |  |
|              | 2800 OTTA         | 1          | 1508          | 1508.3          | 1.5      | 3.6   | 1.8  |      |         |  |
|              | 2700 PENN         | 1          | 1508.1        | 1508.4          | .5       | 3.5   | 1.8  |      |         |  |
|              | 2695 SGMR         | 1          | 1507.9        | 1508.2          | .7       | 5.2   | 1.7  |      |         |  |
|              | 1415 SGMR         | 45         | 1507.8        | 1508.2          | 1.6      | 151.0   | 64.8 |      |         |  |
|              | 960 PENN          | 1          | 1508          | 1508.3          | .6       | 5.2   | 1.6  |      |         |  |
|              | 606 SGMR          | 41         | 1633.4        | 1633.4          | 3.8      | 65.0  | 8.0  |      |         |  |
|              | 2700 PENN         | 20         | 1908          | 2004.4          | 104      | 5.7   | 3.4  |      |         |  |
|              | 10700 PENN        | 45         | 1949.4        | 1950.8          | 4.2      | 42.6  | 11.0 |      |         |  |
|              | 8800 SGMR         | 45         | 1949.4        | 1950.7          | 2.8      | 40.5  | 8.0  |      |         |  |
|              | 4995 SGMR         | 45         | 1949.2        | 1949.4          | 3.8      | 12.3  | 2.5  |      |         |  |
|              | 4995 SGMR         | 45         | 1949.2        | 1951            | 3.8      | 12.3  | 2.5  |      |         |  |
|              | 2800 OTTA         | 21         | 1910          | 1910            | 90       | 4.8   | 3.0  |      |         |  |
|              | 2800 OTTA         | 4          | 1949          | 1949.5          | 4        | 14.0  | 6.0  |      |         |  |
|              | 2700 PENN         | 3          | 1949.2        | 1949.5          | 5.2      | 17.1  | 5.7  |      |         |  |
|              | 2695 SGMR         | 45         | 1949          | 1949.4          | 7        | 23.3  | 7.0  |      |         |  |
|              | 1415 SGMR         | 1          | 1949.4        | 1949.6          | 5.3      | 5.4   | 1.8  |      |         |  |
|              | 960 PENN          | 45         | 1949.5        | 1949.6          | .9       | 5.1   | 2.4  |      |         |  |
|              | 960 PENN          | 1          | 2010.4        | 2010.6          | .5       | 2.4   | 1.2  |      |         |  |
|              | 960 PENN          | 3          | 2013.1        | 2013.3          | .4       | 17.2  | 8.6  |      |         |  |
|              | 606 SGMR          | 1          | 1948.7        | 1950            | 6.3      | 3.5   | 1.2  |      |         |  |
|              | 606 SGMR          | 45         | 1957.7        | 1959.3          | 6.8      | 15.7  | 5.2  |      |         |  |
|              | 10700 PENN        | 45         | 2203.1        | 2204.4          | 3.7      | 108.6   | 17.9 |      |         |  |
|              | 2700 PENT         | 28         | 2203          | 2203            | 1        | 3.0   | 1.5  |      |         |  |
|              | 2700 PENN         | 3          | 2203          | 2204.4          | 3.8      | 13.4  | 3.2  |      |         |  |
|              | 2700 PENT         | 4          | 2204          | 2204.4          | 2        | 13.8  | 6.9  |      |         |  |
|              | 960 PENN          | 1          | 2152.9        | 2153.3          | .5       | 5.8   | 2.5  |      |         |  |
|              | 960 PENN          | 1          | 2204          | 2204.3          | .6       | 3.5   | 1.1  |      |         |  |
|              | 2700 PENT         | 29         | 2206          | 2206            | 8        | 3.0   | 1.5  |      |         |  |
|              | 2700 PENT         | 1          | 2351          | 2351.2          | 1        | 5.2   | 2.6  |      |         |  |
|              | 2                 | 8800 SGMR  | 20            | 1307            | 1309.5   | 16  | 9.7  | 4.0  |         |  |
|              |                   | 2800 OTTA  | 21            | 1258            | 1316     | 30  | 5.8  | 2.9  |         |  |
|              |                   | 2800 OTTA  | 1             | 1309            | 1309.8   | 2   | 4.4  | 2.2  |         |  |
|              |                   | 2800 OTTA  | 1             | 1325            | 1325.5   | 1.5   | 2.4  | 1.2  |         |  |
|              |                   | 2700 PENN  | 20            | 1308.4          | 1309.8   | 16.5  | 6.4  | 3.2  |         |  |
|              |                   | 4995 SGMR  | 20            | 1305.8          | 1316.8   | 18.2  | 14.1 | 6.0  |         |  |
|              |                   | 2695 SGMR  | 20            | 1300.4          | 1315     | 33.6  | 10.2 | 4.0  |         |  |
|              |                   | 10700 PENN | 3             | 1424.6          | 1424.8   | 7.8   |      |      |         |  |
|              |                   | 10700 PENN | 3             | 1435.6          | 1436.2   | 4.2   |      |      |         |  |
|              |                   | 8800 SGMR  | 3             | 1424.6          | 1424.7   | 5.4   | 69.0 | 10.0 |         |  |
| 8800 SGMR    |                   | 3          | 1436          | 1436.5          | 1.4      | 19.0  | 3.0  |      |         |  |
| 4995 SGMR    |                   | 3          | 1424.2        | 1424.5          | 3.8      | 88.5  | 15.0 |      |         |  |
| 4995 SGMR    |                   | 3          | 1435.4        | 1436.6          | 2.6      | 50.0  | 8.0  |      |         |  |
| 2800 OTTA    |                   | 3          | 1424          | 1425            | 2.5      | 27.0  | 13.0 |      |         |  |
| 2800 OTTA    |                   | 4          | 1436          | 1436.5          | 2        | 36.0  | 14.0 |      |         |  |
| 2700 PENN    |                   | 3          | 1424          | 1424.8          | 4        | 27.4  | 8.4  |      |         |  |
| 2700 PENN    |                   | 3          | 1435.6        | 1436.6          | 1.4      | 51.2  | 18.8 |      |         |  |
| 2695 SGMR    |                   | 45         | 1424          | 1424.9          | 4        | 89.6  | 8.5  |      |         |  |
| 2695 SGMR    |                   | 45         | 1435.7        | 1436.5          | 1.8      | 89.6  | 15.0 |      |         |  |
| 1415 SGMR    |                   | 45         | 1424.3        | 1424.7          | 3.7      | 55.4  | 7.6  |      |         |  |
| 1415 SGMR    |                   | 45         | 1435.8        | 1436.3          | 2.6      | 28.4  | 4.0  |      |         |  |
| 960 PENN     |                   | 1          | 1424.5        | 1425            | 5.3      | 1.2   | 0.6  |      |         |  |
| 606 SGMR     |                   | 45         | 1424.2        | 1424.7          | 2.8      | 13.2  | 4.0  |      |         |  |
| 4995 SGMR    |                   | 29         | 1438          | 1438            | 7        | 8.8   | 4.0  |      |         |  |
| 2800 OTTA    |                   | 29         | 1438          | 1438            | 6        | 2.8   | 1.8  |      |         |  |
| 2700 PENN    |                   | 29         | 1437          | 1437            | 14       | 7.3   | 3.7  |      |         |  |
| 2695 SGMR    |                   | 29         | 1437.5        | 1437.5          | 7.5      | 6.7   | 3.0  |      |         |  |
| 2800 OTTA    |                   | 21         | 1540          | 1630            | 220      | 13.0  | 6.5  |      |         |  |
| 10700 PENN   |                   | 3          | 1556.6        | 1601            | 9        | 146.1   | 62.7 |      |         |  |
| 8800 SGMR    |                   | 3          | 1558.4        | 1600.8          | 11.6     | 101.0   | 20.0 |      |         |  |
| 4995 SGMR    |                   | 3          | 1556.2        | 1600.5          | 13.8     | 178.0   | 36.0 |      |         |  |
| 2800 OTTA    |                   | 2          | 1549          | 1550            | 5        | 3.5   | 2.0  |      |         |  |
| 2800 OTTA    |                   | 3          | 1558          | 1600.5          | 8        | 160.0   | 40.0 |      |         |  |
| 2800 OTTA    |                   | 1          | 1630          | 1631            | 2        | 3.4   | 1.7  |      |         |  |
| 2700 PENN    |                   | 20         | 1543.2        | 1549.7          | 72.8     | 9.4   | 4.7  |      |         |  |
| 2700 PENN    |                   | 3          | 1557.8        | 1600.6          | 9        | 132.2   | 37.6 |      |         |  |
| 2700 PENN    |                   | 3          | 1606.8        | 1630.7          | 34       | 7.5   | 3.8  |      |         |  |
| 2695 SGMR    |                   | 3          | 1557.5        | 1600.4          | 12.5     | 198.0   | 40.0 |      |         |  |
| 1415 SGMR    |                   | 3          | 1557.5        | 1600.7          | 8        | 66.4  | 11.4 |      |         |  |
| 1415 SGMR    |                   | 45         | 1629.8        | 1630.5          | 2.9      | 20.0  | 4.0  |      |         |  |
| 960 PENN     |                   | 1          | 1559.6        | 1600.7          | 3        | 1.0   | 0.5  |      |         |  |
| 606 SGMR     |                   | 45         | 1551.6        | 1600.7          | 16.4     | 52.5  | 5.0  |      |         |  |
| 606 SGMR     |                   | 45         | 1629.8        | 1630.5          | 2.7      | 97.0  | 15.0 |      |         |  |
| 10700 PENN   | 29                | 1605.6     | 1605.6        | 36              | 33.2     | 13.1  |      |      |         |  |
| 2800 OTTA    | 1                 | 2011.7     | 2012          | 1.5             | 2.0      | 1.0   |      |      |         |  |
| 2800 OTTA    | 1                 | 2126       | 2127.5        | 3               | 3.0      | 1.5   |      |      |         |  |
| 2700 PENT    | 21                | 2358       | 2403          | 17              | 6.6      | 3.3   |      |      |         |  |
| 2700 PENT    | 1                 | 2358       | 2358.5        | 2               | 5.2      | 2.6   |      |      |         |  |
| 2700 PENT    | 1                 | 2406       | 2406.5        | 1               | 6.6      | 4.0   |      |      |         |  |
| 3            | 10700 PENN        | 45         | 1317.9        | 1323.3          | 9.8      | 29.8  | 9.8  |      |         |  |
|              | 8800 SGMR         | 3          | 1319          | 1319.3          | 1        | 11.0  | 3.5  |      |         |  |
|              | 8800 SGMR         | 3          | 1322          | 1323.3          | 2.2      | 27.5  | 9.0  |      |         |  |
|              | 4995 SGMR         | 1          | 1318.5        | 1319.2          | 1.5      | 3.8   | 1.1  |      |         |  |
|              | 4995 SGMR         | 3          | 1321.6        | 1323.3          | 5.4      | 19.0  | 6.0  |      |         |  |
|              | 4995 SGMR         | 3          | 1328.5        | 1329.2          | 2.5      | 7.6   | 2.5  |      |         |  |
|              | 2800 OTTA         | 21         | 1317          | 1319.5          | 25       | 5.0   | 2.5  |      |         |  |

## SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

MARCH 1967

| MAR.<br>1967 | FREQUENCY STATION | TYPE       | STARTING TIME | TIME OF MAXIMUM | DURATION | FLUX DENSITY<br>$10^{22} \text{ W m}^{-2} (\text{c/s})^{-1}$ |       | INT   | REMARKS     |  |
|--------------|-------------------|------------|---------------|-----------------|----------|--|-------|-------|-------------|--|
|              |                   |            | UT            | UT              | MINUTES  | PEAK   | MEAN  |       |             |  |
|              |                   |            |               |                 |          |  |       |       |             |  |
| 3            | 2800 OTTA         | 1          | 1323          | 1323.2          | 1.5      | 4.2  | 2.1   |       |             |  |
|              | 2700 PENN         | 20         | 1317          | 1323.5          | 15       | 5.4  | 2.6   |       |             |  |
|              | 2695 SGMR         | 1          | 1323          | 1323.3          | 3.5      | 6.4  | 2.0   |       |             |  |
|              | 2695 SGMR         | 20         | 1329          | 1329.5          | 3        | 3.2  | 1.6   |       |             |  |
|              | 1415 SGMR         | 20         | 1318          | 1319.5          | 11       | 1.7  | .6    |       |             |  |
|              | 2695 SGMR         | 1          | 1318.5        | 1319.4          | 1.6      | 4.8  | 1.5   |       |             |  |
|              | 606 SGMR          | 20         | 1317          | 1319.8          | 11       | .7   | .2    |       |             |  |
|              | 4995 SGMR         | 1          | 1437.6        | 1438.3          | 1        | 5.7  | 1.9   |       |             |  |
|              | 2695 SGMR         | 1          | 1438.3        | 1438.5          | .7       | 2.2  | .7    |       |             |  |
|              | 2800 OTTA         | 20         | 1450          | 1455            | 10       | 2.6  | 1.3   |       |             |  |
|              | 10700 PENN        | 3          | 1620          | 1620.9          | 1.5      | 15.3   | 7.7   |       |             |  |
|              | 2800 OTTA         | 23         | 1500          |                 | 390      | 9.6  | 4.5   |       |             |  |
|              | 10700 PENN        | 20         | 1658.6        | 1705            | 16.4     | 11.5   | 5.8   |       |             |  |
|              | 2800 OTTA         | 1          | 1702.5        | 1703            | 1        | 1.8  | 1.0   |       |             |  |
|              | 2800 OTTA         | 1          | 1704.5        | 1704.2          | .5       | 1.0  | 0.5   |       |             |  |
|              | 2700 PENN         | 20         | 1642          | 1703.1          | 38.7     | 6.2  | 3.1   |       |             |  |
|              | 2800 OTTA         | 1          | 1745.9        | 1746            | .5       | 1.0  | 0.5   |       |             |  |
|              | 10700 PENN        | 20         | 1802.1        | 1823.8          | 57.8     | 7.9  | 4.7   |       |             |  |
|              | 2700 PENN         | 20         | 1815.2        | 1822            | 29.5     | 6.1  | 3.0   |       |             |  |
|              | 10700 PENN        | 20         | 2030.1        | 2031.4          | 32       | 10.0   | 5.0   |       |             |  |
|              | 8800 SGMR         | 3          | 2031.2        | 2031.5          | 2.8      | 9.1  | 4.5   |       |             |  |
|              | 4995 SGMR         | 1          | 2031.2        | 2031.4          | 6.2      | 4.0  | 1.8   |       |             |  |
|              | 2700 PENN         | 20         | 2030          | 2035            | 29.4     | 1.8  | 0.9   |       |             |  |
|              | 960 PENN          | 1          | 2026.2        | 2026.3          | .4       | 3.4  | 1.7   |       |             |  |
|              | 960 PENN          | 1          | 2029          | 2029.2          | .3       | 4.3  | 2.2   |       |             |  |
|              | 960 PENN          | 1          | 2031.6        | 2031.9          | .4       | 4.3  | 2.2   |       |             |  |
|              | 10700 PENN        | 40         | 2136.3        | 2143            | 19.7     | 16.3   | 8.2   |       |             |  |
|              | 2800 OTTA         | 21         | 2140          | 2145            | 10       | 2.6  | 1.3   |       |             |  |
|              | 2800 OTTA         | 1          | 2140          | 2141            | 2        | 5.6  | 2.8   |       |             |  |
|              | 2700 PENN         | 20         | 2139.2        | 2140.9          | 11.9     | 8.1  | 4.1   |       |             |  |
|              | 1415 SGMR         | 40         | 2140.6        | 2141            | 3.4      | 4.5  | 1.8   |       |             |  |
|              | 606 SGMR          | 40         | 2140.6        | 2143            | 3.4      | 2.6  | 1.0   |       |             |  |
|              | 2700 PENT         | 1          | 2213.5        | 2213.9          | .5       | 2.4  | 1.2   |       |             |  |
|              | 960 PENN          | 1          | 2210.7        | 2210.8          | .3       | 4.9  | 2.4   |       |             |  |
|              | 10700 PENN        | 3          | 2221.3        |                 | 1        |  |       |       | DUR. SUNSET |  |
|              | 2700 PENN         | 1          | 2221.2        |                 | 1        |  |       |       | DUR. SUNSET |  |
|              | 2700 PENT         | 21         | 2250          | 2303            | 45       | 4.4  | 2.2   |       |             |  |
|              | 2700 PENT         | 4          | 2309          | 2311            | 6        | 13.0   | 7.0   |       |             |  |
|              | 4                 | 8800 SGMR  | 3             | 1212.5          | 1213.4   | 18.5   | 754.0 | 251.0 |             |  |
|              |                   | 4995 SGMR  | 3             | 1213            | 1213.4   | 14   | 337.0 | 112.0 |             |  |
|              |                   | 2695 SGMR  | 3             | 1213.2          | 1213.6   | 19.8   | 243.0 | 81.0  |             |  |
|              |                   | 1415 SGMR  | 3             | 1213.2          | 1213.6   | 20.3   | 69.6  | 23.2  |             |  |
|              |                   | 606 SGMR   | 1             | 1213.4          | 1213.7   | .5   | 3.3   | 1.1   |             |  |
|              |                   | 10700 PENN | 3             | 1235.6          | 1236.4   | 2.8  | 36.3  | 9.4   |             |  |
|              |                   | 8800 SGMR  | 3             | 1235            | 1236     | 10.5   | 31.2  | 10.4  |             |  |
|              |                   | 4995 SGMR  | 3             | 1235            | 1236     | 10.5   | 20.6  | 6.9   |             |  |
|              |                   | 2700 PENN  | 3             | 1235.4          | 1236.9   | 3.4  | 8.8   | 3.8   |             |  |
|              |                   | 2695 SGMR  | 3             | 1235            | 1236     | 11   | 10.3  | 3.4   |             |  |
| 1415 SGMR    |                   | 1          | 1234.5        | 1236            | 11       | 3.6  | 1.2   |       |             |  |
| 606 SGMR     |                   | 1          | 1234.3        | 1236            | 5.7      | 3.3  | 1.1   |       |             |  |
| 2800 OTTA    |                   | 21         | 1250 E        | 1313            | 140 D    | 14.0   |       |       |             |  |
| 2800 OTTA    |                   | 21         | 1250 E        | 1313            | 50 D     | 14.0   |       |       |             |  |
| 10700 PENN   |                   | 45         | 1319.9        | 1325.4          | 7.4      | 151.2  | 67.8  |       |             |  |
| 8800 SGMR    |                   | 45         | 1320          | 1325.3          | 11       | 153.0  | 50.0  |       |             |  |
| 4995 SGMR    |                   | 45         | 1319.6        | 1325.3          | 12.4     | 150.0  | 35.0  |       |             |  |
| 2800 OTTA    |                   | 3          | 1323.2        | 1325.7          | 6        | 60.0   | 22.0  |       |             |  |
| 2800 OTTA    |                   | 21         | 1340          | 1415            | 90       | 9.0  |       |       |             |  |
| 2700 PENN    |                   | 3          | 1321.4        | 1325.5          | 5.6      | 61.1   | 27.1  |       |             |  |
| 2695 SGMR    |                   | 45         | 1320.7        | 1325.5          | 12.3     | 85.0   | 15.0  |       |             |  |
| 1415 SGMR    |                   | 3          | 1320.3        | 1325.3          | 8.7      | 14.4   | 4.8   |       |             |  |
| 960 PENN     |                   | 1          | 1324.5        | 1325.6          | 3.3      | .6   | 0.3   |       |             |  |
| 606 SGMR     |                   | 20         | 1435.2        | 1442.2          | 14.4     | 3.3  | 1.1   |       |             |  |
| 10700 PENN   |                   | 29         | 1327.3        | 1327.3          | 86       | 41.7   | 20.8  |       |             |  |
| 8800 SGMR    |                   | 29         | 1331          | 1331            | 67       | 21.6   | 10.8  |       |             |  |
| 4995 SGMR    |                   | 29         | 1332          | 1332            | 61       | 15.2   | 7.6   |       |             |  |
| 2700 PENN    |                   | 29         | 1327          | 1327            | 60       | 25.9   | 12.9  |       |             |  |
| 2695 SGMR    |                   | 29         | 1333          | 1333            | 100      | 14.0   | 7.0   |       |             |  |
| 2800 OTTA    |                   | 21         | 1515          | 1600            | 195      | 10.2   | 6.0   |       |             |  |
| 10700 PENN   |                   | 20         | 1539.3        | 1540.9          | 25       | 7.1  | 3.5   |       |             |  |
| 10700 PENN   |                   | 1          | 1640.1        | 1642.7          | 3.9      | 7.0  | 3.5   |       |             |  |
| 2700 PENN    |                   | 20         | 1521.5        | 1559.1          | 101.5    | 5.4  | 2.7   |       |             |  |
| 10700 PENN   |                   | 3          | 1715.4        | 1716.2          | 4.3      | 871.2  | 176.0 |       |             |  |
| 10700 PENN   |                   | 45         | 1719.7        | 1721            | 4.7      | 106.6  | 29.7  |       |             |  |
| 10700 PENN   |                   | 3          | 1725.4        | 1725.5          | 3.2      | 187.0  | 19.3  |       |             |  |
| 10700 PENN   |                   | 26         | 1730.6        | 1730.6          |          | 6.7  |       |       |             |  |
| 8800 SGMR    |                   | 45         | 1715.6        | 1716.2          | 18.4     | 1330.0   | 443.0 |       |             |  |
| 4995 SGMR    |                   | 45         | 1715.6        | 1716.2          | 18.4     | 975.0  | 325.0 |       |             |  |
| 2800 OTTA    |                   | 45         | 1715.8        | 1716.5          | 15       | 378.0  | 75.0  |       |             |  |
| 2800 OTTA    |                   | 45         | 1715.8        | 1716.5          | 4        | 378.0  |       |       |             |  |
| 2800 OTTA    |                   | 45         | 1719.8        | 1721            | 5.5      | 108.0  |       |       |             |  |
| 2800 OTTA    |                   | 45         | 1725.3        | 1726            | 5.5      | 75.0   |       |       |             |  |
| 2700 PENN    |                   | 3          | 1715.8        | 1716.3          | 4.2      | 288.7  | 111.1 |       |             |  |
| 2700 PENN    |                   | 3          | 1720          | 1721            | 3.2      | 50.1   | 25.1  |       |             |  |
| 2700 PENN    |                   | 3          | 1725.4        | 1726            | 1.8      | 43.6   | 18.3  |       |             |  |
| 2700 PENN    |                   | 26         | 1735          | 1735            |          | 3.0  |       |       |             |  |
| 2695 SGMR    |                   | 45         | 1715.6        | 1716.2          | 18.4     | 530.0  | 243.0 |       |             |  |
| 1415 SGMR    | 45                | 1716       | 1716.5        | 19              | 90.0     | 30.0   |       |       |             |  |
| 960 PENN     | 45                | 1715.8     | 1716          | 1.3             | 48.5     | 11.8   |       |       |             |  |
| 960 PENN     | 1                 | 1720.1     | 1721.7        | 4.5             | .9       | 0.5  |       |       |             |  |
| 960 PENN     | 1                 | 1725.6     | 1726.1        | 2               | .4       | 0.3  |       |       |             |  |

SOLAR RADIO EMISSION  
OUTSTANDING OCCURRENCES

MARCH 1967

| MAR. 1967  | FREQUENCY STATION | TYPE       | STARTING TIME | TIME OF MAXIMUM | DURATION | FLUX DENSITY<br>$10^{-22} \text{Wm}^{-2} (\text{c/s})^{-1}$ |       | INT  | REMARKS |            |
|------------|-------------------|------------|---------------|-----------------|----------|---|-------|------|---------|------------|
|            |                   |            | UT            | UT              | MINUTES  | PEAK  | MEAN  |      |         |            |
| 4          | 606 SGMR          | 45         | 1715.9        | 1716.1          | 12.5     | 9638.0  | 350.0 |      |         |            |
|            | 486 WASH          | 3          | 1717          | 1727            | 11       | 100.00  |       |      |         |            |
|            | 2700 PENN         | 29         | 1720          | 1720            | 12       | 29.4  | 14.7  |      |         |            |
|            | 960 PENN          | 29         | 1717.1        | 1717.1          | 14       | .9  | 0.5   |      |         |            |
|            | 606 SGMR          | 29         | 1728.4        | 1728.4          | 76.6     | 4.8   | 2.4   |      |         |            |
|            | 10700 PENN        | 20         | 1914.2        | 1922.3          | 21       | 11.5  | 5.0   |      |         |            |
|            | 8800 SGMR         | 22         | 1911          | 1919.4          | 26       | 8.1   | 2.7   |      |         |            |
|            | 4995 SGMR         | 22         | 1910          | 1914.3          | 27       | 19.0  | 6.3   |      |         |            |
|            | 2800 OTTA         | 21         | 1910          | 1920            | 45       | 13.2  | 6.6   |      |         |            |
|            | 2800 OTTA         | 1          | 1914          | 1914.6          | 3        | 5.6   | 3.6   |      |         |            |
|            | 2695 SGMR         | 22         | 1911.2        | 1915.7          | 25.8     | 16.8  | 5.6   |      |         |            |
|            | 1415 SGMR         | 22         | 1910          | 1915.7          | 27       | 5.4   | 1.8   |      |         |            |
|            | 606 SGMR          | 23         | 1853          | 1914.6          | 49       | 3.2   | 1.1   |      |         |            |
|            | 606 SGMR          | 4          | 1914.2        | 1914.6          | .6       | 12.8  | 4.3   |      |         |            |
|            | 10700 PENN        | 3          | 2037.2        | 2037.6          | 1.4      | 23.2  | 6.5   |      |         |            |
|            | 10700 PENN        | 3          | 2104.6        | 2105.4          | 2.4      | 15.5  | 7.7   |      |         |            |
|            | 8800 SGMR         | 3          | 2104.6        | 2105.5          | 10.4     | 20.3  | 6.8   |      |         |            |
|            | 4995 SGMR         | 45         | 2104.6        | 2105.4          | 12.4     | 24.7  | 8.0   |      |         |            |
|            | 2800 OTTA         | 21         | 2104          | 2105            | 75       | 4.4   | 2.2   |      |         |            |
|            | 2800 OTTA         | 46         | 2104          | 2105.5          | 65       | 29.0  | 12.0  |      |         |            |
|            | 2700 PENN         | 3          | 2104          | 2105.5          | 2.7      | 26.8  | 11.6  |      |         |            |
|            | 2700 PENN         | 45         | 2107.6        | 2109.8          | 2.8      | 13.7  | 5.4   |      |         |            |
|            | 2695 SGMR         | 45         | 2104.4        | 2105.4          | 12.6     | 32.8  | 11.0  |      |         |            |
|            | 1415 SGMR         | 45         | 2104.3        | 2105.3          | 12.7     | 14.4  | 4.8   |      |         |            |
|            | 960 PENN          | 1          | 2104.6        | 2105.6          | 2.6      | 1.3   | 0.6   |      |         |            |
|            | 960 PENN          | 1          | 2107.9        | 2110            | 4.3      | 1.3   | 0.6   |      |         |            |
|            | 606 SGMR          | 45         | 2103.8        | 2104            | 9.2      | 171.0   | 40.0  |      |         |            |
|            | 606 SGMR          | 3          | 2126.6        | 2126.8          | .4       | 9.6   | 3.2   |      |         |            |
|            | 486 WASH          | 45         | 2105          | 2106            | 2        | 120.00  |       |      |         |            |
|            | 2800 OTTA         | 29         | 2110.5        |                 | 10       | 6.4   | 3.2   |      |         |            |
|            | 2700 PENN         | 29         | 2106.7        | 2106.7          | 61       | 3.9   | 1.9   |      |         |            |
|            | 2700 PENT         | 20         | 2338          | 2340            | 10       | 3.8   | 1.9   |      |         |            |
|            | 5                 | PENN       |               | 1238            | 2240     |   |       |      |         | HEAVY RAIN |
|            |                   | 2800 OTTA  | 21            | 1320            |          | 365   | 6.6   | 4.0  |         |            |
|            |                   | 10700 PENN | 3             | 1340            | 1340.2   | .9  | 27.4  | 13.7 |         |            |
|            |                   | 8800 SGMR  | 3             | 1339.3          | 1340     | 1.6   | 21.6  | 10.8 |         |            |
|            |                   | 4995 SGMR  | 3             | 1339.2          | 1340     | 1.5   | 15.6  | 7.8  |         |            |
|            |                   | 2800 OTTA  | 1             | 1339.8          | 1340.1   | 1   | 3.4   | 1.7  |         |            |
|            |                   | 2700 PENN  | 1             | 1340            | 1340.4   | 1.1   | 3.9   | 2.0  |         |            |
|            |                   | 2695 SGMR  | 1             | 1338.7          | 1340.2   | 2.7   | 7.0   | 3.5  |         |            |
|            |                   | 1415 SGMR  | 45            | 1339.8          | 1339.9   | 1.1   | 31.4  | 8.0  |         |            |
|            |                   | 8800 SGMR  | 3             | 1446.3          | 1446.6   | 6.7   | 10.8  | 3.6  |         |            |
| 4995 SGMR  |                   | 3          | 1444.6        | 1446.5          | 8.4      | 8.6   | 2.9   |      |         |            |
| 10700 PENN |                   | 1          | 1547.9        | 1548.1          | 1.1      | 3.5   | 1.7   |      |         |            |
| 2800 OTTA  |                   | 1          | 1547.7        | 1548            | 2        | 2.0   | 1.0   |      |         |            |
| 2700 PENN  |                   | 1          | 1547.6        | 1548            | 1.4      | 3.8   | 1.9   |      |         |            |
| 10700 PENN |                   | 3          | 1602.7        | 1602.8          | .5       | 93.0  | 46.5  |      |         |            |
| 8800 SGMR  |                   | 3          | 1602.7        | 1602.8          | 1.3      | 110.0   | 55.0  |      |         |            |
| 4995 SGMR  |                   | 3          | 1602.7        | 1602.8          | 3.3      | 84.0  | 42.0  |      |         |            |
| 2800 OTTA  |                   | 4          | 1602.6        | 1602.9          | 2        | 30.0  | 15.0  |      |         |            |
| 2800 OTTA  |                   | 29         | 1604.6        |                 | 5        | 3.4   | 1.7   |      |         |            |
| 2700 PENN  |                   | 3          | 1602.8        | 1602.9          | 3        | 23.3  | 10.8  |      |         |            |
| 2695 SGMR  |                   | 45         | 1602.7        | 1603.1          | 4.3      | 35.0  | 10.7  |      |         |            |
| 1415 SGMR  |                   | 1          | 1602.7        | 1602.8          | 2.3      | 4.0   | 2.0   |      |         |            |
| 2800 OTTA  |                   | 1          | 1923.5        | 1923.6          | .5       | 1.2   | 0.6   |      |         |            |
| 10700 PENN |                   | 3          | 2003.4        | 2003.7          | .8       | 10.7  | 5.3   |      |         |            |
| 2700 PENT  |                   | 1          | 2003.4        | 2003.7          | 1        | 1.0   | 0.5   |      |         |            |
| 2700 PENN  |                   | 1          | 2003.6        | 2003.8          | .8       | .8  | 0.4   |      |         |            |
| 2700 PENN  |                   | 20         | 2015.2        | 2104.4          | 103.8    | 5.9   | 2.7   |      |         |            |
| 10700 PENN |                   | 1          | 2022.2        | 2022.4          | .9       | 7.1   | 3.6   |      |         |            |
| 10700 PENN |                   | 1          | 2026.5        | 2027            | 1.4      | 7.1   | 3.6   |      |         |            |
| 2800 OTTA  |                   | 1          | 2022.4        | 2022.5          | 2.5      | 1.8   | 0.9   |      |         |            |
| 2700 PENN  |                   | 1          | 2022.4        | 2022.4          | 1.3      | 1.6   | 0.8   |      |         |            |
| 2700 PENN  |                   | 1          | 2024.8        | 2025.3          | 2.2      | 1.6   | 0.8   |      |         |            |
| 6          |                   | 2800 OTTA  | 20            | 1315            | 1355     | 350   | 13.0  | 6.5  |         |            |
|            |                   | 10700 PENN | 20            | 1720            | 1727.7   | 21.2  | 12.5  | 4.6  |         |            |
|            |                   | 10700 PENN | 1             | 2125.2          | 2126.1   | 2.4   | 7.3   | 3.7  |         |            |
|            |                   | 2700 PENT  | 20            | 2255            | 2310     | 100 D   | 11.0  |      |         |            |
| 7          |                   | 10700 PENN | 1             | 1641            | 1645.9   | 7.5   | 7.0   | 2.6  |         |            |
|            |                   | 2700 PENN  | 1             | 1644.8          | 1645.9   | 2.4   | 2.3   | 1.0  |         |            |
|            |                   | 960 PENN   | 1             | 1646.3          | 1646.5   | .5  | 1.0   | 0.4  |         |            |
|            |                   | 10700 PENN | 20            | 1723.8          | 1726.8   | 15.8  | 7.1   | 3.1  |         |            |
|            |                   | 2700 PENN  | 20            | 1723.8          | 1726.8   | 8   | 2.4   | 1.4  |         |            |
|            |                   | 10700 PENN | 1             | 1824.8          | 1826     | 1.8   | 3.6   | 1.8  |         |            |
|            | 960 PENN          | 1          | 1824.9        | 1825            | .5       | 1.1   | 0.4   |      |         |            |
|            | 10700 PENN        | 1          | 1852.5        | 1854.9          | 5.7      | 3.6   | 1.8   |      |         |            |
|            | 960 PENN          | 1          | 1854.4        | 1854.8          | 1.2      | 3.8   | 0.4   |      |         |            |
|            | 486 WASH          | 45         | 1853          | 1855            | 12       | 85.0  |       |      |         |            |
| 8          | 8800 SGMR         | 40         | 1519          | 1520            | 6.5      | 5.0   | 1.7   |      |         |            |
|            | 4995 SGMR         | 40         | 1519          | 1520.4          | 8        | 7.6   | 2.5   |      |         |            |
|            | 2800 OTTA         | 45         | 1519.5        | 1520            | 1.5      | 2.0   | 1.5   |      |         |            |
|            | 2700 PENN         | 1          | 1517.6        | 1518.3          | 3.3      | 2.1   | 1.1   |      |         |            |
|            | 2695 SGMR         | 40         | 1519          | 1520.4          | 6        | 2.6   | 1.0   |      |         |            |
|            | 1415 SGMR         | 40         | 1518.9        | 1519.9          | 3.1      | 5.7   | 2.0   |      |         |            |
|            | 606 SGMR          | 40         | 1518.9        | 1519            | 3.1      | 8.9   | 3.0   |      |         |            |
|            | 960 PENN          | 3          | 1913.9        | 1914.1          | .3       | 10.7  | 5.3   |      |         |            |
|            | 2700 PENN         | 45         | 1941.6        | 1942            | 2.7      | 28.3  | 3.9   |      |         |            |



## SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

MARCH 1967

| MAR.<br>1967 | FREQUENCY STATION | TYPE   | STARTING TIME | TIME OF MAXIMUM | DURATION | FLUX DENSITY<br>$10^{-22} \text{ W m}^{-2} (\text{c/s})^{-1}$ |      | INT | REMARKS |
|--------------|-------------------|--------|---------------|-----------------|----------|---|------|-----|---------|
|              |                   |        | UT            | UT              | MINUTES  | PEAK  | MEAN |     |         |
| 8            | 960 PENN          | 3      | 2141.8        | 2142            | .4       | 8.2   | 4.1  |     |         |
| 9            | 960 PENN          | 3      | 1859          | 1859.2          | .3       | 8.0   | 4.0  |     |         |
|              | 960 PENN          | 3      | 1918          | 1918.2          | .3       | 7.9   | 3.9  |     |         |
|              | 960 PENN          | 3      | 2123.2        | 2123.5          | .5       | 14.4  | 4.7  |     |         |
|              | 10700 PENN        | 3      | 2150.6        | 2151            | 1.5      | 8.9   | 4.5  |     |         |
|              | 2800 OTTA         | 1      | 2144.5        | 2144.7          | .5       | 1.4   | 1.0  |     |         |
|              | 2700 PENN         | 1      | 2144.2        | 2144.9          | 2.2      | 1.8   | 0.9  |     |         |
| 10           | 2800 OTTA         | 20     | 1920          | 1925            | 15       | 3.4   | 1.7  |     |         |
|              | 2800 OTTA         | 20     | 1413          | 1418            | 25       | 4.4   | 2.2  |     |         |
|              | 2800 OTTA         | 20     | 1550          | 1554            | 12       | 2.0   | 1.0  |     |         |
|              | 2700 PENN         | 1      | 1933.7        | 1937.6          | 5.1      | 3.9   | 1.2  |     |         |
|              | 2800 OTTA         | 26     | 2035          | 2035            | 30       | 4.5   |      |     |         |
|              | 2800 OTTA         | 20     | 2050          | 2104            | 45       | 2.0   | 1.0  |     |         |
|              | 960 PENN          | 45     | 2119.2        | 2119.3          | .8       | 13.7  | 6.8  |     |         |
|              | 2700 PENT         | 1      | 2306          | 2306.5          | 1        | 2.6   | 1.3  |     |         |
| 11           | 10700 PENN        | 3      | 1239.2        | 1240.5          | 6        | 13.3  | 6.6  |     |         |
|              | 10700 PENN        | 3      | 1245.6        | 1245.8          | 1        | 10.4  | 5.2  |     |         |
|              | 10700 PENN        | 3      | 1246.9        | 1247.5          | 1        | 17.4  | 8.7  |     |         |
|              | 2700 PENN         | 20     | 1237          | 1240.8          | 9.2      | 3.7   | 1.8  |     |         |
|              | 2700 PENN         | 20     | 1320.5        | 1324.1          | 14       | 2.5   | 1.3  |     |         |
|              | 2700 PENN         | 3      | 2221.8        | 2222.4          | 1.1      | 8.6   | 4.3  |     |         |
|              | 960 PENN          | 1      | 2224.4        | 2224.7          | 1        | 1.3   | 0.7  |     |         |
| 12           | 10700 PENN        | 3      | 1228          | 1228.3          | .6       | 7.9   | 4.0  |     |         |
|              | 2700 PENN         | 1      | 1512.9        | 1513.2          | .9       | .8  | 0.4  |     |         |
|              | 960 PENN          | 45     | 1921.7        | 1924.2          | 4        | 14.5  | 4.8  |     |         |
|              | 960 PENN          | 3      | 1928.3        | 1928.8          | .6       | 10.6  | 5.3  |     |         |
|              | 960 PENN          | 3      | 2013          | 2013.2          | .4       | 9.9   | 5.0  |     |         |
|              | 960 PENN          | 1      | 2104.8        | 2105            | .4       | 5.7   | 2.8  |     |         |
|              | 960 PENN          | 1      | 2114.2        | 2114.4          | .4       | 2.8   | 1.4  |     |         |
|              | 960 PENN          | 1      | 2115.8        | 2116            | .4       | 3.8   | 1.9  |     |         |
| 13           | 10700 PENN        | 3      | 1947.5        | 1947.5          | .6       | 28.0  | 5.6  |     |         |
| 14           | 2700 PENN         | 24     | 2025          | 2258            |          | 4.5   |      |     |         |
|              | 2700 PENT         | 1      | 2306          | 2306.5          | 1        | 2.6   | 1.3  |     |         |
| 15           | 2700 PENT         | 1      | 0044.5        | 0045            | 1        | 1.6   | 0.8  |     |         |
|              | 2700 PENT         | 4      | 0047          | 0048            | 1.5      | 10.0  | 5.0  |     |         |
|              | 184 BOUL          | 6      | 0158          | 0159            | 11       |   |      |     | 2       |
|              | 4995 SGMR         | 22     | 1415          | 1422            | 29       | 9.4   | 4.7  |     |         |
|              | 2800 OTTA         | 24     | 1418          |                 | 7        | 2.5   |      |     |         |
|              | 2800 OTTA         | 4      | 1418          | 1422            | 7        | 13.0  | 6.5  |     |         |
|              | 2700 PENN         | 20     | 1418.8        | 1422.1          | 39       | 11.3  | 2.3  |     |         |
|              | 2695 SGMR         | 22     | 1415          | 1422            | 28       | 15.0  | 7.5  |     |         |
|              | 1415 SGMR         | 22     | 1415          | 1421.5          | 29       | 5.1   | 2.5  |     |         |
|              | 606 SGMR          | 22     | 1419          | 1421            | 6        | 1.0   | .5   |     |         |
|              | 10700 PENN        | 3      | 1841.6        | 1841.6          | 1.2      | 31.0  | 9.0  |     |         |
|              | 10700 PENN        | 1      | 2011.3        | 2011.7          | 1.5      | 5.2   | 2.6  |     |         |
|              | 10700 PENN        | 1      | 2017.8        | 2018.8          | 3        | 6.5   | 3.3  |     |         |
|              | 10700 PENN        | 1      | 2027.6        | 2027.8          | 2.3      | 4.4   | 2.2  |     |         |
|              | 4995 SGMR         | 3      | 2054          | 2054.8          | 4        | 15.6  | 5.2  |     |         |
|              | 2800 OTTA         | 21     | 2053          | 2055            | 12       | 1.6   | 0.8  |     |         |
|              | 2800 OTTA         | 4      | 2054          | 2055            | 1.5      | 15.0  | 6.0  |     |         |
| 2700 PENN    | 3                 | 2053.7 | 2054.9        | 2               | 12.0     | 2.6   |      |     |         |
| 2695 SGMR    | 3                 | 2054   | 2054.8        | 4               | 12.0     | 4.0   |      |     |         |
| 1415 SGMR    | 3                 | 2053.8 | 2054          | 4.2             | 10.2     | 3.5   |      |     |         |
| 606 SGMR     | 4                 | 2053.8 | 2055          | 4.2             | 24.8     | 8.3   |      |     |         |
| 16           | 10700 PENN        | 3      | 1258          | 1258.5          | 1.3      | 16.3  | 8.2  |     |         |
|              | 2700 PENN         | 1      | 1258.1        | 1258.5          | 1.3      | 4.5   | 2.2  |     |         |
|              | 2800 OTTA         | 20     | 2050          | 2052            | 10       | 1.6   | 0.8  |     |         |
|              | 184 BOUL          | 6      | 2113          | 2114            | 1        |   |      |     | 2       |
|              | 2700 PENT         | 2      | 2354.5        | 2355            | 1        | 2.8   | 1.4  |     |         |
|              | 2700 PENT         | 2      | 2416          | 2417            | 6        | 3.8   | 1.9  |     |         |
|              |                   |        |               |                 |          |   |      |     |         |
| 17           | 2700 PENN         | 26     | 1544.8        | 1544.8          |          | 4.5   |      |     |         |
|              | 2700 PENN         | 26     | 1914.6        | 1921.4          | 17.4     | 9.8   | 4.9  |     |         |
|              | 2800 OTTA         | 20     | 1929.5        | 1930.5          | 8        | 1.2   | 0.6  |     |         |
|              | 2800 OTTA         | 21     | 2015          | 2025            | 60       | 2.4   | 1.2  |     |         |
|              | 2800 OTTA         | 1      | 2040          | 2041            | 3        | 2.0   | 1.0  |     |         |
|              | 2800 OTTA         | 1      | 2052.3        | 2052.5          | .5       | .8  | 0.4  |     |         |
|              | 2700 PENN         | 1      | 2039.2        | 2041.4          | 5.8      | 5.9   | 2.9  |     |         |
|              | 960 PENN          | 1      | 2024.6        | 2025            | .5       | 7.4   | 3.7  |     |         |
|              | 960 PENN          | 3      | 2048.8        | 2048.9          | .3       | 9.5   | 4.7  |     |         |
|              | 960 PENN          | 1      | 2112.9        | 2113.1          | .4       | 5.6   | 2.8  |     |         |
|              | 2800 OTTA         | 21     | 2151          | 2157            | 25       | 4.2   | 2.1  |     |         |
|              | 2800 OTTA         | 1      | 2151.5        | 2152.5          | 3        | 3.0   | 1.5  |     |         |
|              | 2700 PENN         | 20     | 2151.6        | 2152.4          | 22       | 4.7   | 2.4  |     |         |
|              | 960 PENN          | 1      | 2153.7        | 2153.8          | .5       | 2.6   | 1.3  |     |         |
| 18           | 10700 PENN        | 3      | 1333.9        | 1334.2          | 1.1      | 11.8  | 5.9  |     |         |
|              | 10700 PENN        | 1      | 1521.8        | 1521.9          | .5       | 6.8   | 3.4  |     |         |
|              | 10700 PENN        | 3      | 1522.8        | 1523.1          | .6       | 9.5   | 4.7  |     |         |
|              | 2700 PENN         | 20     | 1537          | 1539.3          | 9        | 4.4   | 2.1  |     |         |
|              | 2800 OTTA         | 20     | 1538          | 1539            | 15       | 4.2   | 2.1  |     |         |
|              | 2700 PENN         | 20     | 1709.6        | 1712.2          | 10.2     | 3.7   | 1.8  |     |         |
|              | 960 PENN          | 1      | 1745.2        | 1745.4          | .8       | 1.3   | 0.7  |     |         |

SOLAR RADIO EMISSION  
OUTSTANDING OCCURRENCES

MARCH 1967

| MAR. 1967 | FREQUENCY STATION | TYPE   | STARTING TIME | TIME OF MAXIMUM | DURATION | FLUX DENSITY<br>$10^{-22} \text{ W m}^{-2} (\text{c/s})^{-1}$ |       | INT. | REMARKS |
|-----------|-------------------|--------|---------------|-----------------|----------|---|-------|------|---------|
|           |                   |        | UT            | UT              | MINUTES  | PEAK  | MEAN  |      |         |
| 18        | 2700 PENN         | 20     | 1914.9        | 1925.4          | 100      |   | 3.8   | 1.9  |         |
|           | 10700 PENN        | 3      | 2036.9        | 2037.3          | 1.2      | 16.4  | 8.2   |      |         |
|           | 960 PENN          | 1      | 2136          | 2136.8          | 1.8      | 1.9   | 0.9   |      |         |
| 19        | 2700 PENN         | 26     | 1844.2        | 1907            | 53.8     | 3.9   | 2.4   |      |         |
|           | 2700 PENN         | 26     | 1941.8        | 2004            | 33       | 3.5   | 1.8   |      |         |
|           | 184 BOUL          | 41     | 2115          | 2135            | 103      |   |       | 2    |         |
|           | 184 BOUL          | 41     | 2345          | 2350            | 15       |   |       | 2    |         |
| 20        | 10700 PENN        | 45     | 1154.4        | 1202.6          | 14.6     | 479.1   | 155.6 |      |         |
|           | 8800 SGMR         | 45     | 1149          | 1202.2          | 30       | 300.0   | 100.0 |      |         |
|           | 4995 SGMR         | 45     | 1149          | 1202.2          | 28       | 198.0   | 66.0  |      |         |
|           | 2800 OTTA         | 4      | 1159          | 1202            | 10       | 60.0  | 35.0  |      |         |
|           | 2700 PENN         | 45     | 1154.8        | 1202.5          | 21.2     | 61.4  | 17.3  |      |         |
|           | 2695 SGMR         | 45     | 1148.5        | 1202.2          | 28.5     | 77.0  | 26.0  |      |         |
|           | 1415 SGMR         | 45     | 1148          | 1202.3          | 43       | 40.0  | 13.3  |      |         |
|           | 960 PENN          | 1      | 1201.5        | 1204.2          | 6.7      |   | 2.3   | 1.3  |         |
|           | 606 SGMR          | 45     | 1148          | 1201.7          | 51       | 36.3  | 7.0   |      |         |
|           | 10700 PENN        | 29     | 1209          | 1209            | 45       | 66.8  | 18.3  |      |         |
|           | 2800 OTTA         | 29     | 1209          |                 | 10       | 11.0  | 5.5   |      |         |
|           | 2800 OTTA         | 20     | 1240          | 1249            | 50       | 4.6   | 2.3   |      |         |
|           | 606 SGMR          | 21     | 1247          | 1253.1          | 44       | 3.3   | 1.6   |      |         |
|           | 606 SGMR          | 3      | 1253          | 1253.1          |          | 36.3  | 7.2   |      |         |
|           | 960 PENN          | 45     | 1340.7        | 1341.8          | 2        | 4.3   | 1.3   |      |         |
|           | 606 SGMR          | 4      | 1344.2        | 1346.7          | 6.8      | 22.1  | 7.4   |      |         |
|           | 184 BOUL          | 6      | 1346          | 1347            | 2.5      |   |       | 2    |         |
|           | 2800 OTTA         | 20     | 1357          |                 | 110      | 3.8   | 2.0   |      |         |
|           | 10700 PENN        | 3      | 1403.4        | 1403.5          |          | 10.3  | 5.1   |      |         |
|           | 2700 PENN         | 1      | 1403.1        | 1403.3          | 1.3      | 2.7   | 1.4   |      |         |
|           | 960 PENN          | 1      | 1404.3        | 1404.6          | 1.7      | 4.4   | 2.2   |      |         |
|           | 2700 PENN         | 26     | 1619          | 1648            |          | 16.9  |       |      |         |
|           | 606 SGMR          | 40     | 1713.5        | 1715.1          | 8.5      | 4.3   | 1.4   |      |         |
|           | 2800 OTTA         | 20     | 1930          |                 | 90       | 2.0   | 1.0   |      |         |
|           | 960 PENN          | 3      | 2038.6        | 2038.8          | .3       | 9.6   | 4.8   |      |         |
|           | 960 PENN          | 3      | 2215.6        | 2216            | .7       | 8.8   | 1.1   |      |         |
|           | 2700 PENT         | 25     | 2300          |                 | 10       | 6.0   |       |      |         |
| 2700 PENT | 1                 | 2300   | 2305          | 8               | 3.2      | 1.6   |       |      |         |
| 21        | 2700 PENN         | 1      | 1445          | 1446.6          | 4.7      | 4.2   | 2.1   |      |         |
|           | 8800 SGMR         | 20     | 1636.2        | 1647.2          | 50.8     | 6.4   | 3.0   |      |         |
|           | 4995 SGMR         | 20     | 1636.2        | 1639.5          | 25.8     | 5.8   | 2.5   |      |         |
|           | 2700 PENN         | 20     | 1554.5        | 1640            | 89.8     | 6.1   | 3.1   |      |         |
|           | 2695 SGMR         | 20     | 1636.7        | 1642.5          | 25.3     | 3.3   | 1.5   |      |         |
|           | 1415 SGMR         | 20     | 1638.4        | 1646            | 14.6     | 1.8   | 1.0   |      |         |
|           | 184 BOUL          | 6      | 1705          | 1705            | 3        |   |       | 2    |         |
|           | 2700 PENN         | 26     | 1727.6        | 1734.7          | 17       | 3.2   | 1.6   |      |         |
|           | 486 WASH          | 3      | 1730          | 1731            | 2        | 150.00  |       |      |         |
|           | 2700 PENN         | 20     | 1815.9        | 1830.4          | 24       | 3.9   | 2.0   |      |         |
|           | 2695 SGMR         | 20     | 1826.7        | 1830.3          | 10.3     | 2.0   | 1.0   |      |         |
|           | 1415 SGMR         | 45     | 1830.1        | 1830.3          | 2.9      | 15.6  | 4.0   |      |         |
|           | 960 PENN          | 45     | 1829.9        | 1830.1          | 1.3      | 30.3  | 7.3   |      |         |
|           | 606 SGMR          | 45     | 1830          | 1830.3          | 1.7      | 57.7  | 15.0  |      |         |
|           | 2700 PENN         | 24     | 1903.5        | 2049.6          |          | 5.2   |       |      |         |
|           | 2800 OTTA         | 22     | 1953          | 2100            | 105      | 2.6   | 1.3   |      |         |
|           | 960 PENN          | 1      | 2014          | 2014.2          | .4       | 7.3   | 3.7   |      |         |
|           | 960 PENN          | 1      | 2021.8        | 2022.1          | .6       | 6.6   | 3.3   |      |         |
|           | 10700 PENN        | 3      | 2158.7        | 2159.2          | 6.3      | 26.8  | 6.9   |      |         |
|           | 2800 OTTA         | 45     | 2157          | 2059.2          | 12       | 42.0  | 11.0  |      |         |
|           | 2800 OTTA         | 45     | 2157          | 2059.2          | 4.5      | 42.0  |       |      |         |
| 2800 OTTA | 45                | 2201.5 | 2202.6        | 7.5             | 12.0     |   |       |      |         |
| 2700 PENN | 45                | 2156.4 | 2158.9        | 15.8            | 39.8     | 5.1   |       |      |         |
| 960 PENN  | 1                 | 2156.3 | 2156.6        | .5              | 7.1      | 3.5   |       |      |         |
| 22        | 2800 OTTA         | 28     | 0019          |                 | 6.5      | 4.8   | 3.0   |      |         |
|           | 2800 OTTA         | 46     | 0025.5        | 0130            | 80 D     | 1500.0  |       |      |         |
|           | 2800 OTTA         | 46     | 0025.5        | 0032            | 33       | 1100.0  |       |      |         |
|           | 2800 OTTA         | 46     | 0058          | 0130            | 47 D     | 1500.0  |       |      |         |
|           | 184 BOUL          | 41     | 0034          | 0036            | 14       |   |       | 1    |         |
|           | 10700 PENN        | 3      | 1220.4        | 1221            | 1.4      | 8.5   | 4.3   |      |         |
|           | 184 BOUL          | 24     | 1330          | 1331            | 28       |   |       | 1    |         |
|           | 2800 OTTA         | 21     | 1500          |                 | 190      |   |       |      |         |
|           | 2800 OTTA         | 1      | 1506.8        | 1507.5          | 1        | 4.0   | 3.0   |      |         |
|           | 2700 PENN         | 20     | 1524.2        | 1528.2          | 8.8      | 1.0   | 0.5   |      |         |
|           | 2800 OTTA         | 1      | 1527.5        | 1528.2          | 1.5      | 2.7   | 1.3   |      |         |
|           | 960 PENN          | 1      | 1529.4        | 1529.5          | .3       | 1.6   | 0.8   |      |         |
|           | 2800 OTTA         | 20     | 1600          | 1604            | 10       | 1.5   | 0.7   |      |         |
|           | 8800 SGMR         | 3      | 1733.5        | 1733.6          | 1.5      | 2.6   | 1.3   |      |         |
|           | 4995 SGMR         | 3      | 1733.4        | 1733.6          | 1.6      | 9.0   | 1.0   |      |         |
|           | 2800 OTTA         | 2      | 1720.3        | 1721.3          | 3.5      | 23.0  | 6.0   |      |         |
|           | 2800 OTTA         | 3      | 1733.5        | 1733.7          | 1.5      | 2.6   | 1.3   |      |         |
|           | 2700 PENN         | 1      | 1720.9        | 1721.2          | 2.1      | 7.6   | 3.8   |      |         |
|           | 2700 PENN         | 3      | 1733.3        | 1733.6          | 2.6      | 2.0   | 1.0   |      |         |
|           | 2695 SGMR         | 3      | 1733.5        | 1733.7          | 1.5      | 8.2   | 4.1   |      |         |
|           | 1415 SGMR         | 1      | 1733.5        | 1733.7          | 1.5      | 8.1   | 1.0   |      |         |
|           | 960 PENN          | 1      | 1731.9        | 1732.1          | .5       | 3.7   | 1.0   |      |         |
|           | 2800 OTTA         | 29     | 1735          |                 | 10       | 2.0   | 1.0   |      |         |
|           | 2800 OTTA         | 20     | 1820          | 1935            | 200      | 2.0   | 1.0   |      |         |
|           | 2700 PENN         | 1      | 1849          | 1849.2          | .5       | 6.2   | 4.0   |      |         |
|           | 2695 SGMR         | 3      | 2106.4        | 2106.7          | .6       | 2.1   | 1.0   |      |         |
|           | 1415 SGMR         | 1      | 2106.8        | 2106.9          | .2       | 24.3  | 6.0   |      |         |
| 960 PENN  | 3                 | 1908.1 | 1908.3        | .4              | 3.6      | 1.0   |       |      |         |
|           |                   |        |               |                 | 9.5      | 4.8   |       |      |         |

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Mar 67

## SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

MARCH 1967

| MAR.<br>1967 | FREQUENCY STATION | TYPE | STARTING TIME | TIME OF MAXIMUM | DURATION | FLUX DENSITY<br>$10^{-22} \text{ W m}^{-2} (\text{c/s})^{-1}$ |      | INT. | REMARKS |
|--------------|-------------------|------|---------------|-----------------|----------|---|------|------|---------|
|              |                   |      | UT            | UT              | MINUTES  | PEAK  | MEAN |      |         |
| 22           | 960 PENN          | 1    | 2114.6        | 2114.7          | .3       | 6.3   | 3.1  | 1    |         |
|              | 606 SGMR          | 4    | 2117.5        | 2117.5          | .3       | 91.3  | 10.0 |      |         |
|              | 486 WASH          | 3    | 1929          | 1930            | 2        | 120.0   |      |      |         |
|              | 184 BOUL          | 42   | 1846          | 1925            | 133      |   |      |      |         |
|              | 10700 PENN        | 3    | 2202.8        | 2203.1          | 2.1      | 9.6   | 4.8  |      |         |
|              | 2800 OTTA         | 1    | 2203.5        | 2204.2          | 1.5      | 2.6   | 1.3  |      |         |
|              | 2700 PENN         | 1    | 2203.6        | 2204.5          | 1.2      | 4.2   | 2.1  |      |         |
|              | 960 PENN          | 1    | 2203.5        | 2203.6          | .6       | 4.1   | 2.1  |      |         |
|              | 2700 PENT         | 24   | 2220          |                 | 45       | 6.6   |      |      |         |
|              | 960 PENN          | 1    | 2217.5        | 2217.6          | .3       | 4.6   | 2.3  |      |         |
| 23           | 2800 OTTA         | 22   | 1255          | 1302            | 35       | 5.0   | 2.5  | 1    |         |
|              | 184 BOUL          | 42   | 1313          | 1336            | 55       |   |      |      |         |
|              | 2800 OTTA         | 26   | 1347          | 1420            | 125      | 8.0   | 4.0  |      |         |
|              | 184 BOUL          | 6    | 1453          | 1453            | .5       |   |      |      |         |
|              | 10700 PENN        | 3    | 1854.7        | 1854.1          | .6       | 10.4  | 5.2  |      |         |
|              | 8800 SGMR         | 1    | 1854.6        | 1854.7          | 1        | 6.4   | 1.5  |      |         |
|              | 4995 SGMR         | 3    | 1854.6        | 1854.7          | 1.4      | 12.1  | 3.0  |      |         |
|              | 2800 OTTA         | 23   | 1840          | 1850            | 30       | 2.4   | 1.2  |      |         |
|              | 2800 OTTA         | 1    | 1854.9        | 1855            | .5       | 3.0   | 1.5  |      |         |
|              | 2700 PENN         | 1    | 1854.7        | 1854.8          | 1.1      | 2.7   | 1.3  |      |         |
|              | 2695 SGMR         | 22   | 1847          | 1854.9          | 13       | 6.0   | 3.0  |      |         |
|              | 1415 SGMR         | 3    | 1856.7        | 1856.8          | .3       | 46.8  | 15.0 |      |         |
|              | 960 PENN          | 1    | 1831.3        | 1831.6          | .4       | 2.5   | 1.2  |      |         |
|              | 960 PENN          | 1    | 1859          | 1859.3          | .6       | 1.4   | 0.7  |      |         |
|              | 606 SGMR          | 40   | 1840          | 1843.2          | 16       | 7.3   | 2.5  |      |         |
|              | 184 BOUL          | 7    | 1854          | 1928            | 54       |   |      |      |         |
|              | 10700 PENN        | 3    | 1914.4        | 1914.6          | 2.6      | 18.0  | 9.0  |      |         |
|              | 8800 SGMR         | 45   | 1914.4        | 1914.6          | 4.3      | 12.8  | 4.5  |      |         |
|              | 4995 SGMR         | 45   | 1914.3        | 1914.6          | 2.7      | 32.6  | 10.5 |      |         |
|              | 2800 OTTA         | 3    | 1914.4        | 1914.6          | 2        | 14.0  | 4.0  |      |         |
|              | 2700 PENN         | 3    | 1907.9        | 1908.3          | .6       | 10.0  | 5.0  |      |         |
|              | 2700 PENN         | 3    | 1914.5        | 1914.6          | 1.1      | 10.8  | 6.9  |      |         |
|              | 2695 SGMR         | 3    | 1914.4        | 1914.6          | 3.6      | 10.5  | 3.5  |      |         |
|              | 1415 SGMR         | 1    | 1914.4        | 1915.1          | 2.6      | 4.5   | 1.5  |      |         |
|              | 960 PENN          | 1    | 1909.4        | 1909.6          | 1.6      | 2.0   | 1.0  |      |         |
|              | 606 SGMR          | 1    | 1914.4        | 1914.6          | 2.6      | 2.4   | .8   |      |         |
|              | 2700 PENN         | 29   | 1915.6        | 1915.6          | 165 D    | 3.4   | 3.0E |      |         |
|              | 10700 PENN        | 3    | 1928.5        | 1929            | .8       | 112.4   | 59.6 |      |         |
|              | 8800 SGMR         | 3    | 1920          | 1929            | 10       | 130.0   | 40.0 |      |         |
|              | 4995 SGMR         | 45   | 1919          | 1929.3          | 13       | 103.0   | 35.0 |      |         |
|              | 2800 OTTA         | 21   | 1919          | 1932            | 55       | 6.4   | 3.2  |      |         |
|              | 2800 OTTA         | 41   | 1923          | 1929            | 8        | 6.0   |      |      |         |
|              | 2700 PENN         | 45   | 1922.9        | 1929            | 8.4      | 57.5  | 12.5 |      |         |
|              | 2695 SGMR         | 45   | 1922          | 1929.3          | 10       | 79.0  | 25.0 |      |         |
|              | 1415 SGMR         | 45   | 1923          | 1929.3          | 9        | 48.8  | 18.0 |      |         |
|              | 960 PENN          | 1    | 1923.1        | 1923.3          | .5       | 3.0   | 1.5  |      |         |
|              | 960 PENN          | 3    | 1928.6        | 1929            | 5        | 10.1  | 3.1  |      |         |
|              | 606 SGMR          | 45   | 1924          | 1929.7          | 10       | 110.5   | 33.0 |      |         |
|              | 10700 PENN        | 29   | 1929.3        | 1929.3          | 12.7     | 18.0  | 9.2  |      |         |
|              | 8800 SGMR         | 29   | 1930          | 1930            | 34.5     | 19.2  | 8.6  |      |         |
|              | 4995 SGMR         | 29   | 1932          | 1932            | 37       | 14.0  | 7.0  |      |         |
|              | 2700 PENN         | 29   | 1931.3        | 2200            | 150 D    | 10.1  | 8.0  |      |         |
|              | 2695 SGMR         | 29   | 1932          | 1932            | 35       | 9.0   | 4.5  |      |         |
|              | 1415 SGMR         | 29   | 1932          | 1932            | 10       | 5.3   | 2.6  |      |         |
|              | 606 SGMR          | 29   | 1934          | 1934            | 51       | 9.9   | 4.9  |      |         |
| 2800 OTTA    | 26                | 2150 | 2205          | 40              | 3.0      | 1.5   |      |      |         |
| 2700 PENT    | 21                | 2325 | 2328.2        | 95              | 8.4      | 4.2   |      |      |         |
| 2700 PENT    | 3                 | 2329 | 2331          | 9               | 46.0     | 18.0  |      |      |         |
| 24           | 2800 OTTA         | 1    | 1204          | 1206            | 4        | 5.4   | 2.7  | 2    |         |
|              | 606 SGMR          | 3    | 1312.6        | 1312.8          | .4       | 40.0  | 20.0 |      |         |
|              | 8800 SGMR         | 1    | 1510          | 1513            | 8        | 6.6   | 2.2  |      |         |
|              | 4995 SGMR         | 3    | 1511.5        | 1513            | 6.5      | 9.3   | 3.1  |      |         |
|              | 2695 SGMR         | 1    | 1510          | 1513.1          | 8        | 6.2   | 2.1  |      |         |
|              | 2800 OTTA         | 1    | 1542.5        | 1543.2          | 3        | 3.4   | 1.7  |      |         |
|              | 2700 PENN         | 5    | 1535.7        |                 | 8 D      |   |      |      |         |
|              | 8800 SGMR         | 1    | 1645.3        | 1645.5          | 1.3      | 6.6   | 2.2  |      |         |
|              | 4995 SGMR         | 3    | 1645          | 1645.3          | 2        | 14.0  | 7.0  |      |         |
|              | 2695 SGMR         | 20   | 1644.7        | 1645.3          | 8.3      | 1.6   | .8   |      |         |
|              | 10700 PENN        | 20   | 1829.4        | 1835.5          | 11.4     | 8.4   | 4.2  |      |         |
|              | 8800 SGMR         | 22   | 1829          | 1836.1          | 21       | 11.0  | 5.5  |      |         |
|              | 4995 SGMR         | 22   | 1831          | 1836.1          | 20       | 18.0  | 9.0  |      |         |
|              | 2800 OTTA         | 24   | 1800          |                 | 120      | 3.0   |      |      |         |
|              | 2800 OTTA         | 1    | 1835          | 1836.2          | 4        | 7.0   | 3.5  |      |         |
|              | 2700 PENN         | 20   | 1830.4        | 1938            | 229.6    | 4.6   | 3.1  |      |         |
|              | 2700 PENN         | 1    | 1834.9        | 1836.3          | 2.6      | 6.9   | 3.5  |      |         |
|              | 2695 SGMR         | 22   | 1829          | 1836.1          | 26       | 10.9  | 5.4  |      |         |
|              | 960 PENN          | 45   | 1824.1        | 1824.3          | .8       | 3.9   | 1.9  |      |         |
|              | 960 PENN          | 45   | 1827.7        | 1828.5          | 1        | 10.9  | 5.1  |      |         |
|              | 960 PENN          | 3    | 1833.6        | 1833.7          | .3       | 7.8   | 3.9  |      |         |
|              | 960 PENN          | 45   | 1835.5        | 1837.2          | 1.9      | 15.5  | 5.0  |      |         |
|              | 184 BOUL          | 6    | 1834          | 1835            | 2        |   |      |      |         |
|              | 8800 SGMR         | 3    | 2022.9        | 2023.1          | 1.1      | 8.3   | 4.1  |      |         |
|              | 4995 SGMR         | 4    | 2022.7        | 2023            | 11.3     | 8.1   | 2.0  |      |         |
|              | 960 PENN          | 3    | 2047.6        | 2047.7          | .2       | 8.2   | 4.1  |      |         |
|              | 960 PENN          | 1    | 2216.1        | 2216.5          | .6       | 4.9   | 2.4  |      |         |
| 25           | 2800 OTTA         | 20   | 1230          | 1310            | 20       | 4.0   | 2.0  |      |         |
|              | 2800 OTTA         | 20   | 1750          | 1925            | 220      | 13.0  | 6.5  |      |         |
|              | 2700 PENN         | 20   | 1827          | 1924.4          | 192      | 13.2  | 6.6  |      |         |

SOLAR RADIO EMISSION  
OUTSTANDING OCCURRENCES  
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| MAR.<br>1967 | FREQUENCY STATION | TYPE   | STARTING TIME | TIME OF MAXIMUM | DURATION | FLUX DENSITY                                 |      | INT. | REMARKS |
|--------------|-------------------|--------|---------------|-----------------|----------|--|------|------|---------|
|              |                   |        | UT            | UT              |          | $10^{-22} \text{ Wm}^{-2} (\text{c/s})^{-1}$ |      |      |         |
|              |                   |        |               |                 | MINUTES  | PEAK   | MEAN |      |         |
| 25           | 960 PENN          | 1      | 1933.5        | 1933.6          | .6       | 6.0  | 3.0  |      |         |
|              | 960 PENN          | 1      | 2018          | 2018.2          | .4       | 5.3  | 2.6  |      |         |
|              | 2700 PENN         | 20     | 2149          | 2158.4          | 40       | 4.3  | 2.2  |      |         |
|              | 2800 OTTA         | 20     | 2155          | 2158            | 30       | 3.4  | 2.0  |      |         |
|              | 960 PENN          | 1      | 2228          | 2228.1          | .3       | 5.3  | 2.7  |      |         |
|              | 960 PENN          | 3      | 2231.3        | 2231.4          | .3       | 16.4   | 8.2  |      |         |
|              | 486 WASH          | 3      | 2327          | 2328            | 2        | 50.0   |      |      |         |
|              | 2700 PENT         | 4      | 2352          | 2353            | 8        | 13.6   | 6.0  |      |         |
| 26           | 2700 PENT         | 1      | 0014.5        | 0015            | 1.5      | 4.0  | 2.0  |      |         |
|              | 486 WASH          | 3      | 0014          | 0016            | 3        | 40.0   |      |      |         |
|              | 2700 PENT         | 29     | 0016          |                 | 13       | 2.4  | 1.2  |      |         |
|              | 10700 PENN        | 45     | 1447.4        | 1450.5          | 9.2      | 61.6   | 14.0 |      |         |
|              | 8800 SGMR         | 45     | 1448          | 1450.5          | 10       | 66.0   | 16.0 |      |         |
|              | 4995 SGMR         | 45     | 1447.3        | 1450.5          | 5.2      | 50.0   | 10.0 |      |         |
|              | 2800 OTTA         | 21     | 1448          | 1455            | 25       | 4.0  | 2.0  |      |         |
|              | 2800 OTTA         | 4      | 1448          | 1449.2          | 4.5      | 21.0   | 10.0 |      |         |
|              | 2800 OTTA         | 4      | 1448          | 1449.2          | 4.5      | 21.0   | 10.0 |      |         |
|              | 2700 PENN         | 20     | 1446.6        | 1706            | 311.5    | 24.6   | 12.3 |      |         |
|              | 2700 PENN         | 45     | 1447.6        | 1449.2          | 4.7      | 128.2  | 15.9 |      |         |
|              | 2695 SGMR         | 45     | 1447.7        | 1449.3          | 6.3      | 187.9  | 46.0 |      |         |
|              | 1415 SGMR         | 45     | 1447.7        | 1449.3          | 4.9      | 63.0   | 15.0 |      |         |
|              | 1415 SGMR         | 45     | 1455.4        | 1456.2          | 4.6      | 41.5   | 9.0  |      |         |
|              | 960 PENN          | 1      | 1445.7        | 1450.7          | 6.9      | 2.6  | 1.3  |      |         |
|              | 606 SGMR          | 45     | 1447.7        | 1450.2          | 6.3      | 46.4   | 10.0 |      |         |
|              | 184 BOUL          | 6      | 1447          | 1449            | 5        |  |      |      |         |
|              | 606 SGMR          | 29     | 1454          | 1454            | 6        | 9.9  | 4.5  |      |         |
|              | 10700 PENN        | 3      | 1605          | 1605.4          | 3        | 18.2   | 9.1  |      |         |
|              | 8800 SGMR         | 3      | 1604.8        | 1605.4          | 2.5      | 36.0   | 8.0  |      |         |
|              | 4995 SGMR         | 3      | 1604.8        | 1605.4          | 1.8      | 56.0   | 14.0 |      |         |
|              | 2800 OTTA         | 4      | 1605          | 1605.6          | 2        | 48.0   | 20.0 |      |         |
|              | 2700 PENN         | 45     | 1605          | 1605.9          | 4.1      | 46.0   | 9.1  |      |         |
|              | 2695 SGMR         | 45     | 1604.8        | 1605.9          | 3.5      | 84.9   | 20.0 |      |         |
|              | 1415 SGMR         | 45     | 1605.1        | 1605.9          | 3.1      | 21.0   | 5.0  |      |         |
|              | 960 PENN          | 1      | 1604.6        | 1605.5          | 2.4      | 1.1  | 0.5  |      |         |
|              | 4995 SGMR         | 29     | 1606.6        | 1606.6          | 16.4     | 9.4  | 4.5  |      |         |
|              | 2800 OTTA         | 29     | 1607          | 1607            | 8        | 6.8  | 3.4  |      |         |
|              | 1415 SGMR         | 29     | 1608.2        | 1608.2          | 12.8     | 2.8  | 1.3  |      |         |
|              | 2800 OTTA         | 21     | 1530          | 1703            | 330      | 25.0   | 7.0  |      |         |
|              | 10700 PENN        | 20     | 1603.6        | 1704.7          | 128.4    | 30.1   | 15.0 |      |         |
|              | 10700 PENN        | 3      | 1714.7        | 1716.7          | 4        | 13.8   | 6.9  |      |         |
|              | 8800 SGMR         | 20     | 1631          | 1703            | 60       | 19.5   | 6.0  |      |         |
|              | 8800 SGMR         | 3      | 1716.3        | 1717            | 3.7      | 10.4   | 2.0  |      |         |
|              | 4995 SGMR         | 20     | 1635.5        | 1703            | 66       | 53.0   | 17.0 |      |         |
|              | 4995 SGMR         | 3      | 1716          | 1716.7          | 3.6      | 15.1   | 3.0  |      |         |
|              | 2800 OTTA         | 3      | 1715.5        | 1716.8          | 4.5      | 11.4   | 5.7  |      |         |
|              | 2700 PENN         | 3      | 1715          | 1716.9          | 4.6      | 13.4   | 5.6  |      |         |
|              | 2695 SGMR         | 20     | 1636          | 1702            | 67.4     | 16.7   | 5.5  |      |         |
|              | 2695 SGMR         | 3      | 1716          | 1716.8          | 3        | 12.4   | 2.5  |      |         |
|              | 1415 SGMR         | 20     | 1633.5        | 1714            | 101.5    | 13.2   | 4.5  |      |         |
|              | 2800 OTTA         | 40     | 1832          | 1832.3          | 2        | 14.0   |      |      |         |
| 2700 PENN    | 45                | 1832.2 | 1832.3        | 2.8             | 13.6     | 2.9  |      |      |         |
| 1415 SGMR    | 45                | 1832.6 | 1833.7        | 2.9             | 78.1     | 19.0   |      |      |         |
| 960 PENN     | 1                 | 1833.5 | 1833.6        | .6              | 1.1      | 0.5  |      |      |         |
| 2800 OTTA    | 20                | 2030   | 2034          | 10              | 3.0      | 1.5  |      |      |         |
| 2700 PENN    | 20                | 2031.8 | 2033.8        | 9.6             | 5.1      | 2.6  |      |      |         |
| 10700 PENN   | 3                 | 2159.5 | 2200.7        | 4               | 12.6     | 6.3  |      |      |         |
| 2800 OTTA    | 45                | 2158   | 2158.8        | 10              | 10.0     | 6.5  |      |      |         |
| 2700 PENN    | 20                | 2158   | 2158.5        | 27              | 12.4     | 4.3  |      |      |         |
| 1415 SGMR    | 40                | 2158.1 | 2202.1        | 10.2            | 16.5     | 3.0  |      |      |         |
| 960 PENN     | 1                 | 2143.8 | 2144.2        | 1.1             | 3.8      | 1.4  |      |      |         |
| 606 SGMR     | 40                | 2158.1 | 2206.5        | 10.9            | 7.9      | 1.5  |      |      |         |
| 2800 OTTA    | 29                | 2208   | 2208          | 45              | 3.0      | 1.5  |      |      |         |
| 960 PENN     | 1                 | 2223.2 | 2223.4        | .4              | 5.4      | 2.7  |      |      |         |
| 27           | 4995 SGMR         | 20     | 1233          | 1237.8          | 12       | 8.6  | 2.7  |      |         |
|              | 2800 OTTA         | 22     | 1231          | 1238            | 19       | 13.0   | 6.0  |      |         |
|              | 2700 PENN         | 3      | 1233.2        | 1237.6          | 8.2      | 16.4   | 7.8  |      |         |
|              | 2695 SGMR         | 20     | 1233          | 1237.8          | 9        | 10.8   | 3.5  |      |         |
|              | 1415 SGMR         | 22     | 1233          | 1238            | 14       | 8.3  | 3.0  |      |         |
|              | 606 SGMR          | 40     | 1233          | 1239.7          | 9        | 8.3  | 2.0  |      |         |
|              | 2700 PENN         | 29     | 1241.4        | 1241.4          | 27       | 4.4  | 1.7  |      |         |
|              | 606 SGMR          | 40     | 1257.7        | 1302.1          | 41.3     | 19.8   | 3.3  |      |         |
|              | 8800 SGMR         | 22     | 1435          | 1450.2          | 34       | 6.5  | 3.0  |      |         |
|              | 2700 PENN         | 20     | 1338.4        | 1440            | 240      | 2.7  | 1.4  |      |         |
|              | 10700 PENN        | 3      | 1519.5        | 1520.5          | 3.5      | 17.2   | 8.6  |      |         |
|              | 4995 SGMR         | 22     | 1435          | 1454.5          | 42       | 8.6  | 4.0  |      |         |
|              | 2800 OTTA         | 21     | 1442          | 1455            | 60 D     | 5.0  |      |      |         |
|              | 2800 OTTA         | 1      | 1442          | 1443            | 2        | 5.4  | 3.0  |      |         |
|              | 2700 PENN         | 1      | 1441.8        | 1442.7          | 1.8      | 6.0  | 3.8  |      |         |
|              | 2695 SGMR         | 23     | 1435          | 1442.8          | 36       | 6.2  | 3.0  |      |         |
|              | 2695 SGMR         | 1      | 1442          | 1442.8          | 1.5      | 3.1  | 1.0  |      |         |
|              | 960 PENN          | 1      | 1442.5        | 1442.7          | .4       | 1.1  | 0.5  |      |         |
|              | 606 SGMR          | 40     | 1501.8        | 1503.7          | 5.2      | 3.3  | 1.0  |      |         |
|              | 2700 PENN         | 29     | 1443.6        | 1445            | 31.2     | 3.8  | 2.0  |      |         |
|              | 2800 OTTA         | 21     | 1538          | 1635            | 140      | 9.2  | 4.6  |      |         |
|              | 10700 PENN        | 3      | 1607.6        | 1609.1          | 3.4      | 35.3   | 22.6 |      |         |
|              | 8800 SGMR         | 3      | 1608          | 1610.6          | 6        | 39.0   | 13.0 |      |         |
|              | 4995 SGMR         | 3      | 1608          | 1610.6          | 5        | 38.7   | 12.8 |      |         |

