

Solar activity was at very low to low levels during the period. Only weak C-class flares (<C3) were observed on 20-21 January and 24 January from Regions 2484 (N08, L=094, class/area Dro/030 on 20 January), 2487 (S13, L=336, class/area Dai/100 on 21 January), and 2488 (N04, L=319, class/area Dai/200 on 24 January). Region 2487 was in a growth phase since its emergence on 18 January, but entered into a decay phase after 22 January and was only responsible for three weak C-class flares. Region 2488 continued to exhibit growth since its emergence on the disk on 18 January and was responsible for two weak C-class flares. No Earth-directed coronal mass ejections (CMEs) were observed during the summary period.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal levels on 19-20 January, moderate levels on 21 January and high levels on 18 January and again on 22-24 January. The maximum flux of the period was 12,881 pfu observed at 24/1550 UTC.

Geomagnetic field activity ranged from quiet to major storm (G2-Moderate) levels. The period began under quiet conditions for the majority of 18 January. At approximately 18/2056 UTC, a small shock was observed in ACE data indicating the arrival of a CME from a filament eruption on 14 January. Total field (Bt) initially increased from 6 nT to 12 nT with solar wind speed increasing from 300 km/s to near 380 km/s while the Bz component fluctuated between +6 nT and -9 nT. By 19/0935 UTC, the Bz component deflected north and total field increased to 14 nT. A subsequent rotation of the Bz component occurred after 20/0325 UTC to a maximum of -13 nT followed by another increase in the total field to a maximum of 21 nT at 21/0545 UTC. By this time, the Bz component was fluctuating between +/-18 nT. By 21/1006 UTC, Bt decreased to around 8 nT, while the solar wind speed increased to around 530 km/s as the solar wind began to transition into a negative polarity coronal hole high speed stream (CH HSS). The geomagnetic field responded with an unsettled period late on 18 January, quiet to active levels on 19 January, quiet to minor storm levels (G1-Minor) on 20 January, and unsettled to major storm levels (G2-Moderate) on 21 January. Solar wind speeds continued around 500-550 km/s under CH HSS influence until late on 23 January. Solar wind speeds continued to be elevated in the 450-500 km/s range through the end of the period. As a result, the geomagnetic field was at quiet to active periods from 22-24 January.

Space Weather Outlook

25 January - 20 February 2016

Solar activity is expected to be at very low to low levels with a slight chance for an M-class flare (R1-R2, Minor-Moderate) from 25-31 January as Region 2488 continues to develop.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at mostly high



levels due to recurrent CH HSS activity. A return to moderate levels is expected on 25-26 January, 07-08 February, and 14-18 February.

Geomagnetic field activity is expected to be at unsettled to active levels from 25-30 January, 02-03 February, 07-10 February, and 17-20 February due to recurrent CH HSS activity.



Daily Solar Data

| Date | Radio Flux 10.7cm | Sun spot No. | Sunspot Area (10 ⁻⁶ hemi.) | X-ray Background Flux | Flares | | | | | | | | |
|------------|----------------------|-----------------|--|--------------------------|--------|---|---|---------|---|---|---|---|---|
| | | | | | X-ray | | | Optical | | | | | |
| | | | | | C | M | X | S | 1 | 2 | 3 | 4 | |
| 18 January | 100 | 48 | 280 | B1.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 January | 98 | 55 | 110 | B1.8 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| 20 January | 100 | 59 | 180 | B2.4 | 2 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 |
| 21 January | 104 | 56 | 200 | B2.5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 January | 101 | 50 | 180 | B2.0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 23 January | 99 | 54 | 170 | B2.2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 24 January | 104 | 47 | 230 | B2.9 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

Daily Particle Data

| Date | Proton Fluence (protons/cm ² -day-sr) | | | Electron Fluence (electrons/cm ² -day-sr) | | |
|------------|---|---------|----------|---|---------|--------|
| | >1 MeV | >10 MeV | >100 MeV | >0.6 MeV | >2MeV | >4 MeV |
| | 18 January | 4.4e+05 | 1.3e+04 | 3.1e+03 | 6.6e+07 | |
| 19 January | 7.3e+05 | 1.2e+04 | 2.7e+03 | 1.2e+06 | | |
| 20 January | 4.4e+05 | 1.2e+04 | 2.8e+03 | 1.8e+05 | | |
| 21 January | 5.7e+05 | 1.2e+04 | 3.0e+03 | 3.5e+06 | | |
| 22 January | 2.0e+05 | 1.2e+04 | 3.1e+03 | 7.4e+07 | | |
| 23 January | 3.7e+05 | 1.3e+04 | 3.3e+03 | 1.2e+08 | | |
| 24 January | 8.0e+05 | 1.3e+04 | 3.4e+03 | 2.6e+08 | | |

