

Space Weather Highlights
23 - 29 Aug 2004

SWO PRF 1513
31 Aug 2004

Solar activity ranged from very low to low levels. Activity was very low on 23 – 24 August and again on 27 – 29 August while low levels were observed on 25 – 26 August. The largest flare of the period was a C1.8/Sf flare on 26/0219 UTC from Region 663 (N10, L=263, class/area, Eso/140 on 25 August). The most significant event of the period occurred at approximately 27/0900 UTC when a prominence on the west limb at S02 erupted. LASCO imagery detected a partial halo CME from this event.

Solar wind data were available from the NASA Advanced Composition Explorer (ACE) spacecraft during most of the summary period. The period began with wind speed near 400 km/s and the IMF Bz at +/- 5 nT. By early on 25 August, wind speed had decayed to near 300 km/s and the Bz remained weak. Midday on the 26th, a weak shock was recorded at ACE that briefly increased wind speed to 450 km/s; however, the IMF Bz remained mostly northward. By the end of the summary period, wind speed decayed to near 400 km/s and Bz did not fluctuate much beyond +/- 5 nT.

There were no greater than 10 MeV proton events at geosynchronous orbit during the summary period.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels on 23 - 26 and 28 August.

The geomagnetic field was mostly quiet to unsettled. However, a brief episode of active conditions occurred at all latitudes during 28/0600 - 0900 UTC.

Space Weather Outlook
01 September - 27 September 2004

Solar activity levels are expected to increase to low to moderate through 15 September after the return of old Region 656 (S14, L=085) early in the period.

A greater than 10 MeV proton event is possible upon the return of old Region 656.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels on 01 – 06 September and 14 – 19 September.

The geomagnetic field is expected to range from mostly quiet to active with isolated minor storm levels. From 01 – 05 September and 13 – 18 September, levels are expected to be at unsettled to active levels with isolated minor storm conditions, due to a series of recurrent coronal hole high speed streams.



Daily Solar Data

| Date | Radio Flux 10.7 cm | Sun spot No. | Sunspot Area (10 ⁻⁶ hemi.) | X-ray Background | Flares | | | | | | | |
|-----------|-----------------------|-----------------|--|------------------|------------|---|---|---------|---|---|---|---|
| | | | | | X-ray Flux | | | Optical | | | | |
| | | | | | C | M | X | S | 1 | 2 | 3 | 4 |
| 23 August | 110 | 93 | 700 | B1.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 August | 105 | 55 | 560 | B1.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 August | 100 | 60 | 550 | B1.4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 August | 98 | 44 | 240 | B1.5 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 27 August | 91 | 33 | 170 | B1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 August | 87 | 28 | 170 | A7.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 August | 86 | 36 | 100 | A5.8 | 0 | 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) | | |
|-----------|---|--------|---------|---|--------|--------|
| | >1MeV | >10MeV | >100MeV | >.6MeV | >2MeV | >4MeV |
| | 23 August | 3.7E+5 | 1.3E+4 | 2.9E+3 | | 1.3E+8 |
| 24 August | 3.1E+5 | 1.3E+4 | 2.9E+3 | | 1.7E+8 | |
| 25 August | 3.7E+5 | 1.4E+4 | 3.3E+3 | | 9.2E+7 | |
| 26 August | 4.4E+5 | 1.4E+4 | 3.2E+3 | | 6.8E+7 | |
| 27 August | 3.2E+5 | 1.4E+4 | 3.2E+3 | | 2.5E+7 | |
| 28 August | 3.8E+5 | 1.5E+4 | 3.4E+3 | | 4.3E+7 | |
| 29 August | 5.5E+5 | 1.4E+4 | 3.2E+3 | | 4.6E+7 | |

