

Space Weather Highlights
17 September - 23 September 2012

SWPC PRF 1934
24 September 2012

Solar activity reached low levels this week. C-class x-ray flares were observed on 17-20 and 23 September. The largest, a C2/Sf, was recorded from Region 1576 (S21, L=180, class/area Dso/70 on 20 September) at 19/1512 UTC. The remainder included a C2 flare from Region 1575 (N08, L=181, class/area Eko/320 on 22 September) at 17/1406 UTC, a C1 at 18/1009Z, and a C1 from Region 1574 (S22, L=302, class/area Cao/40 on 20 September) at 20/1139 UTC, and a long-duration C1 from beyond the east limb at 23/1556 UTC. The long-duration C-flare was associated with a vivid CME in LASCO C2 imagery. Estimated plane-of-sky speed was around 600 km/s.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached moderate levels each day of the week except the 20th when it remained at background levels.

The geomagnetic field ranged from quiet to active levels during the week, with minor storm levels observed at high latitudes on all but the first and last days. The week began with the geomagnetic field at quiet to unsettled levels. Geomagnetic field activity increased to active levels late on the 19th when a corotating interaction region (CIR) became geoeffective. A coronal hole high speed stream followed on the 20th bringing mostly quiet to unsettled conditions. Between the 19th and the 20th, the solar sector changed from positive to negative, consistent with the geoeffective coronal hole polarity. Solar wind speed at the ACE spacecraft fluctuated between 600 and 400 km/s between the 20th and 21st, before beginning a slow decline late on the 21st. Solar wind speed by the end of the week had dropped to about 350 km/s. The Bz component of the interplanetary magnetic field reached its maximum of approximately -11 nT late on the 19th with the arrival of the CIR.

Space Weather Outlook
24 September - 20 October 2012

Solar activity is expected to be at low levels with an increasing chance for moderate activity during the first two weeks of the period as active regions rotate onto the visible disk.

A slight chance for a proton event exists due to potential activity associated with returning regions from 24 September through 08 October.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels on 8-9 October and again on 17-18 October.

Geomagnetic field activity is expected to remain mostly at quiet to unsettled levels except for 3-5 October, 09-10 October, and 16-17 October when recurrent coronal hole high speed streams are expected to bring a chance for active levels.



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 |
| 17 September | 102 | 51 | 220 | B2.3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 September | 104 | 61 | 330 | B2.8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 September | 110 | 62 | 420 | B2.5 | 2 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 20 September | 117 | 68 | 610 | B2.7 | 1 | 0 | 0 | 11 | 0 | 0 | 0 | 0 |
| 21 September | 117 | 74 | 420 | B2.5 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 22 September | 125 | 46 | 390 | B3.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 September | 134 | 57 | 410 | B3.7 | 1 | 0 | 0 | 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 |
| | 17 September | 1.2e+05 | 1.1e+04 | 2.8e+03 | | 2.2e+07 |
| 18 September | 1.1e+05 | 1.1e+04 | 2.7e+03 | | 1.0e+07 | |
| 19 September | 1.9e+05 | 1.1e+04 | 2.6e+03 | | 1.4e+07 | |
| 20 September | 1.1e+05 | 1.1e+04 | 2.6e+03 | | 3.1e+06 | |
| 21 September | 1.6e+05 | 1.2e+04 | 2.7e+03 | | 7.4e+06 | |
| 22 September | 1.4e+05 | 1.5e+04 | 2.8e+03 | | 1.3e+07 | |
| 23 September | 2.2e+05 | 1.6e+04 | 3.0e+03 | | 1.6e+07 | |

Daily Geomagnetic Data

| Date | Middle Latitude Fredericksburg | | High Latitude College | | Estimated Planetary | |
|--------------|-----------------------------------|-----------------|--------------------------|-----------------|------------------------|-----------------|
| | A | K-indices | A | K-indices | A | K-indices |
| | 17 September | 6 | 2-2-1-2-2-2-1 | 4 | 1-1-0-3-1-0-1-1 | 6 |
| 18 September | 7 | 2-2-2-2-3-2-1-1 | 15 | 1-1-2-5-4-3-2-2 | 8 | 2-3-2-3-2-2-1-1 |
| 19 September | 13 | 2-3-1-2-3-3-4-3 | 16 | 2-2-1-2-5-4-3-3 | 14 | 1-3-1-2-2-3-4-4 |
| 20 September | 10 | 3-2-3-2-3-2-2-2 | 20 | 3-2-3-5-5-3-2-2 | 9 | 3-2-3-2-2-2-2-2 |
| 21 September | 5 | 1-1-1-1-3-2-1-1 | 13 | 2-1-1-5-3-3-2-1 | 5 | 1-1-1-1-2-2-1-1 |
| 22 September | 3 | 1-1-1-1-1-1-1-1 | 12 | 1-2-3-5-3-1-1-1 | 4 | 1-1-1-2-1-0-0-1 |
| 23 September | 1 | 0-0-0-0-1-1-1-0 | 1 | 1-1-1-0-0-0-0-0 | 2 | 0-0-0-0-1-1-0-0 |