Daily Geomagnetic Data

| Date | Middle Latitude Fredericksburg | | High Latitude College | | Estimated Planetary | |
|------------|-----------------------------------|-----------------|--------------------------|-----------------|------------------------|-----------------|
| | A | K-indices | A | K-indices | A | K-indices |
| | 18 January | 4 | 0-0-0-0-1-2-1-3 | 2 | 0-0-0-1-2-1-0-1 | 5 |
| 19 January | 7 | 2-2-3-2-1-2-2-1 | 9 | 2-3-3-4-2-0-0-0 | 11 | 4-3-3-3-1-1-0-1 |
| 20 January | 12 | 0-1-3-3-3-3-3-3 | 0 | 0-0-0-0-0-0-0-0 | 25 | 1-2-4-4-4-5-5-4 |
| 21 January | 15 | 0-0-0-0-0-3-3-3 | 23 | 0-0-0-0-0-4-3-4 | 32 | 4-6-5-3-3-4-4-4 |
| 22 January | 10 | 3-3-3-2-2-2-2-1 | 15 | 3-2-3-4-4-3-2-2 | 14 | 4-4-3-3-2-2-3-2 |
| 23 January | 10 | 1-3-4-2-3-2-1-1 | 17 | 2-3-4-2-5-3-3-1 | 12 | 2-3-4-2-3-3-2-1 |
| 24 January | 9 | 2-2-1-1-1-3-4-2 | 12 | 2-2-2-2-3-4-3-2 | 15 | 3-2-2-1-2-3-4-2 |



Alerts and Warnings Issued

| Date & Time of Issue UTC | Type of Alert or Warning | Date & Time of Event UTC |
|-----------------------------|--|-----------------------------|
| 18 Jan 1106 | CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu | 13/1420 |
| 18 Jan 2207 | WARNING: Geomagnetic K = 4 | 18/2205 - 19/0600 |
| 19 Jan 0106 | ALERT: Geomagnetic K = 4 | 19/0106 |
| 19 Jan 0546 | EXTENDED WARNING: Geomagnetic K = 4 | 18/2205 - 19/1500 |
| 19 Jan 1459 | EXTENDED WARNING: Geomagnetic K = 4 | 18/2205 - 19/2300 |
| 19 Jan 2243 | EXTENDED WARNING: Geomagnetic K = 4 | 18/2205 - 20/0600 |
| 20 Jan 0540 | EXTENDED WARNING: Geomagnetic K = 4 | 18/2205 - 20/1500 |
| 20 Jan 1132 | WARNING: Geomagnetic K = 5 | 20/1135 - 1800 |
| 20 Jan 1133 | EXTENDED WARNING: Geomagnetic K = 4 | 18/2205 - 20/2200 |
| 20 Jan 1725 | EXTENDED WARNING: Geomagnetic K = 4 | 18/2205 - 21/0600 |
| 20 Jan 1725 | EXTENDED WARNING: Geomagnetic K = 5 | 20/1135 - 2359 |
| 20 Jan 1802 | ALERT: Geomagnetic K = 5 | 20/1759 |
| 20 Jan 2101 | ALERT: Geomagnetic K = 5 | 20/2059 |
| 20 Jan 2203 | EXTENDED WARNING: Geomagnetic K = 4 | 18/2205 - 21/0900 |
| 20 Jan 2203 | EXTENDED WARNING: Geomagnetic K = 5 | 20/1135 - 21/0600 |
| 21 Jan 0534 | EXTENDED WARNING: Geomagnetic K = 5 | 20/1135 - 21/1300 |
| 21 Jan 0534 | EXTENDED WARNING: Geomagnetic K = 4 | 18/2205 - 21/1800 |
| 21 Jan 0549 | ALERT: Geomagnetic K = 5 | 21/0549 |
| 21 Jan 0554 | WARNING: Geomagnetic K = 6 | 21/0550 - 1200 |
| 21 Jan 0559 | ALERT: Geomagnetic K = 6 | 21/0559 |
| 21 Jan 0655 | ALERT: Geomagnetic K = 5 | 21/0654 |
| 21 Jan 1725 | EXTENDED WARNING: Geomagnetic K = 4 | 18/2205 - 22/0600 |
| 21 Jan 2224 | WARNING: Geomagnetic K = 5 | 21/2224 - 22/0600 |
| 22 Jan 0554 | EXTENDED WARNING: Geomagnetic K = 4 | 18/2205 - 22/1500 |
| 22 Jan 1341 | ALERT: Electron 2MeV Integral Flux \geq 1000pfu | 22/1325 |
| 23 Jan 0458 | WARNING: Geomagnetic K = 4 | 23/0457 - 1400 |
| 23 Jan 0844 | ALERT: Geomagnetic K = 4 | 23/0844 |
| 23 Jan 0856 | CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu | 22/1325 |

