**Space Weather Highlights** **SWPC PRF 2526**
**22 January - 28 January 2024** **29 January 2024**

Solar activity was at low to high levels this period. High levels were observed on 22 January with seven R1 (minor) flares observed from Regions 3559 (N27, L=288, class/area Fki/520 on 23 Jan) and 3561 (S17, L=327, class/area Dac/220 on 23 Jan). The largest of these flares was an M3.4 from Region 3461 at 22/2121 UTC. On 23 January, nine R1 (minor) and one R2 (moderate) flares were observed from Regions 3559 and 3561. The largest flare was an R2 (moderate) M5.1 from region 3559 at 23/0331 UTC. Moderate levels were observed on 24 January with four R1 (minor) flares observed, the largest an M2.6 from Region 3561 at 24/0140 UTC. Low levels were observed on 25-28 January. A Type II radio sweep, with a speed of 648 km/s, was observed at 28/0228 UTC. Location of this was suspected to be from a region behind the ENE limb.

No 10 MeV proton events were observed at geosynchronous orbit. An enhancement of 7.14 pfu was observed at 22/1655 UTC, most likely from R1 (minor) flare activity from Region 3559.

The greater than 2 MeV electron flux at geosynchronous orbit was at low to moderate levels through the period.

Geomagnetic field activity was mostly quiet with isolated unsettled and active periods due to weak CME activity on 22-24 Jan and initial influence from a negative polarity CH HSS late on 28 Jan.

**Space Weather Outlook**
**29 January - 24 February 2024**

Solar activity is expected to be low to moderate (R1-R2/Minor-Moderate) levels on 29-31 Jan due primarily to the flare potential of Region 3559. Low levels are expected on 01-11 Feb. An increased chance for moderate (R1-R2/Minor-Moderate) levels is possible on 12-24 Feb as Region 3559 rotates back onto the visible disk.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to reach high levels on 01-03 Feb due to CH HSS influence. Low to moderate levels are expected from 28-31 Jan and 04-24 Feb.

Geomagnetic field activity is expected to be at unsettled to isolated active periods on 29-31 Jan and 05-06 Feb due to recurrent CH HSS activity. Mostly quiet levels are expected on 01-04 and 07 -24 Feb.

## *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 |
| 22 January | 196 | 139 | 870 | C1.9 | 7 | 6 | 0 | 13 | 2 | 0 | 0 | 0 |
| 23 January | 180 | 123 | 1130 | C2.1 | 14 | 8 | 0 | 1 | 1 | 0 | 0 | 0 |
| 24 January | 172 | 108 | 850 | C1.5 | 11 | 4 | 0 | 12 | 0 | 0 | 0 | 0 |
| 25 January | 161 | 101 | 630 | C1.0 | 9 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 26 January | 157 | 97 | 860 | C1.0 | 6 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 27 January | 148 | 52 | 440 | C1.0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 28 January | 141 | 75 | 440 | B9.7 | 6 | 0 | 0 | 3 | 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 | >2MeV |
| 22 January | 9.8e+07 | 2.2e+05 | 1.9e+06 |
| 23 January | 9.8e+07 | 4.5e+04 | 1.4e+06 |
| 24 January | 1.4e+07 | 2.0e+04 | 1.2e+06 |
| 25 January | 5.9e+06 | 1.8e+04 | 1.2e+06 |
| 26 January | 1.8e+06 | 1.8e+04 | 1.1e+06 |
| 27 January | 7.4e+05 | 1.8e+04 | 1.2e+06 |
| 28 January | 1.3e+06 | 1.8e+04 | 1.2e+06 |

