

**Space Weather Highlights**  
**26 January - 01 February 2015**

**SWPC PRF 2057**  
**02 February 2015**

Solar activity was at moderate levels for much of the week, with seven M-class flares observed through 30 January. Region 2268 (S10, L=47, class/area=Fhc/500 on 29 January) produced five of them, the largest of which was an M2/1b on 29 January at 1142 UTC. Region 2277 (N08, L=330, class/area=Fkc/510 on 30 January) produced the remaining two, the largest of which was an M2 with no optical counterpart on 30 Jan at 1216 UTC. No Earth-directed coronal mass ejections were observed.

No proton events were observed at geosynchronous orbit, however proton flux was elevated. The flux began rising on 27 January, reached a peak of 1.5 pfu on 30 January at 1205 UTC, and returned to normal levels by 01 February.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal to moderate levels during the week.

The geomagnetic field activity ranged from quiet to minor storm levels during the week. Active periods were recorded on 26 January, 29 January, and 31 January-01 February. Evidence for the influence of a high speed solar wind stream, emanating from a southern crown coronal hole, was evident in ACE spacecraft data beginning on 27 January and persisting through 29 January. The high speed stream was preceded by jump in density and fluctuating magnetic field consistent with a weak cororating interaction region. These features are believed to be responsible for the active conditions in the beginning of the week. Another encounter with the southern crown high speed solar wind stream brought active conditions late on 31 January into 01 February. Solar wind speed rose to over 700 km/s, Bz fell to -12 nT, and geomagnetic activity reached minor storm levels for the last synoptic period of 01 February.

**Space Weather Outlook**  
**02 February - 28 February 2015**

Solar activity is expected to be at low to moderate levels, with a slight chance for high levels, through 09 February until Region 2277 departs the visible solar disk. Low levels of activity are anticipated from 10-16 February. Low to moderate levels, with a slight chance for high levels, are expected with the return of Regions 2268 on 17 February and 2277 on 22 February.

There is a slight chance the greater than 10 MeV proton proton flux at geosynchronous orbit will exceed the 10 pfu threshold until 09 February and after 17 February.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to reach moderate to high levels by 04 February, and again on 19-23 February due to recurrent coronal hole high speed stream (CH HSS) influence.

Geomagnetic field activity is expected to begin at active to minor storm levels. Unsettled to active periods with a slight chance for minor storm levels, particularly at high latitudes, are



expected to persist through 09 February, from 15-21 February, and from 25 February through the end of the forecast period in response to recurrent coronal hole high speed solar wind streams.



### *Daily Solar Data*

| Date        | Radio<br>Flux<br>10.7cm | Sun<br>spot<br>No. | Sunspot<br>Area<br>(10 <sup>-6</sup> hemi.) | X-ray<br>Background<br>Flux | Flares |   |   |         |   |   |   |   |
|-------------|-------------------------|--------------------|---|-----------------------------|--------|---|---|---------|---|---|---|---|
|             |                         |                    |   |                             | X-ray  |   |   | Optical |   |   |   |   |
|             |                         |                    |   |                             | C      | M | X | S       | 1 | 2 | 3 | 4 |
| 26 January  | 147                     | 110                | 580   | B7.0                        | 6      | 1 | 0 | 14      | 0 | 0 | 0 | 0 |
| 27 January  | 158                     | 119                | 840   | B9.6                        | 5      | 0 | 0 | 16      | 0 | 0 | 0 | 0 |
| 28 January  | 159                     | 140                | 850   | B9.5                        | 6      | 2 | 0 | 7       | 1 | 1 | 0 | 0 |
| 29 January  | 165                     | 181                | 1160  | B9.4                        | 16     | 1 | 0 | 20      | 3 | 0 | 0 | 0 |
| 30 January  | 159                     | 193                | 1450  | B8.6                        | 4      | 3 | 0 | 4       | 0 | 0 | 0 | 0 |
| 31 January  | 154                     | 153                | 1320  | B6.3                        | 5      | 0 | 0 | 2       | 0 | 0 | 0 | 0 |
| 01 February | 142                     | 132                | 1030  | B7.0                        | 6      | 0 | 0 | 6       | 0 | 1 | 0 | 0 |

### *Daily Particle Data*

| Date        | Proton Fluence<br>(protons/cm <sup>2</sup> -day-sr) |         |          | Electron Fluence<br>(electrons/cm <sup>2</sup> -day-sr) |         |         |
|-------------|---|---------|----------|---|---------|---------|
|             | >1 MeV  | >10 MeV | >100 MeV | >0.6 MeV  | >2MeV   | >4 MeV  |
|             | 26 January  | 2.4e+05 | 1.1e+04  | 2.3e+03   |         | 2.1e+05 |
| 27 January  | 3.2e+05   | 1.3e+04 | 2.4e+03  |   | 1.9e+06 |         |
| 28 January  | 9.5e+05   | 2.0e+04 | 2.5e+03  |   | 1.8e+06 |         |
| 29 January  | 2.6e+06   | 3.5e+04 | 2.5e+03  |   | 4.3e+06 |         |
| 30 January  | 2.2e+06   | 6.0e+04 | 2.4e+03  |   | 1.0e+06 |         |
| 31 January  | 1.3e+06   | 3.6e+04 | 2.5e+03  |   | 9.7e+05 |         |
| 01 February | 8.5e+05   | 1.3e+04 | 2.4e+03  |   | 6.7e+05 |         |

### *Daily Geomagnetic Data*

| Date        | Middle Latitude<br>Fredericksburg |                 | High Latitude<br>College |                 | Estimated<br>Planetary |                 |
|-------------|-----------------------------------|-----------------|--------------------------|-----------------|------------------------|-----------------|
|             | A                                 | K-indices       | A                        | K-indices       | A                      | K-indices       |
|             | 26 January                        | 12              | 3-2-3-4-3-2-2-1          | 19              | 2-1-4-5-4-4-2-1        | 16              |
| 27 January  | 9                                 | 3-2-3-2-2-2-2-2 | 13                       | 2-2-3-4-3-3-2-2 | 12                     | 3-3-3-2-2-3-3-3 |
| 28 January  | 5                                 | 2-1-3-2-1-1-0-1 | 14                       | 2-2-3-5-4-1-1-1 | 7                      | 3-2-3-2-1-1-1-1 |
| 29 January  | 7                                 | 2-1-1-1-2-2-3-2 | 8                        | 1-0-1-3-2-3-3-2 | 9                      | 2-1-1-2-2-2-4-3 |
| 30 January  | 8                                 | 2-3-2-1-1-2-3-2 | 9                        | 1-2-3-3-2-2-2-2 | 11                     | 3-3-2-1-1-2-3-3 |
| 31 January  | 6                                 | 1-2-1-1-1-2-2-3 | 8                        | 1-2-0-3-2-3-2-2 | 9                      | 2-2-1-2-2-2-2-4 |
| 01 February | 11                                | 3-1-2-2-2-3-3-3 | 17                       | 3-1-2-3-3-4-4-4 | 21                     | 4-3-3-2-2-3-4-5 |