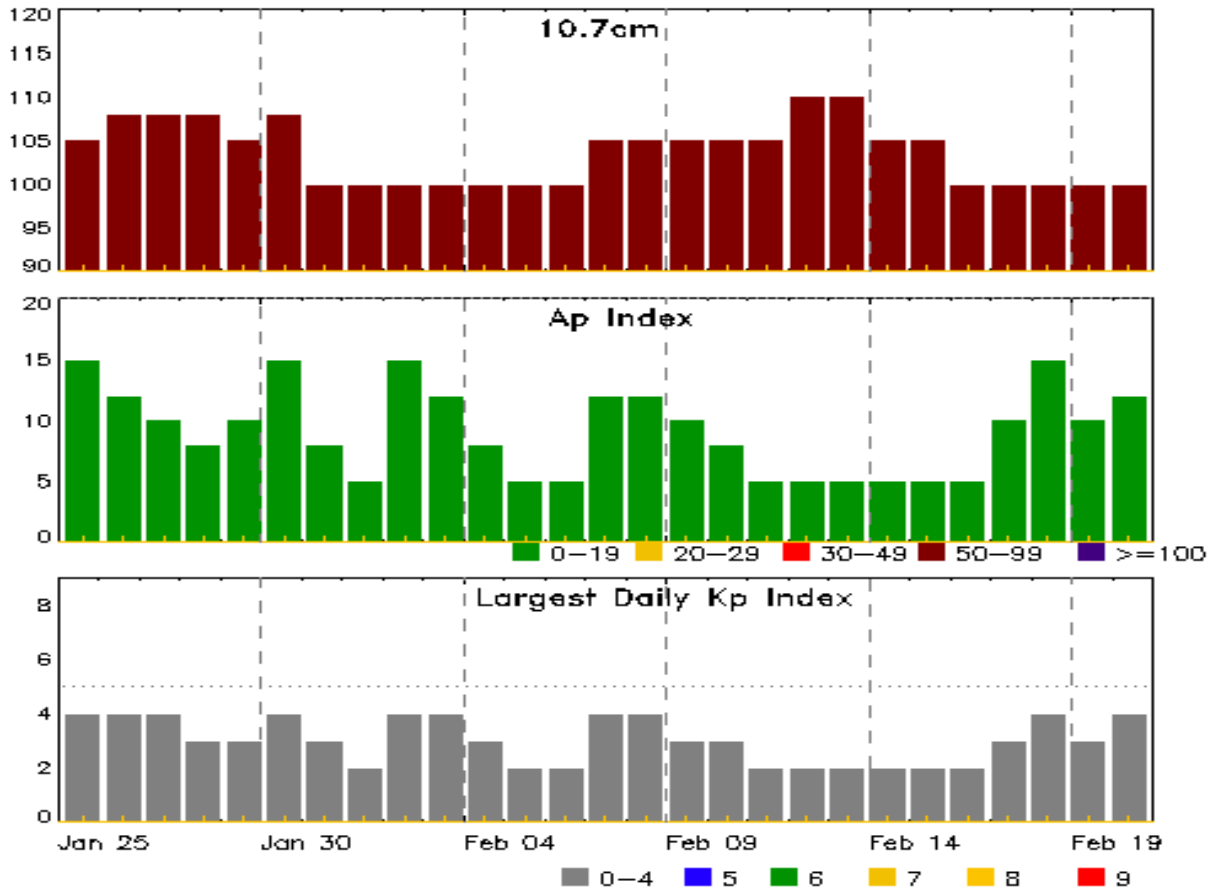


Alerts and Warnings Issued

| Date & Time of Issue UTC | Type of Alert or Warning | Date & Time of Event UTC |
|---|--|---|
| 24 Jan 0503 | CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu | 22/1325 |
| 24 Jan 1851 | WARNING: Geomagnetic K = 4 | 24/1850 - 2300 |
| 24 Jan 1916 | ALERT: Geomagnetic K = 4 | 24/1915 |
| 24 Jan 2256 | EXTENDED WARNING: Geomagnetic K = 4 | 24/1850 - 25/1000 |