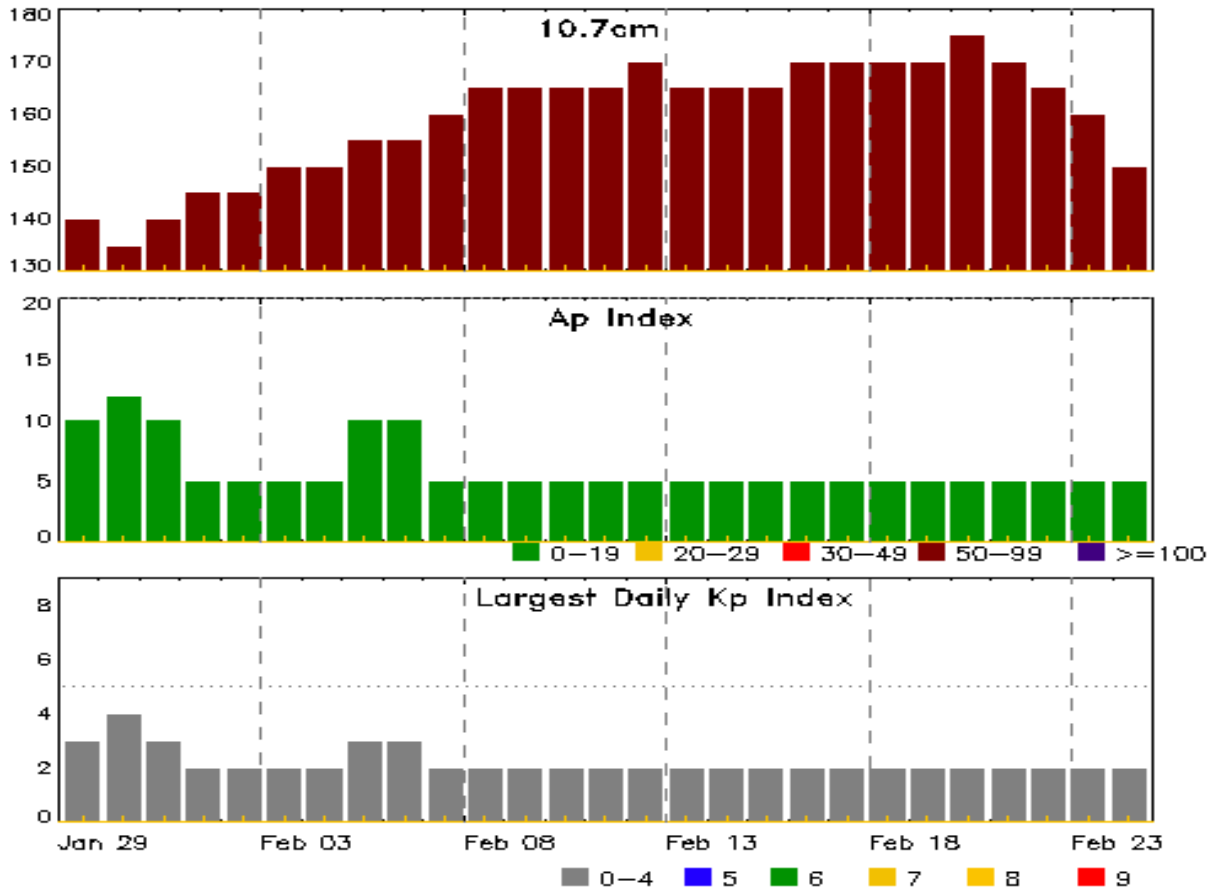
## *Daily Geomagnetic Data*

| Date | Middle Latitude Fredericksburg | | High Latitude College | | Estimated Planetary | |
|---|---|---|---|---|---|---|
| | A | K-indices | A | K-indices | A | K-indices |
| 22 January | 6 | 0-1-1-1-1-2-3-3 | 6 | 0-0-1-2-3-2-2-2 | 9 | 1-1-1-1-2-2-3-4 |
| 23 January | 5 | 2-2-1-1-2-1-1-1 | 7 | 2-2-2-3-2-1-1-1 | 7 | 2-3-2-1-2-1-1-2 |
| 24 January | 7 | 3-2-3-1-2-2-0-1 | 8 | 2-3-3-3-3-0-0-0 | 10 | 4-3-3-2-2-1-1-1 |
| 25 January | 4 | 0-1-1-1-2-1-2-1 | 6 | 0-0-0-1-4-3-1-0 | 6 | 1-1-1-2-2-2-2-2 |
| 26 January | 4 | 0-1-0-1-2-2-2-2 | 3 | 0-0-0-1-3-1-1-1 | 6 | 1-1-0-1-3-2-2-2 |
| 27 January | 4 | 2-2-1-1-1-1-1-1 | 4 | 1-1-3-2-1-0-0-0 | 5 | 3-1-1-1-1-1-1-1 |
| 28 January | 5 | 1-1-1-1-2-2-2-2 | 6 | 0-0-1-4-2-1-1-2 | 5 | 1-1-2-2-2-2-3-3 |

## *Alerts and Warnings Issued*

| Date & Time of Issue UTC | Type of Alert or Warning | Date & Time of Event UTC |
|---|---|---|
| 22 Jan 1419 | WARNING: Proton 10MeV Integral Flux > 10pfu | 22/1418 - 2359 |
| 22 Jan 1633 | WARNING: Geomagnetic K = 4 | 22/1632 - 23/0600 |
| 22 Jan 1804 | WATCH: Geomagnetic Storm Category G1 predicted | |
| 22 Jan 2324 | ALERT: Geomagnetic K = 4 | |
| 23 Jan 0334 | ALERT: X-ray Flux exceeded M5 | 23/0333 |
| 23 Jan 0355 | SUMMARY: X-ray Event exceeded M5 | 23/0309 - 0338 |
| 23 Jan 1729 | WATCH: Geomagnetic Storm Category G1 predicted | |
| 24 Jan 0242 | WARNING: Geomagnetic K = 4 | 24/0241 - 0900 |
| 24 Jan 0245 | ALERT: Geomagnetic K = 4 | |
| 24 Jan 0840 | EXTENDED WARNING: Geomagnetic K = 4 | 24/0241 - 1500 |
| 24 Jan 1943 | WATCH: Geomagnetic Storm Category G1 predicted | |
| 27 Jan 1021 | CANCELLATION: Geomagnetic Storm Category G1 predicted | |
| 28 Jan 0320 | ALERT: Type II Radio Emission | 28/0228 |

## *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 |
|---|---|---|---|---|---|---|---|
| 29 Jan | 140 | 10 | 3 | 12 Feb | 170 | 5 | 2 |
| 30 | 135 | 12 | 4 | 13 | 165 | 5 | 2 |
| 31 | 140 | 10 | 3 | 14 | 165 | 5 | 2 |
| 01 Feb | 145 | 5 | 2 | 15 | 165 | 5 | 2 |
| 02 | 145 | 5 | 2 | 16 | 170 | 5 | 2 |
| 03 | 150 | 5 | 2 | 17 | 170 | 5 | 2 |
| 04 | 150 | 5 | 2 | 18 | 170 | 5 | 2 |
| 05 | 155 | 10 | 3 | 19 | 170 | 5 | 2 |
| 06 | 155 | 10 | 3 | 20 | 175 | 5 | 2 |
| 07 | 160 | 5 | 2 | 21 | 170 | 5 | 2 |
| 08 | 165 | 5 | 2 | 22 | 165 | 5 | 2 |
| 09 | 165 | 5 | 2 | 23 | 160 | 5 | 2 |
| 10 | 165 | 5 | 2 | 24 | 150 | 5 | 2 |
| 11 | 165 | 5 | 2 | | | | |