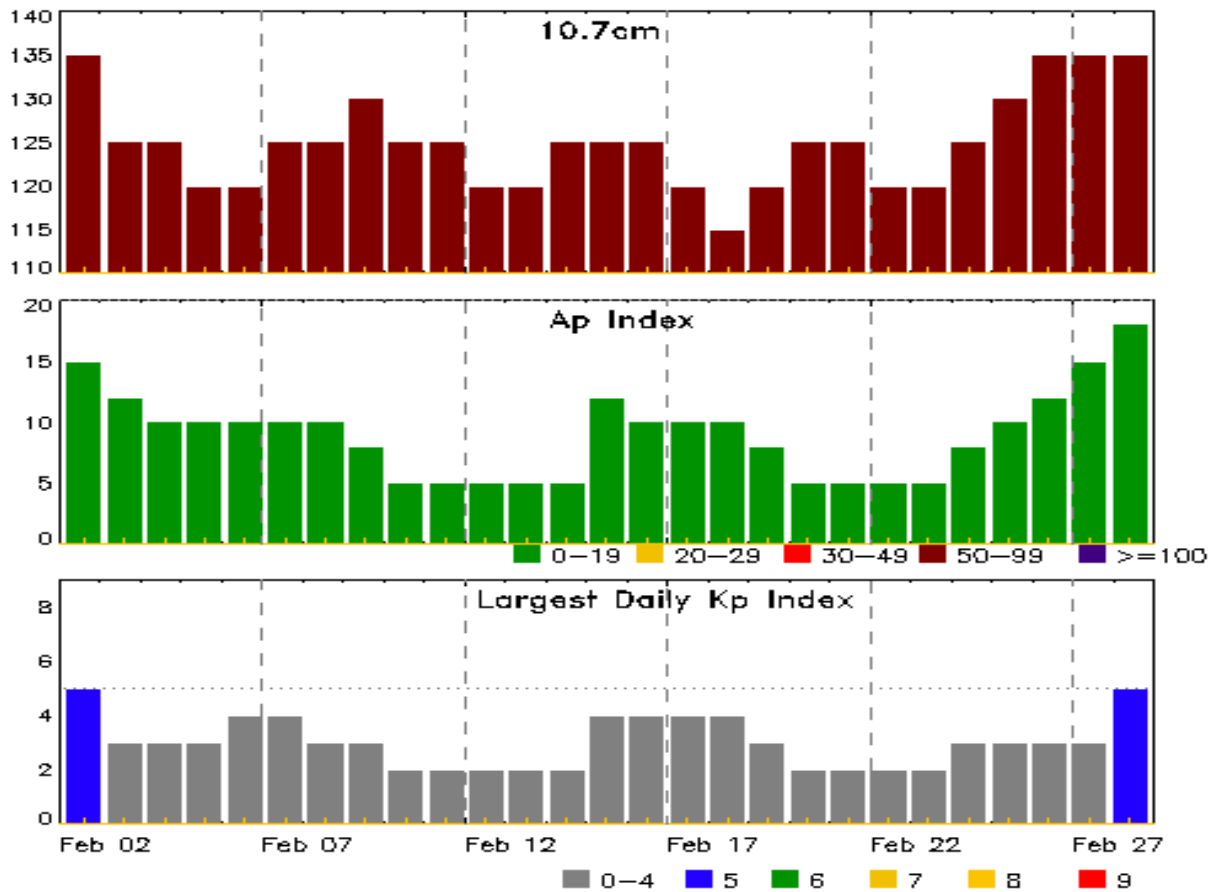


### *Alerts and Warnings Issued*

| <b>Date &amp; Time<br/>of Issue UTC</b> | <b>Type of Alert or Warning</b>                | <b>Date &amp; Time<br/>of Event UTC</b> |
|---|--|---|
| 26 Jan 0100                             | WARNING: Geomagnetic K = 4                     | 26/0102 - 1500                          |
| 26 Jan 1045                             | ALERT: Geomagnetic K = 4                       | 26/1044                                 |
| 26 Jan 1455                             | EXTENDED WARNING: Geomagnetic K = 4            | 26/0102 - 1900                          |
| 27 Jan 0512                             | WARNING: Geomagnetic K = 4                     | 27/0512 - 1500                          |
| 28 Jan 2021                             | WATCH: Geomagnetic Storm Category G1 predicted |   |
| 29 Jan 1858                             | WARNING: Geomagnetic K = 4                     | 29/1857 - 30/1900                       |
| 29 Jan 1945                             | ALERT: Geomagnetic K = 4                       | 29/1942                                 |
| 30 Jan 1835                             | EXTENDED WARNING: Geomagnetic K = 4            | 29/1857 - 30/1900                       |
| 30 Jan 1837                             | EXTENDED WARNING: Geomagnetic K = 4            | 29/1857 - 31/1900                       |
| 30 Jan 1958                             | WATCH: Geomagnetic Storm Category G1 predicted |   |
| 31 Jan 2301                             | WARNING: Geomagnetic K = 4                     | 31/2305 - 01/1900                       |
| 01 Feb 0007                             | ALERT: Geomagnetic K = 4                       | 31/2359                                 |
| 01 Feb 1835                             | EXTENDED WARNING: Geomagnetic K = 4            | 31/2305 - 02/1900                       |
| 01 Feb 1938                             | WATCH: Geomagnetic Storm Category G1 predicted |   |
| 01 Feb 2103                             | WARNING: Geomagnetic K = 5                     | 01/2105 - 02/0400                       |
| 01 Feb 2355                             | ALERT: Geomagnetic K = 5                       | 01/2355                                 |



## Twenty-seven Day Outlook



| Date   | Radio Flux<br>10.7cm | Planetary<br>A Index | Largest<br>Kp Index | Date   | Radio Flux<br>10.7cm | Planetary<br>A Index | Largest<br>Kp Index |
|--------|----------------------|----------------------|---------------------|--------|----------------------|----------------------|---------------------|
| 02 Feb | 135                  | 15                   | 5                   | 16 Feb | 125                  | 10                   | 4                   |
| 03     | 125                  | 12                   | 3                   | 17     | 120                  | 10                   | 4                   |
| 04     | 125                  | 10                   | 3                   | 18     | 115                  | 10                   | 4                   |
| 05     | 120                  | 10                   | 3                   | 19     | 120                  | 8                    | 3                   |
| 06     | 120                  | 10                   | 4                   | 20     | 125                  | 5                    | 2                   |
| 07     | 125                  | 10                   | 4                   | 21     | 125                  | 5                    | 2                   |
| 08     | 125                  | 10                   | 3                   | 22     | 120                  | 5                    | 2                   |
| 09     | 130                  | 8                    | 3                   | 23     | 120                  | 5                    | 2                   |
| 10     | 125                  | 5                    | 2                   | 24     | 125                  | 8                    | 3                   |
| 11     | 125                  | 5                    | 2                   | 25     | 130                  | 10                   | 3                   |
| 12     | 120                  | 5                    | 2                   | 26     | 135                  | 12                   | 3                   |
| 13     | 120                  | 5                    | 2                   | 27     | 135                  | 15                   | 3                   |
| 14     | 125                  | 5                    | 2                   | 28     | 135                  | 18                   | 5                   |
| 15     | 125                  | 12                   | 4                   |        |                      |                      |                     |



### *Energetic Events*

| Date   | Time  |      |          | X-ray |            | Optical Information |          |       | Peak           |                 | Sweep Freq   |              |
|--------|-------|------|----------|-------|------------|---------------------|----------|-------|----------------|-----------------|--------------|--------------|
|        | Begin | Max  | Half Max | Class | Integ Flux | Imp/ Brtns          | Location | Rgn # | Radio Flux 245 | Radio Flux 2695 | Intensity II | Intensity IV |
| 26 Jan | 1646  | 1653 | 1658     | M1.1  | 0.005      |                     |          | 2268  |                |                 |              |              |
| 28 Jan | 0421  | 0441 | 0455     | M1.4  | 0.021      | 2N                  | S09E09   | 2268  |                |                 |              |              |
| 28 Jan | 2132  | 2137 | 2140     | M1.0  | 0.002      | SF                  | N08E73   | 2277  |                |                 |              |              |
| 29 Jan | 1132  | 1142 | 1152     | M2.1  | 0.017      | 1B                  | S12W06   | 2268  |                |                 |              |              |
| 30 Jan | 0032  | 0044 | 0102     | M2.0  | 0.023      |                     |          | 2268  |                |                 |              |              |
| 30 Jan | 0529  | 0536 | 0635     | M1.7  | 0.048      |                     |          | 2268  |                |                 |              |              |
| 30 Jan | 1210  | 1216 | 1221     | M2.4  | 0.009      |                     |          | 2277  |                | 110             |              |              |