SPIKE

3

SOLAR RADIO EMISSION  
OUTSTANDING OCCURRENCES

MARCH 1967

| MAR.<br>1967 | FREQUENCY STATION | TYPE       | STARTING | TIME OF | DURATION | FLUX DENSITY                  |       | INT   | REMARKS |      |
|--------------|-------------------|------------|----------|---------|----------|-------------------------------|-------|-------|---------|------|
|              |                   |            | TIME     | MAXIMUM |          | $10^{22} W_m^{-2} (c/s)^{-1}$ |       |       |         |      |
|              |                   |            | UT       | UT      |          | MINUTES                       | PEAK  |       |         | MEAN |
| 27           | 2800 OTTA         | 21         | 1608     | 1614    | 16       | 9.4                           | 4.7   |       |         |      |
|              | 2800 OTTA         | 3          | 1610     | 1610.9  | 2        | 24.0                          | 12.0  |       |         |      |
|              | 2700 PENN         | 3          | 1601.7   | 1610.1  | 9.7      | 16.1                          | 4.8   |       |         |      |
|              | 2695 SGMR         | 22         | 1543     | 1545.2  | 16       | 4.6                           | 1.5   |       |         |      |
|              | 2695 SGMR         | 3          | 1608     | 1610.7  | 4        | 37.2                          | 12.3  |       |         |      |
|              | 1415 SGMR         | 22         | 1543     | 1544    | 3        | 3.7                           | 1.2   |       |         |      |
|              | 1415 SGMR         | 4          | 1608     | 1610.6  | 7        | 20.8                          | 7.0   |       |         |      |
|              | 960 PENN          | 1          | 1608.5   | 1610.9  | 3        | 5.7                           | 0.8   |       |         |      |
|              | 606 SGMR          | 40         | 1543     | 1545.5  | 3        | 11.6                          | 3.0   |       |         |      |
|              | 606 SGMR          | 22         | 1558     | 1637    | 44       | 6.6                           | 1.6   |       |         |      |
|              | 10700 PENN        | 29         | 1611     | 1611    | 11.1     | 17.6                          | 8.6   |       |         |      |
|              | 8800 SGMR         | 29         | 1614     | 1614    | 43       | 13.0                          | 6.5   |       |         |      |
|              | 4995 SGMR         | 29         | 1613     | 1613    | 40       | 17.2                          | 8.6   |       |         |      |
|              | 2700 PENN         | 29         | 1611.4   | 1611.4  | 38.6     | 11.1                          | 5.5   |       |         |      |
|              | 2695 SGMR         | 29         | 1612     | 1612    | 51       | 12.4                          | 6.2   |       |         |      |
|              | 1415 SGMR         | 29         | 1615     | 1615    | 16       | 2.6                           | 1.3   |       |         |      |
|              | 10700 PENN        | 3          | 1719.2   | 1720    | 6        | 13.2                          | 6.6   |       |         |      |
|              | 8800 SGMR         | 20         | 1718.8   | 1719.8U | 28.2     | 13.4U                         | 4.4   |       |         |      |
|              | 4995 SGMR         | 20         | 1718.8   | 1719.8U | 28.2     | 13.5U                         | 4.5   |       |         |      |
|              | 2800 OTTA         | 22         | 1716     | 1720    | 30       | 8.8                           | 4.4   |       |         |      |
|              | 2700 PENN         | 20         | 1715     | 1720    | 14.4     | 6.7                           | 3.3   |       |         |      |
|              | 2695 SGMR         | 20         | 1718.8   | 1719.8U | 28.2     | 12.3U                         | 4.1   |       |         |      |
|              | 1415 SGMR         | 20         | 1718.8   | 1720.3  | 7.5      | 5.0                           | 2.0   |       |         |      |
|              | 606 SGMR          | 40         | 1719     | 1719    | 194      | 17.9                          | 3.0   |       |         |      |
|              | 10700 PENN        | 3          | 1946.6   | 1947.4  | 2.2      | 18.5                          | 9.2   |       |         |      |
|              | 2800 OTTA         | 21         | 1835     | 1945    | 205      | 6.0                           | 3.5   |       |         |      |
|              | 2700 PENN         | 20         | 1853.1   | 1944.8  | 197.7    | 7.7                           | 3.9   |       |         |      |
|              | 2800 OTTA         | 1          | 2030     | 2033    | 5        | 5.4                           | 3.0   |       |         |      |
|              | 2800 OTTA         | 1          | 2045     | 2046    | 4        | 3.0                           | 1.5   |       |         |      |
|              | 2700 PENN         | 20         | 2027.6   | 2033.6  | 26.8     | 7.0                           | 2.9   |       |         |      |
|              | 10700 PENN        | 20         | 2111.2   | 2112.4  | 32       | 14.1                          | 7.1   |       |         |      |
|              | 10700 PENN        | 3          | 2122.4   | 2125.5  | 11.6     | 30.6                          | 12.9  |       |         |      |
|              | 2800 OTTA         | 4          | 2111     | 2112    | 4        | 11.0                          | 5.5   |       |         |      |
|              | 2800 OTTA         | 4          | 2122     | 2126    | 10       | 10.0                          | 5.0   |       |         |      |
|              | 2700 PENN         | 45         | 2109.7   | 2112.5  | 7        | 14.4                          | 3.7   |       |         |      |
|              | 2700 PENN         | 20         | 2120.8   | 2123.1  | 12       | 12.0                          | 5.3   |       |         |      |
|              | 1415 SGMR         | 45         | 2110.4   | 2111.7  | 21.6     | 112.0                         | 15.0  |       |         |      |
|              | 960 PENN          | 45         | 2111.6   | 2111.7  | 1.4      | 18.7                          | 2.0   |       |         |      |
|              | 960 PENN          | 1          | 2113.4   | 2114.3  | 1.6      | 2.1                           | 1.1   |       |         |      |
|              | 960 PENN          | 1          | 2121.5   | 2123.1  | 5        | 1.9                           | 1.1   |       |         |      |
|              | 606 SGMR          | 45         | 2110     | 2111.7  | 21       | 185.0                         | 37.0  |       |         |      |
|              | 486 WASH          | 45         | 2110     | 2112    | 6        | 145.0D                        |       |       |         |      |
|              | 184 BOUL          | 41         | 2111     | 2112    | 21       |                               |       |       | 2       |      |
|              | 960 PENN          | 1          | 2153.5   | 2154    | 2        | 2.3                           | 0.6   |       |         |      |
|              | 28                | 184 BOUL   | 48       | 0016    | 0049     | 35                            |       |       |         | 2    |
|              |                   | 184 BOUL   | 41       | 0236    | 0306     | 38                            |       |       |         | 1    |
|              |                   | 606 SGMR   | 4        | 1208.2  | 1208.4   | .8                            | 56.1  | 18.4  |         |      |
|              |                   | 2800 OTTA  | 1        | 1234.5  | 1234.8   | .5                            | 3.0   | 1.5   |         |      |
|              |                   | 2800 OTTA  | 1        | 1710.5  | 1710.8   | 1                             | 1.6   | 0.8   |         |      |
|              |                   | 10700 PENN | 45       | 1735.8  | 1737     | 4                             | 447.9 | 111.1 |         |      |
| 8800 SGMR    |                   | 45         | 1736.4   | 1737.7  | 4.1      | 481.4                         | 112.1 |       |         |      |
| 4995 SGMR    |                   | 45         | 1736.4   | 1737.6  | 4.1      | 244.8                         | 53.0  |       |         |      |
| 2800 OTTA    |                   | 4          | 1736.5   | 1737.8  | 4        | 62.0                          | 26.0  |       |         |      |
| 2700 PENN    |                   | 45         | 1735.8   | 1737.4  | 4        | 58.8                          | 20.1  |       |         |      |
| 2695 SGMR    |                   | 45         | 1736.4   | 1738    | 4.1      | 89.0                          | 18.0  |       |         |      |
| 1415 SGMR    |                   | 45         | 1736.3   | 1738.2  | 5.2      | 1321.0                        | 287.0 |       |         |      |
| 960 PENN     |                   | 45         | 1736     | 1737.6  | 3.4      | 41.0                          | 10.2  |       |         |      |
| 606 SGMR     |                   | 45         | 1736.4   | 1738.7  | 6.5      | 2449.0                        | 565.0 |       |         |      |
| 486 WASH     |                   | 45         | 1736     | 1738    | 6        | 150.0D                        |       |       |         |      |
| 184 BOUL     |                   | 6          | 1734     | 1736    | 8        |                               |       |       | 1       |      |
| 10700 PENN   |                   | 29         | 1739.8   | 1739.8  | 7.6      | 6.8                           | 3.4   |       |         |      |
| 8800 SGMR    |                   | 29         | 1740.5   | 1740.5  | 14.2     | 18.9                          | 9.4   |       |         |      |
| 4995 SGMR    |                   | 29         | 1740.5   | 1740.5  | 24       | 8.4                           | 4.2   |       |         |      |
| 2800 OTTA    |                   | 29         | 1740.5   | 1740.5  | 7        | 5.4                           | 2.5   |       |         |      |
| 2700 PENN    |                   | 29         | 1739.8   | 1739.8  | 6.2      | 4.7                           | 2.0   |       |         |      |
| 2695 SGMR    |                   | 29         | 1740.5   | 1740.5  | 24       | 6.0                           | 3.0   |       |         |      |
| 1415 SGMR    |                   | 29         | 1741.5   | 1741.5  | 67.5     | 3.5                           | 1.7   |       |         |      |
| 960 PENN     |                   | 29         | 1739.4   | 1739.4  | 3.4      | .6                            | 0.3   |       |         |      |
| 606 SGMR     |                   | 29         | 1742.9   | 1742.9  | 66.1     | 6.6                           | 3.3   |       |         |      |
| 2800 OTTA    |                   | 2          | 1800.5   | 1801.3  | 1.5      | 2.6                           | 1.3   |       |         |      |
| 2700 PENN    |                   | 20         | 1856.7   | 1909.4  | 38.1     | 6.0                           | 3.6   |       |         |      |
| 2800 OTTA    |                   | 23         | 1857     | 1925    | 40       | 6.2                           | 3.1   |       |         |      |
| 10700 PENN   |                   | 3          | 1913.2   | 1916.4  | 6        | 8.5                           | 4.3   |       |         |      |
| 8800 SGMR    |                   | 45         | 1910     | 1917.3  | 24.5     | 26.5                          | 7.8   |       |         |      |
| 4995 SGMR    |                   | 45         | 1907     | 1916.9  | 27.5     | 31.5                          | 8.5   |       |         |      |
| 2800 OTTA    |                   | 45         | 1914.5   | 1917.4  | 5.5      | 32.0                          | 12.0  |       |         |      |
| 2800 OTTA    |                   | 45         | 1914.5   | 1915    | 1.5      | 11.0                          |       |       |         |      |
| 2800 OTTA    |                   | 45         | 1916     | 1917.4  | 4        | 32.0                          |       |       |         |      |
| 2700 PENN    |                   | 45         | 1913.2   | 1916.8  | 6.6      | 29.6                          | 9.4   |       |         |      |
| 2695 SGMR    |                   | 45         | 1907     | 1917.3  | 22       | 36.9                          | 9.0   |       |         |      |
| 1415 SGMR    |                   | 45         | 1906.3   | 1917.3  | 24.7     | 356.0                         | 70.0  |       |         |      |
| 960 PENN     |                   | 45         | 1908.6   | 1917    | 10.6     | 6.0                           | 2.2   |       |         |      |
| 606 SGMR     |                   | 45         | 1906     | 1915.5  | 21       | 93.0                          | 19.0  |       |         |      |
| 486 WASH     |                   | 45         | 1914     | 1916    | 5        | 40.0                          |       |       |         |      |
| 184 BOUL     | 42                | 1905       | 1916     | 60      |          |                               |       | 1     |         |      |
| 2700 PENT    | 1                 | 2259.2     | 2300     | 1.5     | 2.2      | 1.1                           |       |       |         |      |
| 29           | 10700 PENN        | 3          | 1234.1   | 1234.6  | 1.4      | 18.9                          | 10.8  |       |         |      |
|              | 2700 PENN         | 1          | 1234     | 1234.8  | 2.2      | 5.1                           | 2.5   |       |         |      |
|              | 10700 PENN        | 3          | 1422.3   | 1422.8  | 1.7      | 12.5                          | 6.3   |       |         |      |

SOLAR RADIO EMISSION  
OUTSTANDING OCCURRENCES

MARCH 1967

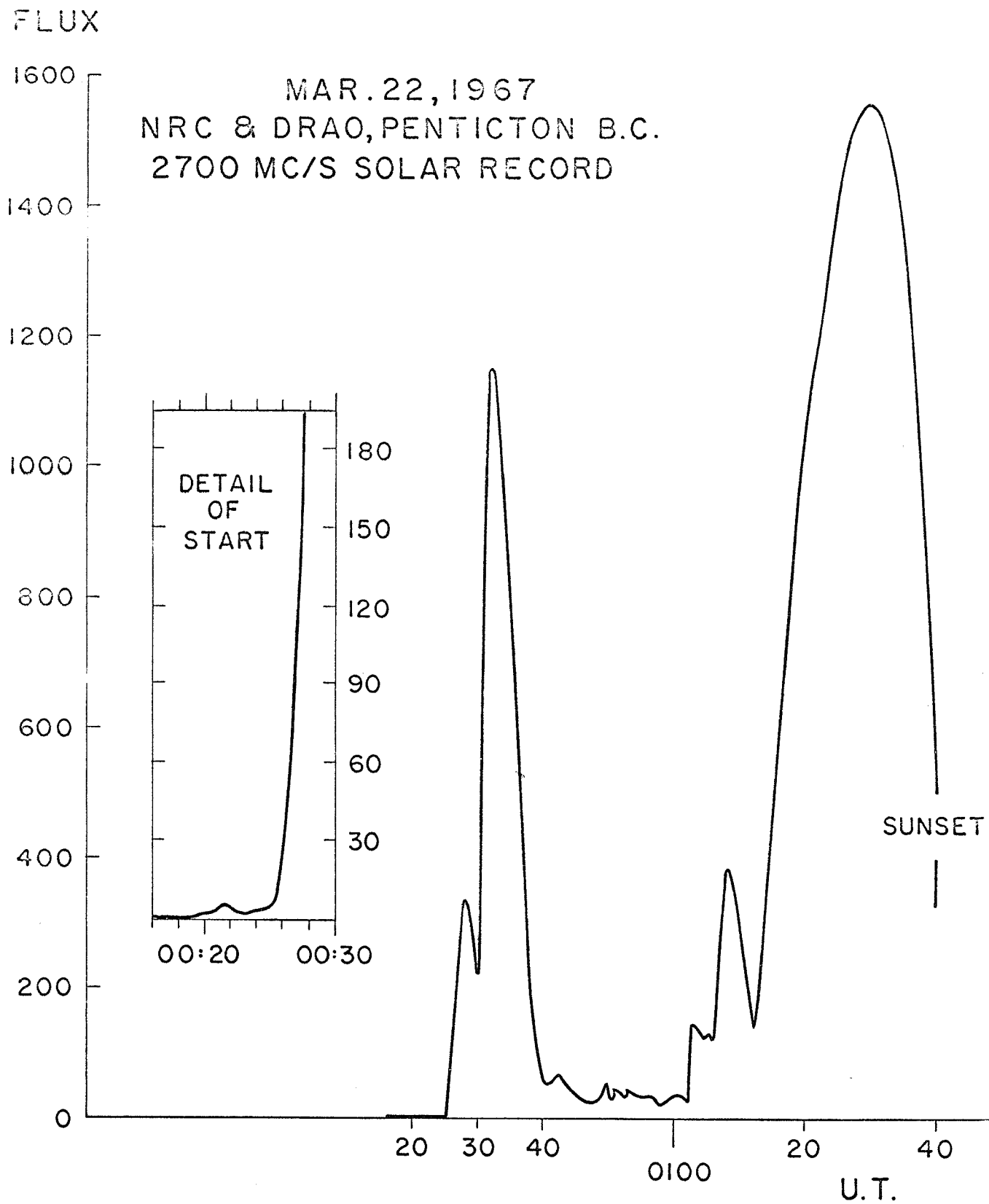
| MAR. 1967 | FREQUENCY STATION | TYPE   | STARTING TIME | TIME OF MAXIMUM | DURATION | FLUX DENSITY       |              | INT         | REMARKS |
|-----------|-------------------|--------|---------------|-----------------|----------|--------------------|--------------|-------------|---------|
|           |                   |        | UT            | UT              | MINUTES  | $10^{22} W_m^{-2}$ | $(c/s)^{-1}$ |             |         |
|           |                   |        |               |                 |          |                    | PEAK         | MEAN        |         |
| 29        | 2800 OTTA         | 1      | 1453.5        | 1453.8          | .7       |                    | 1.2          | 0.6         |         |
|           | 2700 PENN         | 1      | 1453.7        | 1453.8          | .4       |                    | 2.5          | 1.3         |         |
|           | 10700 PENN        | 3      | 1534.9        | 1535.1          | 1.1      |                    | 8.7          | 4.4         |         |
|           | 10700 PENN        | 1      | 1539.1        | 1540.5          | 1.6      |                    | 6.5          | 3.3         |         |
|           | 10700 PENN        | 1      | 1544.3        | 1544.5          | 1.1      |                    | 6.5          | 3.3         |         |
|           | 10700 PENN        | 1      | 1550.1        | 1550.8          | 1.4      |                    | 6.5          | 3.3         |         |
|           | 10700 PENN        | 3      | 1554.3        | 1555.5          | 5.7      |                    | 20.0         | 6.1         |         |
|           | 2700 PENN         | 26     | 1600          | 1600            |          |                    | 13.2         |             |         |
|           | 10700 PENN        | 20     | 1706.8        | 1710            | 53.2     |                    | 7.9          | 5.6         |         |
|           | 10700 PENN        | 1      | 1724.3        | 1724.7          | .9       |                    | 4.8          | 2.4         |         |
|           | 10700 PENN        | 3      | 1731.8        | 1732.5          | 1.5      |                    | 52.9         | 27.7        |         |
|           | 10700 PENN        | 3      | 1742.9        | 1743.5          | 2        |                    | 34.4         | 9.6         |         |
|           | 8800 SGMR         | 21     | 1725          | 1739.7          | 61       |                    | 36.0         | 12.0        |         |
|           | 8800 SGMR         | 3      | 1732.8        | 1733.4          | 2.2      |                    | 95.0         | 27.0        |         |
|           | 8800 SGMR         | 3      | 1743          | 1744.4          | 4        |                    | 75.0         | 19.0        |         |
|           | 4995 SGMR         | 21     | 1721          | 1737.4          | 67       |                    | 28.0         | 9.0         |         |
|           | 4995 SGMR         | 3      | 1732.4        | 1733.4          | 2.6      |                    | 108.0        | 29.0        |         |
|           | 4995 SGMR         | 3      | 1743          | 1744.4          | 4.5      |                    | 33.0         | 8.0         |         |
|           | 2800 OTTA         | 2      | 1700          | 1700.5          | 4        |                    | 5.4          | 2.7         |         |
|           | 2800 OTTA         | 21     | 1725          | 1731            | 55       |                    | 5.8          | 2.9         |         |
|           | 2800 OTTA         | 3      | 1732          | 1733.5          | 3        |                    | 34.0         | 20.0        |         |
|           | 2800 OTTA         | 30     | 1735          |                 | 15       |                    | 12.0         | 6.0         |         |
|           | 2800 OTTA         | 1      | 1737.3        | 1737.7          | .7       |                    | 3.0          | 1.5         |         |
|           | 2700 PENN         | 20     | 1705.4        | 1730.1          | 82       |                    | 12.9         | 6.5         |         |
|           | 2700 PENN         | 45     | 1731.5        | 1732.8          | 9.7      |                    | 27.2         | 8.6         |         |
|           | 2695 SGMR         | 21     | 1724          | 1737.5          | 38       |                    | 20.0         | 7.0         |         |
|           | 2695 SGMR         | 3      | 1732.6        | 1733.6          | 2.4      |                    | 39.0         | 13.0        |         |
|           | 10700 PENN        | 29     | 1733.3        | 1733.3          | 26.7     |                    | 18.0         | 9.0         |         |
|           | 2800 OTTA         | 21     | 1850          | 2025            | 160      |                    | 7.8          | 4.0         |         |
|           | 2700 PENN         | 24     | 1829.8        | 1954            |          |                    | 12.1         |             |         |
|           | 10700 PENN        | 20     | 1906.8        | 1913.6          | 17.1     |                    | 16.5         | 8.3         |         |
|           | 960 PENN          | 1      | 1855.8        | 1855.9          | .7       |                    | 3.6          | 1.8         |         |
|           | 960 PENN          | 1      | 1904.1        | 1904.8          | 1.2      |                    | 2.2          | 1.1         |         |
|           | 8800 SGMR         | 21     | 1941.3        | 1944.3          | 19.7     |                    | 13.6         | 4.5         |         |
|           | 8800 SGMR         | 3      | 1942.5        | 1943.2          | 1.5      |                    | 18.6         | 9.3         |         |
|           | 4995 SGMR         | 22     | 1941.2        | 1943.1          | 30.3     |                    | 16.4         | 5.5         |         |
|           | 2800 OTTA         | 22     | 1941          | 1943            | 9        |                    | 4.2          | 2.1         |         |
|           | 2700 PENN         | 45     | 1939.9        | 1941.2          | 7.1      |                    | 9.3          | 4.7         |         |
|           | 2695 SGMR         | 22     | 1940.8        | 1943            | 11.2     |                    | 5.4          | 1.0         |         |
|           | 1415 SGMR         | 45     | 1942.8        | 1944.2          | 2.7      |                    | 14.4         | 1.7         |         |
|           | 960 PENN          | 1      | 1947.6        | 1947.9          | .4       |                    | 4.8          | 2.4         |         |
|           | 2800 OTTA         | 1      | 2101          | 2101.4          | .5       |                    | 6.0          | 3.0         |         |
|           | 2800 OTTA         | 1      | 2112.5        | 2112.8          | 1        |                    | 2.4          | 1.2         |         |
|           | 2700 PENN         | 1      | 2110.4        | 2111.3          | 1.7      |                    | 4.4          | 2.2         |         |
|           | 960 PENN          | 1      | 2110.8        | 2111.2          | 1.2      |                    | .3           | 0.2         |         |
|           | 10700 PENN        | 3      | 2206.3        | 2210            | 8.7      |                    | 22.6         | 11.3        |         |
|           | 2800 OTTA         | 45     | 2209          | 2210.7          | 4        |                    | 4.4          | 3.3         |         |
|           | 2700 PENN         | 45     | 2205.4        | 2208.5          | 6.1      |                    | 8.2          | 3.2         |         |
|           | 10700 PENN        | 5      | 2245.9        |                 | .4       |                    |              |             |         |
|           | 2700 PENN         | 5      | 2245.9        |                 | .3       |                    |              |             |         |
| 2800 OTTA | 2                 | 2246.7 | 2247.2        | 1               |          | 2.4                | 1.2          | DUR. SUNSET |         |
| 30        | 2700 PENT         | 45     | 0022          | 0024            | 4        |                    | 12.6         | 9.4         |         |
|           | 2700 PENT         | 45     | 0022          | 0022.5          | 1        |                    | 9.0          |             |         |
|           | 2700 PENT         | 45     | 0023          | 0024            | 3        |                    | 12.6         |             |         |
|           | 2700 PENT         | 29     | 0026          |                 | 80       |                    | 8.2          | 5.0         |         |
|           | 8800 SGMR         | 3      | 1102.2        | 1102.4          | 1        |                    | 64.2         | 16.0        |         |
|           | 4995 SGMR         | 3      | 1102.1        | 1102.4          | 1.8      |                    | 73.0         | 18.0        |         |
|           | 2695 SGMR         | 3      | 1102.2        | 1102.4          | .8       |                    | 12.0         | 3.0         |         |
|           | 1415 SGMR         | 1      | 1102.3        | 1102.4          | .3       |                    | 2.9          | .5          |         |
|           | 10700 PENN        | 20     | 1146.4        | 1148.2          | 115      |                    | 19.4         | 5.1         |         |
|           | 8800 SGMR         | 3      | 1146.7        | 1147            | 2.9      |                    | 33.0         | 8.0         |         |
|           | 4995 SGMR         | 45     | 1146.6        | 1148.2          | 3.1      |                    | 63.0         | 15.0        |         |
|           | 2700 PENN         | 20     | 1146          | 1148.2          | 67       |                    | 14.7         | 7.3         |         |
|           | 2695 SGMR         | 3      | 1146.6        | 1148.2          | 6.4      |                    | 27.1         | 6.5         |         |
|           | 1415 SGMR         | 40     | 1143          | 1146.7          | 8        |                    | 17.0         | 4.0         |         |
|           | 2700 PENN         | 3      | 1221.1        | 1222            | 1.1      |                    | 9.6          | 2.7         |         |
|           | 960 PENN          | 1      | 1221.5        | 1221.7          | .4       |                    | 1.9          | 0.9         |         |
|           | 8800 SGMR         | 20     | 1324.9        | 1339            | 17.5     |                    | 6.0          | 3.0         |         |
|           | 4995 SGMR         | 20     | 1322.9        | 1332.7          | 24.1     |                    | 11.5         | 5.0         |         |
|           | 2800 OTTA         | 20     | 1320          | 1328            | 30       |                    | 6.0          | 3.0         |         |
|           | 2700 PENN         | 1      | 1326.2        | 1328            | 6.2      |                    | 3.7          | 1.8         |         |
|           | 2700 PENN         | 1      | 1419          | 1421.9          | 3.8      |                    | 1.9          | 1.0         |         |
|           | 2700 PENN         | 1      | 1431.6        | 1433.2          | 4.1      |                    | 2.3          | 1.2         |         |
|           | 2700 PENN         | 1      | 1441.5        | 1441.9          | 1.2      |                    | 1.3          | 0.6         |         |
|           | 2695 SGMR         | 20     | 1313          | 1339.8          | 42       |                    | 14.7         | 7.0         |         |
|           | 1415 SGMR         | 20     | 1330          | 1442.5          | 85       |                    | 11.8         | 5.0         |         |
|           | 960 PENN          | 1      | 1356.8        | 1357            | .8       |                    | 1.6          | 0.8         |         |
|           | 960 PENN          | 1      | 1441.7        | 1442            | .9       |                    | 1.3          | 0.6         |         |
|           | 606 SGMR          | 40     | 1258.2        | 1258.7          | 118.3    |                    | 25.5         | 2.0         |         |
|           | 2800 OTTA         | 21     | 1640          | 1755            | 255      |                    | 8.8          | 4.4         |         |
|           | 10700 PENN        | 3      | 1935.1        | 1935.2          | .4       |                    | 8.5          | 4.2         |         |
|           | 10700 PENN        | 3      | 1938.5        | 1939.5          | 7.5      |                    | 39.5         | 8.9         |         |
|           | 8800 SGMR         | 3      | 1934.1        | 1934.3          | .7       |                    | 14.0         | 4.0         |         |
|           | 8800 SGMR         | 3      | 1938.6        | 1939.3          | 6.4      |                    | 83.0         | 25.0        |         |
|           | 4995 SGMR         | 3      | 1938.4        | 1939.4          | 6.6      |                    | 108.0        | 27.0        |         |
|           | 2800 OTTA         | 3      | 1938          | 1939.5          | 10       |                    | 64.0         | 16.0        |         |
|           | 2700 PENN         | 3      | 1748.7        | 1752.2          | 10.6     |                    | 11.5         | 2.0         |         |
|           | 2700 PENN         | 3      | 1937.7        | 1939.3          | 8.8      |                    | 63.1         | 10.4        |         |
|           | 2695 SGMR         | 3      | 1938.4        | 1939.4          | 6.6      |                    | 68.0         | 17.0        |         |
|           | 1415 SGMR         | 3      | 1938.8        | 1939.4          | 4.2      |                    | 21.0         | 5.5         |         |

SOLAR RADIO EMISSION  
OUTSTANDING OCCURRENCES  
MARCH 1967

| MAR. 1967  | FREQUENCY STATION | TYPE   | STARTING TIME | TIME OF MAXIMUM | DURATION | FLUX DENSITY  |      | INT | REMARKS |
|------------|-------------------|--------|---------------|-----------------|----------|---|------|-----|---------|
|            |                   |        | UT            | UT              | MINUTES  | $10^{-22} \text{ W}_m^{-2} (\text{c/s})^{-1}$<br>PEAK | MEAN |     |         |
| 30         | 960 PENN          | 1      | 1938.7        | 1939.3          | 1.8      | 1.8   | 0.9  | 1   |         |
|            | 606 SGMR          | 41     | 1934.4        | 1934.7          | .6       | 18.2  | 2.6  |     |         |
|            | 606 SGMR          | 3      | 1938.5        | 1939.6          | 6.5      | 50.0  | 10.0 |     |         |
|            | 486 WASH          | 45     | 1939          | 1940            | 3        | 60.0  |      |     |         |
|            | 184 BOUL          | 42     | 1823          | 1937            | 123      |   |      |     |         |
|            | 2700 PENT         | 23     | 2340          | 2343            | 90       | 10.0  | 4.0  |     |         |
| 31         | 2700 PENT         | 4      | 0057.5        | 0058            | 2.5      | 8.8   | 4.4  |     |         |
|            | 2700 PENT         | 3      | 0109          | 0109.5          | 1        | 8.8   | 4.4  |     |         |
|            | 8800 SGMR         | 20     | 1201.7        | 1211.4          | 24.3     | 7.2   | 3.6  |     |         |
|            | 4995 SGMR         | 20     | 1201.5        | 1205.7          | 21.5     | 8.8   | 4.4  |     |         |
|            | 2695 SGMR         | 20     | 1201          | 1202.5          | 24       | 6.2   | 3.1  |     |         |
|            | 1415 SGMR         | 24     | 1155          | 1200.8          | U        | 5.3   | 2.7  |     |         |
|            | 606 SGMR          | 24     | 1154          | 1200.7          | U        | 11.6  | 3.3  |     |         |
|            | 10700 PENN        | 20     | 1256          | 1337.5          | 66       | 10.6  | 5.3  |     |         |
|            | 10700 PENN        | 3      | 1936.7        | 1937.6          | 1.4      | 23.8  | 11.9 |     |         |
|            | 8800 SGMR         | 3      | 1936.8        | 1937.4          | 4.8      | 30.0  | 10.0 |     |         |
|            | 4995 SGMR         | 3      | 1937          | 1937.3          | 5        | 17.6  | 5.9  |     |         |
|            | 2800 OTTA         | 20     | 1319          | 1340            | 60       | 4.6   | 2.3  |     |         |
|            | 2700 PENN         | 20     | 1255          | 1337.7          | 69       | 3.5   | 1.8  |     |         |
|            | 606 SGMR          | 3      | 1301.9        | 1302            | .2       | 23.2  | 7.5  |     |         |
|            | 2700 PENN         | 1      | 1550.3        | 1550.5          | .5       | 1.8   | 0.9  |     |         |
|            | 2800 OTTA         | 21     | 1600          | 1620            | 60       | 5.0   | 2.5  |     |         |
|            | 10700 PENN        | 20     | 1627.8        | 1628.6          | 11.2     | 10.1  | 5.0  |     |         |
|            | 8800 SGMR         | 4      | 1628          | 1628.6          | 15       | 12.0  | 4.0  |     |         |
|            | 4995 SGMR         | 4      | 1628          | 1628.6          | 9.5      | 11.0  | 3.6  |     |         |
|            | 2800 OTTA         | 2      | 1628          | 1628.8          | 5        | 7.2   | 3.6  |     |         |
|            | 2700 PENN         | 1      | 1606.8        | 1609.3          | 3        | 1.7   | 0.8  |     |         |
|            | 2700 PENN         | 20     | 1610          | 1610.9          | 13.4     | 2.8   | 1.4  |     |         |
|            | 2700 PENN         | 1      | 1627.8        | 1628.8          | 5.7      | 6.9   | 3.2  |     |         |
|            | 2695 SGMR         | 4      | 1628          | 1629.1          | 5.5      | 9.3   | 3.1  |     |         |
|            | 1415 SGMR         | 2      | 1628          | 1628.5          | 5.5      | 3.3   | 1.1  |     |         |
|            | 606 SGMR          | 1      | 1626          | 1628.5          | 5        | 1.7   | .6   |     |         |
|            | 2800 OTTA         | 1      | 1709.8        | 1710            | 2        | 4.2   | 2.1  |     |         |
|            | 2700 PENN         | 1      | 1709.8        | 1710            | 1.3      | 4.7   | 2.4  |     |         |
|            | 960 PENN          | 1      | 1709.8        | 1709.9          | .2       | 2.6   | 1.3  |     |         |
|            | 2700 PENN         | 1      | 1714.1        | 1714.5          | .9       | 2.2   | 1.1  |     |         |
|            | 2700 PENN         | 3      | 1721.5        | 1721.8          | .5       | 11.5  | 4.9  |     |         |
|            | 2800 OTTA         | 21     | 1724          | 1730            | 20       | 3.0   | 1.5  |     |         |
|            | 2800 OTTA         | 4      | 1726.7        | 1727            | 2        | 10.6  | 5.3  |     |         |
|            | 2700 PENN         | 3      | 1727          | 1727.3          | 7        | 10.5  | 2.9  |     |         |
|            | 2800 OTTA         | 21     | 1840          | 1848            | 60       | 3.0   | 2.0  |     |         |
|            | 10700 PENN        | 1      | 1847.2        | 1847.2          | .3       | 1.7   | 0.9  |     |         |
|            | 10700 PENN        | 3      | 1853.2        | 1853.7          | 1.4      | 11.7  | 5.8  |     |         |
|            | 8800 SGMR         | 4      | 1846          | 1847.3          | 2.2      | 8.2   | 2.7  |     |         |
|            | 8800 SGMR         | 4      | 1853.3        | 1853.8          | 2.1      | 11.3  | 3.8  |     |         |
|            | 4995 SGMR         | 4      | 1846          | 1847.3          | 2        | 5.3   | 1.7  |     |         |
|            | 4995 SGMR         | 4      | 1853.3        | 1853.8          | 5.7      | 23.4  | 7.8  |     |         |
|            | 2800 OTTA         | 2      | 1846          | 1847.3          | 2        | 4.8   | 2.4  |     |         |
|            | 2800 OTTA         | 3      | 1853.4        | 1853.8          | 3        | 20.0  | 10.0 |     |         |
|            | 2700 PENN         | 20     | 1840          | 1848            | 55       | 3.0   | 1.5  |     |         |
|            | 2700 PENN         | 1      | 1846          | 1847.3          | 1.8      | 6.0   | 3.0  |     |         |
|            | 2700 PENN         | 3      | 1853.3        | 1853.7          | 3.3      | 18.8  | 6.5  |     |         |
|            | 2695 SGMR         | 4      | 1846.2        | 1847.2          | 5.2      | 8.7   | 2.9  |     |         |
|            | 2695 SGMR         | 4      | 1853.3        | 1853.9          | 2.9      | 17.7  | 5.9  |     |         |
|            | 1415 SGMR         | 4      | 1853.2        | 1853.7          | 5.8      | 11.3  | 3.8  |     |         |
|            | 960 PENN          | 3      | 1853.3        | 1854.2          | 1.1      | 12.1  | 4.0  |     |         |
|            | 2800 OTTA         | 40     | 1944          | 1948.5          | 8        | 2.4   |      |     |         |
|            | 2700 PENN         | 1      | 1945.3        | 1948.7          | 6.9      | 6.2   | 3.1  |     |         |
|            | 960 PENN          | 1      | 1946.4        | 1946.6          | .5       | 1.0   | 0.5  |     |         |
|            | 960 PENN          | 45     | 1948.2        | 1948.5          | .4       | 4.1   | 2.0  |     |         |
|            | 2700 PENN         | 1      | 2013.8        | 2014.1          | 4.6      | 4.7   | 2.3  |     |         |
|            | 2800 OTTA         | 2      | 2014          | 2014.3          | 2.5      | 4.4   | 2.2  |     |         |
|            | 960 PENN          | 1      | 2014          | 2014.1          | 3.1      | 1.3   | 0.7  |     |         |
| 10700 PENN | 3                 | 2023   | 2023.2        | .5              | 11.7     | 5.8   |      |     |         |
| 8800 SGMR  | 3                 | 2022.8 | 2023.2        | 1.2             | 12.6     | 4.2   |      |     |         |
| 4995 SGMR  | 3                 | 2022.6 | 2023.1        | 3.6             | 12.3     | 4.1   |      |     |         |
| 2800 OTTA  | 3                 | 2022.8 | 2023.2        | 2               | 12.6     | 6.3   |      |     |         |
| 2700 PENN  | 3                 | 2022.8 | 2023.2        | 7.2             | 12.5     | 2.4   |      |     |         |
| 2695 SGMR  | 3                 | 2022.8 | 2023.1        | 7.7             | 14.0     | 4.7   |      |     |         |
| 1415 SGMR  | 3                 | 2022.9 | 2023.1        | 1.1             | 18.7     | 6.2   |      |     |         |
| 960 PENN   | 45                | 2022.8 | 2023.1        | .7              | 9.9      | 2.6   |      |     |         |
| 2700 PENN  | 24                | 2035   | 2303 D        |                 | 9.4      |   |      |     |         |
| 2700 PENT  | 1                 | 2315.5 | 2317          | 1               | 2.2      | 1.1   |      |     |         |
| 2700 PENT  | 21                | 2346   | 2405          | 80              | 7.4      | 3.7   |      |     |         |
| 2700 PENT  | 3                 | 2346   | 2348.2        | 6               | 42.2     | 21.0  |      |     |         |

No data are available from Haleakala for March 1967. Boulder 184 began satisfactory operation on March 15, 1967.

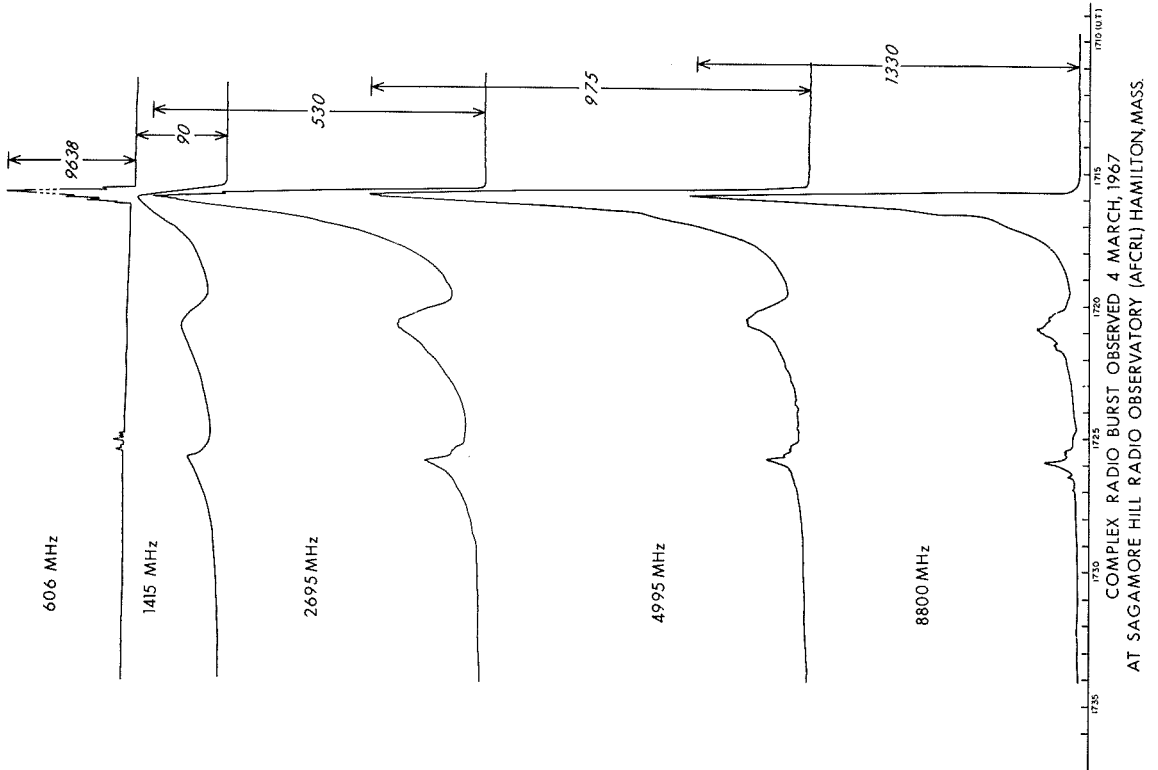
SELECTED 2700 Mc/s SOLAR NOISE BURST  
DRAO PENTICTON, CANADA  
MARCH 1967



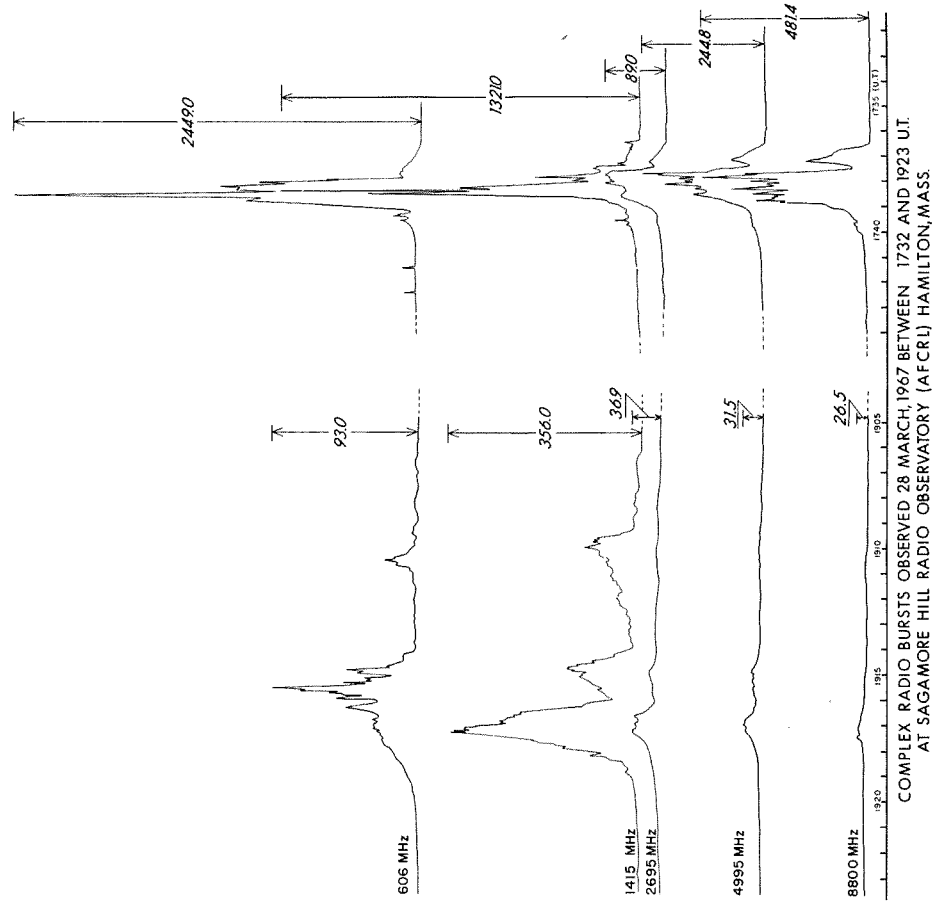


SELECTED SOLAR NOISE BURSTS  
AFCRL SAGAMORE HILL

MARCH 1967



COMPLEX RADIO BURST OBSERVED 4 MARCH, 1967  
AT SAGAMORE HILL RADIO OBSERVATORY (AFCRL) HAMILTON, MASS.



COMPLEX RADIO BURSTS OBSERVED 28 MARCH, 1967 BETWEEN 1732 AND 1923 UT  
AT SAGAMORE HILL RADIO OBSERVATORY (AFCRL) HAMILTON, MASS.

SOLAR RADIO EMISSION  
SPECTRAL OBSERVATION

MARCH 1967

University of Colorado

7.6-41 Mc/s

| Date<br>Mar<br>1967 |      |               |                |                          | Date<br>Mar<br>1967 |           |                 |                 |                           |       |
|---------------------|------|---------------|----------------|--------------------------|---------------------|-----------|-----------------|-----------------|---------------------------|-------|
|                     | Type | Time (U. T. ) | Inten-<br>sity | Frequency<br>Range(Mc/s) |                     | Type      | Time (U. T. )   | Inten-<br>sity  | Frequency<br>Range (Mc/s) |       |
| 1                   | III  | 1508.5-1508.7 | 1              | 34-41                    | 2                   | IIIg      | 2431.5-2432.7   | 1               | 28-38                     |       |
|                     | III  | 1609.8-1610.2 | 1              | 25-41                    | 3                   | continuum | b1340.0-2211.2  | 1               | 24-41                     |       |
|                     | III  | 1617.8-1618.1 | 1              | 32-41                    |                     | IIIg      | 1505.5-1507.3   | 2               | 25-41                     |       |
|                     | III  | 1910.6-1910.9 | 2              | 24-41                    |                     | IIIg      | 1534.4-1536.2   | 3               | 24-41                     |       |
|                     | III  | 1940.6-1940.9 | 2              | 28-41                    |                     | III       | 1649.4-1650.0   | 3               | 22-41                     |       |
|                     | IIIg | 2012.2-2025.6 | 2              | 16-41                    |                     | IIIg      | 1745.0-1748.2   | 3               | 16-41                     |       |
|                     | III  | 2045.2-2045.5 | 1              | 30-38                    |                     | III       | 1801.9-1802.3   | 3               | 22-41                     |       |
|                     | III  | 2102.1-2102.5 | 2              | 22-39                    |                     | IIIg      | 1914.7-1915.2   | 2               | 27-41                     |       |
|                     | IIIg | 2108.6-2112.2 | 2              | 22-41                    |                     | IIIg      | 1932.1-1934.7   | 2               | 25-41                     |       |
|                     | III  | 2118.8-2119.1 | 2              | 25-41                    |                     | IIIg      | 2000.0-2001.3   | 3               | 16-41                     |       |
|                     | III  | 2127.9-2128.2 | 1              | 23-37                    |                     | III       | 2126.1-2127.0   | 3               | 20-41                     |       |
|                     | IIIg | 2148.0-2149.0 | 1              | 25-41                    |                     | III G     | 2141.0-2146.9   | 3               | 20-41                     |       |
|                     | IIIg | 2203.8-2204.8 | 1              | 23-41                    |                     | IIIg      | 2158.5-2200.6   | 2               | 23-41                     |       |
|                     | IIIg | 2219.5-2220.8 | 3              | 24-41                    |                     | II        | 2157.9-2211.2   | 3               | 24-41                     |       |
|                     | IIIg | 2233.9-2235.2 | 1              | 26-41                    |                     | continuum | 2211.2-a2408.0  | 1               | 26-41                     |       |
|                     | IIIg | 2243.8-2245.2 | 2              | 24-41                    |                     | III       | 2222.1-2222.5   | 2               | 22-41                     |       |
|                     | III  | 2248.2-2248.6 | 2              | 24-41                    |                     | IIIg      | 2309.8-2311.4   | 3               | 24-41                     |       |
|                     | IIIg | 2259.8-2301.6 | 2              | 25-41                    |                     | IIIg      | 2318.8-2319.3   | 2               | 28-41                     |       |
|                     | III  | 2307.9-2308.6 | 2              | 24-41                    |                     | III       | 2358.5-2358.9   | 2               | 26-41                     |       |
|                     | IIIg | 2314.3-2316.5 | 1              | 28-41                    | 4                   | continuum | b1350.0-a2430.0 | 1               | 24-41                     |       |
|                     | III  | 2325.8-2326.0 | 2              | 25-41                    |                     | IIIg      | 1502.5-1506.4   | 3               | 22-41                     |       |
|                     | III  | 2330.6-2330.9 | 2              | 26-41                    |                     | IIIg      | 1541.2-1544.3   | 2               | 23-41                     |       |
|                     | IIIg | 2336.7-2342.6 | 3              | 25-41                    |                     | III       | 1626.0-1626.6   | 3               | 25-41                     |       |
|                     | IIIg | 2348.2-2352.0 | 3              | 24-41                    |                     | III       | 1631.9-1632.4   | 3               | 25-41                     |       |
|                     | III  | 2402.5-2402.8 | 2              | 29-41                    |                     | IIIg      | 1656.3-1658.8   | 2               | 22-41                     |       |
|                     | IIIg | 2407.1-2409.9 | 2              | 29-41                    |                     | III G     | 1744.2-1751.0   | 2               | 19-41                     |       |
|                     |      | 2431.2-2431.7 | 2              | 30-41                    |                     | IIIg      | 1853.5-1855.2   | 3               | 16-41                     |       |
|                     | 2    | III           | 1351.5-1352.0  | 1                        | 28-40               |           | IIIg            | 2239.6-2247.5   | 3                         | 21-41 |
|                     |      | III           | 1424.6-1424.9  | 1                        | 28-38               |           | III G           | 2328.4-2332.0   | 2                         | 24-41 |
|                     |      | continuum     | 1439.2-1510.0  | 1                        | 26-41               | 5         | IIIg            | 1402.1-1403.3   | 2                         | 26-41 |
|                     |      | IIIg          | 1450.9-1453.0  | 2                        | 22-41               |           | continuum       | 1501.5-1811.0   | 1                         | 24-41 |
|                     |      | III           | 1531.5-1531.9  | 2                        | 23-41               |           | IV              | 1811.0-1950.0   | 3                         | 27-41 |
|                     |      | IIIg          | 1550.5-1552.0  | 1                        | 26-41               |           | continuum       | 1950.0-2035.0   | 1                         | 25-41 |
|                     |      | III           | 1557.8-1558.2  | 1                        | 25-41               |           | III             | 2027.0-2027.5   | 3                         | 21-41 |
|                     |      | IIIg          | 1600.0-1603.0  | 3                        | 23-41               |           | III             | 2032.4-2032.8   | 3                         | 22-41 |
|                     |      | II            | 1607.4-1616.5  | 2                        | 22-41               |           | continuum       | 2035.0-a2435.0  | 1                         | 24-41 |
|                     |      | IV            | 1616.5-1706.1  | 2                        | 22-41               |           | III             | 2115.6-2116.4   | 2                         | 22-41 |
|                     |      | continuum     | 1706.1-1725.0  | 1                        | 22-41               |           | III             | 2129.0-2129.7   | 3                         | 21-41 |
|                     |      | continuum     | 1725.0-2216.0  | 1                        | 25-41               |           | III G           | 2148.0-2152.0   | 1                         | 25-41 |
|                     |      | IIIg          | 1927.0-1929.3  | 2                        | 16-41               |           | IIIg            | 2347.5-2348.5   | 2                         | 26-41 |
|                     |      | III           | 2017.6-2018.2  | 2                        | 17-41               |           | III G           | 2357.1-2400.2   | 2                         | 27-41 |
|                     |      | III           | 2019.5-2020.0  | 2                        | 22-41               |           | III             | 2408.2-2408.6   | 2                         | 28-41 |
|                     |      | III           | 2029.0-2029.5  | 2                        | 19-41               |           | continuum       | b1328.0-a2356.0 | 1                         | 24-41 |
|                     |      | III           | 2054.2-2054.7  | 2                        | 24-41               |           | III             | 1838.7-1839.3   | 2                         | 23-41 |
|                     |      | III           | 2318.1-2318.4  | 2                        | 20-41               | 6         | IIIg            | 2103.3-2105.1   | 2                         | 24-41 |
| III                 |      | 2324.1-2324.2 | 1              | 27-41                    |                     | III       | 1347.7-1347.9   | 1               | 29-41                     |       |
| III                 |      | 2333.8-2334.1 | 2              | 25-41                    |                     | IIIg      | 1353.8-1354.8   | 2               | 27-41                     |       |
| III G               |      | 2343.0-2349.1 | 2              | 24-41                    |                     | IIIg      | 1357.8-1359.4   | 3               | 25-41                     |       |
| III g               |      | 2406.4-2408.0 | 1              | 22-41                    |                     | continuum | b1402.4-1903.0  | 1               | 25-41                     |       |
| III                 |      | 2416.0-2416.3 | 1              | 28-41                    | 7                   | IIIg      | 1402.4-1404.7   | 2               | 26-41                     |       |

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Mar 67

# SOLAR RADIO EMISSION SPECTRAL OBSERVATION

MARCH 1967

University of Colorado

7.6-41 Mc/s

| Date<br>Mar<br>1967 |             |                 |                |                           | Date<br>Mar<br>1967 |                 |                |                |                           |
|---------------------|-------------|-----------------|----------------|---------------------------|---------------------|-----------------|----------------|----------------|---------------------------|
|                     | Type        | Time (U. T.)    | Inten-<br>sity | Frequency<br>Range (Mc/s) |                     | Type            | Time (U. T.)   | Inten-<br>sity | Frequency<br>Range (Mc/s) |
| 7                   | IIIg        | 1500.5-1505.1   | 2              | 25-41                     | 20                  | II              | 1351.8-1401.2  | 2              | 32-41                     |
|                     | III         | 1536.9-1537.5   | 2              | 23-41                     |                     | IIIg            | 1507.5-1510.4  | 3              | 22-39                     |
|                     | IIIg        | 1557.0-1600.8   | 3              | 22-41                     |                     | III             | 1515.5-1515.7  | 1              | 26-39                     |
|                     | IIIG        | 1617.5-1625.9   | 2              | 22-41                     |                     | IIIg            | 1523.6-1528.1  | 3              | 22-41                     |
|                     | IIIg        | 1704.8-1708.9   | 3              | 19-41                     |                     | IIIg            | 1538.6-1539.9  | 2              | 25-40                     |
|                     | IIIg        | 1738.8-1742.6   | 2              | 20-41                     |                     | continuum       | 1552.3-1705.3  | 1              | 25-41                     |
|                     | IIIG        | 1850.8-1903.0   | 3              | 16-41                     |                     | IIIG            | 1614.5-1618.9  | 3              | 16-41                     |
|                     | continuum   | 1903.0-a2500.0  | 1              | 22-41                     |                     | IIIg            | 1633.6-1637.2  | 3              | 16-41                     |
|                     | III         | 1931.9-1932.5   | 2              | 22-41                     |                     | continuum       | 1705.3-1722.0  | 2              | 22-41                     |
|                     | IIIg        | 1936.0-1937.0   | 2              | 16-41                     |                     | continuum       | 1722.0-2203.5  | 1              | 24-41                     |
| 8                   | IIIg        | 2311.0-2312.4   | 3              | 24-41                     | III                 | 1748.7-1750.0   | 3              | 16-41          |                           |
|                     | continuum   | 1550.2-1701.2   | 1              | 24-41                     | IIIg                | 1826.2-1829.2   | 3              | 16-41          |                           |
|                     | continuum   | 1701.2-2035.0   | 2              | 26-41                     | IIIg                | 1858.5-1900.5   | 3              | 16-41          |                           |
|                     | continuum   | 2035.0-a2441.0  | 1              | 24-41                     | IIIg                | 1947.9-1948.7   | 3              | 20-41          |                           |
|                     | IIIG        | 2420.8-2429.2   | 2              | 28-41                     | IIIg                | 1958.8-2002.0   | 3              | 20-41          |                           |
| 9                   | continuum   | b1317-1503.0    | 1              | 26-41                     | IIIg                | 2035.5-2036.0   | 2              | 17-41          |                           |
|                     | continuum   | 1503.0-1811.0   | 1              | 25-41                     | IIIg                | 2052.2-2055.6   | 2              | 17-41          |                           |
|                     | continuum   | 1811.0-2030.0   | 1              | 27-36                     | III                 | 2104.8-2105.4   | 3              | 22-41          |                           |
|                     | continuum   | 2030.0-a2500    | 2              | 24-41                     | IIIg                | 2122.7-2125.7   | 3              | 16-41          |                           |
| 10                  | IV          | b1331.0-a2445   | 3              | 22-41                     | IIIg                | 2156.4-2157.0   | 2              | 22-41          |                           |
| 11                  | continuum   | b1317.0-a2440.1 | 2              | 25-41                     | 21                  | continuum       | b1350.5-1825.8 | 1              | 22-41                     |
|                     | III         | 1905.6-1907.0   | 3              | 24-41                     |                     | IIIg            | 1617.5-1620.3  | 2              | 20-41                     |
| 12                  | continuum   | b1317.0-a2354.8 | 1              | 24-41                     |                     | IIIg            | 1702.9-1710.1  | 3              | 24-41                     |
| 13                  | III         | 1624.8-1625.0   | 1              | 26-41                     |                     | continuum       | 1825.8-1842.6  | 3              | 22-41                     |
|                     | III         | 1635.7-1636.0   | 1              | 28-38                     |                     | III             | 1838.5-1839.3  | 3              | 14-41                     |
| 14                  | III         | 2330.7-2331.0   | 1              | 30-39                     |                     | continuum       | 1842.6-2446.5  | 1              | 22-41                     |
|                     | IIIg        | 2346.5-2348.3   | 2              | 26-41                     |                     | IIIg            | 2047.6-2050.8  | 3              | 21-41                     |
|                     | III         | 1714.2-1714.7   | 1              | 24-41                     |                     | IIIg            | 2123.8-2126.3  | 2              | 22-41                     |
|                     | IIIg        | 2012.7-2014.5   | 2              | 24-41                     |                     | III             | 2306.4-2307.0  | 2              | 29-41                     |
|                     | III         | 2100.3-2100.6   | 2              | 20-41                     |                     | IIIg            | 2319.5-2320.9  | 2              | 28-41                     |
| 15                  | IIIg        | 2120.6-2122.1   | 1              | 20-41                     | IIIg                | 2400.0-2400.9   | 2              | 29-41          |                           |
|                     | IIIg        | 2152.5-2158.4   | 2              | 22-41                     | IV                  | 2446.5-a2500.0  | 2              | 29-41          |                           |
|                     | IIIg        | 2055.8-2057.8   | 2              | 25-41                     | continuum           | b1303.5-a1940.0 | 1              | 25-41          |                           |
|                     | III         | 2204.6-2204.9   | 1              | 26-41                     | IIIg                | 1330.5-1335.8   | 2              | 28-41          |                           |
| 16                  | IIIg        | 2429.1-2432.7   | 2              | 29-41                     | IIIg                | 1506.9-1507.1   | 3              | 25-41          |                           |
|                     | no activity |                 |                |                           | III                 | 1527.8-1529.1   | 3              | 22-41          |                           |
| 17                  | no activity |                 |                |                           | IIIG                | 1600.4-1605.8   | 2              | 23-41          |                           |
| 18                  | III         | 2242.4-2243.0   | 2              | 29-41                     | II                  | 1617.7-1630.4   | 1              | 25-41          |                           |
|                     | III         | 2352.5-2352.9   | 1              | 30-41                     | IIIg                | 1733.5-1734.9   | 3              | 15-41          |                           |
| 19                  | III         | 1355.2-1355.6   | 1              | 28-41                     | IIIg                | 1905.5-1906.6   | 1              | 16-38          |                           |
|                     | III         | 1428.0-1428.2   | 1              | 30-41                     | 23                  | continuum       | b1303.0-1826.3 | 1              | 25-41                     |
|                     | IIIg        | 1434.6-1436.4   | 1              | 22-41                     |                     | IIIg            | 1401.0-1402.0  | 3              | 26-41                     |
|                     | III         | 1620.4-1621.0   | 2              | 25-41                     |                     | IIIg            | 1734.1-1736.0  | 2              | 24-41                     |
|                     | III         | 1713.9-1714.5   | 1              | 22-41                     |                     | continuum       | 1826.3-1928.6  | 3              | 15-41                     |
|                     | III         | 1750.9-1751.2   | 1              | 28-41                     |                     | III             | 1928.6-1931.0  | 3              | 16-41                     |
|                     | III         | 1809.4-1809.6   | 1              | 28-41                     |                     | IV              | 1931.6-1937.0  | 2              | 26-41                     |
|                     | III         | 1944.8-1945.1   | 1              | 28-41                     |                     | continuum       | 1937.0-a2410.0 | 1              | 24-41                     |
|                     | continuum   | 2036.0-2130.0   | 1              | 28-41                     |                     | III             | 2313.6-2314.8  | 3              | 18-40                     |
|                     | 20          | continuum       | b1318.0-1324.5 | 1                         |                     | 28-39           | IIIg           | 2408.7-2410.8  | 2                         |
| IIIg                |             | 1346.6-1348.4   | 3              | 24-39                     |                     | III             | 1321.0-1321.4  | 1              | 30-41                     |

SOLAR RADIO EMISSION  
SPECTRAL OBSERVATION

MARCH 1967

University of Colorado

7.6-41 Mc/s

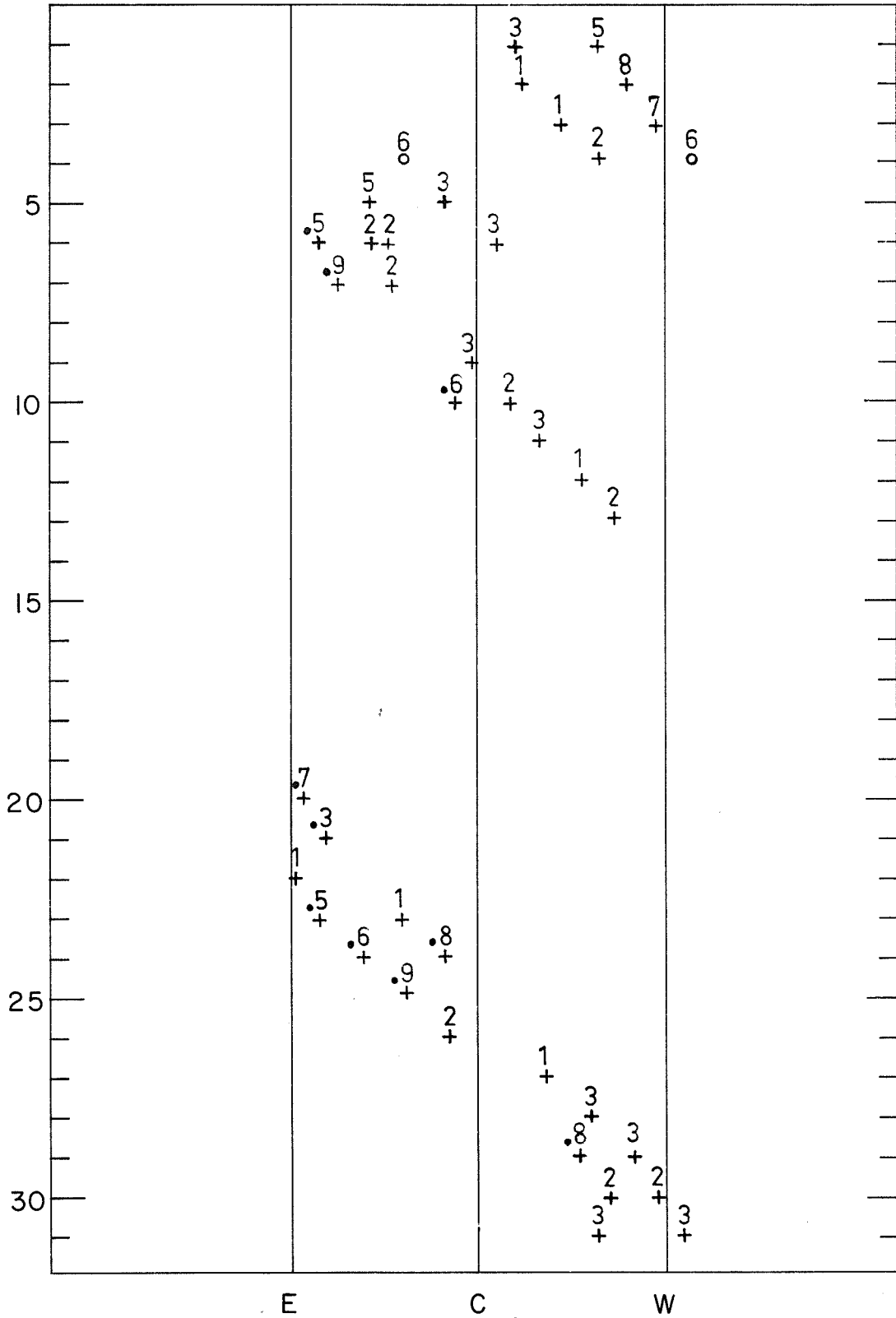
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|---------------------|-----------------|----------------|----------------|---------------------------|---------------------|----------------|-----------------|----------------|---------------------------|-------|
|                     | Type            | Time (U. T.)   | Inten-<br>sity | Frequency<br>Range (Mc/s) |                     | Type           | Time (U. T.)    | Inten-<br>sity | Frequency<br>Range (Mc/s) |       |
| 24                  | IIIg            | 1404.2-1405.1  | 3              | 25-41                     | 27                  | IIIG           | 2118.0-2132.2   | 3              | 21-41                     |       |
|                     | IIIg            | 1447.6-1449.2  | 1              | 26-41                     |                     | IIIG           | 2134.8-2138.6   | 2              | 22-41                     |       |
|                     | III             | 1456.8-1457.0  | 1              | 27-41                     |                     | II             | 2138.6-2154.9   | 2              | 22-41                     |       |
|                     | III             | 1558.4-1558.8  | 1              | 29-39                     |                     | 28             | III             | 1309.8-1310.5  | 1                         | 30-41 |
|                     | IIIg            | 1613.7-1624.4  | 2              | 24-41                     |                     |                | IIIG            | 1326.1-1331.6  | 2                         | 25-41 |
|                     | III             | 1633.9-1634.1  | 1              | 31-41                     | III                 | 1406.0-1406.3  | 1               | 28-38          |                           |       |
|                     | III             | 1729.1-1730.0  | 1              | 25-41                     | III                 | 1430.1-1430.3  | 2               | 25-41          |                           |       |
|                     | continuum       | 1757.4-1838.3  | 1              | 24-41                     | continuum           | 1503.5-a2450.0 | 1               | 25-41          |                           |       |
|                     | IIIg            | 1858.3-1901.1  | 1              | 26-41                     | IIIg                | 1737.0-1739.1  | 1               | 16-41          |                           |       |
|                     | continuum       | 1918.7-2019.8  | 1              | 25-41                     | 29                  | III            | 1442.5-1442.9   | 1              | 29-41                     |       |
|                     | III             | 2104.7-2105.1  | 1              | 26-41                     |                     | III            | 1509.5-1509.8   | 1              | 28-41                     |       |
|                     | continuum       | 2128.4-2154.0  | 1              | 25-41                     | III                 | 1512.2-1512.4  | 1               | 31-38          |                           |       |
|                     | III             | 2225.6-2225.9  | 1              | 28-39                     | III                 | 1734.9-1735.2  | 1               | 26-36          |                           |       |
|                     | III             | 2229.7-2230.0  | 1              | 30-39                     | continuum           | 1841.8-2041.0  | 1               | 26-41          |                           |       |
|                     | IIIg            | 2246.1-2247.7  | 1              | 29-41                     | III                 | 2036.4-2038.2  | 2               | 17-41          |                           |       |
| IIIG                | 2300.8-2309.5   | 1              | 29-41          | 30                        | IIIg                | 1243.6-1245.3  | 2               | 25-39          |                           |       |
| IIIg                | 2327.9-2328.9   | 1              | 30-41          |                           | III                 | 1329.2-1329.5  | 1               | 28-36          |                           |       |
| III                 | 2336.1-2336.5   | 2              | 25-41          |                           | continuum           | b1359.8-1612.4 | 1               | 27-41          |                           |       |
| III                 | 2342.7-2342.9   | 1              | 32-41          |                           | IIIg                | 1550.0-1552.3  | 2               | 22-41          |                           |       |
| continuum           | b1248.0-a2416.0 | 1              | 22-39          |                           | IIIg                | 1606.9-1610.1  | 2               | 21-41          |                           |       |
| 25                  | IIIg            | 1424.4-1426.3  | 2              | 24-38                     | continuum           | 1658.3-a2500.0 | 1               | 26-41          |                           |       |
|                     | IIIG            | 2152.7-2159.4  | 2              | 20-39                     | IIIG                | 1718.6-1731.3  | 2               | 16-41          |                           |       |
| 26                  | continuum       | b1254.0-1504.2 | 1              | 27-41                     | IIIg                | 1809.5-1810.5  | 2               | 24-41          |                           |       |
|                     | IIIG            | 1447.3-1453.2  | 2              | 20-41                     | IIIG                | 1838.4-1843.6  | 2               | 16-41          |                           |       |
|                     | III             | 1545.7-1546.1  | 1              | 29-41                     | IIIg                | 1938.4-1941.1  | 3               | 14-41          |                           |       |
|                     | III             | 1553.2-1553.5  | 1              | 28-41                     | IIIG                | 2108.3-2115.5  | 2               | 21-41          |                           |       |
|                     | III             | 1604.2-1604.6  | 1              | 30-41                     | IIIg                | 2144.7-2146.0  | 2               | 20-41          |                           |       |
|                     | III             | 1611.6-1611.9  | 1              | 28-41                     | IIIg                | 2208.7-2210.8  | 2               | 22-41          |                           |       |
|                     | IIIg            | 1618.8-1622.7  | 3              | 28-41                     | 31                  | continuum      | b1324.0-a2500.0 | 1              | 26-41                     |       |
|                     | continuum       | 1857.4-2048.0  | 1              | 25-41                     |                     | III            | 1416.7-1617.3   | 2              | 28-41                     |       |
|                     | IIIG            | 2157.3-2207.7  | 2              | 24-41                     | IIIg                | 1421.3-1424.7  | 3               | 25-41          |                           |       |
|                     | continuum       | 2207.7-a2425.0 | 1              | 28-41                     | IIIG                | 1425.5-1434.7  | 2               | 31-41          |                           |       |
| continuum           | b1248.0-a2500.0 | 1              | 25-41          | IIIg                      | 1541.9-1543.7       | 2              | 24-41           |                |                           |       |
| IIIg                | 1313.5-1315.2   | 3              | 23-41          | IIIg                      | 1702.0-1703.7       | 3              | 16-41           |                |                           |       |
| IIIG                | 1329.0-1335.3   | 3              | 24-41          | III                       | 1710.6-1711.0       | 2              | 16-41           |                |                           |       |
| 27                  | IIIg            | 1503.9-1505.0  | 2              | 20-41                     | IIIg                | 1817.6-1820.7  | 3               | 17-41          |                           |       |
|                     | IIIg            | 1543.5-1545.4  | 2              | 24-41                     | III                 | 1904.2-1904.5  | 2               | 28-41          |                           |       |
|                     | III             | 1632.5-1633.2  | 2              | 16-41                     | IIIg                | 2346.0-2350.0  | 3               | 26-39          |                           |       |
|                     | IIIg            | 1719.1-1720.0  | 3              | 17-41                     | IIIg                | 2415.4-2416.5  | 3               | 29-39          |                           |       |
|                     | II              | 1732.0-1749.8  | 2              | 24-41                     |                     |                |                 |                |                           |       |

# SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATION

MARCH 1967

Nançay

408 Mc/s

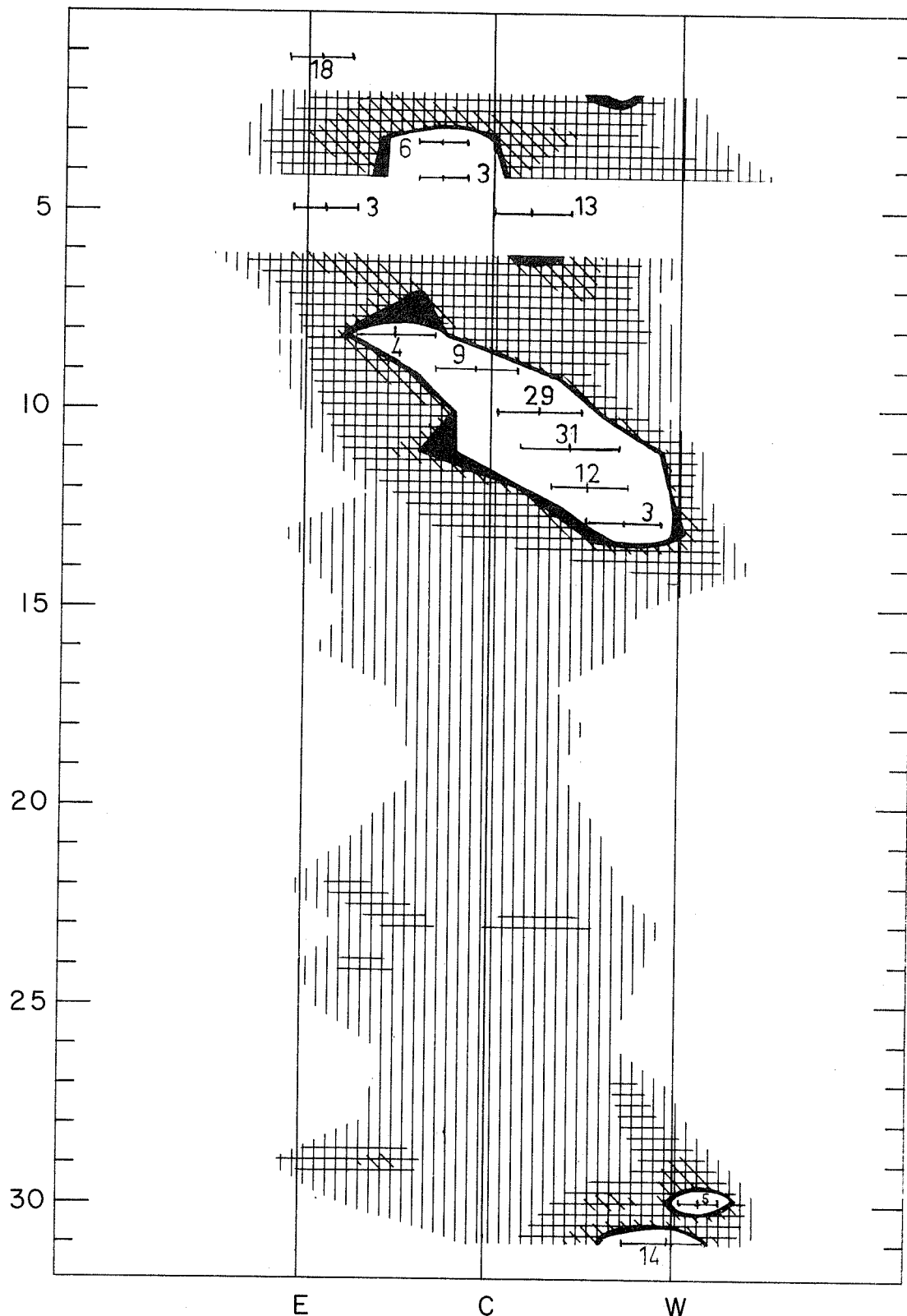


# SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATION

MARCH 1967

Nançay

169 Mc/s

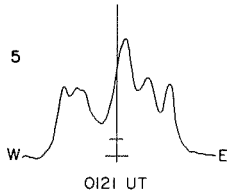
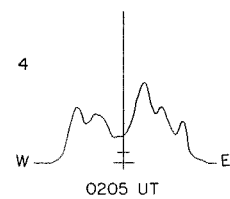
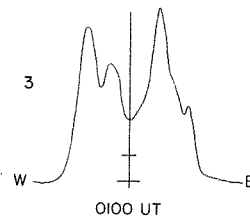
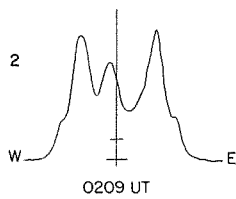
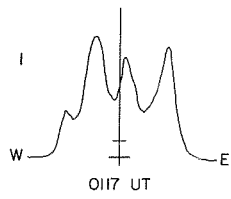


### EAST - WEST SOLAR SCANS

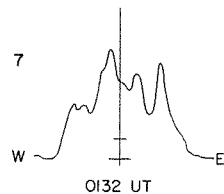
March 1967

FLEURS, AUSTRALIA

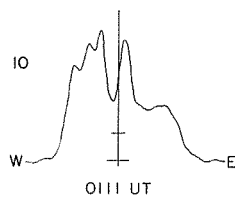
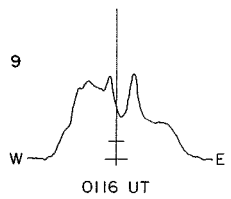
21 cm  
Fan-Beam with 2 minutes of arc  
E - W Resolution



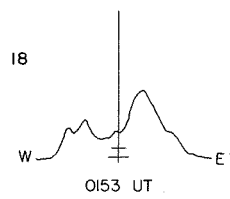
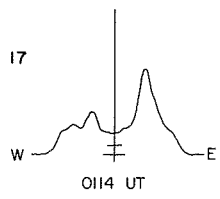
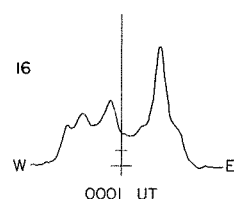
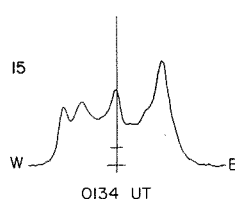
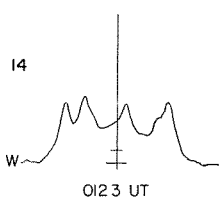
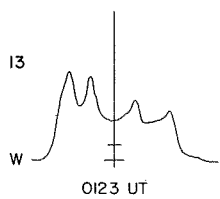
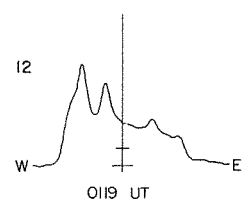
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March 6



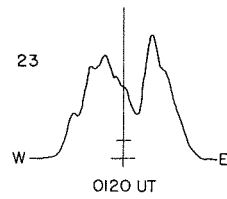
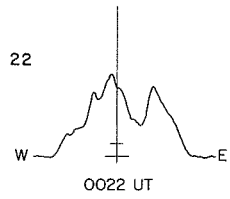
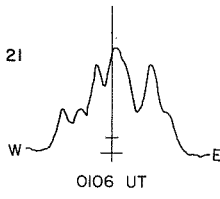
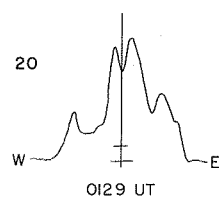
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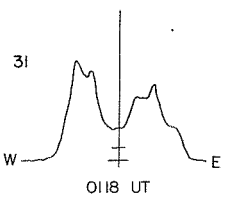
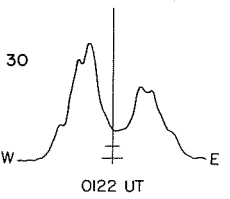
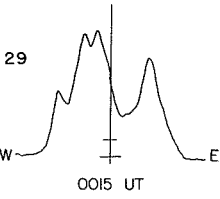
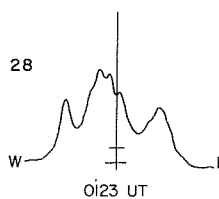
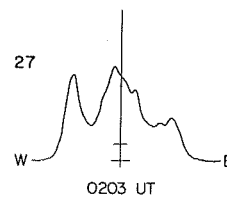
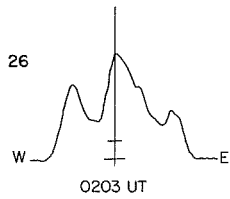
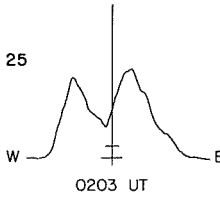
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March 19



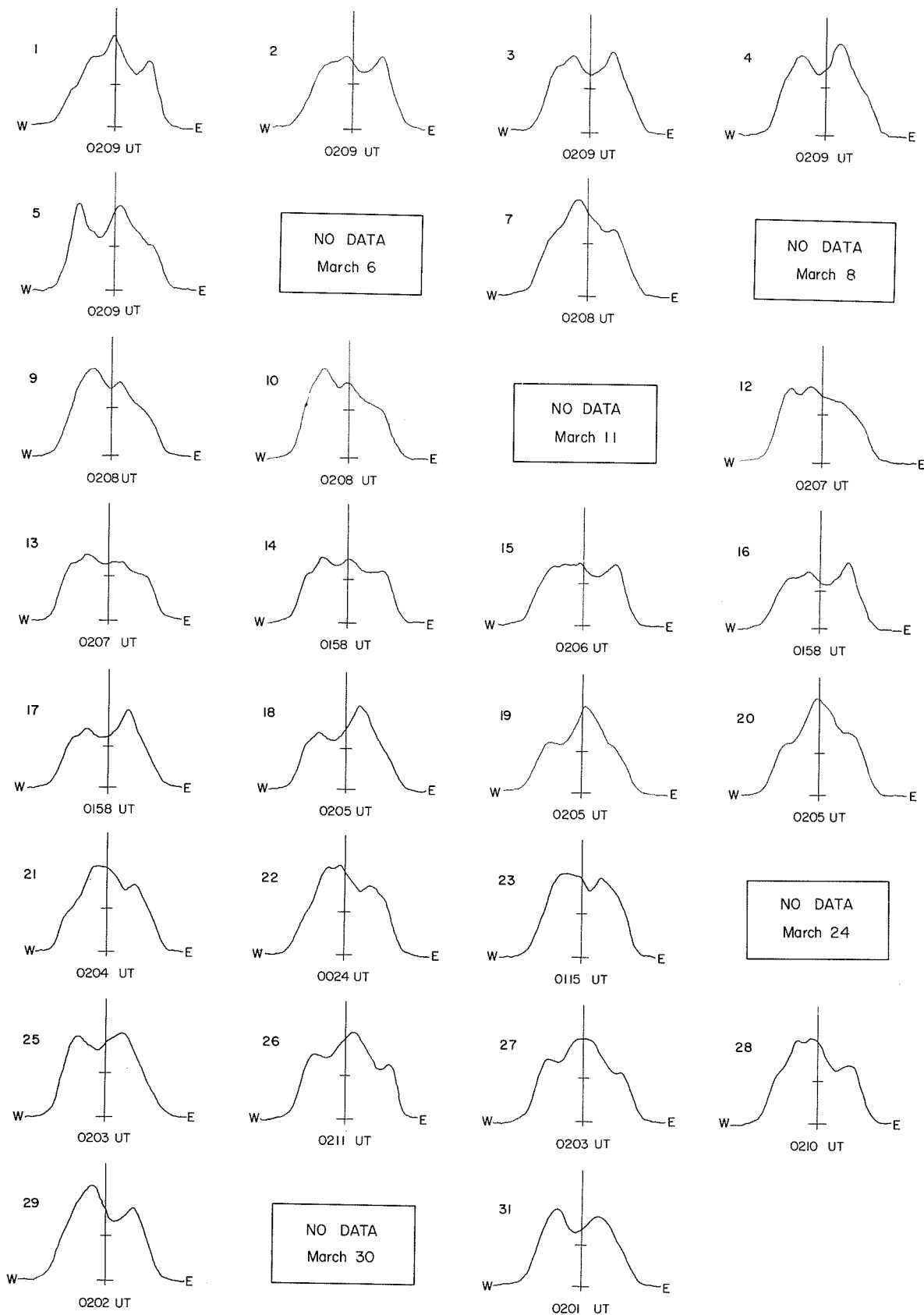
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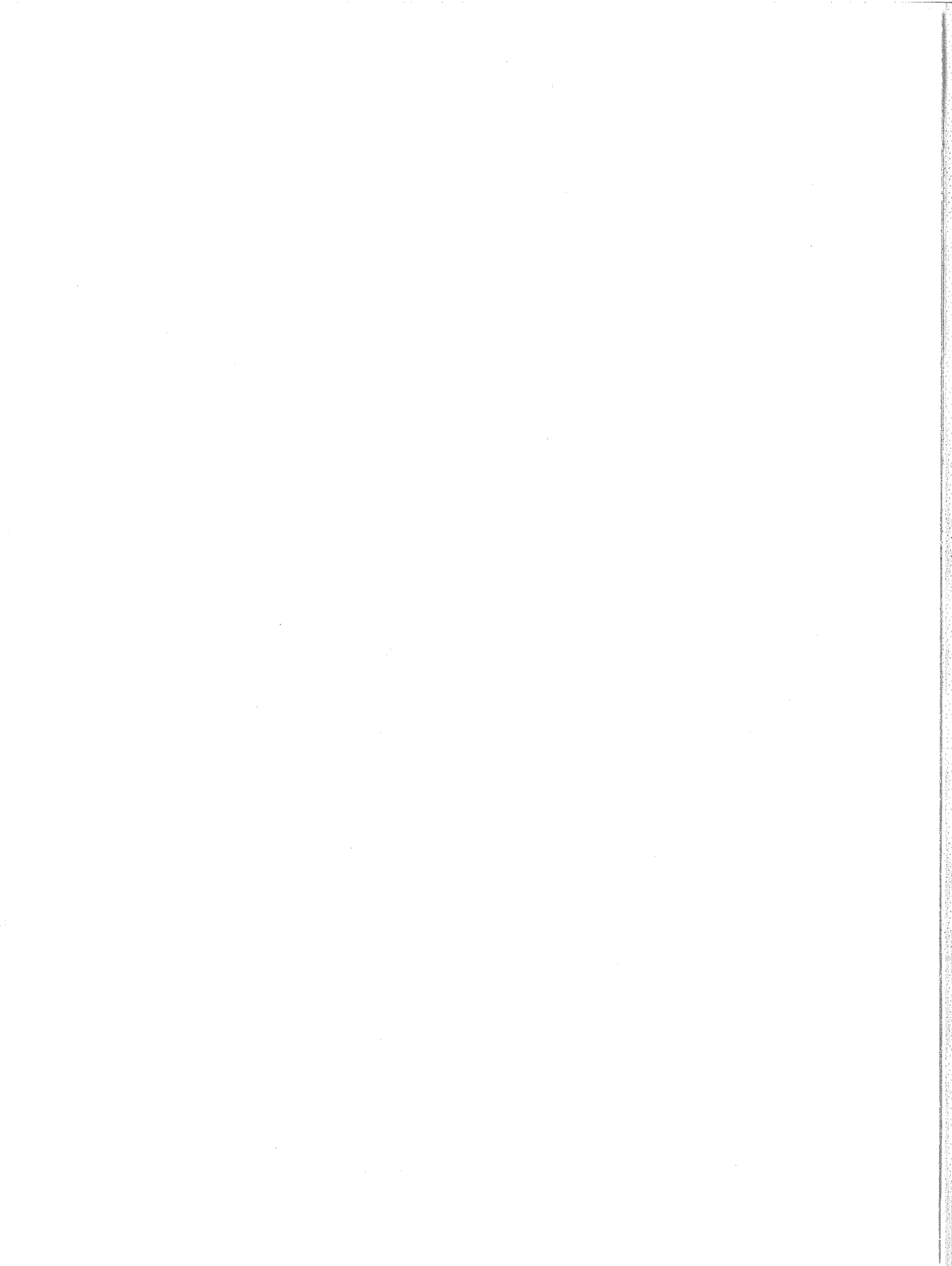
EAST - WEST SOLAR SCANS  
March 1967

FLEURS, AUSTRALIA

43 cm  
Fan-Beam with 4 minutes of arc  
E-W Resolution







SOLAR PROTON EVENT  
(Provisional)

March 11-16, 1967

| Indicator   | Effects   | Time of Start  | Approximate Time of End       |
|---|---|--|-------------------------------|
| <p>I. VLF signals</p> <p>A. NAA, Annapolis, Md., to Anchorage</p> <p>B. GBR, Rugby, Eng. to Anchorage</p> | <p>83° phase advance and amplitude modulation</p> <p>~260° phase adv. amplitude modulation</p>                      | <p>11/2003</p> <p>between 11/1800 and 2400</p>                     | <p>14/0500</p> <p>14/0500</p> |
| <p>II. HF signals</p> <p>A. 9 Mc/s Thule to Anchorage</p> <p>B. 12 Mc/s Thule to Anchorage</p>            | <p>amplitude drop</p> <p>amplitude drop</p>   | <p>11/2000</p> <p>11/2000</p>                                      | <p>14/0500</p> <p>14/0500</p> |
| <p>III. Satellite info.</p> <p>A. Vela system</p> <p>B. Pioneer VII</p>                                   | <p>increase in neutron count</p> <p>1-2 orders of mag. increase on three cosmic ray count channels (.6-190 Mev)</p> | <p>11/2016<br/>max. 12/0100</p> <p>between 11/0815 and 12/0851</p> | <p>?</p> <p>16/0015</p>       |

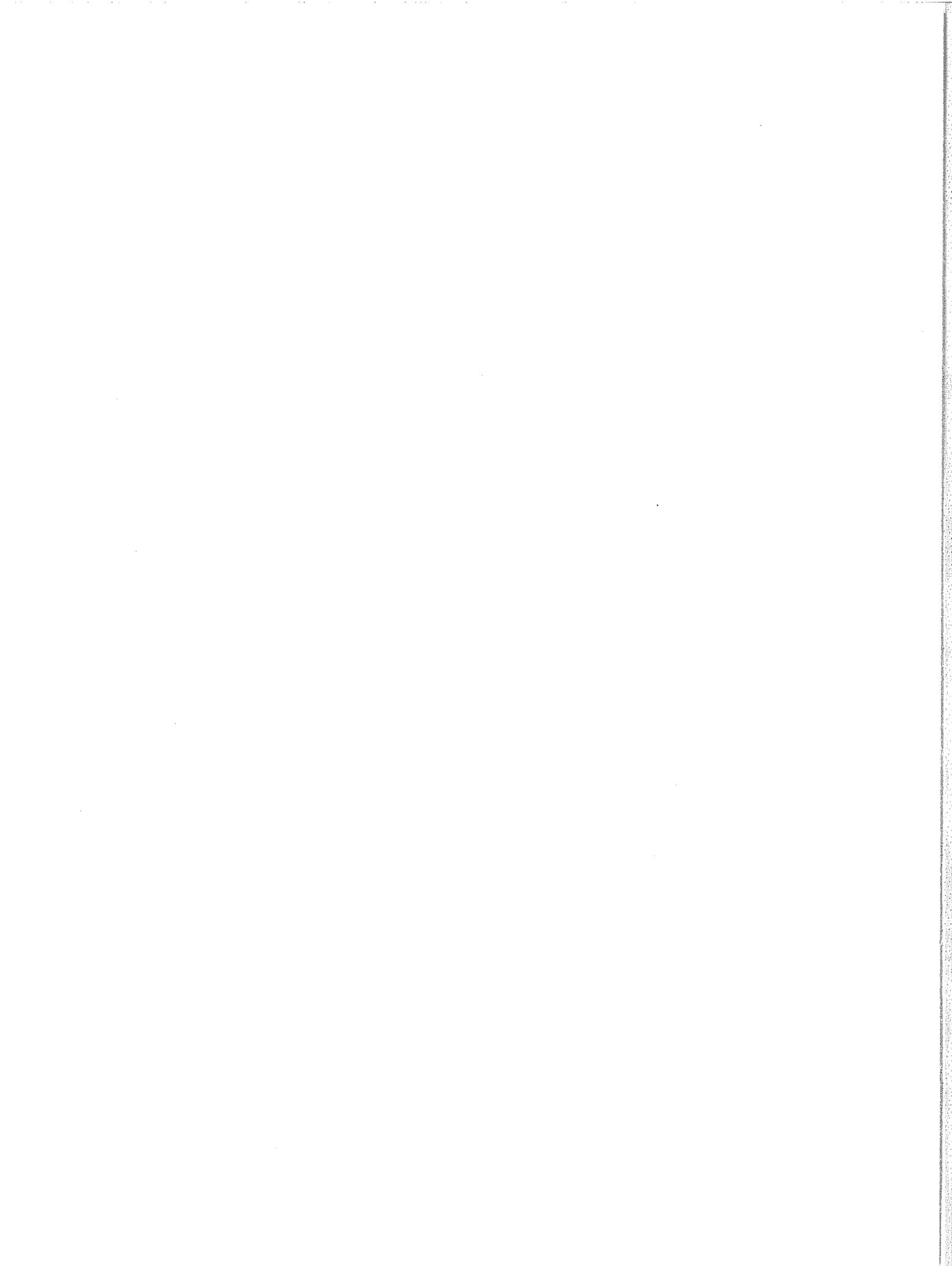
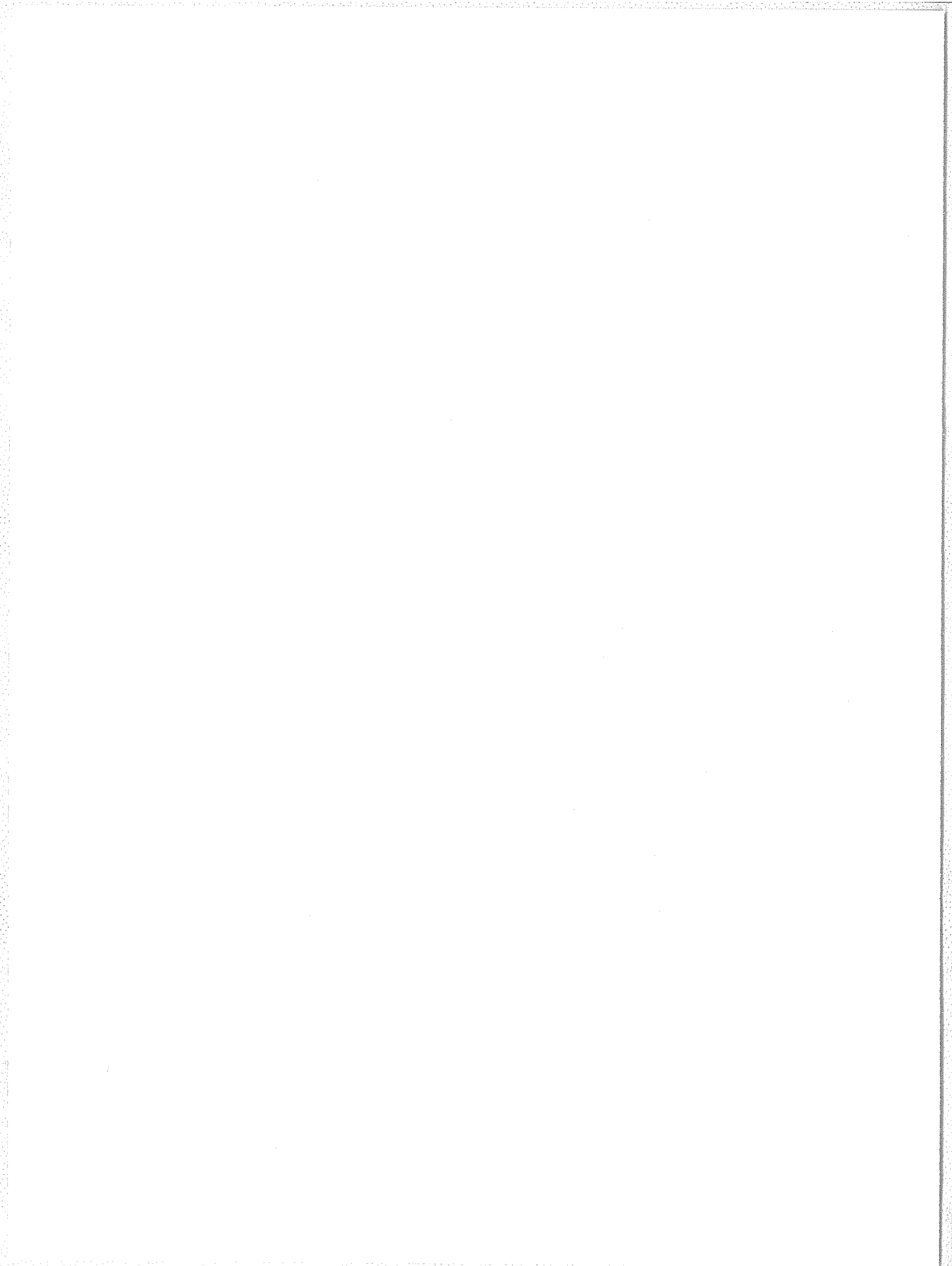


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| <u>Geomagnetic Indices</u><br>Table of Indices Kp, Ci, Cp, Ap<br>Chart of Kp by Solar Rotations and 12-Month<br>Table of Daily Average Ap<br>Principal Magnetic Storms   | 78<br>79<br>80    |
| <u>Radio Propagation Indices</u><br>North Atlantic and North Pacific Quality Figures<br>and Forecasts<br>Charts of North Atlantic Short-term Forecasts<br>and Quality and High Latitude Advance Forecasts<br>Transmission Frequency Ranges - North Atlantic Path | 82<br>83<br>84-85 |

For explanations of the data contained herein see "Descriptive Text" published in February 1967.