Daily Geomagnetic Data

| Date | Middle Latitude Fredericksburg | | High Latitude College | | Estimated Planetary | |
|-----------|-----------------------------------|-----------------|--------------------------|-----------------|------------------------|-----------------|
| | A | K-indices | A | K-indices | A | K-indices |
| | 23 August | 10 | 2-3-2-2-3-3-2-2 | 5 | 2-1-3-2-0-1-1-1 | 7 |
| 24 August | 3 | 2-0-1-1-1-1-1-0 | 5 | 1-0-2-2-3-1-1-0 | 5 | 2-1-1-1-2-2-2-2 |
| 25 August | 3 | 0-1-0-1-2-1-1-1 | 5 | 0-1-1-3-3-1-0-0 | 7 | 1-2-1-2-3-2-2-2 |
| 26 August | 4 | 1-0-1-1-2-1-2-2 | 3 | 1-1-0-1-1-2-1-1 | 7 | 2-1-1-1-2-3-3-3 |
| 27 August | 4 | 1-1-1-0-2-1-2-2 | 4 | 2-1-1-1-1-1-1-1 | 8 | 3-1-1-2-2-3-2-3 |
| 28 August | 6 | 1-3-2-2-1-1-1-1 | 7 | 2-1-4-3-0-1-1-0 | 12 | 2-3-4-3-3-3-3-2 |
| 29 August | 5 | 2-2-0-2-1-1-2-2 | 3 | 1-2-0-0-1-1-1-1 | 8 | 2-2-0-2-2-3-3-3 |

