

Solar activity began the week at low levels with 27 C-class flares between 09 August - 03 September and ended at moderate levels with an M3 flare at 04/1145 UTC from Region 1286 (N20, L=304, class/area Dso/080 on 03 September). The M3 event was associated with a partial-halo coronal mass ejection which was directed away from the west limb. Although Region 1282 (N25, L=300, class/area Eso/170) did not produce any significant activity during the period, it did develop a delta magnetic configuration on 03 September. Region 1283 (N14, L=223, class/area Dsi/220) developed into the largest spot group during the period.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal levels.

Geomagnetic field activity began the week at generally quiet to unsettled levels with isolated active and minor storm periods at high latitudes due to a negative polarity coronal hole high speed stream (CH HSS). Activity decreased to mostly quiet levels for 30 August - 02 September. Activity increased to quiet to unsettled levels with isolated active periods at high latitudes for 03 - 04 September. An isolated major storm period occurred at high latitudes during 03/0900 - 1200 UTC. Solar wind data indicated a solar sector boundary crossing on 02 September at about 1000 UTC, and a co-rotating interaction region on 03 September at about 0100 UTC followed by a negative polarity CH HSS.

Space Weather Outlook **07 September - 03 October 2011**

Solar activity is expected to be low with M-class activity likely and a slight chance for X-class activity through 11 September when Region 1283 rotates off the disk. A decrease to very low to low levels is expected from 12 - 17 September. An increase to low to moderate levels is expected as old Regions 1286 and 1283 return and transit the disk from 18 September through the remainder of the forecast period.

A slight chance for proton events is expected at geosynchronous orbit until 12 September.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels 07 - 08 September, followed by normal to moderate levels for 09 - 12 September. High levels are expected 13 - 14 September, followed by another decrease to normal to moderate levels for 15 - 28 September. High levels resume 29 - 30 September. Normal to moderate levels are expected 01 - 03 October.

Geomagnetic field activity is expected to be at mostly quiet levels through 09 September. Activity is expected to increase to unsettled to active levels 10 - 13 September with the arrival of a coronal mass ejection coupled with a CH HSS. Mostly quiet levels will prevail from 14 - 29 September. An increase to unsettled is expected 30 September - 01 October due to another recurrent CH HSS. Quiet levels will predominate for 02 - 03 October.



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 |
| 29 August | 101 | 66 | 195 | B2.9 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 30 August | 101 | 89 | 230 | B2.4 | 5 | 0 | 0 | 3 | 1 | 0 | 0 | 0 |
| 31 August | 109 | 121 | 450 | B2.6 | 1 | 0 | 0 | 8 | 0 | 0 | 0 | 0 |
| 01 September | 112 | 119 | 590 | B2.9 | 2 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |
| 02 September | 115 | 103 | 650 | B3.3 | 1 | 0 | 0 | 12 | 0 | 0 | 0 | 0 |
| 03 September | 119 | 139 | 580 | B4.9 | 8 | 0 | 0 | 18 | 0 | 0 | 0 | 0 |
| 04 September | 119 | 114 | 540 | B6.3 | 6 | 1 | 0 | 4 | 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 |
| | 29 August | 1.7e+05 | 1.3e+04 | 3.3e+03 | | 1.9e+06 |
| 30 August | 2.1e+05 | 1.2e+04 | 2.9e+03 | | 2.7e+06 | |
| 31 August | 2.6e+05 | 1.2e+04 | 3.1e+03 | | 3.3e+06 | |
| 01 September | 3.5e+05 | 1.3e+04 | 3.2e+03 | | 3.7e+06 | |
| 02 September | 3.8e+05 | 1.3e+04 | 3.5e+03 | | 3.0e+06 | |
| 03 September | 9.1e+05 | 1.3e+04 | 3.1e+03 | | 1.0e+06 | |
| 04 September | 2.1e+05 | 1.4e+04 | 3.1e+03 | | 2.7e+06 | |

Daily Geomagnetic Data

| Date | Middle Latitude Fredericksburg | | High Latitude College | | Estimated Planetary | |
|--------------|-----------------------------------|-----------------|--------------------------|-----------------|------------------------|-----------------|
| | A | K-indices | A | K-indices | A | K-indices |
| | 29 August | 7 | 2-1-3-3-1-1-1-2 | 12 | 3-1-5-4-1-1-0-0 | 9 |
| 30 August | 2 | 1-0-0-1-2-1-1-0 | 3 | 0-1-0-2-3-0-0-0 | 4 | 1-0-0-1-2-1-2-1 |
| 31 August | 1 | 0-0-1-0-0-0-0-1 | 1 | 1-0-2-0-0-0-0-0 | 2 | 0-0-1-0-1-1-0-1 |
| 01 September | 1 | 1-1-0-0-0-0-0-0 | 1 | 1-1-0-0-0-0-0-0 | 3 | 1-1-0-0-1-1-1-1 |
| 02 September | 1 | 0-1-0-1-0-0-0-1 | 1 | 0-0-0-1-0-0-0-1 | 3 | 0-2-0-0-1-1-1-1 |
| 03 September | 9 | 2-3-2-3-3-2-1-1 | 22 | 3-3-2-6-4-4-0-1 | 13 | 3-3-2-3-2-3-3-3 |
| 04 September | 7 | 2-3-1-1-2-2-2-1 | 13 | 2-2-3-2-4-4-2-1 | 8 | 2-3-2-1-2-2-3-2 |