Errata: Mt. Wilson Magnetograms on page 33 of IER-FB-270 published February 1967 the end time for the December 12 observations should be approximately 22.25UT, not 17.51. The Deltax for December 20 should be near the same as that for the other days.



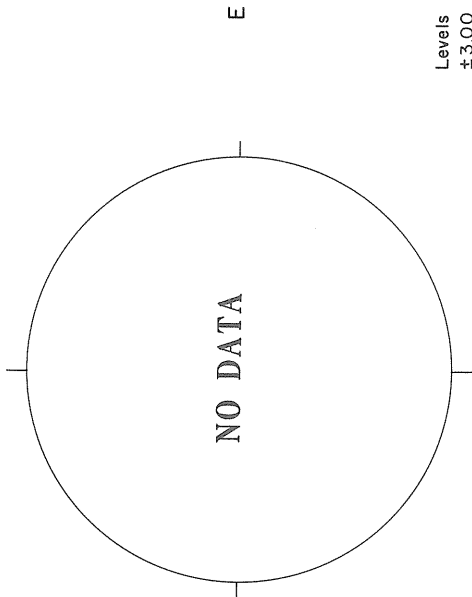
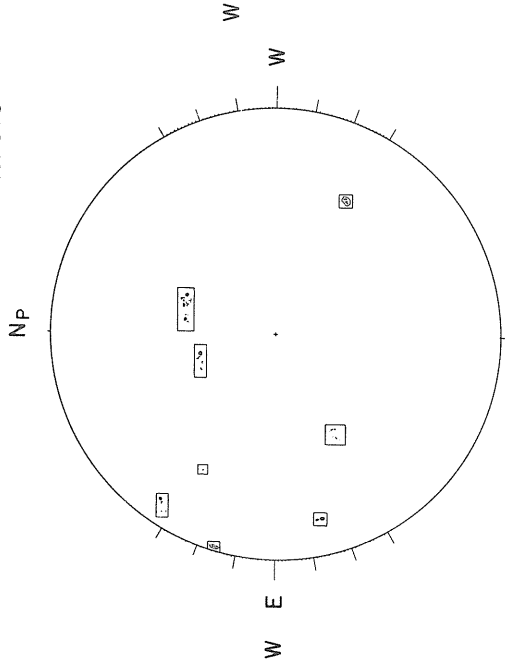
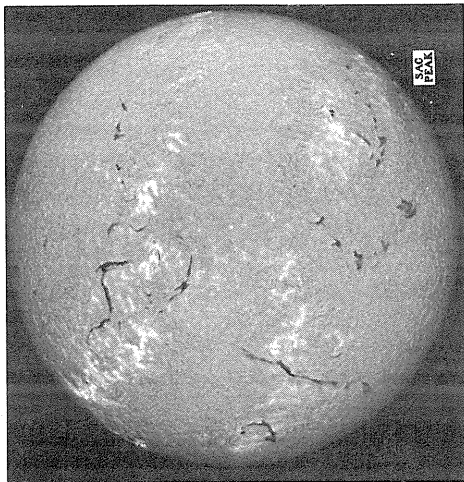
FEBRUARY 1, 1967 (P=-11.96, B<sub>0</sub>=6.01, L<sub>0</sub>=284.85)

SACRAMENTO PEAK  
N

H $\alpha$

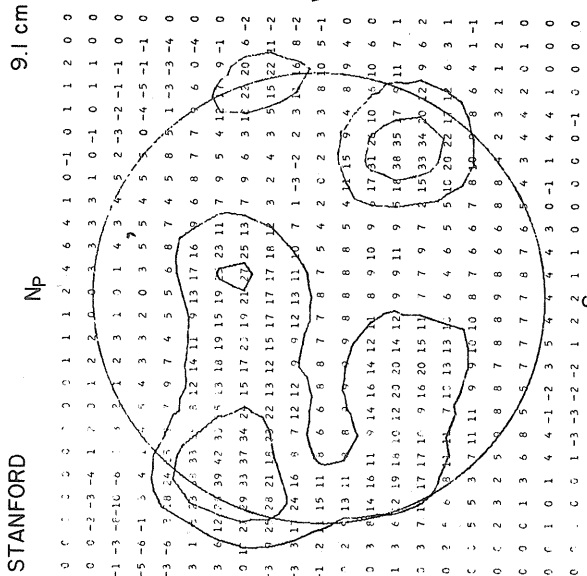
ESSA-BOULDER

SUNSPOTS

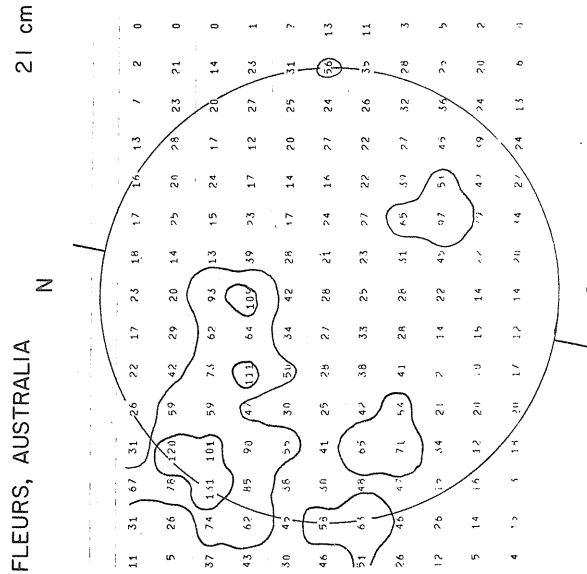


Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

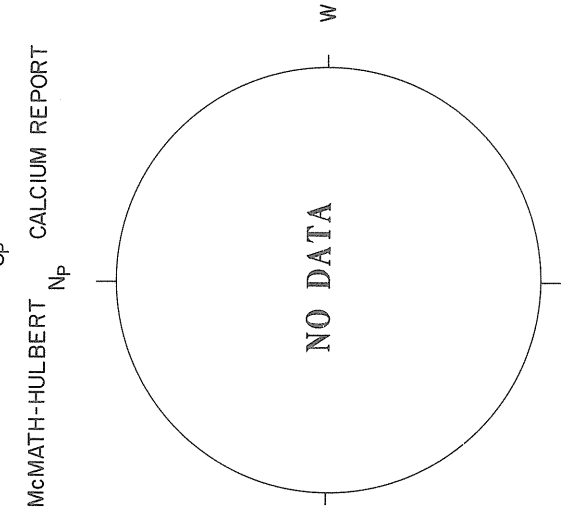
STANFORD  
1619 UT



FLEURS, AUSTRALIA  
1600 UT



McMATH-HULBERT  
Np



S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

Activity Indicators: Contour lines are drawn at 50,000 and 100,000 Ck on a map smoothed by replacing each value by the mean of the nine values centered on it.

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

MT. WILSON  
DELTA Y=63.3  
DELTA X=49.8

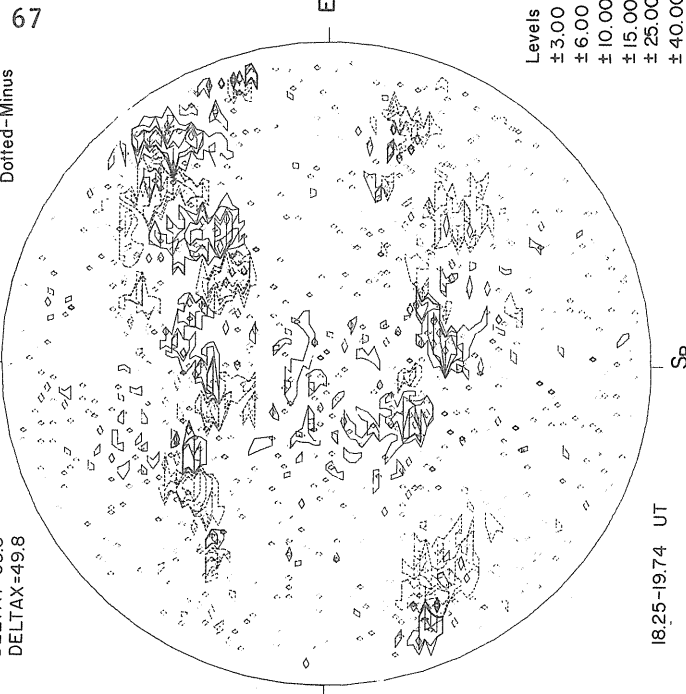
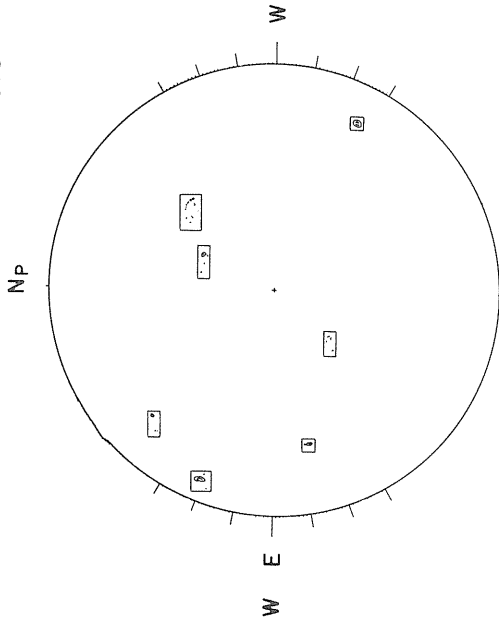
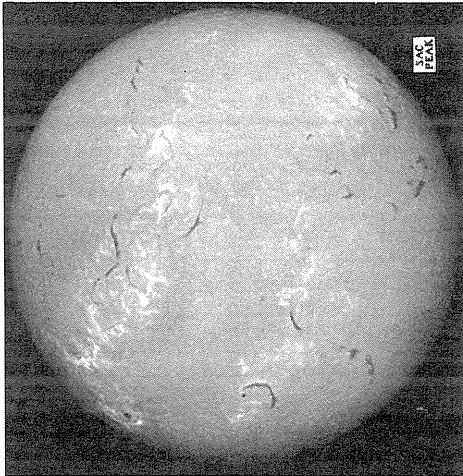
FEBRUARY 2, 1967 (P=-12.36, B<sub>0</sub>=-6.09, L<sub>0</sub>=271.68)

SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER

SUNSPOTS



Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

67-28-2.5  
70-26-3  
71-19-2.5  
72-09-2.5  
73-15-2.5  
74-32-3  
80-52-3  
81-19-2.5  
82-27-3

STANFORD  
1758 UT

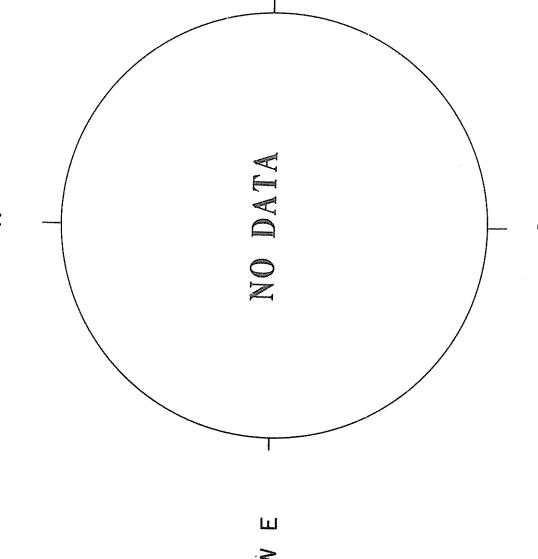
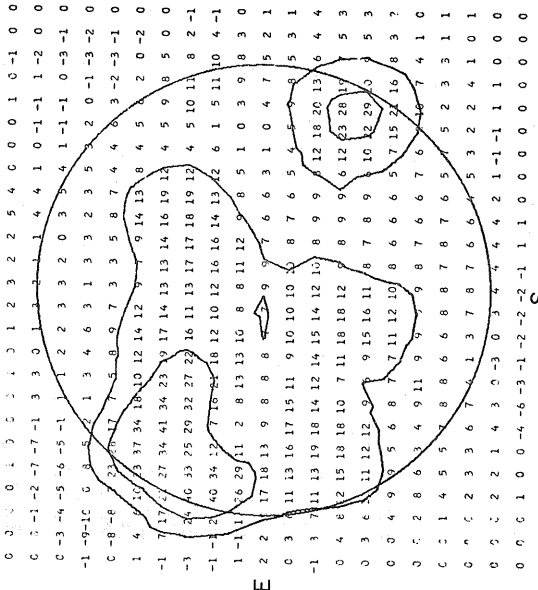
9.1 cm

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT

CALCIUM REPORT



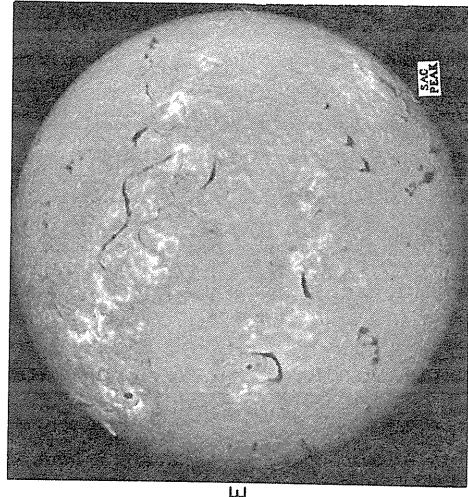
S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

SP Brightness Unit 5,000° K  
20-21 UT

# FEBRUARY 3, 1967 (P=-12.77, B<sub>0</sub>=-6.15, L<sub>0</sub>=258.51)

MT. WILSON  
Np  
MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

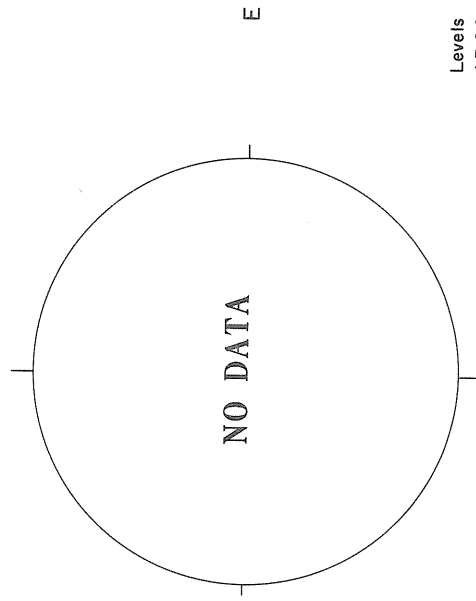
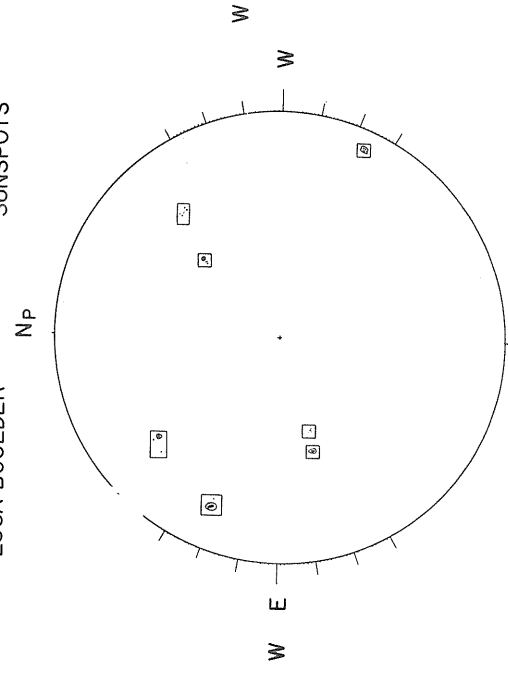
SACRAMENTO PEAK  
N



H $\alpha$

ESSA-BOULDER

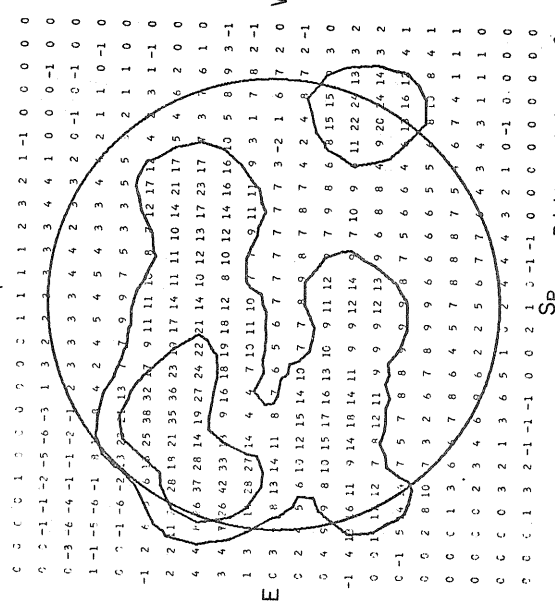
SUNSPOTS



Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

STANFORD  
S  
1527 UT

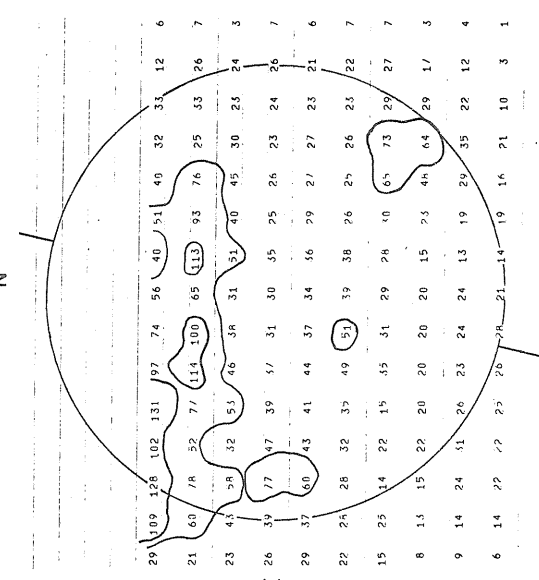
9.1 cm  
Np



20-21 UT  
SP  
Brightness Unit 5,000° K

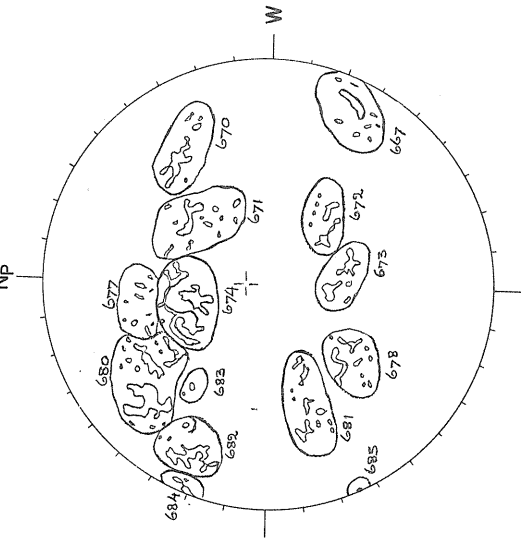
FLEURS, AUSTRALIA  
Sp  
1600 UT

21 cm



S  
Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

McMATH-HULBERT  
Sp  
CALCIUM REPORT



1515 UT  
SP

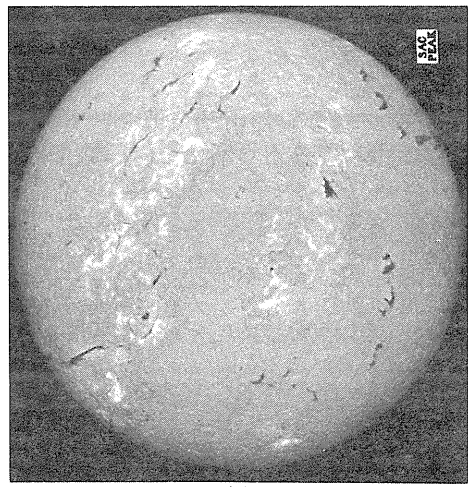
67-25-2.5  
70-27-3.5  
71-24-2.5  
72-14-2.5  
73-17-2.5  
74-36-3.5  
80-53-3  
81-20-2.5  
82-29-3  
83-03-3  
84-17-3



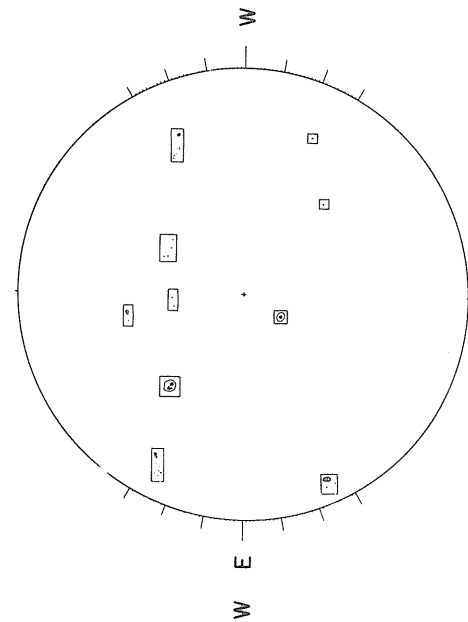


**FEBRUARY 5, 1967 (P=-13.56, B<sub>0</sub>=-6.29, L<sub>0</sub>=232.18)**

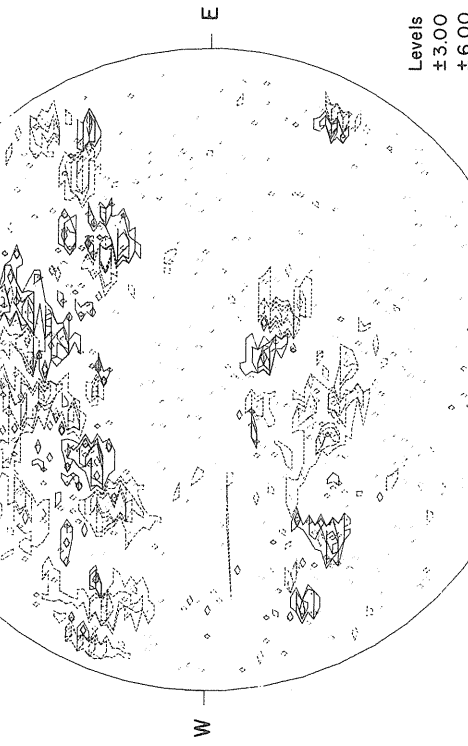
**SACRAMENTO PEAK**  
N



**ESSA-BOULDER (SAC PEAK)**  
N P

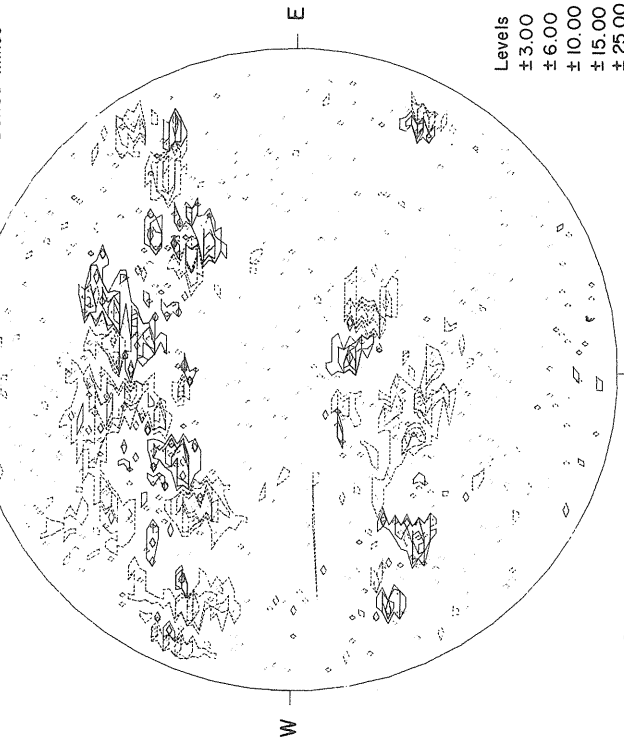


**SUNSPOTS**  
N P



**MT. WILSON**  
DELTA Y=62.0  
DELTA X=50.0

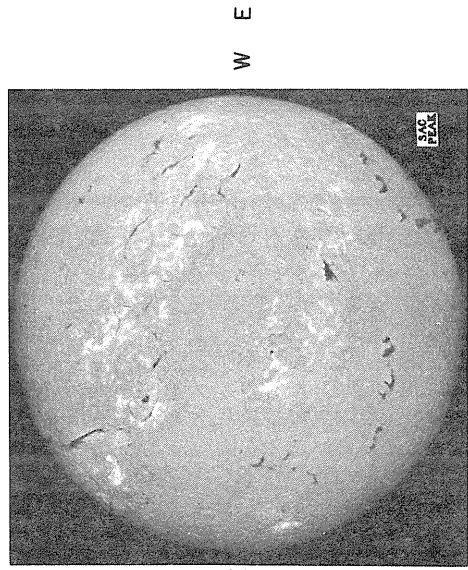
**MAGNETOGRAM**  
Solid-Plus  
Dotted-Minus



Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

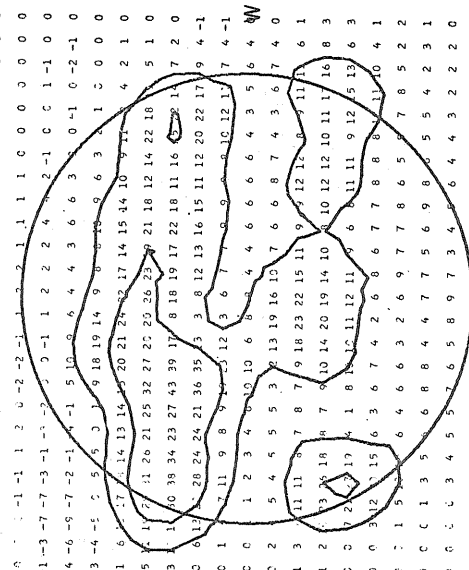
45  
Feb 67

**STANFORD**  
S



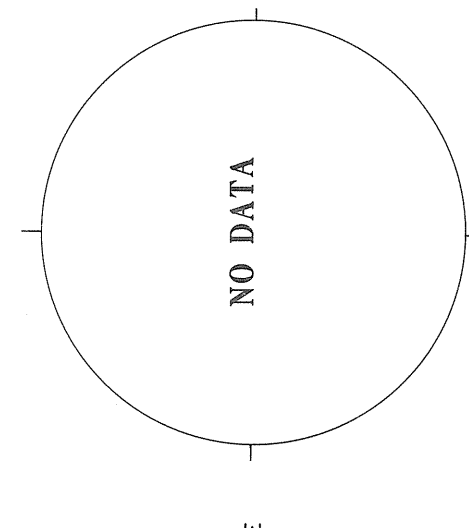
**1559 UT**  
S P

**FLEURS, AUSTRALIA**  
N



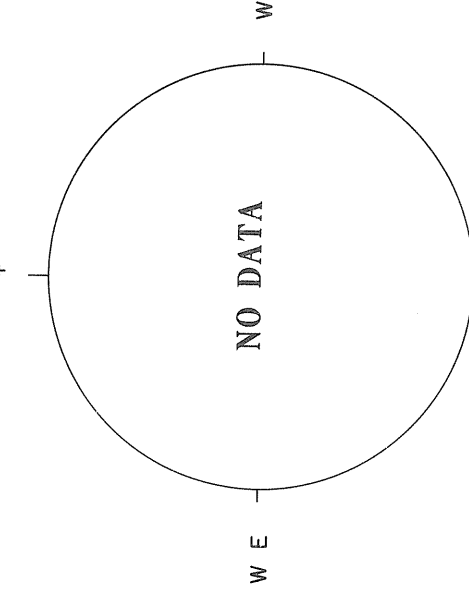
**1550 UT**  
S P

**McMATH-HULBERT**  
N P



**2184-2337 UT**  
S P

**McMATH-HULBERT**  
N P



S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

S P Brightness Unit 5,000° K

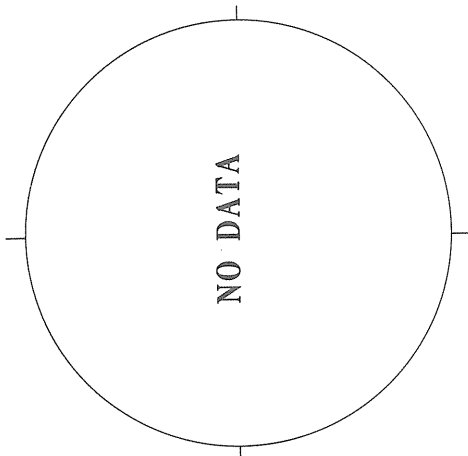
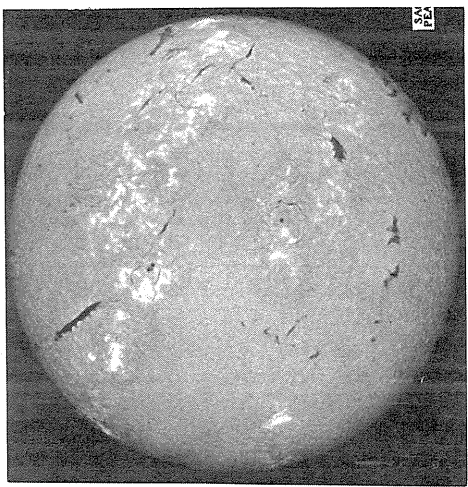
FEBRUARY 6, 1967 (P=-13.96, B<sub>0</sub>=-6.35, L<sub>0</sub>=219.01)

SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER  
Np

SUNSPOTS  
Np



- Levels
- ±3.00
- ±6.00
- ±10.00
- ±15.00
- ±25.00
- ±40.00

1654 UT

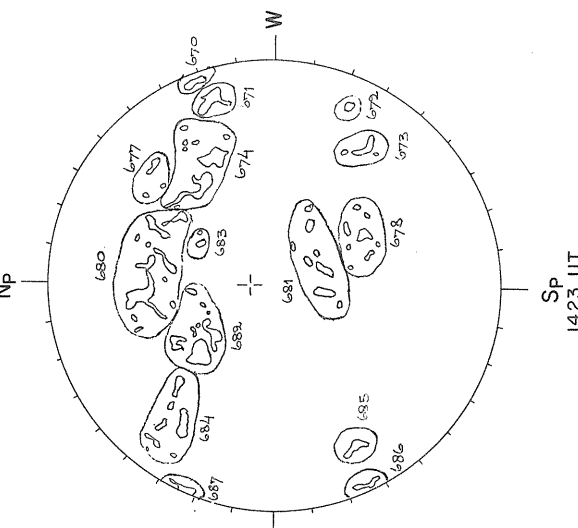
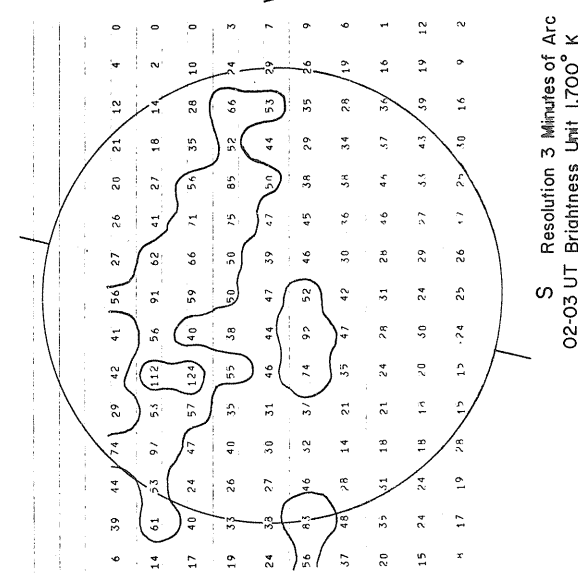
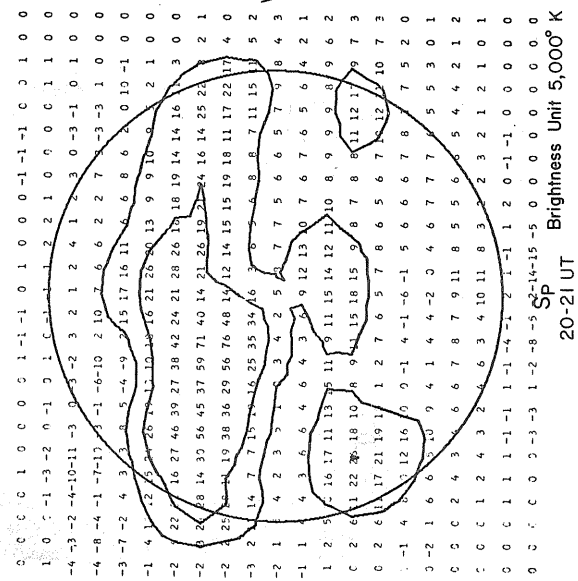
STANFORD

9.1 cm

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT  
CALCIUM REPORT



- 70-30-3
- 74-37-2.5
- 80-54-3
- 81-15-3
- 82-28-3
- 83-04-2.5
- 84-26-3.5
- 85-08-3.5
- 87-23-3

20-21 UT

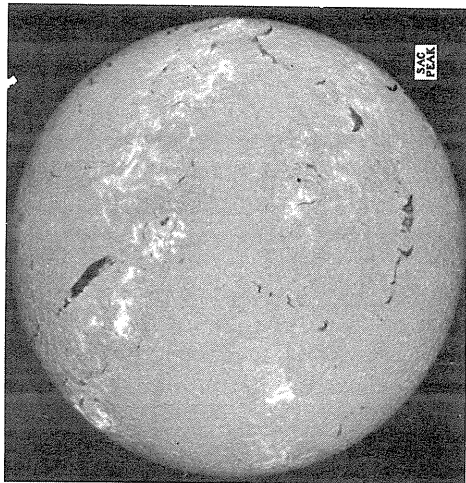
S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

1423 UT

FEBRUARY 7, 1967 (P=-14.34, B<sub>0</sub>=-6.41, L<sub>0</sub>=205.85)

MT. WILSON Np MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

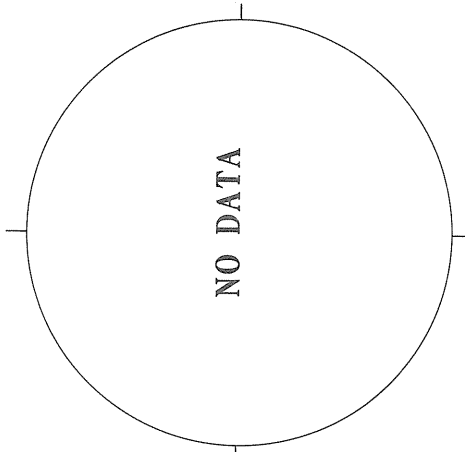
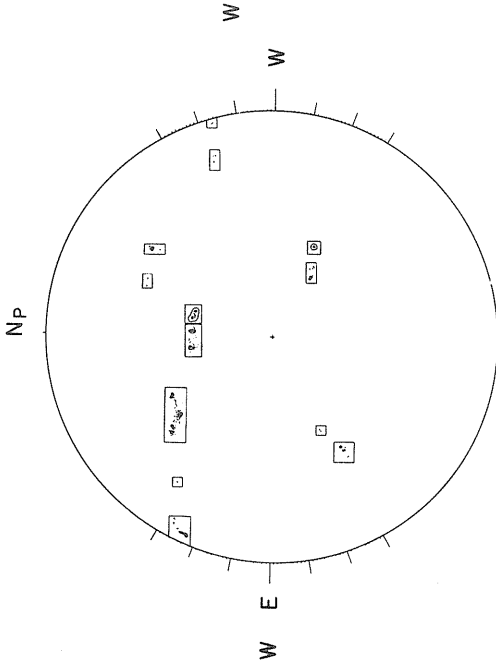
SACRAMENTO PEAK N



H $\alpha$

ESSA-BOULDER

SUNSPOTS



S  
1549 UT

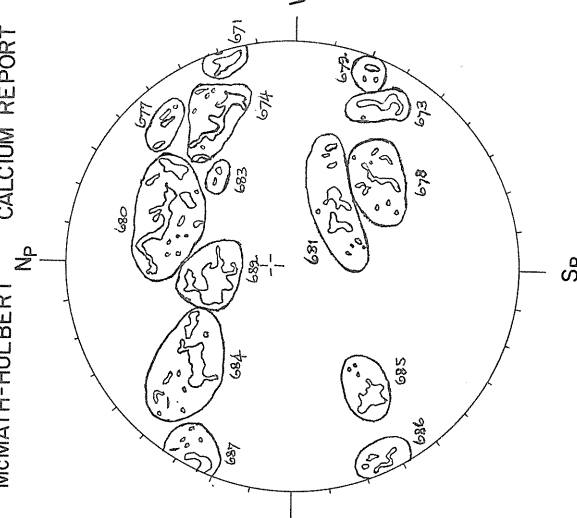
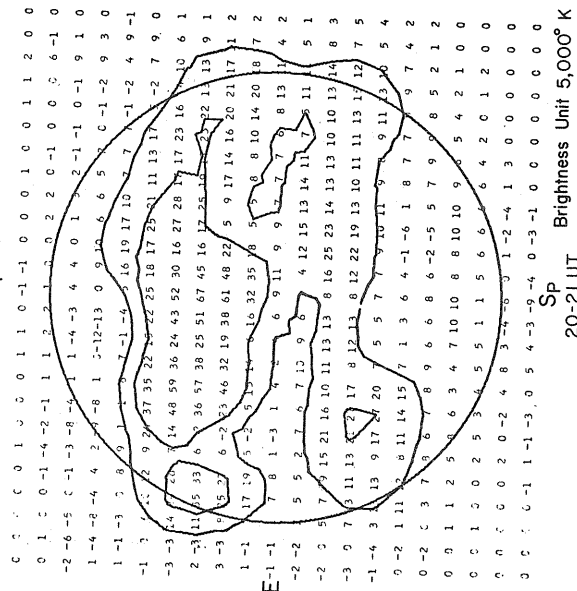
STANFORD

9.1 cm

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT Np  
CALCIUM REPORT



Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

71-23-2.5  
73-17-2.5  
74-38-3  
80-53-3  
81-26-3.5  
82-36-3  
84-43-3.5  
85-20-3.5  
86-12-2.5  
87-36-3.5

47  
Feb 67

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

SP Brightness Unit 5,000° K

20-21 UT

SP  
1350 UT

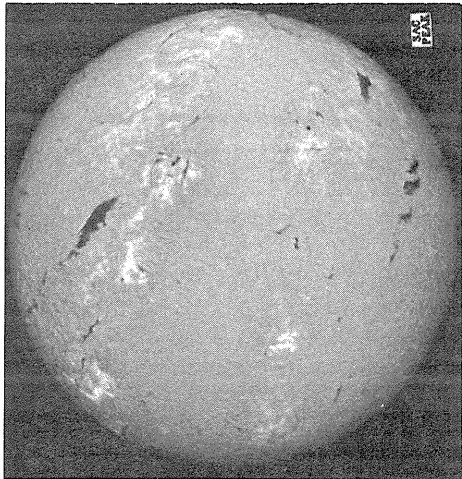
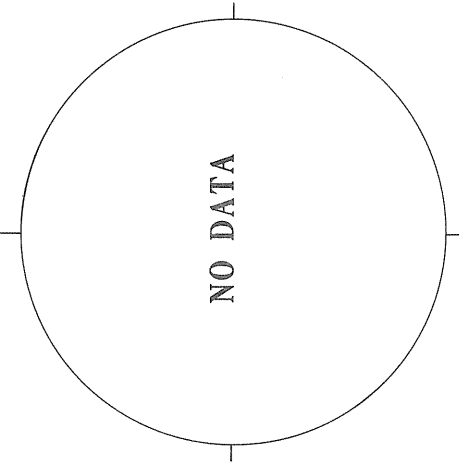
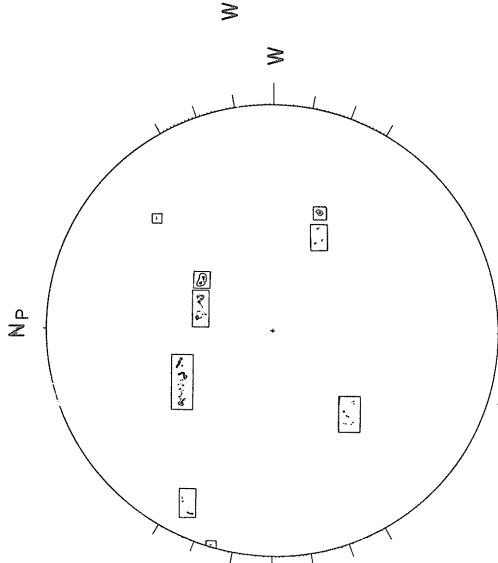
FEBRUARY 8, 1967 (P=-14.72, B<sub>0</sub>=6.47, L<sub>0</sub>=192.68)

SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER

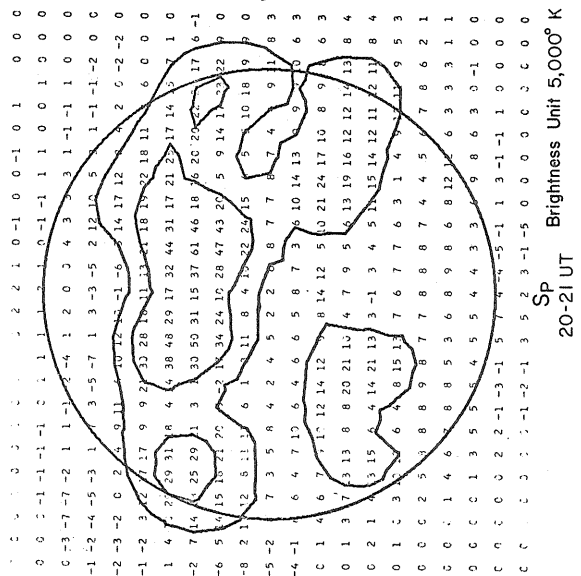
SUNSPOTS



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

STANFORD  
Np  
1624 UT

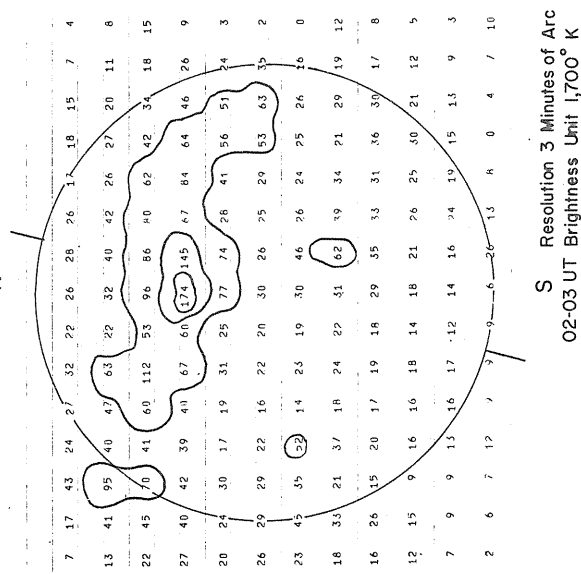
9.1 cm



Brightness Unit 5,000° K

FLEURS, AUSTRALIA  
Np  
1630 UT

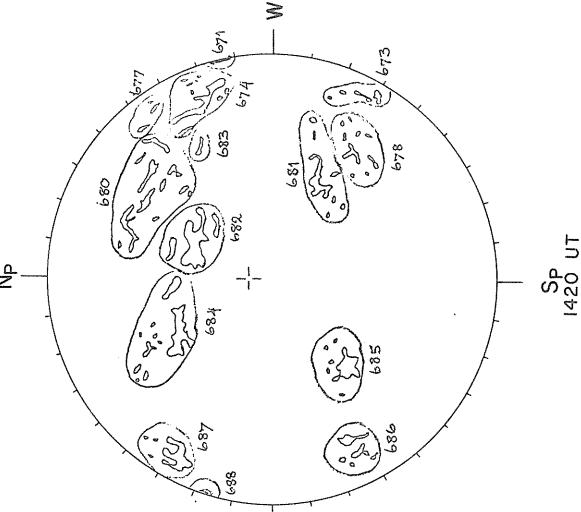
21 cm



Brightness Unit 1,700° K

McMATH-HULBERT  
Np  
1420 UT

CALCIUM REPORT

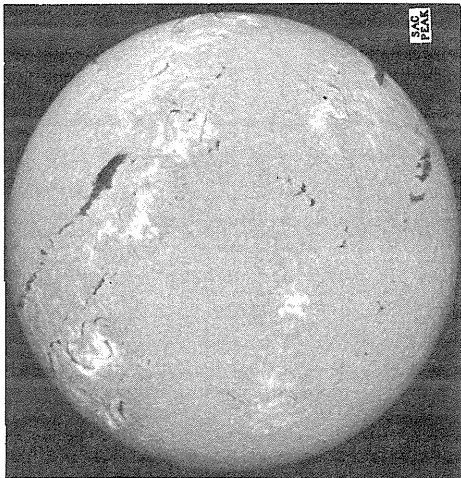


Brightness Unit 1,700° K

74-31-25  
80-43-3  
81-23-3  
82-35-3  
84-42-3.5  
85-20-3.5  
86-18-2.5  
87-46-3.5  
88-14-3

FEBRUARY 9, 1967 (P=-15.10, B<sub>0</sub>=-6.53, L<sub>0</sub>=179.52)

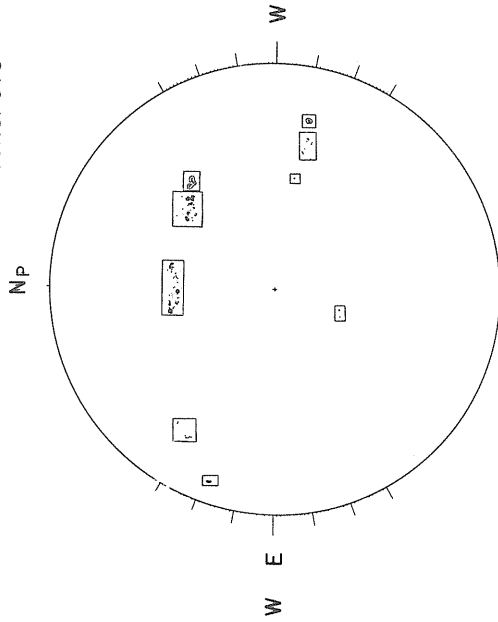
SACRAMENTO PEAK N



H $\alpha$

ESSA-BOULDER

SUNSPOTS



1605 UT

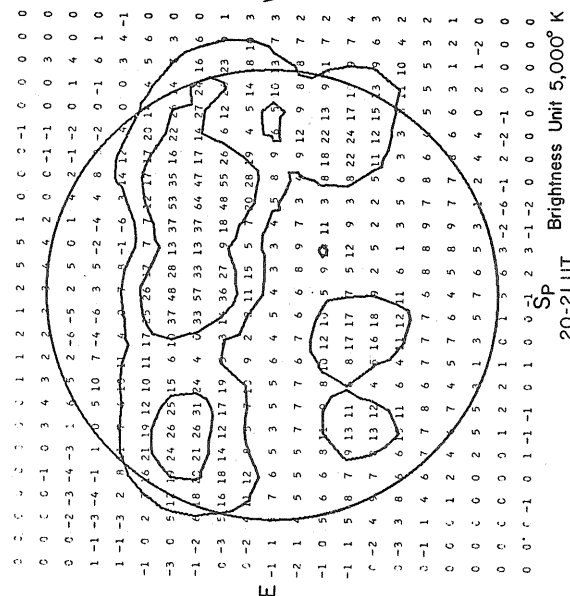
STANFORD

9.1 cm

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT



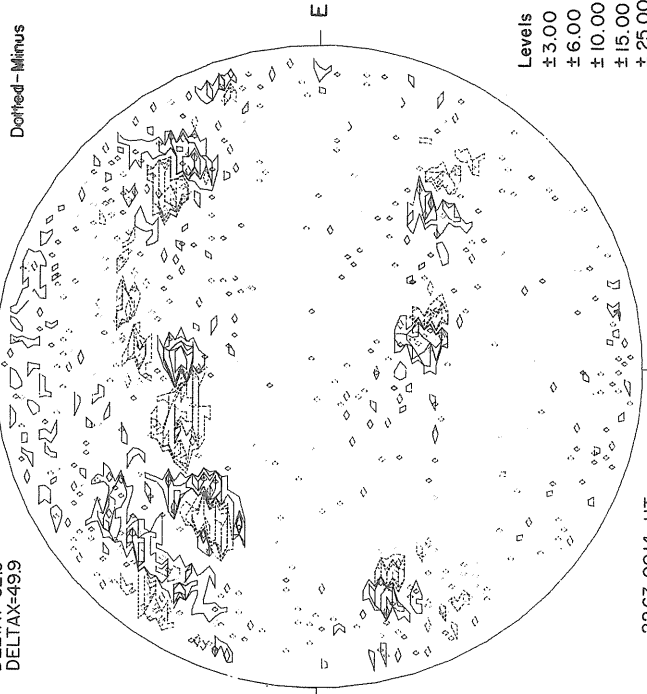
20-21 UT

Brightness Unit 5,000° K

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

MT. WILSON  
DELTA Y=62.0  
DELTA X=49.9

MAGNETOGRAM  
Solid - Plus  
Dotted - Minus

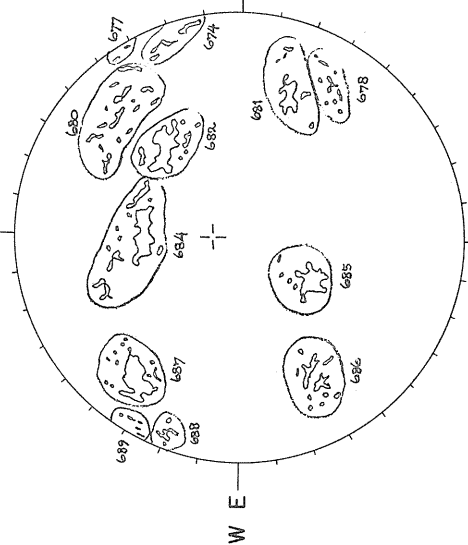


Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

2263-0014 UT

McMATH-HULBERT

CALCIUM REPORT

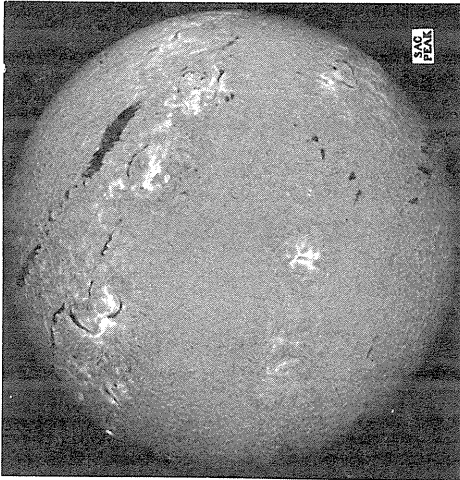


SP  
1555 UT

74-26 2.5  
80-40-2.5  
81-23-3  
82-36-3.5  
84-44-3.5  
85-21-3.5  
87-48-3.5  
88-16-2.5

FEBRUARY 10, 1967 (P=-15.47, B<sub>0</sub>=-6.58, L<sub>0</sub>=166.35)

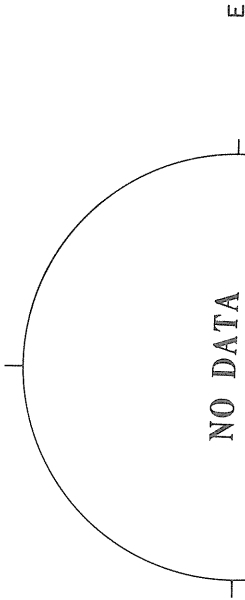
SACRAMENTO PEAK N  
H $\alpha$



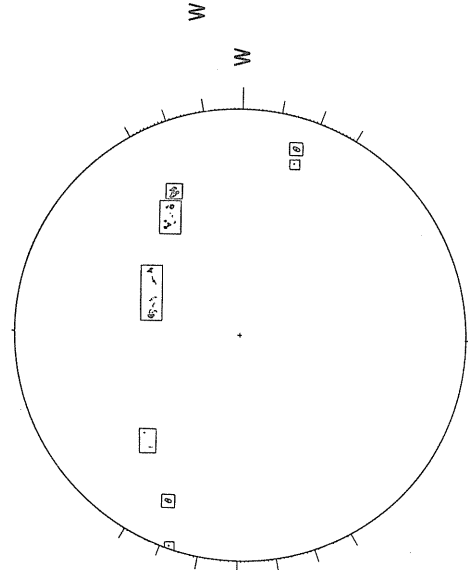
ESSA-BOULDER

SUNSPOTS

Np



NO DATA



- Levels
- ± 3.00
- ± 6.00
- ± 10.00
- ± 15.00
- ± 25.00
- ± 40.00

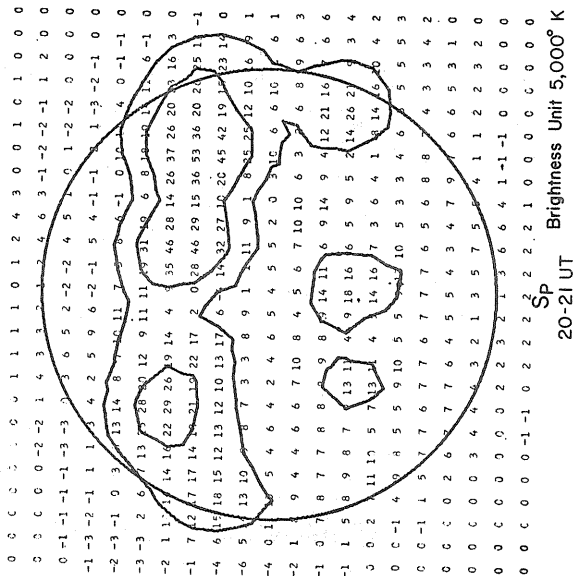
1528 UT

S

STANFORD

Np

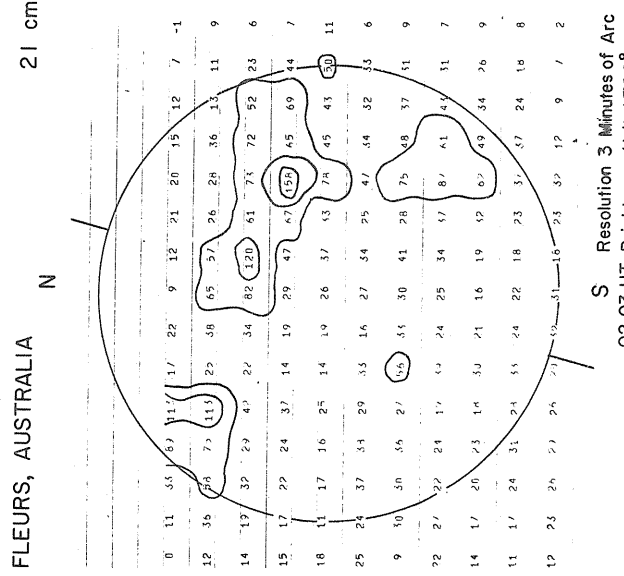
9.1 cm



FLEURS, AUSTRALIA

N

21 cm



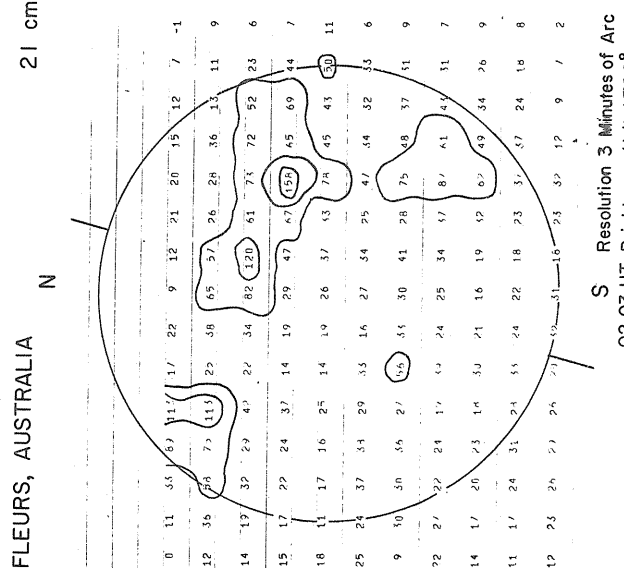
1600 UT

Sp

McMATH-HULBERT

Np

CALCIUM REPORT



20-21 UT

Sp

Brightness Unit 5,000° K

McMATH-HULBERT

Np

1555 UT

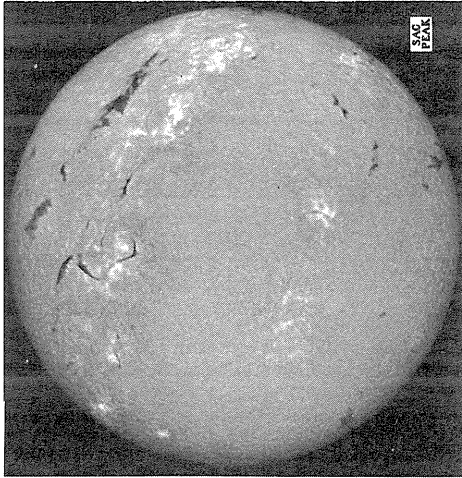
Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

- 80-31-2.5
- 81-24-2.5
- 82-37-3.5
- 84-47-3.5
- 85-23-3.5
- 86-19-2.5
- 87-51-3.5
- 88-12-2.5
- 91-04-3

# FEBRUARY 11, 1967 (P=-15.83, B<sub>0</sub>=-6.63, L<sub>0</sub>=153.18)

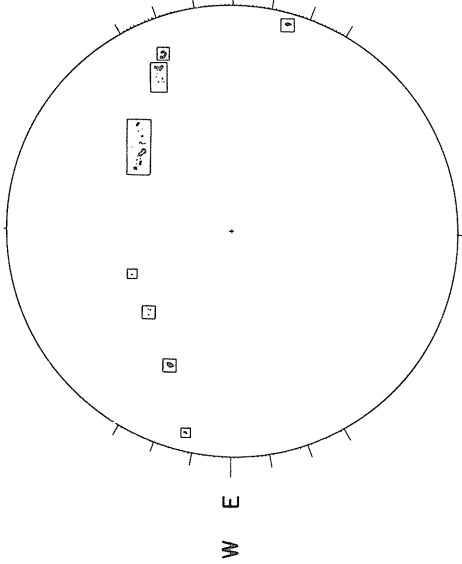
SACRAMENTO PEAK  
N

H $\alpha$



ESSA-BOULDER  
Np

SUNSPOTS



1623 UT

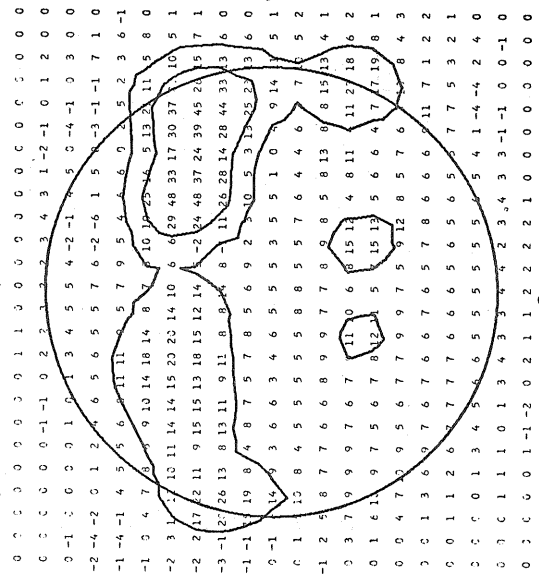
1530 UT

STANFORD

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT  
Np



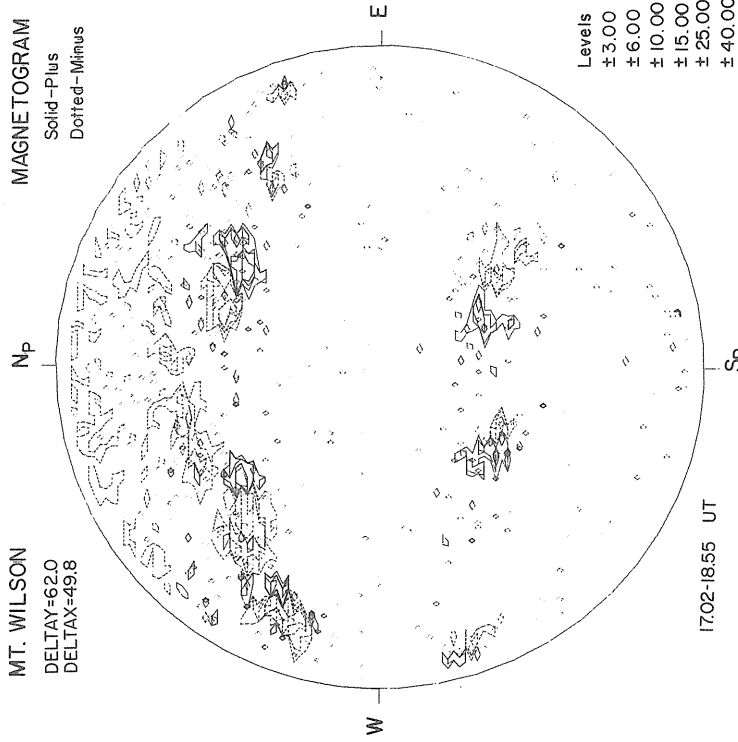
SP  
20-21 UT

Brightness Unit 5,000° K

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

MT. WILSON  
DELTA $\gamma$ =62.0  
DELTA $\xi$ =49.8

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus



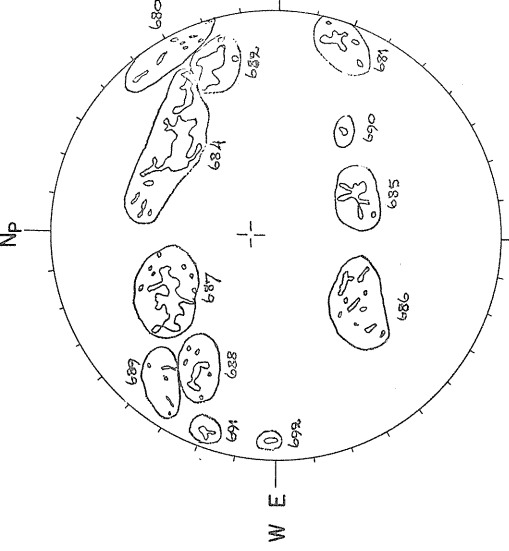
Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

17.02-1855 UT

McMATH-HULBERT  
Np

CALCIUM REPORT

21 cm

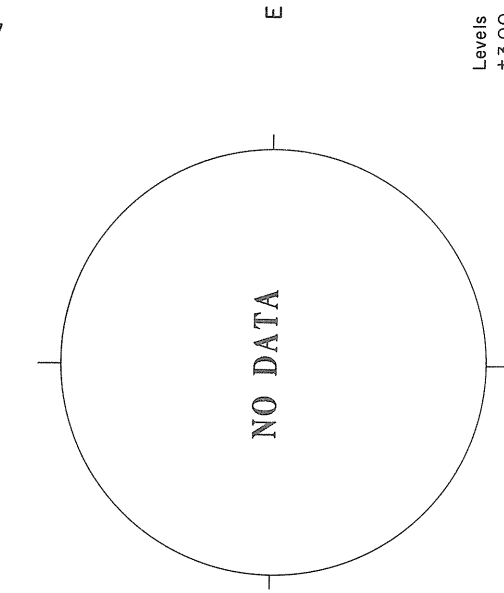


SP  
1420 UT

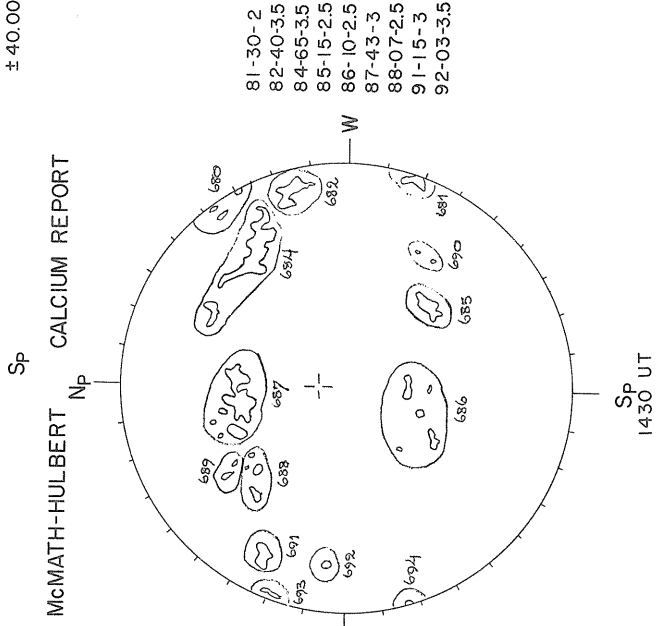
81-28-2.5  
82-41-3.5  
84-62-3.5  
85-17-3  
86-16-2.5  
87-48-3  
88-12-2.5  
91-09-3  
92-06-3



MT. WILSON Np MAGNETOGRAM  
Solid-Plus  
Dotted-Minus



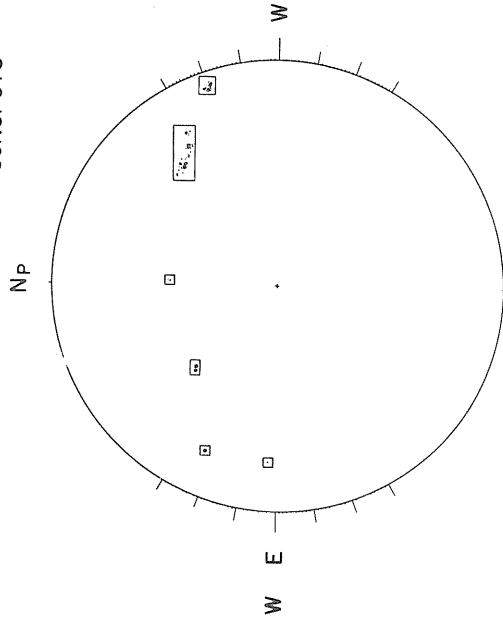
Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00



81-30-2  
82-40-35  
84-65-35  
85-15-2.5  
86-10-2.5  
87-43-3  
88-07-2.5  
91-15-3  
92-03-3.5

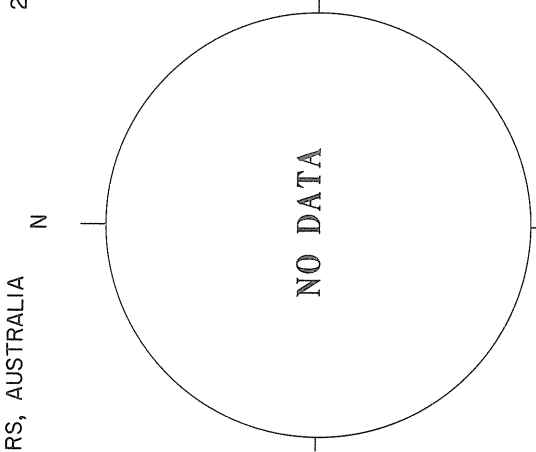
FEBRUARY 12, 1967 (P=-16.19, B<sub>0</sub>=-6.68, L<sub>0</sub>=140.02)

ESSA-BOULDER Np SUNSPOTS



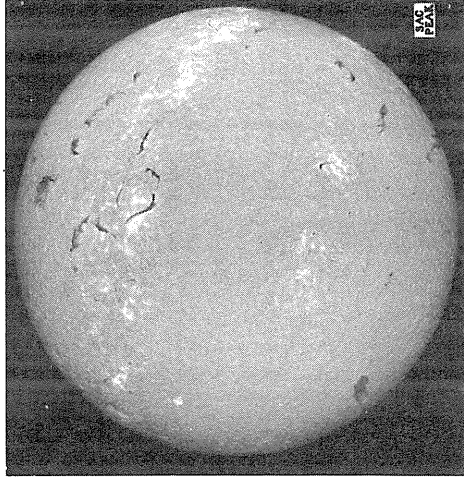
Sp 1720 UT

FLEURS, AUSTRALIA N



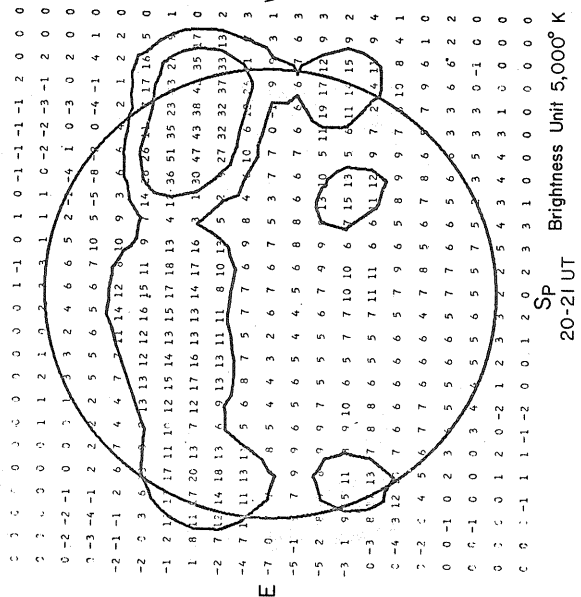
S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