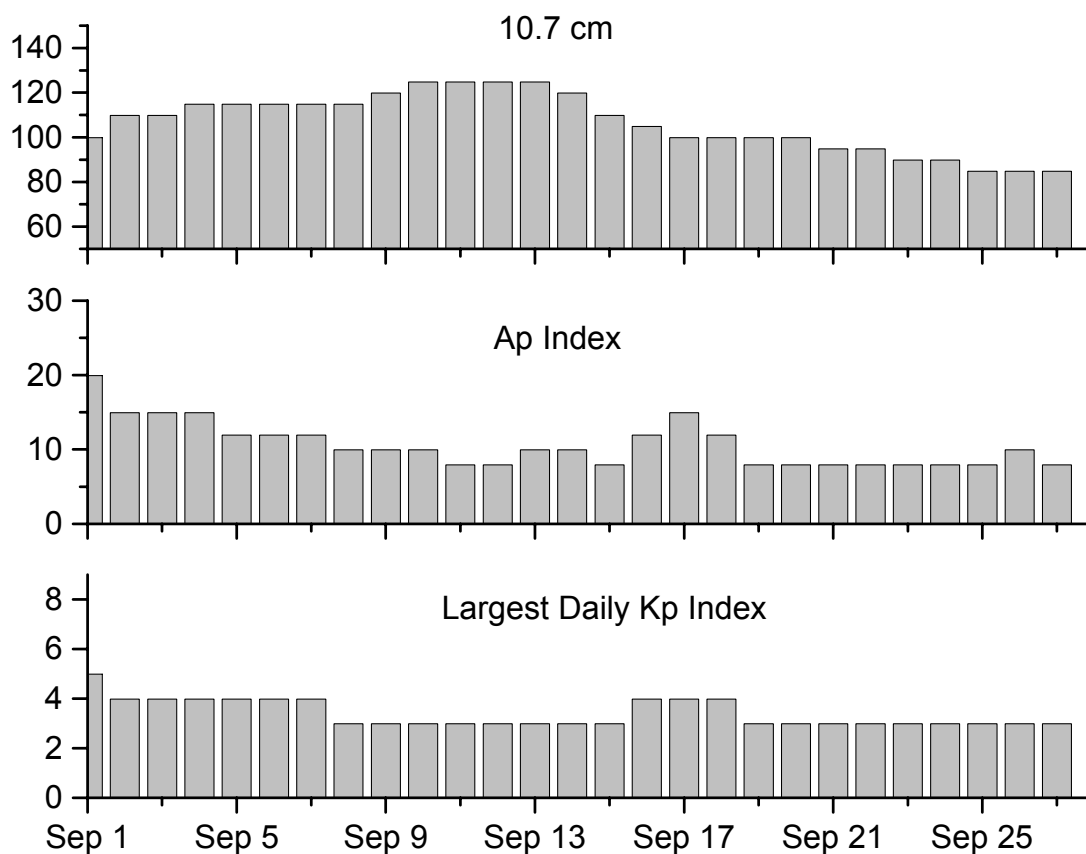


Alerts and Warnings Issued

| <u>Date & Time of Issue</u> | <u>Type of Alert or Warning</u> | <u>Date & Time of Event UT</u> |
|---------------------------------|--|------------------------------------|
| 23 Aug 0015 | 2 – 245 MHz Radio Bursts | 22 Aug |
| 23 Aug 1026 | ALERT: Electron 2MeV Integral Flux > 1000pfu | Aug 23 1005 |
| 24 Aug 0842 | ALERT: Electron 2MeV Integral Flux > 1000pfu | Aug 24 0815 |
| 24 Aug 2308 | ALERT: Type II Radio Emission | Aug 24 2110 |
| 24 Aug 2310 | ALERT: Type IV Radio Emission | Aug 24 2124 |
| 25 Aug 0006 | 2 – 245 MHz Radio Bursts | 24 Aug |
| 25 Aug 1051 | ALERT: Electron 2MeV Integral Flux > 1000pfu | Aug 25 1035 |
| 26 Aug 0009 | 4 – 245 MHz Radio Bursts | 25 Aug |
| 26 Aug 1310 | ALERT: Electron 2MeV Integral Flux > 1000pfu | Aug 26 1305 |
| 27 Aug 0115 | 1 – 245 MHz Radio Burst | 26 Aug |
| 28 Aug 0101 | 1 – 245 MHz Radio Burst | 27 Aug |
| 28 Aug 0826 | WARNING: Geomagnetic K= 4 | 28 Aug 0826 - 1600 |
| 28 Aug 0833 | ALERT: Geomagnetic K= 4 | Aug 28 0833 |
| 28 Aug 1558 | ALERT: Electron 2MeV Integral Flux > 1000pfu | Aug 28 1535 |
| 29 Aug 0029 | 1 – 245 MHz Radio Bursts | 28 Aug |
| 29 Aug 1426 | ALERT: Electron 2MeV Integral Flux > 1000pfu | Aug 29 1405 |



Twenty-seven Day Outlook



| Date | Radio Flux 10.7 cm | Planetary A Index | Largest Kp Index | Date | Radio Flux 10.7 cm | Planetary A Index | Largest Kp Index |
|--------|-----------------------|----------------------|---------------------|--------|-----------------------|----------------------|---------------------|
| 01 Sep | 100 | 20 | 5 | 15 Sep | 110 | 8 | 3 |
| 02 | 110 | 15 | 4 | 16 | 105 | 12 | 4 |
| 03 | 110 | 15 | 4 | 17 | 100 | 15 | 4 |
| 04 | 115 | 15 | 4 | 18 | 100 | 12 | 4 |
| 05 | 115 | 12 | 4 | 19 | 100 | 8 | 3 |
| 06 | 115 | 12 | 4 | 20 | 100 | 8 | 3 |
| 07 | 115 | 12 | 4 | 21 | 95 | 8 | 3 |
| 08 | 115 | 10 | 3 | 22 | 95 | 8 | 3 |
| 09 | 120 | 10 | 3 | 23 | 90 | 8 | 3 |
| 10 | 125 | 10 | 3 | 24 | 90 | 8 | 3 |
| 11 | 125 | 8 | 3 | 25 | 85 | 8 | 3 |
| 12 | 125 | 8 | 3 | 26 | 85 | 10 | 3 |
| 13 | 125 | 10 | 3 | 27 | 85 | 8 | 3 |
| 14 | 120 | 10 | 3 | | | | |