Twenty-seven Day Outlook



| Date | Radio Flux 10.7cm | Planetary A Index | Largest Kp Index | Date | Radio Flux 10.7cm | Planetary A Index | Largest Kp Index |
|--------|----------------------|----------------------|---------------------|--------|----------------------|----------------------|---------------------|
| 25 Jan | 105 | 15 | 4 | 08 Feb | 105 | 12 | 4 |
| 26 | 108 | 12 | 4 | 09 | 105 | 10 | 3 |
| 27 | 108 | 10 | 4 | 10 | 105 | 8 | 3 |
| 28 | 108 | 8 | 3 | 11 | 105 | 5 | 2 |
| 29 | 105 | 10 | 3 | 12 | 110 | 5 | 2 |
| 30 | 108 | 15 | 4 | 13 | 110 | 5 | 2 |
| 31 | 100 | 8 | 3 | 14 | 105 | 5 | 2 |
| 01 Feb | 100 | 5 | 2 | 15 | 105 | 5 | 2 |
| 02 | 100 | 15 | 4 | 16 | 100 | 5 | 2 |
| 03 | 100 | 12 | 4 | 17 | 100 | 10 | 3 |
| 04 | 100 | 8 | 3 | 18 | 100 | 15 | 4 |
| 05 | 100 | 5 | 2 | 19 | 100 | 10 | 3 |
| 06 | 100 | 5 | 2 | 20 | 100 | 12 | 4 |
| 07 | 105 | 12 | 4 | | | | |



Energetic Events

| Date | Time | | | X-ray | Optical Information | | | Peak | | Sweep Freq | |
|------|-------|-----|----------|-------|---------------------|------------|------------------|-------|----------------|-----------------|--------------|
| | Begin | Max | Half Max | Class | Integ Flux | Imp/ Brtns | Location Lat CMD | Rgn # | Radio Flux 245 | Radio Flux 2695 | Intensity II |

No Events Observed

Flare List

| Date | Time | | | X-ray Class | Imp/ Brtns | Optical Location Lat CMD | Rgn # |
|--------|-------|-------|-------|-------------|------------|--------------------------|-------|
| | Begin | Max | End | | | | |
| 18 Jan | 1558 | 1625 | 1636 | B3.9 | | | 2485 |
| 19 Jan | 0328 | 0338 | 0342 | B2.6 | | | |
| 19 Jan | 0849 | 0900 | 0906 | B2.9 | | | 2485 |
| 19 Jan | 1033 | 1036 | 1041 | B4.1 | | | |
| 19 Jan | 1820 | 1821 | 1834 | | SF | N09W63 | 2484 |
| 19 Jan | 2001 | 2009 | 2012 | | SF | N09W64 | 2484 |
| 19 Jan | 2047 | 2112 | 2144 | B5.5 | | | |
| 20 Jan | 0058 | 0102 | 0104 | B3.7 | | | 2484 |
| 20 Jan | 0440 | 0446 | 0452 | B6.6 | | | 2484 |
| 20 Jan | 0729 | 0734 | 0740 | C1.3 | SF | N06W71 | 2484 |
| 20 Jan | 0742 | 0742 | 0753 | | SF | N06E64 | 2488 |
| 20 Jan | 0809 | 0813 | 0818 | B4.9 | | | |
| 20 Jan | 0845 | 0849 | 0900 | B5.2 | | | 2484 |
| 20 Jan | 0911 | 0918 | 0921 | B8.4 | SF | N06W73 | 2484 |
| 20 Jan | 1115 | 1119 | 1124 | B9.6 | SF | S11E46 | 2487 |
| 20 Jan | 1209 | U1215 | A1225 | | SF | N05E63 | 2488 |
| 20 Jan | 1210 | U1212 | 1215 | | SF | S12E46 | 2487 |
| 20 Jan | 1255 | 1255 | 1258 | | SF | S11E46 | 2487 |
| 20 Jan | 1320 | 1321 | 1324 | | SF | N07W78 | 2484 |
| 20 Jan | 1425 | 1432 | 1434 | C1.3 | SF | S12E45 | 2487 |
| 20 Jan | 1637 | 1640 | 1642 | B4.1 | | | |
| 20 Jan | 1704 | 1709 | 1713 | B4.8 | SF | S13E42 | 2487 |
| 20 Jan | 1738 | 1741 | 1744 | B3.8 | | | 2487 |
| 20 Jan | 1746 | 1746 | 1748 | | SF | S13E42 | 2487 |
| 21 Jan | 0117 | 0145 | 0153 | C2.9 | | | 2487 |
| 21 Jan | 0536 | 0544 | 0552 | C1.3 | | | 2488 |
| 21 Jan | 0801 | 0813 | 0827 | C1.1 | | | 2484 |
| 21 Jan | 1322 | 1351 | 1419 | C1.4 | | | 2487 |
| 22 Jan | 0223 | 0243 | 0251 | B3.8 | | | 2484 |
| 22 Jan | 2014 | 2014 | 2021 | | SF | N05E31 | 2488 |
| 22 Jan | 2347 | 2352 | 2355 | B7.1 | | | 2488 |