SACRAMENTO PEAK N H $\alpha$



S 1526 UT

STANFORD Np 9.1 cm

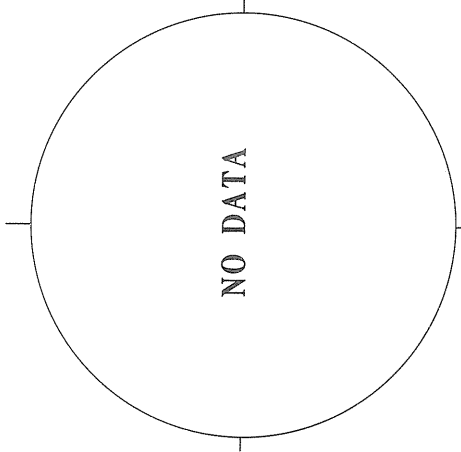


Brightness Unit 5,000° K

20-21 UT

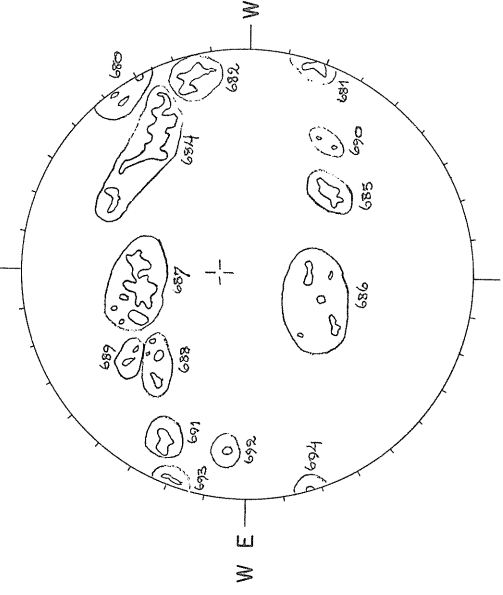
21 cm

FLEURS, AUSTRALIA N



S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

McMATH-HULBERT Np

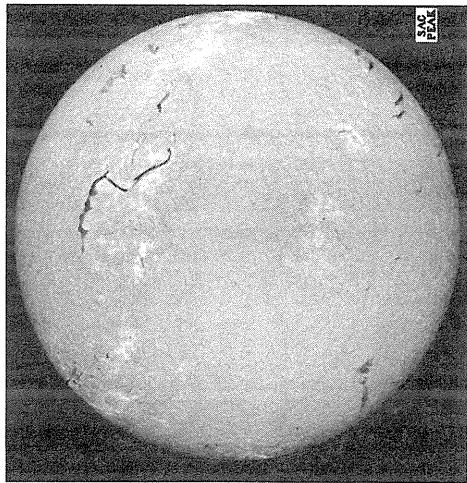


Sp 1430 UT

FEBRUARY 13, 1967 (P=-16.55, B<sub>0</sub>=-6.73, L<sub>0</sub>=126.85)

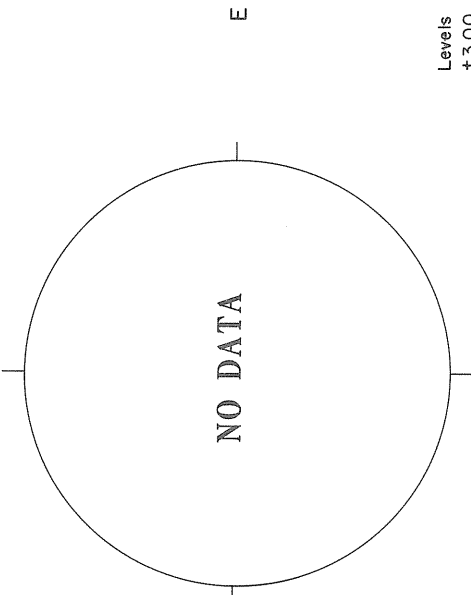
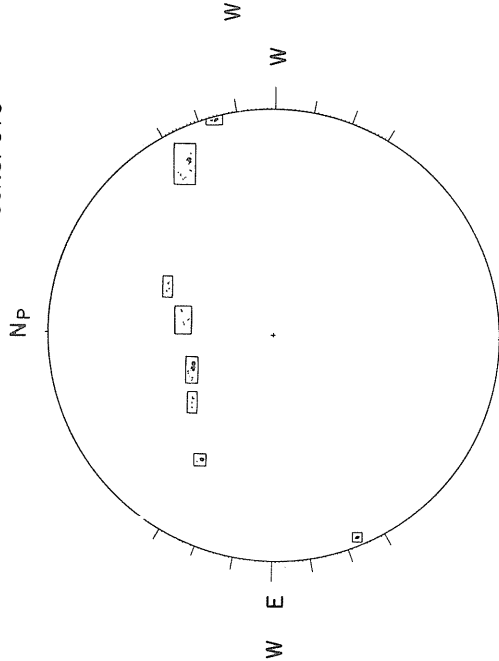
MT. WILSON Np MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

SACRAMENTO PEAK N



ESSA-BOULDER

SUNSPOTS



Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

1511 UT

1840 UT

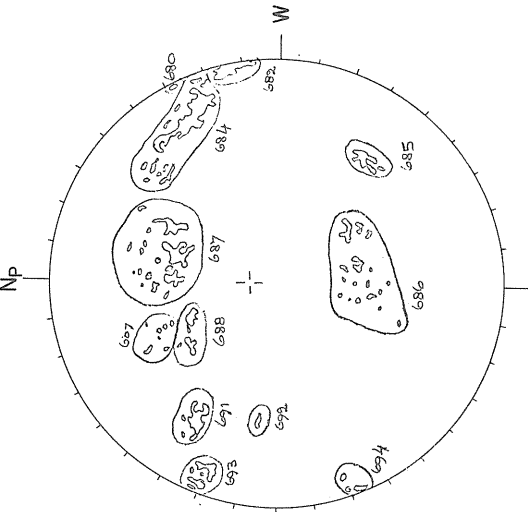
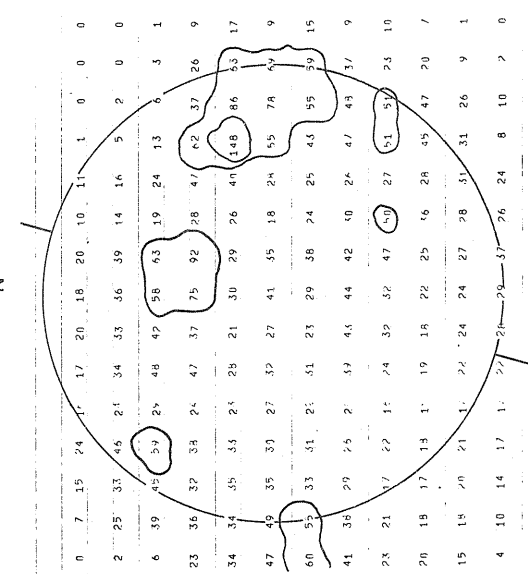
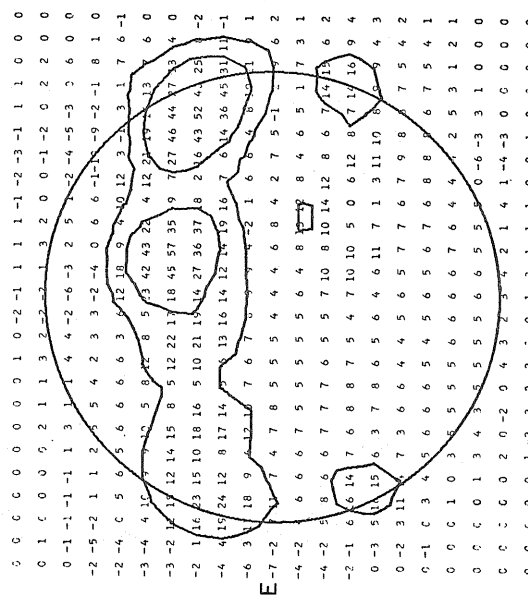
STANFORD

9.1 cm

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT  
CALCIUM REPORT



82-35-3.5  
84-60-3.5  
85-11-2.5  
86-17-2.5  
87-37-3.5  
88-07-3  
91-12-2.5  
94-08-3

53  
Feb 67

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

Brightness Unit 5,000° K

20-21 UT

1545 UT

54  
Feb 67

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

Np

MT. WILSON

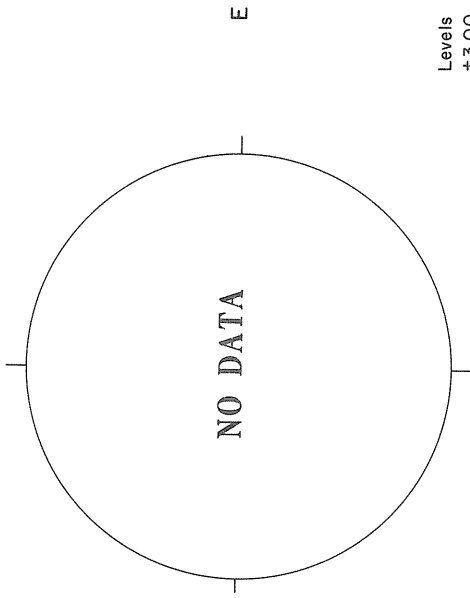
FEBRUARY 14, 1967 (P=-16.89, B<sub>0</sub>=-6.78, L<sub>0</sub>=113.68)

SACRAMENTO PEAK  
N

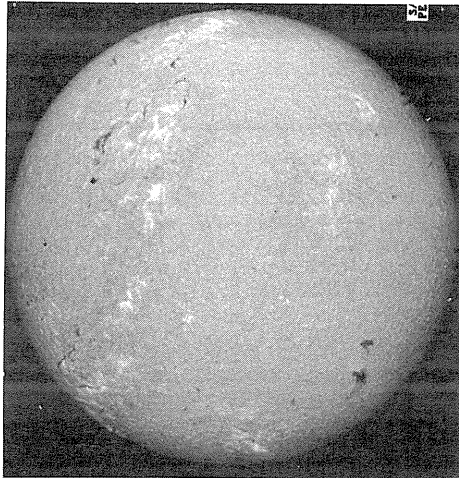
H $\alpha$

ESSA-BOULDER  
Np

SUNSPOTS



Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00



E

W

E

W

W

W

1846 UT  
S

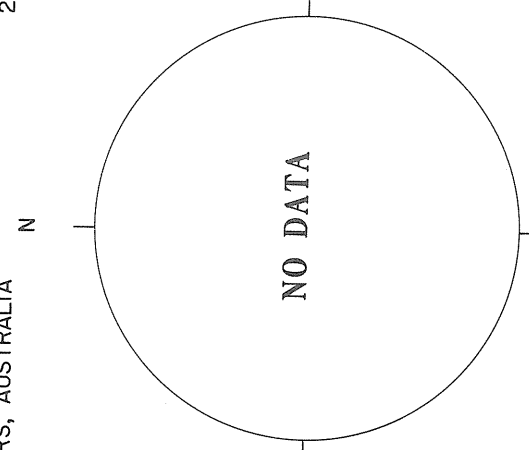
STANFORD

9.1 cm

FLEURS, AUSTRALIA  
N

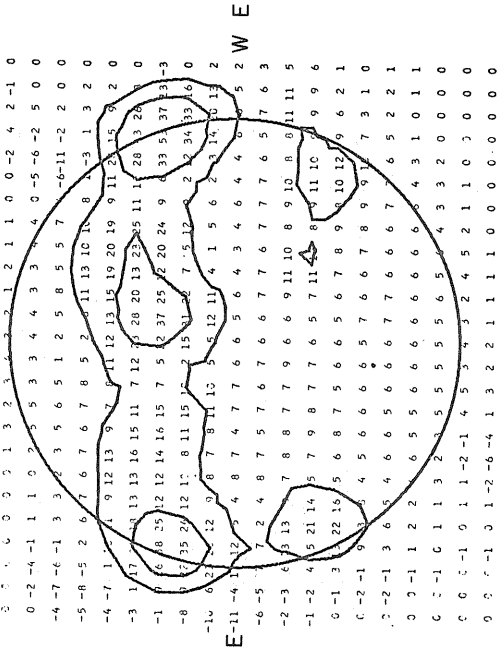
21 cm

McMATH-HULBERT  
Np



Sp

McMATH-HULBERT  
Np



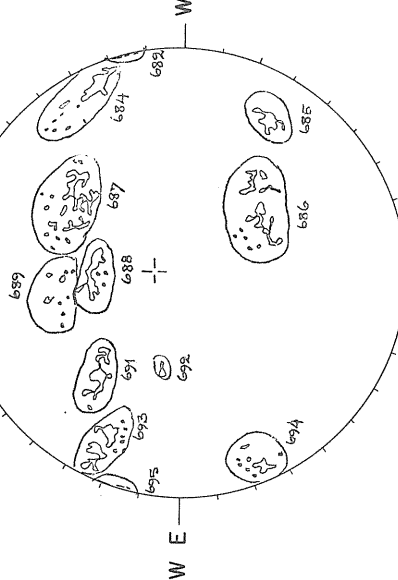
9.1 cm

FLEURS, AUSTRALIA  
N

21 cm

McMATH-HULBERT  
Np

82-10-25  
84-53-35  
85-13-25  
86-19-25  
87-34-3  
88-13-35  
91-18-25  
93-32-25  
94-17-3  
95-10-3



Sp

McMATH-HULBERT  
Np

20-21 UT  
Sp  
Brightness Unit 5,000° K

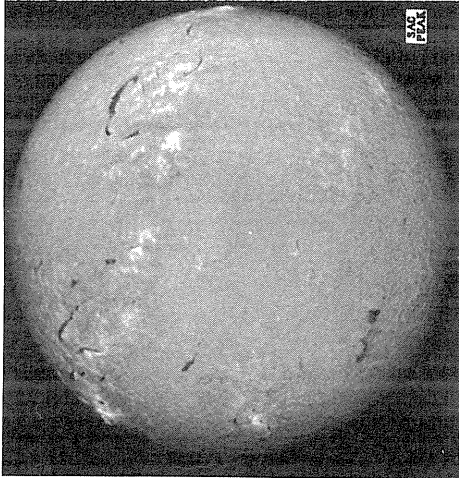
02-03 UT  
Brightness Unit 1,700° K

Sp  
1350 UT

McMATH-HULBERT  
Np

**FEBRUARY 15, 1967 (P=-17.24, B<sub>0</sub>=-6.82, L<sub>0</sub>=100.51)**

SACRAMENTO PEAK N

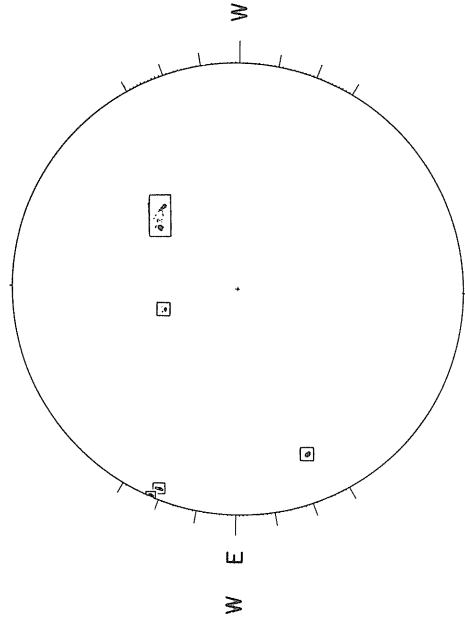


H $\alpha$

ESSA-BOULDER

Np

SUNSPOTS



1743 UT

1800 UT

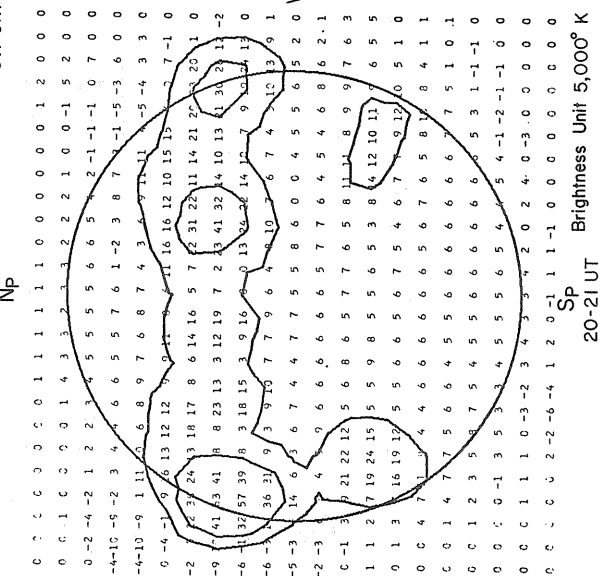
2184-2336 UT

STANFORD

9.1 cm

FLEURS, AUSTRALIA

21 cm

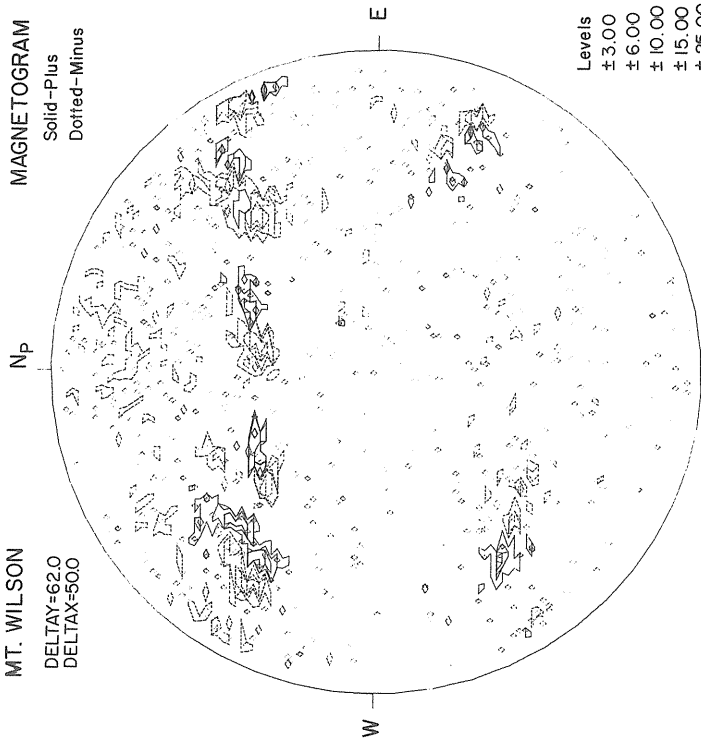


Brightness Unit 5,000° K

20-21 UT

MT. WILSON  
DELTA-620  
DELTA-500

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

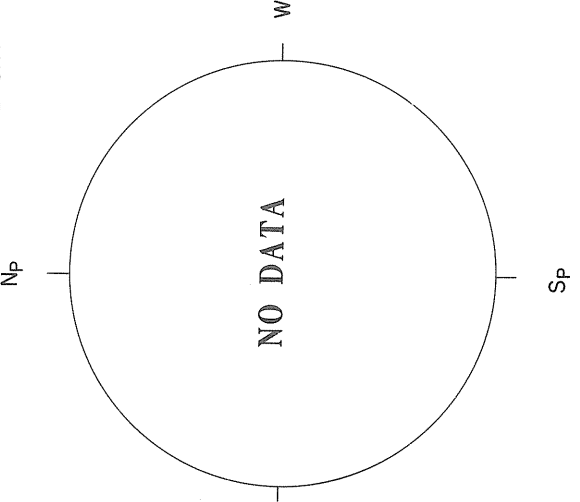


Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

2184-2336 UT

McMATH-HULBERT

CALCIUM REPORT

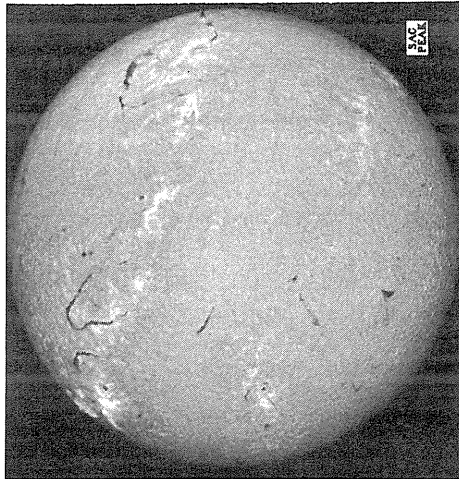


Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

56  
Feb 67

FEBRUARY 16, 1967 (P=-17.57, B<sub>0</sub>=-6.87, L<sub>0</sub>=87.35)

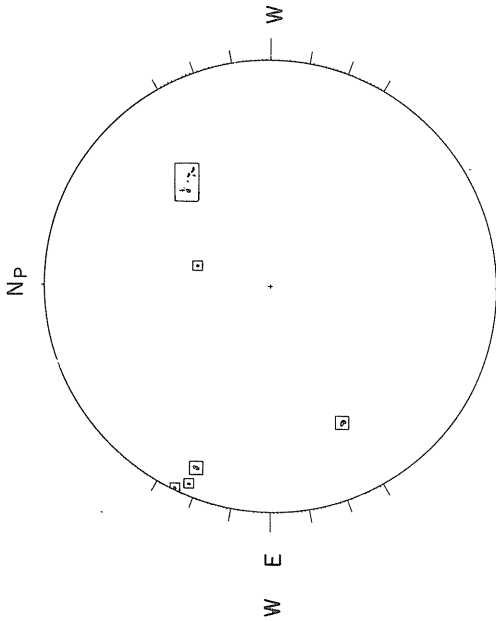
SACRAMENTO PEAK  
N



H $\alpha$

ESSA-BOULDER

SUNSPOTS



S  
1541 UT

SP  
1520 UT

STANFORD

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT  
NP

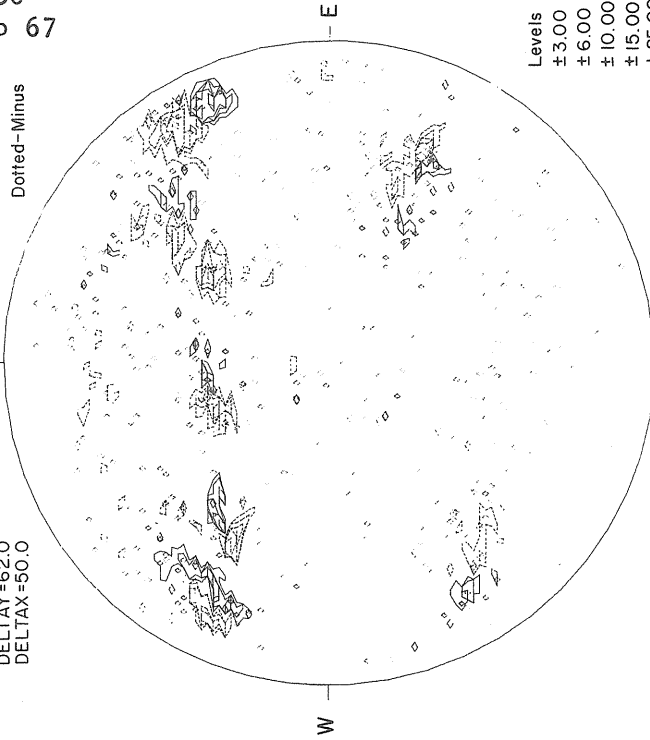
17.78-19.31 UT

SP

Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

MT. WILSON  
DELTA Y = 62.0  
DELTA X = 50.0



87-38-2.5  
88-19-3  
91-18-2.5  
93-24-3  
94-19-2.5  
95-66-3.5  
98-41-3

9.1 cm

NO DATA

McMATH-HULBERT  
NP

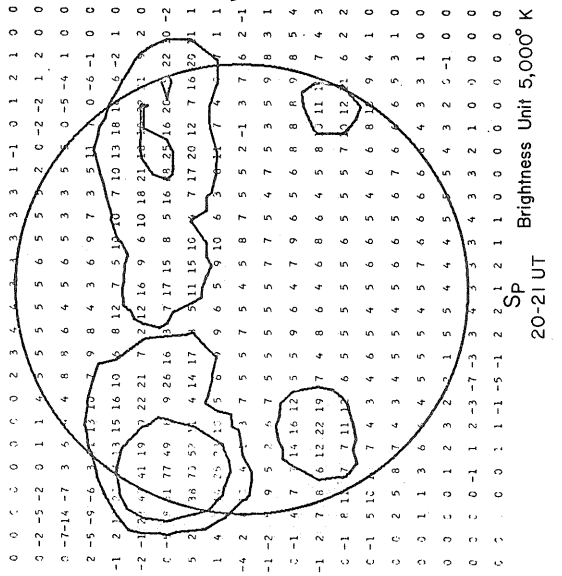
CALCIUM REPORT

17.78-19.31 UT

SP

Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

87-38-2.5  
88-19-3  
91-18-2.5  
93-24-3  
94-19-2.5  
95-66-3.5  
98-41-3

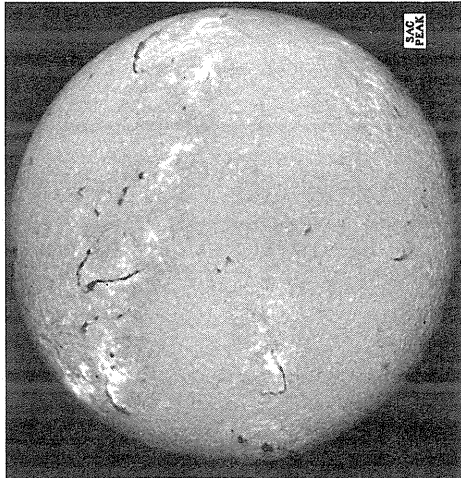


S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

Brightness Unit 5,000° K  
20-21 UT

FEBRUARY 17, 1967 (P=-17.9I, B<sub>0</sub>=-6.9I, L<sub>0</sub>=74.18)

SACRAMENTO PEAK  
N

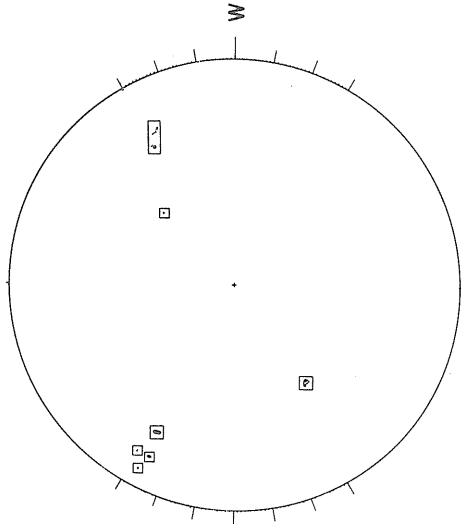


H $\alpha$

ESSA-BOULDER

Np

SUNSPOTS



S  
1501 UT

SP  
1530 UT

17.78-19.30 UT

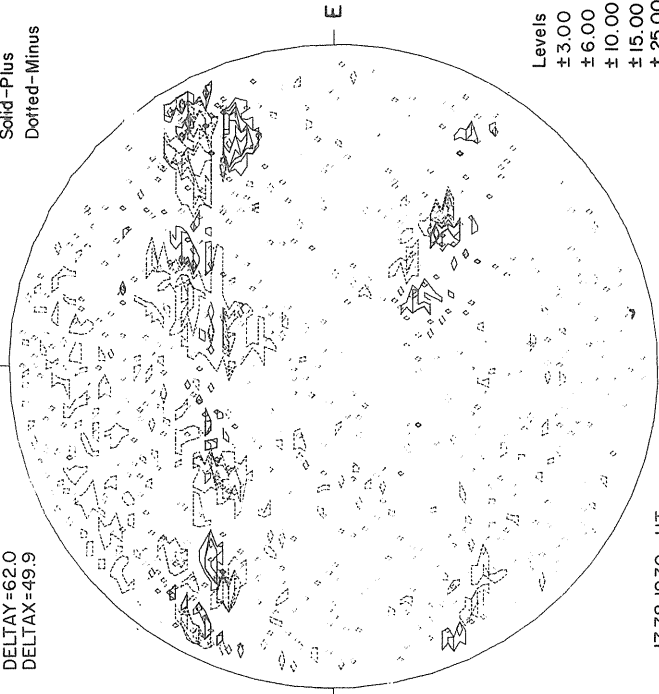
Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

MAGNETOGRAM

Solid-Plus  
Dotted-Minus

MT. WILSON

DELTA Y = 62.0  
DELTA X = 49.9



STANFORD

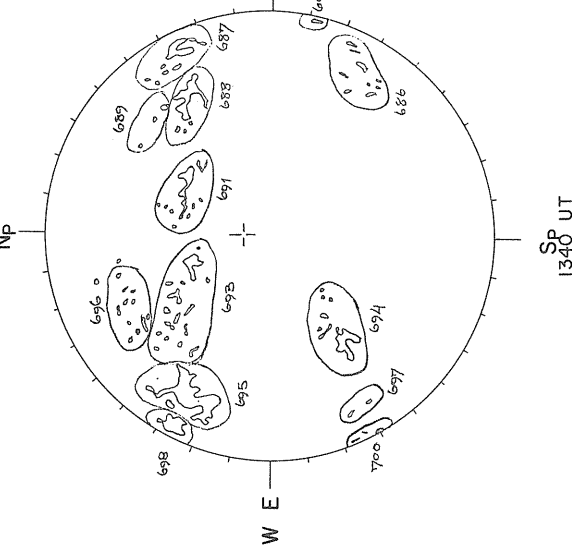
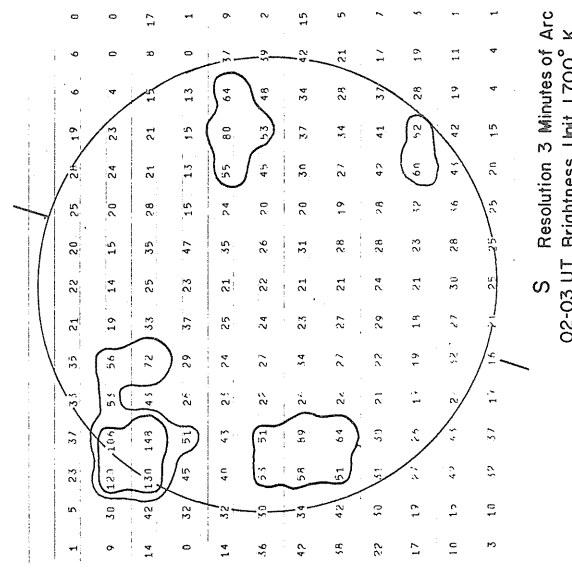
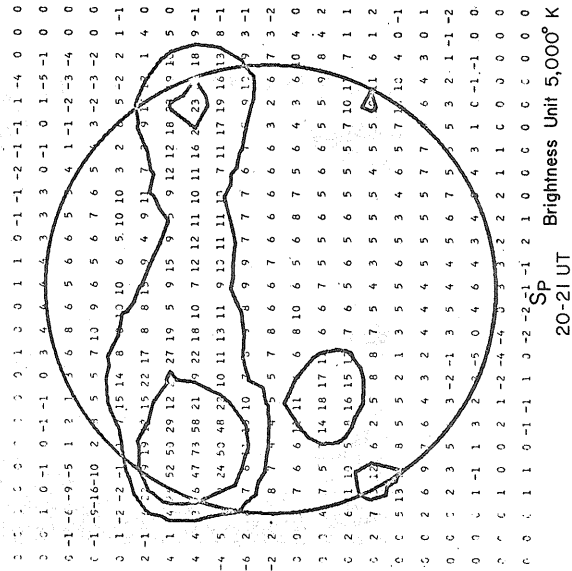
9.1 cm

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT

CALCIUM REPORT



Brightness Unit 5,000<sup>o</sup> K

Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700<sup>o</sup> K

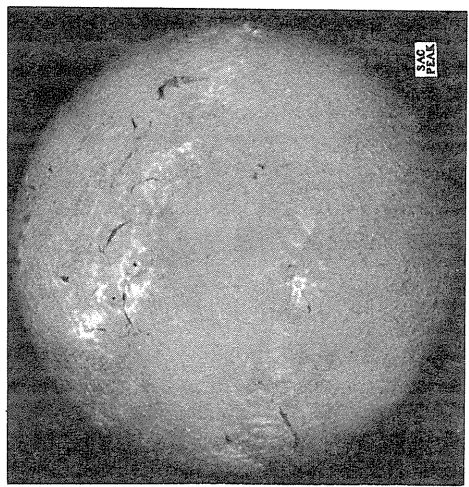
SP  
1340 UT



# FEBRUARY 19, 1967 (P=-18.55, B<sub>0</sub>=6.98, L<sub>0</sub>=47.84)

MT. WILSON Np MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

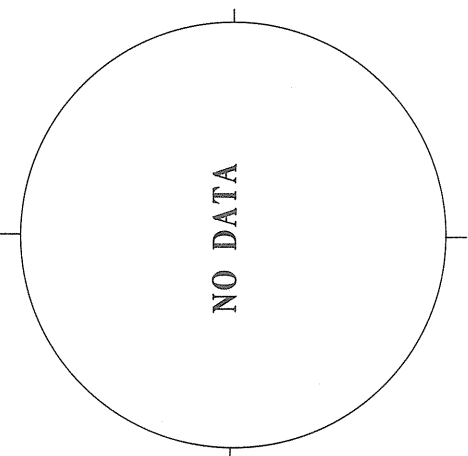
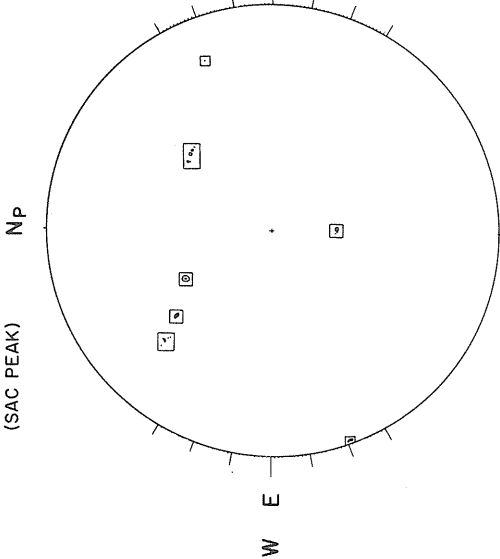
SACRAMENTO PEAK N



H $\alpha$

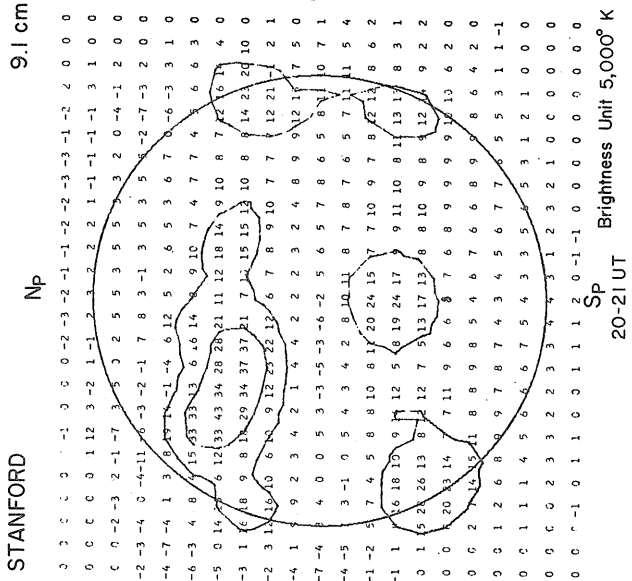
ESSA-BOULDER (SAC PEAK)

SUNSPOTS

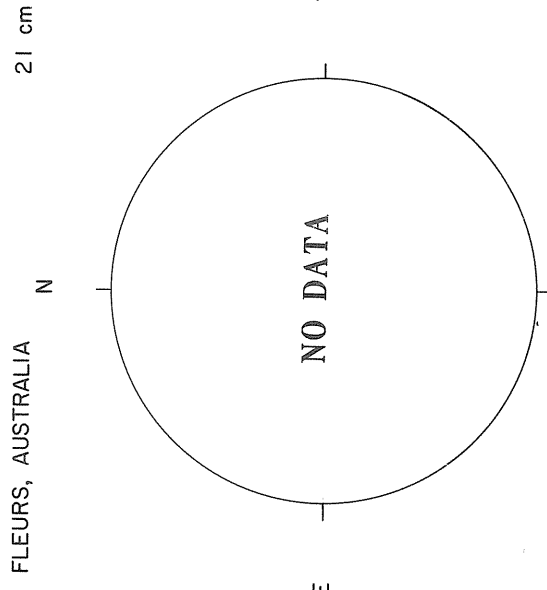


Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

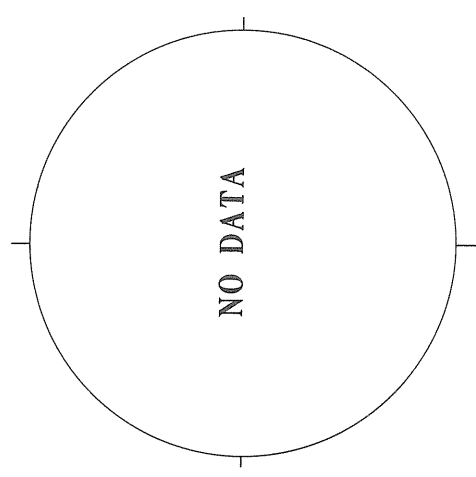
STANFORD 1956 UT



FLEURS, AUSTRALIA 2003 UT



McMATH-HULBERT Np CALCIUM REPORT



S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

20-21 UT Sp Brightness Unit 5,000° K

Sp



60  
Feb 67

MT. WILSON  
MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

Np

Sp

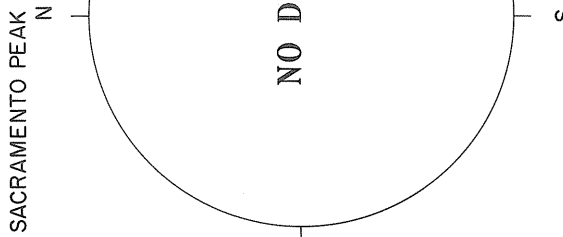
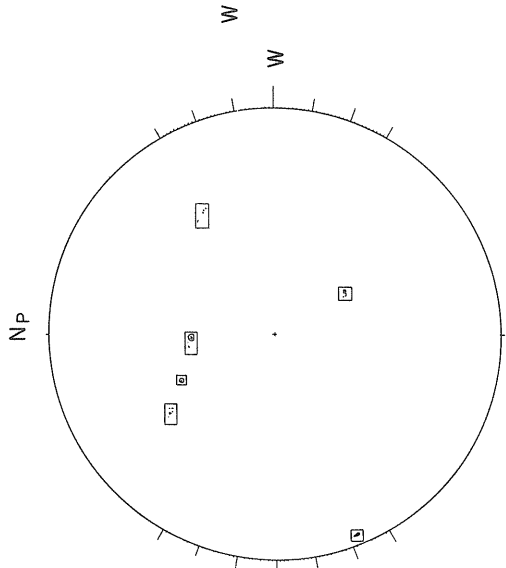
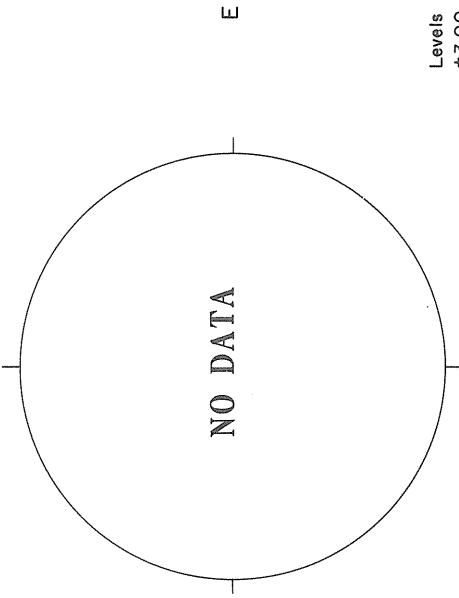
FEBRUARY 20, 1967 (P=-18.87, B<sub>0</sub>=-7.01, L<sub>0</sub>=34.67)

SACRAMENTO PEAK  
H $\alpha$

ESSA-BOULDER  
Np

SUNSPOTS

H $\alpha$

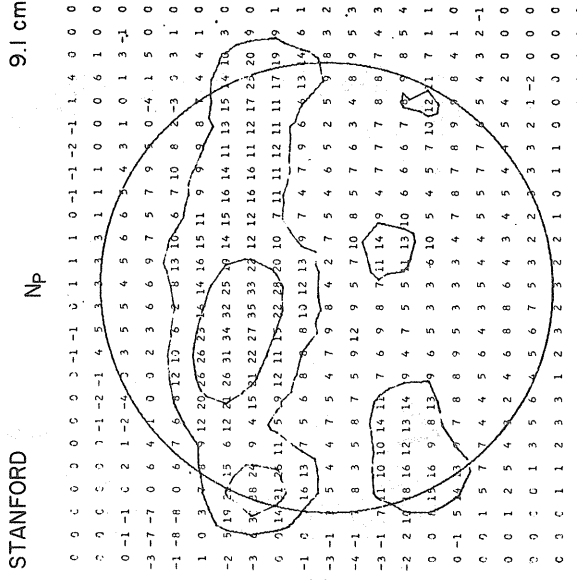
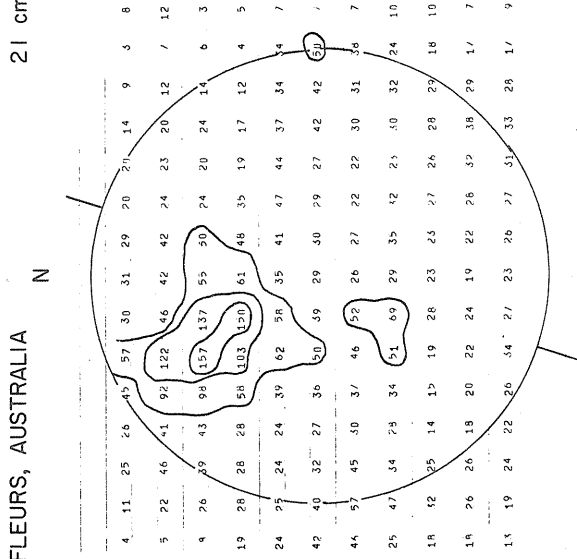


Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

McMATH-HULBERT  
Np

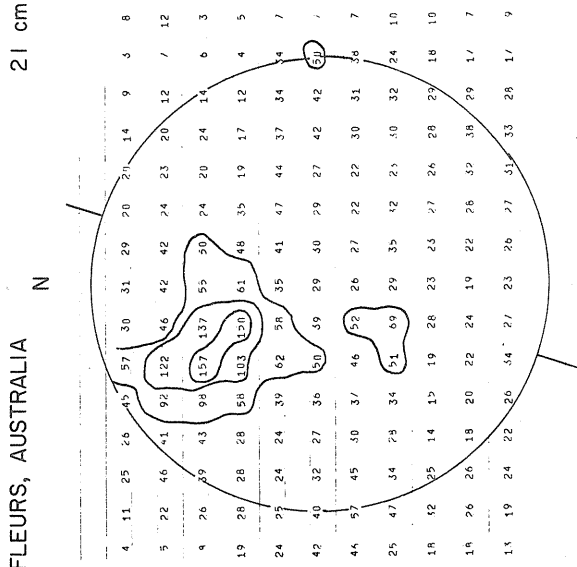
FLEURS, AUSTRALIA  
Sp  
1530 UT

STANFORD  
Np  
9.1 cm



20-21 UT  
Sp  
Brightness Unit 5,000° K

McMATH-HULBERT  
Np  
CALCIUM REPORT



20-21 UT  
Sp  
Brightness Unit 5,000° K

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

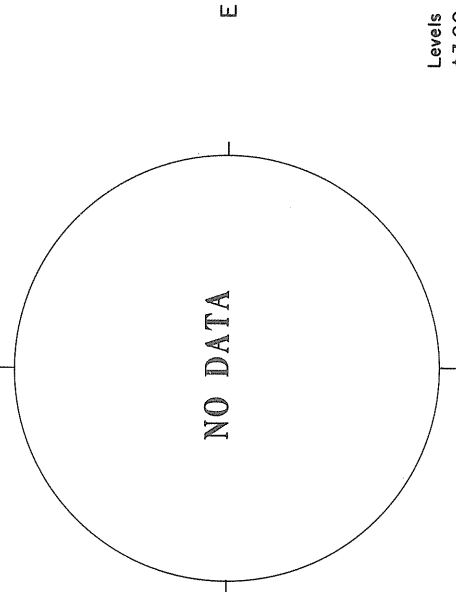
Sp  
1705 UT

93-28-3  
94-15-3.5  
95-58-3.5  
98-36-3.5  
00-08-3

MT. WILSON  
MAGNETOGRAM  
Solid - Plus  
Dotted - Minus

Np

NO DATA



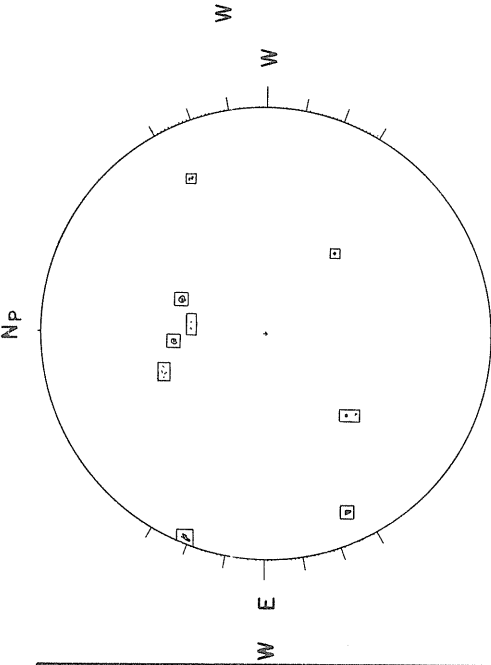
Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

93-263  
94-16-3  
95-54-3  
98-33-3  
00-07-25  
03-27-25  
04-41-35

61  
Feb 67

FEBRUARY 21, 1967 (P=-19.17, B<sub>0</sub>=-7.04, L<sub>0</sub>=21.50)

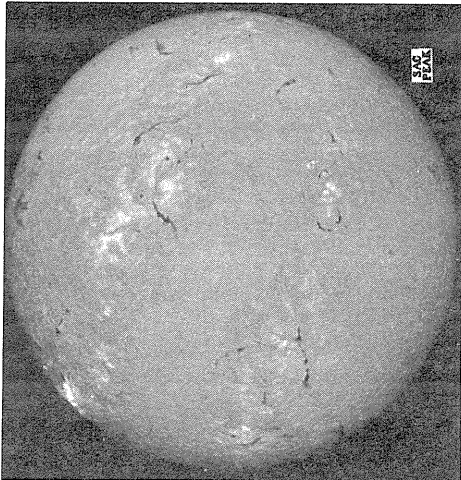
SUNSPOTS  
ESSA-BOULDER



Np

H $\alpha$

SACRAMENTO PEAK  
N



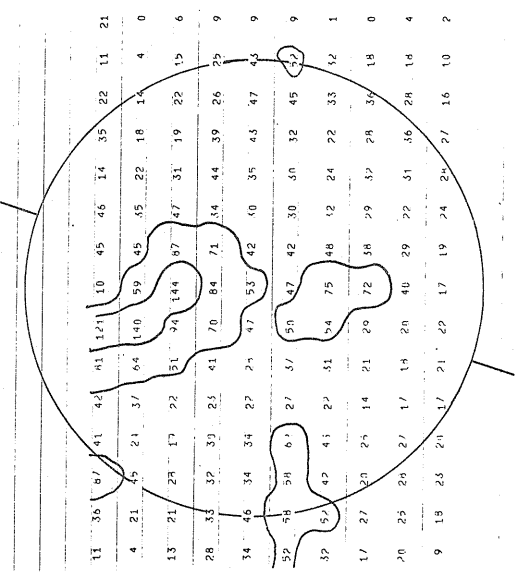
2024 UT  
S

1505 UT  
Sp

FLEURS, AUSTRALIA  
N

McMATH-HULBERT  
Np

CALCIUM REPORT



Sp

McMATH-HULBERT

McMATH-HULBERT

STANFORD  
Np

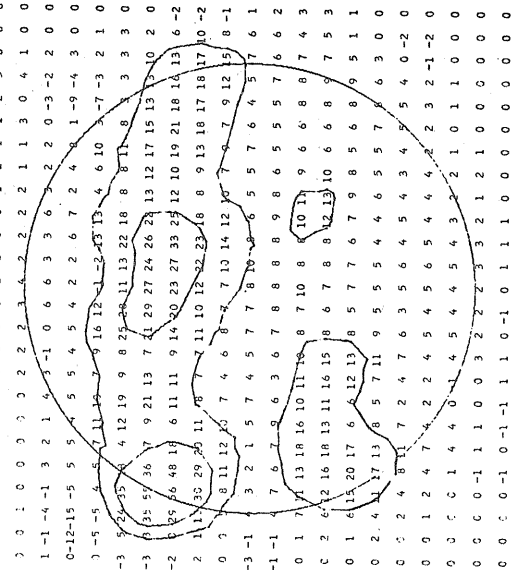
FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT

CALCIUM REPORT

McMATH-HULBERT



Sp

21 cm

McMATH-HULBERT

CALCIUM REPORT

McMATH-HULBERT

20-21 UT  
Sp  
Brightness Unit 5,000° K

S  
Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

S  
Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

Sp  
1755 UT

Sp  
1755 UT

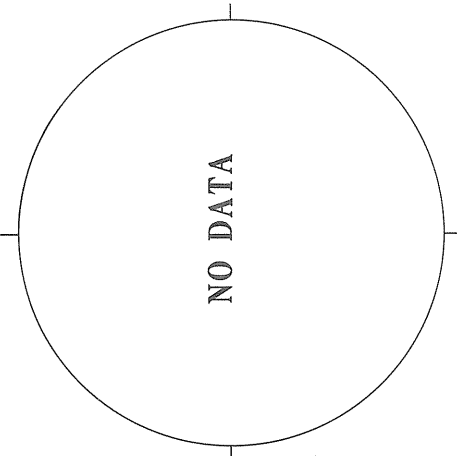
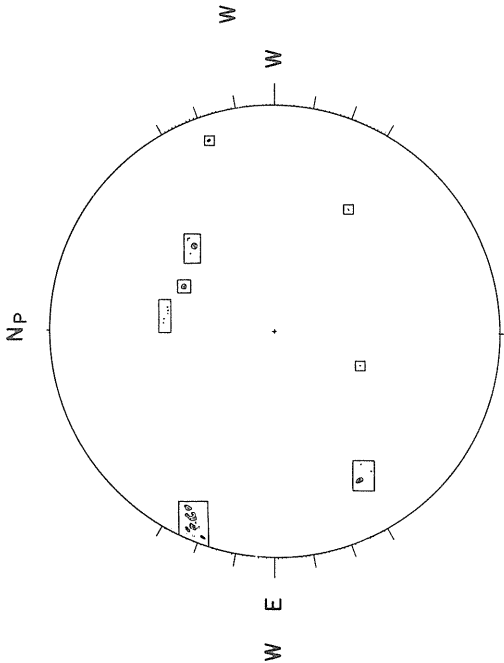
MT. WILSON  
M<sub>p</sub> MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER

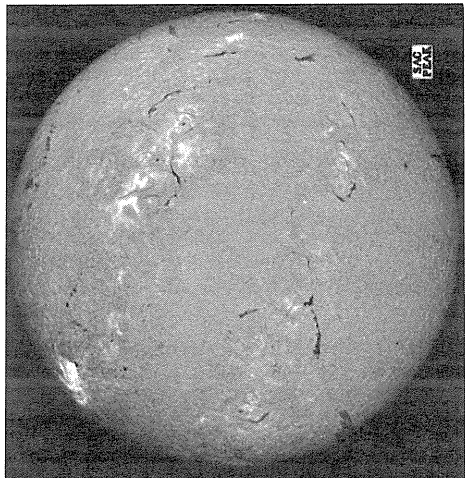
SUNSPOTS



Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

93-24-2.5  
95-55-3  
98-34-3  
00-08-2.5  
03-30-2  
04-44-4

FEBRUARY 22, 1967 (P=-19.48, B<sub>0</sub>=7.07, L<sub>0</sub>=8.33)

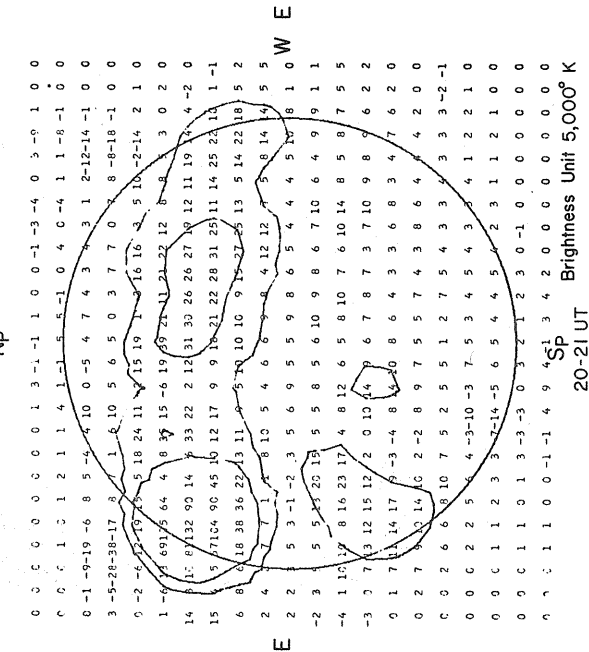


S  
1520 UT

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT  
N<sub>p</sub> CALCIUM REPORT



STANFORD  
N<sub>p</sub> 9.1 cm  
0 0 0 0 0 0 0 1 3 -1 -1 1 0 0 -1 -3 -4 0 3 -9 1 0 0  
0 0 0 1 0 2 1 1 4 1 -1 5 5 -1 0 4 0 -4 1 1 -8 -1 0 0  
0 -1 -9 -19 -6 8 5 -4 10 0 -5 4 7 4 3 3 1 2 -12 -14 -1 0 0  
3 -5 -28 -38 -17 8 1 6 10 5 6 5 0 3 7 7 0 8 -8 -18 -1 0 0  
0 -2 -6 -12 -19 5 18 24 11 15 19 1 1 16 16 8 5 10 -2 -14 2 1 0  
1 -6 7 69 17 5 64 4 8 35 15 -6 19 59 27 11 21 22 12 8 0 3 0 2 0  
14 6 17 87 32 90 14 6 33 22 2 12 31 30 26 26 27 19 12 11 19 1 4 -2 0  
15 5 71 64 90 45 10 12 17 9 18 21 22 28 31 25 11 14 25 2 10 1 -1  
6 8 0 18 38 36 22 3 11 6 5 14 10 10 9 17 22 25 13 5 14 22 18 5 2  
2 4 7 1 7 8 10 5 4 6 6 9 8 4 12 12 7 5 8 14 4 5 5  
2 2 5 3 -1 -2 3 5 6 9 5 5 9 6 5 4 4 4 5 10 6 1 0 0  
-2 3 5 5 20 15 5 5 8 5 6 10 9 8 6 7 10 6 4 9 9 1 1  
-4 1 10 17 8 16 23 17 4 8 12 6 5 8 10 7 6 10 14 8 5 8 7 5 5  
-3 3 7 3 12 15 12 2 0 10 4 6 7 8 7 3 7 10 9 8 6 6 2 2  
9 1 7 11 14 17 5 -3 -4 8 10 8 6 4 3 6 8 3 4 7 6 2 0  
0 2 7 3 14 10 2 -2 8 9 7 5 5 7 4 3 8 6 4 7 4 2 0 0  
0 2 6 6 8 10 7 5 2 5 5 1 2 7 5 4 3 3 3 3 3 -2 -1  
0 0 0 2 2 5 4 -3 -10 -3 7 5 3 4 5 4 3 7 4 1 2 2 1 0  
0 0 0 1 1 2 3 3 -2 -16 -5 6 5 4 5 4 5 2 3 1 1 2 1 0 0  
0 0 0 1 1 0 1 3 -3 0 3 2 1 2 3 0 -1 0 0 0 0 0 0 0 0  
0 0 1 1 0 0 -1 4 9 4 1 3 4 2 0 0 0 0 0 0 0 0 0 0 0

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

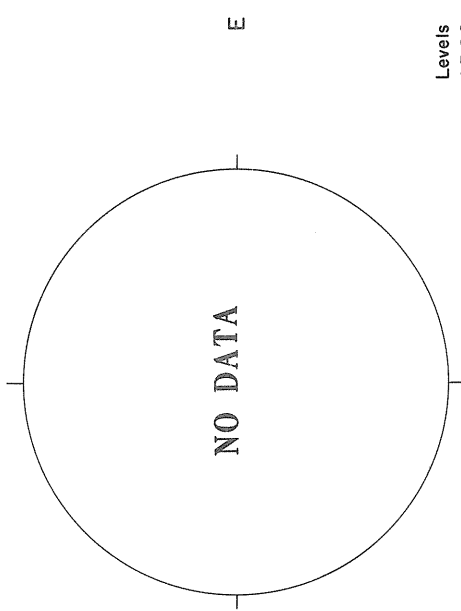
20-21 UT  
SP  
Brightness Unit 5,000° K

SP  
1345 UT



64  
Feb 67

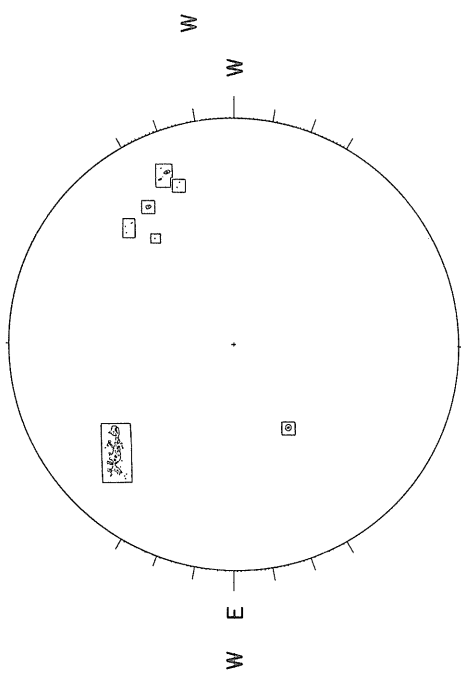
MT. WILSON  
M<sub>p</sub>  
MAGNETOGRAM  
Solid-Plus  
Dotted-Minus



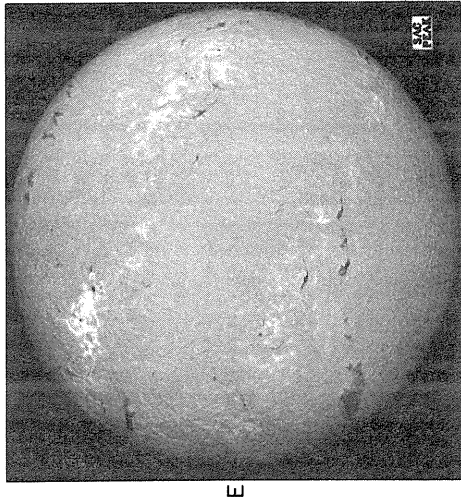
Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

FEBRUARY 24, 1967 (P=-20.06, B = -7.13, L = 341.99)

ESSA-BOULDER  
NP  
SUNSPOTS

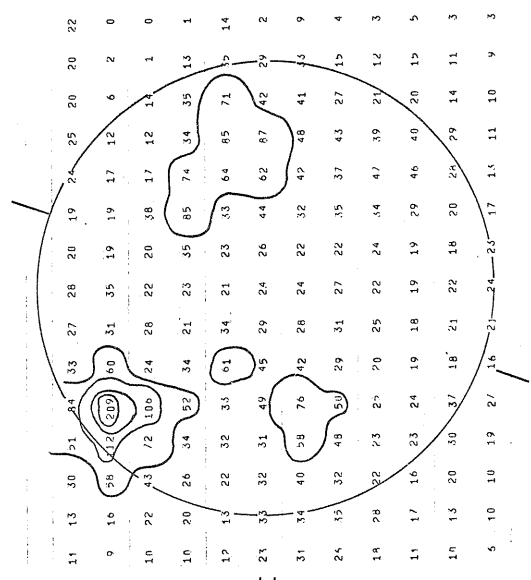


SACRAMENTO PEAK  
N  
H $\alpha$

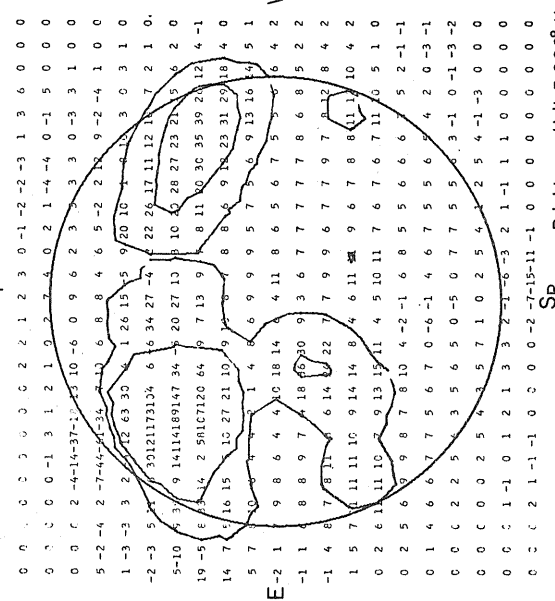


SP  
1510 UT

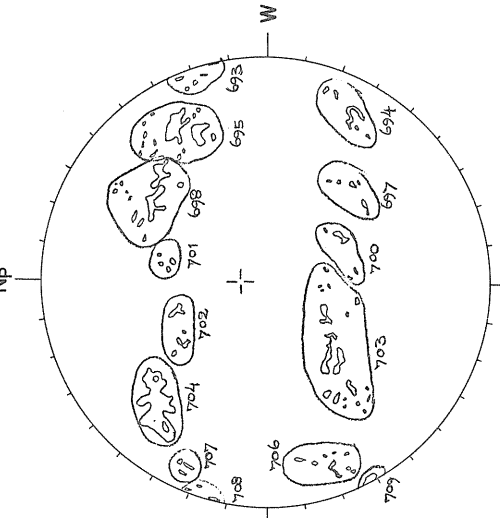
FLEURS, AUSTRALIA  
N  
21 cm



STANFORD  
NP  
9.1 cm



McMATH-HULBERT  
NP  
SP



SP  
1345 UT

S  
02-03 UT  
Resolution 3 Minutes of Arc  
Brightness Unit 1700° K

SP  
20-21 UT  
Brightness Unit 5,000° K

94-13-2.5  
95-42-3  
98-29-3  
00-06-3  
02-08-2.5  
03-36-2  
04-69-3.5

# FEBRUARY 25, 1967 (P=-20.35, B<sub>0</sub>=-7.15, L<sub>0</sub>=328.82)

MT. WILSON  
MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

Np

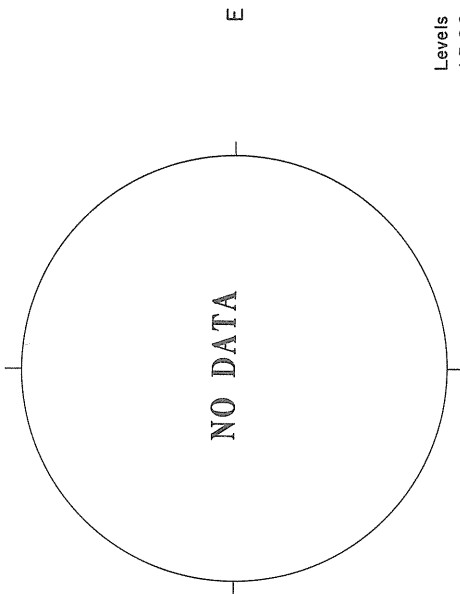
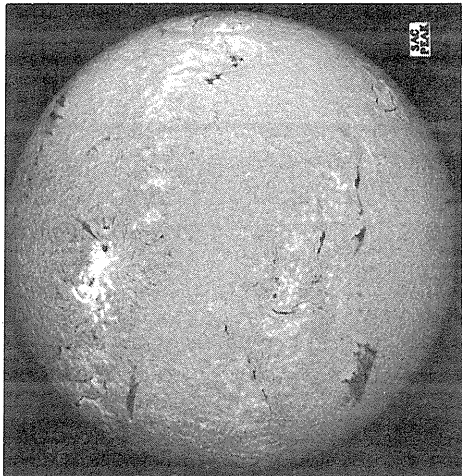
NP

SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER  
Np

SUNSPOTS  
Np



Levels  
± 3.00  
± 6.00  
± 10.00  
± 15.00  
± 25.00  
± 40.00

1541 UT

2105 UT

STANFORD  
Np

FLEURS, AUSTRALIA  
N

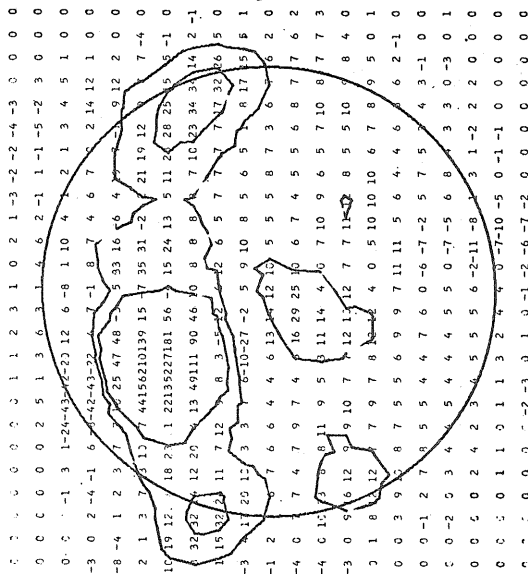
21 cm

McMATH-HULBERT  
Np

9.1 cm

Sp

CALCIUM REPORT



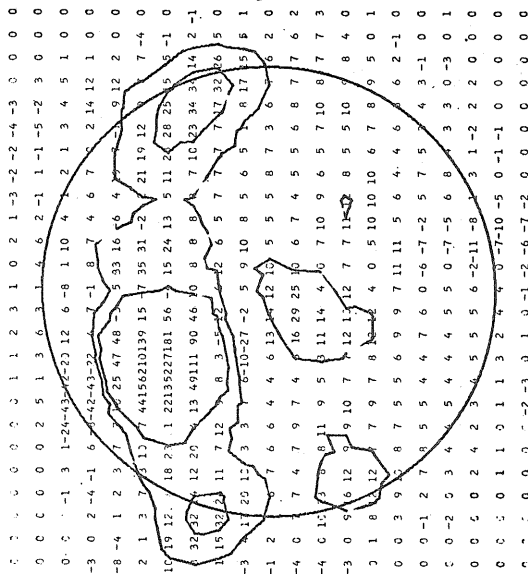
9.1 cm

N

21 cm

Sp

CALCIUM REPORT



21 cm

N

21 cm

Sp

CALCIUM REPORT

94-09-25  
95-40-3  
98-32-3  
00-08-25  
03 34 25  
04-70-35

65  
Feb 67

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

20-21 UT  
Sp  
Brightness Unit 5,000° K

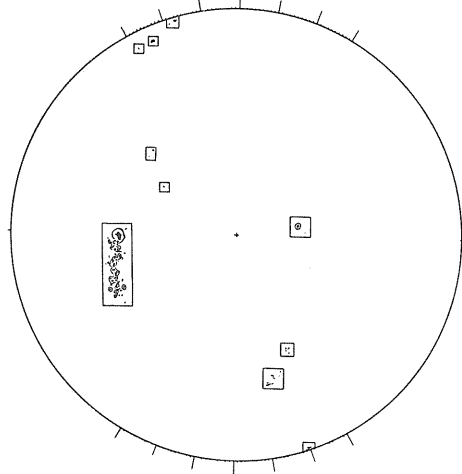
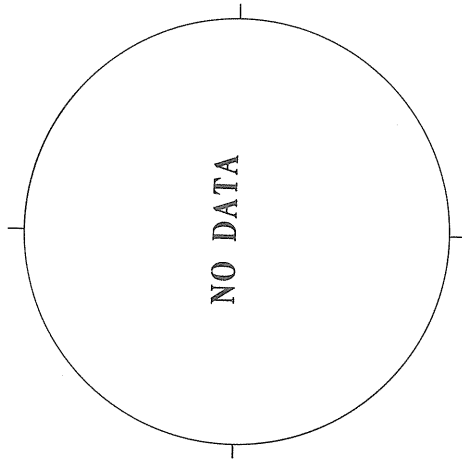
FEBRUARY 26, 1967 (P=20.63, B<sub>0</sub>=-7.17, L<sub>0</sub>=315.65)

SACRAMENTO PEAK  
N

H $\alpha$

ESSA-BOULDER  
Np

SUNSPOTS



NO DATA

E

- Levels
- ±3.00
- ±6.00
- ±10.00
- ±15.00
- ±25.00
- ±40.00

STANFORD

Np

9.1 cm

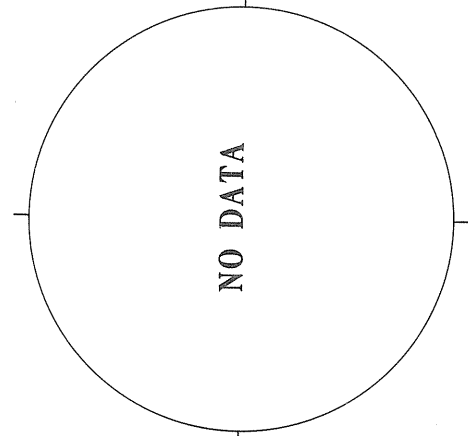
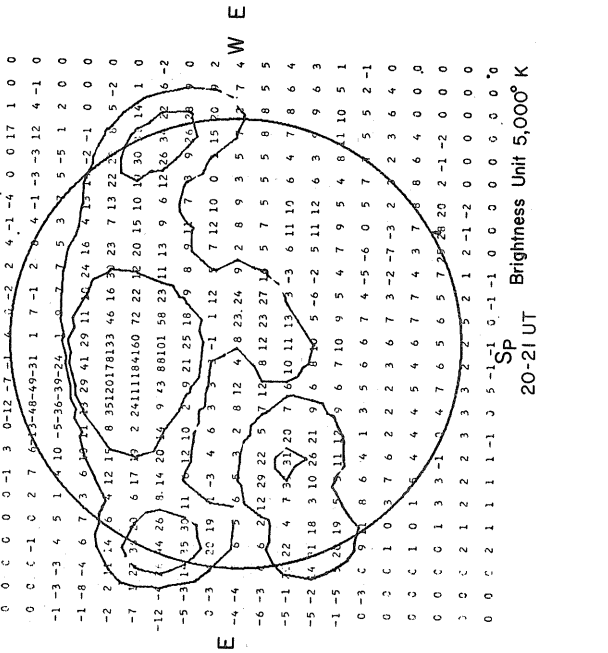
FLEURS, AUSTRALIA

SP  
1450 UT

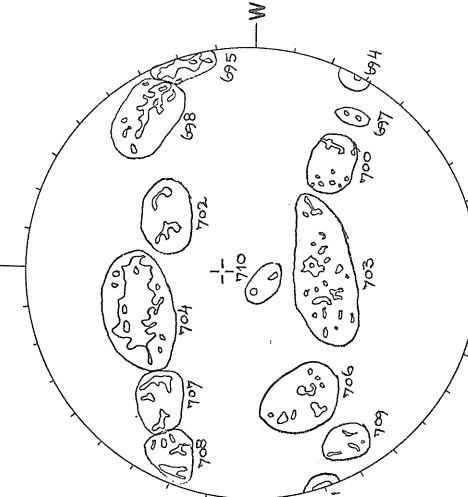
21 cm

McMATH-HULBERT  
Np

CALCIUM REPORT



NO DATA



- 95-60-2.5
- 98-35-2.5
- 02-10-2.5
- 03-31-2
- 04-85-3.5
- 06-15-3
- 11-12-3

S Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

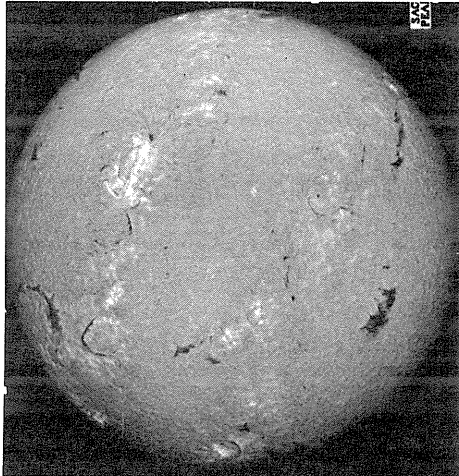
SP  
20-21 UT  
Brightness Unit 5,000° K

SP  
1500 UT

# FEBRUARY 27, 1967 (P=-20.90, B<sub>0</sub>=-7.19, L<sub>0</sub>=302.47)

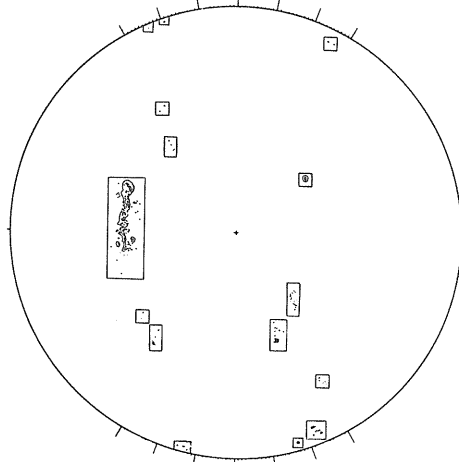
SACRAMENTO PEAK N

H $\alpha$



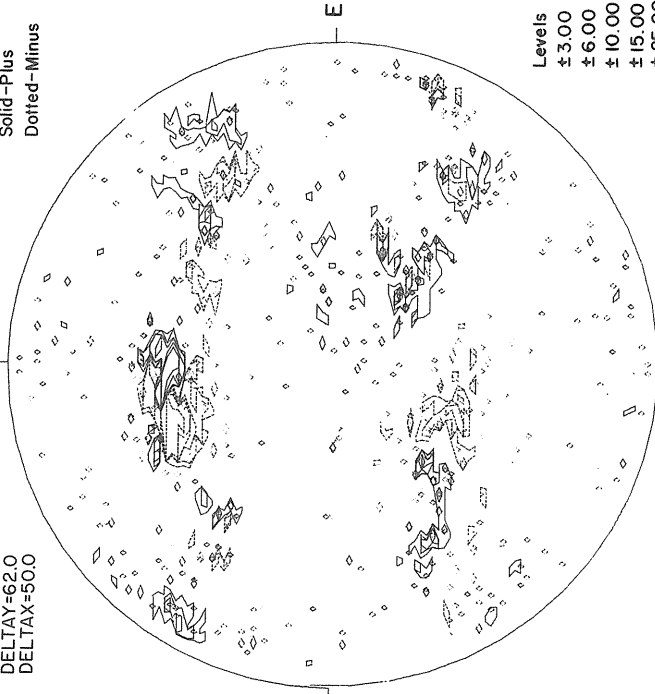
ESSA-BOULDER Np

SUNSPOTS



MT. WILSON  
DELTA Y=62.0  
DELTA X=50.0

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus



Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

2220 UT

1540 UT

22.56-0006 UT

STANFORD

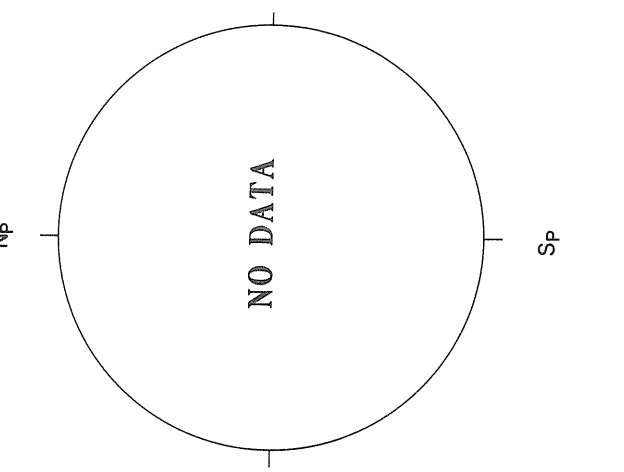
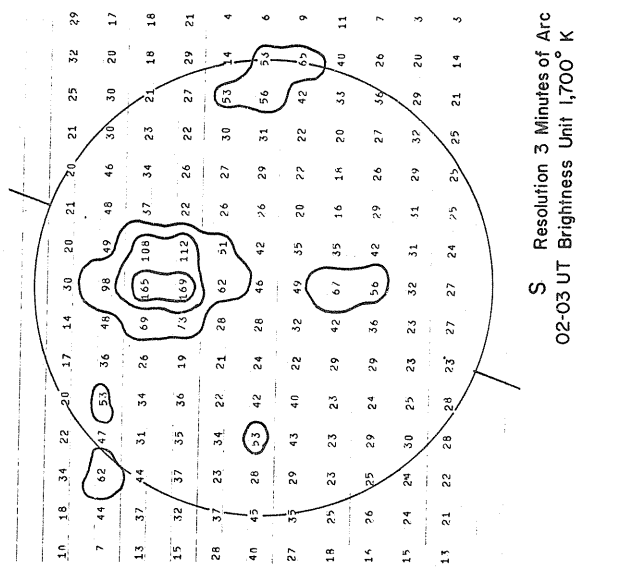
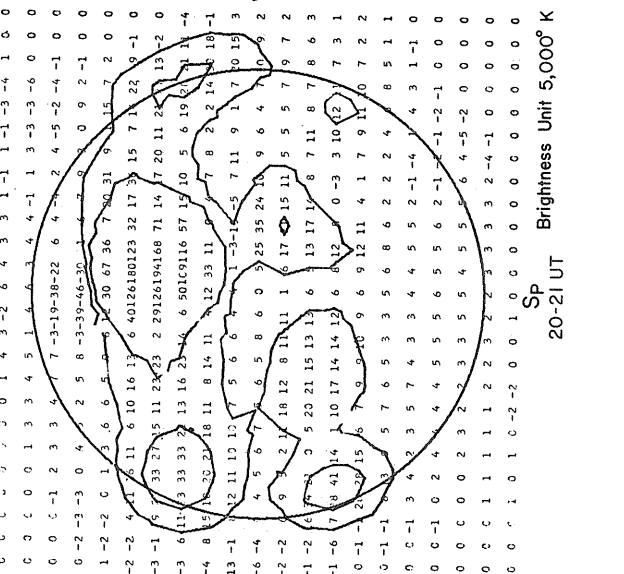
9.1 cm

FLEURS, AUSTRALIA

21 cm

McMATH-HULBERT Np

CALCIUM REPORT



Brightness Unit 5,000° K

Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K



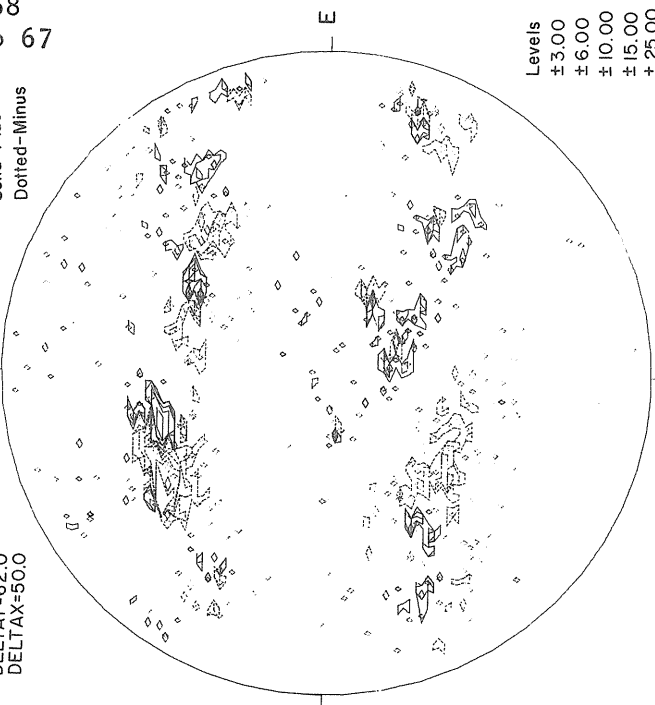
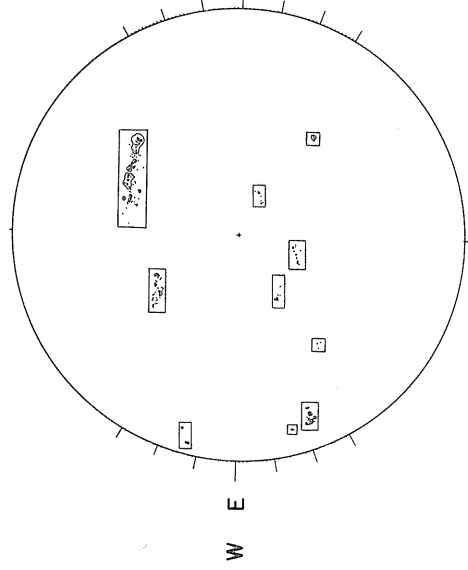
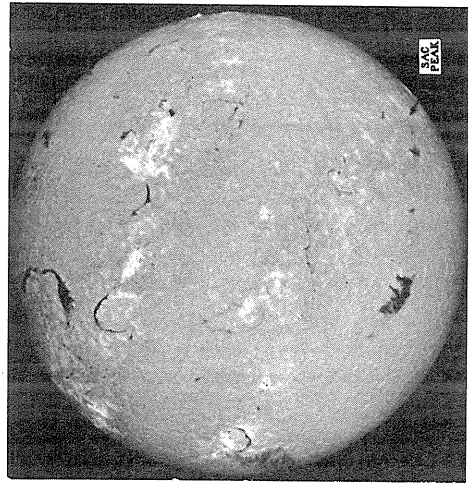
MT. WILSON  
DELTA Y=62.0  
DELTA X=50.0

FEBRUARY 28, 1967 (P=-21.16, B<sub>0</sub>=-7.20, L<sub>0</sub>=289.30)