## *Energetic Events*

| | Time | | | X-ray | | Optical Information | | | Peak Radio Flux | | Sweep Freq Intensity | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Begin | Max | Half Max | Class | Integ Flux | Imp/ Brtns | Location Lat | CMD | Rgn # | 245 | 2695 | II | IV |
| 22 Jan | 0609 | 0622 | 0630 | M1.5 | 0.002 | 1N | N29 | E27 | 3559 | | | 110 | |
| 22 Jan | 1928 | 1932 | 1936 | M1.2 | 0.006 | | | | 3559 | | | | |
| 22 Jan | 1943 | 1947 | 1953 | M2.0 | 0.010 | 1F | S15 | W30 | 3561 | | | | |
| 22 Jan | 2114 | 2121 | 2132 | M3.4 | 0.021 | | | | 3561 | | | | |
| 22 Jan | 2136 | 2143 | 2158 | M1.6 | 0.019 | | | | 3561 | | | | |
| 22 Jan | 2219 | 2222 | 2226 | M2.1 | 0.006 | | | | 3561 | | | | |
| 23 Jan | 0309 | 0331 | 0338 | M5.1 | 0.041 | | | | 3559 | 440 | | 140 | |
| 23 Jan | 0752 | 0811 | 0818 | M2.4 | 0.006 | | | | 3561 | | | | |
| 23 Jan | 0818 | 0822 | 0826 | M2.3 | 0.010 | 1F | S19 | W37 | 3561 | | | | |
| 23 Jan | 1303 | 1308 | 1313 | M1.0 | 0.006 | | | | 3559 | | | | |
| 23 Jan | 1445 | 1459 | 1505 | M1.3 | 0.013 | | | | 3561 | | | | |
| 23 Jan | 1636 | 1640 | 1647 | M4.3 | 0.019 | | | | 3561 | | | | |
| 23 Jan | 1835 | 1844 | 1849 | M1.1 | 0.009 | | | | 3561 | | | | |
| 23 Jan | 1957 | 2001 | 2005 | M1.0 | 0.001 | | | | 3561 | | | | |
| 24 Jan | 0021 | 0038 | 0043 | M1.0 | 0.011 | | | | 3561 | | | | |
| 24 Jan | 0131 | 0140 | 0153 | M2.6 | 0.025 | SF | S20 | W48 | 3561 | | | 100 | |
| 24 Jan | 0518 | 0543 | 0600 | M1.4 | 0.025 | | | | 3561 | | | | |
| 24 Jan | 2044 | 2058 | 2111 | M1.3 | 0.012 | | | | 3561 | | | | |

## *Flare List*

| | Time | | | Optical | | | |
|---|---|---|---|---|---|---|---|
| Date | Begin | Max | End | X-ray Class | Imp/ Brtns | Location Lat CMD | Rgn # |
| 22 Jan | 0026 | 0032 | 0048 | C2.9 | SF | N25E32 | 3559 |
| 22 Jan | 0134 | 0147 | 0217 | C6.5 | SF | N26E23 | 3559 |
| 22 Jan | 0312 | 0312 | 0317 | | SF | N23E18 | 3559 |
| 22 Jan | 0359 | 0414 | 0430 | C5.3 | | | 3559 |
| 22 Jan | 0609 | 0622 | 0630 | M1.5 | 1N | N29E27 | 3559 |
| 22 Jan | 0636 | 0636 | 0638 | | SF | N29E27 | 3559 |
| 22 Jan | 0639 | 0639 | 0640 | | SF | N29E27 | 3559 |
| 22 Jan | 0642 | 0643 | 0644 | | SF | N29E27 | 3559 |
| 22 Jan | 0646 | 0647 | 0648 | | SF | N29E27 | 3559 |
| 22 Jan | 0652 | 0652 | 0700 | | SF | N31E28 | 3559 |
| 22 Jan | 0656 | 0724 | 0744 | | SF | N30E28 | 3559 |
| 22 Jan | 0717 | 0728 | 0737 | C5.2 | | | 3559 |
| 22 Jan | 0817 | 0825 | 0833 | C5.8 | SF | N28E24 | 3559 |