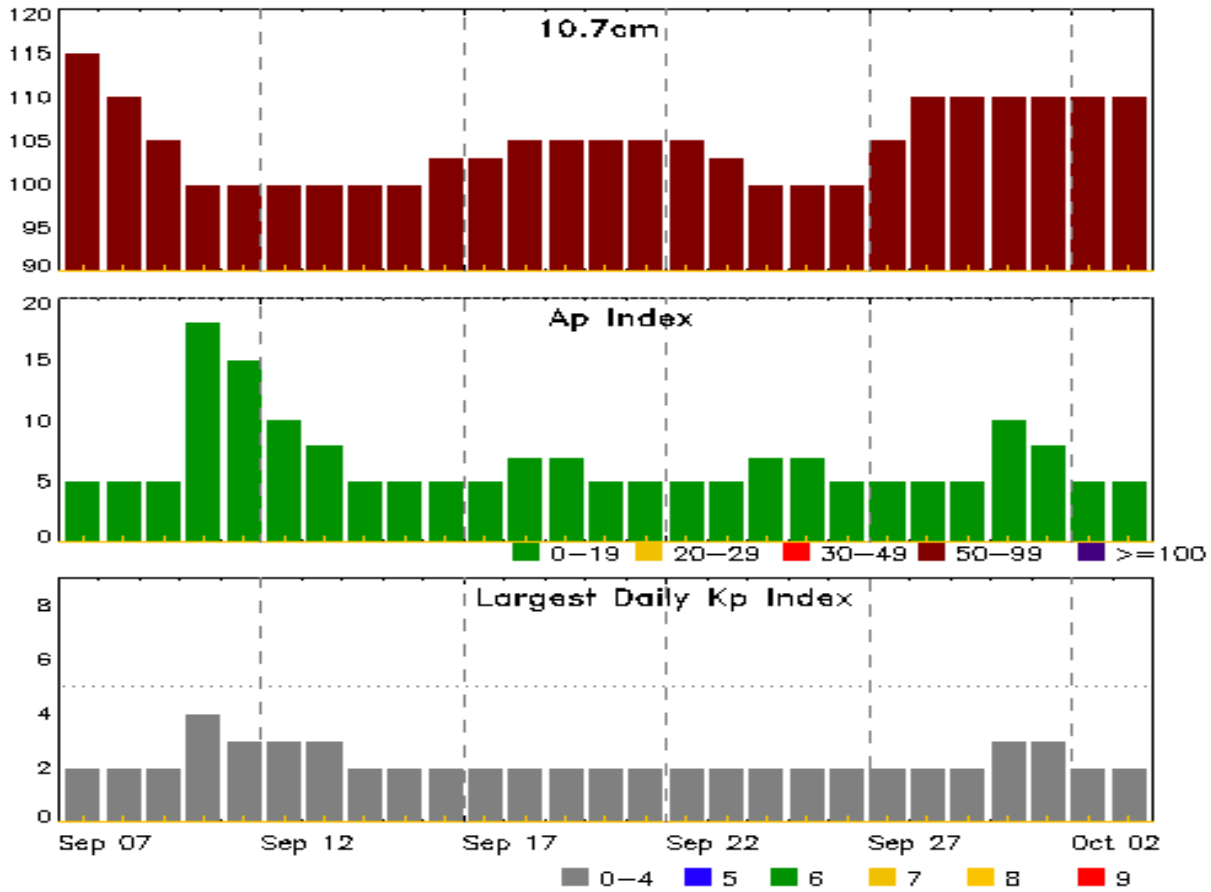


Alerts and Warnings Issued

| Date & Time of Issue UTC | Type of Alert or Warning | Date & Time of Event UTC |
|---|---------------------------------|---|
| 03 Sep 0505 | WARNING: Geomagnetic K = 4 | 03/0530 - 1200 |
| 03 Sep 1112 | ALERT: Geomagnetic K = 4 | 03/1111 |



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 |
|--------|----------------------|----------------------|---------------------|--------|----------------------|----------------------|---------------------|
| 07 Sep | 115 | 5 | 2 | 21 Sep | 105 | 5 | 2 |
| 08 | 110 | 5 | 2 | 22 | 105 | 5 | 2 |
| 09 | 105 | 5 | 2 | 23 | 103 | 5 | 2 |
| 10 | 100 | 18 | 4 | 24 | 100 | 7 | 2 |
| 11 | 100 | 15 | 3 | 25 | 100 | 7 | 2 |
| 12 | 100 | 10 | 3 | 26 | 100 | 5 | 2 |
| 13 | 100 | 8 | 3 | 27 | 105 | 5 | 2 |
| 14 | 100 | 5 | 2 | 28 | 110 | 5 | 2 |
| 15 | 100 | 5 | 2 | 29 | 110 | 5 | 2 |
| 16 | 103 | 5 | 2 | 30 | 110 | 10 | 3 |
| 17 | 103 | 5 | 2 | 01 Oct | 110 | 8 | 3 |
| 18 | 105 | 7 | 2 | 02 | 110 | 5 | 2 |
| 19 | 105 | 7 | 2 | 03 | 110 | 5 | 2 |
| 20 | 105 | 5 | 2 | | | | |



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 | Intensity IV |
| 04 Sep | 1121 | 1145 | 1150 | M3.2 | 0.018 | SF | N13E08 | 1190 | | | | |

Flare List

| Date | Time | | | X-ray Class | Optical | | |
|--------|-------|-------|------|-------------|------------|------------------|-------|
| | Begin | Max | End | | Imp/ Brtns | Location Lat CMD | Rgn # |
| 29 Aug | 0706 | 0721 | 0734 | C3.7 | | | |
| 29 Aug | 0819 | 0827 | 0832 | B6.7 | | | |
| 29 Aug | 1015 | 1117 | 1149 | C2.9 | | | |
| 29 Aug | 1555 | 1600 | 1605 | C1.1 | | | |
| 29 Aug | 2142 | 2147 | 2150 | C1.7 | | | |
| 29 Aug | 2303 | 2307 | 2319 | B8.2 | SF | N17W46 | 1274 |
| 30 Aug | 0306 | 0312 | 0316 | C1.9 | SF | N18W48 | 1274 |
| 30 Aug | 0510 | 0514 | 0520 | C1.1 | | | 1274 |
| 30 Aug | 0536 | 0540 | 0545 | B5.6 | | | 1274 |
| 30 Aug | 0634 | 0643 | 0655 | C1.5 | | | |
| 30 Aug | 0833 | 0839 | 0847 | B5.0 | | | 1274 |
| 30 Aug | 0915 | 0923 | 0934 | B8.8 | | | |
| 30 Aug | 0944 | 0948 | 0957 | | SF | S20E51 | 1281 |
| 30 Aug | 1128 | 1132 | 1139 | | SF | N11E17 | 1279 |
| 30 Aug | 1156 | 1208 | 1223 | B7.5 | | | |
| 30 Aug | 1348 | 1413 | 1428 | C1.5 | | | |
| 30 Aug | 2202 | 2246 | 2253 | C5.5 | 1F | S19E45 | 1281 |
| 31 Aug | 0126 | 0130 | 0133 | B3.9 | | | |
| 31 Aug | 0616 | 0617 | 0619 | | SF | S20E38 | 1281 |
| 31 Aug | 0634 | 0635 | 0637 | | SF | S20E38 | 1281 |
| 31 Aug | 1116 | 1123 | 1133 | C2.2 | SF | N15E75 | 1283 |
| 31 Aug | 1308 | U1317 | 1338 | | SF | S21E34 | 1281 |
| 31 Aug | 1342 | 1347 | 1351 | B8.8 | SF | N13E68 | 1283 |
| 31 Aug | 1421 | 1426 | 1434 | B5.5 | | | |
| 31 Aug | 1508 | 1510 | 1512 | | SF | S17E31 | 1281 |
| 31 Aug | 1509 | 1509 | 1512 | | SF | N13E67 | 1283 |
| 31 Aug | 1523 | 1524 | 1542 | | SF | N19E69 | 1283 |
| 01 Sep | 0119 | 0126 | 0134 | B5.3 | | | |
| 01 Sep | 0722 | 0730 | 0736 | | SF | N24W17 | 1277 |
| 01 Sep | 1242 | 1248 | 1253 | C2.0 | SF | N14E61 | 1283 |
| 01 Sep | 1335 | 1335 | 1339 | | SF | N25W20 | 1282 |