Flare List

| Date | Time | | | X-ray Class | Optical | | Rgn # |
|--------|-------|------|------|----------------|---------------|---------------------|----------|
| | Begin | Max | End | | Imp/ Brtns | Location Lat CMD | |
| 23 Jan | 0053 | 0057 | 0104 | B4.3 | | | 2487 |
| 23 Jan | B2145 | 2148 | 2155 | | SF | N07E12 | 2488 |
| 24 Jan | 0001 | 0005 | 0009 | B4.5 | | | 2487 |
| 24 Jan | 0407 | 0455 | 0538 | C1.4 | | | 2488 |
| 24 Jan | 0820 | 0824 | 0830 | B5.9 | | | 2490 |
| 24 Jan | 1038 | 1040 | 1106 | | SF | N04E06 | 2488 |
| 24 Jan | 2212 | 2217 | 2222 | B7.4 | | | 2488 |



Region Summary

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | | | | | |
|--------------------|----------|-----------|----------------------------|----------------|------------|------------|-----------|-------|---|---|---------|---|---|---|---|---|--|--|
| | Lat CMD | Helio Lon | Area 10 ⁶ hemi. | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | | | | | |
| | | | | | | | | C | M | X | S | 1 | 2 | 3 | 4 | | | |
| Region 2480 | | | | | | | | | | | | | | | | | | |
| 06 Jan | N04E74 | 121 | 80 | 5 | Cao | 4 | B | 1 | | | | | | | | | | |
| 07 Jan | N03E58 | 124 | 180 | 10 | Dao | 6 | B | 1 | | | | 1 | | | | | | |
| 08 Jan | N03E43 | 126 | 180 | 10 | Dao | 6 | B | | | | | | | | | | | |
| 09 Jan | N03E32 | 124 | 180 | 10 | Dao | 7 | B | | | | | | | | | | | |
| 10 Jan | N02E17 | 125 | 190 | 11 | Eso | 7 | B | | | | | | | | | | | |
| 11 Jan | N03E05 | 123 | 170 | 11 | Eso | 3 | B | | | | | | | | | | | |
| 12 Jan | N03W08 | 123 | 150 | 9 | Cso | 4 | B | | | | | 1 | | | | | | |
| 13 Jan | N03W23 | 126 | 140 | 6 | Cso | 3 | B | | | | | | | | | | | |
| 14 Jan | N03W39 | 128 | 140 | 4 | Hax | 2 | A | | | | | 1 | | | | | | |
| 15 Jan | N04W52 | 129 | 130 | 5 | Hsx | 2 | A | 4 | | | | 1 | | | | | | |
| 16 Jan | N03W66 | 129 | 130 | 4 | Hsx | 1 | A | | | | | | | | | | | |
| 17 Jan | N03W79 | 129 | 140 | 3 | Hsx | 1 | A | | | | | | | | | | | |
| 18 Jan | N03W94 | 131 | 140 | 3 | Hsx | 1 | A | | | | | | | | | | | |
| | | | | | | | | 6 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | | |

Crossed West Limb.
 Absolute heliographic longitude: 123

| | | | | | | | | | | | | | | | | | | |
|--------------------|--------|-----|-----|---|-----|---|---|---|---|---|---|---|---|---|---|---|--|--|
| Region 2483 | | | | | | | | | | | | | | | | | | |
| 08 Jan | N16E44 | 125 | 10 | 3 | Bxo | 3 | B | | | | | | | | | | | |
| 09 Jan | N17E30 | 126 | 30 | 6 | Cso | 5 | B | | | | | | | | | | | |
| 10 Jan | N17E17 | 125 | 50 | 6 | Dao | 8 | B | | | | | | | | | | | |
| 11 Jan | N17E03 | 125 | 180 | 7 | Dao | 7 | B | | | | | 1 | | | | | | |
| 12 Jan | N17W09 | 124 | 130 | 8 | Dao | 5 | B | | | | | | | | | | | |
| 13 Jan | N18W22 | 125 | 140 | 8 | Dao | 3 | B | | | | | | | | | | | |
| 14 Jan | N18W35 | 124 | 90 | 7 | Cao | 2 | B | | | | | | | | | | | |
| 15 Jan | N17W49 | 126 | 90 | 2 | Hsx | 1 | A | | | | | | | | | | | |
| 16 Jan | N17W65 | 128 | 60 | 3 | Hsx | 1 | A | | | | | | | | | | | |
| 17 Jan | N17W78 | 128 | 70 | 2 | Hax | 1 | A | | | | | | | | | | | |
| 18 Jan | N17W92 | 129 | 70 | 2 | Hax | 1 | A | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | | |

Crossed West Limb.
 Absolute heliographic longitude: 125



Region Summary - continued

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | | | | |
|--------------------|----------|-----|---------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|---|---|
| | Lat CMD | Lon | Helio 10 ⁻⁶ hemi. | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | | | | |
| | | | | | | | | C | M | X | S | 1 | 2 | 3 | 4 | | |
| Region 2484 | | | | | | | | | | | | | | | | | |
| 10 Jan | N05E48 | 94 | 10 | 2 | Bxo | 3 | B | | | | | | | | | | |
| 11 Jan | N07E34 | 94 | plage | | | | | | | | | | | | | | |
| 12 Jan | N07E19 | 97 | plage | | | | | | | | | | | | | | |
| 13 Jan | N07E06 | 97 | plage | | | | | | | | | | | | | | |
| 14 Jan | N07W09 | 99 | plage | | | | | | | | | | | | | | |
| 15 Jan | N07W24 | 101 | plage | | | | | | | | | | | | | | |
| 16 Jan | N07W39 | 103 | plage | | | | | | | | | | | | | | |
| 17 Jan | N07W54 | 104 | plage | | | | | | | | | | | | | | |
| 18 Jan | N07W69 | 106 | plage | | | | | | | | | | | | | | |
| 19 Jan | N07W84 | 108 | 20 | 3 | Cro | 5 | B | | | | | 2 | | | | | |
| 20 Jan | N08W83 | 94 | 30 | 5 | Dro | 6 | B | 1 | | | | 3 | | | | | |
| | | | | | | | | 1 | 0 | 0 | | 5 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.

Absolute heliographic longitude: 97

| | | | | | | | | | | | | | | | | | |
|--------------------|--------|----|-------|---|-----|---|---|---|---|---|--|---|---|---|---|---|---|
| Region 2485 | | | | | | | | | | | | | | | | | |
| 14 Jan | N13E60 | 29 | 30 | 4 | Cro | 2 | B | | | | | 1 | | | | | |
| 15 Jan | N13E46 | 29 | 30 | 6 | Dro | 5 | B | | | | | | | | | | |
| 16 Jan | N13E34 | 29 | 20 | 5 | Cro | 6 | B | | | | | | | | | | |
| 17 Jan | N14E21 | 29 | 10 | 5 | Bxo | 5 | B | | | | | | | | | | |
| 18 Jan | N14E07 | 30 | 10 | 5 | Axx | 5 | A | | | | | | | | | | |
| 19 Jan | N15W04 | 28 | 10 | 2 | Axx | 4 | A | | | | | | | | | | |
| 20 Jan | N15W18 | 29 | plage | | | | | | | | | | | | | | |
| 21 Jan | N15W32 | 30 | plage | | | | | | | | | | | | | | |
| 22 Jan | N15W46 | 30 | plage | | | | | | | | | | | | | | |
| 23 Jan | N15W60 | 31 | plage | | | | | | | | | | | | | | |
| 24 Jan | N15W74 | 32 | plage | | | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | | 1 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 28