### *Flare List*

| Date   | Time  |      |      | X-ray Class | Imp/ Brtns | Location Lat CMD | Rgn # |
|--------|-------|------|------|-------------|------------|------------------|-------|
|        | Begin | Max  | End  |             |            |                  |       |
| 26 Jan | 0050  | 0053 | 0055 | B7.3        | SF         | S10E41           | 2268  |
| 26 Jan | 0120  | 0121 | 0125 |             | SF         | S09E40           | 2268  |
| 26 Jan | 0129  | 0130 | 0131 |             | SF         | S09E40           | 2268  |
| 26 Jan | 0507  | 0535 | 0554 | C1.1        |            |                  | 2271  |
| 26 Jan | 0537  | 0547 | 0549 |             | SF         | S09E39           | 2268  |
| 26 Jan | 0608  | 0627 | 0649 | C1.8        |            |                  | 2271  |
| 26 Jan | 0720  | 0743 | 0756 | C1.6        | SF         | S09E38           | 2268  |
| 26 Jan | 0746  | 0747 | 0750 |             | SF         | S10E37           | 2268  |
| 26 Jan | 0757  | 0758 | 0801 |             | SF         | S09E35           | 2268  |
| 26 Jan | 0808  | 0835 | 0843 | C1.7        |            |                  | 2268  |
| 26 Jan | 0818  | 0819 | 0821 |             | SF         | S12E34           | 2268  |
| 26 Jan | 0832  | 0839 | 0842 |             | SF         | S12E32           | 2268  |
| 26 Jan | 0844  | 0848 | 0849 |             | SF         | S11E34           | 2268  |
| 26 Jan | 0851  | 0903 | 0911 | C1.7        | SF         | S09E36           | 2268  |
| 26 Jan | 0914  | 0917 | 0920 |             | SF         | S03E11           |       |
| 26 Jan | 0932  | 0932 | 0936 |             | SF         | S04E10           |       |
| 26 Jan | 1021  | 1023 | 1028 |             | SF         | S04E10           | 2273  |
| 26 Jan | 1646  | 1653 | 1658 | M1.1        |            |                  | 2268  |
| 26 Jan | 2345  | 2348 | 2350 | C1.2        |            |                  | 2268  |
| 27 Jan | 0348  | 0349 | 0351 |             | SF         | S03E02           | 2273  |
| 27 Jan | 0442  | 0444 | 0446 |             | SF         | S03E02           | 2273  |
| 27 Jan | 0454  | 0457 | 0459 | C1.6        | SF         | S10E26           | 2268  |
| 27 Jan | 0543  | 0547 | 0549 | C2.4        | SF         | S03E01           | 2273  |
| 27 Jan | 0553  | 0557 | 0601 |             | SF         | S03E01           | 2273  |



## *Flare List*

| Date   | Time  |      |      | X-ray<br>Class | Optical       |                     | Rgn<br># |
|--------|-------|------|------|----------------|---------------|---------------------|----------|
|        | Begin | Max  | End  |                | Imp/<br>Brtns | Location<br>Lat CMD |          |
| 27 Jan | 0642  | 0652 | 0700 |                | SF            | S16W15              | 2275     |
| 27 Jan | 0713  | 0733 | 0827 | C2.1           |               |                     |          |
| 27 Jan | 0726  | 0726 | 0730 |                | SF            | S16W16              | 2275     |
| 27 Jan | 0903  | 0904 | 0909 |                | SF            | N12E58              | 2272     |
| 27 Jan | 0911  | 0924 | 0940 | C1.9           |               |                     | 2268     |
| 27 Jan | 0938  | 0938 | 0942 |                | SF            | S07E23              | 2268     |
| 27 Jan | 1618  | 1619 | 1620 |                | SF            | S10E18              | 2268     |
| 27 Jan | 1756  | 1758 | 1804 |                | SF            | S02W09              | 2273     |
| 27 Jan | 1835  | 1852 | 1932 |                | SF            | S10E17              | 2268     |
| 27 Jan | 1955  | 1955 | 1955 |                | SF            | S18W23              | 2275     |
| 27 Jan | 1959  | 2000 | 2005 |                | SF            | S18W23              | 2275     |
| 27 Jan | 2013  | 2013 | 2017 |                | SF            | S03W10              | 2273     |
| 27 Jan | 2255  | 2257 | 2304 |                | SF            | S08E13              | 2268     |
| 27 Jan | 2352  | 2359 | 0005 | C5.7           |               |                     |          |
| 28 Jan | 0055  | 0128 | 0148 | C4.7           | 1F            | S11E12              | 2268     |
| 28 Jan | 0250  | 0255 | 0303 |                | SF            | S11E12              | 2268     |
| 28 Jan | 0342  | 0342 | 0343 |                | SF            | S12E13              | 2268     |
| 28 Jan | 0421  | 0441 | 0455 | M1.4           | 2N            | S09E09              | 2268     |
| 28 Jan | 0520  | 0530 | 0538 | C9.8           |               |                     | 2268     |
| 28 Jan | 0838  | 0839 | 0849 |                | SF            | N07E83              | 2277     |
| 28 Jan | 0934  | 0935 | 0938 |                | SF            | N07E83              | 2277     |
| 28 Jan | 1038  | 1043 | 1046 | C2.7           |               |                     | 2277     |
| 28 Jan | 1307  | 1312 | 1316 | C2.5           |               |                     |          |
| 28 Jan | 1742  | 1743 | 1745 |                | SF            | S09E04              | 2268     |
| 28 Jan | 1824  | 1835 | 1906 | C2.2           | SF            | S13E02              | 2268     |
| 28 Jan | 2132  | 2137 | 2140 | M1.0           | SF            | N08E73              | 2277     |
| 28 Jan | 2332  | 2336 | 2340 | C1.7           |               |                     | 2276     |
| 29 Jan | 0151  | 0151 | 0203 |                | SF            | N10E75              | 2277     |
| 29 Jan | 0222  | 0223 | 0227 |                | SF            | S08E27              | 2276     |
| 29 Jan | 0242  | 0252 | 0255 | C3.2           | SF            | N07E72              | 2277     |
| 29 Jan | 0308  | 0313 | 0316 | C4.1           | SF            | N07E72              | 2277     |
| 29 Jan | 0336  | 0336 | 0339 |                | SF            | N08E69              | 2277     |
| 29 Jan | 0348  | 0352 | 0355 | C2.6           | SF            | N07E71              | 2277     |
| 29 Jan | 0420  | 0433 | 0447 | C3.1           | SF            | N07E71              | 2277     |
| 29 Jan | 0515  | 0523 | 0550 | C8.2           | 1N            | S13W06              | 2268     |
| 29 Jan | 0627  | 0628 | 0644 |                | SF            | N07E70              | 2277     |
| 29 Jan | 0659  | 0659 | 0706 |                | SF            | S12W00              | 2268     |
| 29 Jan | 0717  | 0717 | 0721 |                | SF            | S12W06              | 2268     |



## *Flare List*

| Date   | Time  |       |       | Optical     |           |                  |       |
|--------|-------|-------|-------|-------------|-----------|------------------|-------|
|        | Begin | Max   | End   | X-ray Class | Imp/Brtns | Location Lat CMD | Rgn # |
| 29 Jan | 0753  | 0754  | 0756  |             | SF        | N07E68           | 2277  |
| 29 Jan | 0758  | 0800  | 0806  |             | SF        | N07E68           | 2277  |
| 29 Jan | 0823  | 0824  | 0840  |             | SF        | S06E23           | 2276  |
| 29 Jan | 0840  | 0840  | 0843  |             | SF        | N12E83           | 2277  |
| 29 Jan | 0917  | 0918  | 0925  | C1.9        | SF        | N16W38           | 2271  |
| 29 Jan | 0936  | 0937  | 0945  |             | SF        | N10E79           | 2277  |
| 29 Jan | 0953  | 0957  | 1005  | C2.9        | SF        | N07E62           | 2277  |
| 29 Jan | 1007  | 1008  | 1014  |             | SF        | N10E68           | 2277  |
| 29 Jan | 1036  | 1043  | 1051  | C2.1        | SF        | N10E68           | 2277  |
| 29 Jan | 1132  | 1142  | 1152  | M2.1        | 1B        | S12W06           | 2268  |
| 29 Jan | 1221  | 1226  | 1230  | C7.6        |           |                  | 2277  |
| 29 Jan | 1330  | 1333  | 1340  | C2.4        |           |                  | 2277  |
| 29 Jan | 1407  | 1416  | 1420  | C2.2        |           |                  | 2277  |
| 29 Jan | 1437  | 1444  | 1448  | C1.7        |           |                  | 2276  |
| 29 Jan | 1649  | 1652  | 1656  | C1.6        |           |                  | 2277  |
| 29 Jan | 1812  | 1815  | 1824  | C5.0        |           |                  | 2277  |
| 29 Jan | 1930  | 1953  | 2023  | C6.4        |           |                  | 2268  |
| 29 Jan | 2319  | 2326  | 2332  |             | SF        | S13W14           | 2268  |
| 29 Jan | 2337  | 2346  | 2359  | C8.4        | 1N        | N07E61           | 2277  |
| 30 Jan | 0000  | 0004  | 0013  |             | SF        | N09E65           | 2277  |
| 30 Jan | 0032  | 0044  | 0102  | M2.0        |           |                  | 2268  |
| 30 Jan | B0449 | U0459 | A0758 |             | SF        | S12W20           | 2268  |
| 30 Jan | 0451  | 0501  | 0509  | C2.3        | SF        | N08E57           | 2277  |
| 30 Jan | 0529  | 0536  | 0635  | M1.7        |           |                  | 2268  |
| 30 Jan | 0628  | U0629 | A0631 |             | SF        | N10E58           | 2277  |
| 30 Jan | 0819  | 0825  | 0829  | C3.8        |           |                  | 2276  |
| 30 Jan | 1210  | 1216  | 1221  | M2.4        |           |                  | 2277  |
| 30 Jan | 1743  | 1806  | 1820  | C2.0        |           |                  | 2268  |
| 30 Jan | 2018  | 2021  | 2024  | C1.2        |           |                  | 2271  |
| 31 Jan | 0027  | 0030  | 0033  | B9.9        |           |                  | 2271  |
| 31 Jan | 0347  | 0349  | 0352  |             | SF        | N08E46           | 2277  |
| 31 Jan | 0746  | 0801  | 0827  | C1.2        | SF        | S12W35           | 2268  |
| 31 Jan | 1153  | 1157  | 1200  | C1.0        |           |                  | 2277  |
| 31 Jan | 1635  | 1641  | 1650  | C1.6        |           |                  | 2275  |
| 31 Jan | 2047  | 2103  | 2109  | C1.2        |           |                  | 2277  |
| 31 Jan | 2124  | 2135  | 2144  | C1.7        |           |                  | 2268  |
| 01 Feb | 0324  | 0436  | 0514  | C2.8        | 2F        | S13W47           | 2268  |
| 01 Feb | 0639  | 0645  | 0647  | C2.2        | SF        | N06E20           | 2277  |