Flare List

| Date | Time | | | X-ray Class | Optical | | Rgn # |
|--------|-------|-------|-------|----------------|---------------|---------------------|----------|
| | Begin | Max | End | | Imp/ Brtns | Location Lat CMD | |
| 01 Sep | 1347 | 1351 | 1355 | B6.0 | | | 1283 |
| 01 Sep | 1813 | 1822 | 1830 | C2.0 | SF | N15E57 | 1283 |
| 01 Sep | 1938 | 1940 | 1947 | | SF | N24W21 | 1282 |
| 02 Sep | 0004 | 0009 | 0015 | B6.3 | | | 1281 |
| 02 Sep | 0628 | 0632 | 0636 | B6.5 | SF | N15E50 | 1283 |
| 02 Sep | 0736 | 0737 | 0739 | | SF | N13E50 | 1283 |
| 02 Sep | 0809 | 0854 | 0909 | | SF | N15E50 | 1283 |
| 02 Sep | 0816 | 0824 | 0855 | | SF | S20E08 | 1281 |
| 02 Sep | 0849 | 0852 | 0855 | B8.9 | SF | N13E49 | 1283 |
| 02 Sep | 0916 | 0921 | 0932 | B7.6 | SF | N14E50 | 1283 |
| 02 Sep | 0957 | 0958 | 1004 | | SF | N24W28 | 1282 |
| 02 Sep | 1057 | 1134 | 1148 | | SF | N14E48 | 1283 |
| 02 Sep | 1348 | 1352 | 1405 | | SF | S20E05 | 1281 |
| 02 Sep | 1509 | 1516 | 1521 | C1.8 | SF | S18E08 | 1281 |
| 02 Sep | 1822 | 1827 | 1846 | | SF | S18E04 | 1281 |
| 02 Sep | 2224 | 2232 | 2239 | | SF | S19E03 | 1281 |
| 03 Sep | 0105 | 0106 | 0114 | | SF | N19W66 | 1286 |
| 03 Sep | 0319 | 0322 | 0325 | C1.0 | SF | N20W67 | 1286 |
| 03 Sep | 0558 | 0600 | 0607 | | SF | N19W68 | 1286 |
| 03 Sep | B0601 | U0603 | 0620 | | SF | N18W67 | 1286 |
| 03 Sep | 0747 | 0756 | 0804 | C2.4 | SF | S21W01 | 1281 |
| 03 Sep | 0821 | 0827 | 0834 | | SF | N20W69 | 1286 |
| 03 Sep | 0856 | 0859 | 0905 | B8.4 | | | 1281 |
| 03 Sep | 1344 | 1345 | 1430 | C1.0 | SF | N16W74 | 1286 |
| 03 Sep | 1405 | 1406 | 1412 | | SF | S18W05 | 1281 |
| 03 Sep | 1451 | 1500 | 1506 | | SF | N17W74 | 1286 |
| 03 Sep | 1541 | 1549 | 1555 | | SF | N16W75 | 1280 |
| 03 Sep | 1605 | 1608 | 1611 | | SF | N16W75 | 1280 |
| 03 Sep | 1613 | 1616 | 1621 | | SF | N16W75 | 1280 |
| 03 Sep | 1637 | 1641 | 1647 | | SF | S19W07 | 1281 |
| 03 Sep | 1645 | 1649 | 1701 | | SF | N18W76 | 1280 |
| 03 Sep | 1732 | 1736 | 1739 | C2.5 | SF | N17W76 | 1286 |
| 03 Sep | 1842 | 1846 | 1849 | C1.2 | | | 1286 |
| 03 Sep | 1907 | 1908 | 1931 | | SF | N17W77 | 1280 |
| 03 Sep | 2004 | 2009 | 2014 | C1.2 | SF | N17W76 | 1281 |
| 03 Sep | 2202 | 2205 | A2235 | | SF | N17W78 | 1286 |
| 03 Sep | 2208 | 2212 | 2214 | C1.6 | | | 1287 |
| 03 Sep | 2302 | 2308 | 2311 | C1.7 | | | 1286 |



Flare List

| Date | Time | | | X-ray Class | Optical | | Rgn # |
|--------|-------|------|------|----------------|---------------|---------------------|----------|
| | Begin | Max | End | | Imp/ Brtns | Location Lat CMD | |
| 04 Sep | 0000 | 0000 | 0014 | | SF | N19W74 | 1286 |
| 04 Sep | 0101 | 0107 | 0113 | C8.3 | | | 1286 |
| 04 Sep | 0436 | 0453 | 0503 | C9.0 | SF | N19W67 | 1286 |
| 04 Sep | 0535 | 0618 | 0628 | C4.0 | | | 1286 |
| 04 Sep | 1121 | 1145 | 1150 | M3.2 | | | 1286 |
| 04 Sep | 1418 | 1418 | 1741 | | SF | N17W87 | 1280 |
| 04 Sep | 1521 | 1534 | 1553 | C5.8 | | | 1286 |
| 04 Sep | 1915 | 1919 | 1921 | B8.9 | | | |
| 04 Sep | 1930 | 1934 | 1937 | B9.5 | | | |
| 04 Sep | 1940 | 1947 | 1959 | C1.4 | | | |
| 04 Sep | 2246 | 2246 | 2251 | | SF | S29E55 | 1287 |
| 04 Sep | 2358 | 0037 | 0104 | C7.9 | | | |



Region Summary

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | | | | | |
|---------------------------|----------|-----|--------------------------------|-------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|---|---|
| | Lat CMD | Lon | Helio 10 ⁶ hemi. | Area | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | | | | |
| | | | | | | | | | C | M | X | S | 1 | 2 | 3 | 4 | | |
| <i>Region 1274</i> | | | | | | | | | | | | | | | | | | |
| 20 Aug | N19E70 | | 2 | 30 | 3 | Hrx | 2 | A | | | | | | | | | | |
| 21 Aug | N18E57 | | 1 | 30 | 2 | Cro | 2 | B | | | | | | | | | | |
| 22 Aug | N18E42 | | 2 | 30 | 3 | Dso | 2 | B | | | | | | | | | | |
| 23 Aug | N19E30 | | 2 | 30 | 2 | Hsx | 2 | A | | | | | | | | | | |
| 24 Aug | N18E16 | | 2 | 10 | 3 | Cro | 4 | B | | | | | | | | | | |
| 25 Aug | N17E05 | | 1 | 10 | 2 | Bxo | 2 | B | | | | | | | | | | |
| 26 Aug | N17W09 | | 2 | plage | | | | | | | | | | | | | | |
| 27 Aug | N17W23 | | 2 | plage | | | | | | | | | | | | | | |
| 28 Aug | N17W37 | | 3 | plage | | | | | | | | | | | | | | |
| 29 Aug | N17W51 | | 4 | plage | | | | | | | | | 1 | | | | | |
| 30 Aug | N18W59 | 358 | | 10 | 4 | Bxo | 5 | B | 2 | | | | 1 | | | | | |
| 31 Aug | N19W72 | 358 | | 30 | 1 | Hrx | 1 | A | | | | | | | | | | |
| 01 Sep | N19W86 | 359 | | plage | | | | | | | | | | | | | | |
| | | | | | | | | | 2 | 0 | 0 | | 2 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.
 Absolute heliographic longitude: 1

| | | | | | | | | | | | | | | | | | | |
|---------------------------|--------|-----|--|-------|---|-----|---|---|---|---|---|--|---|---|---|---|---|---|
| <i>Region 1275</i> | | | | | | | | | | | | | | | | | | |
| 21 Aug | N06E68 | 350 | | 30 | 3 | Cro | 1 | B | | | | | | | | | | |
| 22 Aug | N07E55 | 349 | | 10 | 5 | Cso | 1 | B | | | | | | | | | | |
| 23 Aug | N08E39 | 351 | | 20 | 1 | Hsx | 1 | A | | | | | | | | | | |
| 24 Aug | N07E26 | 352 | | 10 | 2 | Axx | 2 | A | | | | | | | | | | |
| 25 Aug | N07E17 | 350 | | 10 | 6 | Bxo | 3 | B | | | | | | | | | | |
| 26 Aug | N07E05 | 348 | | 30 | 4 | Dso | 2 | B | | | | | | | | | | |
| 27 Aug | N07W08 | 346 | | 30 | 2 | Cso | 2 | B | | | | | | | | | | |
| 28 Aug | N07W19 | 344 | | 10 | 4 | Bxo | 4 | B | | | | | | | | | | |
| 29 Aug | N07W40 | 351 | | 5 | | Axx | 2 | A | | | | | | | | | | |
| 30 Aug | N07W55 | 355 | | plage | | | | | | | | | | | | | | |
| 31 Aug | N07W70 | 357 | | plage | | | | | | | | | | | | | | |
| 01 Sep | N07W85 | 358 | | plage | | | | | | | | | | | | | | |
| | | | | | | | | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.
 Absolute heliographic longitude: 348