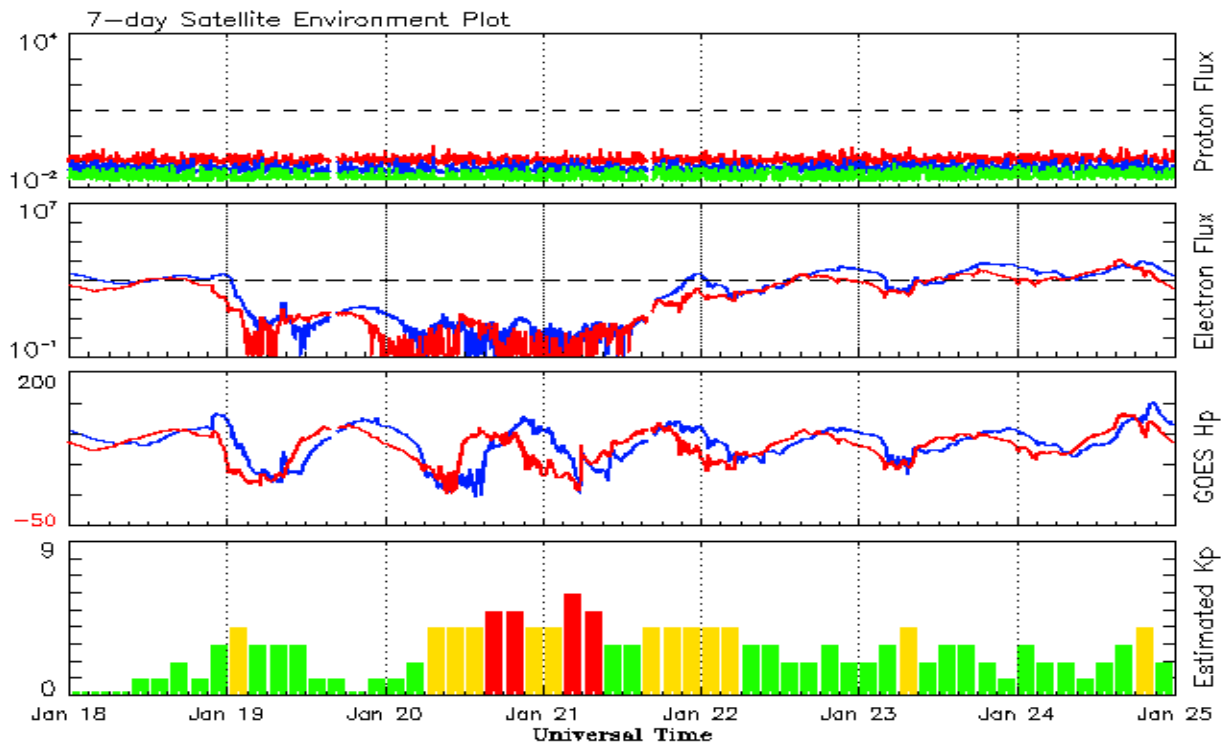


Recent Solar Indices (preliminary)
Observed monthly mean values

| 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 |
| 2014 | | | | | | | | | |
| 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 | 67.5 | 0.65 | 124.8 | 69.8 | 144.3 | 143.5 | 9 | 7.5 |
| May | 116.8 | 67.5 | 0.64 | 122.3 | 69.0 | 130.0 | 144.7 | 7 | 7.9 |
| June | 107.7 | 61.7 | 0.66 | 121.4 | 68.5 | 122.2 | 145.5 | 7 | 8.4 |
| July | 113.6 | 60.1 | 0.64 | 120.4 | 67.6 | 137.3 | 145.2 | 5 | 8.8 |
| August | 106.2 | 64.1 | 0.70 | 115.1 | 65.0 | 124.7 | 142.8 | 9 | 8.9 |
| September | 127.4 | 78.0 | 0.69 | 107.4 | 61.1 | 146.1 | 140.1 | 11 | 9.3 |
| October | 92.0 | 54.0 | 0.66 | 101.7 | 58.4 | 153.7 | 138.4 | 10 | 9.9 |
| November | 101.8 | 62.2 | 0.69 | 97.9 | 56.8 | 155.3 | 137.4 | 10 | 10.1 |
| December | 120.0 | 67.7 | 0.65 | 95.2 | 55.3 | 158.7 | 137.0 | 12 | 10.5 |
| 2015 | | | | | | | | | |
| January | 101.2 | 55.8 | 0.66 | 92.1 | 53.6 | 141.7 | 135.8 | 10 | 11.0 |
| February | 70.6 | 40.0 | 0.63 | 88.3 | 51.7 | 128.8 | 133.8 | 10 | 11.5 |
| March | 61.7 | 32.7 | 0.62 | 84.2 | 49.3 | 126.0 | 131.2 | 17 | 12.0 |
| April | 72.5 | 45.2 | 0.75 | 80.5 | 47.3 | 129.2 | 127.3 | 12 | 12.4 |
| May | 83.0 | 53.3 | 0.71 | 77.5 | 45.6 | 120.1 | 123.3 | 9 | 12.7 |
| June | 77.3 | 39.9 | 0.53 | 73.1 | 43.2 | 123.2 | 119.5 | 14 | 13.0 |
| July | 68.4 | 39.5 | 0.58 | | | 107.0 | | 10 | |
| August | 61.6 | 38.6 | 0.63 | | | 106.2 | | 16 | |
| September | 72.5 | 47.2 | 0.65 | | | 102.1 | | 16 | |
| October | 59.5 | 37.0 | 0.62 | | | 104.1 | | 15 | |
| November | 61.8 | 37.9 | 0.61 | | | 109.6 | | 13 | |
| December | 54.1 | 34.6 | 0.64 | | | 112.8 | | 15 | |

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 18 January 2016*

The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-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.