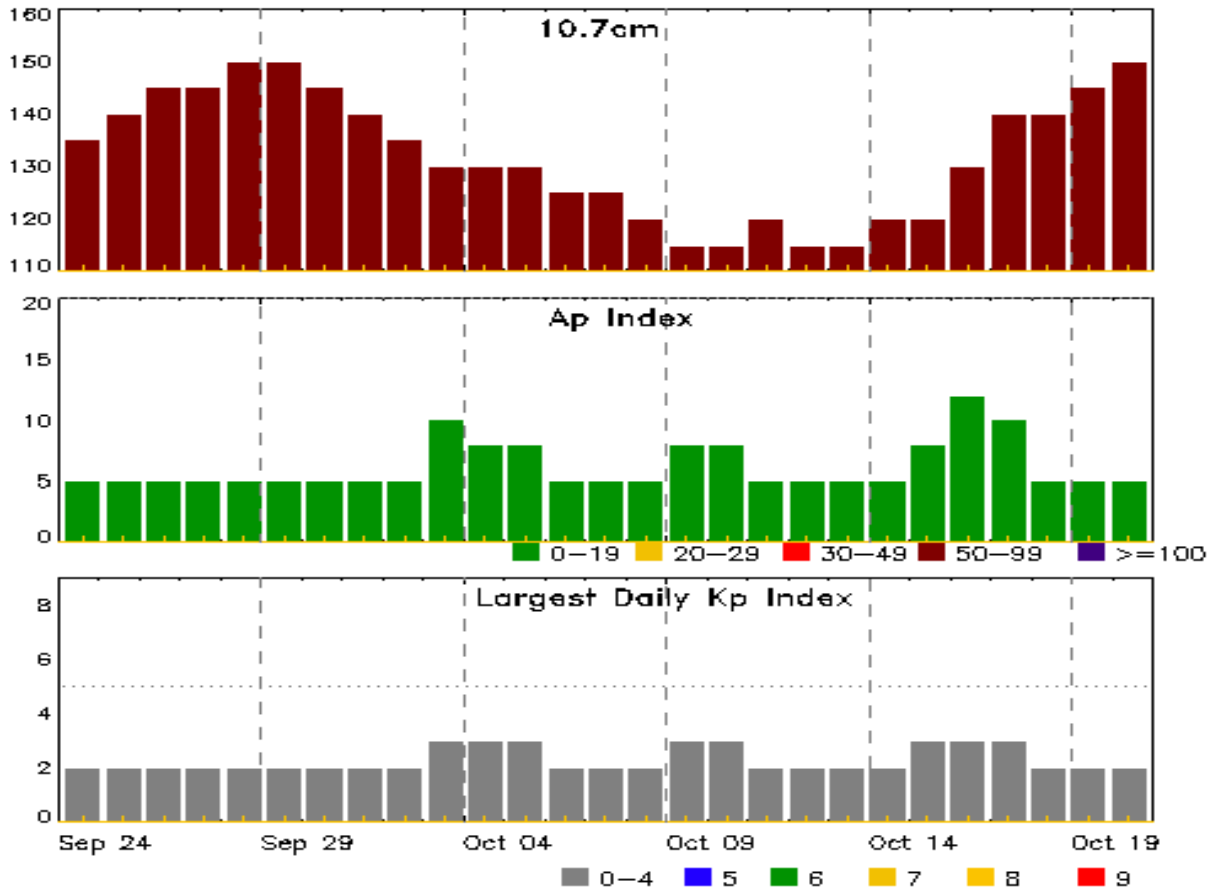


Alerts and Warnings Issued

| Date & Time of Issue UTC | Type of Alert or Warning | Date & Time of Event UTC |
|---|-------------------------------------|---|
| 19 Sep 2042 | WARNING: Geomagnetic K = 4 | 19/2042 - 20/0100 |
| 19 Sep 2047 | ALERT: Geomagnetic K = 4 | 19/2047 |
| 20 Sep 0045 | EXTENDED WARNING: Geomagnetic K = 4 | 19/2042 - 20/0700 |