MAGNETOGRAM  
Solid-Plus  
Dotted-Minus

ESSA-BOULDER  
NP  
SUNSPOTS

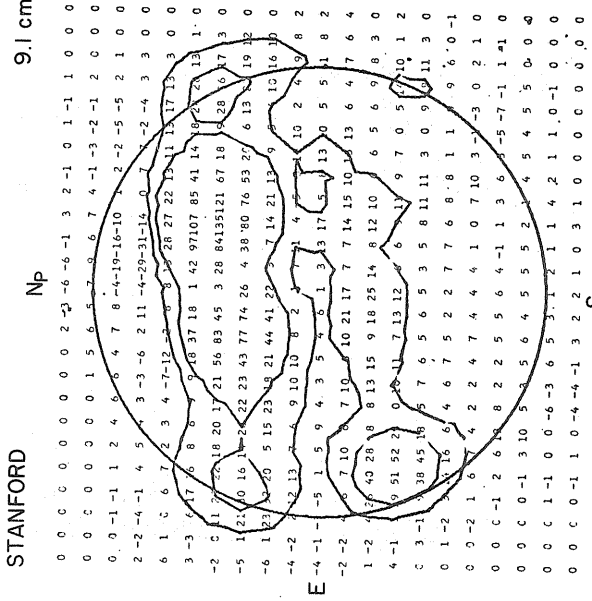
SACRAMENTO PEAK  
N



Levels  
±3.00  
±6.00  
±10.00  
±15.00  
±25.00  
±40.00

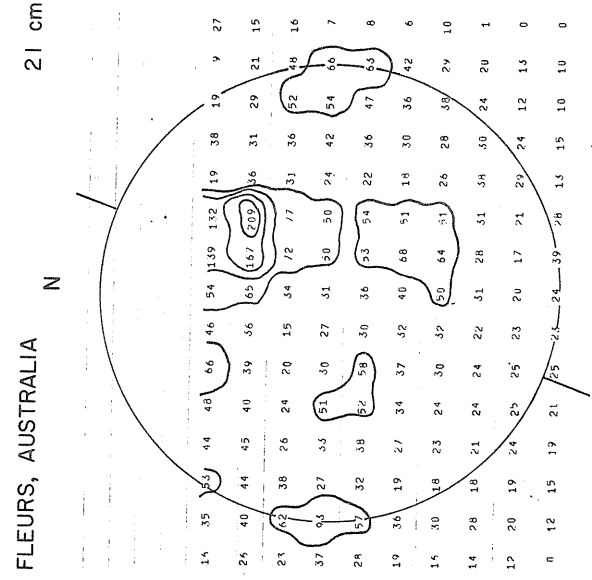
1608 UT

STANFORD  
Np



Brightness Unit 5,000° K

FLEURS, AUSTRALIA  
N



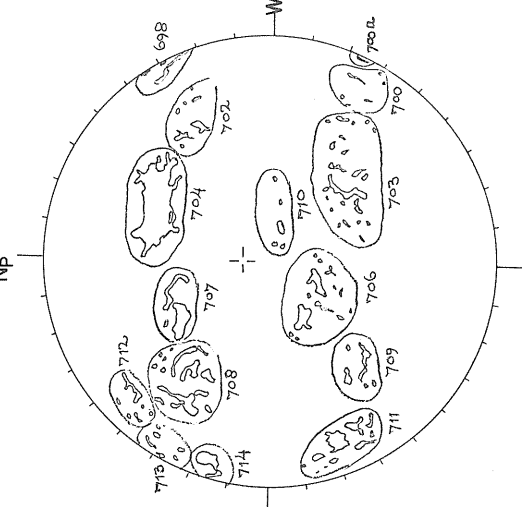
Resolution 3 Minutes of Arc  
02-03 UT Brightness Unit 1,700° K

1545 UT

21 cm

1631-1841 UT

McMATH-HULBERT  
Np



1450 UT

CALCIUM REPORT

98-18-3.5  
02-12-3  
03 28 2.5  
04-83-3.5  
06-24-3  
07-23-3.5  
08-37-2.5  
09-13-2.5  
10-09-3  
11-38-3  
14 23 2.5  
00a-05-3.5

# FINAL CORONAL LINE EMISSION INDICES

FEBRUARY 1967

| CMP<br>February<br>1967 | 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>1</sub> | G <sub>6</sub>                                   | G <sub>1</sub> | R <sub>1</sub> | G <sub>6</sub>                                 | G <sub>1</sub> | R <sub>1</sub> | G <sub>6</sub>                                 | G <sub>1</sub> | R <sub>1</sub> |     |
| 1                       | 126  | 194            | x              | 101  | 124            | x              | 80   | 113            | 4              | 12   | 108            | 17             | 50  |
| 2                       | x  | x              | x              | x  | x              | x              | 73   | 118            | 9              | 28   | 134            | 12             | 31  |
| 3                       | 125  | 209            | x              | 94   | 124            | x              | x  | x              | x              | x  | x              | x              | x   |
| 4                       | x  | x              | x              | x  | x              | x              | 59   | 95             | 11             | 21   | 101            | 24             | 50  |
| 5                       | x  | x              | x              | x  | x              | x              | x  | x              | x              | x  | x              | x              | x   |
| 6                       | 129  | 199            | 88             | 83   | 110            | 20             | x  | x              | x              | x  | x              | x              | x   |
| 7                       | x  | x              | x              | x  | x              | x              | x  | x              | x              | x  | x              | x              | x   |
| 8                       | 112  | 137            | x              | 38   | 45             | x              | x  | x              | x              | x  | x              | x              | x   |
| 9                       | 70   | 91             | 23             | 29   | 39             | 14             | x  | x              | x              | x  | x              | x              | x   |
| 10                      | 40   | 49             | 42             | 31   | 38             | 17             | 36   | 49             | 10             | 31   | 109            | 28             | 55  |
| 11                      | 63   | 94             | 40             | 39   | 51             | 29             | 41   | 59             | 8              | 13   | 105            | 49             | 102 |
| 12                      | 71   | 119            | x              | 54   | 76             | x              | 40   | 72             | 27             | 39   | 84             | 57             | 79  |
| 13                      | x  | x              | x              | x  | x              | x              | 58   | 104            | 11             | 14   | 244            | 23             | 43  |
| 14                      | x  | x              | x              | x  | x              | x              | 54   | 67             | 9              | 15   | 115            | 27             | 44  |
| 15                      | 61   | 101            | 58             | 34   | 47             | 6              | 38   | 57             | 13             | 21   | 148            | 34             | 48  |
| 16                      | 62   | 83             | 62             | 23   | 31             | 11             | 26   | 30             | 14             | 16   | 115            | 37             | 57  |
| 17                      | x  | x              | x              | x  | x              | x              | x  | x              | x              | x  | x              | x              | x   |
| 18                      | 95   | 138            | 39             | 43   | 60             | 10             | 30   | 40             | 0              | 0  | 80             | 28             | 52  |
| 19                      | x  | x              | x              | x  | x              | x              | x  | x              | x              | x  | x              | x              | x   |
| 20                      | x  | x              | x              | x  | x              | x              | 53   | 89             | x              | x  | 166            | x              | x   |
| 21                      | x  | x              | x              | x  | x              | x              | x  | x              | x              | x  | x              | x              | x   |
| 22                      | x  | x              | x              | x  | x              | x              | 36   | 56             | 11             | 16   | 133            | 14             | 23  |
| 23                      | x  | x              | x              | x  | x              | x              | x  | x              | x              | x  | x              | x              | x   |
| 24                      | 50   | 72             | 64             | 58   | 79             | 25             | x  | x              | x              | x  | x              | x              | x   |
| 25                      | 56   | 80             | 99             | 83   | 106            | 37             | x  | x              | x              | x  | x              | x              | x   |
| 26                      | 37   | 54             | 81             | 44   | 72             | 31             | x  | x              | x              | x  | x              | x              | x   |
| 27                      | 72   | 110            | 78             | 109  | 166            | 22             | x  | x              | x              | x  | x              | x              | x   |
| 28                      | 79   | 133            | 43             | 93   | 147            | 7              | 138  | 150            | x              | x  | 221            | x              | x   |

### SUDDEN IONOSPHERIC DISTURBANCES

SHORT WAVE RADIO FADEOUTS                      SUDDEN PHASE ANOMALIES  
SUDDEN COSMIC NOISE ABSORPTION              SUDDEN ENHANCEMENTS OF SIGNAL  
SUDDEN ENHANCEMENTS OF ATMOSPHERICS      SUDDEN FREQUENCY DEVIATIONS

FEBRUARY 1967

| FEB<br>1967 | UNIVERSAL TIME |       |      | WIDE<br>SPREAD<br>INDEX | SWF<br>TYPE<br>IMP | IMPORTANCE |      |     |     |     | STATIONS | KNOWN<br>FLARE               |       |
|-------------|----------------|-------|------|-------------------------|--------------------|------------|------|-----|-----|-----|----------|------------------------------|-------|
|             | START          | END   | MAX  |                         |                    | ABS        | SCNA | SEA | SPA | SES |          |                              | SFD   |
| 01          | 0809           | 0835  | 0813 | 1                       |                    |            |      |     |     | 79  |          | MA(NPG18-79)                 | 0750  |
| 01          | 1220           | 1530  | 1256 | 1                       |                    |            |      |     |     | 92  |          | UM(NSS21-92)                 | 1332E |
| 01          | 1228           | 1407  | 1407 | 1                       |                    |            | 1-   |     |     |     |          | JU                           |       |
| 01          | 1230           | 1320  | 1258 | 5                       | SL 1+              |            |      |     |     |     |          | HU BA BY JU SO               |       |
| 01          | 2300           | 0140  | 2330 | 5                       |                    |            |      |     |     | 65  |          | HA(WWVL20-65)                |       |
| 01          | 2308           | 2325  | 2316 | 5                       | G 1                |            |      |     |     |     |          | MA(NPG18-55)                 |       |
|             |                |       |      |                         |                    |            |      |     |     |     |          | BE MA TO                     |       |
| 02          | 0144           | 0221  | 0146 | 4                       | S 1                |            |      |     |     |     |          | MA TO                        | *     |
| 02          | 0145           | 0147  | 0146 | 1                       |                    |            |      |     |     |     | 09       | HA(WWVH5-0.9,<br>WWVH10-0.5) |       |
| 02          | 0145           | 0225  | 0155 | 5                       |                    |            |      |     |     | 99  |          | MA(NPG18-112)                |       |
| 02          | 0148           | 0203  | 0152 | 1                       |                    | 20         | 1-   |     |     |     |          | HA(WWVL20-7)                 |       |
|             |                |       |      |                         |                    |            |      |     |     |     |          | MA                           |       |
| 03          | 0302           | 0325  | 0309 | 1                       |                    | 9          | 1-   |     |     |     |          | MA                           | 0305E |
| 03          | 0302           | 0404  | 0314 | 1                       |                    |            |      |     |     | 68  |          | MA(NPG18-68)                 |       |
| 03          | 0303           | 0405  | 0307 | 5                       | S 2                |            |      |     |     |     |          | MA GH OK                     |       |
| 04          | 1640           | 1745  | 1702 | 5                       |                    |            |      |     |     |     | 2        | UM A1                        |       |
| 04          | 1643           | 1655  | 1654 | 1                       |                    |            |      |     |     |     |          | BO(WWI8-0.6)                 |       |
| 04          | 1647           |       |      | 5                       |                    |            |      |     |     | 99  |          | BO(WWVL20-400)               |       |
|             |                |       |      |                         |                    |            |      |     |     |     |          | UM(NSS21-100,NBA24-78)       |       |
| 04          | 1647           | 1729  | 1706 | 5                       | SL 1               |            |      |     |     |     |          | BE BA GS MC TR               |       |
| 04          | 1647           | 1840  | 1656 | 1                       |                    |            |      | 2   |     |     |          | A6                           |       |
| 04          | 1652           | 1728  | 1707 | 3                       |                    | 18         | 1    |     |     |     |          | BO MC                        |       |
| 05          | 0014           | 0029  | 0024 | 1                       | G 1-               |            |      |     |     |     |          | MA                           |       |
| 05          | 0016           | 0110  | 0030 | 5                       |                    |            |      |     |     | 75  |          | MA(NPG18-75)                 |       |
|             |                |       |      |                         |                    |            |      |     |     |     |          | HA(WWVL20-40)                |       |
| 06          | 1840           |       |      | 5                       |                    |            |      |     |     | 99  |          | BO(WWVL20-180)               | 1825  |
| 06          | 1842           | 1907  | 1855 | 5                       | SL 1-              |            |      |     |     |     |          | HA(WWVL20-22)                |       |
| 06          | 1847           | 1855  | 1849 | 1                       |                    |            |      |     |     |     | 02       | HU BE MC TR                  |       |
| 06          | 1848           | 2000  | 1859 | 3                       |                    |            |      | 2   |     |     |          | BO(WWI11-0.2)                |       |
|             |                |       |      |                         |                    |            |      |     |     |     |          | A6 A1                        |       |
| 07          | 0128           | 0210  | 0135 | 5                       |                    |            |      |     |     | 99  |          | MA(NPG18-127)                | 0130E |
| 07          | 0130           | 0204  | 0135 | 5                       | S 1                |            |      |     |     |     |          | HA(WWVL20-15)                |       |
| 07          | 0133           | 0149  | 0135 | 1                       |                    | 25         | 1-   |     |     |     |          | MA OK TO                     |       |
| 07          | 1028           | 1113  |      | 3                       |                    |            |      | 2   |     |     |          | MA                           |       |
| 07          | 1030           | 1115  |      | 3                       |                    |            |      |     |     | *   |          | KU PU                        | 1025  |
| 07          | 1032           | 1117  |      | 3                       | S 2+               |            |      |     |     |     |          | KU PU                        |       |
| 07          | 1557           |       |      | 1                       |                    |            |      |     |     | 99  |          | PU KU                        |       |
| 07          | 1801           | 1809  | 1804 | 1                       |                    |            |      |     |     |     | 03       | BO(WWVL20-140)               | 1557  |
| 07          | 1805           |       |      | 1                       |                    |            |      |     |     | 56  |          | BO(WWI11-0.3)                | 1801  |
| 07          | 1857           |       |      | 1                       |                    |            |      |     |     | 85  |          | BO(WWVL20-56)                |       |
| 07          | 1857           | 2010  | 2000 | 3                       |                    |            |      | 1-  |     |     |          | BO(WWVL20-85)                | 1838  |
| 07          | 1946           |       |      | 5                       |                    |            |      |     |     | 55  |          | A1 A6                        | 1941  |
|             |                |       |      |                         |                    |            |      |     |     |     |          | BO(WWVL20-55)                |       |
| 07          | 2056           |       |      | 5                       |                    |            |      |     |     | 85  |          | HA(WWVL20-18)                | 2052  |
|             |                |       |      |                         |                    |            |      |     |     |     |          | BO(WWVL20-85)                |       |
| 07          | 2233           |       |      | 5                       |                    |            |      |     |     | 70  |          | HA(WWVL20-29)                | 2232  |
|             |                |       |      |                         |                    |            |      |     |     |     |          | BO(WWVL20-70)                |       |
|             |                |       |      |                         |                    |            |      |     |     |     |          | HA(WWVL20-15)                |       |
| 08          | 0438           | 0455  | 0441 | 4                       | S 1-               |            |      |     |     |     |          | MA OK                        | 0440  |
| 08          | 0438           | 0527  | 0503 | 1                       |                    |            |      |     |     | 40  |          | MA(NPG18-40)                 |       |
| 08          | 1814           |       |      | 5                       |                    |            |      |     |     | 70  |          | BO(WWVL20-70)                | 1812  |
| 08          | 1818           | 1845U | 1822 | 1                       | SL 1-              |            |      |     |     |     |          | HA(WWVL20-15)                |       |
|             |                |       |      |                         |                    |            |      |     |     |     |          | TR                           |       |
| 12          | 1616           | 1622  | 1617 | 1                       |                    |            |      |     |     |     | 02       | BO(WWI11-0.2)                | 1615  |
| 13          | 1755           | 1835  | 1802 | 1                       |                    |            |      |     |     |     | 10       | BO(WWI8-1.0)                 | 1746  |
| 13          | 1800           |       |      | 5                       |                    |            |      |     |     | 99  |          | BO(WWVL20-280)               |       |
|             |                |       |      |                         |                    |            |      |     |     |     |          | HA(WWVL20-47)                |       |
| 13          | 1804           | 1910  | 1825 | 5                       | G 1+               |            |      |     |     |     |          | UM(WWVL20-86)                |       |
|             |                |       |      |                         |                    |            |      |     |     |     |          | MC AN BA BE BO GS WS         |       |
| 15          | 1726           | 1729  | 1727 | 1                       |                    |            |      |     |     |     | 02       | BO(WWI11-0.2)                | 2303  |
| 15          | 2310           | 2323  | 2315 | 5                       |                    |            |      |     |     | 18  |          | MA(NPG18-18)                 |       |
|             |                |       |      |                         |                    |            |      |     |     |     |          | HA(WWVL20-15)                |       |
| 16          | 1112           | 1230  | 1135 | 1                       |                    |            |      |     |     | 70  |          | MA(NPG18-70)                 | 2204  |
| 16          | 2204           | 2210  | 2205 | 1                       |                    |            |      |     |     |     | 02       | BO(WWI11-0.2)                |       |
| 17          | 1936           | 1955  | 1947 | 1                       | SL 1-              |            |      |     |     |     |          | BO                           | 1934  |
| 17          | 1938           |       |      | 5                       |                    |            |      |     |     | 75  |          | BO(WWVL20-75)                |       |
|             |                |       |      |                         |                    |            |      |     |     |     |          | HA(WWVL20-11)                |       |
| 17          | 1938           | 1945  | 1940 | 1                       |                    |            |      |     |     |     | 04       | MA(NPG18-14)                 |       |
| 17          | 2216           |       |      | 5                       |                    |            |      |     |     | 52  |          | BO(WWI11-0.4)                | 2204  |
|             |                |       |      |                         |                    |            |      |     |     |     |          | BO(WWVL20-52)                |       |
|             |                |       |      |                         |                    |            |      |     |     |     |          | HA(WWVL20-15)                |       |
| 20          | 2212           | 2230  | 2216 | 1                       |                    |            |      | 1+  |     |     |          | A6                           | 2159  |

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|-------------|----------------|-------|------|-------------------|--------------|------------|------|-----|-----|-----|----------|---|-------|
|             | START          | END   | MAX  |                   |              | ABS        | SCNA | SEA | SPA | SES |          |   | SFD   |
| ↑1967<br>20 | 2219           |       |      | 5                 |              |            |      |     |     | 99  |          | BO(WWV L20-280)<br>HA(WWV L20-14)   |       |
| 21          | 1605           | 1623  | 1612 | 1                 | SL 2+        |            |      |     |     |     |          | TR  | 1609E |
| 21          | 1606           |       |      | 5                 |              |            |      |     |     | 99  |          | BO(WWV L20-280)<br>UM(WWV L20-61)<br>BO(WWI11-0.3)<br>A6<br>UM                        | 1609E |
| 21          | 1607           | 1618  | 1609 | 1                 |              |            |      |     |     |     | 03       | BO(WWV L20-52)<br>BO(WWI11-0.2)   |       |
| 21          | 1610           | 1655  | 1614 | 1                 |              |            |      | 1   |     |     |          | BO(WWV L20-70)  | 1947  |
| 21          | 1621           | 1635  | 1626 | 1                 | S 1          |            |      |     |     | 52  |          | HA(WWV L20-40)<br>BO(WWV L20-420)   | 2010E |
| 21          | 1634           |       |      | 1                 |              |            |      |     |     |     |          | BO(WWV L20-420)   |       |
| 21          | 1634           | 1637  | 1635 | 1                 |              |            |      |     |     | 70  |          | WS  | 2030  |
| 21          | 1951           |       |      | 5                 |              |            |      |     |     |     |          | BO(WWV L20-70)<br>HA(WWV L20-18)<br>BO(WWV L20-420)                                   |       |
| 21          | 2003           |       |      | 1                 |              |            |      |     |     | 99  |          |   |       |
| 21          | 2003           | 2008  | 2007 | 1                 |              |            |      |     |     |     | 03       |   |       |
| 21          | 2005           | 2014  | 2009 | 1                 | S 1-         |            |      |     |     |     |          |   |       |
| 21          | 2047           |       |      | 5                 |              |            |      |     |     | 70  |          |   |       |
| 21          | 2102           |       |      | 1                 |              |            |      |     |     | 99  |          |   |       |
| 22          | 0120           | 0152  | 0128 | 5                 |              |            |      |     |     | 58  |          | MA(NPG18-58)<br>AN(NPM26-43)<br>HA(WWV L20-14)<br>HA(WWV H5-0.4)<br>MA CA OK TO<br>MA | 0123  |
| 22          | 0121           | 0125  | 0123 | 1                 |              |            |      |     |     |     |          |   |       |
| 22          | 0121           | 0203  | 0130 | 5                 | S 1          |            |      |     |     |     | 04       |   |       |
| 22          | 0125           | 0136  | 0132 | 1                 |              |            |      |     |     |     |          |   |       |
| 22          | 0349           | 0443  | 0357 | 1                 |              | 17         | 1-   |     |     |     |          |   |       |
| 22          | 0357           | 0425  | 0359 | 5                 | S 1          |            |      |     |     | 93  |          | MA(NPM26-93,NPG18-50)<br>MA ND OK TO  | 0406E |
| 22          | 0501           | 0557  | 0514 | 1                 |              |            |      |     |     |     | 63       | MA(NPG18-63)  | 0501  |
| 22          | 0503           | 0526  | 0511 | 5                 | S 1          |            |      |     |     |     |          | MA CA OK TO   |       |
| 22          | 0622           | 0641  | 0624 | 5                 | S 1          |            |      |     |     |     |          | MA OK TO  | 0622  |
| 22          | 0622           | 0722  | 0627 | 1                 |              |            |      |     |     | 42  |          | MA(NPG18-42)  |       |
| 22          | 1147           | 1230  | 1207 | 1                 |              |            |      |     |     | 26  |          | UM(NSS21-26)  |       |
| 22          | 1155           | 1223  | 1203 | 1                 |              |            |      |     |     |     | 2+       | LO  |       |
| 22          | 1159           | 1216  |      | 1                 | S 2          |            |      |     |     |     |          | PU  |       |
| 22          | 1325           |       | 1332 | 1                 |              |            |      |     |     |     | 62       | UM(NSS21-62,WWV L20-58)   | 1325E |
| 22          | 1325           | 1336  | 1331 | 1                 | SL 1-        |            |      |     |     |     |          | TR  |       |
| 22          | 1325           | 1345  | 1330 | 1                 |              |            |      |     |     |     | 2        | LO  |       |
| 22          | 1442           | 1530  | 1510 | 3                 | G 1-         |            |      |     |     |     |          | MC BE   | 1440  |
| 22          | 1457           |       | 1510 | 1                 |              |            |      |     |     | 29  |          | UM(WWV L20-29,NSS21-21)   |       |
| 22          | 1525           | 1529  | 1526 | 1                 |              |            |      |     |     |     | 02       | BO(WWI11-0.2)<br>BO(WWV L20-15)<br>BO(WWV L20-95)<br>UM(NSS21-31,WWV L20-29)          | 1606  |
| 22          | 1528           |       |      | 1                 |              |            |      |     |     | 15  |          |   |       |
| 22          | 1617           |       |      | 5                 |              |            |      |     |     | 95  |          |   |       |
| 22          | 1716           |       |      | 1                 |              |            |      |     |     | 52  |          | BO(WWV L20-52)  | 1657  |
| 22          | 1800           | 2210  | 1830 | 1                 |              |            |      |     |     | 54  |          | HA(WWV L20-54)  | 1657  |
| 22          | 1809           | 1936  | 1850 | 3                 |              |            |      |     |     |     |          | BO MC   |       |
| 22          | 1812           | 1842D | 1834 | 1                 | SL 1+        |            |      |     |     |     |          | MC  |       |
| 22          | 1842           | 1928D | 1852 | 3                 | S 2+         |            |      |     |     |     |          | MC BE BO  | 1819  |
| 22          | 1843           | 1930  | 1852 | 5                 |              |            |      |     |     | 54  |          | UM(NSS21-54,WWV L20-43)<br>HA(WWV L20-43)   |       |
| 22          | 1846           | 1853  | 1847 | 1                 |              |            |      |     |     |     | 28       | BO(WWI11-2.8)   |       |
| 22          | 1928           | 2000  | 1935 | 3                 | G 1          |            |      |     |     |     |          | MC BO   | 1925  |
| 22          | 1932           | 2012  | 1940 | 1                 |              |            |      |     |     | 7   |          | HA(WWV L20-7)   |       |
| 22          | 2211           |       |      | 5                 |              |            |      |     |     | 99  |          | BO(WWV L20-110)<br>MA(NPG18-25)   | 2205  |
| 22          | 2211           | 2218  | 2214 | 1                 |              |            |      |     |     |     | 02       | BO(WWI11-0.2)   |       |
| 22          | 2215           | 2225  |      | 1                 | SL 1         |            |      |     |     |     |          | PU  |       |
| 23          | 0054           | 0247  | 0114 | 5                 |              |            |      |     |     | 96  |          | MA(NPG18-96)<br>HA(WWV L20-18)<br>MA CA GH TO<br>MA                                   | 0053  |
| 23          | 0055           | 0134  | 0114 | 5                 | G 1+         |            |      |     |     |     |          |   |       |
| 23          | 0106           | 0128  | 0115 | 1                 |              |            |      |     |     |     |          |   |       |
| 23          | 0109           | 0110  | 0109 | 1                 |              |            |      |     |     |     |          |   |       |
| 23          | 0547           | 0637  | 0557 | 1                 |              | 27         | 1    |     |     |     |          | HA(WWV H10-1.0)<br>MA(NPG18-45)   | 0625E |
| 23          | 0550           | 0622  | 0552 | 5                 | S 1          |            |      |     |     | 45  |          | MA ND OK  |       |
| 23          | 0550           | 0622  | 0605 | 1                 |              |            |      |     |     |     |          | MA  |       |
| 23          | 0553           | 0630  | 0558 | 1                 |              | 17         | 1-   |     |     |     |          | A1  |       |
| 23          | 0830           | 0842  |      | 5                 | S 1          |            |      |     |     |     |          | DA ND   |       |
| 23          | 0830           | 0900  | 0839 | 1                 |              |            |      |     |     |     | 18       | MA(NPG18-18)  | 0831E |
| 23          | 0831           | 0849  | 0838 | 1                 |              |            |      |     |     |     |          | MA  |       |
| 23          | 0831           | 0905  | 0836 | 1                 |              | 13         | 1-   |     |     |     |          | A1  |       |
| 23          | 1554           | 1556  | 1555 | 1                 |              |            |      |     |     |     | 2        |   |       |
| 23          | 1612           | 1621  | 1613 | 1                 |              |            |      |     |     |     | 02       | BO(WWI9-0.2)  |       |
| 23          | 1613           |       |      | 1                 |              |            |      |     |     |     | 14       | BO(WWI11-1.4)<br>BO(WWV L20-70)   | 1608  |
| 23          | 1615           | 1629D | 1618 | 5                 | S 1          |            |      |     |     | 70  |          | WS BA BE TR   |       |
| 23          | 1629           | 1645D | 1630 | 1                 | S 1-         |            |      |     |     |     |          | WS  | 1624  |
| 23          | 1700           | 1713  | 1704 | 1                 |              |            |      |     |     |     |          | BO(WWI11-0.2)<br>BO(WWI11-0.4)  | 1624  |
| 23          | 1728           | 1734  | 1729 | 1                 |              |            |      |     |     |     | 04       | BO(WWV L20-250)   | 1728  |
| 23          | 1730           |       |      | 1                 |              |            |      |     |     | 99  |          |   |       |
| 23          | 1806           | 2100U | 1856 | 1                 |              |            |      |     |     | 65  |          | AN(NPM26-65,NSS21-56,<br>WWV L20-22)  |       |
| 23          | 1945           | 2120  | 1947 | 1                 |              |            |      |     |     | 36  |          | HA(WWV L20-36)  | 1941E |
| 23          | 2047           | 2056  | 2050 | 1                 |              |            |      |     |     |     | 02       | BO(WWI11-0.2)   |       |
| 23          | 2245           |       |      | 5                 |              |            |      |     |     | 99  |          | BO(WWV L20-100)<br>HA(WWV L20-18)<br>MA(NPG18-32)                                     | 2246  |

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|------|----------------|-------|------|-------------------|--------------|------------|------|-----|-----|-----|-----|-------------------------|-------------|
|      | START          | END   | MAX  |                   |              | ABS        | SCNA | SEA | SPA | SES | SFD |                         |             |
| 1967 |                |       |      |                   |              |            |      |     |     |     |     |                         |             |
| 24   | 0608           | 0628  | 0618 | 1                 |              |            |      |     |     |     |     | MA(NPG18-24)            |             |
| 24   | 0608           | 0730  | 0614 | 5                 | G 1+         |            |      |     |     | 24  |     | MA HK ND OK             | 0607E       |
| 24   | 1515           |       | 1527 | 1                 |              |            |      |     |     | 36  |     | UM(WWV20-36,NSS21-31)   | 1516E       |
| 24   | 1518           | 1530  | 1523 | 1                 | SL 1-        |            |      |     |     |     |     | TR                      |             |
| 24   | 1720           | 1800  | 1722 | 1                 |              |            |      |     |     | 11  |     | HA(WWV20-11)            |             |
| 24   | 1743           | 1747  | 1744 | 1                 |              |            |      |     |     |     | 03  | BO(WWI11-0.3)           |             |
| 24   | 1900           | 1925  | 1911 | 5                 | SL 1+        |            |      |     |     |     |     | MC BE BO HU TR          | 1900        |
| 24   | 1901           | 1921  | 1902 | 5                 |              |            |      |     |     |     | 07  | BO(WWI9-0.7)            |             |
| 24   | 1902           |       |      | 5                 |              |            |      |     |     | 99  |     | HA(WWVH5-0.4)           |             |
| 24   | 1902           | 2000  | 1910 | 3                 |              |            |      |     |     |     |     | BO(WWV20-350)           |             |
| 24   | 1904           | 1925  | 1908 | 3                 |              |            |      |     |     |     |     | HA(WWV20-50)            |             |
| 24   | 1947           | 1955  | 1950 | 1                 |              | 17         | 1    | 1   |     |     |     | UM(NSS21-54)            |             |
| 24   | 2355           | 2357  | 2356 | 1                 |              |            |      |     |     |     | 05  | A6 A1                   |             |
| 24   | 2355           | 2408  | 2358 | 1                 |              |            |      |     |     |     | 07  | BO MC                   |             |
| 24   |                |       |      |                   |              |            |      |     |     |     |     | BO(WWI8-0.5)            |             |
| 24   |                |       |      |                   |              |            |      |     |     |     |     | HA(WWVH5-0.7,           | 2355        |
| 24   |                |       |      |                   |              |            |      |     |     |     |     | WWVH10-0.3)             |             |
| 24   |                |       |      |                   |              |            |      |     |     |     |     | MA(NPG18-20)            |             |
| 25   | 1620           |       |      | 1                 |              |            |      |     |     | 99  |     | BO(WWV20-200)           |             |
| 25   | 1623           | 1715U |      | 5                 | SL 1         |            |      |     |     |     |     | TR MC                   |             |
| 25   | 1807           | 1811  | 1809 | 5                 |              |            |      |     |     |     | 14  | BO(WWI8-1.4)            | 1807        |
| 25   | 1810           |       |      | 5                 |              |            |      |     |     |     |     | HA(WWVH5-0.5)           |             |
| 25   | 1810           | 1830  | 1820 | 5                 | SL 1-        |            |      |     |     |     |     | BO(WWV20-200)           | 1807        |
| 25   | 1844           |       |      | 5                 |              |            |      |     |     | 99  |     | HA(WWV20-25)            |             |
| 25   | 1844           | 1846  | 1845 | 1                 |              |            |      |     |     |     |     | MC BE HU TR             |             |
| 25   | 1850           | 1906  | 1858 | 5                 | SL 1         |            |      |     |     |     |     | BO(WWV20-140)           | 1843        |
| 25   | 1857           | 1859  | 1858 | 5                 |              |            |      |     |     |     |     | HA(WWV20-43)            |             |
| 25   | 1951           | 2015  | 2000 | 3                 |              | 31         | 2    |     |     |     | 08  | BO(WWI11-0.8)           |             |
| 25   | 1952           | 2110  | 2003 | 1                 |              |            |      | 2+  |     |     |     | BE MC TR                |             |
| 25   | 1955           | 2038  | 2000 | 5                 | S 1          |            |      |     |     |     | 12  | BO(WWI11-1.2)           |             |
| 25   | 1956           |       |      | 5                 |              |            |      |     |     | 99  |     | HA(WWVH5-1.0)           |             |
| 25   |                |       |      |                   |              |            |      |     |     |     |     | BO MC                   | 1948        |
| 25   |                |       |      |                   |              |            |      |     |     |     |     | A6                      |             |
| 25   |                |       |      |                   |              |            |      |     |     |     |     | HU AN BE MC WS          |             |
| 25   |                |       |      |                   |              |            |      |     |     |     |     | BO(WWV20-200)           |             |
| 25   |                |       |      |                   |              |            |      |     |     |     |     | AN(NPM26-76,NSS21-11)   |             |
| 25   |                |       |      |                   |              |            |      |     |     |     |     | HA(WWV20-58)            |             |
| 25   |                |       |      |                   |              |            |      |     |     |     |     | MA(NPM26-65)            |             |
| 26   | 0137           | 0156  | 0145 | 1                 | SL 1-        |            |      |     |     |     |     | MA                      | 0142E       |
| 26   | 0139           | 0158  | 0145 | 1                 |              |            |      |     |     |     |     | MA(NPG18-50)            |             |
| 27   | 0251           | 0253  | 0252 | 1                 |              |            |      |     |     |     |     |                         |             |
| 27   | 0251           | 0312  | 0254 | 1                 |              |            |      |     |     |     | 02  | HA(WWVH5-0.2)           | 0302E       |
| 27   | 0251           | 0316  | 0255 | 4                 | G 1-         |            |      |     |     | 54  |     | MA(NPG18-54)            |             |
| 27   | 1300           | 1330  |      | 1                 | S 1-         |            |      |     |     |     |     | MA OK                   |             |
| 27   | 1304           | 1344  |      | 1                 |              |            |      |     |     |     |     | PU                      | 1258        |
| 27   | 1454           | 1457  | 1454 | 1                 |              |            |      | 1+  |     |     |     | PU                      |             |
| 27   | 1503           | 1505  | 1504 | 1                 |              |            |      |     |     |     | 03  | BO(WWI8-0.3)            | 1429E       |
| 27   | 1504           | 1515  | 1510 | 5                 | SL 1-        |            |      |     |     |     | 02  | BO(WWI9-0.2)            | 1505E       |
| 27   | 1505           | 1545  |      | 1                 |              |            |      |     |     |     |     | TR PU                   |             |
| 27   | 1637           | 1805  | 1643 | 5                 |              |            |      |     |     |     |     | PU                      |             |
| 27   | 1640           |       | 1644 | 1                 |              |            |      |     |     |     |     | A6 A1 LO PU             | 1637        |
| 27   | 1640           |       | 1651 | 3                 |              |            |      |     |     |     | 110 | BO(WWI11-11.0)          |             |
| 27   | 1640           | 1725  | 1651 | 3                 |              | 48         | 2    |     |     |     |     | BO MC                   |             |
| 27   | 1640           | 1752  | 1655 | 5                 | S 2+         |            |      |     |     |     |     | MC BA BE BO GS HU TO SO |             |
| 27   | 1648           | 1918  | 1655 | 1                 |              |            |      |     |     |     | 47  | SW                      |             |
| 27   | 1709           | 1712  | 1710 | 1                 |              |            |      |     |     |     |     | HA(WWV20-47)            |             |
| 27   | 2114           | 2302  | 2140 | 5                 |              |            |      |     |     |     | 03  | BO(WWI11-0.3)           |             |
| 27   |                |       |      |                   |              |            |      |     |     |     |     | MA(NPG18-208,NPM26-105) | 2048        |
| 27   |                |       |      |                   |              |            |      |     |     |     |     | AN(WWV20-137)           |             |
| 27   |                |       |      |                   |              |            |      |     |     |     |     | HA(WWV20-76)            |             |
| 27   | 2116           | 2125  | 2116 | 1                 |              |            |      |     |     |     | 03  | BO(WWI9-0.3)            |             |
| 27   | 2121           | 2150  | 2135 | 5                 | SL 1+        |            |      |     |     |     |     | MC BE BO GH GS HU TO WS |             |
| 27   | 2122           | 2200  | 2129 | 1                 |              | 9          | 1    |     |     |     |     | BO                      |             |
| 27   | 2340           | 2432  | 2344 | 5                 |              |            |      |     |     |     |     | MA(NPG18-36,NPG18-30)   | 2335        |
| 27   |                |       |      |                   |              |            |      |     |     |     |     | HA(WWV20-11)            |             |
| 28   | 0148           | 0240  | 0203 | 1                 |              |            |      |     |     |     |     | MA(NPG18-90)            | *           |
| 28   | 0159           | 0237  | 0210 | 1                 | S 1-         |            |      |     |     |     |     | MA                      |             |
| 28   | 1603           | 1606  | 1604 | 1                 |              |            |      |     |     |     |     | BO(WWI9-0.3)            | 1555        |
| 28   | 1604           | 1618  | 1610 | 1                 | S 1-         |            |      |     |     |     |     | TR                      |             |
| 28   | 1835           | 1920  | 1840 | 1                 |              |            |      |     |     |     |     | HA(WWV20-22)            | 1825        |
| 28   | 1836           | 1855  | 1843 | 5                 | SL 1-        |            |      |     |     |     |     | BE MC TR WS             |             |
| 28   | 2234           | 2258  | 2242 | 1                 |              |            |      |     |     |     |     | MA(NPG18-23)            | 2236        |
| 28   | 2237           | 2239  | 2238 | 1                 |              |            |      |     |     |     |     | BO(WWI9-0.2)            |             |

No Anchorage data available from 01 February to 08 February, 1967 inclusive.  
Hawaii SCNA-SEA out of operation.

RIOMETER EVENTS

FEBRUARY 1967

Great Whale River

30 Mc/s

| FEB. 1967 | START UT | END UT | MAX UT | MAX. ABS. .1DB | NO. OF PKS | FEB. 1967 | START UT | END UT | MAX UT | MAX. ABS. .1DB | NO. OF PKS |
|-----------|----------|--------|--------|----------------|------------|-----------|----------|--------|--------|----------------|------------|
| [02       | 1350     |        | 2118   |                |            | 17        | 0056     | 2214   | 0312   | 40             | 12         |
| 03        |          | 1121   |        | 10             | 3          | 18        | 0130     | 2156   | 0401   | 20             | 8          |
| 03        | 1505     | 2327   | 2101   | 11             | 1          | 19        | 0738     | 1016   | 0808   | 6              | 2          |
| 04        | 0448     | 0626   | 0524   | 15             | 1          | 19        | 1222     | 2321   | 1413   | 15             | 5          |
| [04       | 1153     |        |        |                |            | [20       | 0948     |        | 1826   |                |            |
| 05        |          | 2309   | 0133   | 37             | 13         | [21       |          | 0121   |        | 10             | 7          |
| [06       | 0236     | 0908   | 0323   | 6              | 3          | 21        | 0737     | 2258   | 1650   | 20             | 8          |
| 07        | *        |        |        |                |            | [22       | 0650     |        | 1440   |                |            |
| [08       |          | 1910   | 1258   | 32             | 20         | [23       |          | 0138   |        | 28             | 8          |
| [09       | 0537     |        | 0540   |                |            | [23       | 0950     |        | 1130   |                |            |
| [10       |          | 2100   |        | 31             | 12         | [24       |          | 2351   |        | 5              | 24         |
| 11        | 0310     | 2250   | 1437   | 16             | 12         | 25        | 0348     | 2208   | 0507   | 35             | 10         |
| 13        | 1700     | 2331   | 1742   | 7              | 6          | [26       | 0045     |        | 1700   |                |            |
| 14        | 1508     | 2250   | 1814   | 5              | 9          | [27       |          | 0110   |        | 30             | 5          |
| 15        | 0120     | 1058   | 0700   | 4              | 5          | [27       | 0415     |        | 1505   |                |            |
| [15       | 1415     |        | 1720   |                |            | [28       |          | 0432   |        | 26             | 8          |
| [16       |          | 0305   |        | 6              | 6          | 28        | *        | 2210   | 1843   | 7              | 2          |
| 16        | 0804     | 2232   | 0912   | 65             | 23         |           |          |        |        |                |            |

\* TIME NOT KNOWN DUE TO EQUIPMENT FAILURE OR OTHER CAUSE.

THIS TABULATION SHOWS ALL EVENTS STARTING ON ANY DAY OF THIS MONTH. SEE PREVIOUS MONTH TABLE FOR EVENTS WHICH MAY NOT HAVE ENDED BY THE FIRST DAY OF THIS MONTH.

MAX IS THE TIME OF EVENT MAXIMUM.  
ABS IS ABSORPTION.  
PKS IS PEAKS.

NO DATA ZEROS FOR ALL VALUES OF A DAY.

## SOLAR RADIATION MONITORING SATELLITE X-RAY

FEBRUARY 1967

| OUTSTANDING EVENTS FOR FEBRUARY 1967 |      |       |      |                          |                         |                         |  |
|--------------------------------------|------|-------|------|--------------------------|-------------------------|-------------------------|--|
| DATE                                 | STA  | START | STOP | 8-20<br>$\times 10^{-3}$ | 0-8<br>$\times 10^{-4}$ | 0-3<br>$\times 10^{-5}$ | COMMENTS                               |
| 1                                    | NRL  | 1223  | 1233 |                          | 86.51                   | 115.81                  | INCREASING                             |
|                                      | NRL  | 2254  | 2307 |                          | 46.00                   | 9.38                    |  |
| 21                                   | NRL  | 1247  | 1256 |                          | 141.54                  | 5.24                    |  |
|                                      | NRL  | 1802  | 1814 |                          | 230.00                  | 17.30                   |  |
| 22                                   | NRL  | 0841  | 0857 | 165.10                   | 37.81                   | 13.11                   | INCREASING                             |
|                                      | ABRD | 1211  | 1218 | 170                      | 40                      | 11                      |  |
|                                      | NRL  | 1403  | 1413 | 135.36                   | 37.90                   | 10.31                   |  |
|                                      | NRL  | 1731  | 1745 | 131.19                   | 47.97                   | 15.50                   |  |
|                                      | ABRD | 1914  | 1924 | 380 D                    | 75 D                    | 63                      |  |
| 23                                   | ABRD | 1142  | 1154 | 96 D                     |                         |                         | INCREASING<br>DECREASING               |
|                                      | NRL  | 1145  | 1154 | 128.45                   | 512.27                  | 63.96                   |  |
|                                      | NRL  | 1702  | 1715 | 69.53                    | 118.30                  | 10.04                   |  |
| 24                                   | NRL  | 0740  | 0756 | 127.57                   | 229.81                  | 28.78                   | DECREASING<br>INCREASING               |
|                                      | ABRD | 1428  | 1440 | 37                       | 66                      | 11                      |  |
|                                      | NRL  | 1447  | 1500 | 59.11                    | 47.21                   | 4.94                    |  |
|                                      | NRL  | 1631  | 1645 | 56.33                    | 61.90                   | 12.17                   |  |
|                                      | ABRD | 1814  | 1824 | 40                       | 45                      | 6.2                     |  |
| 25                                   | NRL  | 0855  | 0910 | 42.61                    | 51.45                   | 8.59                    | DECREASING<br>DECREASING<br>INCREASING |
|                                      | NRL  | 1418  | 1429 | 29.79                    | 24.65                   | 2.69                    |  |
|                                      | NRL  | 1601  | 1613 | 32.95                    | 41.48                   | 8.88                    |  |
|                                      | ABRD | 1744  | 1754 | 31                       | 22                      | 3.8                     |  |
|                                      | NRL  | 1746  | 1755 | 34.67                    | 30.42                   | 5.06                    |  |
| 26                                   | NRL  | 0825  | 0840 | 33.77                    | 31.65                   | 6.18                    | INCREASING                             |
|                                      | NRL  | 1346  | 1358 | 32.74                    | 21.58                   | 2.18                    |  |
|                                      | ABRD | 1531  | 1540 | 38                       | 19                      | 1.8                     |  |
|                                      | ABRD | 1713  | 1724 | 31                       | 15                      | 0.92                    |  |
| 27                                   | ABRD | 1313  | 1324 | 38                       | 40                      | 7.0                     | DECREASING<br>INCREASING               |
|                                      | NRL  | 1316  | 1327 | 41.67                    | 43.76                   | 7.63                    |  |
|                                      | NRL  | 1504  | 1514 | 35.14                    | 38.29                   | 5.97                    |  |
|                                      | ABRD | 1644  | 1654 | 45 D                     |                         |                         |  |
|                                      | NRL  | 1646  | 1657 | 47.19D                   | 128.55D                 | 17.24D                  |  |
| 28                                   | NRL  | 0911  | 0923 | 27.43                    | 18.71                   | 1.36                    | DECREASING                             |
|                                      | NRL  | 1246  | 1257 | 26.89                    | 15.86                   | 0.93                    |  |
|                                      | NRL  | 1615  | 1627 | 40.73                    | 32.61                   | 3.45                    |  |

NRL SOLAR X-RAY DATA (Preliminary)

| DAILY AVERAGES FOR FEBRUARY 1967 |                           |                          |                         |
|----------------------------------|---------------------------|--------------------------|-------------------------|
| DATE                             | 44-60<br>$\times 10^{-1}$ | 8-20<br>$\times 10^{-3}$ | 0-8<br>$\times 10^{-4}$ |
| 1                                | 4.75                      |                          | 26.05                   |
| 2                                | 4.28                      |                          | 3.58                    |
| 3                                | 3.36                      |                          |                         |
| 20                               | 4.02                      |                          |                         |
| 21                               | 5.16                      |                          | 9.89                    |
| 22                               | 8.27                      | 126.19                   | 37.62                   |
| 23                               | 4.80                      | 31.49                    | 23.88                   |
| 24                               |                           | 52.49                    | 45.14                   |
| 25                               |                           | 30.77                    | 28.14                   |
| 26                               |                           | 33.61                    | 22.88                   |
| 27                               |                           | 23.09                    | 11.21                   |
| 28                               |                           | 22.96                    | 10.07                   |

Only the daily averages as given by NRL are presented. This is because they have available the maximum number of records from a single station from which to calculate the averages.

SOLAR RADIATION MONITORING SATELLITE  
X-RAY

FEBRUARY 1967

| OBSERVING TIMES FOR FEBRUARY 1967 |      |       |      |                 |      |      |       |      |                 |
|-----------------------------------|------|-------|------|-----------------|------|------|-------|------|-----------------|
| DATE                              | STA  | START | STOP | ASPECT<br>ANGLE | DATE | STA  | START | STOP | ASPECT<br>ANGLE |
| 1                                 | NRL  | 1223  | 1233 | 31.0            | 24   | NRL  | 0740  | 0756 | 18.5            |
|                                   | NRL  | 1403  | 1419 | 31.2            |      | NRL  | 0926  | 0940 | 18.2            |
|                                   | NRL  | 1549  | 1603 | 31.4            |      | NRL  | 1114  | 1124 | 17.8            |
|                                   | BOUL | 1729  | 1744 | 32.0            |      | ABRD | 1114  | 1122 |                 |
|                                   | NRL  | 1738  | 1747 | 31.5            |      | ABRD | 1258  | 1306 |                 |
|                                   | BOUL | 1918  | 1930 | 32.0            |      | NRL  | 1302  | 1312 | 17.6            |
|                                   | NRL  | 1925  | 1934 | 31.7            |      | ABRD | 1428  | 1440 |                 |
|                                   | BOUL | 2104  | 2115 | 32.0            |      | NRL  | 1447  | 1500 | 17.2            |
|                                   | NRL  | 2110  | 2122 | 32.1            |      | NRL  | 1631  | 1645 | 17.0            |
|                                   | NRL  | 2254  | 2307 | 32.5            |      | ABRD | 1814  | 1824 |                 |
| 2                                 | NRL  | 0040  | 0048 | 32.7            | 25   | NRL  | 0855  | 0910 | 12.0            |
|                                   | NRL  | 1154  | 1202 | 34.4            |      | NRL  | 1044  | 1053 | 11.6            |
|                                   | NRL  | 1334  | 1348 | 34.5            |      | ABRD | 1044  | 1054 |                 |
|                                   | NRL  | 1519  | 1533 | 34.5            |      | ABRD | 1228  | 1238 |                 |
|                                   | BOUL | 1659  | 1714 | 34.0            |      | NRL  | 1232  | 1241 | 11.3            |
|                                   | NRL  | 1706  | 1716 | 34.5            |      | ABRD | 1414  | 1425 |                 |
|                                   | NRL  | 1855  | 1903 | 34.5            |      | NRL  | 1418  | 1429 | 11.1            |
|                                   | BOUL | 2034  | 2045 | 34.0            |      | NRL  | 1601  | 1613 | 10.7            |
|                                   | NRL  | 2039  | 2051 | 35.0            |      | ABRD | 1601  | 1611 |                 |
|                                   | NRL  | 2224  | 2238 | 35.4            |      | ABRD | 1744  | 1754 |                 |
| 3                                 | NRL  | 0009  | 0019 | 35.8            | 26   | NRL  | 0825  | 0840 | 5.0             |
|                                   | NRL  | 1303  | 1318 | 37.5            |      | NRL  | 1014  | 1024 | 5.5             |
|                                   | NRL  | 1448  | 1503 | 37.5            |      | ABRD | 1156  | 1208 |                 |
|                                   | NRL  | 1636  | 1645 | 37.5            |      | NRL  | 1202  | 1211 | 5.5             |
|                                   | NRL  | 1824  | 1832 | 37.6            |      | NRL  | 1346  | 1358 | 5.0             |
| 20                                | NRL  | 2009  | 2019 | 38.0            | ABRD | 1348 | 1354  |      |                 |
|                                   | NRL  | 1318  | 1327 | 39.0            | NRL  | 1531 | 1545  | 3.5  |                 |
|                                   | NRL  | 1504  | 1515 | 38.5            | ABRD | 1531 | 1540  |      |                 |
|                                   | 21   | NRL   | 0913 | 0927            | 34.8 | ABRD | 1713  | 1724 |                 |
|                                   |      | NRL   | 1100 | 1111            | 34.8 | NRL  | 1716  | 1726 | 3.5             |
| NRL                               |      | 1247  | 1256 | 34.5            | 27   | NRL  | 0942  | 0953 | -3.0            |
| NRL                               |      | 1434  | 1444 | 34.4            |      | NRL  | 1131  | 1140 | -3.0            |
| NRL                               |      | 1617  | 1631 | 33.7            |      | ABRD | 1313  | 1324 |                 |
| NRL                               | 1802 | 1814  | 33.8 | NRL             |      | 1316 | 1327  | -3.0 |                 |
| 22                                | NRL  | 0841  | 0857 | 30.0            |      | NRL  | 1504  | 1514 | -3.0            |
|                                   | NRL  | 1028  | 1040 | 29.7            | ABRD | 1644 | 1654  |      |                 |
|                                   | ABRD | 1211  | 1218 |                 | NRL  | 1646 | 1657  | -3.0 |                 |
|                                   | NRL  | 1216  | 1226 | 29.5            | 28   | NRL  | 0724  | 0740 | -8.1            |
|                                   | NRL  | 1403  | 1413 | 29.3            |      | NRL  | 0911  | 0923 | -8.5            |
|                                   | NRL  | 1547  | 1601 | 29.0            |      | ABRD | 1055  | 1107 |                 |
|                                   | ABRD | 1550  | 1554 |                 |      | NRL  | 1100  | 1109 | -8.7            |
|                                   | NRL  | 1731  | 1745 | 28.5            |      | NRL  | 1246  | 1257 | -9.0            |
|                                   | ABRD | 1733  | 1742 |                 |      | ABRD | 1247  | 1253 |                 |
|                                   | ABRD | 1914  | 1924 |                 |      | NRL  | 1430  | 1444 | -9.4            |
| 23                                | NRL  | 0957  | 1011 | 24.2            |      | ABRD | 1431  | 1440 |                 |
|                                   | ABRD | 1142  | 1154 |                 |      | NRL  | 1615  | 1627 | -9.8            |
|                                   | NRL  | 1145  | 1154 | 23.7            |      |      |       |      |                 |
|                                   | ABRD | 1328  | 1339 |                 |      |      |       |      |                 |
|                                   | NRL  | 1332  | 1342 | 23.5            |      |      |       |      |                 |
|                                   | NRL  | 1517  | 1530 | 23.4            |      |      |       |      |                 |
|                                   | ABRD | 1518  | 1525 |                 |      |      |       |      |                 |
|                                   | NRL  | 1702  | 1715 | 23.0            |      |      |       |      |                 |
| NRL                               | 1849 | 1854  | 22.6 |                 |      |      |       |      |                 |



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Feb 67

# COSMIC RAY INDICES (Neutron Monitors)

FEBRUARY 1967

| FEB.<br>1967 | CHURCHILL                        | DEEP RIVER                       | CLIMAX                           | DALLAS                           |
|--------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
|              | DAILY AVERAGE<br>COUNTS PER HOUR | DAILY AVERAGE<br>COUNTS PER HOUR | DAILY AVERAGE<br>COUNTS PER HOUR | DAILY AVERAGE<br>COUNTS PER HOUR |
| 1            | *                                | 6680.8                           | 3991.9                           | *                                |
| 2            |                                  | 6734.7                           | 4033.0                           |                                  |
| 3            |                                  | 6710.2                           | 3990.2                           |                                  |
| 4            |                                  | 6643.2                           | 3947.9                           |                                  |
| 5            |                                  | 6641.7                           | 3965.8                           |                                  |
| 6            |                                  | 6604.5                           | 3891.4                           |                                  |
| 7            |                                  | 6605.5                           | 3925.0                           |                                  |
| 8            |                                  | 6475.3                           | 3881.6                           |                                  |
| 9            |                                  | 6453.8                           | 3850.9                           |                                  |
| 10           |                                  | 6495.8                           | 3876.3                           |                                  |
| 11           |                                  | 6563.3                           | 3896.9                           |                                  |
| 12           |                                  | 6631.1                           | 3928.9                           |                                  |
| 13           |                                  | 6635.3                           | 3935.6 (38)                      |                                  |
| 14           |                                  | 6638.4                           | 3983.5 (26)                      |                                  |
| 15           |                                  | 6667.3                           | 3994.2                           |                                  |
| 16           |                                  | 6512.7                           | 3918.8                           |                                  |
| 17           |                                  | 6497.2                           | 3898.2                           |                                  |
| 18           |                                  | 6569.6                           | 3919.8                           |                                  |
| 19           |                                  | 6589.0                           | 3927.2                           |                                  |
| 20           |                                  | 6616.8                           | 3944.6                           |                                  |
| 21           |                                  | 6654.5                           | 3976.2                           |                                  |
| 22           |                                  | 6690.0                           | 4010.7                           |                                  |
| 23           |                                  | 6717.6                           | 4028.4                           |                                  |
| 24           |                                  | 6750.5                           | 4028.9                           |                                  |
| 25           |                                  | 6737.8                           | 4021.0                           |                                  |
| 26           |                                  | 6731.5                           | 4031.5                           |                                  |
| 27           |                                  | 6732.3                           | 4035.4                           |                                  |
| 28           |                                  | 6761.8                           | 4040.9                           |                                  |

\* The data from Dallas and Churchill have not been processed.  
It will be published when it becomes available.

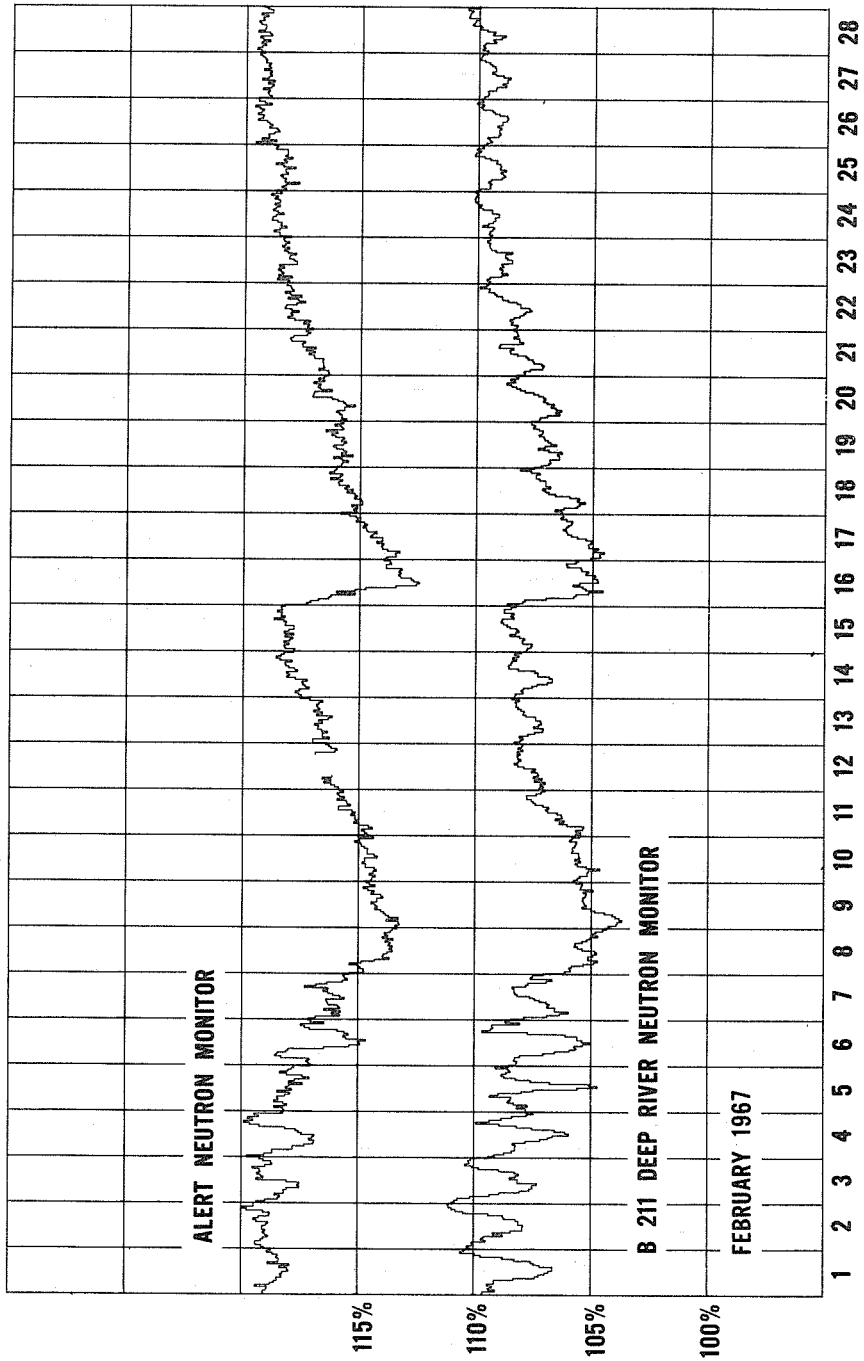
( ) Number of section hours for which data are available if less than 40.

Deep River Neutron Monitor, Scaling Factor 300.

Climax IGC Station B305, Scaling Factor 100.

**COSMIC RAY INDICES**  
(Pressure Corrected Hourly Totals)

FEBRUARY 1967



GEOMAGNETIC ACTIVITY INDICES

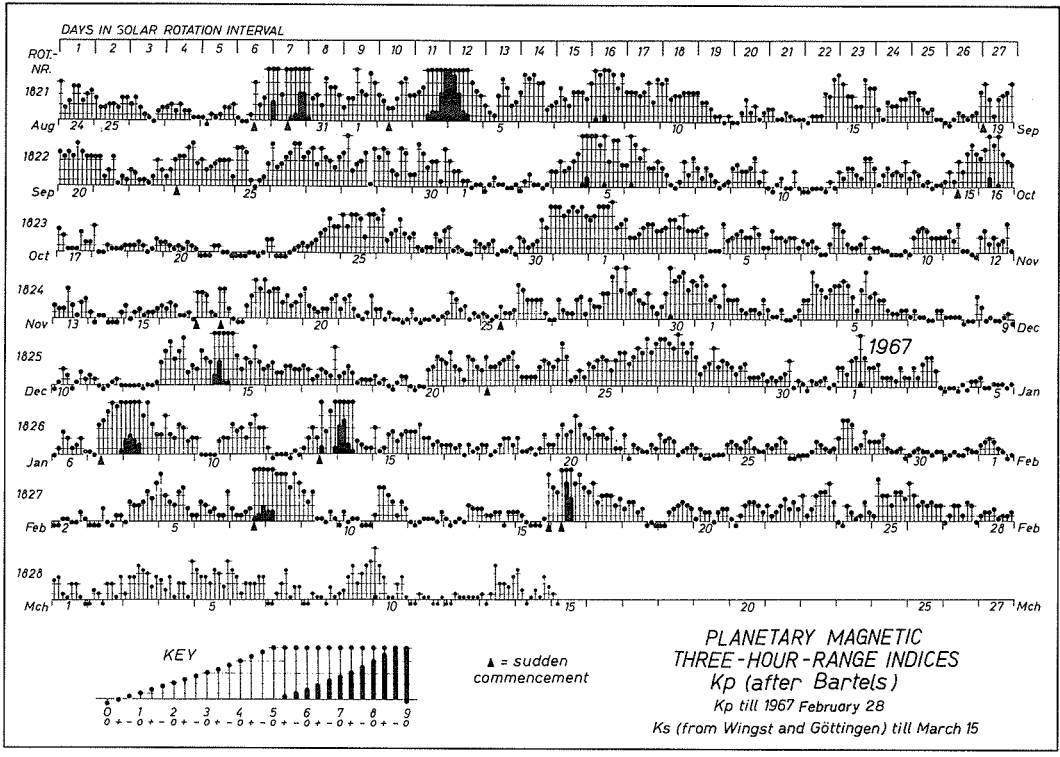
FEBRUARY 1967

| DAY |    | Kp                       |    |    |    |    |    |    |    | SUM  | Ci   | Cp   | Ap |
|-----|----|--------------------------|----|----|----|----|----|----|----|------|------|------|----|
|     |    | THREE-HOUR RANGE INDICES |    |    |    |    |    |    |    |      |      |      |    |
|     |    | 1                        | 2  | 3  | 4  | 5  | 6  | 7  | 8  |      |      |      |    |
| 1   | Q  | 1+                       | 2- | 2  | 2- | 1  | 1- | 0  | 0+ | 9-   | 0.1  | 0.1  | 4  |
| 2   | QQ | 0                        | 0  | 1- | 1- | 0+ | 0+ | 1+ | 1- | 4    | 0.1  | 0.0  | 2  |
| 3   | QQ | 0                        | 0  | 0  | 2- | 0+ | 0  | 1  | 1  | 4    | 0.0  | 0.0  | 2  |
| 4   |    | 0+                       | 2+ | 2  | 2  | 2+ | 3+ | 3- | 4  | 19   | 0.8  | 0.7  | 11 |
| 5   |    | 5-                       | 3  | 2+ | 2  | 3+ | 4- | 2- | 1  | 22-  | 1.0  | 0.8  | 15 |
| 6   |    | 1                        | 2+ | 2  | 1+ | 2- | 1  | 1  | 3+ | 14-  | 0.4  | 0.4  | 7  |
| 7   | D  | 2-                       | 1  | 1  | 1+ | 2- | 5+ | 6- | 6+ | 24   | 1.5  | 1.3  | 30 |
| 8   | D  | 6                        | 6  | 5- | 5- | 5- | 4- | 5- | 4  | 38+  | 1.7  | 1.5  | 46 |
| 9   |    | 3+                       | 2+ | 3+ | 1- | 1- | 0+ | 1+ | 1- | 13-  | 0.4  | 0.4  | 8  |
| 10  | QQ | 0                        | 1+ | 0+ | 1- | 1- | 0  | 0  | 0  | 3    | 0.1  | 0.0  | 2  |
| 11  |    | 1                        | 4- | 4- | 3  | 2+ | 1  | 2+ | 2- | 19-  | 0.5  | 0.7  | 11 |
| 12  | QQ | 0+                       | 0  | 0+ | 1- | 1- | 1- | 0+ | 1+ | 4+   | 0.1  | 0.0  | 2  |
| 13  | QQ | 1-                       | 0  | 0+ | 1- | 0+ | 2  | 2- | 2- | 7+   | 0.2  | 0.1  | 4  |
| 14  | Q  | 2-                       | 1  | 1  | 1+ | 1+ | 0  | 1+ | 1+ | 9    | 0.2  | 0.1  | 4  |
| 15  |    | 1+                       | 1  | 0+ | 0  | 0  | 0  | 1- | 5- | 8    | 0.4  | 0.3  | 7  |
| 16  | D  | 4-                       | 3+ | 5  | 8  | 7  | 4  | 5- | 4- | 39+  | 1.8  | 1.7  | 64 |
| 17  | D  | 3+                       | 4  | 2+ | 3  | 3  | 3  | 2  | 3- | 23+  | 0.8  | 0.8  | 15 |
| 18  |    | 2-                       | 2+ | 2+ | 1+ | 2- | 0  | 0+ | 0  | 10-  | 0.1  | 0.2  | 5  |
| 19  |    | 0                        | 0  | 1+ | 2- | 2  | 2+ | 2  | 2- | 11   | 0.3  | 0.2  | 5  |
| 20  | Q  | 1-                       | 2- | 1+ | 1+ | 0+ | 1+ | 2- | 2- | 10   | 0.2  | 0.2  | 5  |
| 21  |    | 1-                       | 0  | 1  | 2  | 2+ | 2+ | 2  | 1+ | 12-  | 0.3  | 0.2  | 6  |
| 22  |    | 2                        | 1  | 1+ | 2  | 3- | 2- | 2+ | 2- | 15-  | 0.3  | 0.4  | 7  |
| 23  |    | 3                        | 1  | 2- | 3  | 3+ | 3+ | 4  | 2+ | 22-  | 1.1  | 0.8  | 14 |
| 24  | Q  | 0+                       | 0  | 2  | 1+ | 1- | 1  | 2+ | 1+ | 9    | 0.2  | 0.2  | 4  |
| 25  | D  | 1                        | 4+ | 3  | 3  | 2  | 3+ | 3+ | 3- | 23-  | 1.0  | 0.4  | 15 |
| 26  |    | 4                        | 3  | 2  | 2+ | 2  | 2+ | 2  | 2  | 20-  | 0.7  | 0.3  | 11 |
| 27  |    | 0+                       | 1  | 2  | 2  | 1  | 2+ | 2  | 0+ | 11   | 0.3  | 0.1  | 5  |
| 28  | Q  | 1                        | 1+ | 1+ | 2- | 1- | 1  | 1  | 1+ | 9+   | 0.2  | 0.1  | 4  |
|     |    |                          |    |    |    |    |    |    |    | MEAN | 0.53 | 0.43 | 11 |

Preliminary storm sudden commencements (ssc) occurred February 7 at 1636UT, February 15 at 2347UT and February 16 at 0835UT.

The Kp values given as integers represent the values normally given with a small zero following the number, i.e., 0=0o, 1=1o, etc., because the table is prepared by computer and lower case symbols are not available.

GEOMAGNETIC ACTIVITY INDICES



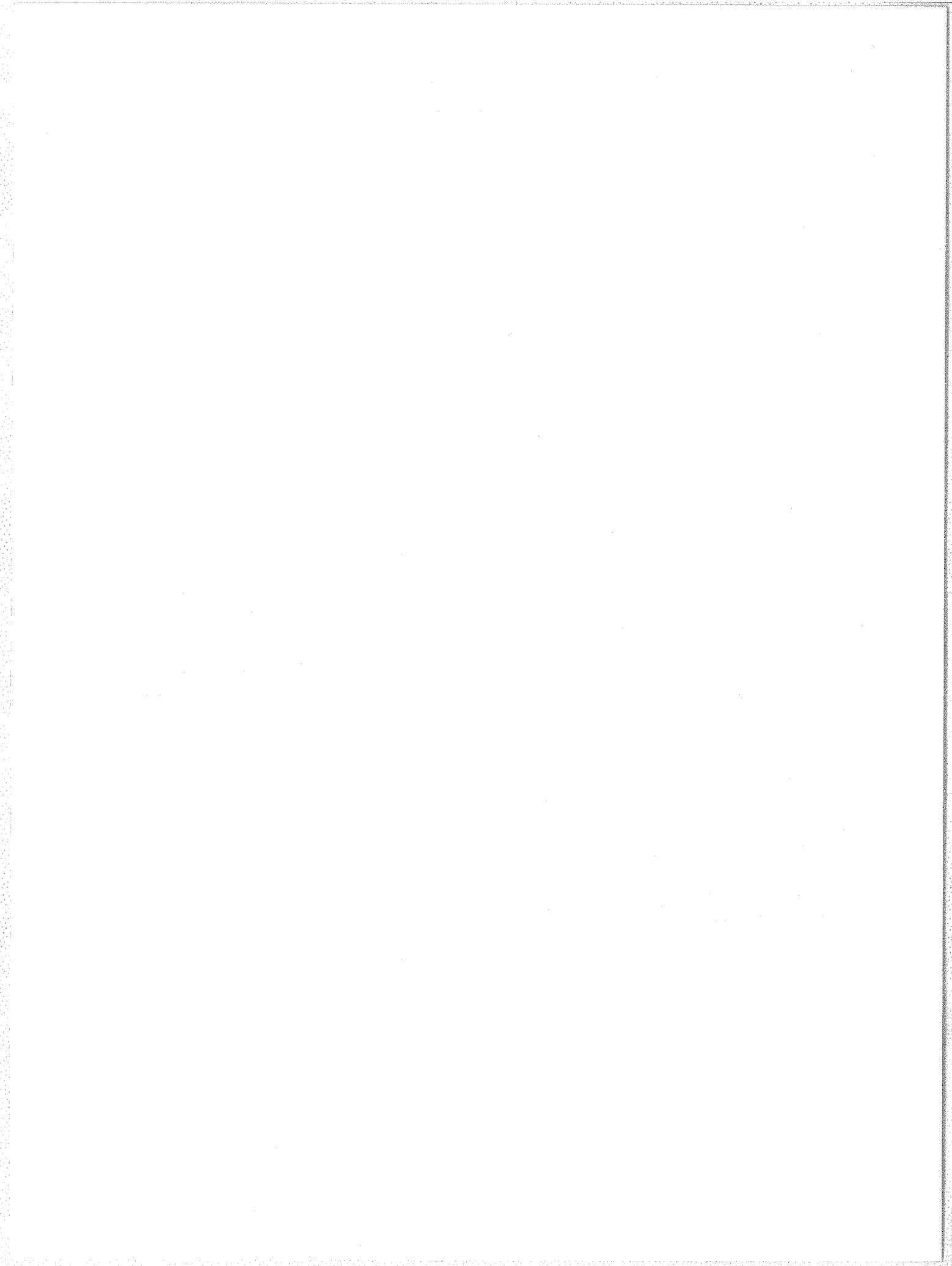
DAILY AVERAGE INDICES Ap

| DAY  | 1966 |      |     |      |      | 1967 |       |      |      |      |      |      |
|------|------|------|-----|------|------|------|-------|------|------|------|------|------|
|      | MAR. | APR. | MAY | JUNE | JULY | AUG. | SEPT. | OCT. | NOV. | DEC. | JAN. | FEB. |
| 1    | 3    | 18   | 8   | 12   | 5    | 6    | 22    | 6    | 31   | 17   | 18   | 4    |
| 2    | 3    | 13   | 12  | 10   | 4    | 1    | 15    | 3    | 14   | 6    | 7    | 2    |
| 3    | 10   | 7    | 5   | 7    | 4    | 7    | 92    | 4    | 17   | 4    | 10   | 2    |
| 4    | 9    | 8    | 12  | 4    | 14   | 8    | 112   | 26   | 9    | 19   | 2    | 11   |
| 5    | 5    | 6    | 6   | 5    | 5    | 10   | 13    | 36   | 9    | 20   | 3    | 15   |
| 6    | 4    | 7    | 7   | 4    | 5    | 6    | 24    | 22   | 7    | 7    | 6    | 7    |
| 7    | 2    | 10   | 4   | 9    | 4    | 5    | 14    | 8    | 6    | 4    | 28   | 30   |
| 8    | 3    | 10   | 5   | 4    | 22   | 5    | 42    | 5    | 7    | 4    | 60   | 46   |
| 9    | 4    | 5    | 5   | 3    | 36   | 9    | 19    | 9    | 3    | 3    | 12   | 8    |
| 10   | 10   | 5    | 2   | 2    | 25   | 12   | 19    | 3    | 9    | 4    | 4    | 2    |
| 11   | 6    | 2    | 10  | 3    | 8    | 14   | 7     | 2    | 6    | 3    | 16   | 11   |
| 12   | 6    | 3    | 6   | 7    | 15   | 14   | 5     | 10   | 8    | 2    | 2    | 2    |
| 13   | 14   | 15   | 7   | 5    | 3    | 6    | 4     | 8    | 7    | 20   | 26   | 4    |
| 14   | 64   | 8    | 2   | 4    | 4    | 9    | 10    | 4    | 2    | 48   | 61   | 4    |
| 15   | 7    | 4    | 2   | 6    | 8    | 5    | 20    | 14   | 4    | 18   | 9    | 7    |
| 16   | 7    | 3    | 5   | 6    | 6    | 4    | 10    | 20   | 4    | 8    | 9    | 64   |
| 17   | 6    | 4    | 7   | 4    | 11   | 2    | 9     | 6    | 11   | 9    | 4    | 15   |
| 18   | 4    | 3    | 5   | 3    | 4    | 10   | 3     | 4    | 12   | 5    | 5    | 5    |
| 19   | 20   | 2    | 3   | 6    | 5    | 20   | 17    | 4    | 12   | 3    | 5    | 5    |
| 20   | 10   | 5    | 8   | 7    | 6    | 7    | 21    | 4    | 8    | 7    | 13   | 5    |
| 21   | 8    | 5    | 4   | 4    | 14   | 5    | 10    | 2    | 6    | 12   | 9    | 6    |
| 22   | 7    | 13   | 4   | 3    | 8    | 4    | 6     | 2    | 3    | 14   | 4    | 7    |
| 23   | 67   | 10   | 2   | 17   | 6    | 22   | 17    | 2    | 2    | 8    | 5    | 14   |
| 24   | 2    | 6    | 2   | 16   | 6    | 16   | 12    | 11   | 6    | 12   | 2    | 4    |
| 25   | 14   | 3    | 5   | 16   | 4    | 8    | 13    | 22   | 4    | 14   | 5    | 15   |
| 26   | 20   | 3    | 78  | 6    | 6    | 6    | 22    | 15   | 10   | 24   | 4    | 11   |
| 27   | 13   | 1    | 5   | 4    | 11   | 5    | 18    | 6    | 6    | 34   | 4    | 5    |
| 28   | 42   | 4    | 5   | 5    | 10   | 4    | 22    | 5    | 19   | 14   | 12   | 4    |
| 29   | 12   | 6    | 4   | 6    | 5    | 13   | 17    | 4    | 15   | 7    | 4    | 4    |
| 30   | 6    | 10   | 6   | 6    | 6    | 82   | 16    | 13   | 28   | 6    | 3    | 3    |
| 31   | 3    |      | 48  |      | 5    | 23   |       | 34   |      | 3    | 2    |      |
| MEAN | 13   | 7    | 9   | 6    | 9    | 11   | 21    | 10   | 9    | 11   | 11   | 11   |

PRINCIPAL MAGNETIC STORMS

FEBRUARY 1967

| DATE<br>1967 | STORM TIME |             | OBS   | GEO-<br>MAG.<br>LAT. | SUDDEN COMMENCEMENT   |       |               |               | C<br>FIGURE<br>DEGREE<br>OF AC-<br>TIVITY | MAXIMAL ACTIVITY<br>ON K-SCALE 0 TO 9 |                  |            | RANGES            |                   |                   | STORM<br>NUMBERS |               |
|--------------|------------|-------------|-------|----------------------|-----------------------|-------|---------------|---------------|---|---------------------------------------|------------------|------------|-------------------|-------------------|-------------------|------------------|---------------|
|              | MO. DA.    | UT<br>START |       |                      | UT END<br>MO. DA. HR. | TYPE  | AMPLITUDES    |               |   | MO. DA.                               | 3-HOUR<br>PERIOD | K<br>INDEX | D<br>( $\gamma$ ) | H<br>( $\gamma$ ) | Z<br>( $\gamma$ ) |                  |               |
|              |            |             |       |                      |                       |       | D( $\gamma$ ) | H( $\gamma$ ) |   |                                       |                  |            |                   |                   |                   |                  | Z( $\gamma$ ) |
| 02 03        | 1800       | 02 05 22    | HYDE  | 07.6N                | ..                    | ..    | ..            | ..            | M   | ---                                   | -                | -          | 2                 | 87                | 18                | 7                |               |
| 02 04        | 08--       | 02 05 22    | COLL  | 64.6N                | ..                    | ..    | ..            | ..            | MS  | 02 05                                 | 6                | 6          | 59                | 720               | 350               | 7                |               |
|              | 1134       | 02 05 18    | KGLN  | 57.3S                | SC                    | ---   | ---           | ---           | M   | 02 05                                 | 1,5              | 4          | ---               | ---               | ---               | 7                |               |
| 02 06        | 2115       | 02 08 24    | TUCS  | 40.4N                | SC                    | - 2   | -20           | ---           | MS  | 02 07                                 | 6                | 6          | 20                | 150               | 15                | 8                |               |
|              | 2115       | 02 09 01    | HONO  | 21.1N                | SC                    | ..    | - 3           | -             | M   | 02 08                                 | 2                | 5          | 8                 | 153               | 30                | 8                |               |
|              | 1800       | 02 09 01    | HYDE  | 07.6N                | ..                    | ..    | ..            | ..            | MS  | ---                                   | -                | -          | 6                 | 212               | 22                | 8                |               |
|              | 2110       | ---         | HYDE  | 07.6N                | SI                    | - 0.3 | -18           | - 3           | -   | ---                                   | -                | -          | ---               | ---               | ---               | 8                |               |
| 02 07        | 14--       | 02 09 08    | COLL  | 64.6N                | ..                    | ..    | ..            | ..            | S   | 02 07                                 | 6                | 8          | 211               | 2060              | 1040              | 8                |               |
|              | 14--       | 02 09 00    | SITK  | 60.0N                | ..                    | ..    | ..            | ..            | MS  | 02 08                                 | 4                | 7          | 125               | 800               | 460               | 8                |               |
|              | 1636       | 02 09 02    | WITT  | 54.1N                | SC                    | - 2   | +10           | 0             | MS  | 02 07                                 | 8                | 7          | 45                | 220               | 95                | 8                |               |
|              | 1637       | 02 09 01    | FRED  | 49.6N                | SC *                  | - 2   | +34           | + 8           | M   | 02 07                                 | 6                | 5          | 30                | 196               | 100               | 8                |               |
|              |            |             |       |                      |                       |       |               |               |   | 02 08                                 | 1                | 5          |                   |                   |                   | 8                |               |
|              | 1636       | 02 09 01    | SJUA  | 29.9N                | SC                    | - 0.2 | +15           | + 5           | MS  | 02 07                                 | 7                | 6          | 10                | 161               | 52                | 8                |               |
|              | 1636       | 02 09 09    | MBOR  | 21.3N                | SC                    | - 2.2 | +27           | -             | MS  | 02 07                                 | 6,7,8            | 6          | 4                 | 130               | 25                | 8                |               |
|              |            |             |       |                      |                       |       |               |               |   | 02 08                                 | 1                | 6          |                   |                   |                   | 8                |               |
|              | 1637       | 02 09 01    | ALIB  | 09.6N                | SC                    | - 0.3 | +19           | - 4           | MS  | 02 07                                 | 6                | 6          | 7                 | 159               | 45                | 8                |               |
|              | 1635       | 02 09 01    | GUAM  | 04.0N                | SC                    | +01   | +29           | -09           | MS  | 02 07                                 | 8                | 6          | 1                 | 73                | 08                | 8                |               |
|              | 1637       | 02 09 01    | ANNA  | 01.5N                | SC                    | - 0.9 | +24           | +16           | MS  | ---                                   | -                | -          | 5                 | 198               | 36                | 8                |               |
|              | 1637       | 02 09 01    | TVAN  | 01.1S                | SC                    | - 0.3 | +21           | +28           | MS  | ---                                   | -                | -          | 3                 | 211               | 164               | 8                |               |
|              | 1636       | 02 09 02    | APIA  | 16.1S                | SC                    | + 0   | +14           | - 6           | M   | 02 07                                 | 7                | 5          | 11                | 163               | 40                | 8                |               |
|              | 00--       | 02 09 01    | PMOR  | 18.6S                | ..                    | ..    | ..            | ..            | M   | 02 07                                 | 6,7,8            | 5          | 11                | 162               | 90                | 8                |               |
|              |            |             |       |                      |                       |       |               |               |   | 02 08                                 | 1,2,3 4          | 5          |                   |                   |                   | 8                |               |
|              |            |             |       |                      |                       |       |               |               |   | 02 08                                 | 5,7              | 5          |                   |                   |                   | 8                |               |
| 1636         | 02 08 24   | HRMN        | 33.3S | SC                   | + 2.1                 | +10.2 | + 8.9         | MS            | 02 07                                     | 6                                     | 6                | 25         | 123               | 136               | 8                 |                  |               |
| 14--         | 02 09 02   | GNaN        | 43.2S | ..                   | ..                    | ..    | ..            | MS            | 02 07                                     | 6                                     | 6                | 21         | 186               | 128               | 8                 |                  |               |
|              |            |             |       |                      |                       |       |               |               | 02 08                                     | 1                                     | 6                |            |                   |                   | 8                 |                  |               |
| 1636         | 02 09 09   | TOOL        | 46.7S | SC *                 | + 1.9                 | +32   | ---           | MS            | 02 08                                     | 2                                     | 6                | 23         | 270               | 68                | 8                 |                  |               |
| 02 11        | 05--       | 02 11 23    | COLL  | 64.6N                | ..                    | ..    | ..            | ..            | M   | 02 11                                 | 4                | 5          | 73                | 470               | 1220              | 9                |               |
| 02 14        | 2347       | 02 16 20    | SITK  | 60.0N                | SC *                  | ---   | ---           | ---           | S   | 02 16                                 | 4,5              | 9          | 210               | 1860              | 1240              | 10               |               |
| 02 15        | 2348       | 02 18 14    | COLL  | 64.6N                | SC *                  | +40   | +97           | +49           | S   | 02 16                                 | 4,5              | 8          | 633               | 2640              | 1530              | 10               |               |
|              | 2348       | 02 16 23    | WITT  | 54.1N                | SC                    | - 6   | +90           | 0             | MS  | 02 16                                 | 4                | 7          | 55                | 265               | 95                | 10               |               |
|              | 2349       | 02 17 15    | FRED  | 49.6N                | SC *                  | + 2   | +79           | -10           | S   | 02 16                                 | 4                | 8          | 33                | 372               | 132               | 10               |               |
|              | 2348       | 02 16 21    | TUCS  | 40.4N                | SC                    | + 2   | +60           | + 4           | S   | 02 16                                 | 4                | 8          | 30                | 280               | 40                | 10               |               |
|              | 2349       | 02 17 05    | SJUA  | 29.9N                | SC                    | - 0.2 | +42           | +12           | MS  | 02 16                                 | 5                | 7          | 11                | 202               | 31                | 10               |               |
|              | 2348       | 02 17 18    | MBOR  | 21.3N                | SC                    | - 0.7 | +57           | - 4           | S   | 02 16                                 | 4                | 8          | 18                | 245               | 70                | 10               |               |
|              | 2348       | 02 16 21    | HONO  | 21.1N                | SC                    | +     | +33           | +14           | MS  | 02 16                                 | 4                | 7          | 10                | 189               | 58                | 10               |               |
|              | 2348       | 02 16 23    | ALIB  | 09.6N                | SC                    | - 0.2 | +35           | - 3           | S   | 02 16                                 | 4                | 9          | 7                 | 411               | 51                | 10               |               |
|              | 2349       | 02 17 18    | HYDE  | 07.6N                | SC                    | - 0.2 | +38           | - 2           | MS  | ---                                   | -                | -          | 7                 | 358               | 42                | 10               |               |
|              | 2348       | 02 16 22    | GUAM  | 04.0N                | SC *                  | +01   | +57           | -18           | S   | 02 16                                 | 4                | 8          | 2                 | 226               | 37                | 10               |               |
|              | 2348       | 02 16 23    | ANNA  | 01.5N                | SC                    | - 0.8 | +41           | +21           | S   | ---                                   | -                | -          | 7                 | 457               | 105               | 10               |               |
|              | 2348       | 02 16 23    | TVAN  | 01.1S                | SC                    | + 0.5 | +30           | +44           | S   | ---                                   | -                | -          | 4                 | 505               | ---               | 10               |               |
|              | 2348       | 02 17 12    | APIA  | 16.1S                | SC                    | + 1   | +46           | -10           | MS  | 02 16                                 | 4                | 7          | 9                 | 238               | 61                | 10               |               |
|              | 2348       | 02 17 18    | PMOR  | 18.6S                | ..                    | ..    | ..            | ..            | S   | 02 16                                 | 4                | 8          | 8                 | 283               | 137               | 10               |               |
|              | 2348       | 02 16 23    | HRMN  | 33.3S                | SC                    | + 4.0 | +36.4         | +31.9         | S   | 02 16                                 | 4                | 8          | 37                | 270               | 178               | 10               |               |
|              | 2349       | 02 16 16    | GNaN  | 43.2S                | SC *                  | + 3   | + 9           | +10           | S   | 02 16                                 | 4                | 8          | 36                | 298               | 257               | 10               |               |
|              | 2347       | 02 17 18    | TOOL  | 46.7S                | SC                    | + 2.3 | + 9           | ---           | S   | 02 16                                 | 4                | 8          | 33                | 364               | 77                | 10               |               |
|              | 2348       | ---         | ---   | KGLN                 | 57.3S                 | SC    | ---           | ---           | ---                                       | ---                                   | ---              | ---        | ---               | ---               | ---               | ---              | 10            |
| 02 16        | 0831       | 02 17 18    | KGLN  | 57.3S                | SC                    | ---   | ---           | ---           | S   | 02 16                                 | 4                | 8          | ---               | ---               | ---               | 10               |               |
| 02 22        | 2300       | 02 23 22    | HYDE  | 07.6N                | ..                    | ..    | ..            | ..            | M   | ---                                   | -                | -          | 2                 | 158               | 12                | 11               |               |
| 02 23        | 09--       | 02 24 03    | COLL  | 64.6N                | ..                    | ..    | ..            | ..            | MS  | 02 23                                 | 5,6,7            | 6          | 240               | 1240              | 640               | 11               |               |
|              | 09--       | 02 23 21    | HRMN  | 33.3S                | ..                    | ..    | ..            | ..            | M   | 02 23                                 | 5,6,7            | 5          | 12                | 104               | 103               | 11               |               |



# RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

FEBRUARY 1967

NORTH ATLANTIC, NORTH PACIFIC

| FEB.<br>1967 | WHOLE DAY INDICES |               |                       | ADVANCE FORECASTS (JC-REPORTS) FOR WHOLE DAY | NORTH ATLANTIC           |                |                |                | NORTH PACIFIC   |                    |                   |                   | GEOMAGNETIC INDICES |    |                 |    |                 |           |                 |              |     |     |     |
|--------------|-------------------|---------------|-----------------------|--|--------------------------|----------------|----------------|----------------|---|--------------------|-------------------|-------------------|---------------------|----|-----------------|----|-----------------|-----------|-----------------|--------------|-----|-----|-----|
|              | NORTH ATLANTIC    | NORTH PACIFIC | AVERAGE HIGH LATITUDE |  | 6-HOURLY QUALITY FIGURES |                |                |                | SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF: |                    |                   |                   | K <sub>FR</sub>     |    | A <sub>FR</sub> |    | K <sub>SI</sub> |           | A <sub>SI</sub> |              |     |     |     |
|              |                   |               |                       |  | 00 TO 06                 | 06 TO 12       | 12 TO 18       | 18 TO 24       | 00  | 06                 | 12                | 18                | 00                  | 06 | 12              | 18 | HALF DAY (1)    | OB-SERVED | PRE-DICTED      | HALF DAY (1) | (2) |     |     |
|              |                   |               |                       |  | 06                       | 12             | 18             | 24             | 00  | 06                 | 12                | 18                | 00                  | 06 | 12              | 18 | (2)             |           |                 | (2)          |     |     |     |
| 01           | 6+                | 6             | 6                     | 7  | 6 <sub>o</sub>           | 6+             | 7-             | 7-             | 6   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 2               | 0         | 3               | 3            | 2   | 0   | 3   |
| 02           | 7-                | 6             | 6                     | 6  | 7-                       | 7-             | 7-             | 7-             | 6   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 0               | 1         | 2               | 4            | 0   | 0   | 1   |
| 03           | 6+                | 6             | 6                     | 6  | 6+                       | 6-             | 7-             | 7 <sub>o</sub> | 6   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 0               | 1         | 2               | 4            | 0   | 0   | 1   |
| 04           | 7-                | 6             | 6                     | 6  | 7-                       | 6 <sub>o</sub> | 7-             | 7-             | 6   | 6                  | 7                 | 6                 | 6                   | 6  | 6               | 6  | 2               | 3         | 12              | 12           | 2   | 3   | 12  |
| 05           | 7-                | 6             | 6                     | 6  | 6+                       | 6+             | 7 <sub>o</sub> | 7 <sub>o</sub> | 6   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 3               | 2         | 12              | 10           | 2   | 2   | 9   |
| 06           | 7-                | 6             | 6                     | 6  | 7-                       | 6+             | 7-             | 7-             | 6   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 2               | 2         | 7               | 7            | 2   | 2   | 6   |
| 07           | 6+                | 6             | 6                     | 6  | 7-                       | 6+             | 7-             | 6-             | 6   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 2               | (4)       | 17              | 5            | 0   | (4) | 19  |
| 08           | 6-                | 5             | 5                     | 6  | 5-                       | 5-             | 6+             | 7-             | 5   | 4                  | 7                 | 6                 | 6                   | 6  | 5               | 5  | (4)             | (4)       | 28              | 5            | (5) | (4) | 52  |
| 09           | 6+                | 6             | 6                     | 6  | 7-                       | 6-             | 7-             | 7 <sub>o</sub> | 5   | 5                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 2               | 1         | 5               | 12           | 2   | 0   | 4   |
| 10           | 7-                | 6             | 6                     | 6  | 7-                       | 6+             | 7-             | 7 <sub>o</sub> | 6   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 1               | 0         | 1               | 7            | 0   | 0   | 1   |
| 11           | 7-                | 6             | 6                     | 6  | 7-                       | 6 <sub>o</sub> | 7-             | 7 <sub>o</sub> | 7   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 5  | 3               | 2         | 11              | 5            | 2   | 1   | 8   |
| 12           | 6+                | 6             | 6                     | 6  | 6 <sub>o</sub>           | 6+             | 7-             | 7-             | 6   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 1               | 1         | 3               | 5            | 0   | 0   | 0   |
| 13           | 7-                | 6             | 6                     | 7  | 6+                       | 6+             | 7-             | 7-             | 7   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 0               | 1         | 1               | 3            | 0   | 1   | 2   |
| 14           | 7-                | 6             | 6                     | 6  | 7-                       | 6+             | 7-             | 7-             | 7   | 6                  | 7                 | 6                 | 6                   | 6  | 6               | 6  | 1               | 1         | 3               | 18           | 0   | 0   | 2   |
| 15           | 7-                | 6             | 6                     | 4  | 7-                       | 6+             | 7-             | 7-             | 5   | 4                  | 7                 | 6                 | 6                   | 6  | 6               | 6  | 1               | 1         | 7               | 45           | 0   | 1   | 4   |
| 16           | 6 <sub>o</sub>    | 5             | 6                     | 6  | 6+                       | 6-             | 6-             | 7-             | 6   | 3                  | 5                 | 6                 | 6                   | 5  | 5               | 5  | (5)             | (4)       | 63              | 7            | (4) | (6) | 122 |
| 17           | 6+                | 6             | 6                     | 6  | 6-                       | 6-             | 7-             | 7-             | 5   | 4                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 3               | 2         | 12              | 11           | 3   | 2   | 14  |
| 18           | 6+                | 6             | 6                     | 6  | 6+                       | 6+             | 6+             | 7-             | 6   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 2               | 1         | 3               | 7            | 2   | 1   | 5   |
| 19           | 7-                | 6             | 6                     | 7  | 6+                       | 6+             | 7-             | 7-             | 6   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 1               | 2         | 5               | 5            | 0   | 1   | 3   |
| 20           | 7-                | 6             | 6                     | 7  | 7-                       | 6+             | 7-             | 7 <sub>o</sub> | 6   | 6                  | 7                 | 7                 | 5                   | 6  | 6               | 6  | 1               | 1         | 3               | 3            | 1   | 0   | 2   |
| 21           | 7-                | 6             | 6                     | 7  | 7-                       | 6+             | 7-             | 7 <sub>o</sub> | 7   | 6                  | 7                 | 7                 | 5                   | 7  | 6               | 6  | 1               | 2         | 5               | 3            | 0   | 2   | 5   |
| 22           | 7-                | 6             | 6                     | 7  | 6+                       | 6+             | 7-             | 7-             | 7   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 1               | 2         | 6               | 3            | 2   | 2   | 8   |
| 23           | 7-                | 6             | 6                     | 7  | 6+                       | 6+             | 7 <sub>o</sub> | 7-             | 7   | 6                  | 7                 | 7                 | 6                   | 6  | 7               | 6  | 2               | 2         | 8               | 7            | 2   | 3   | 14  |
| 24           | 7-                | 6             | 6                     | 6  | 6+                       | 6+             | 7-             | 7 <sub>o</sub> | 6   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 1               | 1         | 3               | 10           | 1   | 1   | 3   |
| 25           | 7-                | 6             | 6                     | 6  | 7-                       | 6+             | 7 <sub>o</sub> | 7-             | 7   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 2               | 2         | 10              | 6            | 2   | 2   | 11  |
| 26           | 7-                | 6             | 6                     | 6  | 6+                       | 6+             | 7-             | 7-             | 7   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 2               | 2         | 7               | 3            | 2   | 2   | 7   |
| 27           | 7-                | 6             | 6                     | 7  | 7-                       | 6+             | 7-             | 7-             | 7   | 6                  | 7                 | 7                 | 6                   | 6  | 6               | 6  | 1               | 1         | 4               | 3            | 1   | 1   | 3   |
| 28           | 7-                | 6             | 6                     | 7  | 7-                       | 6+             | 7-             | 7 <sub>o</sub> | 7   | 6                  | 7                 | 6                 | 6                   | 6  | 6               | 6  | 1               | 1         | 3               | 3            | 0   | 0   | 1   |
| QUIET        |                   |               |                       | P<br>S<br>U<br>F                             | 17<br>10<br>0<br>1       |                |                |                |   | 15<br>11<br>2<br>0 | 22<br>3<br>0<br>0 | 25<br>3<br>0<br>0 | 21<br>7<br>0<br>0   |    |                 |    |                 |           |                 |              |     |     |     |
| DISTURBED    |                   |               |                       | P<br>S<br>U<br>F                             | 0<br>0<br>0<br>0         |                |                |                |   | 0<br>0<br>0<br>0   | 0<br>0<br>0<br>0  | 0<br>0<br>0<br>0  | 0<br>0<br>0<br>0    |    |                 |    |                 |           |                 |              |     |     |     |

1) THE ADVANCE JC-FORECASTS ARE SCORED AGAINST THE AVERAGE HIGH LATITUDE WHOLE-DAY INDICES.

2) THE PREDICTED AFR INDICES ARE ISSUED EACH WEDNESDAY FOR THE COMING SEVEN DAYS. THE VALUE FOR THE FIRST DAY OF EACH PREDICTION PERIOD IS UNDERScoreD.

SPECIAL NOTE:

A Special Disturbance Warning (SDW) issued February 13 for the period February 14, 15 and 16 is included in the chart above. The quality figures originally forecast for the three days were 7, 7 and 5 respectively, and the magnetic indices originally forecast were 3, 6 and 15.

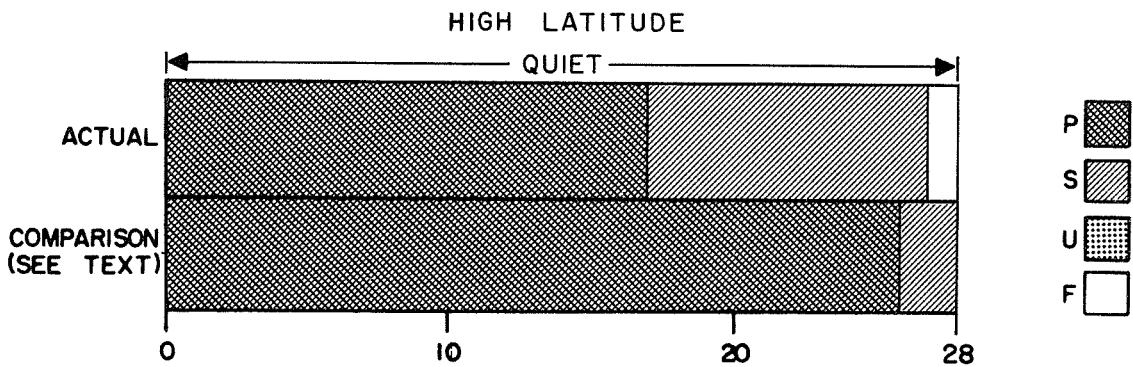
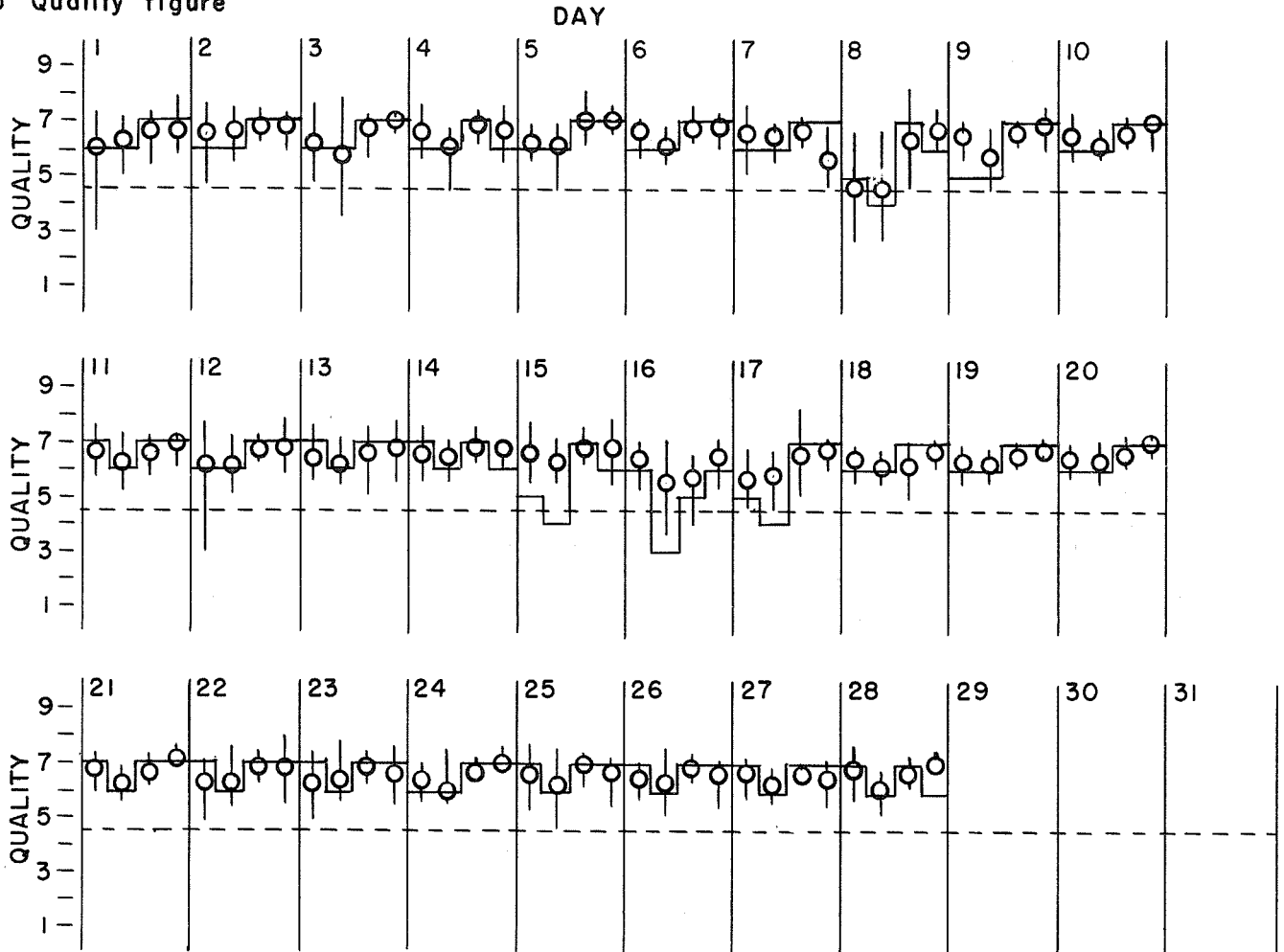
# RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

FEBRUARY 1967

NORTH ATLANTIC

— Short-term forecast  
o Quality figure

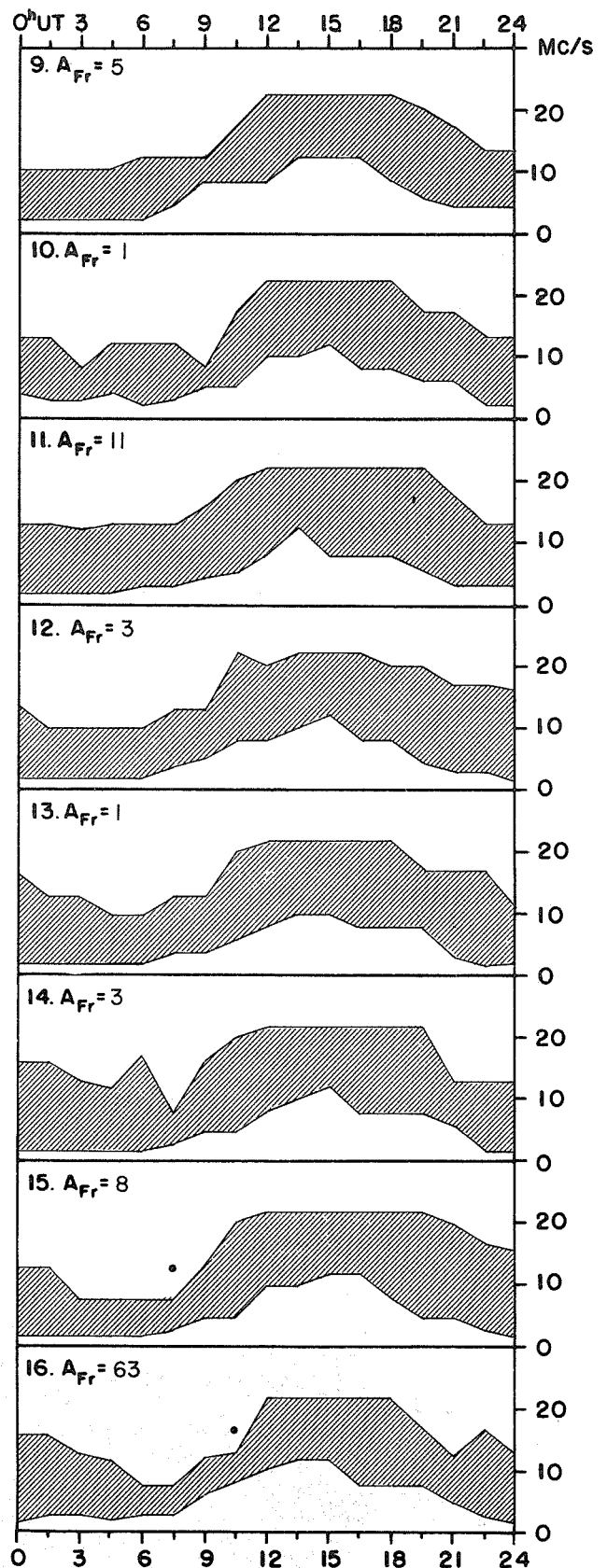
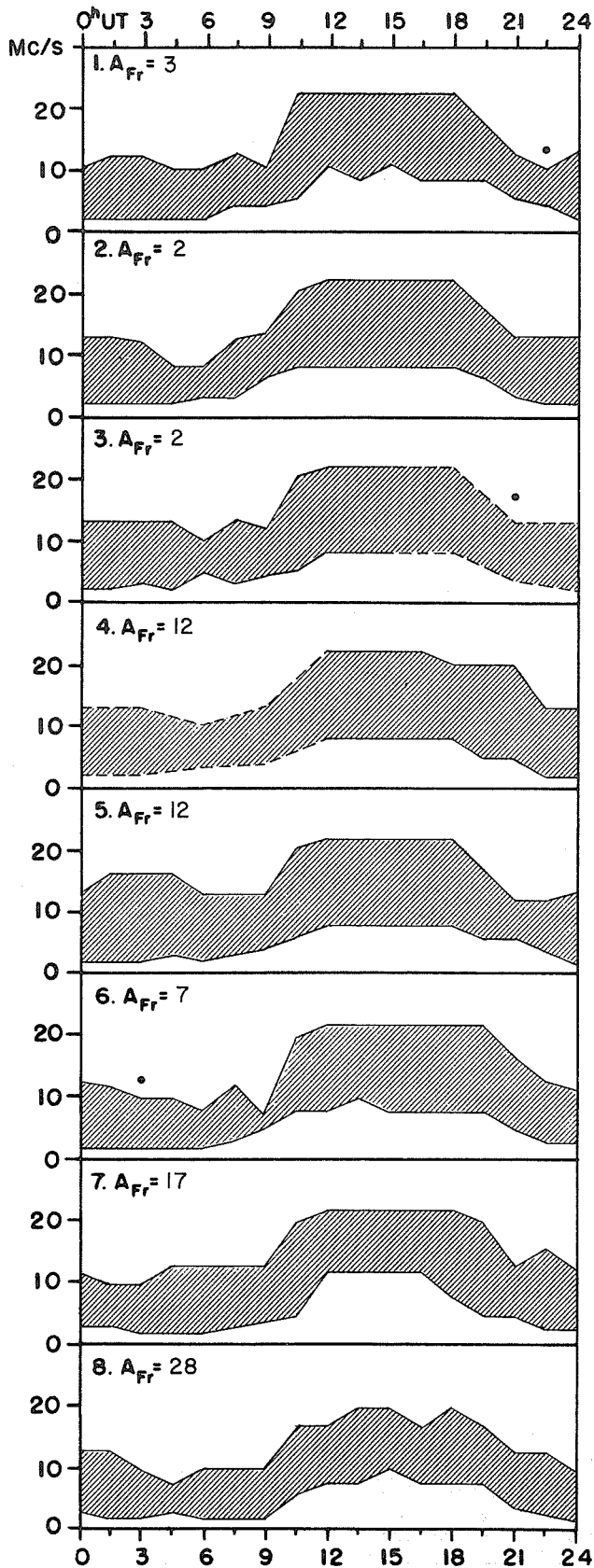
| Range of reports





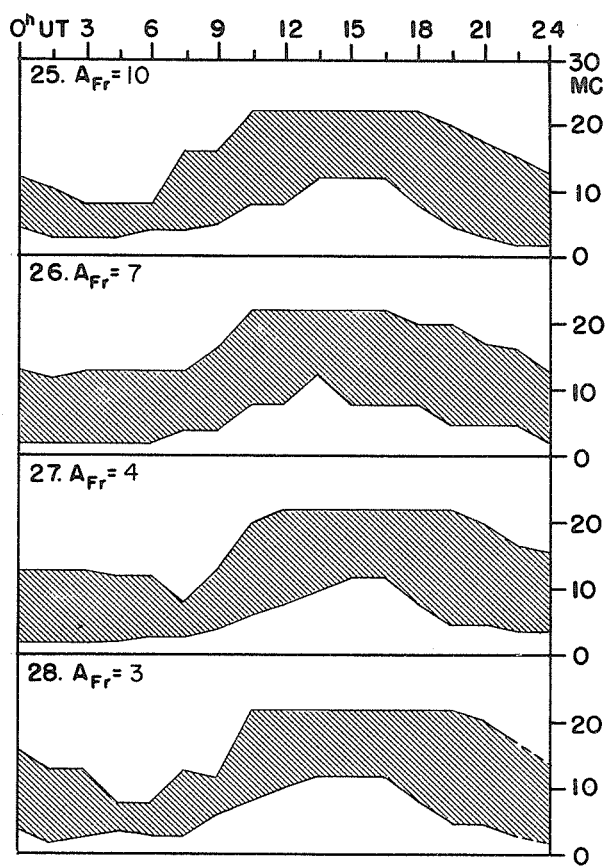
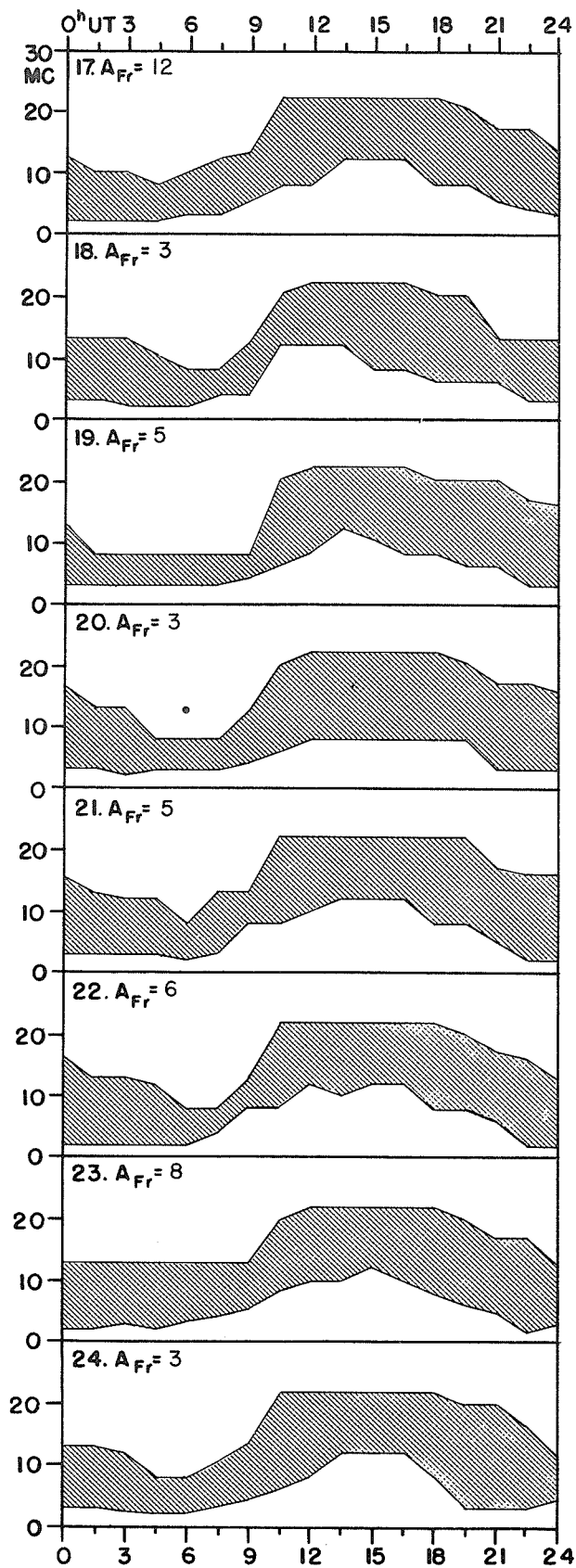
# TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH

FEBRUARY 1967



# TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH

FEBRUARY 1967



Adapted from Observations by Deutsches Bundespost

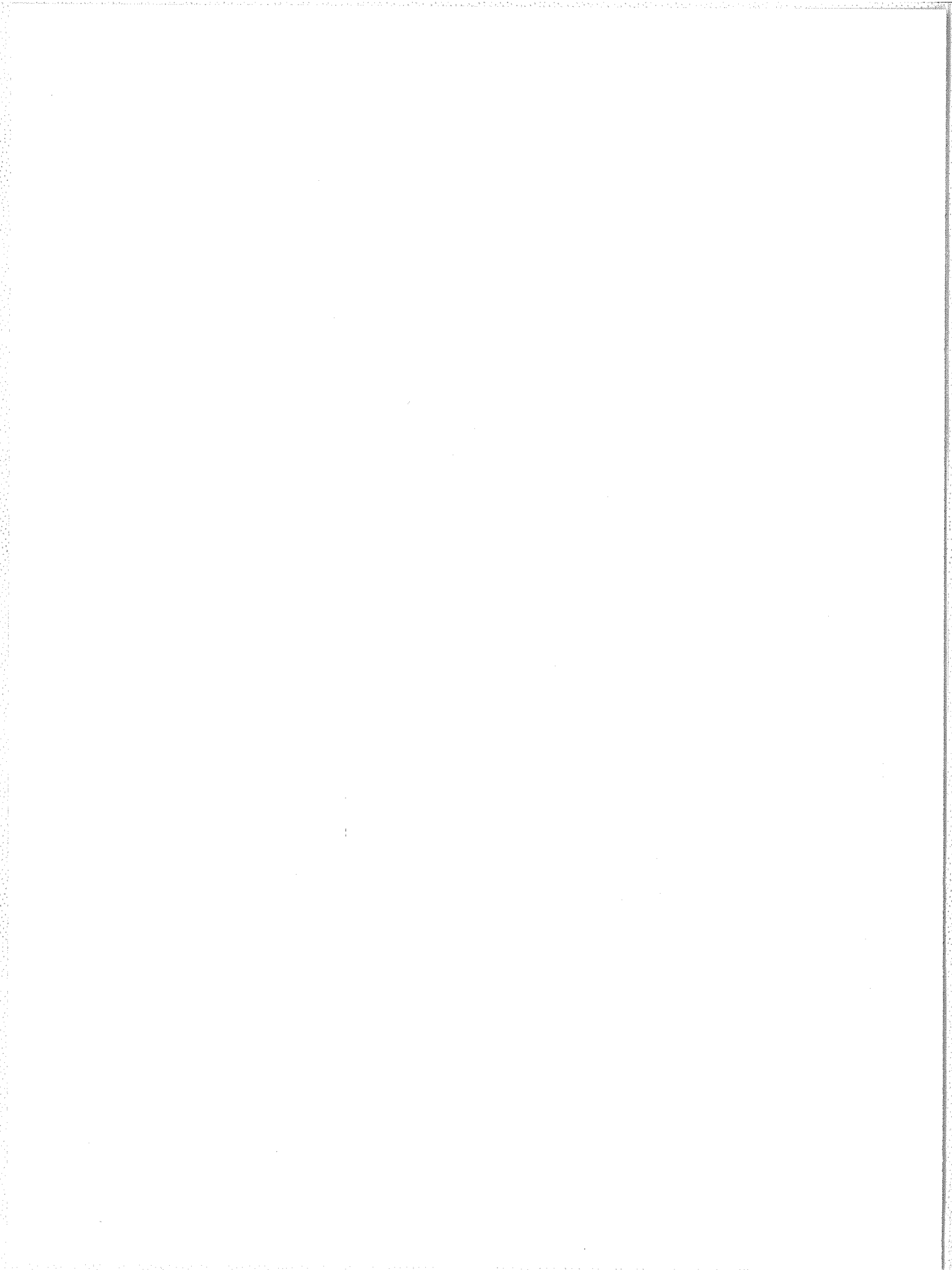
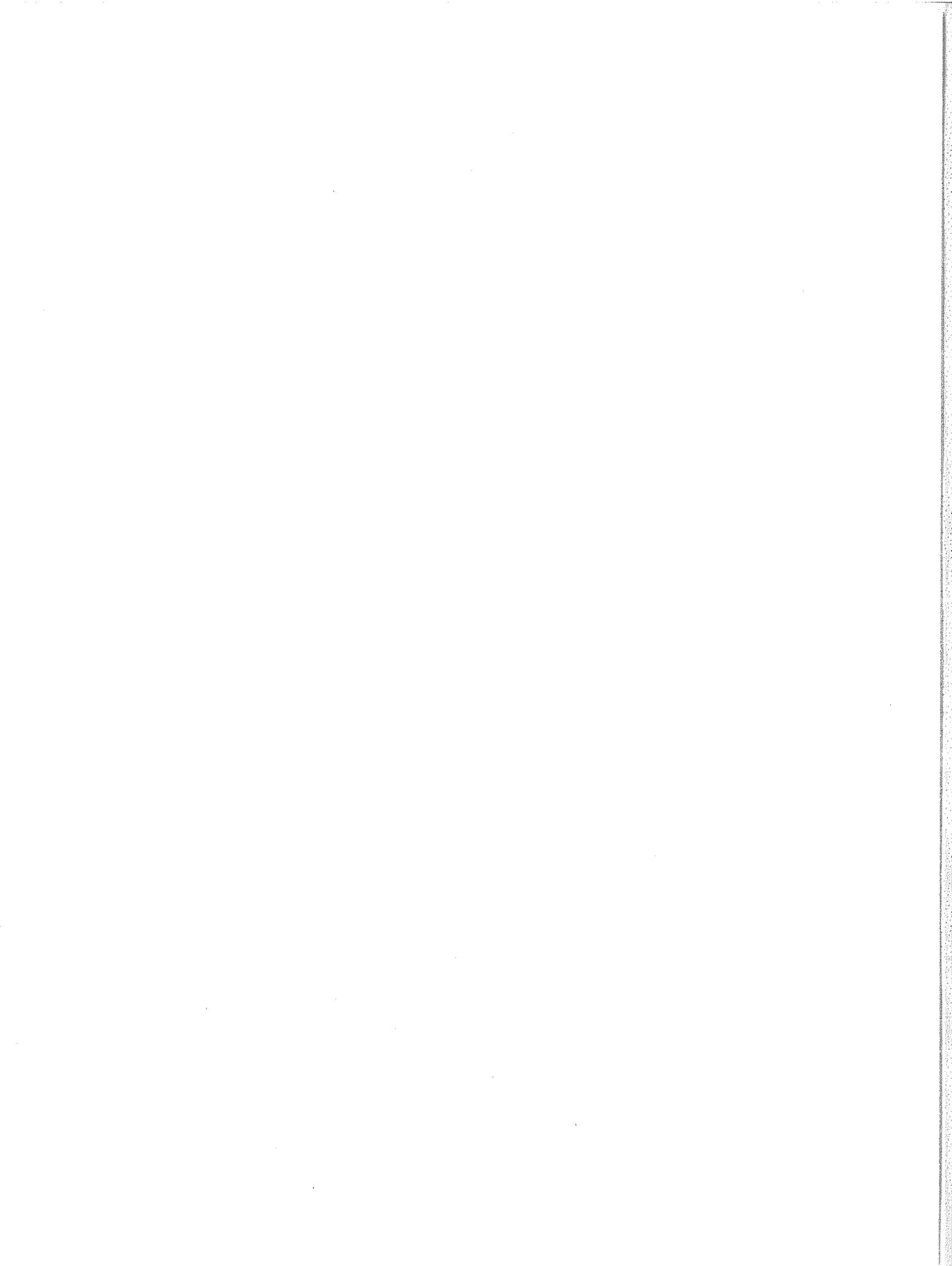


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For explanations of the data contained herein see "Descriptive Text" published in February 1967.



# SOLAR FLARES

REVISED  
OCTOBER 1966

| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION     |            |                  |                     |         | DURATION MIN. | IMPOR-TANCE | OBS. COND. TYPE | MEASUREMENTS |                     |                     |               |             | REMARKS |       |       |   |
|-------------|-------------|-------|-------|------------|--------------|------------|------------------|---------------------|---------|---------------|-------------|-----------------|--------------|---------------------|---------------------|---------------|-------------|---------|-------|-------|---|
|             | DATE        | START | END   | MAX. PHASE | APPROX. LAT. | MER. DIST. | CENTRAL DISTANCE | MCMATH PLAGE REGION | CMP DAY |               |             |                 | TIME UT      | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH Ha | MAX. INT. % |         |       |       |   |
| GRP 950     | 01          | 0148  | 0224  | 0154       | N32          | W50        | .797             | 8516                | 27.3    | 36            | 1-          |                 |              |                     |                     |               |             |         | 1 1 1 |       |   |
| CULG        | 01          | 0148  | 0224  | 0154       | N32          | W50        | .797             | 8516                | 27.3    | 36            | -N          |                 |              |                     |                     |               |             |         | FL    |       |   |
| GRP 951     | 01          | 0213  | 0325  | 0236       | N28          | W62        | .884             | 8516                | 26.4    | 72            | 2           |                 |              |                     |                     |               |             |         | 4 3 3 |       |   |
| CULG        | 01          | 0208  | 0327D | 0230       | N30          | W62        | .887             | 8516                | 26.4    | 79D           | 2B          | P               | 0230         | 5.16                | 10.00               |               |             |         | LFU   |       |   |
| VORO        | 01          | 0219  | 0310  | 0237       | N26          | W60        | .867             | 8516                | 26.6    | 51            | 2F          | P               | 0237         | 4.95                | 9.95                |               |             | 61      | EK    |       |   |
| SIBE        | 01          | 0238E | 0330D | 0241       | N27          | W61        | .876             | 8516                | 26.5    | 52D           | 2N          | C               | 0241         | 3.04                | 5.20                |               |             | 95      | C     |       |   |
| MITK        | 01          | 0252E | 0333  |            | N27          | W62        | .883             | 8516                | 26.5    | 41D           | -N          | C               | 0255         | .93                 | 2.00                |               |             | 160     |       |       |   |
| GRP 952     | 01          | 0255  | 0322  | 0301       | S17          | W11        | .440             | 8529                | 30.3    | 27            | 1-          |                 |              |                     |                     |               |             |         | 1 1 1 |       |   |
| MITK        | 01          | 0255  | 0322  | 0301       | S17          | W11        | .440             | 8529                | 30.3    | 27            | -N          | C               | 0301         | .72                 | .80                 |               |             | 150     | E     |       |   |
| GRP 953     | 01          | 0439  | 0458  |            | S17          | W12        | .447             | 8529                | 30.3    | 19            | 1-          |                 |              |                     |                     |               |             |         | 1 1 1 |       |   |
| MITK        | 01          | 0439E | 0458  |            | S17          | W12        | .447             | 8529                | 30.3    | 19D           | -N          | C               | 0439         | .83                 | .90                 |               |             | 160     | E     |       |   |
| GRP 954     | 01          | 0558  | 0711  | 0644       | S17          | W14        | .461             | 8529                | 30.2    | 73            | 1-          |                 |              |                     |                     |               |             |         | 2 1 1 |       |   |
| ABST        | 01          | 0510E | 0711D | 0644       | S17          | W14        | .461             | 8529                | 30.2    | 121D          | -F          | C               | 0644         | .90                 | 1.01                |               |             | 65      | DJK   |       |   |
| CAPS        | 01          | 0645  | 0651D |            | S16          | W13        | .440             | 8529                | 30.3    | 6D            | -N          |                 | 0649         | .40                 | .40                 |               |             | 160     | E     |       |   |
| GRP 955     | 01          | 0720  | 0735  |            | S15          | W15        | .444             | 8529                | 30.2    | 15            | 1-          |                 |              |                     |                     |               |             |         | 1 1 0 |       |   |
| ISTA        | 01          | 0720E | 0735  |            | S15          | W15        | .444             | 8529                | 30.2    | 15D           | -F          |                 |              |                     |                     |               |             |         |       |       |   |
| GRP 956     | 01          | 0742  | 0801  | 0751       | S16          | W14        | .448             | 8529                | 30.3    | 19            | 1-          |                 |              |                     | .58                 |               |             |         | 5 5 4 |       |   |
| ISTA        | 01          | 0742  | 0800  |            | S16          | W14        | .448             | 8529                | 30.3    | 18            | 1N          |                 |              |                     |                     |               |             |         |       |       |   |
| CAPS        | 01          | 0747E | 0801D |            | S16          | W13        | .440             | 8529                | 30.3    | 14D           | -N          |                 | 0749         | .30                 | .30                 |               |             | 175     |       |       |   |
| KAND        | 01          | 0750E | 0800  |            | S17          | W14        | .461             | 8529                | 30.3    | 10D           | -N          | 3               | 0750         | 1.27                | 1.30                |               |             |         | C     |       |   |
| CATA        | 01          | 0750E | 0800D | 0752       | S17          | W12        | .447             | 8529                | 30.4    | 10D           | -B          |                 | 0752         | .27                 | .30                 |               |             | 221     |       |       |   |
| ATHN        | 01          | 0750E | 0802  | 0750       | S16          | W15        | .456             | 8529                | 30.2    | 12D           | -B          | 2               | 0750         | .79                 | .90                 |               |             | 1.60    |       |       |   |
| GRP 957     | 01          | 0816  | 0843  |            | S16          | W15        | .456             | 8529                | 30.2    | 27            | 1-          |                 |              |                     |                     |               |             |         | 2 2 0 |       |   |
| ISTA        | 01          | 0810  | 0855  |            | S15          | W13        | .427             | 8529                | 30.4    | 45            | -F          |                 |              |                     |                     |               |             |         |       |       |   |
| KAND        | 01          | 0821  | 0830  |            | S16          | W16        | .465             | 8529                | 30.1    | 9             | -N          |                 |              |                     |                     |               |             |         | C     |       |   |
| GRP 958     | 01          | 0958  | 1005  |            | S13          | W43        | .732             | 8522                | 28.2    | 7             | 1-          |                 |              |                     | .60                 |               |             |         | 1 1 1 |       |   |
| MONT        | 01          | 0958  | 1005D |            | S13          | W43        | .732             | 8522                | 28.2    | 7D            | -N          |                 |              |                     | .59                 | .72           |             |         |       |       |   |
| GRP 959     | 01          | 1010  | 1021  | 1012       | S16          | W16        | .465             | 8529                | 30.2    | 11            | 1-          |                 |              |                     | .17                 |               |             |         | 1 1 1 |       |   |
| ATHN        | 01          | 1010  | 1021  | 1012       | S16          | W16        | .465             | 8529                | 30.2    | 11            | -N          | 2               |              | 1012                | .17                 | .20           |             |         | 1.50  |       |   |
| GRP 960     | 01          | 1133  | 1144  | 1135       | S17          | W19        | .504             | 8529                | 30.1    | 11            | 1-          |                 |              |                     | .28                 |               |             |         | 2 2 2 |       |   |
| HUAN        | 01          | 1133  | 1144  | 1135       | S17          | W18        | .495             | 8529                | 30.1    | 11            | -F          | 2               | C            | 1135                | .25                 | .25           |             |         |       | D     |   |
| ATHN        | 01          | 1133  | 1144  | 1135       | S16          | W19        | .492             | 8529                | 30.1    | 11            | -N          | 2               |              | 1135                | .33                 | .40           |             |         | 1.60  |       |   |
| GRP 961     | 01          | 1230  | 1236  | 1232       | S17          | W17        | .486             | 8529                | 30.2    | 6             | 1-          |                 |              |                     | .20                 |               |             |         | 2 2 2 |       |   |
| HUAN        | 01          | 1230  | 1236  | 1232       | S17          | W16        | .477             | 8529                | 30.3    | 6             | -F          | 2               | C            | 1232                | .25                 | .25           |             |         |       | D     |   |
| ATHN        | 01          | 1232E | 1236  | 1232       | S16          | W17        | .474             | 8529                | 30.2    | 4D            | -N          | 2               |              | 1232                | .17                 | .20           |             |         | 1.50  |       |   |
| GRP 962     | 01          | 1326  | 1333  | 1327       | S17          | W19        | .504             | 8529                | 30.1    | 7             | 1-          |                 |              |                     | .55                 |               |             |         | 3 3 3 |       |   |
| MCMA        | 01          | 1325  | 1332  | 1327       | S18          | W20        | .525             | 8529                | 30.1    | 7             | -B          |                 |              | C                   | 1327                | .52           | .60         |         |       |       | D |
| HUAN        | 01          | 1325  | 1332  | 1326       | S17          | W19        | .504             | 8529                | 30.1    | 7             | -N          | 2               | C            | 1326                | .46                 | .48           |             |         |       | D     |   |
| CAPS        | 01          | 1327  | 1335D |            | S16          | W18        | .483             | 8529                | 30.2    | 8D            | -B          | 3               |              | 1335                | .50                 | .60           |             |         | 201   | E     |   |
| GRP 963     | 01          | 1546  | 1553  | 1547       | N22          | W62        | .879             | 8516                | 27.0    | 7             | 1-          |                 |              |                     | .40                 |               |             |         | 2 2 2 |       |   |
| MCMA        | 01          | 1545  | 1553  | 1547       | N22          | W62        | .879             | 8516                | 27.0    | 8             | -N          |                 |              | C                   | 1547                | .41           | .80         |         |       |       | D |
| HUAN        | 01          | 1546  | 1551D |            | N22          | W61        | .872             | 8516                | 27.1    | 5D            | -F          | 1               | P            | 1550                | .21                 |               |             |         |       | D     |   |
| GRP 964     | 01          | 1555  | 1645  | 1619       | S17          | W20        | .513             | 8529                | 30.2    | 50            | 1-          |                 |              |                     | 1.16                |               |             |         | 4 3 3 |       |   |
| MCMA        | 01          | 1550  | 1643  | 1617       | S18          | W20        | .525             | 8529                | 30.2    | 53            | -N          |                 |              |                     | .52                 | .60           |             |         |       |       |   |
| LOCK        | 01          | 1600  | 1700  | 1620       | S16          | W20        | .502             | 8529                | 30.2    | 60            | -N          |                 |              | C                   | 1620                | .80           | 1.00        |         |       | 20    | K |
| SACP        | 01          | 1602E | 1633  | 1628       | S17          | W19        | .504             | 8529                | 30.2    | 31D           | 1N          |                 |              | P                   | 1620                | 2.13          | 2.21        |         |       |       |   |
| HUAN        | 01          | 1626E | 1632D |            | S17          | W20        | .513             | 8529                | 30.2    | 6D            | -N          | 1               |              | P                   | 1627                | .72           | .75         |         |       |       | E |
| GRP 965     | 01          | 1641  | 1700  | 1646       | N23          | W70        | .934             | 8516                | 26.4    | 19            | 1           |                 |              |                     | .99                 |               |             |         |       | 1 1 1 |   |
| LOCK        | 01          | 1641  | 1700  | 1646       | N23          | W70        | .934             | 8516                | 26.4    | 19            | 1F          |                 |              | C                   | 1646                | 1.00          | 2.30        |         |       | 10    | L |
| GRP 966     | 01          | 1647  | 1653  | 1649       | S18          | W21        | .534             | 8529                | 30.1    | 6             | 1-          |                 |              |                     | .61                 |               |             |         |       | 2 2 2 |   |
| MCMA        | 01          | 1646  | 1653  | 1648       | S18          | W20        | .525             | 8529                | 30.2    | 7             | -N          |                 |              | C                   | 1648                | .67           | .80         |         |       |       | E |
| HUAN        | 01          | 1647  | 1653  | 1650       | S17          | W21        | .523             | 8529                | 30.1    | 6             | -N          | 1               |              | C                   | 1650                | .31           | .32         |         |       |       | O |
| GRP 967     | 01          | 1736  | 1803  | 1739       | S17          | W20        | .513             | 8529                | 30.2    | 27            | 1           |                 |              |                     | 2.19                |               |             |         |       | 5 3 3 |   |
| LOCK        | 01          | 1734  | 1815  | 1740       | S16          | W19        | .492             | 8529                | 30.3    | 41            | 1B          |                 |              | C                   | 1740                | 1.80          | 2.20        |         |       | 30    |   |
| SACP        | 01          | 1736  | 1750  | 1740       | S17          | W19        | .504             | 8529                | 30.3    | 14            | 1N          |                 |              | C                   |                     | 3.40          | 3.53        |         |       |       |   |
| MCMA        | 01          | 1737  | 1742D | 1738       | S18          | W20        | .525             | 8529                | 30.2    | 5D            | -B          |                 |              | C                   | 1742                | 1.03          | 1.20        |         |       |       | E |
| HUAN        | 01          | 1740E | 1748D |            | S17          | W20        | .513             | 8529                | 30.2    | 8D            | -B          | 1               |              | P                   | 1741                | 1.60          | 1.66        |         |       |       |   |
| HALE        | 01          | 1755E | 1814D | 1755U      | S16          | W22        | .522             | 8529                | 30.1    | 19D           | -N          | 1               |              | P                   | 1755                | .26           | .30         |         |       |       |   |
| GRP 968     | 01          | 1743  | 1833  | 1801       | N24          | W72        | .945             | 8516                | 26.3    | 50            | 1-          |                 |              |                     | .58                 |               |             |         |       | 5 4 4 |   |
| LOCK        | 01          | 1735  | 1835  | 1800       | N25          | W71        | .939             | 8516                | 26.4    | 60            | 1N          |                 |              | C                   | 1800                | 1.00          | 2.40        |         |       | 20    | L |
| SACP        | 01          | 1751  | 1830  | 1800       | N24          | W72        | .945             | 8516                | 26.3    | 39            | -F          |                 |              | C                   |                     | .60           | 1.16        |         |       |       |   |
| MCMA        | 01          | 1754E | 1817D |            | N24          | W75        | .959             | 8516                | 26.1    | 23D           | -N          |                 |              | C                   | 1758                | .31           | .90         |         |       |       | D |
| HALE        | 01          | 1755E | 1814D | 1802       | N24          | W68        | .922             | 8516                | 26.6    | 19D           | -N          | 1               |              | P                   | 1802                | .26           |             |         |       |       |   |
| HUAN        | 01          | 1804E | 1807D |            | N24          | W73        | .950             | 8516                | 26.3    | 3D            | -F          | 1               |              | P                   | 1807                | .25           |             |         |       |       | D |
| GRP 969     | 01          | 1851  | 1917  | 1858       | S17          | W22        | .533             | 8529                | 30.1    | 26            | 1-          |                 |              |                     | .50                 |               |             |         |       | 1 1 1 |   |
| LOCK        | 01          | 1851  | 1917  | 1858       | S17          | W22        | .533             | 8529                | 30.1    | 26            | -N          |                 |              | C                   | 1858                | .50           | .60         |         |       | 20    |   |
| GRP 970     | 01          | 2023  | 2052  | 2034       | N23          | W64        | .895             | 8516                | 27.0    | 29            | 1-          |                 |              |                     | .93                 |               |             |         |       | 1 1 1 |   |
| LOCK        | 01          | 2023  | 2052  | 2034       | N23          | W64        | .895             | 8516                | 27.0    | 29            | -N          |                 |              | C                   | 2034                | .90           | 1.80        |         |       | 10    |   |
| GRP 971     | 01          | 2044  | 2056  | 2046       | S17          | W23        | .543             | 8529                | 30.1    | 12            | 1-          |                 |              |                     | .90                 |               |             |         |       | 4 3 3 |   |
| LOCK        | 01          | 2043  | 2108  | 2046       | S16          | W24        | .543             | 8529                | 30.1    | 25            | -B          |                 |              | C                   | 2046                | .90           | 1.10        |         |       | 30    | J |
| HALE        | 01          | 2045  | 2052  | 2046       | S15          | W24        |                  |                     |         |               |             |                 |              |                     |                     |               |             |         |       |       |   |

**SOLAR FLARES**  
REVISED  
OCTOBER 1966

| OBSERVATORY | OBSERVED UT |       |       | LOCATION        |              |            |                  |                     | DURATION<br>MIN. | IM-<br>POR-<br>TANCE | OBS.<br>COND. TYPE | MEASUREMENTS |         |                     |                     | REMARKS |               |             |
|-------------|-------------|-------|-------|-----------------|--------------|------------|------------------|---------------------|------------------|----------------------|--------------------|--------------|---------|---------------------|---------------------|---------|---------------|-------------|
|             | DATE        | START | END   | MAX. PHASE      | APPROX. LAT. | MER. DIST. | CENTRAL DISTANCE | MCMATH PLAGE REGION |                  |                      |                    | CMP DAY      | TIME UT | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. |         | MAX. WIDTH Hg | MAX. INT. % |
|             | 1966        |       |       |                 |              |            |                  |                     |                  |                      |                    |              |         |                     |                     |         |               |             |
|             | OCT         |       |       |                 |              |            |                  |                     |                  |                      |                    |              |         |                     |                     |         |               |             |
| GRP 972     | 01          | 2352  | 0000  | 2354            | S15          | W25        | .544             | 8529                | 30.1             | 8                    | 1-                 |              |         |                     |                     |         | 2 2 2         |             |
| SACP        | 01          | 2352  | 2354D | 2354D           | S16          | W25        | .553             | 8529                | 30.1             | 2D                   | -N                 | P            |         | .57                 |                     |         |               |             |
| HALE        | 01          | 2352  | 0000  | 2354            | S14          | W24        | .524             | 8529                | 30.2             | 8                    | -N                 | 1 C          | 2354    | .86                 | .90                 |         | T             |             |
| GRP 973     | 02          | 0014  | 0017  | 0017            | S22          | E44        | .786             | 8528                | 5.3              | 3                    | 1-                 |              |         | .31                 | .40                 |         | 1 1 1         |             |
| HALE        | 02          | 0014U | 0017U | 0017U           | S22          | E44        | .786             | 8528                | 5.3              | 3U                   | -N                 | 1 P          | 0017    | .37                 |                     |         | TE            |             |
| GRP 974     | 02          | 0105  | 0124  | 0110            | S17          | W49        | .808             | 8522                | 28.4             | 19                   | 1-                 |              |         | .31                 | .50                 |         | 1 1 1         |             |
| MANI        | 02          | 0105  | 0124  | 0110            | S17          | W49        | .808             | 8522                | 28.4             | 19                   | -N                 | 3            | 0110    | .54                 |                     |         |               |             |
|             | 02          | 0215  | 0300  | NO FLARE PATROL |              |            |                  |                     |                  |                      |                    |              |         |                     | .62                 | 1.14    |               |             |
| GRP 975     | 02          | 0558  | 0613  | 0603            | S16          | W27        | .574             | 8529                | 30.2             | 15                   | 1-                 |              |         | 1.48                |                     |         | 3 3 3         |             |
| ABST        | 02          | 0557E | 0610D | 0605            | S15          | W30        | .599             | 8529                | 30.0             | 13D                  | -N                 | C            | 0605    | 1.34                | 1.60                |         | 71 D          |             |
| ATHN        | 02          | 0559  | 0611  | 0600            | S17          | W24        | .552             | 8529                | 30.4             | 12                   | -B                 | 2            | 0600    | 1.71                | 2.00                | 1.90    |               |             |
| SIBE        | 02          | 0559  | 0615D | 0604            | S16          | W28        | .585             | 8529                | 30.1             | 16D                  | 1F                 | C            | 0604    | 1.90                | 2.50                |         | 54 E          |             |
| GRP 976     | 02          | 0800  | 0815  | 0802            | S18          | W51        | .829             | 8522                | 28.5             | 15                   | 1-                 |              |         | 1.04                |                     |         | 1 1 1         |             |
| ATHN        | 02          | 0800  | 0815  | 0802            | S18          | W51        | .829             | 8522                | 28.5             | 15                   | -N                 | 2            | 0802    | 1.02                | 1.80                | 1.40    |               |             |
| GRP 977     | 02          | 0835  | 0857  |                 | S15          | W28        | .577             | 8529                | 30.3             | 22                   | 1-                 |              |         | .62                 |                     |         | 1 1 1         |             |
| BUCA        | 02          | 0835E | 0857D |                 | S15          | W28        | .577             | 8529                | 30.3             | 22D                  | -F                 | C            | 0845    | .89                 | 1.10                |         | E             |             |
| GRP 978     | 02          | 0851  | 0945  | 0854            | N22          | W83        | .988             | 8516                | 26.1             | 54                   | 1-                 |              |         | .62                 |                     |         | 2 1 1         |             |
| BUCA        | 02          | 0851E | 0913D | 0854            | N23          | W75        | .959             | 8516                | 26.7             | 22D                  | 1F                 | C            | 0854    | .89                 |                     |         |               |             |
| ISTA        | 02          | 0900E | 0945  |                 | N20          | W90        | .999             | 8516                | 25.6             | 45D                  | 1N                 |              |         |                     |                     |         |               |             |
| GRP 979     | 02          | 0900  | 0955  |                 | N25          | E90        | .999             | 8530                | 9.1              | 55                   | 1-                 |              |         |                     |                     |         | 1 1 0         |             |
| ISTA        | 02          | 0900E | 0955  |                 | N25          | E90        | .999             | 8530                | 9.1              | 55D                  | 1N                 |              |         |                     |                     |         |               |             |
| GRP 980     | 02          | 0900  | 0950  |                 | N29          | W90        | .998             | 8516                | 25.6             | 50                   | 1+                 |              |         |                     |                     |         | 1 1 0         |             |
| ISTA        | 02          | 0900E | 0950  |                 | N29          | W90        | .998             | 8516                | 25.6             | 50D                  | 1B                 |              |         |                     |                     |         |               |             |
| GRP 981     | 02          | 1251  | 1305  | 1252            | S16          | W32        | .629             | 8529                | 30.1             | 14                   | 1-                 |              |         | .92                 |                     |         | 3 2 2         |             |
| ATHN        | 02          | 1250E | 1304  | 1250            | S18          | W32        | .644             | 8529                | 30.1             | 14D                  | -N                 | 2            | 1250    | 1.32                | 1.70                | 1.80    |               |             |
| HUAN        | 02          | 1251  | 1306  | 1253            | S16          | W32        | .629             | 8529                | 30.1             | 15                   | -N                 | 1 C          | 1253    | .46                 | .52                 |         | E             |             |
| ONDR        | 02          | 1254E | 1300D |                 | S13          | W33        | .619             | 8529                | 30.1             | 6D                   | -F                 | V            | 1255    |                     |                     | 1.60    | CD            |             |
| GRP 982     | 02          | 1506  | 1641  | 1608            | N24          | E80        | .979             | 8530                | 8.6              | 95                   | 1-                 |              |         | .54                 |                     |         | 1 1 1         |             |
| SACP        | 02          | 1506  | 1641  | 1608            | N24          | E80        | .979             | 8530                | 8.6              | 95                   | -F                 | C            |         | .60                 | 1.49                |         |               |             |
| GRP 983     | 02          | 1622  | 1633  | 1627            | S18          | W33        | .654             | 8529                | 30.2             | 11                   | 1-                 |              |         | .46                 |                     |         | 1 1 1         |             |
| SACP        | 02          | 1622  | 1633  | 1627            | S18          | W33        | .654             | 8529                | 30.2             | 11                   | -F                 | C            |         | .51                 | .57                 |         |               |             |
|             | 03          | 0015  | 0030  | NO FLARE PATROL |              |            |                  |                     |                  |                      |                    |              |         |                     |                     |         |               |             |
| GRP 984     | 03          | 0828  | 0830  |                 | N22          | W85        | .992             | 8522                | 27.0             | 2                    | 1                  |              |         | .48                 |                     |         | 1 1 1         |             |
| ARCE        | 03          | 0828E | 0830D |                 | N22          | W85        | .992             | 8522                | 27.0             | 2D                   | -N                 | P            | 0828    | .48                 |                     |         |               |             |
| GRP 985     | 03          | 1643  | 1705  | 1645            | N19          | E74        | .955             | 8530                | 9.2              | 22                   | 1-                 |              |         | .41                 |                     |         | 1 1 1         |             |
| MCMA        | 03          | 1643  | 1705  | 1645            | N19          | E74        | .955             | 8530                | 9.2              | 22                   | -N                 | C            | 1645    | .26                 | .30                 |         | DM            |             |
| GRP 986     | 03          | 2239  | 2257  | 2244            | S16          | W74        | .973             | 8522                | 28.4             | 18                   | 1-                 |              |         | .37                 |                     |         | 1 1 1         |             |
| MANI        | 03          | 2239  | 2257  | 2244            | S16          | W74        | .973             | 8522                | 28.4             | 18                   | -F                 | 2            | 2244    | .46                 | 1.10                |         |               |             |
| GRP 987     | 04          | 0005  | 0021  | 0009            | N24          | E72        | .945             | 8530                | 9.4              | 16                   | 1-                 |              |         | .47                 |                     |         | 1 1 1         |             |
| SACP        | 04          | 0005E | 0021D | 0009            | N24          | E72        | .945             | 8530                | 9.4              | 16D                  | -F                 | P            |         | .52                 | .98                 |         |               |             |
| GRP 988     | 04          | 0213  | 0218  | 0215            | N21          | E73        | .950             | 8530                | 9.6              | 5                    | 1-                 |              |         | .50                 |                     |         | 1 1 1         |             |
| MITK        | 04          | 0213  | 0218  | 0215            | N21          | E73        | .950             | 8530                | 9.6              | 5                    | 1N                 | C            | 0215    | .72                 |                     |         |               |             |
| GRP 989     | 04          | 0659  | 0709  | 0700            | S19          | W77        | .985             | 8522                | 28.5             | 10                   | 1-                 |              |         | .38                 |                     |         | 1 1 1         |             |
| ATHN        | 04          | 0659E | 0709D | 0700            | S19          | W77        | .985             | 8522                | 28.5             | 10D                  | -N                 | 2            | 0700    | .33                 |                     | 1.80    |               |             |
| GRP 990     | 04          | 0957  | 1000  |                 | N21          | E69        | .928             | 8530                | 9.6              | 3                    | 1-                 |              |         |                     |                     |         | 1 1 0         |             |
| ONDR        | 04          | 0957E | 1000D |                 | N21          | E69        | .928             | 8530                | 9.6              | 3D                   | -N                 | V            | 0959    |                     |                     | 2.50    | CD            |             |
| GRP 991     | 04          | 1050  | 1120  | 1100            | N23          | E69        | .928             | 8530                | 9.6              | 30                   | 1                  |              |         | 1.00                |                     |         | 3 3 1         |             |
| ONDR        | 04          | 1049E | 1134D |                 | N21          | E68        | .921             | 8530                | 9.6              | 45D                  | 1N                 | V            | 1055    |                     |                     | 2.40    | CH            |             |
| CAPS        | 04          | 1051  | 1103  |                 | N23          | E70        | .934             | 8530                | 9.7              | 12                   | 1N                 | 3            | 1055    | 1.00                |                     |         | 166           |             |
| KHAR        | 04          | 1059E | 1124D | 1100            | N24          | E70        | .934             | 8530                | 9.7              | 25D                  | 2F                 | V            | 1059    |                     |                     | 2.20    | DHKW          |             |
|             | 05          | 0125  | 0130  | NO FLARE PATROL |              |            |                  |                     |                  |                      |                    |              |         |                     |                     |         |               |             |
|             | 05          | 0140  | 0215  | NO FLARE PATROL |              |            |                  |                     |                  |                      |                    |              |         |                     |                     |         |               |             |
|             | 05          | 0230  | 0300  | NO FLARE PATROL |              |            |                  |                     |                  |                      |                    |              |         |                     |                     |         |               |             |
|             | 05          | 0330  | 0445  | NO FLARE PATROL |              |            |                  |                     |                  |                      |                    |              |         |                     |                     |         |               |             |
| GRP 992     | 05          | 0551  | 0559  | 0553            | N26          | E42        | .701             | 8530                | 8.4              | 8                    | 1-                 |              |         | .50                 |                     |         | 1 1 1         |             |
| ATHN        | 05          | 0551  | 0559  | 0553            | N26          | E42        | .701             | 8530                | 8.4              | 8                    | -N                 | 2            | 0553    | .50                 | .70                 | 1.60    |               |             |
| GRP 993     | 05          | 1115  | 1125  | 1115            | N20          | E50        | .769             | 8530                | 9.2              | 10                   | 1-                 |              |         | .70                 |                     |         | 1 1 1         |             |
| ATHN        | 05          | 1115E | 1125D | 1115            | N20          | E50        | .769             | 8530                | 9.2              | 10D                  | -N                 | 2            | 1115    | .69                 | 1.00                | 1.70    |               |             |
| GRP 994     | 05          | 1242  | 1253  | 1244            | N21          | E52        | .791             | 8530                | 9.4              | 11                   | 1-                 |              |         | .68                 |                     |         | 2 2 2         |             |
| ATHN        | 05          | 1241  | 1250  | 1243            | N20          | E49        | .759             | 8530                | 9.2              | 9                    | -N                 | 2            | 1243    | .75                 | 1.30                | 1.40    |               |             |
| MCMA        | 05          | 1243  | 1255  | 1245            | N22          | E54        | .812             | 8530                | 9.6              | 12                   | -N                 | C            | 1245    | .41                 | .70                 |         | E             |             |
|             | 05          | 1640  | 1645  | NO FLARE PATROL |              |            |                  |                     |                  |                      |                    |              |         |                     |                     |         |               |             |
|             | 05          | 1700  | 1710  | NO FLARE PATROL |              |            |                  |                     |                  |                      |                    |              |         |                     |                     |         |               |             |
|             | 05          | 1735  | 1745  | NO FLARE PATROL |              |            |                  |                     |                  |                      |                    |              |         |                     |                     |         |               |             |
|             | 05          | 1755  | 1830  | NO FLARE PATROL |              |            |                  |                     |                  |                      |                    |              |         |                     |                     |         |               |             |
| GRP 995     | 05          | 1951  | 2011  |                 | N23          | E40        | .667             | 8530                | 8.8              | 20                   | 1-                 |              |         | .64                 |                     |         | 1 1 1         |             |
| HUAN        | 05          | 1951  | 2011D |                 | N23          | E40        | .667             | 8530                | 8.8              | 20D                  | -F                 | 1 P          | 2002    | .72                 | .80                 |         | E             |             |
|             | 05          | 2010  | 2225  | NO FLARE PATROL |              |            |                  |                     |                  |                      |                    |              |         |                     |                     |         |               |             |
| GRP 996     | 05          | 2300  | 0100  |                 | S23          | E01        | .493             | 8528                | 6.0              | 120                  | 1-                 |              |         | .23                 |                     |         | 1 1 1         |             |
| IKOM        | 05          | 2300  | 0100  |                 | S23          | E01        | .493             | 8528                | 6.0              | 120                  | -F                 | V            | 2300    | .72                 | .90                 |         | 75 D          |             |
| GRP 997     | 06          | 0046  | 0052  | 0049            | N21          | E43        | .695             | 8530                | 9.3              | 6                    | 1-                 |              |         | .28                 |                     |         | 1 1 1         |             |
| CULG        | 06          | 0046  | 0052D | 0049            | N21          | E43        | .695             | 8530                | 9.3              | 6D                   | -N                 | P            | 0049    | .31                 | .40                 |         |               |             |
| GRP 998     | 06          | 0209  | 0224  | 0220            | N23          | E35        | .609             | 8530                | 8.7              | 15                   | 1-                 |              |         | 2.39                |                     |         | 1 1 1         |             |
| MITK        | 06          | 0209  | 0224  | 0220            | N23          | E35        | .609             | 8530                | 8.7              | 15                   | 1F                 | C            | 0220    | 2.99                | 3.80                |         | 120           |             |

SOLAR FLARES  
REVISED  
OCTOBER 1966

| OBSERVATORY | OBSERVED UT |       |       | LOCATION   |              |            |                  |                     | DURATION<br>MIN. | IM-POR-TANCE | OBS.<br>COND. TYPE | MEASUREMENTS |           |                     |                     |               | REMARKS |             |
|-------------|-------------|-------|-------|------------|--------------|------------|------------------|---------------------|------------------|--------------|--------------------|--------------|-----------|---------------------|---------------------|---------------|---------|-------------|
|             | DATE        | START | END   | MAX. PHASE | APPROX. LAT. | MER. DIST. | CENTRAL DISTANCE | MCMATH PLAGE REGION |                  |              |                    | CMP DAY      | TIME - UT | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH Ha |         | MAX. INT. % |
|             | 1966        |       |       |            |              |            |                  |                     |                  |              |                    |              |           |                     |                     |               |         |             |
|             | OCT         |       |       |            |              |            |                  |                     |                  |              |                    |              |           |                     |                     |               |         |             |
|             | 06          | 0305  | 0325  |            |              |            |                  |                     |                  |              |                    |              |           |                     |                     |               |         |             |
|             | 06          | 0340  | 0405  |            |              |            |                  |                     |                  |              |                    |              |           |                     |                     |               |         |             |
|             | 06          | 0410  | 0500  |            |              |            |                  |                     |                  |              |                    |              |           |                     |                     |               |         |             |
| GRP 999     | 06          | 0730  | 0815  |            | N21          | E41        | .672             | 8530                | 9.4              | 45           | 1-                 |              |           |                     |                     |               |         |             |
| BUCA        | 06          | 0730E | 0815D |            | N21          | E41        | .672             | 8530                | 9.4              | 45D          | 1F                 | C            | 0735      | 1.71                | 3.00                |               | 1 1 1   |             |
| GRP 1000    | 06          | 0749  | 0823  |            | N22          | E32        | .567             | 8530                | 8.7              | 34           | 1-                 |              |           |                     |                     |               |         |             |
| BUCA        | 06          | 0749E | 0823D |            | N22          | E32        | .567             | 8530                | 8.7              | 34D          | -F                 | C            | 0805      | 2.22                |                     |               | 1 1 1   |             |
| GRP 1001    | 06          | 0835  | 1017  | 1011       | N22          | E33        | .580             | 8530                | 8.8              | 102          | 1-                 |              |           |                     |                     |               |         |             |
| BUCA        | 06          | 0835E | 1013D |            | N22          | E32        | .567             | 8530                | 8.8              | 98D          | -N                 | C            | 0839      | 1.10                |                     |               | D 2 2   |             |
| ATHN        | 06          | 1010E | 1017  | 1011       | N21          | E33        | .575             | 8530                | 8.9              | 7D           | -N                 | 2            | 1011      | .89                 | 1.10                | .40           | D       |             |
| GRP 1002    | 06          | 0841  | 0856  |            | N21          | E41        | .672             | 8530                | 9.4              | 15           | 1-                 |              |           |                     |                     |               |         |             |
| BUCA        | 06          | 0841E | 0856D |            | N21          | E41        | .672             | 8530                | 9.4              | 15D          | 1F                 | C            | 0845      | 2.66                | 4.50                |               | 1 1 1   |             |
| GRP 1003    | 06          | 1040  | 1046  | 1042       | N18          | E55        | .817             | 8530                | 10.6             | 6            | 1-                 |              |           |                     |                     |               |         |             |
| ATHN        | 06          | 1040E | 1046  | 1042       | N21          | E53        | .801             | 8530                | 10.4             | 6D           | -N                 | 2            | 1042      | .42                 |                     | .50           | E 2 2   |             |
| MONT        | 06          | 1040  | 1046  |            | N15          | E57        | .834             | 8530                | 10.7             | 6            | -B                 |              |           | .33                 | 1.80                |               |         |             |
| GRP 1004    | 06          | 1105  | 1110  | 1106       | N21          | E32        | .562             | 8530                | 8.9              | 5            | 1-                 |              |           |                     |                     |               |         |             |
| ATHN        | 06          | 1105E | 1110  | 1106       | N21          | E32        | .562             | 8530                | 8.9              | 5D           | -N                 | 2            | 1106      | .32                 |                     | 1.40          | 1 1 1   |             |
| GRP 1005    | 06          | 1537  | 1704  | 1548       | N22          | E37        | .628             | 8530                | 9.4              | 87           | 1+                 |              |           |                     |                     |               |         |             |
| SACP        | 06          | 1533  | 1749D | 1603       | N24          | E36        | .626             | 8530                | 9.3              | 136D         | 2N                 | P            |           | 3.79                | 5.43                |               | 4 4 4   |             |
| CAPS        | 06          | 1539E | 1555D |            | N23          | E40        | .667             | 8530                | 9.7              | 16D          | 2N                 | 1            | 1547      | 4.93                | 5.70                |               | 188     |             |
| HUAN        | 06          | 1539  | 1623  |            | N22          | E36        | .616             | 8530                | 9.4              | 44           | 1F                 | 1            | 1600      | 4.80                | 2.28                |               | C       |             |
| MCMA        | 06          | 1539  | 1700  | 1548       | N20          | E35        | .595             | 8530                | 9.3              | 81           | 1B                 | C            | 1548      | 2.11                | 3.20                |               | E       |             |
| GRP 1006    | 06          | 1602  | 1750  | 1609       | S22          | W14        | .524             | 8528                | 5.6              | 108          | 1-                 |              |           |                     |                     |               |         |             |
| SACP        | 06          | 1602  | 1750  | 1609       | S22          | W14        | .524             | 8528                | 5.6              | 108          | -F                 | C            |           | 2.58                | 1.99                |               | F       |             |
| GRP 1007    | 06          | 1900  | 1955  | 1917       | N22          | E25        | .480             | 8530                | 8.7              | 55           | 1-                 |              |           |                     |                     |               |         |             |
| LOCK        | 06          | 1900  | 1955  | 1917       | N22          | E25        | .480             | 8530                | 8.7              | 55           | -F                 | C            | 1917      | .40                 | .50                 |               | 10      |             |
| GRP 1008    | 06          | 2010  | 2041  | 2017       | N20          | E32        | .557             | 8530                | 9.2              | 31           | 1-                 |              |           |                     |                     |               |         |             |
| LOCK        | 06          | 2010  | 2041  | 2017       | N20          | E32        | .557             | 8530                | 9.2              | 31           | -N                 | C            | 2017      | .50                 | .60                 |               | 10      |             |
| GRP 1009    | 06          | 2220  | 2245  | 2228       | S24          | W12        | .539             | 8528                | 6.0              | 25           | 1-                 |              |           |                     |                     |               |         |             |
| LOCK        | 06          | 2220  | 2245  | 2228       | S24          | W12        | .539             | 8528                | 6.0              | 25           | -F                 | C            | 2228      | .50                 | .60                 |               | 10      |             |
| GRP 1010    | 07          | 0726  | 0809  |            | N29          | E78        | .972             | 8536                | 13.2             | 43           | 1-                 |              |           |                     |                     |               |         |             |
| BUCA        | 07          | 0726E | 0809D |            | N29          | E78        | .972             | 8536                | 13.2             | 43D          | 1N                 | C            | 0733      | 1.09                |                     |               | 1 1 1   |             |
| GRP 1011    | 07          | 0737  | 0859  |            | S22          | W16        | .537             | 8528                | 6.1              | 82           | 1-                 |              |           |                     |                     |               |         |             |
| BUCA        | 07          | 0737E | 0859D |            | S22          | W16        | .537             | 8528                | 6.1              | 82D          | 1F                 | C            | 0819      | 1.55                | 2.60                |               | 1 1 1   |             |
| GRP 1012    | 07          | 0915  | 0930  | 0918       | S24          | W22        | .605             | 8528                | 5.7              | 15           | 1-                 |              |           |                     |                     |               |         |             |
| ARCE        | 07          | 0915  | 0920  | 0917       | S24          | W21        | .597             | 8528                | 5.8              | 5            | -N                 | C            | 0917      | .73                 | .50                 |               | 4 4 4   |             |
| UCCL        | 07          | 0915  | 0923  | 0917       | S24          | W23        | .613             | 8528                | 5.7              | 8            | -N                 | C            | 0917      | .38                 | .60                 |               | HCD     |             |
| ATHN        | 07          | 0915E | 0925  | 0917       | S26          | W20        | .613             | 8528                | 5.9              | 100          | -N                 | 2            | 0917      | .99                 | 1.20                | 1.70          | E       |             |
| BUCA        | 07          | 0915E | 0930D | 0919       | S22          | W24        | .600             | 8528                | 5.6              | 38D          | 1B                 | C            | 0919      | 1.77                | 2.20                |               |         |             |
| GRP 1013    | 07          | 1253  | 1300  | 1254       | S23          | W18        | .563             | 8528                | 6.2              | 7            | 1-                 |              |           |                     |                     |               |         |             |
| MCMA        | 07          | 1253  | 1300  | 1254       | S23          | W18        | .563             | 8528                | 6.2              | 7            | -N                 | C            | 1254      | .73                 | .60                 |               | 1 1 1   |             |
| GRP 1014    | 07          | 2007  | 2022  | 2013       | N19          | E16        | .342             | 8530                | 9.0              | 15           | 1-                 |              |           |                     |                     |               |         |             |
| LOCK        | 07          | 2007  | 2022  | 2013       | N19          | E16        | .342             | 8530                | 9.0              | 15           | -F                 | C            | 2013      | .19                 | .21                 |               | 10      |             |
| GRP 1015    | 07          | 2314  | 2324  | 2317       | N21          | E18        | .386             | 8530                | 9.3              | 10           | 1-                 |              |           |                     |                     |               |         |             |
| LOCK        | 07          | 2314  | 2324  | 2317       | N21          | E18        | .386             | 8530                | 9.3              | 10           | -F                 | C            | 2317      | .40                 | .50                 |               | 10      |             |
| GRP 1016    | 08          | 0328  | 0349  | 0329       | N21          | E13        | .331             | 8530                | 9.1              | 21           | 1-                 |              |           |                     |                     |               |         |             |
| HALE        | 08          | 0328  | 0349  | 0329       | N21          | E13        | .331             | 8530                | 9.1              | 21           | -N                 | 1            | C         | 0329                | .62                 | .53           |         | 1 1 1       |
| GRP 1017    | 08          | 0329  | 0339  | 0333       | N19          | E66        | .908             | 8536                | 13.1             | 10           | 1-                 |              |           |                     |                     |               |         |             |
| HALE        | 08          | 0329  | 0339  | 0333       | N19          | E66        | .908             | 8536                | 13.1             | 10           | -N                 | 1            | C         | 0333                | .25                 | .21           |         | 1 1 1       |
| GRP 1018    | 08          | 0334  | 0348  | 0339       | N25          | E21        | .460             | 8530                | 9.7              | 14           | 1-                 |              |           |                     |                     |               |         |             |
| HALE        | 08          | 0334  | 0348  | 0339       | N25          | E21        | .460             | 8530                | 9.7              | 14           | -N                 | 2            | C         | 0339                | .24                 | .11           |         | 1 1 1       |
| GRP 1019    | 08          | 0338  | 0354  | 0341       | N22          | E03        | .274             | 8530                | 8.4              | 16           | 1-                 |              |           |                     |                     |               |         |             |
| HALE        | 08          | 0338  | 0354  | 0341       | N22          | E03        | .274             | 8530                | 8.4              | 16           | -N                 | 3            | C         | 0341                | .31                 | .30           |         | 1 1 1       |
| GRP 1020    | 08          | 0612  | 0629  | 0615       | N22          | E17        | .386             | 8530                | 9.5              | 17           | 1-                 |              |           |                     |                     |               |         |             |
| SIBE        | 08          | 0612  | 0625  | 0614       | N23          | E16        | .386             | 8530                | 9.5              | 13           | 1F                 | C            | 0614      | 1.99                | 3.40                |               | 53      |             |
| MANI        | 08          | 0612E | 0627D | 0615       | N21          | E18        | .387             | 8530                | 9.6              | 15D          | -N                 | 2            | 0615      | 2.85                | .56                 |               | E       |             |
| ATHN        | 08          | 0612E | 0635D | 0617       | N23          | E17        | .396             | 8530                | 9.5              | 23D          | 1N                 | 1            | 0617      | 1.52                | 2.80                | 1.70          |         |             |
| GRP 1021    | 08          | 0700  | 0718  |            | S22          | W28        | .635             | 8528                | 6.2              | 18           | 1-                 |              |           |                     |                     |               |         |             |
| BUCA        | 08          | 0700E | 0718D |            | S22          | W28        | .635             | 8528                | 6.2              | 18D          | -N                 | C            | 0700      | .46                 | .80                 |               | 1 1 1   |             |
| GRP 1022    | 08          | 0905  | 0911  | 0907       | N20          | E11        | .298             | 8530                | 9.2              | 6            | 1-                 |              |           |                     |                     |               |         |             |
| MANI        | 08          | 0905  | 0911  | 0907       | N20          | E11        | .298             | 8530                | 9.2              | 6            | -N                 | 2            | 0907      | .18                 | .22                 |               | 1 1 1   |             |
| GRP 1023    | 08          | 0916  | 0939  |            | N21          | E13        | .331             | 8530                | 9.4              | 23           | 1-                 |              |           |                     |                     |               |         |             |
| BUCA        | 08          | 0916E | 0939D |            | N21          | E13        | .331             | 8530                | 9.4              | 23D          | 1N                 | C            | 0920      | 1.71                | 2.30                |               | 1 1 1   |             |
| GRP 1024    | 08          | 1014  | 1018  |            | N20          | E08        | .271             | 8530                | 9.0              | 4            | 1-                 |              |           |                     |                     |               |         |             |
| BUCA        | 08          | 1014E | 1018D |            | N20          | E08        | .271             | 8530                | 9.0              | 4D           | -N                 | P            | 1015      | 2.22                | .39                 |               | 1 1 1   |             |
| GRP 1025    | 08          | 1556  | 1615  | 1600       | N20          | E10        | .288             | 8530                | 9.4              | 19           | 1-                 |              |           |                     |                     |               |         |             |
| LOCK        | 08          | 1556  | 1615  | 1600       | N20          | E10        | .288             | 8530                | 9.4              | 19           | -F                 | C            | 1600      | .56                 | .60                 |               | 1 1 1   |             |
| GRP 1026    | 08          | 1726  | 1828  | 1730       | N24          | E08        | .345             | 8530                | 9.3              | 62           | 1-                 |              |           |                     |                     |               |         |             |
| HALE        | 08          | 1726  | 1828D | 1730       | N25          | E08        | .345             | 8530                | 9.3              | 62D          | -B                 | 2            | P         | 1730                | 1.25                | .83           |         | 1 1 1       |
| GRP 1027    | 08          | 1751  | 1800  | 1757       | N20          | E00        | .236             | 8530                | 8.7              | 9            | 1-                 |              |           |                     |                     |               |         |             |
| HALE        | 08          | 1751  | 1800  | 1757       | N20          | E00        | .236             | 8530                | 8.7              | 9            | -N                 | 1            | C         | 1757                | .18                 | .15           |         | 1 1 1       |