Region Summary - continued

| 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 |

Region 1276

| | | | | | | | | | | | | | | | | | |
|--------|--------|-----|-------|--|-----|---|---|--|--|---|---|---|---|---|---|---|---|
| 23 Aug | N20E48 | 344 | 10 | | Axx | 1 | A | | | | | | | | | | |
| 24 Aug | N20E34 | 345 | plage | | | | | | | | | | | | | | |
| 25 Aug | N20E20 | 346 | plage | | | | | | | | | | | | | | |
| 26 Aug | N20E07 | 346 | plage | | | | | | | | | | | | | | |
| 27 Aug | N20W07 | 346 | plage | | | | | | | | | | | | | | |
| 28 Aug | N20W21 | 347 | plage | | | | | | | | | | | | | | |
| 29 Aug | N20W35 | 348 | plage | | | | | | | | | | | | | | |
| 30 Aug | N20W49 | 349 | plage | | | | | | | | | | | | | | |
| 31 Aug | N20W63 | 350 | plage | | | | | | | | | | | | | | |
| 01 Sep | N20W77 | 350 | plage | | | | | | | | | | | | | | |
| | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Died on Disk.

Absolute heliographic longitude: 346

Region 1277

| | | | | | | | | | | | | | | | | | |
|--------|--------|-----|----|---|-----|---|---|--|--|---|---|---|---|---|---|---|---|
| 25 Aug | N17E62 | 304 | 50 | 2 | Hsx | 1 | A | | | | | | | | | | |
| 26 Aug | N17E50 | 303 | 80 | 2 | Hsx | 1 | A | | | | | | | | | | |
| 27 Aug | N17E38 | 302 | 80 | 1 | Hsx | 1 | A | | | | | | | | | | |
| 28 Aug | N17E25 | 300 | 40 | 1 | Hsx | 1 | A | | | | | | | | | | |
| 29 Aug | N17E12 | 299 | 50 | 1 | Hsx | 1 | A | | | | | | | | | | |
| 30 Aug | N18W00 | 299 | 50 | 2 | Hsx | 2 | A | | | | | | | | | | |
| 31 Aug | N18W14 | 300 | 60 | 1 | Hsx | 1 | A | | | | | | | | | | |
| 01 Sep | N18W27 | 300 | 60 | 2 | Hsx | 1 | A | | | | 1 | | | | | | |
| 02 Sep | N19W40 | 300 | 30 | 1 | Hsx | 1 | A | | | | | | | | | | |
| 03 Sep | N18W53 | 300 | 20 | 1 | Hax | 2 | A | | | | | | | | | | |
| 04 Sep | N18W66 | 300 | 20 | 1 | Hsx | 1 | A | | | | | | | | | | |
| | | | | | | | | | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 299

Region 1278

| | | | | | | | | | | | | | | | | | |
|--------|--------|----|-------|---|-----|---|---|--|--|---|---|---|---|---|---|---|---|
| 25 Aug | N16W40 | 46 | 10 | 3 | Bxo | 4 | B | | | | | | | | | | |
| 26 Aug | N16W53 | 46 | 20 | 3 | Cso | 3 | B | | | | | | | | | | |
| 27 Aug | N16W67 | 46 | plage | | | | | | | | | | | | | | |
| 28 Aug | N16W81 | 49 | 0 | | Axx | 1 | A | | | | | | | | | | |
| 29 Aug | N16W95 | 48 | plage | | | | | | | | | | | | | | |
| | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.

Absolute heliographic longitude: 46



Region Summary - continued

| 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 1279 | | | | | | | | | | | | | | | | | | |
| 25 Aug | N14E75 | 291 | 120 | 5 | Hsx | 1 | A | | | | | | | | | | | |
| 26 Aug | N13E61 | 292 | 90 | 2 | Hsx | 1 | A | | | | | | 1 | | | | | |
| 27 Aug | N13E47 | 291 | 120 | 2 | Hsx | 3 | A | | | | | | | | | | | |
| 28 Aug | N13E34 | 291 | 80 | 3 | Cso | 3 | B | | | | | | | | | | | |
| 29 Aug | N13E22 | 290 | 100 | 4 | Cso | 6 | B | | | | | | | | | | | |
| 30 Aug | N13E07 | 291 | 80 | 1 | Hsx | 2 | A | | | | | | 1 | | | | | |
| 31 Aug | N13W06 | 292 | 80 | 1 | Hsx | 1 | A | | | | | | | | | | | |
| 01 Sep | N13W19 | 292 | 60 | 2 | Hax | 3 | A | | | | | | | | | | | |
| 02 Sep | N14W32 | 292 | 60 | 2 | Hsx | 4 | A | | | | | | | | | | | |
| 03 Sep | N13W45 | 292 | 30 | 1 | Hsx | 4 | A | | | | | | | | | | | |
| 04 Sep | N13W59 | 293 | plage | | | | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | | |

Still on Disk.
 Absolute heliographic longitude: 292

| | | | | | | | | | | | | | | | | | | |
|--------------------|--------|-----|-------|---|-----|---|---|---|---|---|---|---|---|---|---|---|--|--|
| Region 1280 | | | | | | | | | | | | | | | | | | |
| 26 Aug | N17E24 | 329 | 30 | 3 | Cro | 3 | B | | | | | | | | | | | |
| 27 Aug | N17E10 | 328 | 20 | 2 | Cro | 3 | B | | | | | | | | | | | |
| 28 Aug | N17W03 | 328 | 10 | 3 | Bxo | 2 | B | | | | | | | | | | | |
| 29 Aug | N16W16 | 328 | 10 | 3 | Bxo | 2 | B | | | | | | | | | | | |
| 30 Aug | N16W30 | 330 | plage | | | | | | | | | | | | | | | |
| 31 Aug | N12W37 | 323 | 10 | 3 | Cro | 2 | B | | | | | | | | | | | |
| 01 Sep | N12W53 | 326 | 30 | 5 | Cso | 4 | B | | | | | | | | | | | |
| 02 Sep | N11W66 | 326 | 80 | 5 | Cso | 5 | B | | | | | | | | | | | |
| 03 Sep | N12W78 | 325 | 10 | 5 | Bxo | 5 | B | | | | | | 5 | | | | | |
| 04 Sep | N13W91 | 325 | 10 | 2 | Bxo | 2 | B | | | | | | 1 | | | | | |
| | | | | | | | | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | | |

Still on Disk.
 Absolute heliographic longitude: 328



Region Summary - continued

| 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 1281 | | | | | | | | | | | | | | | | | |
| 28 Aug | S21E65 | 260 | 60 | 6 | Cso | 2 | B | | | | | 4 | | | | | |
| 29 Aug | S19E54 | 258 | 30 | 6 | Cro | 5 | B | | | | | | | | | | |
| 30 Aug | S20E40 | 258 | 10 | 5 | Bxo | 5 | B | 1 | | | | 1 | 1 | | | | |
| 31 Aug | S20E28 | 258 | 100 | 4 | Csi | 11 | B | | | | | 4 | | | | | |
| 01 Sep | S21E12 | 261 | 160 | 8 | Dao | 16 | B | | | | | | | | | | |
| 02 Sep | S20E01 | 259 | 110 | 7 | Dao | 10 | B | 1 | | | | 5 | | | | | |
| 03 Sep | S19W10 | 257 | 90 | 3 | Dao | 8 | B | 2 | | | | 4 | | | | | |
| 04 Sep | S19W24 | 258 | 70 | 3 | Cao | 5 | B | | | | | | | | | | |
| | | | | | | | | 4 | 0 | 0 | | 18 | 1 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 259

| | | | | | | | | | | | | | | | | | |
|--------------------|--------|-----|-----|----|-----|----|----|---|---|---|--|---|---|---|---|---|---|
| Region 1282 | | | | | | | | | | | | | | | | | |
| 30 Aug | N24E01 | 297 | 10 | 3 | Bxo | 3 | B | | | | | | | | | | |
| 31 Aug | N25W13 | 299 | 50 | 5 | Dso | 9 | B | | | | | | | | | | |
| 01 Sep | N25W26 | 299 | 50 | 8 | Dso | 13 | B | | | | | 2 | | | | | |
| 02 Sep | N25W40 | 300 | 170 | 11 | Eso | 12 | B | | | | | 1 | | | | | |
| 03 Sep | N23W52 | 299 | 100 | 12 | Eso | 8 | BD | | | | | | | | | | |
| 04 Sep | N24W66 | 300 | 90 | 12 | Cso | 6 | B | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | | 3 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 297

| | | | | | | | | | | | | | | | | | |
|--------------------|--------|-----|-----|---|-----|----|---|---|---|---|--|----|---|---|---|---|---|
| Region 1283 | | | | | | | | | | | | | | | | | |
| 30 Aug | N12E71 | 227 | 60 | 1 | Hsx | 1 | A | | | | | | | | | | |
| 31 Aug | N12E61 | 225 | 100 | 3 | Cso | 2 | B | 1 | | | | 4 | | | | | |
| 01 Sep | N12E49 | 224 | 200 | 6 | Cso | 10 | B | 2 | | | | 2 | | | | | |
| 02 Sep | N13E37 | 223 | 200 | 7 | Dso | 11 | B | | | | | 6 | | | | | |
| 03 Sep | N14E24 | 223 | 220 | 9 | Dsi | 21 | B | | | | | | | | | | |
| 04 Sep | N13E11 | 223 | 190 | 9 | Dai | 21 | B | | | | | | | | | | |
| | | | | | | | | 3 | 0 | 0 | | 12 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 223



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 |

Region 1284

| | | | | | | | | | | | | | | | | | |
|--------|--------|-----|-------|---|-----|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 Aug | S19W57 | 356 | 10 | | Axx | 1 | A | | | | | | | | | | |
| 31 Aug | S17W62 | 357 | 10 | 4 | Bxo | 3 | B | | | | | | | | | | |
| 01 Sep | S18W82 | 355 | 30 | 2 | Hrx | 2 | A | | | | | | | | | | |
| 02 Sep | S18W96 | 356 | plage | | | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 356

Region 1285

| | | | | | | | | | | | | | | | | | |
|--------|--------|-----|-------|--|-----|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 Aug | N29W48 | 334 | 10 | | Axx | 1 | A | | | | | | | | | | |
| 01 Sep | N29W62 | 335 | plage | | | | | | | | | | | | | | |
| 02 Sep | N29W76 | 336 | plage | | | | | | | | | | | | | | |
| 03 Sep | N29W90 | 337 | plage | | | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 334

Region 1286

| | | | | | | | | | | | | | | | | | |
|--------|--------|-----|----|---|-----|---|---|---|---|---|----|---|---|---|---|---|---|
| 03 Sep | N20W57 | 304 | 80 | 9 | Dso | 8 | B | 5 | | | 9 | | | | | | |
| 04 Sep | N20W75 | 309 | 80 | 7 | Cso | 6 | B | 4 | 1 | | 2 | | | | | | |
| | | | | | | | | 9 | 1 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.
Absolute heliographic longitude: 304

Region 1287

| | | | | | | | | | | | | | | | | | |
|--------|--------|-----|----|---|-----|---|---|---|---|---|---|---|---|---|---|---|---|
| 03 Sep | S30E64 | 183 | 30 | 3 | Cao | 3 | B | 1 | | | | | | | | | |
| 04 Sep | S32E51 | 183 | 80 | 9 | Cso | 3 | B | | | | 1 | | | | | | |
| | | | | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.
Absolute heliographic longitude: 183