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 |
|--------|----------------------|----------------------|---------------------|--------|----------------------|----------------------|---------------------|
| 24 Sep | 135 | 5 | 2 | 08 Oct | 120 | 5 | 2 |
| 25 | 140 | 5 | 2 | 09 | 115 | 8 | 3 |
| 26 | 145 | 5 | 2 | 10 | 115 | 8 | 3 |
| 27 | 145 | 5 | 2 | 11 | 120 | 5 | 2 |
| 28 | 150 | 5 | 2 | 12 | 115 | 5 | 2 |
| 29 | 150 | 5 | 2 | 13 | 115 | 5 | 2 |
| 30 | 145 | 5 | 2 | 14 | 120 | 5 | 2 |
| 01 Oct | 140 | 5 | 2 | 15 | 120 | 8 | 3 |
| 02 | 135 | 5 | 2 | 16 | 130 | 12 | 3 |
| 03 | 130 | 10 | 3 | 17 | 140 | 10 | 3 |
| 04 | 130 | 8 | 3 | 18 | 140 | 5 | 2 |
| 05 | 130 | 8 | 3 | 19 | 145 | 5 | 2 |
| 06 | 125 | 5 | 2 | 20 | 150 | 5 | 2 |
| 07 | 125 | 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 | | Intensity | |
| | | | | | | | | | 245 | 2695 | II | IV |

No Events Observed

Flare List

| Date | Time | | | X-ray Class | Imp/ Brtns | Location Lat CMD | Rgn # |
|--------|-------|-------|-------|-------------|------------|------------------|-------|
| | Begin | Max | End | | | | |
| 17 Sep | 0614 | 0649 | 0813 | B5.6 | | | 1567 |
| 17 Sep | 0904 | 0908 | 0910 | C1.1 | | | 1567 |
| 17 Sep | 1135 | 1146 | 1201 | C1.5 | | | 1575 |
| 17 Sep | 1350 | 1406 | 1413 | C2.1 | | | 1575 |
| 17 Sep | 2206 | 2212 | 2222 | B9.4 | | | 1575 |
| 18 Sep | 0022 | 0026 | 0037 | B5.5 | | | 1575 |
| 18 Sep | 0821 | 0828 | 0834 | B6.8 | | | 1575 |
| 18 Sep | 0943 | 1009 | 1019 | C1.3 | | | 1575 |
| 19 Sep | 0543 | 0548 | 0551 | B5.3 | SF | N13E84 | 1575 |
| 19 Sep | 1027 | 1031 | 1034 | B3.9 | | | |
| 19 Sep | B1156 | U1158 | A1203 | | SF | N20E36 | 1573 |
| 19 Sep | 1504 | 1512 | 1521 | C2.6 | SF | S20E69 | 1576 |
| 19 Sep | 1627 | 1631 | 1636 | B4.4 | | | |
| 19 Sep | 1637 | 1642 | 1652 | C1.2 | SF | S20E67 | 1576 |
| 20 Sep | 0118 | 0125 | 0131 | B6.8 | | | |
| 20 Sep | 0602 | 0603 | 0609 | | SF | S27W58 | 1574 |
| 20 Sep | B0613 | U0627 | A0627 | | SF | S26W58 | 1574 |
| 20 Sep | 0918 | 0922 | 0926 | B7.7 | SF | S23W63 | 1574 |
| 20 Sep | B0930 | U0949 | A1022 | | SF | S26W58 | 1574 |
| 20 Sep | B1110 | U1128 | A1141 | C1.0 | SF | S26W59 | 1574 |
| 20 Sep | 1229 | 1229 | 1233 | | SF | S25W62 | 1574 |
| 20 Sep | 1236 | 1242 | 1252 | | SF | S26W61 | 1574 |
| 20 Sep | 1327 | U1411 | A1425 | | SF | S26W61 | 1574 |
| 20 Sep | 1429 | 1430 | 1438 | | SF | S26W63 | 1574 |
| 20 Sep | 1447 | 1511 | 1530 | | SF | S26W63 | 1574 |
| 20 Sep | 1538 | 1545 | 1555 | | SF | S25W63 | 1574 |
| 21 Sep | 1156 | 1221 | 1248 | B8.7 | | | 1573 |
| 21 Sep | 1157 | 1204 | 1206 | | SF | N20E05 | 1573 |
| 21 Sep | 1207 | 1216 | 1220 | | SF | N20E06 | 1573 |
| 21 Sep | 1928 | 1932 | 1938 | B4.8 | | | 1574 |
| 22 Sep | 1930 | 2010 | 2051 | B9.2 | | | |