Energetic Events

| Date | Time | | X-ray | | Optical Information | | | Peak | | Sweep Freq | | |
|------|-------|-----|-------|-----|---------------------|---------------|---------------------|----------|------------|------------|-----------|----|
| | Begin | Max | 1/2 | Max | Integ | 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 | Optical | | Rgn |
|-----------|-----------|------|------|-----------------|----------------|---------------------|--|-----|
| | Begin | Max | End | | | Location Lat CMD | | |
| 23 August | 0218 | 0227 | 0235 | B6.8 | | | | 663 |
| | 1929 | 1936 | 1947 | B6.1 | | | | 663 |
| 24 August | 1148 | 1152 | 1200 | B3.0 | | | | |
| | 1330 | 1352 | 1412 | B7.6 | | | | |
| 25 August | 2054 | 2112 | 2127 | B5.4 | | | | |
| | 0102 | 0106 | 0110 | B3.0 | | | | |
| 25 August | 0359 | 0403 | 0407 | B3.1 | | | | 661 |
| | 0515 | 0521 | 0526 | C1.3 | | | | 661 |
| | 0922 | 0926 | 0930 | B3.2 | | | | |
| | 1459 | 1504 | 1509 | B2.0 | | | | |
| | 1858 | 1910 | 1914 | B2.4 | | | | |
| | 2230 | 2241 | 2245 | B3.0 | | | | |
| | 2256 | 2306 | 2312 | B3.4 | | | | |
| | 26 August | 0017 | 0021 | 0025 | B3.8 | | | |
| 26 August | 0214 | 0215 | 0224 | C1.8 | Sf | N10W05 | | 663 |
| | 0449 | 0513 | 0517 | B5.6 | | | | |
| 26 August | 0757 | 0802 | 0810 | B3.6 | | | | 662 |
| | 1259 | 1304 | 1313 | B8.4 | | | | |
| | 1737 | 1743 | 1751 | B3.1 | | | | |
| | 27 August | 1504 | 1506 | 1507 | B1.8 | | | |
| 27 August | 1809 | 1814 | 1817 | B1.7 | | | | 663 |
| | 2357 | 0011 | 0020 | B1.6 | | | | |
| 28 August | 0830 | 0841 | 0843 | B1.4 | | | | |
| | 0915 | 0928 | 0937 | B1.8 | | | | |
| | 1243 | 1253 | 1302 | B1.5 | | | | |
| | 1627 | 1632 | 1637 | B1.2 | | | | |
| 29 August | 0059 | 0104 | 0108 | B1.6 | | | | 664 |
| | 0328 | 0339 | 0345 | B1.3 | | | | 663 |
| | 0755 | 0803 | 0810 | B4.6 | | | | 664 |



Region Summary

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | | | | | |
|-------------------|---------------|-----|---------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|---|--|--|
| | Helio | | Area (10 ⁻⁶ hemi) | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | | | | | |
| | (° Lat ° CMD) | Lon | | | | | | C | M | X | S | 1 | 2 | 3 | 4 | | | |
| <i>Region 661</i> | | | | | | | | | | | | | | | | | | |
| 12 Aug | N08E84 | 349 | 0080 | 04 | Hsx | 001 | A | | | | | | | | | | | |
| 13 Aug | N07E73 | 347 | 0360 | 09 | Dao | 002 | B | | | | | | | | | | | |
| 14 Aug | N07E60 | 347 | 0340 | 07 | Dao | 002 | B | | | | | | | | | | | |
| 15 Aug | N07E47 | 348 | 0390 | 08 | Dko | 002 | B | | | | | | | | | | | |
| 16 Aug | N07E34 | 348 | 0470 | 11 | Eko | 004 | Bd | | | | | | | | | | | |
| 17 Aug | N09E20 | 347 | 0470 | 10 | Dko | 011 | Bd | 1 | | | 1 | | | | | | | |
| 18 Aug | N10E07 | 347 | 0540 | 10 | Dko | 013 | Bg | 2 | | | | | 1 | | | | | |
| 19 Aug | N09W06 | 347 | 0510 | 11 | Eko | 017 | Bg | | | | 1 | | | | | | | |
| 20 Aug | N08W19 | 347 | 0470 | 11 | Eko | 016 | B | | | | | | | | | | | |
| 21 Aug | N07W33 | 348 | 0450 | 08 | Dko | 009 | B | | | | | | | | | | | |
| 22 Aug | N06W47 | 348 | 0430 | 07 | Dko | 007 | B | | | | | | | | | | | |
| 23 Aug | N07W60 | 348 | 0410 | 07 | Dko | 006 | B | | | | | | | | | | | |
| 24 Aug | N06W73 | 348 | 0320 | 07 | Dho | 003 | B | | | | | | | | | | | |
| 25 Aug | N06W86 | 348 | 0300 | 07 | Dho | 003 | B | 1 | | | | | | | | | | |
| | | | | | | | | 4 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | | |

Crossed West Limb.

Absolute heliographic longitude: 347

| | | | | | | | | | | | | | | | | | | |
|-------------------|--------|-----|------|----|-----|-----|---|---|---|---|---|---|---|---|---|---|--|--|
| <i>Region 662</i> | | | | | | | | | | | | | | | | | | |
| 18 Aug | N12E28 | 326 | 0020 | 03 | Cro | 003 | B | | | | | | | | | | | |
| 19 Aug | N13E13 | 328 | 0040 | 05 | Cao | 011 | B | | | | | | | | | | | |
| 20 Aug | N13E00 | 328 | 0110 | 06 | Dao | 013 | B | | | | | | | | | | | |
| 21 Aug | N13W13 | 328 | 0110 | 07 | Dac | 011 | B | | | | | | | | | | | |
| 22 Aug | N13W27 | 328 | 0050 | 05 | Dao | 006 | B | | | | | | | | | | | |
| 23 Aug | N14W41 | 329 | 0010 | 00 | Hrx | 001 | A | | | | | | | | | | | |
| 24 Aug | N14W54 | 329 | | | | | | | | | | | | | | | | |
| 25 Aug | N14W67 | 329 | | | | | | | | | | | | | | | | |
| 26 Aug | N14W80 | 329 | | | | | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |

Crossed West Limb.