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| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION        |            |                  |                     | DURATION<br>MIN. | IM-POR-TANCE | OBS.<br>COND. TYPE | MEASUREMENTS |         |                     |                     |               | REMARKS |             |  |
|-------------|-------------|-------|-------|------------|-----------------|------------|------------------|---------------------|------------------|--------------|--------------------|--------------|---------|---------------------|---------------------|---------------|---------|-------------|--|
|             | DATE        | START | END   | MAX. PHASE | APPROX. LAT.    | MER. DIST. | CENTRAL DISTANCE | MCMATH PLAGE REGION |                  |              |                    | CMP DAY      | TIME UT | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH Ha |         | MAX. INT. % |  |
|             | 1966 OCT    |       |       |            |                 |            |                  |                     |                  |              |                    |              |         |                     |                     |               |         |             |  |
| GRP 1028    | 08          | 1808  | 1812  | 1810       | N23             | E01        | .287             | 8530                | 8.8              | 4            | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| HALE        | 08          | 1808  | 1812  | 1810       | N23             | E01        | .287             | 8530                | 8.8              | 4            | -F                 | 3            | C       | 1810                | .12                 | .11           |         | T           |  |
| GRP 1029    | 08          | 1959  | 2009  | 2004       | N24             | E00        | .303             | 8530                | 8.8              | 10           | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| HALE        | 08          | 1959  | 2009  | 2004       | N24             | E00        | .303             | 8530                | 8.8              | 10           | -N                 | 2            | C       | 2004                | .49                 | .43           |         | T           |  |
| GRP 1030    | 08          | 2045  | 2113  | 2100       | N24             | E00        | .303             | 8530                | 8.9              | 28           | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| HALE        | 08          | 2045  | 2113  | 2100       | N24             | E00        | .303             | 8530                | 8.9              | 28           | -N                 | 2            | C       | 2100                | .31                 | .30           |         | T           |  |
| GRP 1031    | 08          | 2055  | 2111  | 2102       | N13             | E03        | .127             | 8530                | 9.1              | 16           | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| LOCK        | 08          | 2055  | 2111  | 2102       | N13             | E03        | .127             | 8530                | 9.1              | 16           | -F                 |              |         |                     |                     |               |         | 1 1 1       |  |
| GRP 1032    | 08          | 2215  | 2241  | 2227       | N24             | E00        | .303             | 8530                | 8.9              | 26           | 1-                 |              |         |                     |                     |               |         | 10          |  |
| HALE        | 08          | 2215  | 2241  | 2227       | N24             | E00        | .303             | 8530                | 8.9              | 26           | -N                 | 1            | C       | 2227                | .26                 | .21           |         | T           |  |
| GRP 1033    | 08          | 2255  | 2313  | 2302       | N24             | E01        | .304             | 8530                | 9.0              | 18           | 1-                 |              |         |                     |                     |               |         | 2 2 2       |  |
| HALE        | 08          | 2254  | 2316D | 2302       | N24             | E01        | .304             | 8530                | 9.0              | 22D          | -N                 | 2            | P       | 2302                | .59                 | .42           |         | T           |  |
| SACP        | 08          | 2255  | 2309  | 2302       | N23             | E01        | .287             | 8530                | 9.0              | 14           | -F                 |              |         |                     |                     |               |         |             |  |
| GRP 1034    | 08          | 2256  | 2319  | 2259       | N12             | E01        | .100             | 8530                | 9.0              | 23           | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| LOCK        | 08          | 2256  | 2319  | 2259       | N12             | E01        | .100             | 8530                | 9.0              | 23           | -N                 |              |         |                     |                     |               |         | 20          |  |
| GRP 1035    | 08          | 2302  | 2317  | 2307       | N27             | E12        | .400             | 8530                | 9.9              | 15           | 1-                 |              |         |                     |                     |               |         | 4 4 4       |  |
| LOCK        | 08          | 2258  | 2325  | 2308       | N28             | E13        | .421             | 8530                | 9.9              | 27           | -N                 |              |         |                     |                     |               |         | 20          |  |
| HALE        | 08          | 2302  | 2316D | 2307       | N28             | E10        | .401             | 8530                | 9.7              | 14D          | -B                 | 1            | C       | 2308                | 1.58                | 1.50          |         | F           |  |
| VORO        | 08          | 2303  | 2309  | 2305       | N29             | E13        | .435             | 8530                | 9.9              | 6            | 1F                 |              |         |                     |                     |               |         | 52          |  |
| MANI        | 08          | 2304  | 2317  | 2308       | N24             | E13        | .368             | 8530                | 9.9              | 13           | -F                 | 2            |         |                     |                     |               |         | EU          |  |
| GRP 1036    | 09          | 0036  | 0058  | 0041       | N23             | W01        | .288             | 8530                | 9.0              | 22           | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| HALE        | 09          | 0036  | 0058  | 0041       | N23             | W01        | .288             | 8530                | 9.0              | 22           | -N                 | 1            | C       | 0041                | .77                 | .83           |         |             |  |
| GRP 1037    | 09          | 0122  | 0140  | 0128       | N24             | W01        | .305             | 8530                | 9.0              | 18           | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| HALE        | 09          | 0122  | 0140  | 0128       | N24             | W01        | .305             | 8530                | 9.0              | 18           | -N                 | 1            | C       | 0128                | .25                 | .21           |         |             |  |
|             | 09          | 0355  | 0405  |            | NO FLARE PATROL |            |                  |                     |                  |              |                    |              |         |                     |                     |               |         |             |  |
| GRP 1038    | 09          | 0755  | 0821  | 0800       | N20             | W00        | .237             | 8530                | 9.3              | 26           | 1-                 |              |         |                     |                     |               |         | 3 3 3       |  |
| BUCA        | 09          | 0754E | 0825D |            | N21             | W01        | .254             | 8530                | 9.3              | 31D          | -N                 |              |         |                     |                     |               |         | E           |  |
| MONT        | 09          | 0755  | 0830  | 0800       | N20             | E01        | .238             | 8530                | 9.4              | 35           | -F                 |              |         |                     |                     |               |         |             |  |
| MANI        | 09          | 0759E | 0812  |            | N20             | E01        | .238             | 8530                | 9.4              | 13D          | -N                 | 3            |         |                     |                     |               |         |             |  |
| GRP 1039    | 09          | 0827  | 0849  |            | S22             | W44        | .783             | 8528                | 6.1              | 22           | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| BUCA        | 09          | 0827E | 0849D |            | S22             | W44        | .783             | 8528                | 6.1              | 22D          | -F                 |              |         |                     |                     |               |         |             |  |
| GRP 1040    | 09          | 0912  | 1023  | 0919       | N21             | W03        | .259             | 8530                | 9.2              | 71           | 1-                 |              |         |                     |                     |               |         | 5 5 2       |  |
| BUCA        | 09          | 0904E | 1002D | 0919       | N22             | W02        | .273             | 8530                | 9.2              | 58D          | 1B                 |              |         |                     |                     |               |         | F           |  |
| ISTA        | 09          | 0913  | 0940  |            | N22             | W04        | .279             | 8530                | 9.1              | 27           | -F                 |              |         |                     |                     |               |         |             |  |
| KAND        | 09          | 0915  | 1201  |            | N19             | W01        | .221             | 8530                | 9.3              | 166          | 3N                 |              |         |                     |                     |               |         | C           |  |
| MANI        | 09          | 0916E | 0926D |            | N22             | W04        | .279             | 8530                | 9.1              | 10D          | -N                 | 1            |         |                     |                     |               |         |             |  |
| ONDR        | 09          | 0916  | 0927  |            | N21             | W02        | .256             | 8530                | 9.2              | 11           | 1F                 |              |         |                     |                     |               |         | CFHJ        |  |
| GRP 1041    | 09          | 1045  | 1154  | 1103       | N21             | E00        | .254             | 8530                | 9.4              | 69           | 2                  |              |         |                     |                     |               |         | 8 7 6       |  |
| WEND        | 09          | 1045  | 1150  | 1102       | N20             | E02        | .239             | 8530                | 9.6              | 65           | 3N                 |              |         |                     |                     |               |         |             |  |
| CAPS        | 09          | 1046E | 1145  |            | N21             | W01        | .254             | 8530                | 9.4              | 59D          | 3N                 | 3            |         |                     |                     |               |         | 260         |  |
| ARCE        | 09          | 1047E | 1113D |            | N20             | W00        | .237             | 8530                | 9.4              | 26D          | 2B                 |              |         |                     |                     |               |         | F           |  |
| CATA        | 09          | 1048E | 1140D | 1105       | N21             | W00        | .254             | 8530                | 9.5              | 52D          | 2B                 |              |         |                     |                     |               |         | 252         |  |
| KIEV        | 09          | 1050E | 1205D | 1101       | N20             | E01        | .238             | 8530                | 9.5              | 75D          | 3N                 |              |         |                     |                     |               |         | 70          |  |
| ONDR        | 09          | 1058E | 1135  |            | N21             | W03        | .259             | 8530                | 9.2              | 37D          | 1F                 |              |         |                     |                     |               |         | I           |  |
| ATHN        | 09          | 1103E | 1151D |            | N20             | E04        | .246             | 8530                | 9.8              | 48D          | 2N                 | 1            |         |                     |                     |               |         | CFJ         |  |
| KHAR        | 09          | 1106E | 1215D |            | N22             | W00        | .271             | 8530                | 9.5              | 69D          | 4N                 |              |         |                     |                     |               |         |             |  |
| GRP 1042    | 09          | 1519  | 1601  | 1531       | N19             | W06        | .242             | 8530                | 9.2              | 42           | 1-                 |              |         |                     |                     |               |         | 2.00        |  |
| SACP        | 09          | 1514  | 1619  | 1539       | N20             | W05        | .251             | 8530                | 9.3              | 65           | -N                 |              |         |                     |                     |               |         | 1.80        |  |
| MCMA        | 09          | 1524  | 1543  | 1531       | N19             | W07        | .249             | 8530                | 9.1              | 19           | -N                 |              |         |                     |                     |               |         | 2.00        |  |
| LOCK        | 09          | 1529E | 1600  | 1530U      | N18             | W06        | .227             | 8530                | 9.2              | 31D          | -N                 |              |         |                     |                     |               |         | 20          |  |
| GRP 1043    | 09          | 1722  | 1733  | 1726       | S25             | W53        | .868             | 8528                | 5.7              | 11           | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| LOCK        | 09          | 1722  | 1733  | 1726       | S25             | W53        | .868             | 8528                | 5.7              | 11           | -F                 |              |         |                     |                     |               |         | 10          |  |
| GRP 1044    | 09          | 1804  | 1810  | 1807       | S25             | W54        | .876             | 8528                | 5.7              | 6            | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| LOCK        | 09          | 1804  | 1810  | 1807       | S25             | W54        | .876             | 8528                | 5.7              | 6            | -N                 |              |         |                     |                     |               |         | 10          |  |
| GRP 1045    | 09          | 1807  | 1837  | 1819       | N19             | E04        | .230             | 8530                | 10.1             | 30           | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| LOCK        | 09          | 1807  | 1837  | 1819       | N19             | E04        | .230             | 8530                | 10.1             | 30           | -F                 |              |         |                     |                     |               |         | 10          |  |
| GRP 1046    | 09          | 1847  | 1906  | 1857       | S24             | W56        | .886             | 8528                | 5.6              | 19           | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| LOCK        | 09          | 1847  | 1906  | 1857       | S24             | W56        | .886             | 8528                | 5.6              | 19           | -F                 |              |         |                     |                     |               |         | 10          |  |
| GRP 1047    | 09          | 1947  | 2015  | 1955       | S30             | W90        | 1.002            | 8527                | 3.1              | 28           | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| LOCK        | 09          | 1947  | 2015  | 1955       | S30             | W90        | 1.002            | 8527                | 3.1              | 28           | -F                 |              |         |                     |                     |               |         | 10          |  |
| GRP 1048    | 09          | 1950  | 2021  | 2000       | S24             | W56        | .886             | 8528                | 5.6              | 31           | 1                  |              |         |                     |                     |               |         | 1 1 1       |  |
| SACP        | 09          | 1950  | 2021  | 2000       | S24             | W56        | .886             | 8528                | 5.6              | 31           | 1F                 |              |         |                     |                     |               |         |             |  |
| GRP 1049    | 09          | 2050  | 2107  | 2055       | S23             | W58        | .897             | 8528                | 5.5              | 17           | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| LOCK        | 09          | 2050  | 2107  | 2055       | S23             | W58        | .897             | 8528                | 5.5              | 17           | -F                 |              |         |                     |                     |               |         | 10          |  |
| GRP 1050    | 09          | 2106  | 2151  | 2129       | S24             | W57        | .893             | 8528                | 5.6              | 45           | 1-                 |              |         |                     |                     |               |         | 2 2 2       |  |
| SACP        | 09          | 2103  | 2153  | 2128       | S25             | W57        | .896             | 8528                | 5.6              | 50           | 1F                 |              |         |                     |                     |               |         |             |  |
| LOCK        | 09          | 2109  | 2148  | 2130       | S24             | W57        | .893             | 8528                | 5.6              | 39           | 1F                 |              |         |                     |                     |               |         | 10          |  |
| GRP 1051    | 09          | 2157  | 2230  | 2207       | N22             | E12        | .334             | 8530                | 10.8             | 33           | 1-                 |              |         |                     |                     |               |         | 1 1 1       |  |
| LOCK        | 09          | 2157  | 2230  | 2207       | N22             | E12        | .334             | 8530                | 10.8             | 33           | -F                 |              |         |                     |                     |               |         | 10          |  |
| GRP 1052    | 09          | 2254  | 2318  | 2305       | S24             | W56        | .886             | 8528                | 5.8              | 24           | 1-                 |              |         |                     |                     |               |         | 3 3 3       |  |
| SACP        | 09          | 2242  | 2318  | 2305       | S24             | W58        | .900             | 8528                | 5.6              | 36           | 1N                 |              |         |                     |                     |               |         |             |  |
| LOCK        | 09          | 2256  | 2320  | 2303       | S24             | W59        | .906             | 8528                | 5.5              | 24           | -N                 |              |         |                     |                     |               |         | 10          |  |
| MANI        | 09          | 2304  | 2317  | 2308       | S23             | W51        | .846             | 8528                | 6.1              | 13           | -N                 | 3            |         |                     |                     |               |         | J           |  |

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| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION        |            |                  |                     |         | DURATION MIN. | IM-POR-TANCE | OBS.  |      | MEASUREMENTS |                     |                     |                       |             | REMARKS |       |     |
|-------------|-------------|-------|-------|------------|-----------------|------------|------------------|---------------------|---------|---------------|--------------|-------|------|--------------|---------------------|---------------------|-----------------------|-------------|---------|-------|-----|
|             | DATE        | START | END   | MAX. PHASE | APPROX. LAT.    | MER. DIST. | CENTRAL DISTANCE | MCMATH PLAGE REGION | CMP DAY |               |              | COND. | TYPE | TIME UT      | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH H $\alpha$ | MAX. INT. % |         |       |     |
| GRP 1053    | 1966 OCT 10 | 0208  | 0230  | 0213       | N20             | W04        | .247             | 8530                | 9.8     | 22            | 1-           |       |      |              |                     |                     |                       |             |         | 2 2 2 |     |
| MITK        | 10          | 0208  | 0228  | 0213       | N21             | W03        | .260             | 8530                | 9.9     | 20            | -N           |       | 0213 | 1.13         | 1.20                |                     |                       |             | 160     |       |     |
| MANI        | 10          | 0211E | 0231  |            | N20             | W05        | .252             | 8530                | 9.7     | 20            | -F           | 3     | 0212 | .83          | .86                 |                     |                       |             |         |       |     |
| GRP 1054    | 10          | 0226  | 0330  | 0243       | N18             | W03        | .210             | 8530                | 9.9     | 64            | 1-           |       |      |              |                     |                     |                       |             |         | 1 1 1 |     |
| MITK        | 10          | 0226  | 0330  | 0243       | N18             | W03        | .210             | 8530                | 9.9     | 64            | -N           |       | 0243 | .62          | .60                 |                     |                       |             | 140     |       |     |
| GRP 1055    | 10          | 0349  | 0400  | 0350       | N24             | W13        | .370             | 8530                | 9.2     | 11            | 1-           |       |      | 1.27         |                     |                     |                       |             |         | 2 1 1 |     |
| MITK        | 10          | 0349  | 0354D | 0350       | N23             | W14        | .367             | 8530                | 9.1     | 50            | -N           |       | 0350 | 1.75         | 1.90                |                     |                       |             | 150     |       |     |
| MANI        | 10          | 0351E | 0400  |            | N25             | W12        | .375             | 8530                | 9.3     | 90            | -B           | 2     | 0353 | 1.24         | 1.35                |                     |                       |             |         |       |     |
| GRP 1056    | 10          | 0705  | 0734  |            | N21             | E68        | .922             | 8544                | 15.4    | 29            | 1-           |       |      |              |                     |                     |                       |             |         | 1 1 0 |     |
| KAND        | 10          | 0705E | 0734D |            | N21             | E68        | .922             | 8544                | 15.4    | 29            | -N           |       |      |              |                     |                     |                       |             |         | PV    |     |
| GRP 1057    | 10          | 0730  | 0749  |            | S22             | W55        | .873             | 8528                | 6.2     | 19            | 1-           |       |      | 2.58         |                     |                     |                       |             |         | 1 1 1 |     |
| BUCA        | 10          | 0730E | 0749D |            | S22             | W55        | .873             | 8528                | 6.2     | 19D           | 1N           |       | 0735 | 3.22         | 3.20                |                     |                       |             |         |       |     |
| GRP 1058    | 10          | 0835  | 0845  |            | N19             | W18        | .369             | 8530                | 9.0     | 10            | 1-           |       |      | .51          |                     |                     |                       |             |         | 1 1 1 |     |
| ARCE        | 10          | 0835E | 0845D |            | N19             | W18        | .369             | 8530                | 9.0     | 10D           | -N           |       | 0835 | .51          | .50                 |                     |                       |             |         | E     |     |
| GRP 1059    | 10          | 1335  | 1406  | 1342       | N23             | E63        | .889             | 8544                | 15.3    | 31            | 1-           |       |      | .50          |                     |                     |                       |             |         | 2 2 2 |     |
| MCMA        | 10          | 1335  | 1405  | 1342       | N23             | E63        | .889             | 8544                | 15.3    | 30            | -F           |       | 1342 | .31          | .60                 |                     |                       |             |         | E     |     |
| SACP        | 10          | 1335  | 1407  | 1359       | N23             | E62        | .882             | 8544                | 15.2    | 32            | -F           |       |      | .60          | .91                 |                     |                       |             |         |       |     |
|             | 10          | 1840  | 1845  |            | NO FLARE PATROL |            |                  |                     |         |               |              |       |      |              |                     |                     |                       |             |         |       |     |
| GRP 1060    | 10          | 1848  | 1914  | 1902       | N23             | E60        | .866             | 8544                | 15.3    | 26            | 1-           |       |      | .61          |                     |                     |                       |             |         | 1 1 1 |     |
| SACP        | 10          | 1848E | 1914  | 1902       | N23             | E60        | .866             | 8544                | 15.3    | 26D           | -F           |       |      | .68          | 1.00                |                     |                       |             |         |       |     |
| GRP 1061    | 10          | 2015  | 2056  |            | S24             | W60        | .912             | 8528                | 6.3     | 41            | 1-           |       |      | .47          |                     |                     |                       |             |         | 1 1 1 |     |
| MCMA        | 10          | 2015E | 2056D |            | S24             | W60        | .912             | 8528                | 6.3     | 41D           | -N           |       | 2023 | .31          | .70                 |                     |                       |             |         | D     |     |
| GRP 1062    | 10          | 2121  | 2155  | 2129       | N20             | E84        | .991             | 8546                | 17.2    | 34            | 1-           |       |      | .31          |                     |                     |                       |             |         | 1 1 1 |     |
| SACP        | 10          | 2121  | 2155  | 2129       | N20             | E84        | .991             | 8546                | 17.2    | 34            | -N           |       |      | .34          |                     |                     |                       |             |         |       |     |
| GRP 1063    | 10          | 2206  | 2215  | 2210       | N23             | W27        | .514             | 8530                | 8.9     | 9             | 1-           |       |      | .35          |                     |                     |                       |             |         | 2 2 2 |     |
| SACP        | 10          | 2206  | 2215  | 2210       | N23             | W26        | .502             | 8530                | 9.0     | 9             | -N           |       |      | .51          | .52                 |                     |                       |             |         |       |     |
| MANI        | 10          | 2208E | 2214  |            | N22             | W28        | .519             | 8530                | 8.8     | 60            | -N           | 2     | 2210 | .26          | .30                 |                     |                       |             |         |       |     |
|             | 11          | 0005  | 0020  |            | NO FLARE PATROL |            |                  |                     |         |               |              |       |      |              |                     |                     |                       |             |         |       |     |
|             | 11          | 0030  | 0035  |            | NO FLARE PATROL |            |                  |                     |         |               |              |       |      |              |                     |                     |                       |             |         |       |     |
| GRP 1064    | 11          | 0729  | 0803  | 0746       | S22             | W72        | .970             | 8528                | 5.9     | 34            | 1+           |       |      | 1.09         |                     |                     |                       |             |         | 1 1 1 |     |
| BUCA        | 11          | 0729E | 0803D | 0746       | S22             | W72        | .970             | 8528                | 5.9     | 34D           | 1B           |       | 0746 | 1.55         |                     |                     |                       |             |         |       |     |
| GRP 1065    | 11          | 0741  | 0847  |            | N23             | E54        | .815             | 8544                | 15.4    | 66            | 1-           |       |      | .93          |                     |                     |                       |             |         | 1 1 1 |     |
| BUCA        | 11          | 0741E | 0847D |            | N23             | E54        | .815             | 8544                | 15.4    | 66D           | 1N           |       | 0819 | 1.33         | 2.30                |                     |                       |             |         |       |     |
| GRP 1066    | 11          | 0813  | 0901  | 0814       | S24             | W71        | .968             | 8528                | 6.0     | 48            | 1-           |       |      | 1.27         |                     |                     |                       |             |         | 2 2 2 |     |
| ATHN        | 11          | 0813E | 0901D | 0814       | S25             | W70        | .965             | 8528                | 6.1     | 7D            | -N           | 2     | 0814 | .76          |                     |                     |                       |             | 2.00    |       |     |
| BUCA        | 11          | 0813E | 0942D | 0839       | S22             | W72        | .970             | 8528                | 5.9     | 89D           | 1B           |       | 0839 | 2.22         |                     |                     |                       |             |         |       |     |
| GRP 1067    | 11          | 0925  | 0942  |            | N23             | E54        | .815             | 8544                | 15.4    | 17            | 1-           |       |      | 1.42         |                     |                     |                       |             |         | 1 1 1 |     |
| BUCA        | 11          | 0925E | 0942D |            | N23             | E54        | .815             | 8544                | 15.4    | 17D           | -N           |       | 0940 | 1.91         | 1.90                |                     |                       |             |         |       |     |
| GRP 1068    | 11          | 1159  | 1206  | 1201       | N22             | W10        | .318             | 8530                | 10.7    | 7             | 1-           |       |      | .92          |                     |                     |                       |             |         | 1 1 1 |     |
| ATHN        | 11          | 1159  | 1206  | 1201       | N22             | W10        | .318             | 8530                | 10.7    | 7             | -F           | 2     | 1201 | .83          | .90                 |                     |                       |             | 1.20    |       |     |
| GRP 1069    | 11          | 1255  | 1314  | 1303       | N23             | E50        | .776             | 8544                | 15.3    | 19            | 1-           |       |      | .58          |                     |                     |                       |             |         | 1 1 1 |     |
| MCMA        | 11          | 1255E | 1314  | 1303       | N23             | E50        | .776             | 8544                | 15.3    | 19D           | -N           |       | 1303 | .41          | .60                 |                     |                       |             |         | E     |     |
|             | 11          | 1725  | 1735  |            | NO FLARE PATROL |            |                  |                     |         |               |              |       |      |              |                     |                     |                       |             |         |       |     |
|             | 11          | 1835  | 1840  |            | NO FLARE PATROL |            |                  |                     |         |               |              |       |      |              |                     |                     |                       |             |         |       |     |
| GRP 1070    | 11          | 1847  | 1854  | 1849       | S02             | E62        | .887             | 8545                | 16.4    | 7             | 1-           |       |      | .30          |                     |                     |                       |             |         | 2 2 2 |     |
| HUAN        | 11          | 1847  | 1853  |            | S02             | E62        | .887             | 8545                | 16.4    | 6             | -F           | 1     | 1850 | .25          | .38                 |                     |                       |             |         | D     |     |
| MCMA        | 11          | 1847  | 1854  | 1849       | S02             | E62        | .887             | 8545                | 16.4    | 7             | -B           |       | 1849 | .26          | .60                 |                     |                       |             |         |       |     |
| GRP 1071    | 11          | 1932  | 1947  | 1938       | S24             | W84        | .999             | 8528                | 5.5     | 15            | 1-           |       |      | .46          |                     |                     |                       |             |         | 3 3 3 |     |
| LOCK        | 11          | 1930  | 1948  | 1935       | S23             | W85        | .999             | 8528                | 5.4     | 18            | -N           |       | 1935 | .40          | 1.60                |                     |                       |             |         | 10    |     |
| SACP        | 11          | 1931  | 1946  | 1940       | S24             | W80        | .993             | 8528                | 5.8     | 15            | -N           |       |      | .94          |                     |                     |                       |             |         |       |     |
| HUAN        | 11          | 1934  | 1946  |            | S24             | W88        | 1.000            | 8528                | 5.2     | 12            | -N           | 1     | 1940 | .31          |                     |                     |                       |             |         |       | D   |
|             | 11          | 2315  | 0000  |            | NO FLARE PATROL |            |                  |                     |         |               |              |       |      |              |                     |                     |                       |             |         |       |     |
|             | 12          | 0010  | 0030  |            | NO FLARE PATROL |            |                  |                     |         |               |              |       |      |              |                     |                     |                       |             |         |       |     |
|             | 12          | 0400  | 0425  |            | NO FLARE PATROL |            |                  |                     |         |               |              |       |      |              |                     |                     |                       |             |         |       |     |
| GRP 1072    | 12          | 0838  | 0848  |            | S21             | W90        | 1.001            | 8528                | 5.6     | 10            | 1-           |       |      | .15          |                     |                     |                       |             |         | 1 1 1 |     |
| ARCE        | 12          | 0838E | 0848D |            | S21             | W90        | 1.001            | 8528                | 5.6     | 10D           | -N           |       | 0838 | .15          |                     |                     |                       |             |         |       |     |
| GRP 1073    | 12          | 0903  | 0940  | 0925       | N23             | E80        | .980             | 8549                | 18.4    | 37            | 1-           |       |      | .56          |                     |                     |                       |             |         | 1 1 1 |     |
| ARCE        | 12          | 0903E | 0940D | 0925       | N23             | E80        | .980             | 8549                | 18.4    | 37D           | -N           |       | 0925 | .15          |                     |                     |                       |             |         |       | D   |
| GRP 1074    | 12          | 0953  | 1025  | 1000       | N25             | E90        | .999             | 8549                | 19.2    | 32            | 1-           |       |      | .38          |                     |                     |                       |             |         | 2 2 1 |     |
| ARCE        | 12          | 0953E | 0953D |            | N25             | E90        | .999             | 8549                | 19.2    | 32            | 1N           |       | 0953 | .38          |                     |                     |                       |             |         |       |     |
| KHAR        | 12          | 0958E | 1025D | 1000       | N25             | E89        | .998             | 8549                | 19.1    | 27D           | 1F           |       | 1006 |              |                     |                     |                       |             | 2.80    | H     |     |
| GRP 1075    | 12          | 1031  | 1038  | 1032       | N20             | E70        | .935             | 8546                | 17.7    | 7             | 1-           |       |      | .35          |                     |                     |                       |             |         | 1 1 1 |     |
| ATHN        | 12          | 1031  | 1038  | 1032       | N20             | E70        | .935             | 8546                | 17.7    | 7             | -N           | 2     | 1032 | .33          |                     |                     |                       |             |         |       |     |
| GRP 1076    | 12          | 1132  | 1156  | 1142       | N20             | E71        | .940             | 8546                | 17.8    | 24            | 1-           |       |      | 1.02         |                     |                     |                       |             |         | 5 2 1 |     |
| ATHN        | 12          | 1132  | 1153  | 1141       | N20             | E69        | .929             | 8546                | 17.7    | 21            | 1N           | 2     | 1141 | .99          |                     |                     |                       |             |         |       |     |
| KHAR        | 12          | 1142E | 1153  | 1143       | N22             | E76        | .965             | 8546                | 18.2    | 11D           | 1F           |       | 1150 |              |                     |                     |                       |             |         | 2.80  |     |
| KAND        | 12          | 1145E | 1146D |            | N17             | E70        | .934             | 8546                | 17.7    | 10            | 2N           |       | 1145 |              |                     |                     |                       |             |         |       | DH  |
| CAPS        | 12          | 1145E | 1156D |            | N22             | E70        | .935             | 8546                | 17.7    | 11D           | 1F           | 1     | 1148 | 1.80         |                     |                     |                       |             |         |       |     |
| UCCL        | 12          | 1151E | 1200D |            | N20             | E70        | .935             | 8546                | 17.7    | 9D            |              |       |      |              |                     |                     |                       |             |         |       | 155 |
| GRP 1077    | 12          | 1336  | 1358  |            | N22             | E69        | .929             | 8546                | 17.7    | 22            | 1-           |       |      | .40          |                     |                     |                       |             |         | 1 1 1 |     |
| MCMA        | 12          | 1336  | 1358  |            | N22             | E69        | .929             | 8546                | 17.7    | 22            | -N           |       | 1348 | .26          | .60                 |                     |                       |             |         |       | E   |
| GRP 1078    | 12          | 1406  | 1430  | 1410       | N22             | E70        | .935             | 8546                | 17.8    | 24            | 1-           |       |      | .48          |                     |                     |                       |             |         | 1 1 1 |     |
| MCMA        | 12          | 1406  | 1430  | 1410       | N22             | E70        | .935             | 8546                | 17.8    | 24            | -N           |       | 1410 | .31          | .50                 |                     |                       |             |         |       | D   |

SOLAR FLARES  
REVISED  
OCTOBER 1966

| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION |            |                  |                     | DURATION<br>MIN. | IM-<br>POR-<br>TANCE | OBS.<br>COND. TYPE |   | MEASUREMENTS |         |                     |                     |                       | REMARKS |             |
|-------------|-------------|-------|-------|------------|----------|------------|------------------|---------------------|------------------|----------------------|--------------------|---|--------------|---------|---------------------|---------------------|-----------------------|---------|-------------|
|             | DATE        | START | END   | MAX. PHASE | APPROX.  |            | CENTRAL DISTANCE | MCMATH PLAGE REGION |                  |                      |                    |   | CMP DAY      | TIME UT | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH H $\alpha$ |         | MAX. INT. % |
|             |             |       |       |            | LAT.     | MER. DIST. |                  |                     |                  |                      |                    |   |              |         |                     |                     |                       |         |             |
|             | 1966<br>OCT |       |       |            |          |            |                  |                     |                  |                      |                    |   |              |         |                     |                     |                       |         |             |
| GRP 1079    | 12          | 1441  | 1450  | 1443       | N21      | E69        | .929             | 8546                | 17.8             | 9                    | 1-                 |   |              |         |                     |                     | 3 3 3                 |         |             |
| MCMA        | 12          | 1440  | 1450  | 1443       | N22      | E70        | .935             | 8546                | 17.9             | 10                   | -N                 | C | 1443         | .49     | .50                 |                     | D                     |         |             |
| ATHN        | 12          | 1441  | 1453  | 1442       | N20      | E68        | .922             | 8546                | 17.7             | 12                   | -N                 | 2 | 1442         | .31     |                     | 1.60                |                       |         |             |
| HUAN        | 12          | 1442  | 1448  |            | N21      | E68        | .923             | 8546                | 17.7             | 6                    | -F                 | 1 | 1445         | .76     |                     |                     | D                     |         |             |
| GRP 1080    | 12          | 1506  | 1515  | 1508       | N21      | E68        | .923             | 8546                | 17.7             | 9                    | 1-                 |   |              | .25     |                     |                     | 2 2 2                 |         |             |
| ATHN        | 12          | 1505  | 1515  | 1508       | N20      | E68        | .922             | 8546                | 17.7             | 10                   | -N                 | 1 | 1508         | .52     |                     | 1.80                |                       |         |             |
| HUAN        | 12          | 1507  | 1513D |            | N21      | E68        | .923             | 8546                | 17.7             | 6D                   | -F                 | 1 | 1509         | .76     |                     |                     | D                     |         |             |
| GRP 1081    | 12          | 1521  | 1530  | 1523       | N22      | E70        | .935             | 8546                | 17.9             | 9                    | 1-                 |   |              | 1.30    |                     |                     | 1 1 1                 |         |             |
| MCMA        | 12          | 1521  | 1530  | 1523       | N22      | E70        | .935             | 8546                | 17.9             | 9                    | -N                 | C | 1523         | .83     | .90                 |                     | E                     |         |             |
| GRP 1082    | 12          | 1653  | 1700  | 1657       | N22      | E69        | .929             | 8546                | 17.9             | 7                    | 1-                 |   |              | .48     |                     |                     | 1 1 1                 |         |             |
| MCMA        | 12          | 1653  | 1700D |            | N22      | E69        | .929             | 8546                | 17.9             | 7D                   | -N                 | C | 1657         | .26     | .60                 |                     | D                     |         |             |
| GRP 1083    | 12          | 1805  | 1832  | 1817       | N22      | E69        | .929             | 8546                | 17.9             | 27                   | 1-                 |   |              | 1.20    |                     |                     | 1 1 1                 |         |             |
| MCMA        | 12          | 1805  | 1832  | 1817       | N22      | E69        | .929             | 8546                | 17.9             | 27                   | -N                 | C | 1817         | .77     | 1.80                |                     | E                     |         |             |
| GRP 1084    | 12          | 1906  | 1917  | 1908       | N09      | E54        | .805             | 8545                | 16.8             | 11                   | 1-                 |   |              | .99     |                     |                     | 2 2 2                 |         |             |
| SACP        | 12          | 1905  | 1919  | 1908       | N10      | E53        | .794             | 8545                | 16.8             | 14                   | -N                 | C |              | 1.35    | 1.75                |                     |                       |         |             |
| MCMA        | 12          | 1906  | 1915  | 1908       | N08      | E54        | .805             | 8545                | 16.8             | 9                    | -N                 | C | 1908         | .52     | .90                 |                     | E                     |         |             |
| GRP 1085    | 12          | 1915  | 1932  | 1918       | N22      | E68        | .923             | 8546                | 17.9             | 17                   | 1-                 |   |              | .63     |                     |                     | 1 1 1                 |         |             |
| MCMA        | 12          | 1915  | 1932  | 1918       | N22      | E68        | .923             | 8546                | 17.9             | 17                   | -N                 | C | 1918         | .41     | 1.00                |                     | E                     |         |             |
| GRP 1086    | 12          | 1943  | 1950  |            | N22      | E68        | .923             | 8546                | 17.9             | 7                    | 1-                 |   |              | .63     |                     |                     | 1 1 1                 |         |             |
| MCMA        | 12          | 1943  | 1950D |            | N22      | E68        | .923             | 8546                | 17.9             | 7D                   | -N                 | C | 1945         | .41     | 1.00                |                     | E                     |         |             |
| GRP 1087    | 12          | 2052  | 2109  | 2055       | N21      | E61        | .873             | 8546                | 17.4             | 17                   | 1-                 |   |              | .81     |                     |                     | 2 2 2                 |         |             |
| MCMA        | 12          | 2051  | 2055D |            | N21      | E65        | .903             | 8546                | 17.7             | 4D                   | -F                 | P | 2053         | .31     | .70                 |                     | E                     |         |             |
| SACP        | 12          | 2052  | 2109  | 2055       | N21      | E57        | .839             | 8546                | 17.1             | 17                   | -N                 | C |              | 1.27    | 1.78                |                     |                       |         |             |
| GRP 1088    | 13          | 0430  | 0448  | 0432       | N21      | E66        | .910             | 8546                | 18.1             | 18                   | 2                  |   |              | 1.87    |                     |                     | 1 1 1                 |         |             |
| MITK        | 13          | 0430  | 0448D | 0432       | N21      | E66        | .910             | 8546                | 18.1             | 18D                  | 2N                 | C | 0432         | 2.37    |                     | 230                 |                       |         |             |
| GRP 1089    | 13          | 0607  | 0616  | 0610       | N13      | E56        | .825             | 8546                | 17.5             | 9                    | 1-                 |   |              | .17     |                     |                     | 1 1 1                 |         |             |
| MANI        | 13          | 0607  | 0616D | 0610       | N13      | E56        | .825             | 8546                | 17.5             | 9D                   | -N                 | 2 | 0610         | .21     | .35                 |                     |                       |         |             |
| GRP 1090    | 13          | 0621  | 0635  | 0626       | N09      | E47        | .727             | 8545                | 16.8             | 14                   | 1-                 |   |              | .33     |                     |                     | 2 2 2                 |         |             |
| MITK        | 13          | 0621  | 0634  | 0626       | N08      | E47        | .727             | 8545                | 16.8             | 13                   | -N                 | C | 0626         | .62     | .90                 | 140                 | E                     |         |             |
| MANI        | 13          | 0625E | 0635  | 0626       | N10      | E47        | .727             | 8545                | 16.8             | 10D                  | -N                 | 2 | 0626         | .26     | .38                 |                     |                       |         |             |
| GRP 1091    | 13          | 0705  | 0710  | 0706       | N08      | E47        | .727             | 8545                | 16.8             | 5                    | 1-                 |   |              | .32     |                     |                     | 1 1 1                 |         |             |
| ATHN        | 13          | 0705E | 0710  | 0706       | N08      | E47        | .727             | 8545                | 16.8             | 5D                   | -N                 | 1 | 0706         | .33     | .50                 | 1.50                |                       |         |             |
| GRP 1092    | 13          | 0716  | 0809  |            | N20      | E61        | .872             | 8546                | 17.9             | 53                   | 1-                 |   |              |         |                     |                     | 2 2 0                 |         |             |
| ISTA        | 13          | 0710E | 0835  |            | N20      | E62        | .880             | 8546                | 17.9             | 85D                  | -N                 |   |              |         |                     |                     |                       |         |             |
| KAND        | 13          | 0721  | 0743  |            | N20      | E60        | .864             | 8546                | 17.8             | 22                   | -N                 |   |              |         |                     |                     | C                     |         |             |
| GRP 1093    | 13          | 0838  | 0854  | 0842       | N25      | W50        | .782             | 8530                | 9.6              | 16                   | 1-                 |   |              | .78     |                     |                     | 1 1 1                 |         |             |
| MANI        | 13          | 0838E | 0854D | 0842       | N25      | W50        | .782             | 8530                | 9.6              | 16D                  | -F                 | 2 | 0842         | .88     | .96                 |                     |                       |         |             |
| GRP 1094    | 13          | 0906  | 0925  | 0907       | N20      | E58        | .847             | 8546                | 17.7             | 19                   | 1-                 |   |              | 1.24    |                     |                     | 6 4 4                 |         |             |
| ATHN        | 13          | 0901  | 0925  | 0908       | N18      | E56        | .828             | 8546                | 17.6             | 24                   | 1N                 | 2 | 0908         | 1.65    | 3.10                | 1.90                |                       |         |             |
| CAPS        | 13          | 0903E | 0922D |            | N20      | E53        | .801             | 8546                | 17.4             | 19D                  | -F                 | 3 | 0914         | .90     | 1.50                |                     | 150                   |         |             |
| KIEV        | 13          | 0905E | 0915D | 0906       | N18      | E62        | .879             | 8546                | 18.0             | 10D                  | 1F                 | C | 0906         | 2.06    |                     |                     | 60                    |         |             |
| ARCE        | 13          | 0907E | 0921D |            | N20      | E54        | .811             | 8546                | 17.4             | 14D                  | -N                 | C | 0920         | .35     | .60                 |                     |                       |         |             |
| ISTA        | 13          | 0910  | 0925  |            | N21      | E58        | .848             | 8546                | 17.7             | 15                   | -N                 |   |              |         |                     |                     |                       |         |             |
| MANI        | 13          | 0915E | 0925D | 0920       | N20      | E62        | .880             | 8546                | 18.0             | 10D                  | 1F                 | 1 | 0920         | 2.27    | 4.27                |                     |                       |         |             |
| GRP 1095    | 13          | 1005  | 1024  | 1007       | N13      | E60        | .861             | 8546                | 17.9             | 19                   | 1-                 |   |              | .43     |                     |                     | 2 1 1                 |         |             |
| ATHN        | 13          | 1005  | 1020  | 1007       | N11      | E57        | .834             | 8546                | 17.7             | 15                   | -N                 | 2 | 1007         | .43     | .80                 | 1.50                |                       |         |             |
| KHAR        | 13          | 1018E | 1028D |            | N14      | E62        | .878             | 8546                | 18.1             | 10D                  | 1F                 | V | 1024         | 2.84    | 4.10                | 1.50                |                       |         |             |
| GRP 1096    | 13          | 1047  | 1054  | 1049       | N20      | E62        | .880             | 8546                | 18.1             | 7                    | 1-                 |   |              | .68     |                     |                     | 4 4 3                 |         |             |
| KIEV        | 13          | 1045E | 1051D | 1047       | N19      | E66        | .909             | 8546                | 18.4             | 6D                   | 1F                 | C | 1047         | 1.03    |                     | 65                  | DI                    |         |             |
| KHAR        | 13          | 1047  | 1052  | 1048       | N19      | E63        | .887             | 8546                | 18.2             | 5                    | 1N                 | V | 1048         |         |                     | 2.80                |                       |         |             |
| CAPS        | 13          | 1047E | 1053  |            | N20      | E58        | .847             | 8546                | 17.8             | 6D                   | -N                 | 3 | 1050         | .40     | .70                 |                     | 166                   |         |             |
| ATHN        | 13          | 1048  | 1056  | 1051       | N20      | E60        | .864             | 8546                | 18.0             | 8                    | -N                 | 2 | 1051         | .72     | 1.60                | 1.90                |                       |         |             |
| GRP 1097    | 13          | 1150  | 1200  | 1151       | N20      | E56        | .830             | 8546                | 17.7             | 10                   | 1-                 |   |              | .60     |                     |                     | 2 2 2                 |         |             |
| CAPS        | 13          | 1149E | 1202D |            | N19      | E52        | .790             | 8546                | 17.4             | 13D                  | -N                 | 3 | 1152         | .80     | 1.30                |                     | 160                   |         |             |
| ATHN        | 13          | 1150  | 1158  | 1151       | N20      | E59        | .856             | 8546                | 17.9             | 8                    | -N                 | 2 | 1151         | .39     | .80                 | 1.60                |                       |         |             |
| GRP 1098    | 13          | 1332  | 1358  | 1339       | N22      | E58        | .849             | 8546                | 17.9             | 26                   | 1-                 |   |              | 1.32    |                     |                     | 6 5 5                 |         |             |
| LOCA        | 13          | 1328  | 1350  | 1334       | N22      | E60        | .866             | 8546                | 18.1             | 22                   | -N                 | V | 1334         | .85     | 1.70                |                     |                       |         |             |
| ATHN        | 13          | 1335  | 1353  | 1338       | N20      | E58        | .847             | 8546                | 17.9             | 18                   | -N                 | 2 | 1338         | .86     | 1.80                | 1.90                |                       |         |             |
| ZURI        | 13          | 1337E | 1353  | 1343       | N22      | E61        | .874             | 8546                | 18.1             | 16D                  | 1N                 | P | 1343         | 1.80    | 3.80                |                     |                       |         |             |
| CAPS        | 13          | 1342E | 1354  |            | N21      | E60        | .865             | 8546                | 18.1             | 12D                  | 1B                 | 3 | 1347         | 2.00    | 3.80                |                     | 204                   |         |             |
| SACP        | 13          | 1330  | 1410  | 1341       | N22      | E58        | .849             | 8546                | 17.9             | 40                   | 1N                 | C |              | 1.64    | 2.34                |                     |                       |         |             |
| MONT        | 13          | 1335  | 1410  | 1337       | N23      | E52        | .797             | 8546                | 17.5             | 35                   | 1N                 | C | 1337         | 1.90    | 2.50                |                     |                       |         |             |
| GRP 1099    | 13          | 1330  | 1402  | 1340       | N09      | E42        | .666             | 8545                | 16.7             | 32                   | 1-                 |   |              | 1.00    |                     |                     | 1 1 1                 |         |             |
| SACP        | 13          | 1330  | 1402  | 1340       | N09      | E42        | .666             | 8545                | 16.7             | 32                   | -N                 | C |              | 1.11    | 1.26                |                     |                       |         |             |
| GRP 1100    | 13          | 1546  | 1618  | 1558       | N08      | E43        | .678             | 8545                | 16.9             | 32                   | 1-                 |   |              | .76     |                     |                     | 1 1 1                 |         |             |
| SACP        | 13          | 1546  | 1618  | 1558       | N08      | E43        | .678             | 8545                | 16.9             | 32                   | -F                 | C |              | .84     | .96                 |                     |                       |         |             |
| GRP 1101    | 13          | 1645  | 1750  | 1709       | N18      | E52        | .789             | 8546                | 17.6             | 65                   | 1-                 |   |              | 1.44    |                     |                     | 2 2 2                 |         |             |
| LOCK        | 13          | 1640  | 1740  | 1708       | N17      | E53        | .798             | 8546                | 17.7             | 60                   | -N                 | C | 1708         | 1.00    | 1.70                |                     | 20                    |         |             |
| SACP        | 13          | 1649  | 1800  | 1710       | N20      | E51        | .781             | 8546                | 17.5             | 71                   | 1N                 | C |              | 2.03    | 2.60                |                     |                       |         |             |
| GRP 1102    | 13          | 1740  | 1752  | 1746       | N20      | E47        | .739             | 8546                | 17.3             | 12                   | 1-                 |   |              | 1.25    |                     |                     | 2 2 2                 |         |             |
| LOCK        | 13          | 1740  | 1752  | 1744       | N19      | E48        | .748             | 8546                | 17.3             | 12                   | 1N                 | C | 1744         | 1.50    | 2.30                |                     | 20                    |         |             |
| SACP        | 13          | 1740  | 1756E | 1748U      | N22      | E46        | .733             | 8546                | 17.2             | 16D                  | -F                 | P |              | .93     | 1.11                |                     |                       |         |             |



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| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION        |            |                  |                     |         | DURATION | IMPOR-TANCE | OBS. COND. TYPE | MEASUREMENTS |         |                     |                     |                       | REMARKS |             |
|-------------|-------------|-------|-------|------------|-----------------|------------|------------------|---------------------|---------|----------|-------------|-----------------|--------------|---------|---------------------|---------------------|-----------------------|---------|-------------|
|             | DATE        | START | END   | MAX. PHASE | APPROX. LAT.    | MER. DIST. | CENTRAL DISTANCE | MCMATH PLAGE REGION | CMP DAY |          |             |                 | MIN.         | TIME UT | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH H $\alpha$ |         | MAX. INT. % |
|             | 1966        |       |       |            |                 |            |                  |                     |         |          |             |                 |              |         |                     |                     |                       |         |             |
|             | OCT         |       |       |            |                 |            |                  |                     |         |          |             |                 |              |         |                     |                     |                       |         |             |
| GRP 1127    | 15          | 1857  | 2033  | 1925       | N21             | E25        | .478             | 8546                | 17.7    | 96       | 1+          |                 |              |         |                     |                     |                       |         |             |
| LOCK        | 15          | 1850  | 2005  | 1920       | N22             | E25        | .485             | 8546                | 17.7    | 75       | 1B          | C               | 1920         | 2.50    | 2.80                |                     | 30                    |         |             |
| SACP        | 15          | 1852  | 2100  | 1930       | N20             | E23        | .445             | 8546                | 17.5    | 128      | 2F          | C               |              | 5.14    | 5.22                |                     |                       |         |             |
| HUAN        | 15          | 1909  | 1957D |            | N20             | E25        | .471             | 8546                | 17.7    | 480      | 1F          | 1               | P            | 1925    | 2.11                | 2.15                |                       | E       |             |
| MCMA        | 15          | 1937E | 1947D |            | N21             | E26        | .490             | 8546                | 17.8    | 100      | 1B          | P               | 1942         | 1.86    | 2.10                |                     | BF                    |         |             |
| GRP 1128    | 15          | 2236  | 2310  | 2240       | N18             | E23        | .431             | 8546                | 17.7    | 34       | 1-          |                 |              | .71     |                     |                     |                       | 1       |             |
| LOCK        | 15          | 2236  | 2310  | 2240       | N18             | E23        | .431             | 8546                | 17.7    | 34       | -N          | C               | 2240         | .70     | .80                 |                     | 20                    | 1       |             |
| GRP 1129    | 15          | 2336  | 2348  | 2338       | N19             | E22        | .424             | 8546                | 17.6    | 12       | 1-          |                 |              | .56     |                     |                     |                       | 2       |             |
| LOCK        | 15          | 2335  | 2350  | 2338       | N18             | E23        | .431             | 8546                | 17.7    | 15       | -N          | C               | 2338         | .70     | .80                 |                     | 20                    | 2       |             |
| MANI        | 15          | 2336  | 2346  | 2338       | N20             | E20        | .407             | 8546                | 17.5    | 10       | -N          | 2               | 2338         | .46     | .51                 |                     |                       |         |             |
|             | 16          | 0135  | 0140  |            | NO FLARE PATROL |            |                  |                     |         |          |             |                 |              |         |                     |                     |                       |         |             |
|             | 16          | 0435  | 0445  |            | NO FLARE PATROL |            |                  |                     |         |          |             |                 |              |         |                     |                     |                       |         |             |
| GRP 1130    | 16          | 0723  | 0736  | 0725       | N20             | E18        | .383             | 8546                | 17.7    | 13       | 1-          |                 |              | 1.09    |                     |                     |                       | 1       |             |
| ATHN        | 16          | 0723  | 0736  | 0725       | N20             | E18        | .383             | 8546                | 17.7    | 13       | -N          | 2               | 0725         | .99     | 1.10                | 1.80                |                       | 1       |             |
| GRP 1131    | 16          | 0806  | 0822  | 0809       | N21             | E20        | .417             | 8546                | 17.8    | 16       | 1-          |                 |              | 1.09    |                     |                     |                       | 2       |             |
| ATHN        | 16          | 0806  | 0822  | 0809       | N20             | E18        | .383             | 8546                | 17.7    | 16       | -N          | 2               | 0809         | .99     | 1.10                | 1.60                |                       | 1       |             |
| CAPS        | 16          | 0810E | 0820D |            | N21             | E22        | .441             | 8546                | 18.0    | 100      | -F          | 2               | 0819         | 1.20    | 1.30                |                     |                       |         |             |
| GRP 1132    | 16          | 1021  | 1024  | 1022       | N20             | E17        | .371             | 8546                | 17.7    | 3        | 1-          |                 |              | .34     |                     |                     |                       | 1       |             |
| ATHN        | 16          | 1021  | 1024D | 1022       | N20             | E17        | .371             | 8546                | 17.7    | 30       | -N          | 2               | 1022         | .33     | .40                 | 1.60                |                       | 1       |             |
| GRP 1133    | 16          | 1108  | 1112  | 1111       | N20             | E17        | .371             | 8546                | 17.7    | 4        | 1-          |                 |              | .90     |                     |                     |                       | 1       |             |
| ATHN        | 16          | 1108  | 1112D | 1111       | N20             | E17        | .371             | 8546                | 17.7    | 40       | -N          | 2               | 1111         | .83     | .90                 | 1.60                |                       | 1       |             |
| GRP 1134    | 16          | 1204  | 1251  | 1222       | N20             | E17        | .371             | 8546                | 17.8    | 47       | 1           |                 |              | 3.34    |                     |                     |                       | 3       |             |
| ATHN        | 16          | 1204  | 1251  | 1222       | N19             | E17        | .361             | 8546                | 17.8    | 47       | 1N          | 2               | 1222         | 2.64    | 2.80                | 1.90                |                       | 2       |             |
| CAPS        | 16          | 1211E | 1227D |            | N19             | E14        | .325             | 8546                | 17.6    | 160      | 1N          | 1               |              |         |                     |                     |                       |         |             |
| HUAN        | 16          | 1224E | 1239D |            | N22             | E19        | .414             | 8546                | 17.9    | 150      | -N          | 1               | P            | 1224    | 1.24                | 1.25                |                       | E       |             |
| GRP 1135    | 16          | 1537  | 1548  | 1542       | N22             | E15        | .370             | 8546                | 17.8    | 11       | 1-          |                 |              | .50     |                     |                     |                       | 1       |             |
| LOCK        | 16          | 1537  | 1548  | 1542       | N22             | E15        | .370             | 8546                | 17.8    | 11       | -F          | C               | 1542         | .50     | .60                 |                     | 10                    | 1       |             |
| GRP 1136    | 16          | 1609  | 1635  | 1613       | N25             | E15        | .406             | 8546                | 17.8    | 26       | 1-          |                 |              | 1.65    |                     |                     |                       | 1       |             |
| LOCK        | 16          | 1609  | 1635  | 1613       | N25             | E15        | .406             | 8546                | 17.8    | 26       | -N          | C               | 1613         | 1.50    | 1.60                |                     | 10                    | 1       |             |
| GRP 1137    | 16          | 1640  | 1644  | 1642       | N22             | E17        | .392             | 8546                | 18.0    | 4        | 1-          |                 |              | .19     |                     |                     |                       | 1       |             |
| LOCK        | 16          | 1640  | 1644  | 1642       | N22             | E17        | .392             | 8546                | 18.0    | 4        | -N          | C               | 1642         | .20     | .22                 |                     | 10                    | 1       |             |
| GRP 1138    | 16          | 1650  | 1730  | 1700       | N21             | E14        | .348             | 8546                | 17.8    | 40       | 1-          |                 |              | 1.05    |                     |                     |                       | 1       |             |
| LOCK        | 16          | 1650  | 1730  | 1700       | N21             | E14        | .348             | 8546                | 17.8    | 40       | -N          | C               | 1700         | 1.00    | 1.10                |                     | 10                    | 1       |             |
| GRP 1139    | 16          | 1751  | 1811  | 1804       | N27             | E82        | .986             | 8553                | 22.9    | 20       | 1-          |                 |              | .53     |                     |                     |                       | 1       |             |
| SACP        | 16          | 1751  | 1811  | 1804       | N27             | E82        | .986             | 8553                | 22.9    | 20       | -F          | C               |              | .59     |                     |                     |                       | 1       |             |
| GRP 1140    | 16          | 1815  | 1845  | 1820       | N21             | E12        | .328             | 8546                | 17.7    | 30       | 1-          |                 |              | .94     |                     |                     |                       | 1       |             |
| LOCK        | 16          | 1815  | 1845  | 1820       | N21             | E12        | .328             | 8546                | 17.7    | 30       | -N          | C               | 1820         | .90     | 1.00                |                     | 20                    | 1       |             |
| GRP 1141    | 16          | 1904  | 1919  | 1909       | N21             | E10        | .309             | 8546                | 17.5    | 15       | 1-          |                 |              | .94     |                     |                     |                       | 2       |             |
| LOCK        | 16          | 1901  | 1920  | 1908       | N21             | E11        | .318             | 8546                | 17.6    | 19       | -N          | C               | 1908         | 1.00    | 1.10                |                     | 20                    | H       |             |
| SACP        | 16          | 1906  | 1918  | 1909       | N21             | E09        | .301             | 8546                | 17.5    | 12       | -N          | C               |              | .92     | .91                 |                     |                       |         |             |
| GRP 1142    | 16          | 2045  | 2110  | 2055       | N21             | E11        | .318             | 8546                | 17.7    | 25       | 2-          |                 |              | 1.65    |                     |                     |                       | 1       |             |
| LOCK        | 16          | 2045  | 2110  | 2055       | N21             | E11        | .318             | 8546                | 17.7    | 25       | 1B          | C               | 2055         | 1.50    | 2.30                |                     | 30                    | H       |             |
| GRP 1143    | 16          | 2152  | 2218  | 2203       | N20             | E09        | .287             | 8546                | 17.6    | 26       | 1-          |                 |              | 1.05    |                     |                     |                       | 1       |             |
| LOCK        | 16          | 2152  | 2218  | 2203       | N20             | E09        | .287             | 8546                | 17.6    | 26       | -N          | C               | 2203         | 1.00    | 1.04                |                     | 20                    | 1       |             |
| GRP 1144    | 16          | 2223  | 2250  | 2228       | N21             | E14        | .348             | 8546                | 18.0    | 27       | 1-          |                 |              | 1.28    |                     |                     |                       | 1       |             |
| LOCK        | 16          | 2223  | 2250  | 2228       | N21             | E14        | .348             | 8546                | 18.0    | 27       | -N          | C               | 2228         | 1.20    | 1.30                |                     | 20                    | 1       |             |
| GRP 1145    | 16          | 2303  | 2332  | 2257       | N22             | E10        | .323             | 8546                | 17.7    | 29       | 1-          |                 |              | 1.65    |                     |                     |                       | 2       |             |
| LOCK        | 16          | 2253  | 2338  | 2315       | N22             | E12        | .341             | 8546                | 17.9    | 45       | -B          | C               |              |         |                     |                     |                       | K       |             |
| SACP        | 16          | 2312  | 2325  | 2320       | N21             | E07        | .286             | 8546                | 17.5    | 13       | -N          | C               |              | 1.01    | .99                 |                     |                       |         |             |
|             | 17          | 0020  | 0200  |            | NO FLARE PATROL |            |                  |                     |         |          |             |                 |              |         |                     |                     |                       |         |             |
| GRP 1146    | 17          | 0220  | 0226  | 0224       | N22             | E09        | .273             | 8546                | 17.8    | 6        | 1-          |                 |              | 1.30    |                     |                     |                       | 1       |             |
| KODA        | 17          | 0220E | 0226  | 0224       | N22             | E09        | .273             | 8546                | 17.8    | 60       | -B          | P               | 0224         | 1.29    | 1.30                | 1.84                |                       | E       |             |
| GRP 1147    | 17          | 0246  | 0302  | 0247       | N22             | E09        | .273             | 8546                | 17.8    | 16       | 1           |                 |              | 3.51    |                     |                     |                       | 1       |             |
| KODA        | 17          | 0246  | 0302D | 0247       | N22             | E09        | .273             | 8546                | 17.8    | 160      | 1N          | C               | 0249         | 3.23    | 3.40                | 2.08                |                       | JE      |             |
|             | 17          | 0310  | 0425  |            | NO FLARE PATROL |            |                  |                     |         |          |             |                 |              |         |                     |                     |                       |         |             |
| GRP 1148    | 17          | 0426  | 0548  | 0429       | N22             | E05        | .244             | 8546                | 17.6    | 82       | 2+          |                 |              | 4.94    |                     |                     |                       | 1       |             |
| CULG        | 17          | 0426E | 0548  | 0429       | N22             | E05        | .244             | 8546                | 17.6    | 82D      | 2B          | P               | 0429         | 5.47    |                     |                     |                       | 1       |             |
| GRP 1149    | 17          | 0613  | 0619  | 0615       | N23             | W02        | .248             | 8546                | 17.1    | 6        | 1-          |                 |              | .19     |                     |                     |                       | 1       |             |
| CULG        | 17          | 0613  | 0619  | 0615       | N23             | W02        | .248             | 8546                | 17.1    | 6        | -N          | C               | 0615         | .21     | .21                 |                     |                       | L       |             |
| GRP 1150    | 17          | 0627  | 0701  | 0642       | N20             | E04        | .206             | 8546                | 17.6    | 34       | 1-          |                 |              | .56     |                     |                     |                       | 1       |             |
| CULG        | 17          | 0627  | 0701D | 0642       | N20             | E04        | .206             | 8546                | 17.6    | 34D      | -N          | P               | 0642         | .62     |                     |                     |                       | K       |             |
| GRP 1151    | 17          | 1010  | 1101  | 1024       | N21             | E07        | .242             | 8546                | 17.9    | 51       | 1+          |                 |              | 5.57    |                     |                     |                       | 4       |             |
| ATHN        | 17          | 1010E | 1101  | 1024       | N21             | E07        | .242             | 8546                | 17.9    | 51D      | 1B          | 2               | 1024         | 3.63    | 3.80                | 2.00                |                       | 3       |             |
| KIEV        | 17          | 1011E | 1041D | 1020       | N21             | E04        | .222             | 8546                | 17.7    | 30D      | 1F          | C               | 1020         | 7.73    |                     |                     | 55                    | I       |             |
| KHAR        | 17          | 1013E | 1054D | 1027       | N21             | E06        | .234             | 8546                | 17.9    | 41D      | 2N          | V               | 1032         | 8.51    | 8.80                | 1.80                |                       | EO      |             |
| CAPS        | 17          | 1041E | 1056D |            | N20             | E10        | .256             | 8546                | 18.2    | 150      | -N          | 1               | 1045         | 1.00    | 1.00                |                     | 160                   |         |             |
| GRP 1152    | 17          | 1537  | 1537  |            | N20             | E85        | .991             | 8553                | 24.0    |          | 1-          |                 |              | .43     |                     |                     |                       | 1       |             |
| MCMA        | 17          | 1537E | 1537D |            | N20             | E85        | .991             | 8553                | 24.0    |          | -N          | P               | 1537         | .26     |                     |                     |                       | D       |             |
| GRP 1153    | 17          | 2028  | 2105  | 2037       | N21             | W04        | .222             | 8546                | 17.6    | 37       | 1-          |                 |              | .65     |                     |                     |                       | 3       |             |
| LOCK        | 17          | 2025  | 2110  | 2035       | N21             | W05        | .228             | 8546                | 17.5    | 45       | -F          | C               | 2035         | .80     | .83                 |                     | 10                    | 3       |             |
| SACP        | 17          | 2030  | 2059  | 2039       | N21             | W04        | .222             | 8546                | 17.6    | 29       | -F          | C               |              | 1.01    | .99                 |                     |                       |         |             |
| HUAN        | 17          | 2037E | 2050D |            | N20             | W02        | .198             | 8546                | 17.7    | 13D      | -F          | 1               | P            | 2048    | .25                 | .25                 |                       |         | D           |



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| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION        |            |                  |                      |         | DURATION<br>MIN. | IM-<br>POR-<br>TANCE | OBS.<br>COND. TYPE | MEASUREMENTS |                     |                     |                       |             | REMARKS |      |
|-------------|-------------|-------|-------|------------|-----------------|------------|------------------|----------------------|---------|------------------|----------------------|--------------------|--------------|---------------------|---------------------|-----------------------|-------------|---------|------|
|             | DATE        | START | END   | MAX. PHASE | APPROX. LAT.    | MER. DIST. | CENTRAL DISTANCE | MC MATH PLAGE REGION | CMP DAY |                  |                      |                    | TIME UT      | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH H $\alpha$ | MAX. INT. % |         |      |
|             | 1966<br>OCT |       |       |            |                 |            |                  |                      |         |                  |                      |                    |              |                     |                     |                       |             |         |      |
| GRP 1180    | 20          | 0116  | 0129  | 0125       | N13             | E76        | .967             | 8556                 | 25.8    | 13               | 1-                   |                    |              |                     | .18                 |                       |             | 2 2 1   |      |
| MITK        | 20          | 0110  | 0129  |            | N12             | E76        | .967             | 8556                 | 25.7    | 19               | -N                   |                    |              |                     |                     |                       |             |         |      |
| HALE        | 20          | 0122  | 0129  | 0125       | N13             | E75        | .962             | 8556                 | 25.7    | 7                | -F                   | 2                  | C            | 0125                | .15                 |                       |             | 1 1 1   |      |
| GRP 1181    | 20          | 0113  | 0223  | 0143       | N24             | E48        | .762             | 8553                 | 23.7    | 70               | 1                    |                    |              |                     | 2.72                |                       |             |         |      |
| HALE        | 20          | 0113  | 0223  | 0143U      | N24             | E48        | .762             | 8553                 | 23.7    | 70               | 1N                   | 2                  | C            | 0143                | 2.27                | 3.60                  |             |         |      |
|             | 20          | 0350  | 0515  |            | NO FLARE PATROL |            |                  |                      |         |                  |                      |                    |              |                     |                     |                       |             |         |      |
| GRP 1182    | 20          | 0528  | 0538  |            | S19             | E76        | .981             | 8554                 | 25.9    | 10               | 1                    |                    |              |                     |                     |                       |             | 1 1 0   |      |
| MITK        | 20          | 0528E | 0538  |            | S19             | E76        | .981             | 8554                 | 25.9    | 100              | 1N                   |                    |              |                     |                     |                       |             |         |      |
| GRP 1183    | 20          | 0537  | 0605  | 0551       | N13             | E69        | .929             | 8556                 | 25.4    | 28               | 1-                   |                    |              |                     | .19                 |                       |             | 1 1 1   |      |
| CULG        | 20          | 0537E | 0605  | 0551       | N13             | E69        | .929             | 8556                 | 25.4    | 280              | -N                   |                    |              | P                   | 0551                | .21                   |             | K       |      |
| GRP 1184    | 20          | 0558  | 0641  | 0633       | N22             | W31        | .562             | 8546                 | 17.9    | 43               | 1-                   |                    |              |                     | 1.87                |                       |             | 2 2 2   |      |
| CULG        | 20          | 0558  | 0641D | 0633       | N21             | W30        | .544             | 8546                 | 18.0    | 43D              | -B                   |                    |              | P                   | 0633                | 1.13                  | 1.32        | F       |      |
| ATHN        | 20          | 0626E | 0626D |            | N22             | W31        | .562             | 8546                 | 17.9    | 1N               | 2                    |                    |              |                     | 2.31                | 2.40                  | 1.60        |         |      |
| GRP 1185    | 20          | 0558  | 0612  | 0602       | N27             | E80        | .980             | 8555                 | 26.2    | 14               | 1-                   |                    |              |                     | .19                 |                       |             | 1 1 1   |      |
| CULG        | 20          | 0558  | 0612  | 0602       | N27             | E80        | .980             | 8555                 | 26.2    | 14               | -N                   |                    |              | C                   | 0602                | .21                   |             |         |      |
| GRP 1186    | 20          | 0818  | 0835  | 0824       | N08             | E70        | .937             | 8556                 | 25.6    | 17               | 1-                   |                    |              |                     | .15                 |                       |             | 1 1 1   |      |
| CATA        | 20          | 0818E | 0835D | 0824       | N08             | E70        | .937             | 8556                 | 25.6    | 17D              | -N                   |                    |              |                     | 0824                | .15                   |             | 188     |      |
| GRP 1187    | 20          | 0935  | 1004  | 0942       | N26             | E77        | .970             | 8555                 | 26.2    | 29               | 1-                   |                    |              |                     | 1.70                |                       |             | 2 1 1   |      |
| LOCA        | 20          | 0935  | 1000  | 0942       | N26             | E75        | .962             | 8555                 | 26.0    | 25               | 1N                   |                    |              | V                   | 0942                | 1.89                  |             |         |      |
| KHAR        | 20          | 0950E | 1008  |            | N25             | E78        | .974             | 8555                 | 26.3    | 18D              | 2N                   |                    |              | V                   | 0950                |                       | 2.10        | HL      |      |
| GRP 1188    | 20          | 0945  | 1035  |            | N08             | E72        | .948             | 8556                 | 25.8    | 50               | 1-                   |                    |              |                     |                     |                       |             | 1 1 0   |      |
| KAND        | 20          | 0945E | 1035  |            | N08             | E72        | .948             | 8556                 | 25.8    | 50D              | -N                   |                    |              |                     |                     |                       |             | V       |      |
| GRP 1189    | 20          | 1014  | 1029  |            | N15             | W33        | .556             | 8546                 | 18.0    | 15               | 1-                   |                    |              |                     |                     |                       |             | 1 1 0   |      |
| KAND        | 20          | 1014  | 1029  |            | N15             | W33        | .556             | 8546                 | 18.0    | 15               | -N                   |                    |              |                     |                     |                       |             | V       |      |
| GRP 1190    | 20          | 1045  | 1051  |            | N11             | E68        | .923             | 8556                 | 25.5    | 6                | 1-                   |                    |              |                     |                     |                       |             | 1 1 0   |      |
| KHAR        | 20          | 1045E | 1051D |            | N11             | E68        | .923             | 8556                 | 25.5    | 6D               | 1N                   |                    |              | V                   | 1047                |                       | 2.10        | DH      |      |
| GRP 1191    | 20          | 1122  | 1202  |            | N11             | E70        | .936             | 8556                 | 25.7    | 40               | 1-                   |                    |              |                     |                     |                       |             | 2 2 2   |      |
| KHAR        | 20          | 1122E | 1204  |            | N11             | E68        | .923             | 8556                 | 25.6    | 42D              | 1N                   |                    |              | V                   | 1200                | 1.25                  | 3.00        | 3.20    | DHOQ |
| CAPS        | 20          | 1153E | 1159  |            | N11             | E71        | .942             | 8556                 | 25.8    | 6D               | -N                   | 1                  |              |                     | 1155                | .30                   |             |         |      |
| GRP 1192    | 20          | 1248  | 1335  |            | N21             | E43        | .700             | 8553                 | 23.8    | 47               | 1-                   |                    |              |                     | 1.30                |                       |             | 1 1 1   |      |
| MCMA        | 20          | 1248E | 1335  |            | N21             | E43        | .700             | 8553                 | 23.8    | 47D              | -N                   |                    |              | P                   | 1257                | .93                   | 1.30        |         |      |
| GRP 1193    | 20          | 1406  | 1421  |            | N10             | E70        | .936             | 8556                 | 25.8    | 15               | 1-                   |                    |              |                     |                     |                       |             | 1 1 0   |      |
| UCCL        | 20          | 1406E | 1421D |            | N10             | E70        | .936             | 8556                 | 25.8    | 15D              | -                    |                    |              | P                   |                     |                       |             | D       |      |
| GRP 1194    | 20          | 1450  | 1520  | 1500       | N07             | W37        | .599             | 8545                 | 17.8    | 30               | 1-                   |                    |              |                     |                     |                       |             | 1 1 0   |      |
| SALO        | 20          | 1450  | 1520  | 1500       | N07             | W37        | .599             | 8545                 | 17.8    | 30               | -                    |                    |              |                     |                     |                       |             |         |      |
| GRP 1195    | 20          | 1500  | 1520  | 1520       | N08             | E63        | .887             | 8556                 | 25.4    | 20               | 1-                   |                    |              |                     |                     |                       |             | 1 1 0   |      |
| SALO        | 20          | 1500  | 1520  | 1520       | N08             | E63        | .887             | 8556                 | 25.4    | 20               | -                    |                    |              |                     |                     |                       |             |         |      |
| GRP 1196    | 20          | 1612  | 1625  | 1614       | N22             | W30        | .550             | 8546                 | 18.4    | 13               | 1-                   |                    |              |                     | .64                 |                       |             | 1 1 1   |      |
| MCMA        | 20          | 1612  | 1625  | 1614       | N22             | W30        | .550             | 8546                 | 18.4    | 13               | -N                   |                    |              | C                   | 1614                | .46                   | .60         | D       |      |
| GRP 1197    | 20          | 1612  | 1625  | 1614       | N21             | W47        | .744             | 8546                 | 17.2    | 13               | 1                    |                    |              |                     | 1.67                |                       |             | 1 1 1   |      |
| SACP        | 20          | 1612  | 1625  | 1614       | N21             | W47        | .744             | 8546                 | 17.1    | 13               | 1N                   |                    |              | C                   |                     | 1.86                  | 2.25        |         |      |
| GRP 1198    | 20          | 1708  | 1724  | 1723       | N16             | W37        | .612             | 8546                 | 17.9    | 16               | 1-                   |                    |              |                     | .49                 |                       |             | 2 2 2   |      |
| MCMA        | 20          | 1655  | 1720  |            | N16             | W35        | .586             | 8546                 | 18.1    | 25               | -N                   |                    |              | C                   | 1700                | .52                   | .60         | H       |      |
| HALE        | 20          | 1720  | 1727  | 1723       | N15             | W39        | .636             | 8546                 | 17.8    | 7                | -N                   | 2                  | C            | 1723                | .21                 | .30                   |             |         |      |
| GRP 1199    | 20          | 1701  | 1711  | 1702       | N12             | E64        | .895             | 8556                 | 25.5    | 10               | 1-                   |                    |              |                     | .28                 |                       |             | 2 2 2   |      |
| HALE        | 20          | 1658  | 1712  | 1659       | N12             | E62        | .879             | 8556                 | 25.4    | 14               | -N                   | 2                  | C            | 1659                | .21                 | .40                   |             |         |      |
| MCMA        | 20          | 1705  | 1710  | 1706       | N13             | E65        | .902             | 8556                 | 25.6    | 5                | -N                   |                    |              | C                   | 1706                | .21                   | .50         | D       |      |
| GRP 1200    | 20          | 1712  | 1726  | 1716       | N14             | E66        | .909             | 8556                 | 25.7    | 14               | 1-                   |                    |              |                     | .78                 |                       |             | 3 3 3   |      |
| SACP        | 20          | 1710  | 1720  | 1716       | N15             | E64        | .895             | 8556                 | 25.5    | 10               | -N                   |                    |              | P                   |                     | 1.18                  | 1.88        |         |      |
| HALE        | 20          | 1713  | 1731  | 1717       | N14             | E66        | .909             | 8556                 | 25.7    | 18               | -B                   | 2                  | C            | 1717                | .41                 |                       |             |         |      |
| MCMA        | 20          | 1714  | 1727  | 1716       | N14             | E67        | .916             | 8556                 | 25.7    | 13               | -N                   |                    |              | C                   | 1716                | .52                   | 1.20        | E       |      |
| GRP 1201    | 20          | 1736  | 1756  | 1744       | N23             | W31        | .568             | 8546                 | 18.4    | 20               | 1-                   |                    |              |                     | 1.19                |                       |             | 2 2 2   |      |
| HALE        | 20          | 1735  | 1747  | 1746U      | N23             | W31        | .568             | 8546                 | 18.4    | 12               | -B                   | 2                  | P            | 1746                | 1.13                | 1.40                  | E           |         |      |
| MCMA        | 20          | 1737  | 1805  | 1742       | N22             | W30        | .550             | 8546                 | 18.5    | 28               | -F                   |                    |              | C                   | 1742                | .72                   | .90         | E       |      |
| GRP 1202    | 20          | 1738  | 1810  | 1744       | N13             | E67        | .916             | 8556                 | 25.8    | 32               | 1-                   |                    |              |                     | .63                 |                       |             | 2 2 2   |      |
| HALE        | 20          | 1737  | 1747D | 1744U      | N12             | E66        | .909             | 8556                 | 25.7    | 10D              | -N                   | 2                  | P            | 1744                | .52                 |                       | E           |         |      |
| MCMA        | 20          | 1738  | 1810  | 1743       | N13             | E67        | .916             | 8556                 | 25.8    | 32               | -N                   |                    |              | C                   | 1743                | .41                   | 1.00        | E       |      |
| GRP 1203    | 20          | 1747  | 1752  | 1748       | N14             | W36        | .594             | 8546                 | 18.0    | 5                | 1-                   |                    |              |                     | .43                 |                       |             | 1 1 1   |      |
| MCMA        | 20          | 1747  | 1752  | 1748       | N14             | W36        | .594             | 8546                 | 18.0    | 5                | -N                   |                    |              | C                   | 1750                | .31                   | .32         | D       |      |
| GRP 1204    | 20          | 1900  | 1914  | 1904       | N21             | W49        | .765             | 8546                 | 17.1    | 14               | 1                    |                    |              |                     | 1.09                |                       |             | 2 2 2   |      |
| LOCK        | 20          | 1900  | 1915  | 1904       | N21             | W50        | .775             | 8546                 | 17.0    | 15               | -N                   |                    |              | C                   | 1904                | .50                   | .80         | 20      |      |
| SACP        | 20          | 1903E | 1912  | 1904       | N20             | W48        | .752             | 8546                 | 17.2    | 9D               | 1B                   |                    |              | C                   |                     | 1.86                  | 2.30        |         |      |
| GRP 1205    | 20          | 1903  | 1912  | 1905       | N18             | W38        | .631             | 8546                 | 17.9    | 9                | 1-                   |                    |              |                     | .73                 |                       |             | 1 1 1   |      |
| MCMA        | 20          | 1903  | 1912  | 1905       | N18             | W38        | .631             | 8546                 | 17.9    | 9                | -N                   |                    |              | C                   | 1905                | .52                   | .70         | DV      |      |
| GRP 1206    | 20          | 2021  | 2037  | 2024       | N22             | W39        | .658             | 8546                 | 17.9    | 16               | 1-                   |                    |              |                     | .34                 |                       |             | 2 2 2   |      |
| LOCK        | 20          | 2020  | 2035  | 2024       | N22             | W39        | .658             | 8546                 | 17.9    | 15               | -F                   |                    |              | C                   | 2024                | .40                   | .50         | 10      |      |
| CULG        | 20          | 2021  | 2038  | 2023       | N22             | W39        | .658             | 8546                 | 17.9    | 17               | -N                   |                    |              | C                   | 2023                | .31                   | .39         | F       |      |
| GRP 1207    | 20          | 2036  | 2057  | 2043       | N12             | E65        | .902             | 8556                 | 25.7    | 21               | 1-                   |                    |              |                     | .74                 |                       |             | 3 3 3   |      |
| CULG        | 20          | 2034  | 2059  | 2043       | N12             | E66        | .909             | 8556                 | 25.8    | 25               | -N                   |                    |              | C                   | 2043                | .62                   |             |         |      |
| MCMA        | 20          | 2037E | 2046D |            | N13             | E65        | .902             | 8556                 | 25.7    | 9D               | -B                   |                    |              | P                   | 2037                | .41                   | 1.00        | E       |      |
| LOCK        | 20          | 2037  | 2055  | 2042       | N12             | E63        | .887             | 8556                 | 25.6    | 18               | 1N                   |                    |              | C                   | 2042                | 1.00                  | 2.10        | 20      |      |