## *Flare List*

| Date   | Time  |      |      | X-ray<br>Class | Optical       |                     |          |
|--------|-------|------|------|----------------|---------------|---------------------|----------|
|        | Begin | Max  | End  |                | Imp/<br>Brtns | Location<br>Lat CMD | Rgn<br># |
| 01 Feb | 0841  | 0846 | 0851 | C1.8           |               |                     | 2275     |
| 01 Feb | 1126  | 1133 | 1145 | C3.2           |               |                     | 2268     |
| 01 Feb | 1630  | 1631 | 1638 |                | SF            | N06E18              | 2277     |
| 01 Feb | 1708  | 1710 | 1714 |                | SF            | N06E18              | 2277     |
| 01 Feb | 1812  | 1813 | 1817 |                | SF            | N06E17              | 2277     |
| 01 Feb | 1925  | 1930 | 1934 | C1.5           | SF            | N06E12              | 2277     |
| 01 Feb | 2113  | 2126 | 2136 | C3.0           | SF            | S14W54              | 2268     |



## Region Summary

| Date | Location |     | Sunspot Characteristics        |      |                   |               | Flares        |              |       |   |   |         |   |   |   |
|------|----------|-----|--------------------------------|------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|
|      | Lat CMD  | Lon | Helio<br>10 <sup>6</sup> hemi. | Area | Extent<br>(helio) | Spot<br>Class | Spot<br>Count | Mag<br>Class | X-ray |   |   | Optical |   |   |   |
|      |          |     |                                |      |                   |               |               |              | C     | M | X | S       | 1 | 2 | 3 |

### Region 2263

|        |        |     |       |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
|--------|--------|-----|-------|---|-----|---|---|--|---|---|---|---|---|---|---|---|---|
| 15 Jan | N22E50 | 164 | 30    | 3 | Cro | 4 | B |  |   |   |   |   |   |   |   |   |   |
| 16 Jan | N22E36 | 165 | 30    | 5 | Dro | 5 | B |  |   |   |   |   |   |   |   |   |   |
| 17 Jan | N22E21 | 167 | 10    | 6 | Bxo | 4 | B |  |   |   |   |   |   |   |   |   |   |
| 18 Jan | N21E09 | 166 | 10    | 3 | Bxo | 2 | B |  |   |   |   |   |   |   |   |   |   |
| 19 Jan | N21W05 | 167 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 20 Jan | N21W19 | 168 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 21 Jan | N21W33 | 168 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 22 Jan | N21W47 | 169 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 23 Jan | N21W61 | 170 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 24 Jan | N21W75 | 171 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 25 Jan | N21W89 | 172 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
|        |        |     |       |   |     |   |   |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.  
Absolute heliographic longitude: 167

### Region 2264

|        |        |     |       |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
|--------|--------|-----|-------|---|-----|---|---|--|---|---|---|---|---|---|---|---|---|
| 16 Jan | N09E46 | 155 | 10    | 1 | Axx | 1 | A |  |   |   |   |   |   |   |   |   |   |
| 17 Jan | N09E32 | 156 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 18 Jan | N09E19 | 156 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 19 Jan | N09E05 | 157 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 20 Jan | N09W09 | 158 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 21 Jan | N09W23 | 158 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 22 Jan | N09W37 | 159 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 23 Jan | N09W51 | 160 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 24 Jan | N09W65 | 161 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
| 25 Jan | N09W79 | 162 | plage |   |     |   |   |  |   |   |   |   |   |   |   |   |   |
|        |        |     |       |   |     |   |   |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.  
Absolute heliographic longitude: 157



### *Region Summary - continued*

| Date               | Location |     | Sunspot Characteristics |                       |         |       |       | Flares |       |   |   |         |   |   |   |   |
|--------------------|----------|-----|-------------------------|-----------------------|---------|-------|-------|--------|-------|---|---|---------|---|---|---|---|
|                    | Lat      | CMD | Helio                   | Area                  | Extent  | Spot  | Spot  | Mag    | X-ray |   |   | Optical |   |   |   |   |
|                    |          |     | Lon                     | 10 <sup>6</sup> hemi. | (helio) | Class | Count | Class  | C     | M | X | S       | 1 | 2 | 3 | 4 |
| <b>Region 2266</b> |          |     |                         |                       |         |       |       |        |       |   |   |         |   |   |   |   |
| 18 Jan             | S07E08   | 167 | 30                      | 4                     | Cri     | 13    | B     |        |       |   |   |         |   | 1 |   |   |
| 19 Jan             | S06W03   | 165 | 130                     | 6                     | Dai     | 16    | BG    | 2      |       |   |   |         |   | 1 |   |   |
| 20 Jan             | S06W18   | 167 | 120                     | 7                     | Dso     | 14    | B     | 1      |       |   |   |         |   | 1 |   |   |
| 21 Jan             | S06W31   | 166 | 130                     | 9                     | Dao     | 17    | B     |        |       |   |   |         |   | 1 |   |   |
| 22 Jan             | S04W45   | 167 | 110                     | 9                     | Dao     | 7     | B     |        |       |   |   |         |   |   |   |   |
| 23 Jan             | S05W58   | 167 | 80                      | 9                     | Dso     | 4     | B     |        |       |   |   |         |   |   |   |   |
| 24 Jan             | S05W70   | 166 | 60                      | 7                     | Dso     | 3     | B     |        |       |   |   |         |   |   |   |   |
| 25 Jan             | S05W84   | 167 | 50                      | 8                     | Cao     | 3     | B     |        |       |   |   |         |   |   |   |   |
|                    |          |     |                         |                       |         |       |       | 3      | 0     | 0 | 4 | 0       | 0 | 0 | 0 |   |

Crossed West Limb.  
 Absolute heliographic longitude: 165

|                    |        |     |       |   |     |   |   |   |   |   |   |   |   |   |   |  |
|--------------------|--------|-----|-------|---|-----|---|---|---|---|---|---|---|---|---|---|--|
| <b>Region 2267</b> |        |     |       |   |     |   |   |   |   |   |   |   |   |   |   |  |
| 19 Jan             | N18E58 | 104 | 30    | 1 | Hax | 1 | A |   |   |   |   |   |   |   |   |  |
| 20 Jan             | N18E44 | 105 | 30    | 1 | Hrx | 1 | A |   |   |   |   |   |   |   |   |  |
| 21 Jan             | N18E32 | 103 | 20    | 1 | Hrx | 1 | A |   |   |   |   |   |   |   |   |  |
| 22 Jan             | N18E17 | 105 | 10    | 1 | Hrx | 2 | A |   |   |   |   |   |   |   |   |  |
| 23 Jan             | N18E06 | 103 | 10    | 3 | Cro | 2 | B |   |   |   |   |   |   |   |   |  |
| 24 Jan             | N18W07 | 103 | 10    | 4 | Bxo | 2 | B |   |   |   |   |   |   |   |   |  |
| 25 Jan             | N18W21 | 104 | plage |   |     |   |   |   |   |   |   |   |   |   |   |  |
| 26 Jan             | N18W35 | 105 | plage |   |     |   |   |   |   |   |   |   |   |   |   |  |
| 27 Jan             | N18W49 | 105 | plage |   |     |   |   |   |   |   |   |   |   |   |   |  |
| 28 Jan             | N18W63 | 106 | plage |   |     |   |   |   |   |   |   |   |   |   |   |  |
| 29 Jan             | N18W77 | 107 | plage |   |     |   |   |   |   |   |   |   |   |   |   |  |
|                    |        |     |       |   |     |   |   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |

Died on Disk.  
 Absolute heliographic longitude: 103



### *Region Summary - continued*

| Date               | Location |     | Sunspot Characteristics |                               |                   |               |               | Flares       |       |   |   |         |   |   |   |   |  |  |  |  |  |  |  |
|--------------------|----------|-----|-------------------------|-------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|--|--|--|--|--|--|--|
|                    | Lat      | CMD | Helio<br>Lon            | Area<br>10 <sup>6</sup> hemi. | Extent<br>(helio) | Spot<br>Class | Spot<br>Count | Mag<br>Class | X-ray |   |   | Optical |   |   |   |   |  |  |  |  |  |  |  |
|                    |          |     |                         |                               |                   |               |               |              | C     | M | X | S       | 1 | 2 | 3 | 4 |  |  |  |  |  |  |  |
| <b>Region 2268</b> |          |     |                         |                               |                   |               |               |              |       |   |   |         |   |   |   |   |  |  |  |  |  |  |  |
| 22 Jan             | S10E67   |     | 54                      | 230                           | 3                 | Dao           | 1             | B            | 3     | 1 |   |         |   |   |   |   |  |  |  |  |  |  |  |
| 23 Jan             | S10E60   |     | 49                      | 420                           | 14                | Ekc           | 7             | BG           | 4     |   |   | 6       |   |   |   |   |  |  |  |  |  |  |  |
| 24 Jan             | S10E48   |     | 48                      | 460                           | 15                | Ekc           | 8             | BG           | 2     |   |   | 2       | 1 |   |   |   |  |  |  |  |  |  |  |
| 25 Jan             | S10E35   |     | 48                      | 360                           | 15                | Eki           | 10            | BG           | 1     |   |   |         |   |   |   |   |  |  |  |  |  |  |  |
| 26 Jan             | S11E22   |     | 46                      | 430                           | 15                | Eki           | 16            | BG           | 4     | 1 |   | 11      |   |   |   |   |  |  |  |  |  |  |  |
| 27 Jan             | S10E09   |     | 46                      | 480                           | 16                | Fkc           | 24            | BG           | 2     |   |   | 5       |   |   |   |   |  |  |  |  |  |  |  |
| 28 Jan             | S10W05   |     | 48                      | 410                           | 16                | Fkc           | 29            | BG           | 3     | 1 |   | 4       | 1 | 1 |   |   |  |  |  |  |  |  |  |
| 29 Jan             | S10W17   |     | 47                      | 510                           | 16                | Fhc           | 35            | BG           | 2     | 1 |   | 3       | 2 |   |   |   |  |  |  |  |  |  |  |
| 30 Jan             | S10W31   |     | 48                      | 500                           | 17                | Fhc           | 38            | BG           | 1     | 2 |   | 1       |   |   |   |   |  |  |  |  |  |  |  |
| 31 Jan             | S10W44   |     | 48                      | 480                           | 18                | Fkc           | 23            | BG           | 2     |   |   | 1       |   |   |   |   |  |  |  |  |  |  |  |
| 01 Feb             | S11W57   |     | 48                      | 320                           | 18                | Fki           | 18            | BG           | 3     |   |   | 1       |   | 1 |   |   |  |  |  |  |  |  |  |
|                    |          |     |                         |                               |                   |               |               |              | 35    | 6 | 0 | 34      | 4 | 2 | 0 | 0 |  |  |  |  |  |  |  |

Still on Disk.

Absolute heliographic longitude: 48

### **Region 2269**

|        |        |  |    |       |   |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
|--------|--------|--|----|-------|---|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| 22 Jan | N08E36 |  | 85 | 10    | 3 | Bxo | 2 | B |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| 23 Jan | N08E22 |  | 87 | 10    | 4 | Bxo | 5 | B |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| 24 Jan | N09E09 |  | 87 | 10    | 4 | Bxo | 4 | B |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| 25 Jan | N09W06 |  | 89 | 10    | 6 | Bxo | 3 | B |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| 26 Jan | N07W22 |  | 91 | 30    | 5 | Cro | 3 | B |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| 27 Jan | N07W36 |  | 91 | 20    | 6 | Cai | 5 | B |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| 28 Jan | N07W51 |  | 94 | 10    | 6 | Axx | 1 | A |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| 29 Jan | N07W66 |  | 96 | plage |   |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| 30 Jan | N07W81 |  | 98 | plage |   |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
|        |        |  |    |       |   |     |   |   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |

Crossed West Limb.

Absolute heliographic longitude: 89



### *Region Summary - continued*

| Date               | Location |     | Sunspot Characteristics        |       |                   |               |               | Flares       |       |   |   |         |   |   |   |   |   |   |   |   |   |  |  |
|--------------------|----------|-----|--------------------------------|-------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|---|---|---|---|---|--|--|
|                    | Lat CMD  | Lon | Helio<br>10 <sup>6</sup> hemi. | Area  | Extent<br>(helio) | Spot<br>Class | Spot<br>Count | Mag<br>Class | X-ray |   |   | Optical |   |   |   |   |   |   |   |   |   |  |  |
|                    |          |     |                                |       |                   |               |               |              | C     | M | X | S       | 1 | 2 | 3 | 4 |   |   |   |   |   |  |  |
| <b>Region 2270</b> |          |     |                                |       |                   |               |               |              |       |   |   |         |   |   |   |   |   |   |   |   |   |  |  |
| 23 Jan             | S18E55   |     | 54                             | 10    | 1                 | Axx           | 2             | A            | 2     |   |   |         |   |   |   |   |   |   |   |   |   |  |  |
| 24 Jan             | S18E41   |     | 55                             | plage |                   |               |               |              |       |   |   |         |   |   |   |   |   |   |   |   |   |  |  |
| 25 Jan             | S18E27   |     | 56                             | plage |                   |               |               |              |       |   |   |         |   |   |   |   |   |   |   |   |   |  |  |
| 26 Jan             | S18E13   |     | 57                             | plage |                   |               |               |              |       |   |   |         |   |   |   |   |   |   |   |   |   |  |  |
| 27 Jan             | S18W01   |     | 57                             | plage |                   |               |               |              |       |   |   |         |   |   |   |   |   |   |   |   |   |  |  |
| 28 Jan             | S18W15   |     | 58                             | plage |                   |               |               |              |       |   |   |         |   |   |   |   |   |   |   |   |   |  |  |
| 29 Jan             | S18W29   |     | 59                             | plage |                   |               |               |              |       |   |   |         |   |   |   |   |   |   |   |   |   |  |  |
| 30 Jan             | S18W43   |     | 60                             | plage |                   |               |               |              |       |   |   |         |   |   |   |   |   |   |   |   |   |  |  |
| 31 Jan             | S18W57   |     | 61                             | plage |                   |               |               |              |       |   |   |         |   |   |   |   |   |   |   |   |   |  |  |
| 01 Feb             | S18W71   |     | 62                             | plage |                   |               |               |              |       |   |   |         |   |   |   |   |   |   |   |   |   |  |  |
|                    |          |     |                                |       |                   |               |               |              |       | 2 | 0 | 0       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |

Still on Disk.