Absolute heliographic longitude: 328



Region Summary - continued.

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

Region 663

| | | | | | | | | | | | | | | | | | |
|---------------|-----|------|----|-----|-----|----|---|---|---|---|---|---|---|---|---|---|---|
| 19 Aug N08E75 | 266 | 0110 | 04 | Hax | 002 | A | | | | | | | | | | | |
| 20 Aug N10E67 | 261 | 0230 | 10 | Dao | 007 | B | | | | | | | | | | | |
| 21 Aug N11E52 | 263 | 0200 | 13 | Eao | 009 | B | | | | | | | | | | | |
| 22 Aug N11E39 | 262 | 0180 | 12 | Eso | 014 | B | | | | | | | | | | | |
| 23 Aug N11E26 | 262 | 0150 | 13 | Eso | 017 | Bg | | | | | | | | | | | |
| 24 Aug N10E12 | 263 | 0100 | 11 | Cso | 005 | B | | | | | | | | | | | |
| 25 Aug N10W01 | 263 | 0140 | 11 | Eso | 016 | B | | | | | | | | | | | |
| 26 Aug N10W14 | 263 | 0120 | 12 | Cao | 016 | B | 1 | | | | 1 | | | | | | |
| 27 Aug N10W27 | 263 | 0080 | 12 | Eao | 012 | B | | | | | | | | | | | |
| 28 Aug N10W41 | 263 | 0080 | 12 | Eso | 007 | B | | | | | | | | | | | |
| 29 Aug N07W58 | 268 | 0040 | 06 | Cao | 004 | B | | | | | | | | | | | |
| | | | | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 263

Region 664

| | | | | | | | | | | | | | | | | | |
|---------------|-----|------|----|-----|-----|---|--|---|---|---|---|---|---|---|---|---|---|
| 20 Aug S11E40 | 288 | 0030 | 06 | Dao | 009 | B | | | | | | | | | | | |
| 21 Aug S10E25 | 290 | 0090 | 09 | Dac | 019 | B | | | | | | | | | | | |
| 22 Aug S10E12 | 289 | 0100 | 10 | Dao | 022 | B | | | | | | | | | | | |
| 23 Aug S11W03 | 291 | 0120 | 12 | Eso | 017 | B | | | | | | | | | | | |
| 24 Aug S11W16 | 291 | 0140 | 12 | Eso | 017 | B | | | | | | | | | | | |
| 25 Aug S11W29 | 291 | 0110 | 12 | Eso | 011 | B | | | | | | | | | | | |
| 26 Aug S11W42 | 291 | 0120 | 09 | Dao | 008 | B | | | | | | | | | | | |
| 27 Aug S11W58 | 293 | 0090 | 02 | Hsx | 001 | A | | | | | | | | | | | |
| 28 Aug S11W73 | 295 | 0090 | 02 | Hsx | 001 | A | | | | | | | | | | | |
| 29 Aug S11W85 | 302 | 0060 | 03 | Hsx | 001 | A | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Still on Disk.

Absolute heliographic longitude: 291

Region 665

| | | | | | | | | | | | | | | | | | |
|---------------|-----|------|----|-----|-----|---|--|---|---|---|---|---|---|---|---|---|---|
| 22 Aug N04W15 | 316 | 0010 | 03 | Bxo | 003 | B | | | | | | | | | | | |
| 23 Aug N05W28 | 316 | 0010 | 02 | Bxo | 002 | B | | | | | | | | | | | |
| 24 Aug N05W41 | 316 | | | | | | | | | | | | | | | | |
| 25 Aug N05W54 | 316 | | | | | | | | | | | | | | | | |
| 26 Aug N05W67 | 316 | | | | | | | | | | | | | | | | |
| | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Crossed West Limb.