SOLAR FLARES  
REVISED  
OCTOBER 1966

| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION        |                       |                     |                           |            | DURATION<br>MIN. | IM-<br>POR-<br>TANCE | OBS.<br>COND. TYPE | MEASUREMENTS |                           |                           |                     |                   | REMARKS |
|-------------|-------------|-------|-------|------------|-----------------|-----------------------|---------------------|---------------------------|------------|------------------|----------------------|--------------------|--------------|---------------------------|---------------------------|---------------------|-------------------|---------|
|             | DATE        | START | END   | MAX. PHASE | APPROX.<br>LAT. | APPROX.<br>MER. DIST. | CENTRAL<br>DISTANCE | MCMATH<br>FLARE<br>REGION | CMP<br>DAY |                  |                      |                    | TIME<br>UT   | MEAS.<br>AREA<br>Sq. Deg. | CORR.<br>AREA<br>Sq. Deg. | MAX.<br>WIDTH<br>Ha | MAX.<br>INT.<br>% |         |
|             | 1966        |       |       |            |                 |                       |                     |                           |            |                  |                      |                    |              |                           |                           |                     |                   |         |
|             | OCT         |       |       |            |                 |                       |                     |                           |            |                  |                      |                    |              |                           |                           |                     |                   |         |
| GRP 1208    | 20          | 2152  | 2207  | 2156       | N20             | W50                   | .773                | 8546                      | 17.2       | 15               | 1                    |                    |              |                           | 1.33                      |                     |                   | 3 3 3   |
| CULG        | 20          | 2151  | 2208D | 2155       | N20             | W50                   | .773                | 8546                      | 17.2       | 17D              | -B                   | P                  | 2155         |                           | .62                       | .96                 |                   | VL      |
| SACP        | 20          | 2153  | 2204  | 2156       | N20             | W50                   | .773                | 8546                      | 17.2       | 11               | 18                   | C                  |              |                           | 2.29                      | 2.90                |                   |         |
| HALE        | 20          | 2153  | 2210  | 2157       | N21             | W51                   | .785                | 8546                      | 17.1       | 17               | -B                   | 1 C                | 2157         |                           | 1.13                      | 1.80                |                   |         |
| GRP 1209    | 20          | 2305  | 2320  | 2310       | N23             | W42                   | .696                | 8546                      | 17.8       | 15               | 1-                   |                    |              |                           | .49                       |                     |                   | 2 2 2   |
| CULG        | 20          | 2305  | 2313D | 2309       | N22             | W40                   | .669                | 8546                      | 18.0       | 8D               | -N                   | P                  | 2309         |                           | .41                       | .52                 |                   | F       |
| LOCK        | 20          | 2305  | 2320U | 2310       | N23             | W43                   | .707                | 8546                      | 17.7       | 15U              | -F                   | C                  | 2310         |                           | .60                       | .80                 |                   | 10      |
| GRP 1210    | 21          | 0002  | 0053  | 0004       | N13             | E62                   | .879                | 8556                      | 25.7       | 51               | 1-                   |                    |              |                           | .25                       |                     |                   | 1 1 1   |
| HALE        | 21          | 0002  | 0053  | 0004       | N13             | E62                   | .879                | 8556                      | 25.7       | 51               | -N                   | 1 C                | 0004         |                           | .21                       | .40                 |                   | T       |
| GRP 1211    | 21          | 0102  | 0139  | 0133       | N12             | E59                   | .853                | 8556                      | 25.5       | 37               | 1-                   |                    |              |                           | .18                       |                     |                   | 1 1 1   |
| HALE        | 21          | 0102  | 0139  | 0133       | N12             | E59                   | .853                | 8556                      | 25.5       | 37               | -F                   | 1 C                | 0133         |                           | .15                       | .30                 |                   | T       |
| GRP 1212    | 21          | 0227  | 0348  | 0335       | N12             | E57                   | .835                | 8556                      | 25.4       | 81               | 1-                   |                    |              |                           | .37                       |                     |                   | 1 1 1   |
| HALE        | 21          | 0227  | 0348D | 0335       | N12             | E57                   | .835                | 8556                      | 25.4       | 81D              | -N                   | 1 P                | 0335         |                           | .31                       | .60                 |                   | T       |
| GRP 1213    | 21          | 0345  | 0355  | 0347       | N21             | W52                   | .795                | 8546                      | 17.3       | 10               | 1-                   |                    |              |                           | .68                       |                     |                   | 2 2 2   |
| HALE        | 21          | 0345  | 0348D | 0346U      | N22             | W52                   | .797                | 8546                      | 17.3       | 3D               | -B                   | 1 P                | 0346         |                           | .83                       | 1.40                |                   |         |
| MANI        | 21          | 0346E | 0355  | 0348       | N20             | W52                   | .794                | 8546                      | 17.3       | 9D               | -N                   | 2                  | 0348         |                           | .41                       | .66                 |                   |         |
| GRP 1214    | 21          | 0452  | 0458  |            | N14             | W44                   | .696                | 8546                      | 17.9       | 6                | 1-                   |                    |              |                           | .28                       |                     |                   | 1 1 1   |
| MANI        | 21          | 0452E | 0458D |            | N14             | W44                   | .696                | 8546                      | 17.9       | 6D               | -F                   | 2                  | 0453         |                           | .31                       | .43                 |                   |         |
| GRP 1215    | 21          | 0700  | 0802  | 0701       | N17             | W51                   | .779                | 8546                      | 17.5       | 62               | 1-                   |                    |              |                           | .28                       |                     |                   | 2 1 1   |
| CULG        | 21          | 0700  | 0713  | 0701       | N19             | W54                   | .812                | 8546                      | 17.2       | 13               | -N                   | C                  | 0701         |                           | .31                       | .51                 |                   |         |
| ISTA        | 21          | 0705E | 0850  |            | N15             | W47                   | .733                | 8546                      | 17.8       | 105D             | 1F                   |                    |              |                           |                           |                     |                   | 1 1 0   |
| GRP 1216    | 21          | 0705  | 0905  |            | N22             | E60                   | .868                | 8555                      | 25.8       | 120              | 1F                   |                    |              |                           |                           |                     |                   |         |
| ISTA        | 21          | 0705E | 0905D |            | N22             | E60                   | .868                | 8555                      | 25.8       | 120D             | 1F                   |                    |              |                           |                           |                     |                   |         |
| GRP 1217    | 21          | 0906  | 0952  | 0922       | N14             | W48                   | .743                | 8546                      | 17.8       | 46               | 1-                   |                    |              |                           | 1.12                      |                     |                   | 4 4 4   |
| KAND        | 21          | 0840E | 1015  |            | N16             | W49                   | .757                | 8546                      | 17.7       | 95D              | 1N                   |                    | 0920         |                           | 1.85                      | 2.30                |                   | C       |
| ARCE        | 21          | 0910E | 1000D | 0920       | N13             | W49                   | .753                | 8546                      | 17.7       | 50D              | -N                   | C                  | 0920         |                           | 1.02                      | 1.60                |                   | H       |
| CAPS        | 21          | 0917E | 0927D |            | N13             | W47                   | .731                | 8546                      | 17.9       | 100              | -N                   | 1                  | 0918         |                           | .30                       | .40                 |                   | C       |
| KHAR        | 21          | 0917  | 0927  | 0923       | N14             | W49                   | .754                | 8546                      | 17.7       | 10               | 1F                   | V                  | 0923         |                           | 3.74                      | 5.60                | 1.80              | 157     |
| GRP 1218    | 21          | 0930  | 1002  | 0940       | N10             | W48                   | .740                | 8546                      | 17.8       | 32               | 1-                   |                    |              |                           | .67                       |                     |                   | 2 2 1   |
| SALO        | 21          | 0930  | 1010  | 0940       | N07             | W48                   | .740                | 8546                      | 17.8       | 40               | -                    |                    |              |                           |                           |                     |                   |         |
| ATHN        | 21          | 0937E | 0955  | 0940       | N14             | W48                   | .743                | 8546                      | 17.8       | 18D              | -N                   | 2                  | 0940         |                           | .66                       | .90                 | 1.80              |         |
| GRP 1219    | 21          | 1502  | 1508  | 1502       | S16             | E48                   | .789                | 8554                      | 25.2       | 6                | 1-                   |                    |              |                           | .67                       |                     |                   | 1 1 1   |
| ATHN        | 21          | 1502E | 1508  | 1502       | S16             | E48                   | .789                | 8554                      | 25.2       | 6D               | -N                   | 1                  | 1502         |                           | .66                       | 1.10                | 1.70              |         |
| GRP 1220    | 21          | 1614  | 1716  | 1621       | N20             | W53                   | .804                | 8546                      | 17.7       | 62               | 1-                   |                    |              |                           | 1.05                      |                     |                   | 2 1 1   |
| LOCK        | 21          | 1614  | 1725  | 1621       | N20             | W54                   | .813                | 8546                      | 17.6       | 71               | -F                   | C                  | 1621         |                           | 1.00                      | 1.70                |                   | 10      |
| HALE        | 21          | 1630E | 1706  | 1641       | N20             | W51                   | .784                | 8546                      | 17.9       | 36D              | -N                   | 3 P                | 1641         |                           | .12                       | .30                 |                   |         |
| GRP 1221    | 21          | 1719  | 1737  | 1725       | N12             | E48                   | .741                | 8556                      | 25.3       | 18               | 1-                   |                    |              |                           | .21                       |                     |                   | 1 1 1   |
| HALE        | 21          | 1719  | 1737  | 1725       | N12             | E48                   | .741                | 8556                      | 25.3       | 18               | -N                   | 3 C                | 1725         |                           | .10                       | .20                 |                   |         |
| GRP 1222    | 21          | 1719  | 1800  | 1732       | N24             | E32                   | .587                | 8553                      | 24.1       | 41               | 1-                   |                    |              |                           | .25                       |                     |                   | 1 1 1   |
| HALE        | 21          | 1719  | 1800  | 1732       | N24             | E32                   | .587                | 8553                      | 24.1       | 41               | -N                   | 2 C                | 1732         |                           | .21                       | .30                 |                   |         |
| GRP 1223    | 21          | 1821  | 1837  | 1822       | N10             | W55                   | .816                | 8545                      | 17.6       | 16               | 1-                   |                    |              |                           | .74                       |                     |                   | 1 1 1   |
| HALE        | 21          | 1821  | 1837  | 1822       | N10             | W55                   | .816                | 8545                      | 17.6       | 16               | -F                   | 1 C                | 1822         |                           | .62                       | 1.10                |                   |         |
| GRP 1224    | 21          | 1824  | 1852  | 1839       | N22             | E26                   | .502                | 8553                      | 23.7       | 28               | 1-                   |                    |              |                           | .43                       |                     |                   | 2 2 2   |
| HALE        | 21          | 1823  | 1848  | 1840       | N22             | E26                   | .502                | 8553                      | 23.7       | 25               | -F                   | 2 C                | 1840         |                           | .21                       | .22                 |                   | E       |
| LOCK        | 21          | 1825  | 1855  | 1838       | N21             | E25                   | .482                | 8553                      | 23.6       | 30               | -F                   | C                  | 1838         |                           | .60                       | .70                 |                   | 10      |
| GRP 1225    | 21          | 1913  | 1953  | 1920       | N24             | E28                   | .540                | 8553                      | 23.9       | 40               | 1-                   |                    |              |                           | .51                       |                     |                   | 3 3 3   |
| LOCK        | 21          | 1913  | 1945  | 1922       | N23             | E29                   | .545                | 8553                      | 24.0       | 32               | -N                   | C                  | 1922         |                           | .60                       | .70                 |                   | 20      |
| SACP        | 21          | 1913  | 1947  | 1918       | N24             | E28                   | .540                | 8553                      | 23.9       | 34               | -F                   | C                  |              |                           | .68                       | .71                 |                   |         |
| HALE        | 21          | 1913  | 2006  | 1919       | N24             | E26                   | .517                | 8553                      | 23.8       | 53               | -N                   | 2 C                | 1919         |                           | .26                       | .30                 |                   |         |
| GRP 1226    | 21          | 2027  | 2048  | 2030       | N12             | E48                   | .741                | 8556                      | 25.5       | 21               | 1-                   |                    |              |                           | .28                       |                     |                   | 1 1 1   |
| CULG        | 21          | 2027  | 2048  | 2030       | N12             | E48                   | .741                | 8556                      | 25.5       | 21               | -F                   | C                  | 2030         |                           | .31                       | .43                 |                   |         |
| GRP 1227    | 21          | 2109  | 2131  | 2113       | N13             | E47                   | .731                | 8556                      | 25.4       | 22               | 1-                   |                    |              |                           | .48                       |                     |                   | 3 3 3   |
| CULG        | 21          | 2108  | 2130  | 2113       | N12             | E48                   | .741                | 8556                      | 25.5       | 22               | -N                   | C                  | 2113         |                           | .41                       | .60                 |                   |         |
| HALE        | 21          | 2108  | 2134  | 2112       | N13             | E46                   | .719                | 8556                      | 25.3       | 26               | -N                   | 2 C                | 2112         |                           | .26                       | .40                 |                   |         |
| SACP        | 21          | 2110  | 2130  | 2115       | N13             | E47                   | .731                | 8556                      | 25.4       | 20               | -F                   | C                  |              |                           | .85                       | 1.01                |                   |         |
| GRP 1228    | 21          | 2110  | 2135  | 2115       | N05             | E46                   | .717                | 8556                      | 25.3       | 25               | 1-                   |                    |              |                           | .82                       |                     |                   | 1 1 1   |
| LOCK        | 21          | 2110  | 2135  | 2115       | N05             | E46                   | .717                | 8556                      | 25.3       | 25               | -F                   | C                  | 2115         |                           | .80                       | 1.20                |                   | 10      |
| GRP 1229    | 21          | 2223  | 2259  | 2249       | N12             | E47                   | .730                | 8556                      | 25.5       | 36               | 1-                   |                    |              |                           | .47                       |                     |                   | 1 1 1   |
| CULG        | 21          | 2223  | 2259  | 2249       | N12             | E47                   | .730                | 8556                      | 25.5       | 36               | -N                   | C                  | 2249         |                           | .52                       | .70                 |                   |         |
| GRP 1230    | 21          | 2355  | 0011  | 2358       | N13             | E45                   | .707                | 8556                      | 25.4       | 16               | 1-                   |                    |              |                           | .80                       |                     |                   | 3 2 2   |
| MITK        | 21          | 2355  | 0015  | 2358       | N13             | E46                   | .719                | 8556                      | 25.4       | 20               | 1N                   | C                  | 2358         |                           | 1.86                      | 2.30                |                   | 170     |
| IKOM        | 21          | 2357E | 0004D |            | N12             | E45                   | .706                | 8556                      | 25.4       | 7D               | -N                   | V                  | 2357         |                           | .72                       | 1.00                |                   | 95      |
| HALE        | 22          | 0000E | 0007  |            | N14             | E45                   | .709                | 8556                      | 25.4       | 7D               | -B                   | 2 P                | 0000         |                           | .41                       | .60                 |                   |         |
| GRP 1231    | 21          | 2356  | 0013  | 2359       | N05             | E45                   | .705                | 8556                      | 25.4       | 17               | 1-                   |                    |              |                           | .61                       |                     |                   | 1 1 1   |
| LOCK        | 21          | 2356  | 0013  | 2359       | N05             | E45                   | .705                | 8556                      | 25.4       | 17               | -B                   | C                  | 2359         |                           | .60                       | .90                 |                   | 30      |
| GRP 1232    | 22          | 0012  | 0023  | 0018       | N28             | E12                   | .429                | 8558                      | 22.9       | 11               | 1-                   |                    |              |                           | .29                       |                     |                   | 3 3 3   |
| CULG        | 22          | 0003  | 0017  |            | N28             | E12                   | .429                | 8558                      | 22.9       | 14               | -N                   | C                  | 0017         |                           | .31                       | .33                 |                   |         |
| LOCK        | 22          | 0015  | 0025  | 0018       | N28             | E13                   | .435                | 8558                      | 23.0       | 10               | -N                   | C                  | 0018         |                           | .40                       | .42                 |                   | 20      |
| HALE        | 22          | 0017  | 0028  | 0017       | N28             | E10                   | .416                | 8558                      | 22.8       | 11               | -F                   | 2 C                | 0017         |                           | .15                       | .20                 |                   |         |
| GRP 1233    | 22          | 0127  | 0135  | 0129       | N28             | E12                   | .429                | 8558                      | 23.0       | 8                | 1-                   |                    |              |                           | .54                       |                     |                   | 4 4 4   |
| CULG        | 22          | 0125  | 0137D | 0129       | N28             | E12                   | .429                | 8558                      | 23.0       | 12D              | -N                   | P                  | 0129         |                           | .41                       | .44                 |                   |         |
| MITK        | 22          | 0127  | 0135  | 0129       | N27             | E12                   | .415                | 8558                      | 23.0       | 8                | -N                   | C                  | 0129         |                           | 1.34                      | 1.50                |                   | 140     |
| IKOM        | 22          | 0128E | 0131D |            | N28             | E15                   | .450                | 8558                      | 23.2       | 3D               | -                    |                    |              |                           |                           |                     |                   |         |



# SOLAR FLARES

REVISED  
OCTOBER 1966

| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION        |            |                  |                     | DURATION<br>MIN. | IM-PORTANCE | OBS. COND. TYPE | MEASUREMENTS |         |                        |                        |                  | REMARKS |             |  |
|-------------|-------------|-------|-------|------------|-----------------|------------|------------------|---------------------|------------------|-------------|-----------------|--------------|---------|------------------------|------------------------|------------------|---------|-------------|--|
|             | DATE        | START | END   | MAX. PHASE | APPROX. LAT.    | MER. DIST. | CENTRAL DISTANCE | MCMATH PLAGE REGION |                  |             |                 | CMP DAY      | TIME UT | MEAS. AREA<br>Sq. Deg. | CORR. AREA<br>Sq. Deg. | MAX. WIDTH<br>Ha |         | MAX. INT. % |  |
| GRP 1234    | 1966 OCT 22 | 0144  | 0206  | 0152       | N28             | E57        | .853             | 8555                | 26.3             | 22          | 1-              |              |         | .68                    |                        |                  |         | 3 3 3       |  |
| HALE        | 22          | 0140  | 0200  | 0143       | N27             | E54        | .826             | 8555                | 26.1             | 20          | -N              | 2            | C       | 0143                   | .41                    | .80              |         |             |  |
| MITK        | 22          | 0143  | 0209  | 0151       | N28             | E58        | .860             | 8555                | 26.4             | 26          | 1F              |              | C       | 0151                   | 1.55                   | 3.00             | 130     |             |  |
| CULG        | 22          | 0150  | 0210D | 0152       | N28             | E58        | .860             | 8555                | 26.4             | 20D         | -B              |              | P       | 0152                   | .52                    | .95              |         |             |  |
| GRP 1235    | 22          | 0339  | 0348  | 0339       | N13             | W59        | .854             | 8546                | 17.7             | 9           | 1-              |              |         | .25                    |                        |                  | 1 1 1   |             |  |
| HALE        | 22          | 0339  | 0348D | 0339       | N13             | W59        | .854             | 8546                | 17.7             | 9D          | -F              | 3            | C       | 0339                   | .21                    | .40              |         |             |  |
| GRP 1236    | 22          | 0358  | 0408  | 0400       | N21             | E21        | .434             | 8553                | 23.7             | 10          | 1-              |              |         | .37                    |                        |                  | 1 1 1   |             |  |
| CULG        | 22          | 0358  | 0408  | 0400       | N21             | E21        | .434             | 8553                | 23.7             | 10          | -N              |              | C       | 0400                   | .41                    | .44              |         |             |  |
| GRP 1237    | 22          | 0420  | 0456  | 0437       | N29             | E11        | .436             | 8558                | 23.0             | 36          | 1-              |              |         | .19                    |                        |                  | 1 1 1   |             |  |
| CULG        | 22          | 0420  | 0456  | 0437       | N29             | E11        | .436             | 8558                | 23.0             | 36          | -N              |              | C       | 0437                   | .21                    | .22              |         | L           |  |
| GRP 1238    | 22          | 0611  | 0620  | 0617       | N21             | E20        | .422             | 8553                | 23.8             | 9           | 1-              |              |         | .51                    |                        |                  | 2 2 2   |             |  |
| TACH        | 22          | 0611  | 0619  | 0615       | N21             | E20        | .422             | 8553                | 23.8             | 8           | -B              |              | C       | 0615                   | .55                    | .60              | 128     | E           |  |
| CULG        | 22          | 0614E | 0621D | 0618       | N21             | E19        | .410             | 8553                | 23.7             | 7D          | -N              |              | P       | 0618                   | .62                    | .66              |         |             |  |
| GRP 1239    | 22          | 0750  | 0758  | 0753       | N23             | W57        | .845             | 8546                | 18.1             | 8           | 1-              |              |         | .50                    |                        |                  | 1 1 1   |             |  |
| ATHN        | 22          | 0750  | 0758  | 0753       | N23             | W57        | .845             | 8546                | 18.1             | 8           | -N              | 2            |         | .50                    | .90                    | 1.80             |         |             |  |
| GRP 1240    | 22          | 0827  | 0832  |            | N27             | E07        | .385             | 8558                | 22.9             | 5           | 1-              |              |         |                        |                        |                  | 1 1 0   |             |  |
| LOCA        | 22          | 0827E | 0832D |            | N27             | E07        | .385             | 8558                | 22.9             | 5D          | -N              |              | S       |                        |                        |                  |         |             |  |
| GRP 1241    | 22          | 0913  | 0929  | 0915       | N13             | E41        | .658             | 8556                | 25.5             | 16          | 1-              |              |         | .50                    |                        |                  | 1 1 1   |             |  |
| ATHN        | 22          | 0913  | 0929  | 0915       | N13             | E41        | .658             | 8556                | 25.5             | 16          | -N              | 1            |         | .50                    | .70                    | 1.80             |         |             |  |
| GRP 1242    | 22          | 0916  | 0920  | 0917       | N21             | E16        | .375             | 8553                | 23.6             | 4           | 1-              |              |         | 1.50                   |                        |                  | 1 1 1   |             |  |
| ATHN        | 22          | 0916  | 0920  | 0917       | N21             | E16        | .375             | 8553                | 23.6             | 4           | -N              | 1            |         | 1.32                   | 1.40                   | 1.60             |         |             |  |
| GRP 1243    | 22          | 1205  | 1232  | 1207       | N23             | E17        | .408             | 8553                | 23.8             | 27          | 1-              |              |         | 1.09                   |                        |                  | 1 1 1   |             |  |
| MONT        | 22          | 1205  | 1232  | 1207       | N23             | E17        | .408             | 8553                | 23.8             | 27          | -F              |              | C       | 1207                   | 1.09                   | 1.10             |         |             |  |
| GRP 1244    | 22          | 1247  | 1258  | 1250       | N07             | W75        | .964             | 8545                | 16.9             | 11          | 1-              |              |         | .50                    |                        |                  | 2 2 2   |             |  |
| HUAN        | 22          | 1245  | 1249D |            | N08             | W77        | .972             | 8545                | 16.8             | 4D          | -N              | 1            | P       | 1248                   | .41                    |                  |         |             |  |
| ATHN        | 22          | 1249  | 1258  | 1250       | N06             | W72        | .949             | 8545                | 17.1             | 9           | -N              | 1            |         | .66                    | 1.70                   | 1.50             |         |             |  |
| GRP 1245    | 22          | 1452  | 1500  | 1452       | N15             | W66        | .910             | 8546                | 17.7             | 8           | 1-              |              |         | 1.10                   |                        |                  | 2 1 1   |             |  |
| MCMA        | 22          | 1450  | 1457  | 1452       | N14             | W66        | .910             | 8546                | 17.7             | 7           | -N              |              | C       | 1452                   | .72                    | 1.00             |         | D           |  |
| CAPS        | 22          | 1454  | 1502  |            | N15             | W65        | .903             | 8546                | 17.7             | 8           | -F              | 3            |         | .20                    |                        |                  | 150     | D           |  |
| GRP 1246    | 22          | 1611  | 1635  | 1614       | N14             | W66        | .910             | 8546                | 17.7             | 24          | 1-              |              |         | .69                    |                        |                  | 2 2 2   |             |  |
| SACP        | 22          | 1610  | 1644  | 1631U      | N14             | W65        | .902             | 8546                | 17.8             | 34          | -F              |              | C       | 1614                   | 1.10                   | 1.80             |         |             |  |
| HUAN        | 22          | 1611  | 1626  | 1614       | N13             | W67        | .917             | 8546                | 17.6             | 15          | -F              | 1            | C       | 1614                   | .52                    | .90              |         | E           |  |
| GRP 1247    | 22          | 1615  | 1626  | 1620       | N24             | W67        | .919             | 8546                | 17.7             | 11          | 1-              |              |         | .90                    |                        |                  | 1 1 1   |             |  |
| LOCK        | 22          | 1615  | 1626  | 1620       | N24             | W67        | .919             | 8546                | 17.7             | 11          | -N              |              | C       | 1620                   | .90                    | 2.00             | 20      |             |  |
| GRP 1248    | 22          | 1740  | 1746  | 1742       | N15             | W68        | .923             | 8546                | 17.6             | 6           | 1-              |              |         | .38                    |                        |                  | 1 1 1   |             |  |
| LOCK        | 22          | 1740  | 1746  | 1742       | N15             | W68        | .923             | 8546                | 17.6             | 6           | -N              |              | C       | 1742                   | .40                    | .90              | 10      |             |  |
| GRP 1249    | 22          | 1812  | 1825  | 1816       | N20             | E35        | .602             | 8555                | 25.4             | 13          | 1-              |              |         | .34                    |                        |                  | 2 2 2   |             |  |
| LOCK        | 22          | 1812  | 1822  | 1815       | N24             | E35        | .622             | 8555                | 25.4             | 10          | -N              |              | C       | 1815                   | .30                    | .40              | 10      |             |  |
| SACP        | 22          | 1812  | 1827  | 1817       | N15             | E35        | .584             | 8556                | 25.4             | 15          | -N              |              | C       |                        | .42                    | .45              |         |             |  |
| GRP 1250    | 22          | 1910  | 1935  | 1916       | N14             | W68        | .923             | 8546                | 17.7             | 25          | 1-              |              |         | .84                    |                        |                  | 4 4 4   |             |  |
| LOCK        | 22          | 1910  | 1926  | 1914       | N15             | W68        | .923             | 8546                | 17.7             | 16          | -N              |              | C       | 1914                   | .90                    | 1.90             | 20      |             |  |
| HALE        | 22          | 1910  | 1930  | 1914       | N14             | W71        | .942             | 8546                | 17.5             | 20          | -N              | 1            | C       | 1914                   | .41                    |                  |         |             |  |
| SACP        | 22          | 1910U | 1949U | 1920       | N14             | W66        | .910             | 8546                | 17.8             | 39U         | 1F              |              | C       |                        | 1.34                   | 2.27             |         |             |  |
| HUAN        | 22          | 1911E | 1919D |            | N14             | W66        | .910             | 8546                | 17.8             | 8D          | 1F              | 1            | P       | 1912                   | 1.08                   | 1.90             |         | E           |  |
| GRP 1251    | 22          | 2004  | 2024  | 2008       | N14             | E34        | .567             | 8556                | 25.4             | 20          | 1-              |              |         | .56                    |                        |                  | 3 3 3   |             |  |
| SACP        | 22          | 2003  | 2030  | 2008       | N15             | E34        | .570             | 8556                | 25.4             | 27          | -B              |              | C       |                        | .67                    | .72              |         |             |  |
| HALE        | 22          | 2005  | 2020  | 2006       | N14             | E34        | .567             | 8556                | 25.4             | 15          | -N              | 1            | C       | 2006                   | .21                    | .30              |         |             |  |
| LOCK        | 22          | 2005  | 2023  | 2009       | N13             | E35        | .579             | 8556                | 25.5             | 18          | -N              |              | C       | 2009                   | .80                    | 1.00             | 20      |             |  |
| GRP 1252    | 22          | 2103  | 2110  | 2105       | N14             | W69        | .930             | 8546                | 17.7             | 7           | 1-              |              |         | .44                    |                        |                  | 2 2 2   |             |  |
| LOCK        | 22          | 2102  | 2110  | 2105       | N14             | W67        | .917             | 8546                | 17.9             | 8           | -F              |              | C       | 2105                   | .40                    | .80              | 10      |             |  |
| HALE        | 22          | 2103  | 2110  | 2104       | N14             | W71        | .942             | 8546                | 17.6             | 7           | -F              | 1            | C       | 2104                   | .41                    |                  |         |             |  |
| GRP 1253    | 22          | 2146  | 2147  | 2146       | S13             | E26        | .525             | 8554                | 24.9             | 1           | 1-              |              |         | .12                    |                        |                  | 1 1 1   |             |  |
| HALE        | 22          | 2146  | 2147  | 2146       | S13             | E26        | .525             | 8554                | 24.9             | 1           | -F              | 1            | C       | 2146                   | .10                    | .11              |         |             |  |
| GRP 1254    | 22          | 2148  | 2156  | 2150       | N15             | E34        | .570             | 8556                | 25.5             | 8           | 1-              |              |         | .24                    |                        |                  | 2 2 2   |             |  |
| LOCK        | 22          | 2146  | 2157  | 2149       | N13             | E35        | .579             | 8556                | 25.5             | 11          | -F              |              | C       | 2149                   | .30                    | .40              | 10      |             |  |
| HALE        | 22          | 2150  | 2155  | 2151       | N16             | E32        | .547             | 8556                | 25.3             | 5           | -F              | 1            | C       | 2151                   | .15                    | .20              |         |             |  |
| GRP 1255    | 22          | 2213  | 2240  | 2220       | N15             | E34        | .570             | 8556                | 25.5             | 27          | 1-              |              |         | 1.71                   |                        |                  | 2 2 2   |             |  |
| SACP        | 22          | 2212U | 2240  | 2219       | N15             | E32        | .543             | 8556                | 25.3             | 28U         | -B              |              | P       |                        | 1.68                   | 1.77             |         |             |  |
| LOCK        | 22          | 2213  | 2240  | 2220       | N14             | E35        | .581             | 8556                | 25.6             | 27          | -N              |              | C       | 2220                   | 1.70                   | 2.00             | 20      |             |  |
| GRP 1256    | 22          | 2311  | 2330  | 2317       | N15             | E34        | .570             | 8556                | 25.5             | 19          | 1-              |              |         | .43                    |                        |                  | 2 2 2   |             |  |
| SACP        | 22          | 2310  | 2329  | 2317       | N15             | E32        | .543             | 8556                | 25.4             | 19          | -N              |              | C       |                        | .51                    | .53              |         |             |  |
| LOCK        | 22          | 2312  | 2330  | 2316       | N14             | E35        | .581             | 8556                | 25.6             | 18          | -N              |              | C       | 2316                   | .40                    | .90              | 10      |             |  |
| GRP 1257    | 22          | 2330  | 2351  | 2338       | N28             | E45        | .747             | 8555                | 26.4             | 21          | 1-              |              |         | .66                    |                        |                  | 2 2 2   |             |  |
| SACP        | 22          | 2329  | 2349  | 2338       | N28             | E45        | .747             | 8555                | 26.4             | 20          | -N              |              | C       |                        | .42                    | .51              |         |             |  |
| LOCK        | 22          | 2330  | 2352  |            | N27             | E45        | .743             | 8555                | 26.4             | 22          | -N              |              | C       |                        | .90                    | 1.40             | 20      |             |  |
| GRP 1258    | 23          | 0001  | 0020  | 0004       | N13             | E32        | .537             | 8556                | 25.4             | 19          | 1-              |              |         | .97                    |                        |                  | 3 2 2   |             |  |
| LOCK        | 23          | 0025  | 0020U | 0002       | N14             | E33        | .554             | 8556                | 25.5             | 21U         | -B              |              | C       | 0002                   | .80                    | 1.00             | 30      |             |  |
| SACP        | 23          | 0000  | 0020D | 0005       | N14             | E31        | .526             | 8556                | 25.3             | 20D         | -N              |              | C       |                        | 1.23                   | 1.28             |         |             |  |
| IKOM        | 23          | 0005  | 0014D |            | N12             | E31        | .520             | 8556                | 25.3             | 9D          | -F              |              | V       | 0005                   | .62                    | .70              | 75      | D           |  |
|             | 23          | 0105  | 0110  |            | NO FLARE PATROL |            |                  |                     |                  |             |                 |              |         |                        |                        |                  |         |             |  |
|             | 23          | 0115  | 0130  |            | NO FLARE PATROL |            |                  |                     |                  |             |                 |              |         |                        |                        |                  |         |             |  |
| GRP 1259    | 23          | 0208  | 0228  | 0216       | N14             | E32        | .540             | 8556                | 25.5             | 20          | 1-              |              |         | .87                    |                        |                  | 2 2 2   |             |  |
| MITK        | 23          | 0208  | 0227  | 0215       | N13             | E32        | .537             | 8556                | 25.5             | 19          | -N              |              |         | 1.24                   | 1.60                   | 160              |         |             |  |
| HALE        | 23          | 0208  | 0228  | 0216       | N14             | E31        | .526             | 8556                | 25.4             | 20          | -B              | 1            | C       | 0216                   | .72                    | .90              |         |             |  |



# SOLAR FLARES

REVISED  
OCTOBER 1966

| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION        |                       |                     |                        |            | DURATION<br>MIN. | IMPOR-<br>TANCE | OBS.<br>COND. TYPE | MEASUREMENTS |                           |                           |                     | REMARKS |
|-------------|-------------|-------|-------|------------|-----------------|-----------------------|---------------------|------------------------|------------|------------------|-----------------|--------------------|--------------|---------------------------|---------------------------|---------------------|---------|
|             | DATE        | START | END   | MAX. PHASE | APPROX.<br>LAT. | APPROX.<br>MER. DIST. | CENTRAL<br>DISTANCE | MCMATH<br>PLAGE REGION | CMP<br>DAY |                  |                 |                    | TIME<br>UT   | MEAS.<br>AREA<br>Sq. Deg. | CORR.<br>AREA<br>Sq. Deg. | MAX.<br>WIDTH<br>Ha |         |
|             | 1966<br>OCT |       |       |            |                 |                       |                     |                        |            |                  |                 |                    |              |                           |                           |                     |         |
| GRP 1284    | 23          | 2056  | 2137  | 2108       | N14             | W80                   | .982                | 8546                   | 17.9       | 41               | 1               |                    |              | .62                       |                           |                     | 3 3 3   |
| SACP        | 23          | 2055  | 2135  | 2111       | N13             | W81                   | .985                | 8546                   | 17.8       | 40               | -N              | C                  |              | .75                       |                           |                     |         |
| LOCK        | 23          | 2055  | 2135  | 2105       | N14             | W80                   | .982                | 8546                   | 17.9       | 40               | -N              | C                  | 2105         | .50                       | 1.60                      |                     | 10 J    |
| HALE        | 23          | 2058  | 2140U | 2108       | N14             | W79                   | .978                | 8546                   | 17.9       | 42U              | 18              | 1 P                | 2108         | .62                       |                           |                     |         |
| GRP 1285    | 23          | 2156  | 2223  | 2204       | N15             | E18                   | .345                | 8556                   | 25.3       | 27               | 1-              |                    |              | .53                       |                           |                     | 3 3 3   |
| SACP        | 23          | 2152  | 2231  | 2208       | N15             | E19                   | .359                | 8556                   | 25.3       | 39               | -F              | C                  |              | .68                       | .67                       |                     |         |
| HALE        | 23          | 2158  | 2217  | 2203       | N16             | E17                   | .339                | 8556                   | 25.2       | 19               | -N              | 1 C                | 2203         | .31                       | .32                       |                     |         |
| LOCK        | 23          | 2200  | 2222  | 2202       | N14             | E18                   | .338                | 8556                   | 25.3       | 22               | -N              | C                  | 2202         | .60                       | .70                       |                     | 20 H    |
| GRP 1286    | 23          | 2232  | 2250  | 2236       | N15             | E18                   | .345                | 8556                   | 25.3       | 18               | 1-              |                    |              | .51                       |                           |                     | 3 3 3   |
| LOCK        | 23          | 2231  | 2244  | 2234       | N14             | E18                   | .338                | 8556                   | 25.3       | 13               | -N              | C                  | 2234         | .50                       | .60                       |                     | 20 H    |
| SACP        | 23          | 2231  | 2257  | 2240       | N15             | E18                   | .345                | 8556                   | 25.3       | 26               | -F              | C                  |              | .59                       | .58                       |                     |         |
| HALE        | 23          | 2234  | 2242D | 2235       | N16             | E17                   | .339                | 8556                   | 25.2       | 8D               | -N              | 1 P                | 2235         | .41                       | .42                       |                     |         |
| GRP 1287    | 23          | 2230  | 0000  | 2300       | S27             | W02                   | .534                | 8561                   | 23.8       | 90               | 1-              |                    |              | .40                       |                           |                     | 1 1 1   |
| LOCK        | 23          | 2230  | 0000  | 2300       | S27             | W02                   | .534                | 8561                   | 23.8       | 90               | -F              | C                  | 2300         | .40                       | .50                       |                     | 10      |
| GRP 1288    | 23          | 2254  | 2323  | 2303       | N15             | E18                   | .345                | 8556                   | 25.3       | 29               | 1-              |                    |              | .89                       |                           |                     | 2 2 2   |
| LOCK        | 23          | 2252  | 2321  | 2302       | N14             | E18                   | .338                | 8556                   | 25.3       | 29               | -N              | C                  | 2302         | .70                       | .80                       |                     | 20 H    |
| SACP        | 23          | 2256  | 2324  | 2303       | N15             | E18                   | .345                | 8556                   | 25.3       | 28               | -N              | C                  |              | 1.19                      | 1.17                      |                     |         |
| GRP 1289    | 23          | 2354  | 0023  | 2356       | N14             | E17                   | .324                | 8556                   | 25.3       | 29               | 1               |                    |              | 1.61                      |                           |                     | 3 2 2   |
| SACP        | 23          | 2350  | 2355D | 2355U      | N15             | E17                   | .331                | 8556                   | 25.3       | 5D               | -N              | P                  |              | .86                       | .85                       |                     |         |
| LOCK        | 23          | 2353  | 0020D | 2357       | N14             | E17                   | .324                | 8556                   | 25.3       | 27D              | 18              | 1 C                | 2357         | 2.10                      | 2.30                      |                     | 40 H    |
| IKOM        | 24          | 0000  | 0023D |            | N14             | E16                   | .310                | 8556                   | 25.2       | 23D              | -N              | V                  | 0015         | .83                       | .90                       | 1.26                | 100 D   |
| GRP 1290    | 24          | 0010  | 0022  |            | N15             | W80                   | .982                | 8546                   | 18.0       | 12               | 1-              |                    |              | .88                       |                           |                     | 1 1 1   |
| MANI        | 24          | 0010E | 0022D |            | N15             | W80                   | .982                | 8546                   | 18.0       | 12D              | 1N              | 1                  | 0021         | 1.03                      | 2.65                      |                     |         |
|             | 24          | 0050  | 0110  |            | NO FLARE PATROL |                       |                     |                        |            |                  |                 |                    |              |                           |                           |                     |         |
| GRP 1291    | 24          | 0120  | 0130  |            | N16             | W80                   | .982                | 8546                   | 18.1       | 10               | 1-              |                    |              | .98                       |                           |                     | 1 1 1   |
| MANI        | 24          | 0120E | 0130D |            | N16             | W80                   | .982                | 8546                   | 18.1       | 10D              | -N              | 1                  | 0125         | 1.13                      | 2.91                      |                     |         |
|             | 24          | 0130  | 0230  |            | NO FLARE PATROL |                       |                     |                        |            |                  |                 |                    |              |                           |                           |                     |         |
| GRP 1292    | 24          | 0230  | 0241  |            | N18             | W15                   | .334                | 8553                   | 23.0       | 11               | 1-              |                    |              | .23                       |                           |                     | 1 1 1   |
| IKOM        | 24          | 0230  | 0241D |            | N18             | W15                   | .334                | 8553                   | 23.0       | 11D              | -F              | V                  | 0230         | .72                       | .80                       |                     | 75 D    |
| GRP 1293    | 24          | 0253  | 0256  |            | N14             | W85                   | .994                | 8546                   | 17.7       | 3                | 1-              |                    |              |                           |                           |                     | 1 1 0   |
| IKOM        | 24          | 0253  | 0256D |            | N14             | W85                   | .994                | 8546                   | 17.7       | 3D               | -N              | V                  |              |                           |                           |                     |         |
|             | 24          | 0330  | 0335  |            | NO FLARE PATROL |                       |                     |                        |            |                  |                 |                    |              |                           |                           |                     |         |
| GRP 1294    | 24          | 0552  | 0604  | 0553       | N22             | W07                   | .312                | 8553                   | 23.7       | 12               | 1-              |                    |              | 1.32                      |                           |                     | 1 1 1   |
| ATHN        | 24          | 0552E | 0604  | 0553       | N22             | W07                   | .312                | 8553                   | 23.7       | 12D              | -N              | 2                  | 0553         | 1.16                      | 1.20                      | 1.30                |         |
| GRP 1295    | 24          | 0820  | 0855  |            | S25             | W07                   | .514                | 8561                   | 23.8       | 35               | 1-              |                    |              | .77                       |                           |                     | 1 1 1   |
| BUCA        | 24          | 0820E | 0855D |            | S25             | W07                   | .514                | 8561                   | 23.8       | 35D              | -N              | C                  | 0841         | 1.10                      | 1.30                      |                     |         |
| GRP 1296    | 24          | 0836  | 0855  | 0838       | N29             | W19                   | .498                | 8558                   | 22.9       | 19               | 1-              |                    |              | .54                       |                           |                     | 2 2 2   |
| BUCA        | 24          | 0835  | 0855  |            | N29             | W19                   | .498                | 8558                   | 22.9       | 20               | -N              | C                  |              | .56                       | .60                       |                     |         |
| ATHN        | 24          | 0837  | 0842D | 0838       | N29             | W18                   | .489                | 8558                   | 23.0       | 5D               | -N              | 2                  | 0838         | .66                       | .70                       | 1.30                |         |
| GRP 1297    | 24          | 0851  | 0859  |            | N20             | W90                   | 1.000               | 8546                   | 17.6       | 8                | 1-              |                    |              | .23                       |                           |                     | 1 1 1   |
| BUCA        | 24          | 0851  | 0859  |            | N20             | W90                   | 1.000               | 8546                   | 17.6       | 8                | -B              | C                  | 0853         | .33                       |                           |                     |         |
| GRP 1298    | 24          | 0925  | 1004  |            | S25             | W07                   | .514                | 8561                   | 23.9       | 39               | 1-              |                    |              | .46                       |                           |                     | 1 1 1   |
| BUCA        | 24          | 0925E | 1004D |            | S25             | W07                   | .514                | 8561                   | 23.9       | 39D              | -N              | C                  | 0940         | .66                       | .80                       |                     |         |
| GRP 1299    | 24          | 0935  | 0954  | 0946       | N16             | W90                   | 1.000               | 8546                   | 17.6       | 19               | 1               |                    |              | .30                       |                           |                     | 2 2 2   |
| BUCA        | 24          | 0935E | 0954  | 0946       | N17             | W90                   | 1.000               | 8546                   | 17.6       | 19D              | 18              | C                  | 0946         | .56                       |                           |                     |         |
| CAPS        | 24          | 0944E | 0949D |            | N14             | W90                   | 1.000               | 8546                   | 17.7       | 5D               | -N              | 2                  | 0945         | .20                       |                           |                     |         |
| GRP 1300    | 24          | 1010  | 1014  | 1011       | N13             | E14                   | .274                | 8556                   | 25.5       | 4                | 1-              |                    |              | .54                       |                           |                     | 1 1 1   |
| ATHN        | 24          | 1010  | 1014  | 1011       | N13             | E14                   | .274                | 8556                   | 25.5       | 4                | -F              | 2                  | 1011         | .50                       | .50                       | 1.20                |         |
| GRP 1301    | 24          | 1131  | 1144  | 1135       | N14             | E12                   | .255                | 8556                   | 25.4       | 13               | 1-              |                    |              | 1.66                      |                           |                     | 3 2 2   |
| ATHN        | 24          | 1131  | 1144  | 1134       | N13             | E13                   | .259                | 8556                   | 25.5       | 13               | -B              | 2                  | 1134         | .66                       | .70                       | 2.00                |         |
| KIEV        | 24          | 1134E | 1140D | 1135       | N16             | E11                   | .264                | 8556                   | 25.3       | 6D               | -N              | C                  | 1135         | 2.58                      |                           |                     | 60 DI   |
| CAPS        | 24          | 1139E | 1142D |            | N14             | E11                   | .242                | 8556                   | 25.3       | 3D               | -F              | 3                  | 1141         | .70                       | .70                       |                     | 145     |
| GRP 1302    | 24          | 1242  | 1255  | 1245       | N13             | E13                   | .259                | 8556                   | 25.5       | 13               | 1-              |                    |              | .55                       |                           |                     | 1 1 1   |
| ATHN        | 24          | 1242  | 1255  | 1245       | N13             | E13                   | .259                | 8556                   | 25.5       | 13               | -N              | 2                  | 1245         | .50                       | .50                       | 1.70                |         |
| GRP 1303    | 24          | 1313  | 1323  |            | N14             | W90                   | 1.000               | 8546                   | 17.8       | 10               | 1-              |                    |              | .20                       |                           |                     | 2 2 1   |
| CAPS        | 24          | 1312  | 1323  |            | N14             | W90                   | 1.000               | 8546                   | 17.8       | 11               | -N              | 2                  |              | .20                       |                           |                     |         |
| MCMA        | 24          | 1314  | 1322  |            | N13             | W90                   | 1.000               | 8546                   | 17.8       | 8                | -B              | P                  |              |                           |                           |                     |         |
| GRP 1304    | 24          | 1315  | 1323  | 1319       | N23             | W90                   | .999                | 8546                   | 17.8       | 8                | 1-              |                    |              | .39                       |                           |                     | 1 1 1   |
| ATHN        | 24          | 1315  | 1323  | 1319       | N23             | W90                   | .999                | 8546                   | 17.8       | 8                | -B              | 2                  | 1319         | .33                       |                           | 2.00                |         |
| GRP 1305    | 24          | 1321  | 1327  | 1322       | N14             | E11                   | .242                | 8556                   | 25.4       | 6                | 1-              |                    |              | .53                       |                           |                     | 3 3 2   |
| MCMA        | 24          | 1320  | 1327  | 1321       | N15             | E09                   | .229                | 8556                   | 25.2       | 7                | -B              | P                  | 1321         | .36                       | .40                       |                     | DH      |
| ATHN        | 24          | 1321  | 1329  | 1322       | N13             | E13                   | .259                | 8556                   | 25.5       | 8                | -R              | 2                  | 1322         | .50                       | .50                       | 2.00                |         |
| CAPS        | 24          | 1322E | 1326  |            | N14             | E10                   | .229                | 8556                   | 25.3       | 4D               | -F              | 2                  |              |                           |                           |                     | 150     |
| GRP 1306    | 24          | 1400  | 1411  | 1404       | N14             | E11                   | .242                | 8556                   | 25.4       | 11               | 1-              |                    |              | .34                       |                           |                     | 2 2 2   |
| SACP        | 24          | 1358  | 1412  | 1405       | N15             | E09                   | .229                | 8556                   | 25.3       | 14               | -N              | C                  |              | .34                       | .33                       |                     |         |
| ATHN        | 24          | 1402  | 1409  | 1403       | N13             | E12                   | .245                | 8556                   | 25.5       | 7                | -F              | 2                  | 1403         | .33                       | .40                       | 1.30                |         |
| GRP 1307    | 24          | 1420  | 1520  | 1440       | N04             | E07                   | .123                | 8556                   | 25.1       | 60               | 1-              |                    |              |                           |                           |                     | 1 1 0   |
| SALO        | 24          | 1420  | 1520  | 1440       | N04             | E07                   | .123                | 8556                   | 25.1       | 60               | 1-              |                    |              |                           |                           |                     |         |
| GRP 1308    | 24          | 1452  | 1543  | 1506       | N14             | E09                   | .217                | 8556                   | 25.3       | 51               | 1-              |                    |              | 1.33                      |                           |                     | 5 4 4   |
| ATHN        | 24          | 1431  | 1521D | 1505       | N13             | E12                   | .245                | 8556                   | 25.5       | 50D              | -B              | 2                  | 1505         | .99                       | 1.10                      | 2.00                |         |
| SACP        | 24          | 1502  | 1610  | 1504       | N15             | E08                   | .218                | 8556                   | 25.2       | 68               | 1N              | C                  |              | 2.37                      | 2.33                      |                     |         |
| MCMA        | 24          | 1503  | 1520  | 1504       | N15             | E08                   | .218                | 8556                   | 25.2       | 17               | -B              | C                  | 1504         | 1.03                      | 1.10                      |                     | EHRV    |
| CAPS        | 24          | 1505E | 1517  |            | N14             | E10                   | .229                | 8556                   | 25.4       | 12D              | -B              | 2                  | 1506         | .60                       | .60                       |                     | 210     |
| LOCK        | 24          | 1511E | 1603  | 1511U      | N14             | E08                   | .205                | 8556                   | 25.2       | 52D              | -B              | C                  | 1511         | 2.00                      | 2.06                      |                     | 30 H    |





# SOLAR FLARES

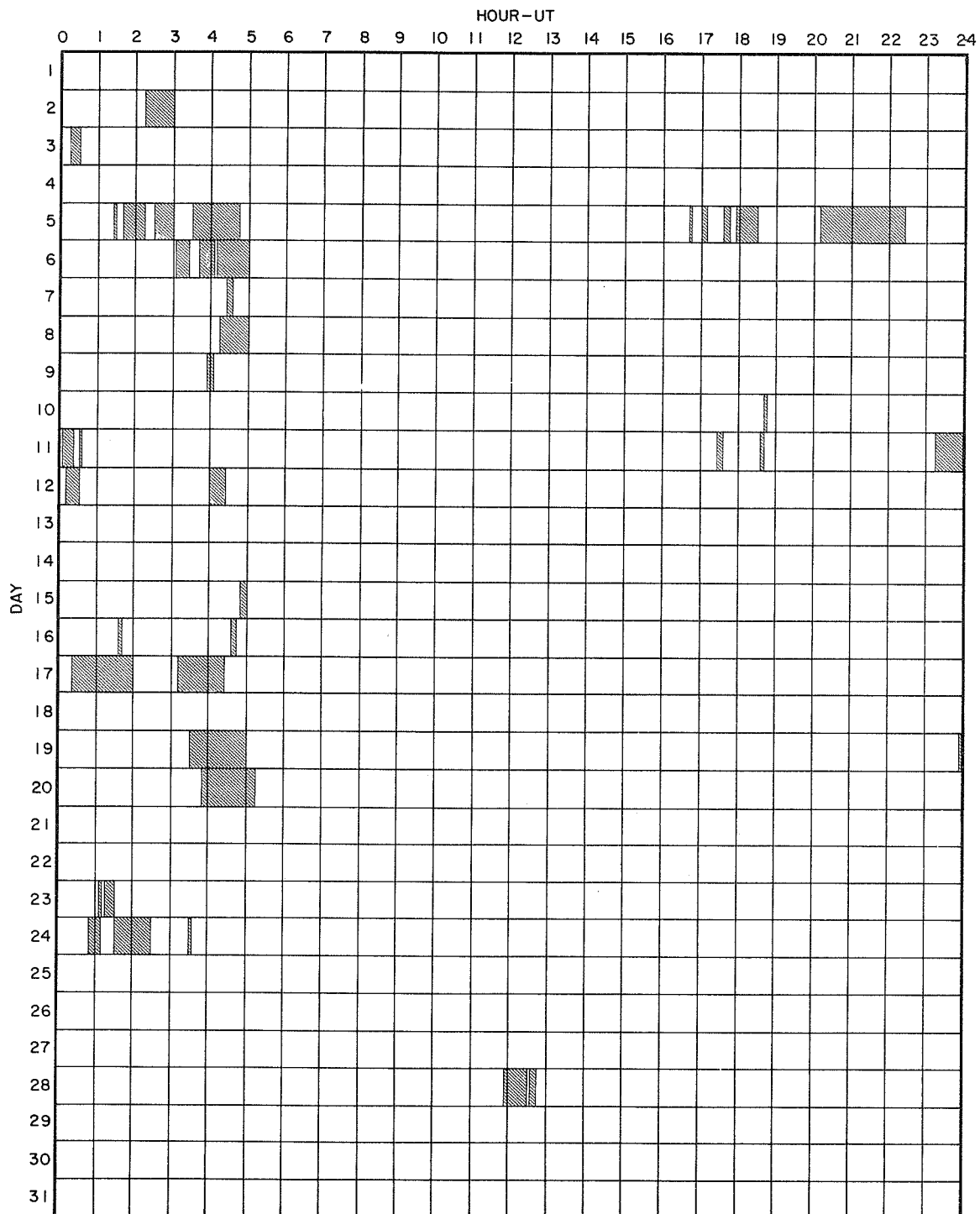
REVISED

OCTOBER 1966

| OBSERVATORY | OBSERVED UT |       |       |            | LOCATION     |            |                  |                     |         | DURATION<br>—<br>MIN. | IM-<br>POR-<br>TANCE | OBS.<br>COND. TYPE | MEASUREMENTS |                     |                     |               |             | REMARKS |
|-------------|-------------|-------|-------|------------|--------------|------------|------------------|---------------------|---------|-----------------------|----------------------|--------------------|--------------|---------------------|---------------------|---------------|-------------|---------|
|             | DATE        | START | END   | MAX. PHASE | APPROX. LAT. | MER. DIST. | CENTRAL DISTANCE | MCMATH PLAGE REGION | CMP DAY |                       |                      |                    | TIME UT      | MEAS. AREA Sq. Deg. | CORR. AREA Sq. Deg. | MAX. WIDTH Ha | MAX. INT. % |         |
|             | 1966 OCT    |       |       |            |              |            |                  |                     |         |                       |                      |                    |              |                     |                     |               |             |         |
| GRP 1360    | 29          | 1930  | 1953  | 1940       | N23          | E19        | .437             | 8567                | 31.2    | 23                    | 1-                   |                    |              |                     |                     |               |             | 1 1 1   |
| LOCK        | 29          | 1930  | 1953  | 1940       | N23          | E19        | .437             | 8567                | 31.2    | 23                    | -F                   | C                  | 1940         | .40                 | .42                 |               | 10          |         |
| GRP 1361    | 29          | 2130  | 2142  | 2135       | N24          | E17        | .427             | 8567                | 31.2    | 12                    | 1-                   |                    |              | .40                 |                     |               | 10          | 1 1 1   |
| LOCK        | 29          | 2130  | 2142  | 2135       | N24          | E17        | .427             | 8567                | 31.2    | 12                    | -F                   | C                  | 2135         | .40                 | .42                 |               | 10          |         |
| GRP 1362    | 29          | 2253  | 2306  | 2257       | N23          | E19        | .437             | 8567                | 31.4    | 13                    | 1-                   |                    |              | .29                 |                     |               | 10          | 1 1 1   |
| LOCK        | 29          | 2253  | 2306  | 2257       | N23          | E19        | .437             | 8567                | 31.4    | 13                    | -F                   | C                  | 2257         | .30                 | .32                 |               | 10          |         |
| GRP 1363    | 30          | 0100  | 0105  | 0102       | N22          | W16        | .396             | 8566                | 28.8    | 5                     | 1-                   |                    |              | .25                 |                     |               |             | 1 1 1   |
| HALE        | 30          | 0100  | 0105  | 0102       | N22          | W16        | .396             | 8566                | 28.8    | 5                     | -F                   | 1 C                | 0102         | .21                 | .22                 |               |             |         |
| GRP 1364    | 30          | 0107  | 0120  | 0109       | N23          | W14        | .388             | 8566                | 29.0    | 13                    | 1-                   |                    |              | .12                 |                     |               |             | 2 1 1   |
| HALE        | 30          | 0107  | 0120  | 0109       | N23          | W14        | .388             | 8566                | 29.0    | 13                    | -F                   | 1 C                | 0109         | .10                 | .11                 |               |             |         |
| MANI        | 30          | 0113E | 0120D |            | N22          | W13        | .366             | 8566                | 29.1    | 7D                    | -N                   | 1                  | 0113         | .52                 | .55                 |               |             |         |
| GRP 1365    | 30          | 0145  | 0219  | 0146       | N12          | W65        | .903             | 8556                | 25.2    | 34                    | 1-                   |                    |              | .67                 |                     |               | 120         | 2 2 2   |
| MITK        | 30          | 0145  | 0218  | 0146       | N12          | W65        | .903             | 8556                | 25.2    | 33                    | 1F                   | C                  | 0146         | 1.03                | 2.30                |               |             | EG      |
| HALE        | 30          | 0145  | 0220  |            | N12          | W65        | .903             | 8556                | 25.2    | 35                    | -N                   | 1 C                | 0200         | .52                 | 1.20                |               |             |         |
| GRP 1366    | 30          | 0713  | 0721  | 0714       | N22          | W21        | .450             | 8566                | 28.7    | 8                     | 1-                   |                    |              | .69                 |                     |               |             | 1 1 1   |
| ATHN        | 30          | 0713  | 0721  | 0714       | N22          | W21        | .450             | 8566                | 28.7    | 8                     | -N                   | 2                  | 0714         | .66                 | .70                 | 1.70          |             |         |
| GRP 1367    | 30          | 1311  | 1341  | 1313       | N33          | W01        | .476             | 8560                | 30.5    | 30                    | 1-                   |                    |              | .51                 |                     |               |             | 1 1 1   |
| ATHN        | 30          | 1311  | 1341  | 1313       | N33          | W01        | .476             | 8560                | 30.5    | 30                    | -N                   | 2                  | 1313         | .50                 | .60                 | 1.40          |             |         |
| GRP 1368    | 30          | 1622  | 1631  | 1625       | N13          | E90        | 1.000            | 8571                | 6.4     | 9                     | 1-                   |                    |              | .16                 |                     |               | 10          | 1 1 1   |
| LOCK        | 30          | 1622  | 1631  | 1625       | N13          | E90        | 1.000            | 8571                | 6.4     | 9                     | -F                   | C                  | 1625         | .20                 | .80                 |               |             |         |
| GRP 1369    | 30          | 1652  | 1704  | 1657       | N22          | W22        | .462             | 8566                | 29.1    | 12                    | 1-                   |                    |              | .61                 |                     |               |             | 1 1 1   |
| LOCK        | 30          | 1652  | 1704  | 1657       | N22          | W22        | .462             | 8566                | 29.1    | 12                    | -F                   | C                  | 1657         | .60                 | .70                 |               | 10          | L       |
| GRP 1370    | 30          | 1956  | 2002  | 1958       | N23          | W25        | .505             | 8566                | 29.0    | 6                     | 1-                   |                    |              | .39                 |                     |               |             | 2 2 2   |
| LOCK        | 30          | 1955  | 2001  | 1957       | N23          | W25        | .505             | 8566                | 29.0    | 6                     | -N                   | C                  | 1957         | .40                 | .43                 |               | 10          | H       |
| HALE        | 30          | 1957  | 2002  | 1958       | N23          | W24        | .494             | 8566                | 29.0    | 5                     | -N                   | 2 C                | 1958         | .31                 | .40                 |               |             |         |
| GRP 1371    | 30          | 2015  | 2037  | 2023       | N23          | W25        | .505             | 8566                | 29.0    | 22                    | 1-                   |                    |              | .19                 |                     |               |             | 1 1 1   |
| LOCK        | 30          | 2015  | 2037  | 2023       | N23          | W25        | .505             | 8566                | 29.0    | 22                    | -F                   | C                  | 2023         | .20                 | .22                 |               | 10          |         |
| GRP 1372    | 30          | 2021  | 2029  | 2024       | N13          | E90        | 1.000            | 8571                | 6.6     | 8                     | 1-                   |                    |              | .25                 |                     |               |             | 1 1 1   |
| LOCK        | 30          | 2021  | 2029  | 2024       | N13          | E90        | 1.000            | 8571                | 6.6     | 8                     | -F                   | C                  | 2024         | .30                 | 1.20                |               | 10          |         |
| GRP 1373    | 30          | 2113  | 2125  | 2116       | S16          | W77        | .981             | 8554                | 25.1    | 12                    | 1-                   |                    |              | .34                 |                     |               |             | 1 1 1   |
| LOCK        | 30          | 2113  | 2125  | 2116       | S16          | W77        | .981             | 8554                | 25.1    | 12                    | -F                   | C                  | 2116         | .40                 | 1.20                |               | 10          |         |
| GRP 1374    | 31          | 0049  | 0055  | 0050       | N24          | W26        | .526             | 8566                | 29.1    | 6                     | 1-                   |                    |              | .25                 |                     |               |             | 1 1 1   |
| HALE        | 31          | 0049  | 0055  | 0050       | N24          | W26        | .526             | 8566                | 29.1    | 6                     | -F                   | 1 C                | 0050         | .21                 | .22                 |               |             | T       |
| GRP 1375    | 31          | 0140  | 0228  | 0210       | N27          | W59        | .870             | 8555                | 26.6    | 48                    | 1-                   |                    |              | .62                 |                     |               |             | 1 1 1   |
| HALE        | 31          | 0140  | 0228  | 0210       | N27          | W59        | .870             | 8555                | 26.6    | 48                    | -F                   | 1 C                | 0210         | .52                 | 1.00                |               |             |         |
| GRP 1376    | 31          | 0218  | 0231  | 0223       | N18          | W23        | .442             | 8566                | 29.4    | 13                    | 1-                   |                    |              | .25                 |                     |               |             | 1 1 1   |
| HALE        | 31          | 0218  | 0231  | 0223       | N18          | W23        | .442             | 8566                | 29.4    | 13                    | -N                   | 1 C                | 0223         | .21                 | .22                 |               |             | T       |
| GRP 1377    | 31          | 0258  | 0310  | 0300       | N30          | E66        | .921             | 8568                | 5.1     | 12                    | 1-                   |                    |              | .25                 |                     |               |             | 1 1 1   |
| HALE        | 31          | 0258  | 0310  | 0300       | N30          | E66        | .921             | 8568                | 5.1     | 12                    | -F                   | 1 C                | 0300         | .21                 |                     |               |             | T       |
| GRP 1378    | 31          | 1443  | 1452  | 1447       | N26          | W68        | .929             | 8555                | 26.5    | 9                     | 1-                   |                    |              | .60                 |                     |               |             | 1 1 1   |
| SACP        | 31          | 1443  | 1452  | 1447       | N26          | W68        | .929             | 8555                | 26.5    | 9                     | -F                   | C                  |              | .67                 | 1.19                |               |             |         |
| GRP 1379    | 31          | 1824  | 1850  | 1828       | N30          | W76        | .969             | 8555                | 26.1    | 26                    | 1-                   |                    |              | .37                 |                     |               |             | 1 1 1   |
| HALE        | 31          | 1824  | 1850  | 1828       | N30          | W76        | .969             | 8555                | 26.1    | 26                    | -F                   | 1 C                | 1828         | .31                 |                     |               |             | T       |
| GRP 1380    | 31          | 1859  | 1922  | 1904       | N18          | E82        | .988             | 8571                | 6.9     | 23                    | 1                    |                    |              | 1.18                |                     |               |             | 4 4 3   |
| SACP        | 31          | 1858  | 1908  | 1901       | N19          | E82        | .988             | 8571                | 6.9     | 10                    | -N                   | C                  |              | .84                 |                     |               |             |         |
| LOCK        | 31          | 1859  | 1925  | 1905       | N18          | E82        | .988             | 8571                | 6.9     | 26                    | 2N                   | C                  | 1905         | 2.20                | 7.90                |               | 20          | H       |
| MAMA        | 31          | 1900  | 1926  | 1905       | N16          | E85        | .994             | 8571                | 7.2     | 26                    | -B                   | C                  |              |                     |                     |               |             |         |
| HALE        | 31          | 1900U | 1928  | 1905U      | N18          | E79        | .979             | 8571                | 6.7     | 28U                   | 1B                   | 1 C                | 1905         | .62                 |                     |               |             | T       |
| GRP 1381    | 31          | 1909  | 1922  | 1913       | N22          | W09        | .335             | 8567                | 31.1    | 13                    | 1-                   |                    |              | .30                 |                     |               |             | 2 2 2   |
| LOCK        | 31          | 1907  | 1922  | 1912       | N22          | W08        | .328             | 8567                | 31.2    | 15                    | -F                   | C                  | 1912         | .30                 | .32                 |               | 10          |         |
| SACP        | 31          | 1910  | 1921  | 1914       | N21          | W09        | .320             | 8567                | 31.1    | 11                    | -F                   | C                  |              | .33                 | .33                 |               |             |         |

# INTERVALS OF NO FLARE PATROL OBSERVATIONS

OCTOBER 1966



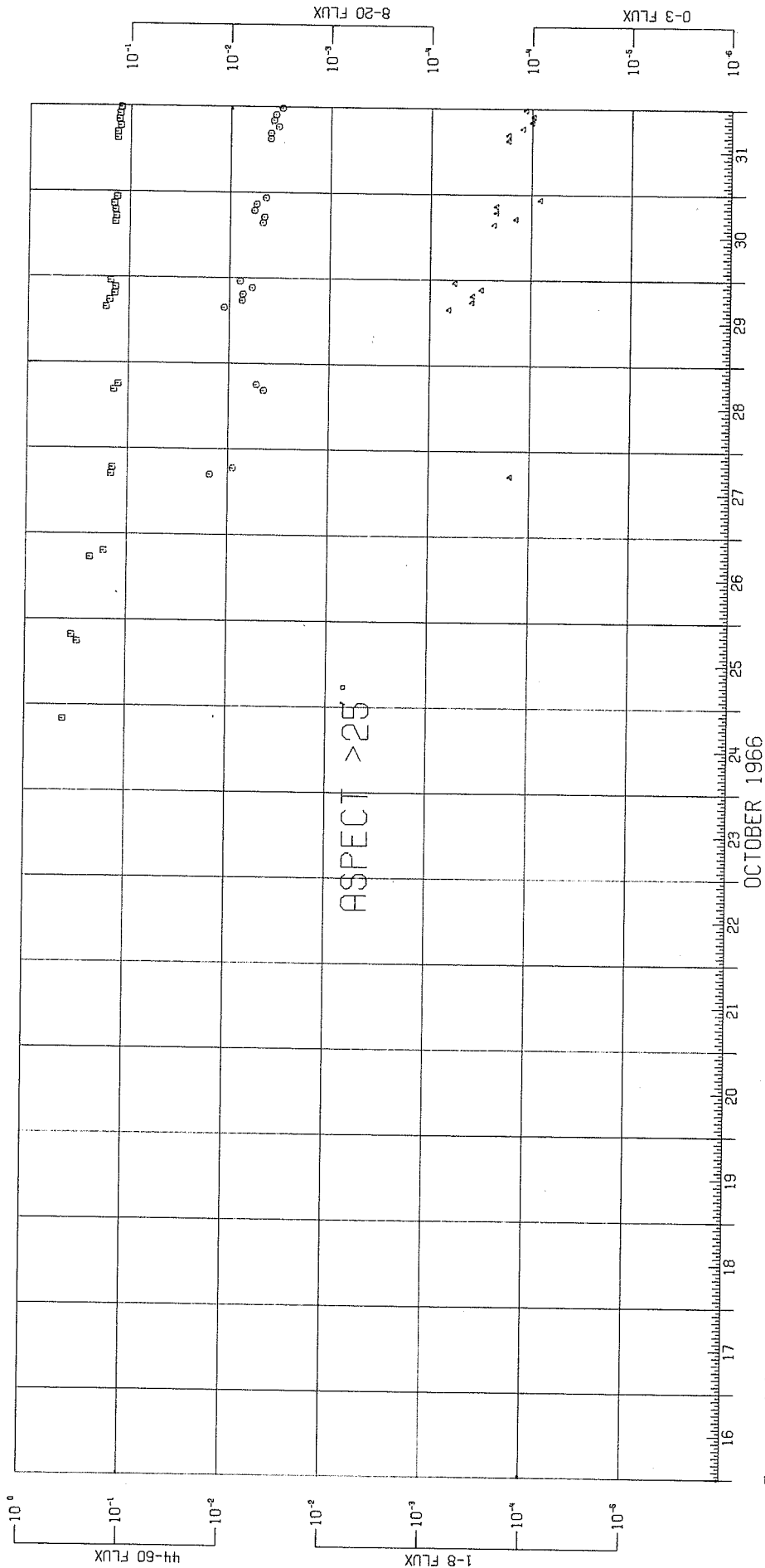
Observatories included:

|            |                   |              |            |                |                 |             |
|------------|-------------------|--------------|------------|----------------|-----------------|-------------|
| Abastumani | Bucaresti         | Herstmonceux | Kharkov    | Manila         | Ondrejov        | Tortosa     |
| Arcetri    | Capri-S (Swedish) | Huancayo     | Kiev       | McMath-Hulbert | Sacramento Peak | Vorochilov  |
| Arosa      | Catania           | Ikomasan     | Kodaikanal | Meudon         | Salonique       | Wendelstein |
| Athens     | Culgoora          | Istanbul     | Locarno    | Mitaka         | Siberie         | Zürich      |
| Bakou      | Haleakala         | Kandilli     | Lockheed   | Monte Mario    | Tachkent        |             |

SOLAR RADIATION MONITORING SATELLITE  
X-RAY

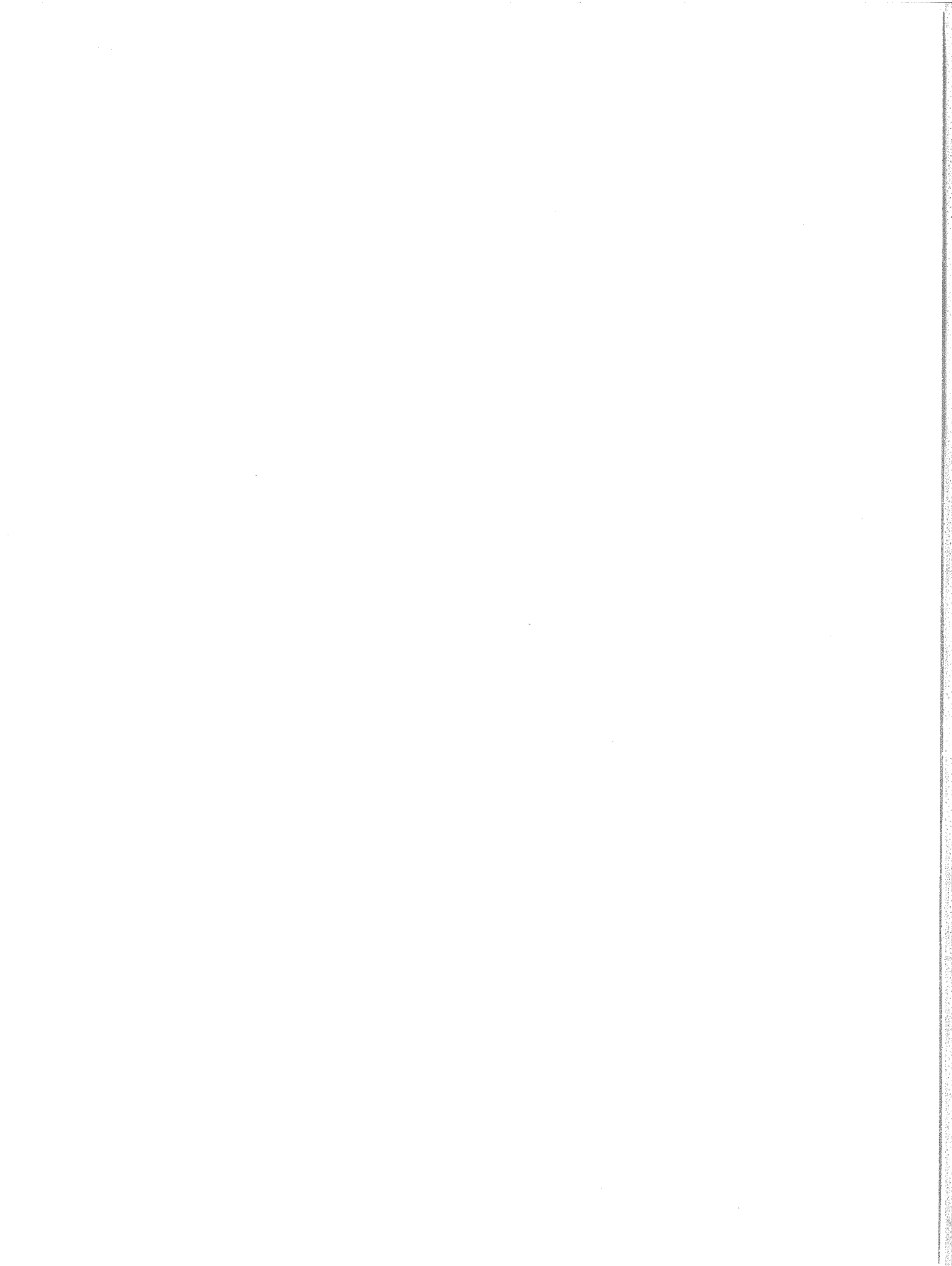
OCTOBER 1966

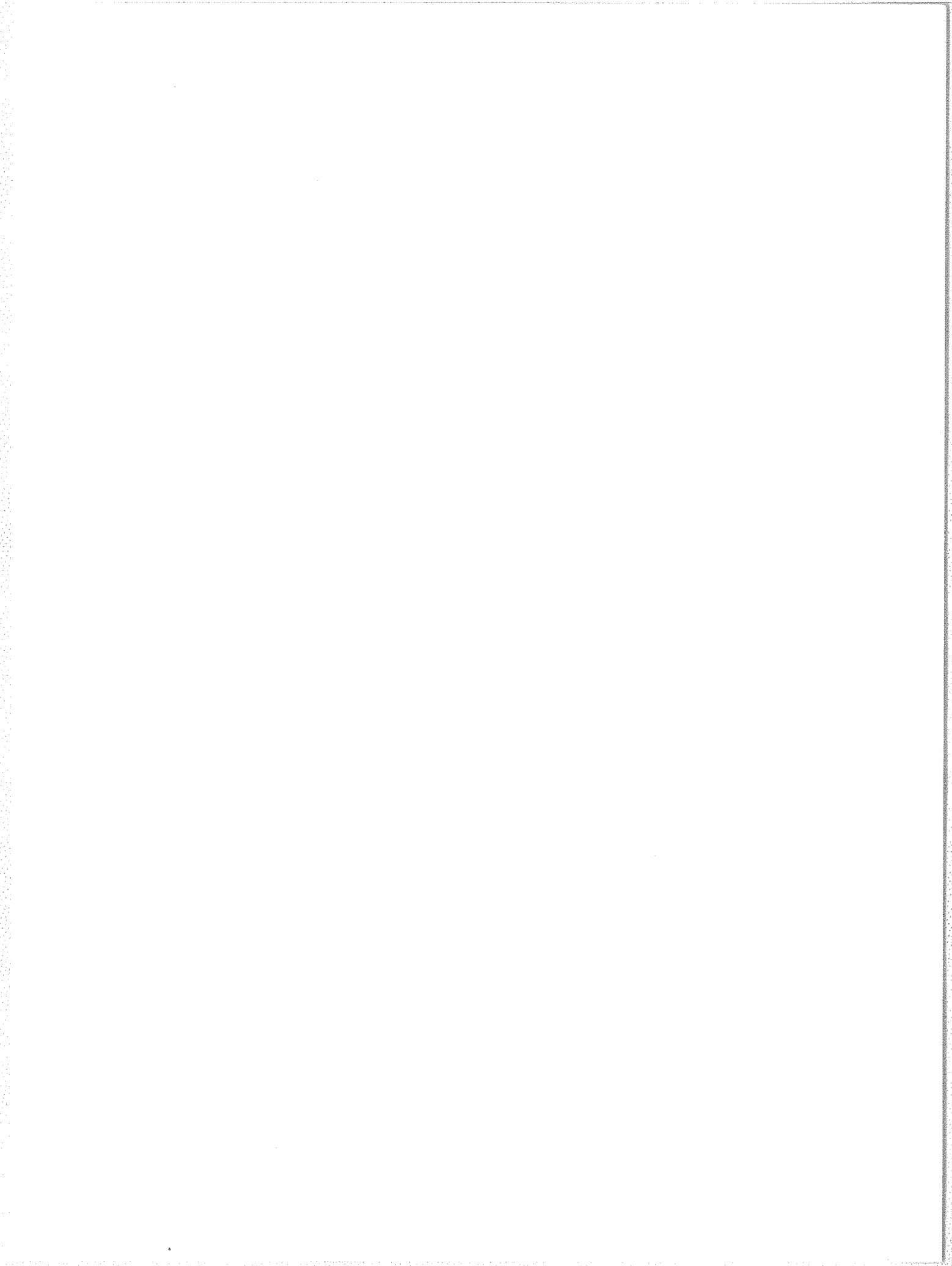
NRL

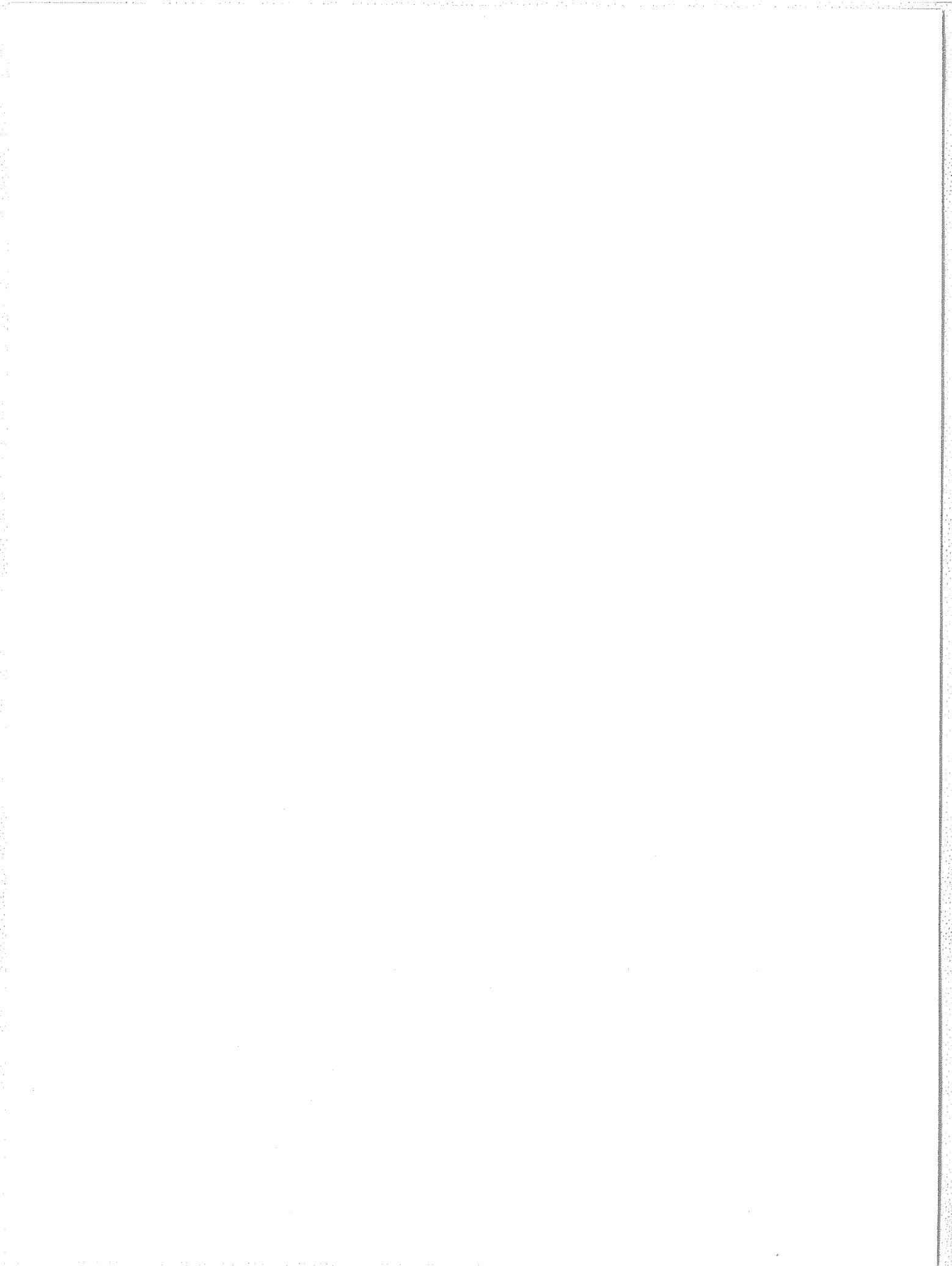


The aspect angle for October 1-15 was greater than 25° and no data was plotted for that time.









## SOLAR RADIATION MONITORING SATELLITE

NOVEMBER 1966

Aberdeen, South Dakota

## OUTSTANDING EVENTS

| DATE   | TIMES OF OBSERVATION | 44-60A               | 8-20A                | 0-8A                 | 0-3A                 |
|--------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Nov. 6 | 0033 0041            | $2.2 \times 10^{-1}$ | $1.5 \times 10^{-2}$ | ----                 | $1.4 \times 10^{-5}$ |
|        | 0217 0222            | ----                 | $4.3 \times 10^{-2}$ | ----                 | $1.3 \times 10^{-4}$ |
| 7      | 1816 1827            | $3.0 \times 10^{-1}$ | $1.6 \times 10^{-2}$ | $1.5 \times 10^{-3}$ | $2.5 \times 10^{-5}$ |
|        | 2002 2011            | $2.1 \times 10^{-1}$ | $3.3 \times 10^{-2}$ | $2.5 \times 10^{-3}$ | $2.2 \times 10^{-5}$ |