## *Flare List*

| Date | Time | | | Optical | | | |
|---|---|---|---|---|---|---|---|
| | Begin | Max | End | X-ray Class | Imp/ Brtns | Location Lat CMD | Rgn # |
| 22 Jan | 1042 | 1046 | 1049 | | SF | S10E17 | 3560 |
| 22 Jan | 1112 | 1127 | 1144 | C7.0 | SF | N28E25 | 3559 |
| 22 Jan | 1201 | 1203 | 1235 | | SF | N29E26 | 3559 |
| 22 Jan | 1628 | 1649 | 1659 | C7.0 | | | 3559 |
| 22 Jan | 1843 | 1946 | 2029 | | 1F | S15W30 | 3561 |
| 22 Jan | 1928 | 1932 | 1936 | M1.2 | | | 3559 |
| 22 Jan | 1943 | 1947 | 1953 | M2.0 | | | 3561 |
| 22 Jan | 2114 | 2121 | 2132 | M3.4 | | | 3561 |
| 22 Jan | 2136 | 2143 | 2158 | M1.6 | | | 3561 |
| 22 Jan | 2219 | 2222 | 2226 | M2.1 | | | 3561 |
| 23 Jan | 0012 | 0015 | 0023 | C8.9 | | | 3561 |
| 23 Jan | 0255 | 0302 | 0309 | C5.4 | | | 3559 |
| 23 Jan | 0309 | 0331 | 0338 | M5.1 | | | 3559 |
| 23 Jan | 0434 | 0441 | 0448 | C3.6 | | | 3561 |
| 23 Jan | 0631 | 0640 | 0645 | C7.0 | | | 3561 |
| 23 Jan | 0635 | 0706 | 0721 | C9.6 | SF | S19W35 | 3561 |
| 23 Jan | 0752 | 0811 | 0818 | M2.4 | | | 3561 |
| 23 Jan | 0755 | 0824 | 0834 | M2.3 | 1F | S19W37 | 3561 |
| 23 Jan | 0917 | 0930 | 0936 | C6.2 | | | 3559 |
| 23 Jan | 0959 | 1004 | 1008 | C3.7 | | | 3561 |
| 23 Jan | 1100 | 1107 | 1126 | C3.6 | | | 3559 |
| 23 Jan | 1152 | 1201 | 1212 | C2.6 | | | 3361 |
| 23 Jan | 1303 | 1308 | 1313 | M1.0 | | | 3559 |
| 23 Jan | 1427 | 1438 | 1445 | C9.5 | | | 3561 |
| 23 Jan | 1445 | 1459 | 1505 | M1.3 | | | 3561 |
| 23 Jan | 1614 | 1633 | 1636 | C7.6 | | | 3559 |
| 23 Jan | 1636 | 1640 | 1647 | M4.3 | | | 3561 |
| 23 Jan | 1732 | 1739 | 1752 | C7.3 | | | 3561 |
| 23 Jan | 1835 | 1844 | 1849 | M1.1 | | | 3561 |
| 23 Jan | 1920 | 1935 | 1945 | C9.1 | | | 3561 |
| 23 Jan | 1957 | 2001 | 2005 | M1.0 | | | 3561 |
| 23 Jan | 2057 | 2107 | 2118 | C4.8 | | | 3159 |
| 24 Jan | 0021 | 0038 | 0043 | M1.0 | | | 3561 |
| 24 Jan | 0043 | 0050 | 0055 | C9.0 | | | 3561 |
| 24 Jan | 0131 | 0140 | 0153 | M2.6 | SF | S20W48 | 3561 |
| 24 Jan | 0428 | 0437 | 0441 | C3.9 | | | 3561 |
| 24 Jan | 0442 | 0449 | 0457 | C3.7 | | | 3561 |
| 24 Jan | 0518 | 0543 | 0600 | M1.4 | | | 3561 |

## *Flare List*

| Date | Time | | | X-ray | Optical | | |
|---|---|---|---|---|---|---|---|
| | Begin | Max | End | Class | Imp/ Brtns | Location Lat CMD | Rgn # |
| 24 Jan | 0629 | 0645 | 0702 | C6.1 | SF | S18W47 | 3561 |
| 24 Jan | 0717 | 0718 | 0726 | | SF | N30E05 | 3559 |
| 24 Jan | 0814 | 0817 | 0824 | | SF | S16W53 | 3561 |
| 24 Jan | 0855 | 0906 | 0912 | C3.7 | SF | N30E05 | 3559 |
| 24 Jan | 0905 | 0905 | 0910 | | SF | S16W53 | 3561 |
| 24 Jan | 1003 | 1018 | 1029 | C4.4 | SF | S17W50 | 3561 |
| 24 Jan | 1025 | 1032 | 1046 | C4.2 | SF | N29E02 | 3559 |
| 24 Jan | 1209 | 1223 | 1237 | C5.9 | SF | S17W54 | 3561 |
| 24 Jan | B1219 | U1219 | A1236 | | SF | N27W10 | 3559 |
| 24 Jan | 1244 | 1257 | 1314 | C6.8 | SF | S17W52 | 3561 |
| 24 Jan | 1420 | 1421 | 1429 | | SF | S17W54 | 3561 |
| 24 Jan | 1551 | 1558 | 1604 | C2.4 | | | |
| 24 Jan | 1926 | 1943 | 1949 | C5.8 | | | 3561 |
| 24 Jan | 2044 | 2058 | 2111 | M1.3 | | | 3561 |
| 25 Jan | 0302 | 0310 | 0316 | C2.0 | | | 3561 |
| 25 Jan | 0620 | 0629 | 0645 | C1.5 | | | 3561 |
| 25 Jan | 0933 | 0938 | 0944 | C2.3 | SF | S13W56 | 3561 |
| 25 Jan | 1041 | 1054 | 1111 | C3.4 | | | 3561 |
| 25 Jan | 1352 | 1410 | 1422 | C4.2 | SF | N22W27 | 3559 |
| 25 Jan | 1454 | 1508 | 1517 | C5.1 | | | 3559 |
| 25 Jan | 1517 | 1522 | 1526 | C5.5 | | | 3561 |
| 25 Jan | 2145 | 2153 | 2159 | C2.7 | | | 3561 |
| 25 Jan | 2233 | 2243 | 2250 | C4.8 | | | 3561 |
| 26 Jan | 0023 | 0033 | 0042 | C9.0 | | | 3561 |
| 26 Jan | 0327 | 0331 | 0336 | C1.8 | | | 3561 |
| 26 Jan | 0450 | 0459 | 0508 | C9.0 | | | 3561 |
| 26 Jan | 0723 | 0723 | 0727 | | SF | S14W36 | 3560 |
| 26 Jan | 1440 | 1440 | 1443 | | SF | S13W56 | 3561 |
| 26 Jan | 1703 | 1711 | 1715 | C2.3 | | | 3561 |
| 26 Jan | 1809 | 1810 | 1811 | C2.0 | SF | N24W45 | 3559 |
| 26 Jan | 2000 | 2024 | 2034 | C3.0 | SF | S08W45 | 3560 |
| 27 Jan | 0635 | 0635 | 0637 | | SF | S12W53 | 3560 |
| 27 Jan | 0930 | 0941 | 0951 | C2.0 | | | 3561 |
| 27 Jan | 1028 | 1039 | 1047 | C2.9 | | | 3561 |
| 28 Jan | 0936 | 1017 | 1038 | C3.3 | | | |
| 28 Jan | 1149 | 1157 | 1254 | C2.8 | SF | S13W72 | 3557 |
| 28 Jan | 1317 | U1317 | A1413 | | SF | S13W72 | 3557 |
| 28 Jan | 1518 | 1529 | 1538 | C3.2 | SF | N27W59 | 3559 |