Absolute heliographic longitude: 57

### **Region 2271**

|        |        |  |    |     |    |     |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|--------|--|----|-----|----|-----|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 Jan | N18E09 |  | 74 | 40  | 6  | Cao | 9  | B  |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 26 Jan | N17W04 |  | 73 | 60  | 5  | Dai | 10 | BG | 2 |   |   |   |   |   |   |   |   |   |   |   |   |
| 27 Jan | N18W18 |  | 74 | 120 | 8  | Dai | 10 | BG |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 28 Jan | N18W30 |  | 73 | 110 | 8  | Dai | 10 | BG |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 29 Jan | N17W44 |  | 74 | 170 | 10 | Dac | 20 | BG | 1 |   |   | 1 |   |   |   |   |   |   |   |   |   |
| 30 Jan | N17W58 |  | 75 | 230 | 10 | Dac | 13 | BG | 1 |   |   |   |   |   |   |   |   |   |   |   |   |
| 31 Jan | N17W70 |  | 74 | 220 | 11 | Eao | 6  | B  |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 01 Feb | N18W84 |  | 75 | 180 | 12 | Eao | 3  | B  |   |   |   |   |   |   |   |   |   |   |   |   |   |
|        |        |  |    |     |    |     |    |    |   | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 73

### **Region 2272**

|        |        |  |    |    |   |     |   |   |  |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|--------|--|----|----|---|-----|---|---|--|---|---|---|---|---|---|---|---|---|---|---|---|
| 26 Jan | N13E60 |  | 10 | 30 | 3 | Cao | 2 | B |  |   |   |   |   |   |   |   |   |   |   |   |   |
| 27 Jan | N13E49 |  | 6  | 40 | 6 | Cso | 3 | B |  |   |   | 1 |   |   |   |   |   |   |   |   |   |
| 28 Jan | N12E31 |  | 9  | 30 | 2 | Hax | 1 | A |  |   |   |   |   |   |   |   |   |   |   |   |   |
| 29 Jan | N12E18 |  | 12 | 20 | 2 | Hax | 2 | A |  |   |   |   |   |   |   |   |   |   |   |   |   |
| 30 Jan | N12E05 |  | 12 | 20 | 1 | Hax | 1 | A |  |   |   |   |   |   |   |   |   |   |   |   |   |
| 31 Jan | N12W09 |  | 13 | 20 | 1 | Hax | 1 | A |  |   |   |   |   |   |   |   |   |   |   |   |   |
| 01 Feb | N13W22 |  | 13 | 20 | 1 | Hrx | 2 | A |  |   |   |   |   |   |   |   |   |   |   |   |   |
|        |        |  |    |    |   |     |   |   |  | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 12



### *Region Summary - continued*

| Date               | Location |     | Sunspot Characteristics         |      |                   |               | Flares        |              |       |   |   |         |   |   |   |   |  |
|--------------------|----------|-----|---------------------------------|------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|--|
|                    | Lat CMD  | Lon | Helio<br>10 <sup>-6</sup> hemi. | Area | Extent<br>(helio) | Spot<br>Class | Spot<br>Count | Mag<br>Class | X-ray |   |   | Optical |   |   |   |   |  |
|                    |          |     |                                 |      |                   |               |               |              | C     | M | X | S       | 1 | 2 | 3 | 4 |  |
| <b>Region 2273</b> |          |     |                                 |      |                   |               |               |              |       |   |   |         |   |   |   |   |  |
| 26 Jan             | S03E03   | 67  | 10                              | 3    | Bxo               | 3             | B             |              |       |   |   | 1       |   |   |   |   |  |
| 27 Jan             | S03W12   | 67  | 90                              | 5    | Dao               | 6             | B             | 1            |       |   |   | 6       |   |   |   |   |  |
| 28 Jan             | N03W26   | 69  | 50                              | 5    | Cao               | 4             | B             |              |       |   |   |         |   |   |   |   |  |
| 29 Jan             | S04W41   | 71  | 40                              | 2    | Cao               | 5             | B             |              |       |   |   |         |   |   |   |   |  |
| 30 Jan             | S03W55   | 72  | 30                              | 5    | Cao               | 5             | B             |              |       |   |   |         |   |   |   |   |  |
| 31 Jan             | S03W69   | 73  | 20                              | 1    | Hrx               | 2             | A             |              |       |   |   |         |   |   |   |   |  |
| 01 Feb             | S03W82   | 73  | 10                              | 1    | Axx               | 1             | A             |              |       |   |   |         |   |   |   |   |  |
|                    |          |     |                                 |      |                   |               |               | 1            | 0     | 0 | 7 | 0       | 0 | 0 | 0 | 0 |  |

Still on Disk.

Absolute heliographic longitude: 67

|                    |        |    |       |   |     |   |   |   |   |   |   |   |   |   |   |   |  |
|--------------------|--------|----|-------|---|-----|---|---|---|---|---|---|---|---|---|---|---|--|
| <b>Region 2274</b> |        |    |       |   |     |   |   |   |   |   |   |   |   |   |   |   |  |
| 26 Jan             | S03W05 | 74 | 10    | 3 | Bxo | 3 | B |   |   |   |   |   |   |   |   |   |  |
| 27 Jan             | S03W20 | 76 | plage |   |     |   |   |   |   |   |   |   |   |   |   |   |  |
| 28 Jan             | S03W35 | 78 | plage |   |     |   |   |   |   |   |   |   |   |   |   |   |  |
| 29 Jan             | S03W50 | 80 | plage |   |     |   |   |   |   |   |   |   |   |   |   |   |  |
| 30 Jan             | S03W65 | 82 | plage |   |     |   |   |   |   |   |   |   |   |   |   |   |  |
| 31 Jan             | S03W78 | 82 | plage |   |     |   |   |   |   |   |   |   |   |   |   |   |  |
|                    |        |    |       |   |     |   |   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |

Crossed West Limb.

Absolute heliographic longitude: 74

|                    |        |    |     |   |     |    |    |   |   |   |   |   |   |   |   |   |  |
|--------------------|--------|----|-----|---|-----|----|----|---|---|---|---|---|---|---|---|---|--|
| <b>Region 2275</b> |        |    |     |   |     |    |    |   |   |   |   |   |   |   |   |   |  |
| 26 Jan             | S16W14 | 83 | 10  | 3 | Cso | 3  | B  |   |   |   |   |   |   |   |   |   |  |
| 27 Jan             | S17W26 | 82 | 90  | 4 | Dai | 11 | BG |   |   |   |   | 4 |   |   |   |   |  |
| 28 Jan             | S17W40 | 83 | 200 | 6 | Dai | 11 | BG |   |   |   |   |   |   |   |   |   |  |
| 29 Jan             | S17W53 | 83 | 140 | 6 | Dao | 10 | BG |   |   |   |   |   |   |   |   |   |  |
| 30 Jan             | S17W67 | 84 | 140 | 6 | Dao | 7  | B  |   |   |   |   |   |   |   |   |   |  |
| 31 Jan             | S17W80 | 84 | 80  | 8 | Dao | 5  | B  | 1 |   |   |   |   |   |   |   |   |  |
| 01 Feb             | S17W94 | 85 | 60  | 7 | Cao | 2  | B  | 1 |   |   |   |   |   |   |   |   |  |
|                    |        |    |     |   |     |    |    | 2 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |  |

Still on Disk.

Absolute heliographic longitude: 83



### *Region Summary - continued*

| Date               | Location |     | Sunspot Characteristics |                               |                   |               |               | Flares       |       |   |   |         |   |   |   |   |   |  |  |  |  |  |  |
|--------------------|----------|-----|-------------------------|-------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|---|--|--|--|--|--|--|
|                    | Lat      | CMD | Helio<br>Lon            | Area<br>10 <sup>6</sup> hemi. | Extent<br>(helio) | Spot<br>Class | Spot<br>Count | Mag<br>Class | X-ray |   |   | Optical |   |   |   |   |   |  |  |  |  |  |  |
|                    |          |     |                         |                               |                   |               |               |              | C     | M | X | S       | 1 | 2 | 3 | 4 |   |  |  |  |  |  |  |
| <b>Region 2276</b> |          |     |                         |                               |                   |               |               |              |       |   |   |         |   |   |   |   |   |  |  |  |  |  |  |
| 28 Jan             | S07E25   |     | 18                      | 10                            | 3                 | Bxo           | 3             | B            | 1     |   |   |         |   |   |   |   |   |  |  |  |  |  |  |
| 29 Jan             | S07E12   |     | 18                      | 10                            | 5                 | Bxo           | 6             | B            | 1     |   |   |         | 2 |   |   |   |   |  |  |  |  |  |  |
| 30 Jan             | S07W01   |     | 18                      | 10                            | 3                 | Bxo           | 3             | B            | 1     |   |   |         |   |   |   |   |   |  |  |  |  |  |  |
| 31 Jan             | S07W16   |     | 20                      | 10                            | 3                 | Bxo           | 3             | B            |       |   |   |         |   |   |   |   |   |  |  |  |  |  |  |
| 01 Feb             | S07W31   |     | 22                      | plage                         |                   |               |               |              |       |   |   |         |   |   |   |   |   |  |  |  |  |  |  |
|                    |          |     |                         |                               |                   |               |               |              | 3     | 0 | 0 | 2       | 0 | 0 | 0 | 0 | 0 |  |  |  |  |  |  |