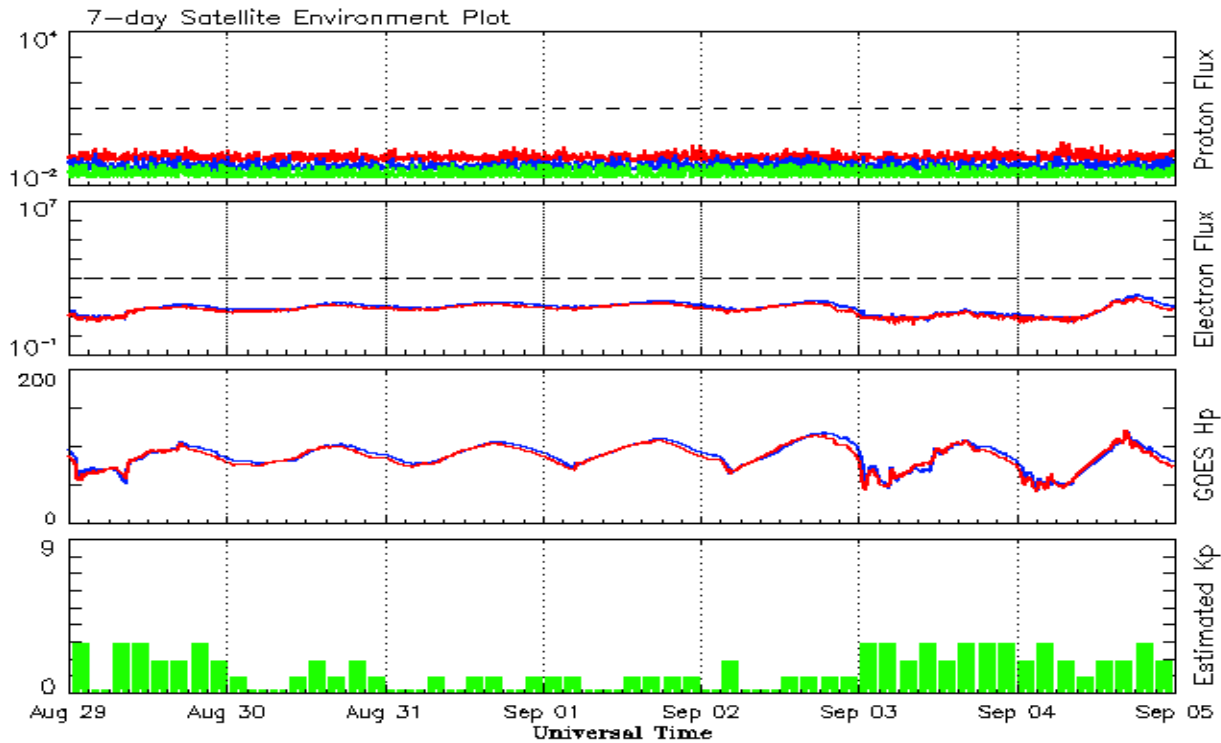


Recent Solar Indices (preliminary)
Observed monthly mean values

| 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 |
| 2009 | | | | | | | | | |
| September | 6.6 | 4.3 | 0.64 | 9.9 | 6.2 | 70.5 | 73.3 | 4 | 3.8 |
| October | 7.0 | 4.8 | 0.66 | 11.3 | 7.1 | 72.3 | 74.1 | 3 | 4.1 |
| November | 7.7 | 4.1 | 0.55 | 12.4 | 7.6 | 73.6 | 74.5 | 3 | 4.5 |
| December | 15.7 | 10.8 | 0.68 | 13.6 | 8.3 | 76.8 | 74.9 | 2 | 4.8 |
| 2010 | | | | | | | | | |
| January | 21.3 | 13.2 | 0.62 | 14.8 | 9.3 | 81.1 | 75.5 | 3 | 5.0 |
| February | 31.0 | 18.8 | 0.60 | 16.7 | 10.6 | 84.7 | 76.5 | 5 | 5.1 |
| March | 24.7 | 15.4 | 0.62 | 19.1 | 12.3 | 83.3 | 77.5 | 5 | 5.3 |
| April | 11.2 | 8.0 | 0.71 | 21.4 | 14.0 | 75.9 | 78.3 | 10 | 5.5 |
| May | 19.9 | 8.7 | 0.44 | 23.8 | 15.5 | 73.8 | 79.0 | 8 | 5.7 |
| June | 17.9 | 13.6 | 0.75 | 25.2 | 16.4 | 72.6 | 79.7 | 7 | 5.8 |
| July | 23.1 | 16.1 | 0.70 | 25.9 | 16.7 | 79.9 | 80.1 | 5 | 6.0 |
| August | 28.2 | 19.6 | 0.70 | 27.3 | 17.4 | 79.7 | 80.7 | 8 | 6.2 |
| September | 35.6 | 25.2 | 0.71 | 30.6 | 19.6 | 81.1 | 82.4 | 5 | 6.3 |
| October | 35.0 | 23.5 | 0.67 | 35.9 | 23.2 | 81.6 | 85.3 | 6 | 6.4 |
| November | 36.1 | 21.5 | 0.60 | 40.5 | 26.5 | 82.5 | 87.7 | 5 | 6.4 |
| December | 22.0 | 14.4 | 0.66 | 43.8 | 28.8 | 84.3 | 89.6 | 4 | 6.5 |
| 2011 | | | | | | | | | |
| January | 32.1 | 18.8 | 0.59 | 47.2 | 31.0 | 83.7 | 91.2 | 6 | 6.7 |
| February | 53.2 | 29.6 | 0.55 | 50.6 | 33.4 | 94.5 | 92.7 | 6 | 6.8 |
| March | 81.0 | 55.8 | 0.69 | | | 115.3 | | 7 | |
| April | 81.7 | 54.4 | 0.67 | | | 112.6 | | 9 | |
| May | 61.4 | 41.6 | 0.68 | | | 95.9 | | 9 | |
| June | 55.5 | 37.0 | 0.67 | | | 95.8 | | 8 | |
| July | 67.0 | 43.9 | 0.66 | | | 94.2 | | 9 | |
| August | 66.0 | 50.6 | 0.77 | | | 101.7 | | 8 | |

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 29 August 2011*

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.

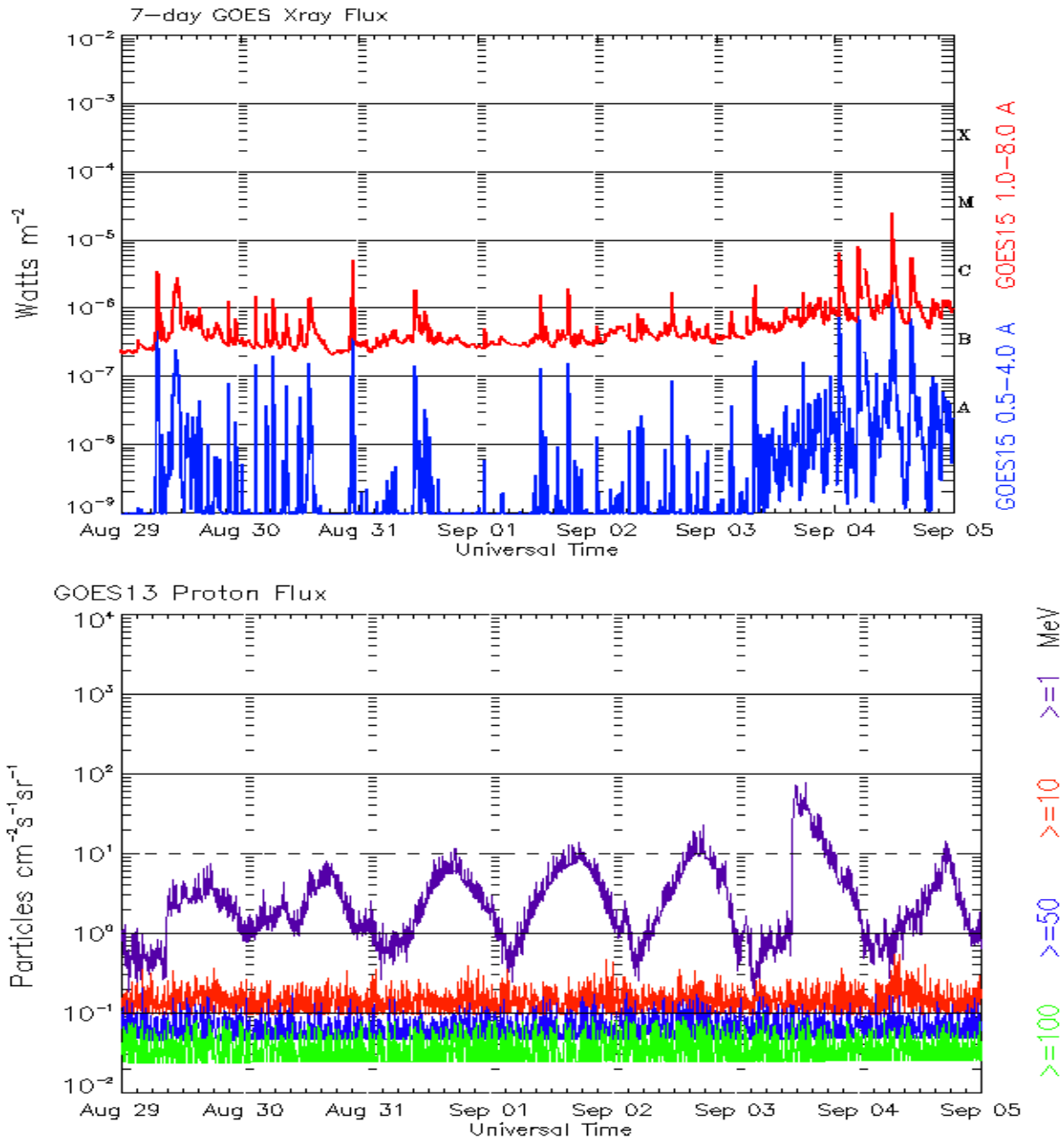
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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.

Kp plot contains the estimated planetary 3-hour K-index (derived by the Air Force Weather Agency) in real time from magnetometers at Meanook, Canada; Sitka, AK; Glenlea, Canada; St. Johns, Canada; Ottawa, Canada; Newport, WA; Fredericksburg, VA; Boulder, CO; Fresno, CA and Hartland, UK. These data are made available through cooperation from the Geological Survey of Canada (GSC), British Geological Survey (BGS) and the US Geological Survey. These may differ from the final Kp values derived from a more extensive network of magnetometers.