## *Flare List*

| | Time | | | Optical | | | |
|---|---|---|---|---|---|---|---|
| Date | Begin | Max | End | X-ray Class | Imp/ Brtns | Location Lat CMD | Rgn # |
| 28 Jan | 1552 | 1600 | 1622 | C3.0 | | | 3359 |
| 28 Jan | 2230 | 2236 | 2244 | C1.5 | | | 3364 |
| 28 Jan | 2322 | 2334 | 2343 | C3.4 | | | |

## *Region Summary*

| | Location | | Sunspot Characteristics | | | | | Flares | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Helio | Area | Extent | Spot | Spot | Mag | X-ray | | | Optical | | | | |
| Date | Lat CMD | Lon | $10^{-6}$ hemi. | (helio) | Class | Count | Class | C | M | X | S | 1 | 2 | 3 | 4 |
| | | | ***Region 3545*** | | | | | | | | | | | | |
| 09 Jan | S06E67 | 42 | 190 | 3 | Hax | 1 | A | | | | | | | | |
| 10 Jan | S06E52 | 44 | 190 | 3 | Hax | 1 | A | | | | | | | | |
| 11 Jan | S06E40 | 43 | 150 | 3 | Hsx | 1 | A | | | | | | | | |
| 12 Jan | S07E30 | 39 | 160 | 7 | Cho | 4 | B | | | | | | | | |
| 13 Jan | S06E17 | 39 | 250 | 6 | Cho | 3 | B | | | | 1 | | | | |
| 14 Jan | S06E02 | 41 | 250 | 6 | Cho | 4 | B | 2 | | | | | | | |
| 15 Jan | S06W10 | 39 | 290 | 10 | Cko | 10 | B | | | | | | | | |
| 16 Jan | S07W26 | 41 | 110 | 3 | Hax | 2 | A | | | | 1 | | | | |
| 17 Jan | S07W39 | 42 | 120 | 3 | Cao | 2 | B | | | | | | | | |
| 18 Jan | S07W51 | 41 | 180 | 3 | Hax | 2 | A | | | | | | | | |
| 19 Jan | S06W66 | 42 | 180 | 3 | Hax | 2 | A | | | | | | | | |
| 20 Jan | S06W79 | 43 | 130 | 3 | Hax | 2 | A | | | | | | | | |
| 21 Jan | S06W91 | 42 | 120 | 3 | Hsx | 1 | A | | | | | | | | |
| | | | | | | | | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 41

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ***Region 3548*** | | | | | | | | | | | | |
| 12 Jan | N12E41 | 28 | 90 | 4 | Dso | 5 | B | 2 | | | | | | | |
| 13 Jan | N12E28 | 28 | 70 | 4 | Dao | 5 | B | | | | | | | | |
| 14 Jan | N12E14 | 29 | 40 | 4 | Cao | 5 | B | | | | | | | | |
| 15 Jan | N12W00 | 30 | 30 | 4 | Cao | 2 | B | | | | | | | | |
| 16 Jan | N02W19 | 33 | 10 | 1 | Axx | 1 | A | | | | | | | | |
| 17 Jan | N15W24 | 28 | 10 | 2 | Bxo | 3 | B | | | | | | | | |
| 18 Jan | N15W38 | 28 | plage | | | | | | | | | | | | |
| 19 Jan | N15W52 | 29 | plage | | | | | | | | | | | | |
| 20 Jan | N15W66 | 30 | plage | | | | | | | | | | | | |
| 21 Jan | N15W80 | 31 | plage | | | | | | | | | | | | |
| | | | | | | | | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 30