Still on Disk.  
Absolute heliographic longitude: 18

|                    |        |  |     |     |    |     |    |    |    |   |   |    |    |   |   |   |   |  |  |  |  |  |  |
|--------------------|--------|--|-----|-----|----|-----|----|----|----|---|---|----|----|---|---|---|---|--|--|--|--|--|--|
| <b>Region 2277</b> |        |  |     |     |    |     |    |    |    |   |   |    |    |   |   |   |   |  |  |  |  |  |  |
| 28 Jan             | N07E67 |  | 336 | 30  | 2  | Hax | 1  | A  | 1  | 1 |   |    | 3  |   |   |   |   |  |  |  |  |  |  |
| 29 Jan             | N07E61 |  | 329 | 260 | 20 | Fhc | 17 | BG | 12 |   |   |    | 14 | 1 |   |   |   |  |  |  |  |  |  |
| 30 Jan             | N08E47 |  | 330 | 510 | 21 | Fkc | 41 | BG | 1  | 1 |   |    | 3  |   |   |   |   |  |  |  |  |  |  |
| 31 Jan             | N08E33 |  | 331 | 480 | 22 | Fkc | 32 | BG | 2  |   |   |    | 1  |   |   |   |   |  |  |  |  |  |  |
| 01 Feb             | N08E20 |  | 331 | 440 | 26 | Fkc | 46 | BG | 2  |   |   |    | 5  |   |   |   |   |  |  |  |  |  |  |
|                    |        |  |     |     |    |     |    |    | 18 | 2 | 0 | 26 | 1  | 0 | 0 | 0 | 0 |  |  |  |  |  |  |

Still on Disk.  
Absolute heliographic longitude: 331

|                    |        |  |   |       |   |     |   |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |
|--------------------|--------|--|---|-------|---|-----|---|---|---|---|---|---|---|---|---|---|---|---|--|--|--|--|--|
| <b>Region 2278</b> |        |  |   |       |   |     |   |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |
| 29 Jan             | S09E24 |  | 6 | 10    | 6 | Bxo | 6 | B |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |
| 30 Jan             | S08E10 |  | 7 | 10    | 5 | Bxo | 5 | B |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |
| 31 Jan             | S08W04 |  | 8 | 10    | 1 | Axx | 1 | A |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |
| 01 Feb             | S08W18 |  | 9 | plage |   |     |   |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |
|                    |        |  |   |       |   |     |   |   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |  |  |  |

Still on Disk.  
Absolute heliographic longitude: 8



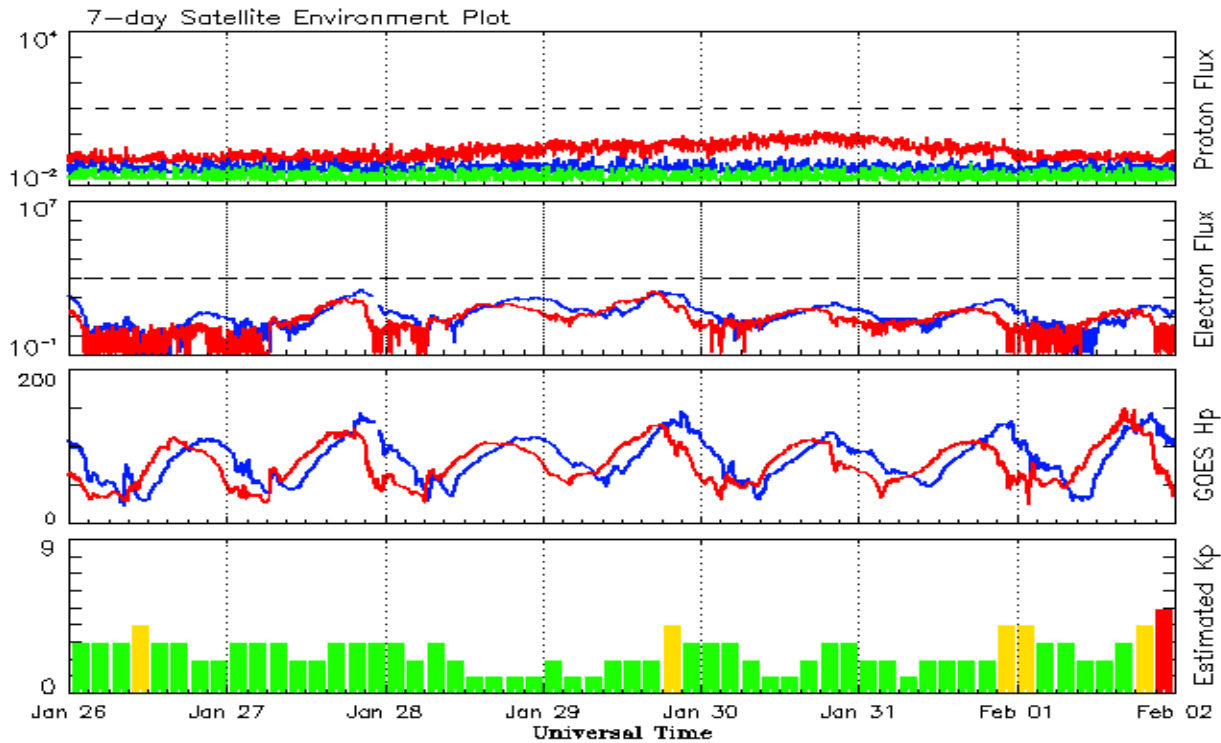
**Recent Solar Indices (preliminary)**  
**Observed monthly mean values**

| Month       | Sunspot Numbers |       |        |               |      | Radio Flux |        | Geomagnetic |        |
|-------------|-----------------|-------|--------|---------------|------|------------|--------|-------------|--------|
|             | Observed values |       | Ratio  | Smooth values |      | Penticton  | Smooth | Planetary   | Smooth |
|             | SEC             | RI    | RI/SEC | SEC           | RI   | 10.7 cm    | Value  | Ap          | Value  |
| <b>2013</b> |                 |       |        |               |      |            |        |             |        |
| February    | 60.0            | 38.1  | 0.63   | 86.7          | 58.4 | 104.4      | 118.0  | 5           | 7.4    |
| March       | 81.0            | 57.9  | 0.71   | 85.7          | 57.6 | 111.2      | 117.1  | 9           | 7.4    |
| April       | 112.8           | 72.4  | 0.64   | 86.7          | 57.9 | 125.0      | 116.6  | 5           | 7.2    |
| May         | 125.5           | 78.7  | 0.63   | 90.5          | 59.9 | 131.3      | 118.1  | 10          | 7.0    |
| June        | 80.1            | 52.5  | 0.66   | 94.4          | 62.6 | 110.2      | 120.9  | 13          | 7.1    |
| July        | 86.1            | 57.0  | 0.66   | 97.9          | 65.5 | 115.6      | 123.9  | 9           | 7.3    |
| August      | 90.2            | 66.0  | 0.73   | 103.7         | 68.9 | 114.7      | 127.9  | 9           | 7.6    |
| September   | 55.0            | 37.0  | 0.67   | 111.0         | 73.0 | 102.7      | 132.3  | 5           | 7.8    |
| October     | 127.1           | 85.6  | 0.67   | 114.3         | 74.9 | 132.3      | 134.7  | 7           | 7.8    |
| November    | 125.7           | 77.6  | 0.62   | 114.6         | 75.3 | 148.4      | 135.4  | 5           | 7.9    |
| December    | 118.2           | 90.3  | 0.76   | 115.4         | 75.9 | 147.7      | 135.9  | 5           | 7.5    |
| <b>2014</b> |                 |       |        |               |      |            |        |             |        |
| January     | 125.9           | 81.8  | 0.65   | 117.7         | 77.3 | 158.6      | 137.3  | 6           | 7.1    |
| February    | 174.6           | 102.3 | 0.59   | 119.5         | 78.3 | 170.3      | 138.6  | 12          | 6.9    |
| March       | 141.1           | 91.9  | 0.65   | 123.2         | 80.8 | 149.9      | 140.8  | 6           | 7.2    |
| April       | 130.5           | 84.7  | 0.65   | 124.8         | 81.9 | 144.3      | 143.5  | 9           | 7.5    |
| May         | 116.8           | 75.2  | 0.64   | 122.3         | 80.5 | 130.0      | 144.7  | 7           | 7.9    |
| June        | 107.7           | 71.0  | 0.66   | 121.4         | 79.7 | 122.2      | 145.5  | 7           | 8.4    |
| July        | 113.6           | 72.4  | 0.64   | 120.4         | 78.6 | 137.3      | 145.2  | 5           | 8.8    |
| August      | 106.2           | 74.6  | 0.70   |               |      | 124.7      |        | 9           |        |
| September   | 127.4           | 87.6  | 0.69   |               |      | 146.1      |        | 11          |        |
| October     | 92.0            | 60.6  | 0.66   |               |      | 153.7      |        | 10          |        |
| November    | 101.8           | 70.1  | 0.69   |               |      | 155.3      |        | 10          |        |
| December    | 120.0           | 78.0  | 0.65   |               |      | 158.7      |        | 12          |        |
| <b>2015</b> |                 |       |        |               |      |            |        |             |        |
| January     | 101.2           | 67.0  | 0.66   |               |      | 141.7      |        | 10          |        |