Flare List

| Date | Time | | | Optical | | | |
|--------|-------|------|------|-------------|------------|------------------|-------|
| | Begin | Max | End | X-ray Class | Imp/ Brtns | Location Lat CMD | Rgn # |
| 23 Sep | 0712 | 0725 | 0731 | B7.7 | | | |
| 23 Sep | 1310 | 1315 | 1327 | B9.5 | | | |
| 23 Sep | 1502 | 1556 | 1855 | C1.7 | | | |



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 | | | | | | | |
| Region 1566 | | | | | | | | | | | | | | | | | | | | | | | |
| 03 Sep | N24E76 | | 20 | 60 | 1 | Hax | 1 | A | | | | | | | | | | | | | | | |
| 04 Sep | N22E64 | | 18 | 60 | 5 | Hax | 1 | A | | | | | | | | | | | | | | | |
| 05 Sep | N22E50 | | 18 | 60 | 4 | Hsx | 1 | A | | | | | | | | | | | | | | | |
| 06 Sep | N22E39 | | 18 | 70 | 3 | Hsx | 2 | A | | | | | | | | | | | | | | | |
| 07 Sep | N23E26 | | 16 | 70 | 1 | Cao | 2 | B | | | | | | | | | | | | | | | |
| 08 Sep | N22E12 | | 17 | 60 | 2 | Hsx | 1 | A | | | | | | | | | | | | | | | |
| 09 Sep | N23E01 | | 15 | 60 | 2 | Hsx | 1 | A | | | | | | | | | | | | | | | |
| 10 Sep | N23W12 | | 15 | 60 | 1 | Hsx | 1 | A | | | | | | | | | | | | | | | |
| 11 Sep | N23W25 | | 15 | 40 | 2 | Hsx | 3 | A | | | | | | | | | | | | | | | |
| 12 Sep | N23W39 | | 16 | 40 | 2 | Hsx | 2 | A | | | | | | | | | | | | | | | |
| 13 Sep | N23W51 | | 15 | 50 | 1 | Hsx | 1 | A | | | | | | | | | | | | | | | |
| 14 Sep | N22W65 | | 15 | 30 | 2 | Hsx | 2 | A | | | | | | | | | | | | | | 1 | |
| 15 Sep | N23W76 | | 13 | 10 | 1 | Hrx | 1 | A | | | | | | | | | | | | | | | |
| 16 Sep | N23W89 | | 14 | 10 | 1 | Hrx | 1 | A | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 0 0 0 1 0 0 0 0 | |

Crossed West Limb.
 Absolute heliographic longitude: 15

| | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|--------|--|-----|-------|---|-----|---|---|---|--|--|--|--|--|--|--|--|--|--|--|--|---|-------------------|
| Region 1567 | | | | | | | | | | | | | | | | | | | | | | | |
| 07 Sep | N17E56 | | 347 | 10 | 2 | Bxo | 2 | B | | | | | | | | | | | | | | | |
| 08 Sep | N17E39 | | 350 | 50 | 5 | Dao | 4 | B | | | | | | | | | | | | | | | |
| 09 Sep | N17E27 | | 349 | 50 | 7 | Dao | 8 | B | | | | | | | | | | | | | | | |
| 10 Sep | N16E14 | | 348 | 10 | 7 | Bxo | 2 | B | 1 | | | | | | | | | | | | | 1 | |
| 11 Sep | N16W02 | | 351 | 30 | 9 | Dso | 4 | B | 2 | | | | | | | | | | | | | 1 | |
| 12 Sep | N16W16 | | 353 | plage | | | | | | | | | | | | | | | | | | | |
| 13 Sep | N16W30 | | 354 | plage | | | | | | | | | | | | | | | | | | | |
| 14 Sep | N16W44 | | 355 | plage | | | | | | | | | | | | | | | | | | | |
| 15 Sep | N16W58 | | 356 | plage | | | | | | | | | | | | | | | | | | | |
| 16 Sep | N17W71 | | 355 | plage | | | | | | | | | | | | | | | | | | | |
| 17 Sep | N17W85 | | 356 | plage | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | 1 4 0 0 2 0 0 0 0 |