## *Region Summary - continued*

| | Location | | Sunspot Characteristics | | | | | Flares | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Helio | Area | Extent | Spot | Spot | Mag | X-ray | | | Optical | | | | |
| Date | Lat CMD | Lon | $10^{-6}$ hemi. | (helio) | Class | Count | Class | C | M | X | S | 1 | 2 | 3 | 4 |
| | | | ***Region 3549*** | | | | | | | | | | | | |
| 12 Jan | S20E62 | 7 | 140 | 5 | Dso | 3 | B | | | | | | | | |
| 13 Jan | S21E50 | 6 | 180 | 5 | Dsi | 7 | B | | | | | | | | |
| 14 Jan | S21E36 | 7 | 250 | 6 | Chi | 7 | B | 2 | | | 1 | | | | |
| 15 Jan | S17E23 | 6 | 240 | 6 | Cso | 8 | B | | | | | | | | |
| 16 Jan | S21E10 | 5 | 180 | 6 | Cso | 7 | B | 1 | | | 1 | | | | |
| 17 Jan | S22W01 | 4 | 180 | 6 | Cso | 5 | B | | | | 1 | | | | |
| 18 Jan | S21W14 | 4 | 200 | 4 | Cao | 5 | B | | | | | | | | |
| 19 Jan | S21W28 | 5 | 200 | 4 | Cao | 3 | B | | | | | | | | |
| 20 Jan | S21W41 | 5 | 180 | 3 | Cso | 3 | B | | | | | | | | |
| 21 Jan | S21W55 | 6 | 170 | 2 | Hsx | 1 | A | 1 | | | | | | | |
| 22 Jan | S17W69 | 6 | 160 | 3 | Hsx | 1 | A | | | | | | | | |
| 23 Jan | S22W82 | 7 | 170 | 2 | Hsx | 1 | A | | | | | | | | |
| | | | | | | | | 4 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 4

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ***Region 3551*** | | | | | | | | | | | | |
| 12 Jan | N25E50 | 19 | 10 | 7 | Bxo | 3 | B | | | | | | | | |
| 13 Jan | N26E39 | 17 | 10 | 3 | Bxo | 3 | B | | | | | | | | |
| 14 Jan | N26E25 | 18 | 10 | 3 | Bxo | 3 | B | | | | | | | | |
| 15 Jan | N26E11 | 19 | plage | | | | | | | | | | | | |
| 16 Jan | N26W03 | 20 | plage | | | | | | | | | | | | |
| 17 Jan | N28W12 | 18 | 30 | 1 | Hsx | 2 | A | | | | | | | | |
| 18 Jan | N26W24 | 15 | plage | | | | | | | | | | | | |
| 19 Jan | N26W36 | 13 | 20 | 2 | Bxo | 3 | B | | | | | | | | |
| 20 Jan | N26W50 | 14 | plage | | | | | | | | | | | | |
| 21 Jan | N26W64 | 15 | plage | | | | | | | | | | | | |
| 22 Jan | N26W78 | 16 | plage | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 20

## *Region Summary - continued*

| | Location | | Sunspot Characteristics | | | | | Flares | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Helio | Area | Extent | Spot | Spot | Mag | X-ray | | | Optical | | | | |
| Date | Lat CMD | Lon | $10^{-6}$ hemi. | (helio) | Class | Count | Class | C | M | X | S | 1 | 2 | 3 | 4 |
| | | | ***Region 3553*** | | | | | | | | | | | | |
| 13 Jan | N05E68 | 348 | 120 | 1 | Hsx | 1 | A | | | | | | | | |
| 14 Jan | N05E54 | 349 | 80 | 2 | Hsx | 3 | A | | | | | | | | |
| 15 Jan | N05E42 | 347 | 150 | 3 | Hax | 3 | A | | | | 1 | | | | |
| 16 Jan | N05E28 | 347 | 70 | 4 | Cao | 5 | B | | | | | | | | |
| 17 Jan | N09E17 | 346 | 90 | 4 | Cao | 35 | B | | | | | | | | |
| 18 Jan | N05E03 | 347 | 110 | 4 | Cao | 10 | B | 3 | | | 1 | 1 | | | |
| 19 Jan | N05W11 | 348 | 80 | 5 | Cao | 6 | B | | | | | | | | |
| 20 Jan | N05W23 | 347 | 40 | 2 | Hax | 1 | A | | | | | | | | |
| 21 Jan | N05W38 | 349 | 20 | 1 | Hrx | 1 | A | | | | 1 | | | | |
| 22 Jan | N05W51 | 348 | 10 | 1 | Axx | 1 | A | | | | | | | | |
| 23 Jan | N05W65 | 350 | plage | | | | | | | | | | | | |
| 24 Jan | N05W80 | 351 | plage | | | | | | | | | | | | |
| | | | | | | | | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 347

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ***Region 3554*** | | | | | | | | | | | | |
| 15 Jan | N07E53 | 336 | 70 | 2 | Hsx | 2 | A | | | | | | | | |
| 16 Jan | N07E37 | 339 | 40 | 2 | Hsx | 1 | A | | | | | | | | |
| 17 Jan | N07E24 | 339 | 40 | 1 | Hsx | 1 | A | | | | | | | | |
| 18 Jan | N07E12 | 338 | 30 | 2 | Hrx | 2 | A | | | | | | | | |
| 19 Jan | N07W01 | 338 | 10 | 2 | Axx | 2 | A | | | | | | | | |
| 20 Jan | N07W16 | 340 | plage | | | | | | | | | | | | |
| 21 Jan | N07W31 | 342 | plage | | | | | | | | | | | | |
| 22 Jan | N07W46 | 344 | plage | | | | | | | | | | | | |
| 23 Jan | N07W60 | 345 | plage | | | | | | | | | | | | |
| 24 Jan | N07W75 | 346 | plage | | | | | | | | | | | | |
| 25 Jan | N07W89 | 347 | plage | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 338