Absolute heliographic longitude: 316



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 |
| <i>Region 666</i> | | | | | | | | | | | | | | |
| 29 Aug | N16E31 | 178 | 0000 | 01 | Axx | 001 | A | | | | | | | |
| | | | | | | | | | | | | | | |

Still on Disk.

Absolute heliographic longitude:178

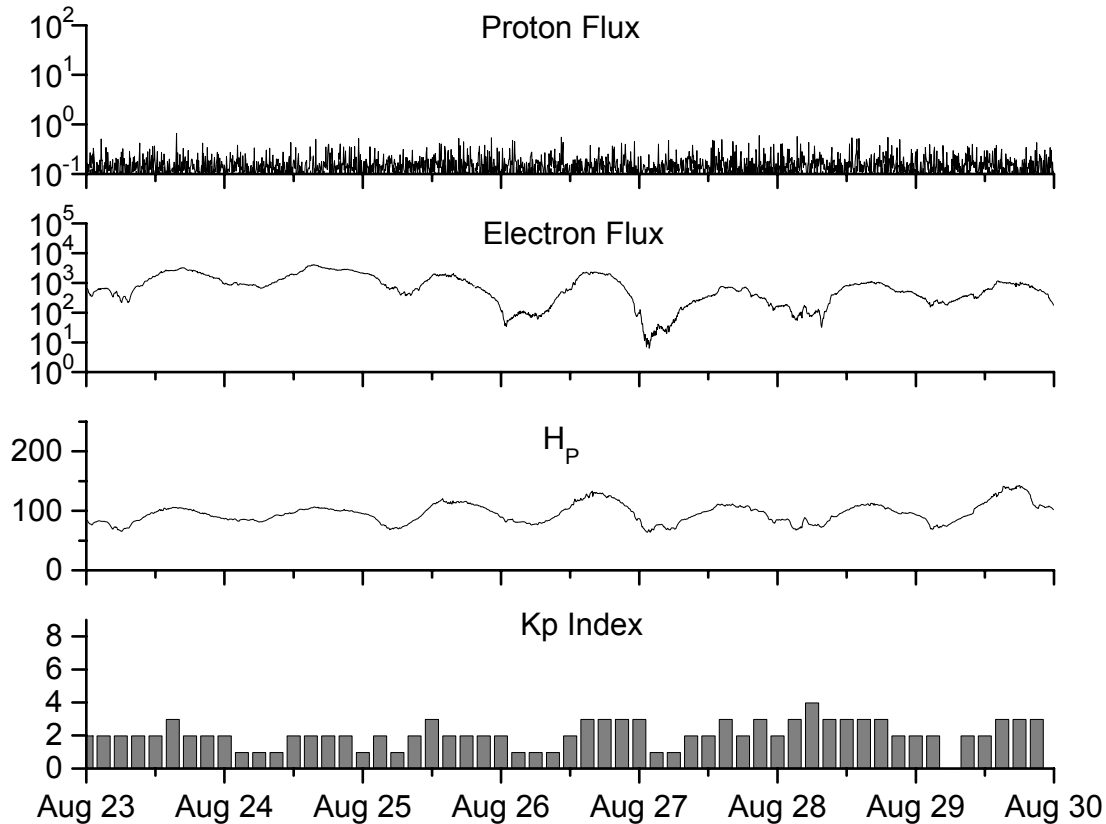


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

| Month | Sunspot Numbers | | | Radio Flux | | Geomagnetic | | | |
|-------------|------------------------|-------------|-----------------|----------------------|---------------------|-----------------------|-----------------|-----------------|-----------------|
| | Observed values SWO | Ratio RI | Ratio RI/SWO | Smooth values SWO | Smooth values RI | *Penticton 10.7 cm | Smooth Value | Planetary Ap | Smooth Value |
| 2002 | | | | | | | | | |
| August | 191.0 | 116.4 | 0.61 | 169.2 | 98.7 | 183.9 | 169.5 | 16 | 14.2 |
| September | 206.4 | 109.6 | 0.53 | 163.4 | 94.6 | 175.8 | 164.1 | 14 | 15.0 |
| October | 153.9 | 97.5 | 0.63 | 158.8 | 90.5 | 167.0 | 159.4 | 23 | 15.6 |
| November | 159.8 | 95.5 | 0.60 | 150.9 | 85.2 | 168.7 | 154.8 | 16 | 16.3 |
| December | 147.9 | 80.8 | 0.55 | 144.6 | 82.1 | 158.6 | 150.9 | 13 | 17.0 |
| 2003 | | | | | | | | | |
| January | 149.3 | 79.7 | 0.53 | 141.7 | 81.0 | 144.0 | 149.2 | 13 | 18.2 |
| February | 87.0 | 46.0 | 0.53 | 136.4 | 78.5 | 124.5 | 144.7 | 17 | 18.9 |
| March | 119.7 | 61.1 | 0.51 | 128.1 | 74.2 | 132.2 | 139.5 | 21 | 19.4 |
| April | 119.7 | 60.0 | 0.50 | 121.5 | 70.3 | 126.3 | 136.3 | 20 | 20.0 |