Crossed West Limb.
 Absolute heliographic longitude: 351



Region Summary - continued

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | | |
|--------------------|----------|-----|-------------------------|-----------------------|---------|-------|--------|-------|-------|---|---|---------|---|---|---|
| | Lat | CMD | Helio | Area | Extent | Spot | Spot | Mag | X-ray | | | Optical | | | |
| | | | Lon | 10 ⁶ hemi. | (helio) | Class | Count | Class | C | M | X | S | 1 | 2 | 3 |
| Region 1569 | | | | | | | | | | | | | | | |
| 10 Sep | S11E65 | 298 | 30 | 1 | Hax | 1 | A | | | | | | | | 1 |
| 11 Sep | S12E53 | 296 | 160 | 10 | Dao | 8 | B | 1 | | | | | | | 1 |
| 12 Sep | S12E39 | 297 | 200 | 12 | Eso | 10 | B | | | | | | | | 1 |
| 13 Sep | S12E27 | 296 | 210 | 12 | Eac | 10 | BG | 3 | | | | | | | 2 |
| 14 Sep | S12E14 | 296 | 140 | 13 | Eao | 10 | BG | | | | | | | | 1 |
| 15 Sep | S12W00 | 296 | 180 | 12 | Eso | 8 | BG | | | | | | | | |
| 16 Sep | S12W13 | 296 | 120 | 12 | Cso | 6 | B | | | | | | | | |
| 17 Sep | S12W26 | 297 | 120 | 9 | Cso | 3 | B | | | | | | | | |
| 18 Sep | S12W40 | 298 | 100 | 9 | Cso | 4 | B | | | | | | | | |
| 19 Sep | S14W55 | 300 | 100 | 3 | Cso | 2 | B | | | | | | | | |
| 20 Sep | S12W70 | 300 | 170 | 2 | Hsx | 2 | A | | | | | | | | |
| 21 Sep | S11W82 | 300 | 80 | 2 | Hsx | 1 | A | | | | | | | | |
| | | | | | | | | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 296

| | | | | | | | | | | | | | | | |
|--------------------|--------|----|-------|---|-----|---|---|---|---|---|---|---|---|---|---|
| Region 1570 | | | | | | | | | | | | | | | |
| 12 Sep | S13W34 | 10 | 20 | 2 | Cso | 3 | B | | | | | | | | |
| 13 Sep | S13W48 | 12 | plage | | | | | | | | | | | | |
| 14 Sep | S13W62 | 13 | plage | | | | | | | | | | | | |
| 15 Sep | S13W76 | 14 | plage | | | | | | | | | | | | |
| 16 Sep | S13W90 | 15 | plage | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 10



Region Summary - continued

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | | |
|--------------------|----------|-----|-------------------------|-----------------------|---------|-------|--------|-------|-------|---|---|---------|---|---|---|
| | Lat | CMD | Helio | Area | Extent | Spot | Spot | Mag | X-ray | | | Optical | | | |
| | | | Lon | 10 ⁶ hemi. | (helio) | Class | Count | Class | C | M | X | S | 1 | 2 | 3 |
| Region 1571 | | | | | | | | | | | | | | | |
| 12 Sep | S12E57 | 279 | 110 | 6 | Cso | 1 | B | | | | | | | | |
| 13 Sep | S13E46 | 277 | 130 | 8 | Cso | 3 | B | | | | | | | | |
| 14 Sep | S12E33 | 277 | 100 | 6 | Cso | 2 | B | | | | | | | | |
| 15 Sep | S13E19 | 277 | 100 | 5 | Cso | 3 | B | | | | | | | | |
| 16 Sep | S13E06 | 277 | 90 | 7 | Cso | 6 | B | | | | | | | | |
| 17 Sep | S13W08 | 279 | 60 | 2 | Hsx | 3 | A | | | | | | | | |
| 18 Sep | S13W21 | 279 | 60 | 2 | Hsx | 2 | A | | | | | | | | |
| 19 Sep | S14W35 | 280 | 30 | 2 | Hsx | 1 | A | | | | | | | | |
| 20 Sep | S14W46 | 278 | 50 | 6 | Cao | 3 | B | | | | | | | | |
| 21 Sep | S13W59 | 276 | 10 | 5 | Bxo | 3 | B | | | | | | | | |
| 22 Sep | S13W72 | 277 | plage | | | | | | | | | | | | |
| 23 Sep | S13W86 | 278 | plage | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.
Absolute heliographic longitude: 277

| | | | | | | | | | | | | | | | |
|--------------------|--------|---|----|--|-----|---|---|---|---|---|---|---|---|---|---|
| Region 1572 | | | | | | | | | | | | | | | |
| 15 Sep | N15W70 | 7 | 10 | | Axx | 1 | A | | | | | | | | |
| 16 Sep | N16W83 | 7 | 10 | | Axx | 1 | A | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.
Absolute heliographic longitude: 7