## *Region Summary - continued*

| | Location | | Sunspot Characteristics | | | | | Flares | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Helio | Area | Extent | Spot | Spot | Mag | X-ray | | | Optical | | | | |
| Date | Lat CMD | Lon | $10^{-6}$ hemi. | (helio) | Class | Count | Class | C | M | X | S | 1 | 2 | 3 | 4 |
| | | | ***Region 3555*** | | | | | | | | | | | | |
| 15 Jan | S11E72 | 318 | 40 | 7 | Dao | 3 | B | | | | | | | | |
| 16 Jan | S11E56 | 319 | 80 | 8 | Dso | 2 | B | | | | | | | | |
| 17 Jan | S10E45 | 318 | 180 | 5 | Dso | 4 | BG | | | | | | | | |
| 18 Jan | S11E31 | 319 | 160 | 9 | Dai | 8 | B | | | | | | | | |
| 19 Jan | S11E16 | 321 | 150 | 9 | Dai | 8 | B | | | | | | | | |
| 20 Jan | S12E04 | 320 | 150 | 10 | Cso | 6 | B | 1 | | | | | | | |
| 21 Jan | S12W09 | 320 | 110 | 5 | Cso | 5 | B | | | | | | | | |
| 22 Jan | S12W26 | 321 | 80 | 3 | Hsx | 2 | A | | | | | | | | |
| 23 Jan | S12W38 | 323 | 80 | 3 | Cao | 3 | B | | | | | | | | |
| 24 Jan | S12W53 | 324 | 60 | 3 | Cao | 4 | B | | | | | | | | |
| 25 Jan | S12W67 | 325 | 60 | 3 | Cao | 2 | B | | | | | | | | |
| 26 Jan | S26W81 | 326 | 140 | 3 | Cao | 3 | B | | | | | | | | |
| | | | | | | | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 320

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ***Region 3556*** | | | | | | | | | | | | |
| 16 Jan | N16E62 | 313 | 70 | 2 | Hsx | 1 | A | | | | | | | | |
| 17 Jan | N17E52 | 311 | 80 | 1 | Hsx | 1 | A | | | | | | | | |
| 18 Jan | N16E39 | 311 | 90 | 2 | Hax | 2 | A | | | | | | | | |
| 19 Jan | N16E25 | 312 | 90 | 2 | Hax | 2 | A | | | | | | | | |
| 20 Jan | N15E12 | 312 | 90 | 2 | Hax | 1 | A | | | | | | | | |
| 21 Jan | N15W01 | 312 | 70 | 2 | Hax | 1 | A | | | | | | | | |
| 22 Jan | N17W16 | 313 | 40 | 5 | Hax | 2 | A | | | | | | | | |
| 23 Jan | N16W29 | 314 | 30 | 1 | Hrx | 2 | A | | | | | | | | |
| 24 Jan | N16W44 | 315 | 30 | 1 | Hrx | 1 | A | | | | | | | | |
| 25 Jan | N16W58 | 316 | 10 | 1 | Axx | 1 | A | | | | | | | | |
| 26 Jan | N16W72 | 317 | plage | | | | | | | | | | | | |
| 27 Jan | N16W86 | 318 | plage | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 312

## *Region Summary - continued*

| | Location | | Sunspot Characteristics | | | | | Flares | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Helio | Area | Extent | Spot | Spot | Mag | X-ray | | | Optical | | | | |
| Date | Lat CMD | Lon | $10^{-6}$ hemi. | (helio) | Class | Count | Class | C | M | X | S | 1 | 2 | 3 | 4 |
| | | ***Region 3557*** | | | | | | | | | | | | | |
| 16 Jan | S13E74 | 57 | 10 | 2 | Hax | 1 | A | | | | | | | | |
| 17 Jan | S13E60 | 60 | plage | | | | | | | | | | | | |
| 18 Jan | S13E46 | 304 | plage | | | | | | | | | | | | |
| 19 Jan | S13E32 | 305 | plage | | | | | | | | | | | | |
| 20 Jan | S13E18 | 306 | plage | | | | | | | | | | | | |
| 21 Jan | S13E04 | 307 | plage | | | | | | | | | | | | |
| 22 Jan | S13W10 | 308 | plage | | | | | | | | | | | | |
| 23 Jan | S13W24 | 309 | plage | | | | | | | | | | | | |
| 24 Jan | S13W39 | 310 | plage | | | | | | | | | | | | |
| 25 Jan | S13W53 | 311 | plage | | | | | | | | | | | | |
| 26 Jan | S13W67 | 312 | plage | | | | | | | | | | | | |
| 27 Jan | S13W81 | 313 | plage | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 307

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ***Region 3559*** | | | | | | | | | | | | | |
| 18 Jan | N27E60 | 290 | 160 | 10 | Dso | 3 | B | | | | | | | | |
| 19 Jan | N26E46 | 291 | 170 | 10 | Dao | 6 | B | | | | | | | | |
| 20 Jan | N27E35 | 289 | 220 | 14 | Eai | 22 | B | 5 | | | | | | | |
| 21 Jan | N27E22 | 289 | 300 | 18 | Fkc | 28 | BG | 12 | | | 10 | 1 | | | |
| 22 Jan | N27E11 | 287 | 360 | 20 | Fkc | 32 | BG | 7 | 2 | | 12 | 1 | | | |
| 23 Jan | N27W03 | 288 | 520 | 20 | Fki | 20 | BG | 4 | 2 | | | | | | |
| 24 Jan | N27W18 | 289 | 480 | 20 | Fki | 20 | BG | 2 | | | 4 | | | | |
| 25 Jan | N27W32 | 290 | 400 | 23 | Fki | 15 | BG | 2 | | | 1 | | | | |
| 26 Jan | N25W46 | 291 | 480 | 16 | Fki | 17 | BG | 1 | | | 1 | | | | |
| 27 Jan | N26W56 | 288 | 310 | 16 | Fki | 14 | BG | | | | | | | | |
| 28 Jan | N26W70 | 289 | 280 | 16 | Fko | 11 | BG | 1 | | | 1 | | | | |
| | | | | | | | | 34 | 4 | 0 | 29 | 2 | 0 | 0 | 0 |