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 29 August 2011*

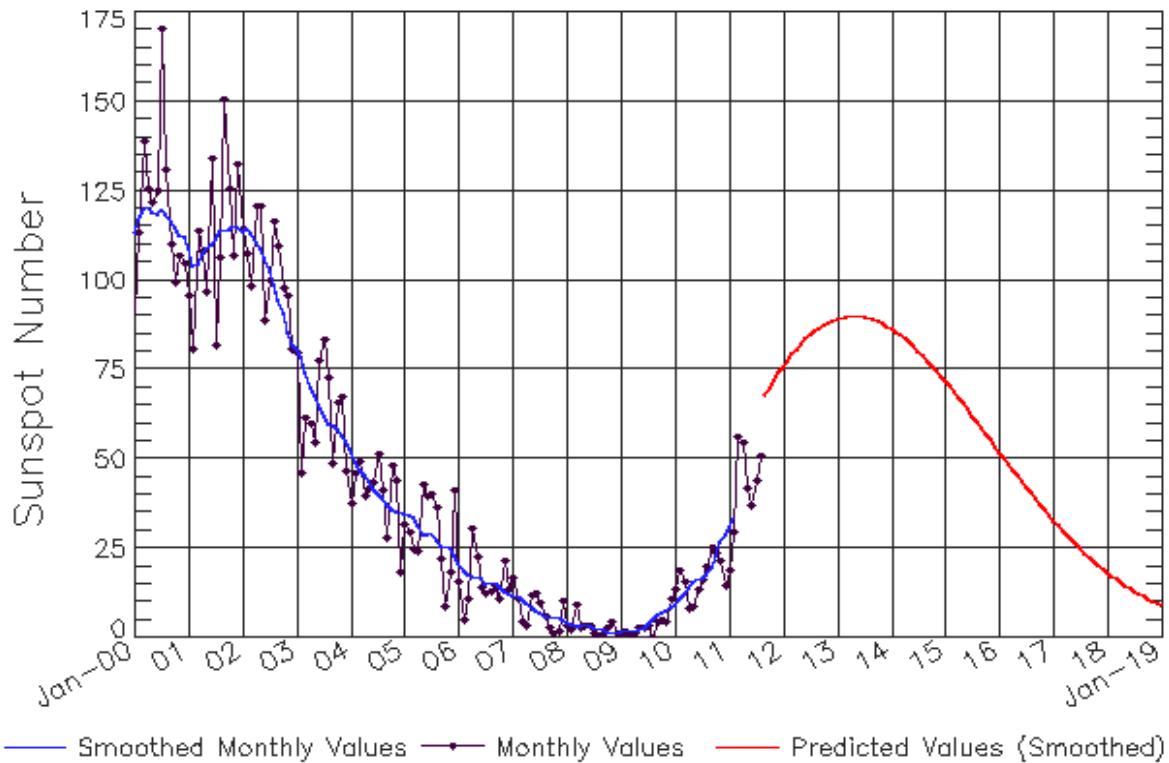
The x-ray plots contains five-minute averages x-ray flux (Watt/m²) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

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.



ISES Solar Cycle Sunspot Number Progression

Observed data through Aug 2011



Updated 2011 Sep 6

NOAA/SWPC Boulder, CO USA

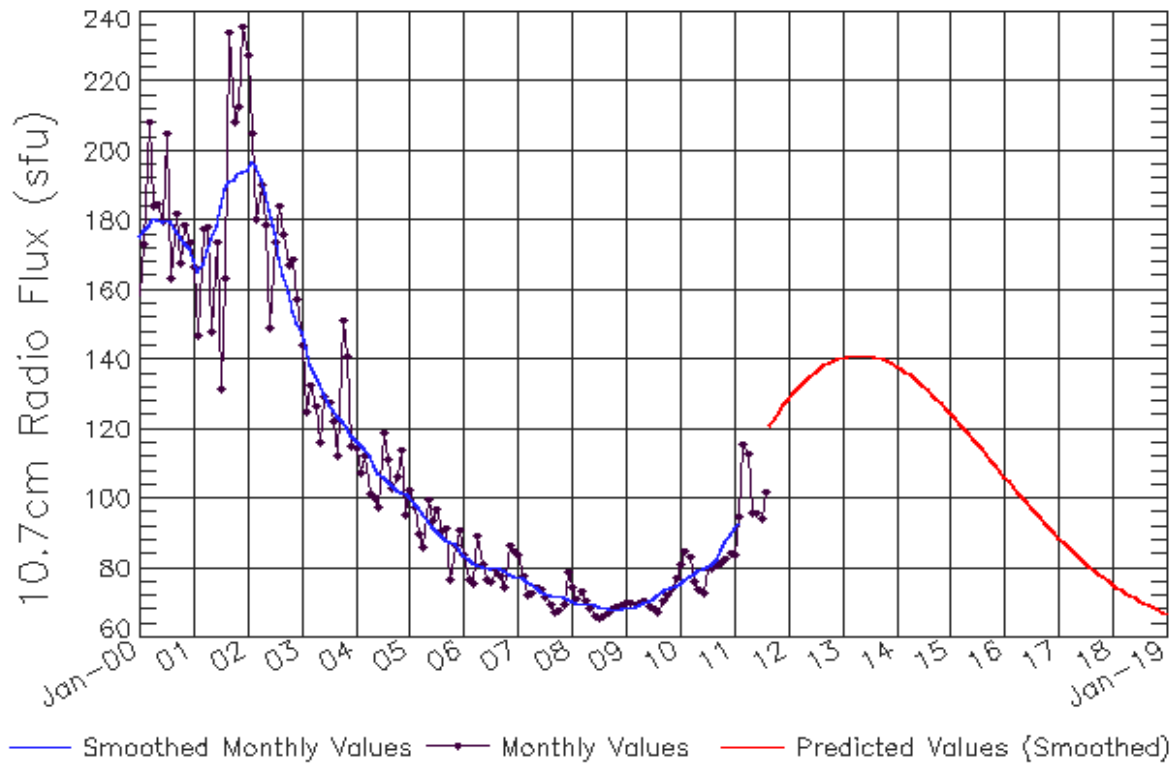
Smoothed Sunspot Number Prediction

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 2010 | 9 (***) | 11 (***) | 12 (***) | 14 (***) | 16 (***) | 16 (***) | 17 (***) | 17 (***) | 20 (***) | 23 (***) | 27 (***) | 29 (***) |
| 2011 | 31 (***) | 33 (***) | 37 (1) | 40 (2) | 44 (3) | 49 (5) | 54 (5) | 58 (6) | 61 (7) | 63 (7) | 66 (8) | 70 (9) |
| 2012 | 73 (9) | 76 (10) | 79 (10) | 81 (10) | 82 (10) | 84 (10) | 85 (10) | 86 (10) | 87 (10) | 88 (10) | 88 (10) | 89 (10) |
| 2013 | 89 (10) | 90 (10) | 90 (10) | 90 (10) | 90 (10) | 90 (10) | 90 (10) | 89 (10) | 89 (10) | 89 (10) | 88 (10) | 87 (10) |
| 2014 | 86 (10) | 86 (10) | 85 (10) | 84 (10) | 83 (10) | 81 (10) | 80 (10) | 79 (10) | 78 (10) | 76 (10) | 75 (10) | 73 (10) |
| 2015 | 72 (10) | 70 (10) | 69 (10) | 67 (10) | 65 (10) | 64 (10) | 62 (10) | 60 (10) | 59 (10) | 57 (10) | 55 (10) | 54 (10) |
| 2016 | 52 (10) | 50 (10) | 49 (10) | 47 (10) | 45 (10) | 44 (10) | 42 (10) | 40 (10) | 39 (10) | 37 (10) | 36 (10) | 34 (10) |
| 2017 | 33 (10) | 31 (10) | 30 (10) | 29 (10) | 27 (10) | 26 (10) | 25 (10) | 24 (10) | 23 (10) | 21 (10) | 20 (10) | 19 (10) |
| 2018 | 18 (10) | 17 (10) | 16 (10) | 15 (10) | 15 (10) | 14 (10) | 13 (10) | 12 (10) | 12 (10) | 11 (10) | 10 (10) | 10 (10) |
| 2019 | 9 (10) | 8 (10) | 8 (10) | 7 (10) | 7 (10) | 6 (10) | 6 (10) | 6 (10) | 5 (10) | 5 (10) | 4 (10) | 4 (10) |