| | | | | | | | | | | | | | | | |
|--------------------|--------|-----|-------|---|-----|---|---|---|---|---|---|---|---|---|---|
| Region 1573 | | | | | | | | | | | | | | | |
| 15 Sep | N17E76 | 222 | plage | | | | | | | | | | 1 | | |
| 16 Sep | N17E62 | 222 | 10 | | Axx | 1 | A | | | | | | 1 | | |
| 17 Sep | N16E48 | 222 | 0 | | Axx | 1 | A | | | | | | | | |
| 18 Sep | N19E36 | 221 | 10 | 3 | Bxo | 2 | B | | | | | | | | |
| 19 Sep | N19E22 | 223 | plage | | | | | | | | | | 1 | | |
| 20 Sep | N19E08 | 224 | plage | | | | | | | | | | | | |
| 21 Sep | N18W04 | 221 | 0 | 2 | Axx | 2 | A | | | | | | 2 | | |
| 22 Sep | N18W17 | 222 | plage | | | | | | | | | | | | |
| 23 Sep | N18W31 | 223 | plage | | | | | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |

Still on Disk.
Absolute heliographic longitude: 221



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 1574 | | | | | | | | | | | | | | | | | | |
| 16 Sep | S25W17 | 302 | 0 | 2 | Bxo | 2 | B | | | | | | | | | | | |
| 17 Sep | S24W32 | 302 | 40 | 3 | Dso | 4 | B | | | | | | | | | | | |
| 18 Sep | S23W43 | 301 | 20 | 2 | Hsx | 1 | A | | | | | | | | | | | |
| 19 Sep | S25W57 | 302 | 20 | 1 | Hsx | 1 | A | | | | | | | | | | | |
| 20 Sep | S22W70 | 302 | 40 | 6 | Cao | 4 | B | 1 | | | | 11 | | | | | | |
| 21 Sep | S24W79 | 299 | 30 | 4 | Cro | 2 | B | | | | | | | | | | | |
| | | | | | | | | 1 | 0 | 0 | | 11 | 0 | 0 | 0 | 0 | 0 | |

Crossed West Limb.
Absolute heliographic longitude: 302

| | | | | | | | | | | | | | | | | | | |
|--------------------|--------|-----|-----|----|-----|----|----|---|---|---|--|---|---|---|---|---|---|--|
| Region 1575 | | | | | | | | | | | | | | | | | | |
| 18 Sep | N07E75 | 185 | 140 | 4 | Dao | 2 | B | 1 | | | | | | | | | | |
| 19 Sep | N10E62 | 183 | 220 | 12 | Eao | 4 | B | | | | | 1 | | | | | | |
| 20 Sep | N07E50 | 182 | 280 | 12 | Eko | 6 | B | | | | | | | | | | | |
| 21 Sep | N08E37 | 180 | 250 | 12 | Eko | 4 | B | | | | | | | | | | | |
| 22 Sep | N08E24 | 181 | 320 | 12 | Eko | 10 | BG | | | | | | | | | | | |
| 23 Sep | N08E11 | 181 | 260 | 13 | Eho | 13 | BG | | | | | | | | | | | |
| | | | | | | | | 3 | 0 | 0 | | 1 | 0 | 0 | 0 | 0 | 0 | |

Still on Disk.
Absolute heliographic longitude: 181

| | | | | | | | | | | | | | | | | | | |
|--------------------|--------|-----|----|---|-----|---|---|---|---|---|--|---|---|---|---|---|---|--|
| Region 1576 | | | | | | | | | | | | | | | | | | |
| 19 Sep | S22E62 | 183 | 50 | 9 | Dso | 4 | B | 2 | | | | 2 | | | | | | |
| 20 Sep | S21E52 | 180 | 70 | 7 | Dso | 3 | B | | | | | | | | | | | |
| 21 Sep | S21E43 | 177 | 50 | 6 | Dso | 2 | B | | | | | | | | | | | |
| 22 Sep | S21E30 | 175 | 50 | 6 | Dao | 2 | B | | | | | | | | | | | |
| 23 Sep | S22E17 | 175 | 50 | 6 | Dso | 2 | B | | | | | | | | | | | |
| | | | | | | | | 2 | 0 | 0 | | 2 | 0 | 0 | 0 | 0 | 0 | |

Still on Disk.
Absolute heliographic longitude: 175

| | | | | | | | | | | | | | | | | | | |
|--------------------|--------|-----|-----|---|-----|----|---|---|---|---|--|---|---|---|---|---|---|--|
| Region 1577 | | | | | | | | | | | | | | | | | | |
| 22 Sep | N08E43 | 162 | 20 | 3 | Cao | 4 | B | | | | | | | | | | | |
| 23 Sep | N08E30 | 162 | 100 | 6 | Dai | 12 | B | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | |

Still on Disk.
Absolute heliographic longitude: 162

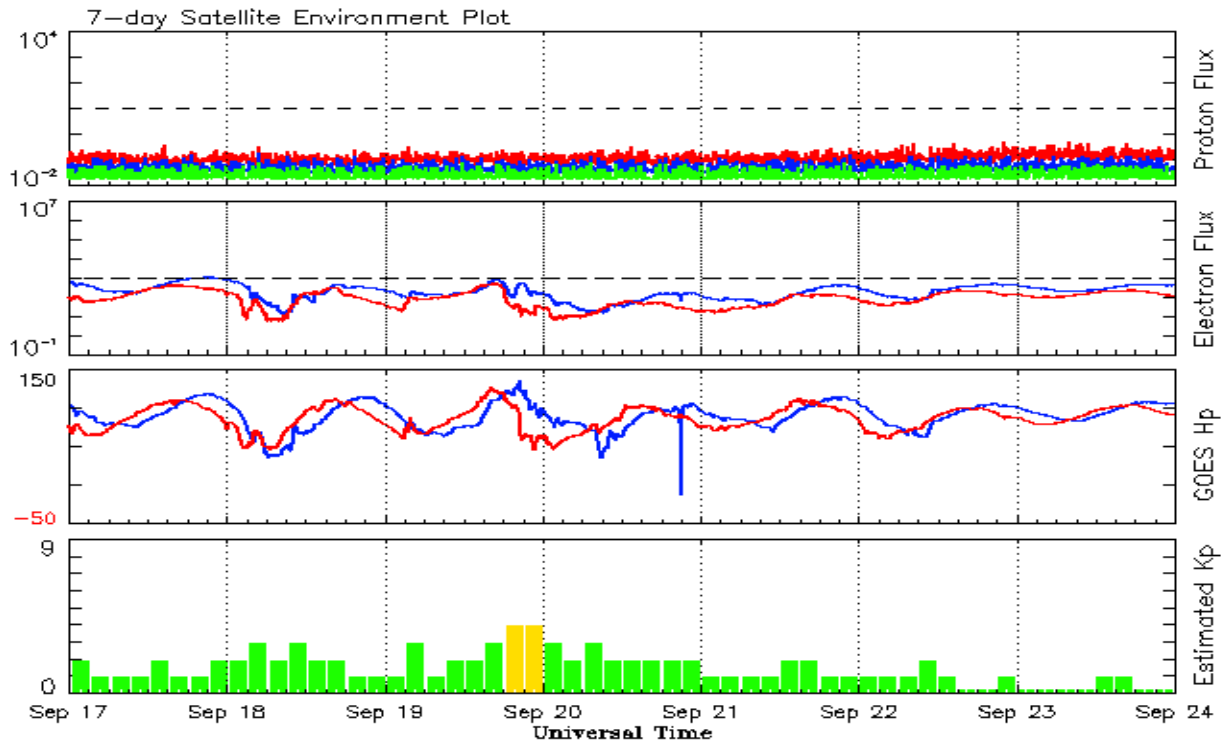


Recent Solar Indices (preliminary)
Observed monthly mean values

| 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 |
| 2010 | | | | | | | | | |
| 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 | 30.9 | 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 | 55.2 | 36.9 | 115.3 | 95.8 | 7 | 7.2 |
| April | 81.7 | 54.4 | 0.67 | 61.5 | 41.8 | 112.6 | 100.4 | 9 | 7.5 |
| May | 61.4 | 41.5 | 0.68 | 69.0 | 47.6 | 95.9 | 105.6 | 9 | 7.5 |
| June | 55.5 | 37.0 | 0.67 | 76.5 | 53.2 | 95.8 | 110.9 | 8 | 7.4 |
| July | 67.0 | 43.8 | 0.66 | 82.5 | 57.2 | 94.2 | 115.4 | 9 | 7.3 |
| August | 66.1 | 50.6 | 0.77 | 84.9 | 59.0 | 101.7 | 117.9 | 8 | 7.4 |
| September | 106.4 | 78.0 | 0.73 | 84.6 | 59.5 | 134.5 | 118.4 | 13 | 7.7 |
| October | 116.8 | 88.0 | 0.75 | 84.6 | 59.9 | 137.2 | 118.4 | 7 | 8.0 |
| November | 133.1 | 96.7 | 0.73 | 86.3 | 61.1 | 153.1 | 119.5 | 3 | 8.0 |
| December | 106.3 | 73.0 | 0.69 | 89.2 | 63.4 | 141.2 | 121.6 | 3 | 8.0 |
| 2012 | | | | | | | | | |
| January | 91.3 | 58.3 | 0.64 | 92.0 | 65.5 | 133.1 | 124.4 | 6 | 8.3 |
| February | 50.1 | 32.9 | 0.66 | 94.2 | 66.9 | 106.7 | 126.7 | 7 | 8.4 |
| March | 77.9 | 64.3 | 0.82 | | | 115.1 | | 14 | |
| April | 84.4 | 55.2 | 0.65 | | | 113.1 | | 9 | |
| May | 99.5 | 69.0 | 0.69 | | | 121.5 | | 8 | |
| June | 88.6 | 64.5 | 0.73 | | | 120.5 | | 10 | |
| July | 99.6 | 66.5 | 0.67 | | | 135.6 | | 13 | |
| August | 85.8 | 63.1 | 0.74 | | | 115.7 | | 7 | |

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 17 September 2012*

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.