Still on Disk.
Absolute heliographic longitude: 288

## *Region Summary - continued*

| | Location | | Sunspot Characteristics | | | | | Flares | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Helio | Area | Extent | Spot | Spot | Mag | X-ray | | | Optical | | | | |
| Date | Lat CMD | Lon | $10^{-6}$ hemi. | (helio) | Class | Count | Class | C | M | X | S | 1 | 2 | 3 | 4 |
| | | | ***Region 3560*** | | | | | | | | | | | | |
| 18 Jan | S11E66 | 284 | 20 | 1 | Hrx | 1 | A | | | | | | | | |
| 19 Jan | S11E52 | 285 | 10 | 1 | Axx | 1 | A | | | | | | | | |
| 20 Jan | S10E35 | 289 | 40 | 6 | Bxi | 8 | B | 3 | | | | | | | |
| 21 Jan | S10E22 | 289 | 60 | 8 | Cri | 10 | B | | | | 1 | | | | |
| 22 Jan | S11E08 | 289 | 40 | 8 | Cao | 4 | B | | | | 1 | | | | |
| 23 Jan | S10W06 | 291 | 80 | 9 | Cao | 8 | B | | | | | | | | |
| 24 Jan | S10W21 | 292 | 70 | 7 | Cao | 4 | B | | | | | | | | |
| 25 Jan | S10W35 | 293 | 50 | 7 | Cao | 4 | B | | | | | | | | |
| 26 Jan | S22W48 | 293 | 40 | 5 | Dai | 8 | B | 1 | | | 2 | | | | |
| 27 Jan | S11W61 | 293 | 120 | 6 | Dai | 6 | B | | | | 1 | | | | |
| 28 Jan | S11W75 | 294 | 130 | 6 | Dai | 7 | B | | | | | | | | |
| | | | | | | | | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |

Still on Disk.
Absolute heliographic longitude: 291

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ***Region 3561*** | | | | | | | | | | | | |
| 19 Jan | S16E11 | 326 | 20 | 4 | Cao | 4 | B | | | | | | | | |
| 20 Jan | S16W03 | 327 | 80 | 5 | Dao | 6 | B | | | | | | | | |
| 21 Jan | S16W16 | 327 | 90 | 7 | Dri | 8 | B | 1 | | | | | | | |
| 22 Jan | S15W28 | 325 | 90 | 6 | Dai | 14 | B | | 4 | | | 1 | | | |
| 23 Jan | S17W42 | 327 | 220 | 9 | Dac | 18 | BG | 8 | 6 | | 1 | 1 | | | |
| 24 Jan | S17W57 | 328 | 200 | 9 | Dac | 18 | BG | 8 | 4 | | 8 | | | | |
| 25 Jan | S17W71 | 329 | 100 | 9 | Dac | 18 | BG | 7 | | | 1 | | | | |
| 26 Jan | S17W85 | 330 | 180 | 5 | Dac | 6 | BG | 4 | | | 1 | | | | |
| | | | | | | | | 28 | 14 | 0 | 11 | 2 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 327

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ***Region 3562*** | | | | | | | | | | | | |
| 20 Jan | S09W14 | 338 | 30 | 3 | Cro | 5 | B | | | | | | | | |
| 21 Jan | S08W27 | 338 | 110 | 5 | Dao | 5 | B | | | | | | | | |
| 22 Jan | S09W42 | 339 | 90 | 4 | Dao | 3 | B | | | | | | | | |
| 23 Jan | S08W54 | 339 | 30 | 2 | Cro | 1 | B | | | | | | | | |
| 24 Jan | S08W69 | 340 | 10 | 1 | Axx | 1 | A | | | | | | | | |
| 25 Jan | S08W83 | 341 | 10 | 1 | Axx | 1 | A | | | | | | | | |
| 26 Jan | S08W97 | 342 | 10 | 1 | Axx | 1 | A | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 338

## *Region Summary - continued*

| | Location | | Sunspot Characteristics | | | | | Flares | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Helio | Area | Extent | Spot | Spot | Mag | X-ray | | | Optical | | | | |
| Date | Lat CMD | Lon | $10^{-6}$ hemi. | (helio) | Class | Count | Class | C | M | X | S | 1 | 2 | 3 | 4 |
| | | ***Region 3563*** | | | | | | | | | | | | | |
| 26 Jan | S06E32 | 213 | 10 | 2 | Bxo | 2 | B | | | | | | | | |
| 27 Jan | S06E17 | 215 | 10 | 2 | Bxo | 2 | B | | | | | | | | |
| 28 Jan | S07E03 | 215 | 10 | 3 | Bxo | 5 | B | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.
Absolute heliographic longitude: 215

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ***Region 3564*** | | | | | | | | | | | | | |
| 28 Jan | S09E54 | 165 | 10 | 1 | Axx | 1 | A | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.
Absolute heliographic longitude: 165

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ***Region 3565*** | | | | | | | | | | | | | |
| 28 Jan | N07E62 | 155 | 10 | 2 | Hrx | 1 | A | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.
Absolute heliographic longitude: 155

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

Published every Monday by the Space Weather Prediction Center.

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NOAA / National Weather Service
Space Weather Prediction Center
325 Broadway, Boulder CO 80305

**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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