| May | 89.6 | 55.2 | 0.62 | 118.3 | 67.8 | 129.3 | 135.0 | 26 | 21.0 |
| June | 118.4 | 77.4 | 0.65 | 113.6 | 65.2 | 129.4 | 132.6 | 24 | 21.8 |
| July | 132.8 | 85.0 | 0.64 | 106.9 | 62.0 | 127.8 | 129.5 | 20 | 22.3 |
| August | 114.3 | 72.7 | 0.64 | 102.8 | 60.3 | 122.1 | 127.5 | 23 | 22.4 |
| September | 82.6 | 48.8 | 0.59 | 100.7 | 59.8 | 112.3 | 126.0 | 19 | 21.9 |
| October | 118.9 | 65.6 | 0.55 | 96.6 | 58.4 | 153.1 | 124.1 | 32 | 21.1 |
| November | 118.9 | 67.2 | 0.57 | 93.6 | 57.0 | 153.1 | 121.8 | 31 | 20.0 |
| December | 75.4 | 47.0 | 0.62 | 91.4 | 55.0 | 115.1 | 119.4 | 18 | 18.6 |
| 2004 | | | | | | | | | |
| January | 62.3 | 37.2 | 0.60 | 87.9 | 52.1 | 114.1 | 117.7 | 20 | 18.0 |
| February | 75.6 | 46.0 | 0.61 | | | 107.0 | | 13 | |
| March | 81.0 | 48.9 | 0.60 | | | 112.2 | | 12 | |
| April | 59.3 | 39.3 | 0.66 | | | 101.3 | | 10 | |
| May | 77.3 | 41.5 | 0.54 | | | 99.7 | | 9 | |
| June | 78.9 | 43.2 | 0.55 | | | 99.7 | | 9 | |
| July | 87.8 | 51.0 | 0.58 | | | 118.6 | | 21 | |

NOTE: All smoothed values after September 2002 and monthly values after March 2003 are preliminary estimates. The lowest smoothed sunspot index number for Cycle 22, RI = 8.0, occurred in May 1996. The highest smoothed sunspot number for Cycle 23, RI= 120.8, occurred April 2000. *After June 1991, the 10.7 cm radio flux data source is Penticton, B.C. Canada. Prior to that, it was Ottawa.





Weekly Geosynchronous Satellite Environment Summary
Week Beginning 23 August 2004

Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-11 (W98) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