ISES Solar Cycle F10.7cm Radio Flux Progression

Observed data through Aug 2011



Updated 2011 Sep 6

NOAA/SWPC Boulder, CO USA

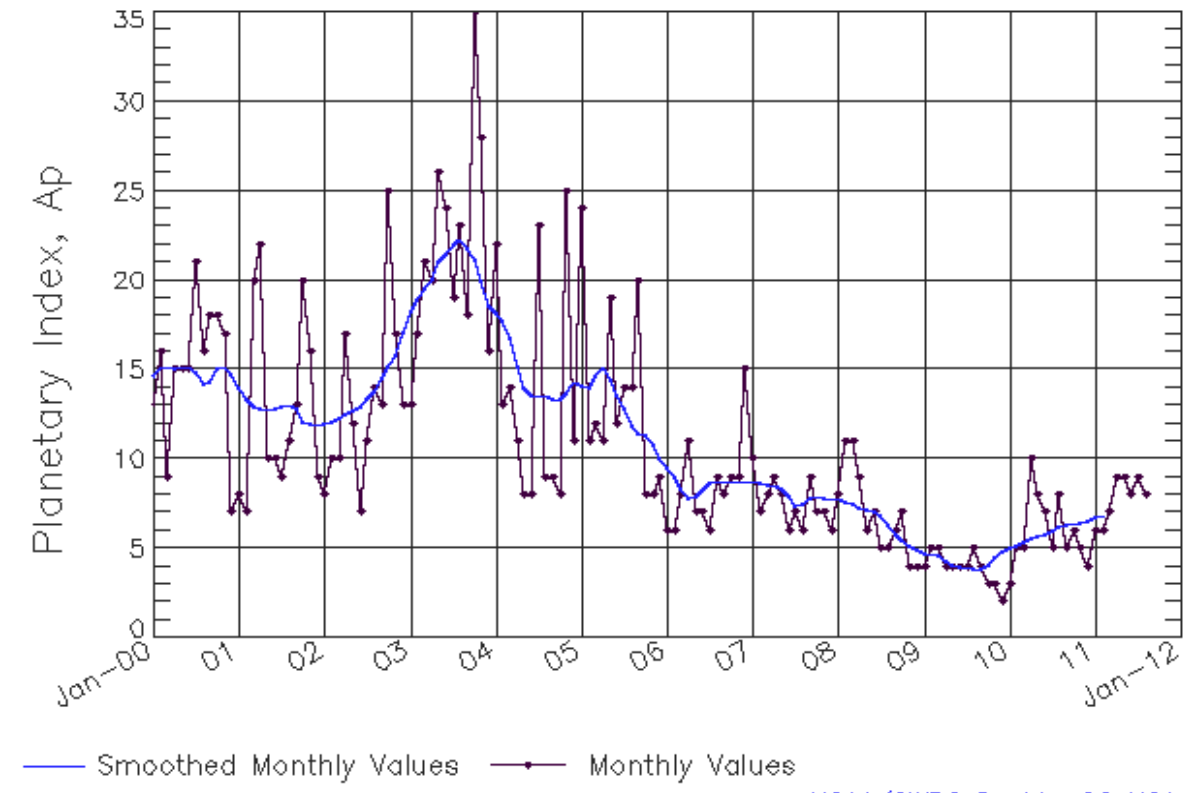
Smoothed F10.7cm Radio Flux Prediction

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 2010 | 76 (**) | 77 (**) | 78 (**) | 78 (**) | 79 (**) | 80 (**) | 80 (**) | 81 (**) | 82 (**) | 85 (**) | 88 (**) | 90 (**) |
| 2011 | 91 (**) | 93 (**) | 95 (1) | 99 (1) | 102 (2) | 106 (3) | 109 (4) | 113 (4) | 115 (5) | 116 (6) | 119 (7) | 122 (8) |
| 2012 | 125 (8) | 129 (9) | 132 (9) | 133 (9) | 134 (9) | 135 (9) | 136 (9) | 137 (9) | 138 (9) | 139 (9) | 140 (9) | 140 (9) |
| 2013 | 141 (9) | 141 (9) | 141 (9) | 141 (9) | 141 (9) | 141 (9) | 141 (9) | 141 (9) | 140 (9) | 140 (9) | 139 (9) | 139 (9) |
| 2014 | 138 (9) | 137 (9) | 136 (9) | 136 (9) | 135 (9) | 134 (9) | 132 (9) | 131 (9) | 130 (9) | 129 (9) | 127 (9) | 126 (9) |
| 2015 | 125 (9) | 123 (9) | 122 (9) | 120 (9) | 119 (9) | 117 (9) | 116 (9) | 114 (9) | 113 (9) | 111 (9) | 110 (9) | 108 (9) |
| 2016 | 106 (9) | 105 (9) | 103 (9) | 102 (9) | 100 (9) | 99 (9) | 97 (9) | 96 (9) | 94 (9) | 93 (9) | 92 (9) | 90 (9) |
| 2017 | 89 (9) | 88 (9) | 86 (9) | 85 (9) | 84 (9) | 83 (9) | 82 (9) | 80 (9) | 79 (9) | 78 (9) | 77 (9) | 76 (9) |
| 2018 | 75 (9) | 75 (9) | 74 (9) | 73 (9) | 72 (9) | 71 (9) | 71 (9) | 70 (9) | 69 (9) | 69 (9) | 68 (9) | 67 (9) |
| 2019 | 67 (9) | 66 (9) | 66 (9) | 65 (9) | 65 (9) | 65 (9) | 64 (9) | 64 (9) | 63 (9) | 63 (9) | 63 (9) | 63 (9) |



ISES Solar Cycle Ap Progression

Observed data through Aug 2011



Updated 2011 Sep 6

NOAA/SWPC Boulder,CO USA

Solar Cycle Comparison charts are temporarily unavailable.



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

Published every Tuesday by the Space Weather Prediction Center.

U.S. Department of Commerce
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

The Weekly has been published continuously since 1951 and is available online since 1997.

<http://spaceweather.gov/weekly/> -- Current and previous year

<http://spaceweather.gov/ftpmenu/warehouse.html> -- Online archive from 1997

<http://spaceweather.gov/ftpmenu/> -- Some content as ascii text

<http://spaceweather.gov/SolarCycle/> -- Solar Cycle Progression web site

<http://spaceweather.gov/contacts.html> -- Contact and Copyright information

http://spaceweather.gov/weekly/Usr_guide.pdf -- User Guide