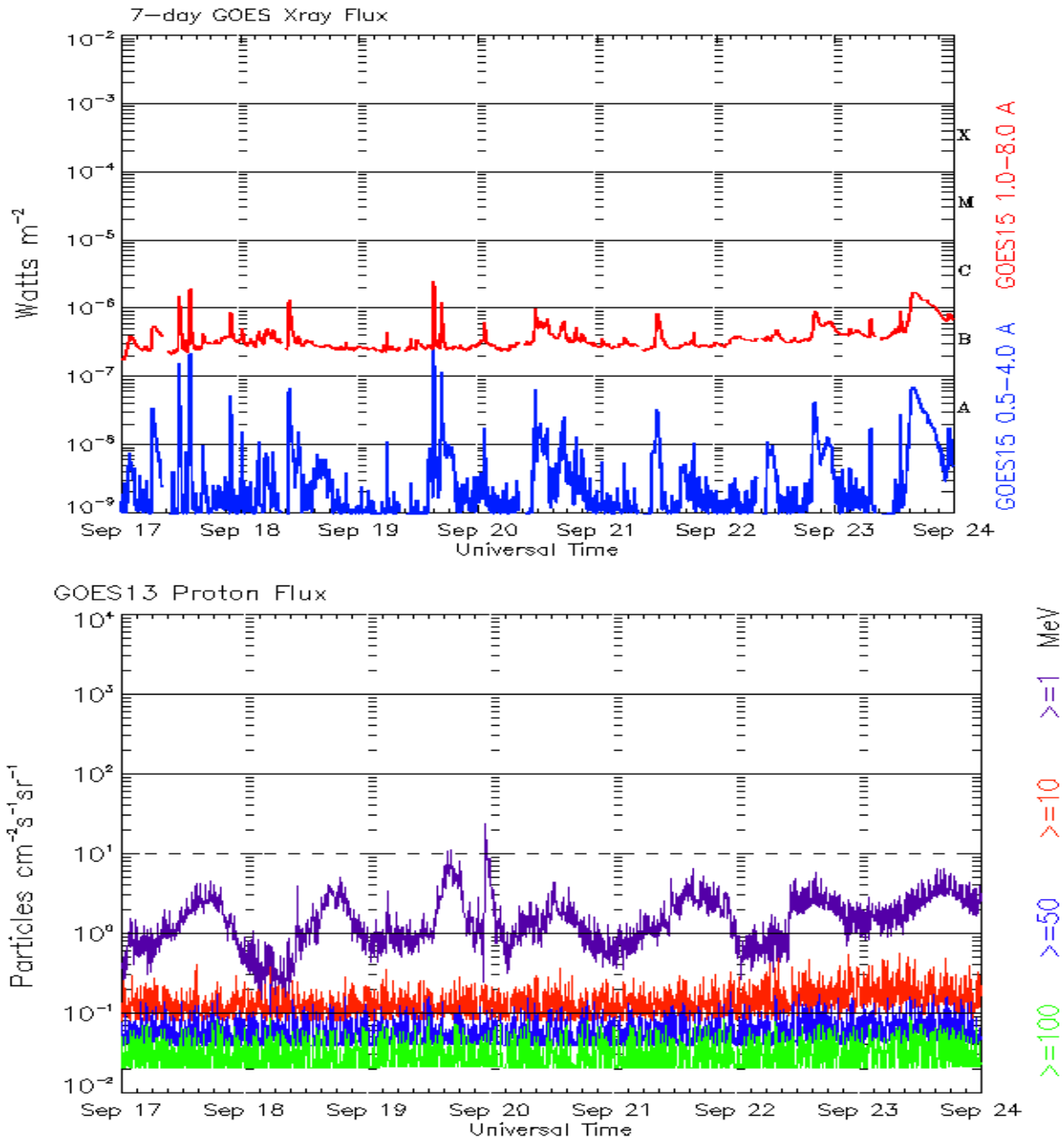
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 17 September 2012*

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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