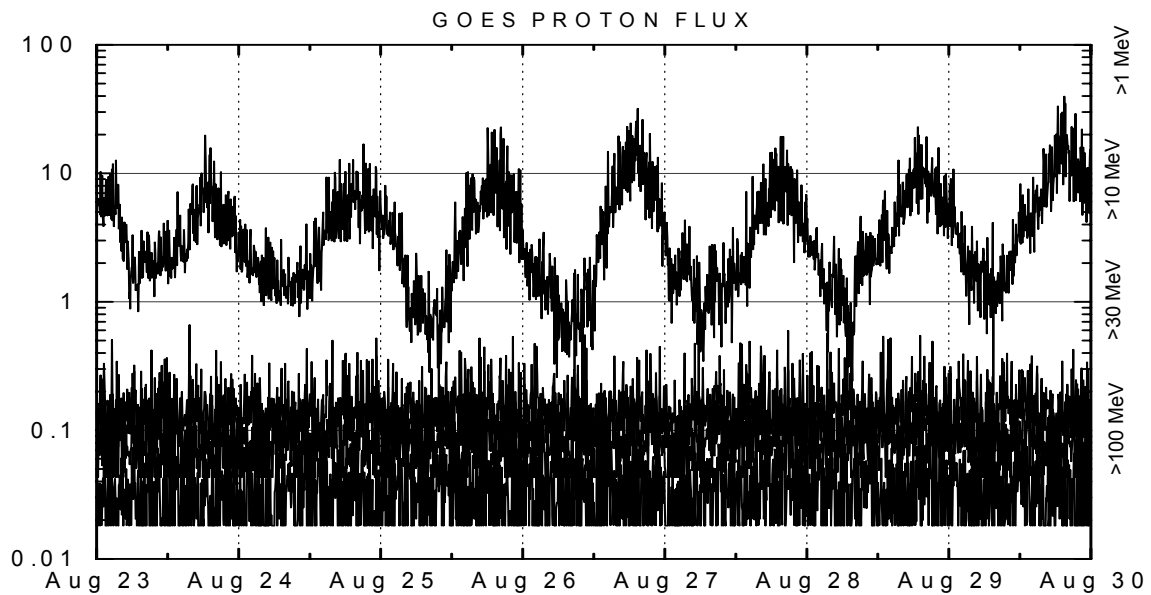
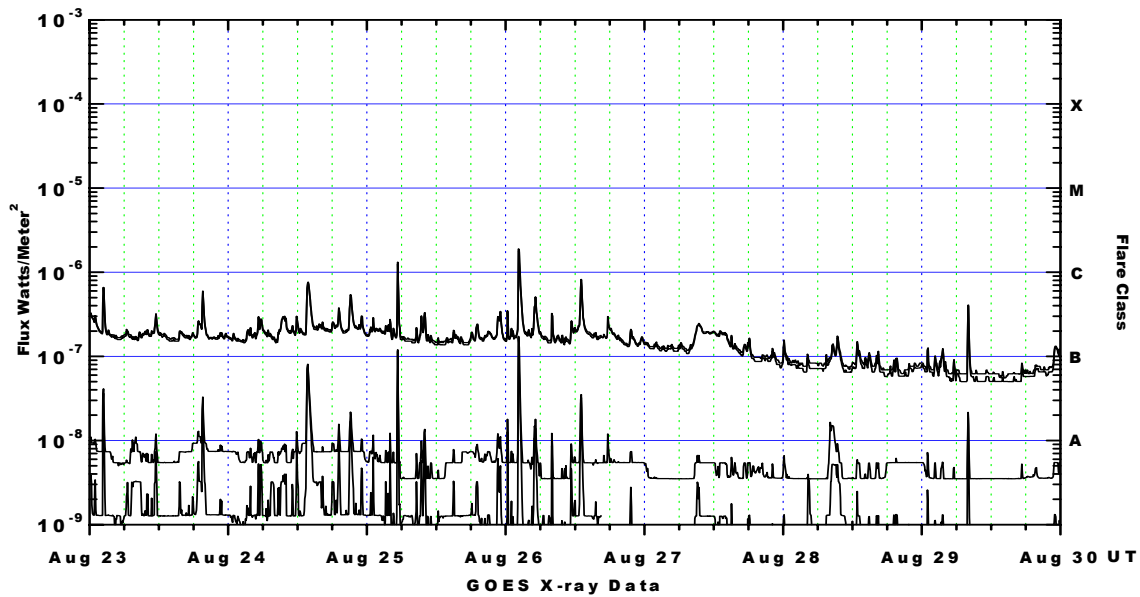
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec-sr) with energies greater than 2 MeV at GOES-12 (W75).

H_p plot contains the five minute averaged magnetic field H - component in nanoteslas (nT) as measured by GOES-12. The H component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

K_p 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 K_p values derived from a more extensive network of magnetometers.

The data included here are those now available in real time at the SWO 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 K_p are "global" parameters that are applicable to a first order approximation over large areas. H_p 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

X-ray plot contains five-minute averaged x-ray flux (watts/m²) as measured by GOES 12 (W75) and GOES 10 (W135) in two wavelength bands, .05 - .4 and .1 - .8 nm. The letters A, B, C, M and X refer to x-ray event levels for the .1 - .8 nm band.

Proton plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-11 (W98) for each of the energy thresholds: >1, >10, >30 and >100 MeV. P10 event threshold is 10 pfu (protons/cm²-sec-sr) at greater than 10 MeV.