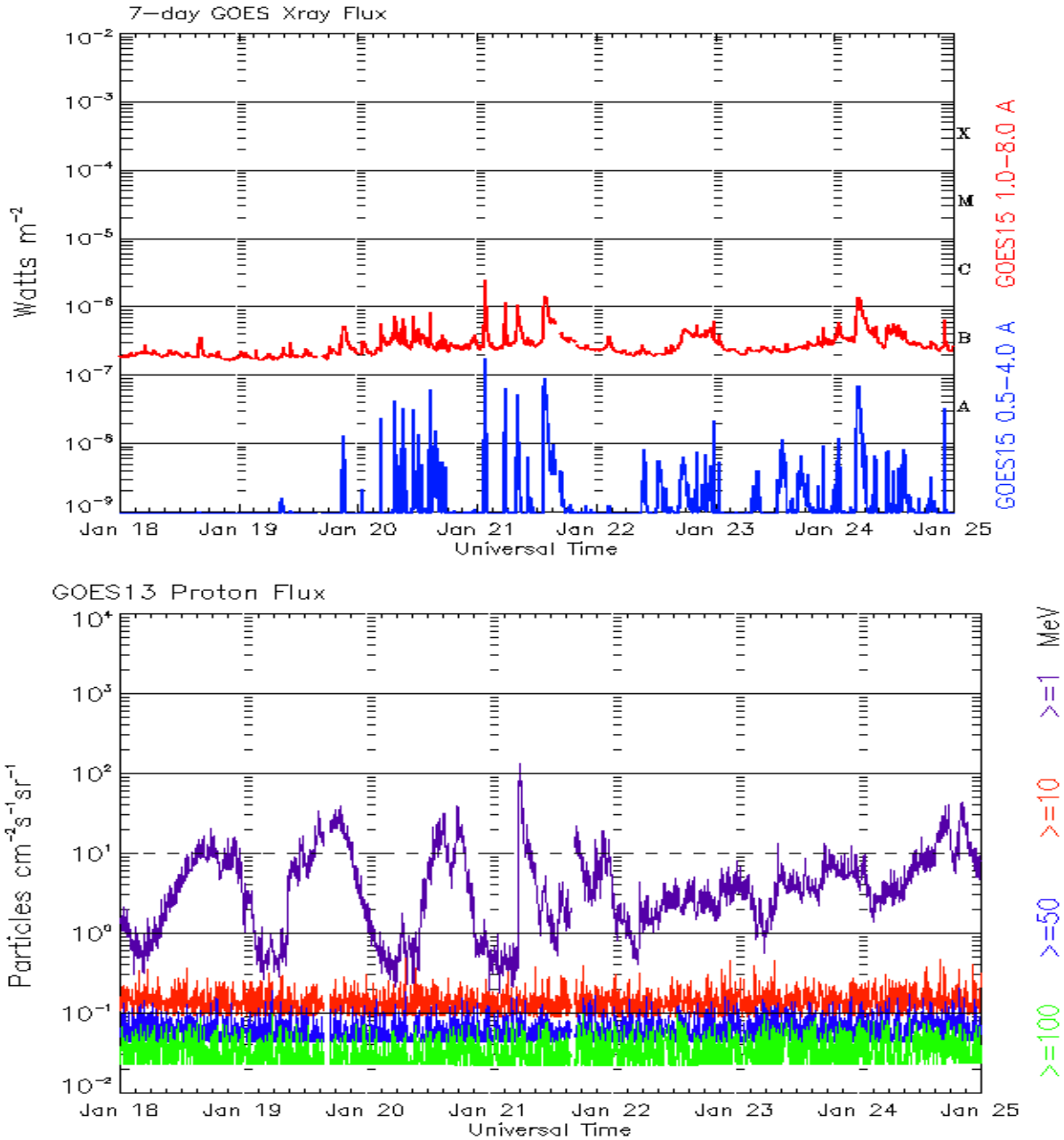
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 18 January 2016*

The x-ray plots contains five-minute averages x-ray flux (Watt/m²) 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/cm² -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.



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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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