**Note:** Values are final except for the most recent 6 months which are considered preliminary.  
Cycle 24 started in Dec 2008 with an RI=1.7.







*Weekly Geosynchronous Satellite Environment Summary  
Week Beginning 26 January 2015*

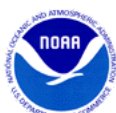
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm<sup>2</sup>-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

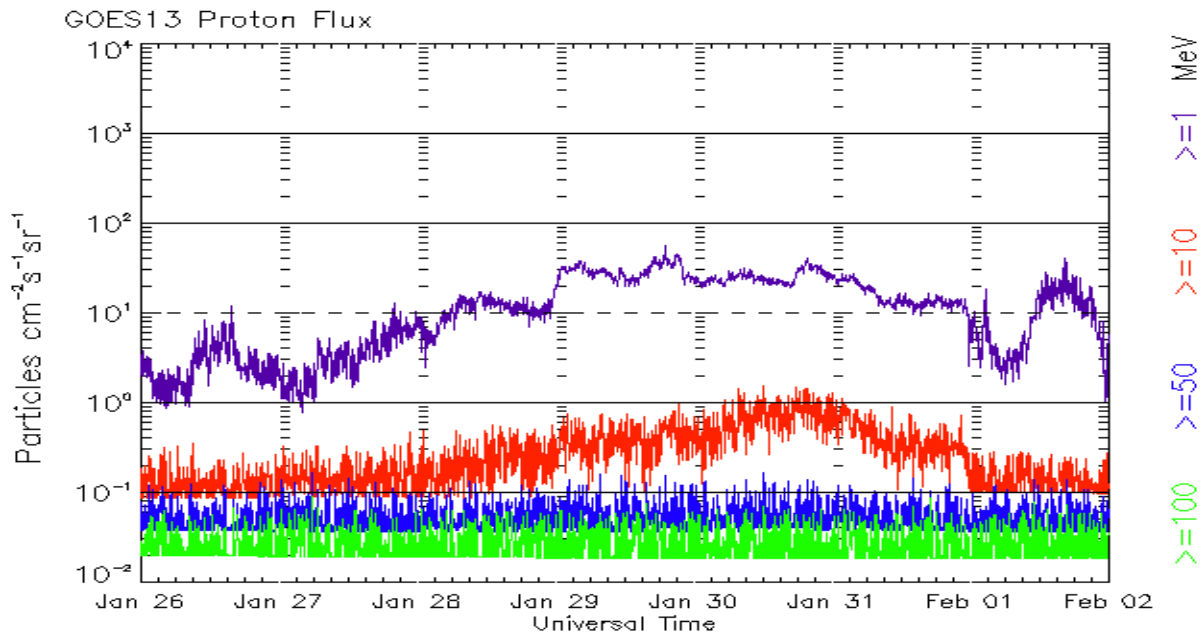
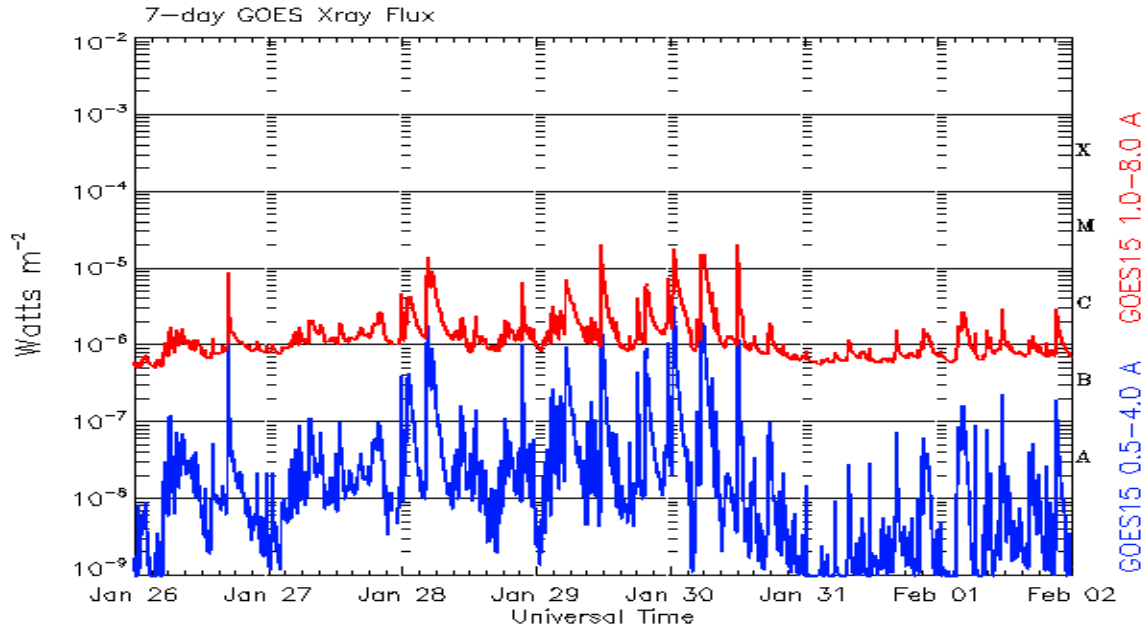
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

The Hp plot contains the five minute averaged Hp magnetic field component in nanoteslas (nT) as by the SWPC Primary GOES satellite. The Hp component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

The Estimated 3-hour Planetary Kp-index is derived at the NOAA Space Weather Prediction Center using data from the following ground-based magnetometers: Boulder, Colorado; Chambon la Foret, France; Fredericksburg, Virginia; Fresno, California; Hartland, UK; Newport, Washington; Sitka, Alaska. These data are made available thanks to the cooperative efforts between SWPC and data providers around the world, which currently includes the U.S. Geological Survey, the British Geological Survey, and the Institut de Physique du Globe de Paris.

The data included here are those now available in real time at the SWPC and are incomplete in that they do not include the full set of parameters and energy ranges known to cause satellite operating anomalies. The proton and electron fluxes and Kp are 'global' parameters that are applicable to a first order approximation over large areas. H parallel is subject to more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.





*Weekly GOES Satellite X-ray and Proton Plots  
Week Beginning 26 January 2015*

The x-ray plots contains five-minute averages x-ray flux ( $Watt/m^2$ ) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged intergral flux units (pfu = protons/ $cm^2$  -sec -sr) as measured by the primary SWPC GOES Proton satellite for each of the energy thresholds:  $>1$ ,  $>10$ ,  $>30$ , and  $>100$  MeV. The P10 event threshold is 10 pfu at greater than 10 MeV.



## ***Preliminary Report and Forecast of Solar Geophysical Data (The Weekly)***

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**Notice:** The 27-day Outlook, Satellite Environment, X-ray and Proton plots have been redesigned. Comments and suggestions are welcome SWPC.Webmaster@noaa.gov

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