

Space Weather Highlights
26 September – 02 October 2005

SWO PRF 1570
04 October 2005

Solar activity was very low. The X-ray flux values were predominantly below B-class levels. The only regions on the visible disk this summary period were Region 810 (N09, L=107, class/area, Eki/250 on 23 September) and Region 812 (S01, L=28, class/area, Cso/30 on 23 September). Region 810 decayed to around 150 millionths in area by the time it rotated around the west limb on 29 September. Region 812 never exceeded 30 millionths in area and was no longer visible after 30 September. Neither region produced any activity of note. The remainder of the disk and limb was stable.

Solar wind data were available from the NASA Advanced Composition Explorer (ACE) spacecraft during most of the summary period. Solar wind speed ranged from a low of near 365 km/s on 28 September to high of 540 km/s on 01 October. Solar wind speed remained steady just below 400 km/s with the IMF Bz not varying much beyond +/- 5 nT until mid-day on 30 September when a co-rotating interaction region followed by a weak coronal hole high speed stream moved into a geoeffective position. The IMF Bz fluctuated between +/- 8 nT as wind speed increased to around 540 km/s. The summary period ended with wind speed around 450 km/s and the IMF Bz between +/- 5 nT.

No greater than 10 MeV proton events were observed this period.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels on 02 October.

The geomagnetic field ranged from quiet to active with periods of minor to major storming at high latitudes. Middle latitudes were quiet to unsettled with isolated active periods on 27 and 28 September. High latitudes were generally quiet to active with isolated minor and major storm periods on 26 and 27 September. Mostly quiet to unsettled periods were observed until mid-day on 30 September when the effects of a coronal hole high speed stream became geoeffective. Periods of minor and major storming were observed on 30 September. Conditions continued at quiet to minor storming through the end of the period.

Space Weather Outlook
05 October 2005 - 31 October 2005

Solar activity is expected to increase to low to moderate due to the return of old Region 808 (S11, L=232) on 04 October. Activity is expected to decrease to very low to low levels by 17 October.

There is a slight chance for a greater than 10 MeV proton event following the return of old Region 808 until 17 October. This region will rotate to the backside on 17 October.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels on 05 – 06 October, 08 – 22 October, and 29 – 31 October.

The geomagnetic field is expected to range from quiet to minor storm levels. Active to minor storm conditions are possible on 12 – 13 October and 28 – 29 October due to a recurrent coronal hole high speed wind stream. Otherwise, expect quiet to unsettled conditions.

Note: SEC will be making a minor change in the Space Weather Highlights section of the Preliminary Report and Forecast of Solar Geophysical Data (PRF). At present, there are five paragraphs describing the solar geophysical environment in the Space Weather Highlights section of the PRF; solar activity, solar wind, proton events, electron flux, and geomagnetic activity. SEC's change will combine solar wind and geomagnetic activity into one paragraph describing the period's geomagnetic activity with respect to solar wind data. The Space Weather Outlook section will remain the same. We will make this change effective on 25 October 2005 with PRF #1573.



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 | |
| 26 September | 81 | 25 | 160 | A2.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 September | 77 | 23 | 210 | A2.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 September | 75 | 22 | 200 | A1.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 September | 74 | 22 | 170 | A1.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 September | 72 | 13 | 20 | A1.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01 October | 72 | 0 | 0 | A1.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02 October | 75 | 0 | 0 | A4.6 | 0 | 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) | | |
|--------------|---|---------|----------|---|--------|--------|
| | >1 MeV | >10 MeV | >100 MeV | >.6 MeV | >2MeV | >4 MeV |
| | 26 September | 1.3E+6 | 1.6E+4 | 4.4E+3 | | 4.3E+6 |
| 27 September | 8.6E+5 | 1.6E+4 | 5.0E+3 | | 3.0E+6 | |
| 28 September | 7.6E+5 | 1.6E+4 | 5.0E+3 | | 6.5E+6 | |
| 29 September | 5.6E+5 | 1.6E+4 | 4.9E+3 | | 1.7E+7 | |
| 30 September | 1.1E+6 | 1.6E+4 | 5.3E+3 | | 1.6E+7 | |
| 01 October | 5.7E+5 | 1.4E+4 | 4.9E+3 | | 6.5E+6 | |
| 02 October | 8.0E+5 | 1.5E+4 | 5.4E+3 | | 6.7E+7 | |

Daily Geomagnetic Data

| Date | Middle Latitude Fredericksburg | | High Latitude College | | Estimated Planetary | |
|--------------|-----------------------------------|-----------------|--------------------------|---------------------|------------------------|-----------------|
| | A | K-indices | A | K-indices | A | K-indices |
| | 26 September | 9 | 3-2-2-2-3-2-2-2 | 16 | 2-2-3-5-4-2-1-3 | 14 |
| 27 September | 10 | 3-4-2-2-2-2-1-2 | 22 | 2-4-4-6-3-3-1-1 | 13 | 3-4-2-3-2-2-1-3 |
| 28 September | 12 | 3-2-4-2-2-3-2-2 | * | *_*_*_*_*_*_*_*_*_* | 12 | 3-3-4-2-2-3-2-2 |
| 29 September | 5 | 2-1-1-2-2-1-1-1 | 10 | 1-2-3-4-3-2-1-1 | 6 | 2-1-1-2-2-2-1-1 |
| 30 September | 6 | 0-1-1-2-3-2-2-2 | 22 | 0-0-2-5-6-4-1-2 | 11 | 1-2-1-3-4-3-2-2 |
| 01 October | 10 | 3-3-3-2-1-1-2-3 | 24 | 4-3-5-5-4-3-2-2 | 13 | 3-4-3-3-3-2-3-3 |
| 02 October | 8 | 2-2-3-2-1-2-2-2 | 29 | 3-3-5-5-5-5-1-2 | 13 | 4-3-4-2-2-3-2-2 |

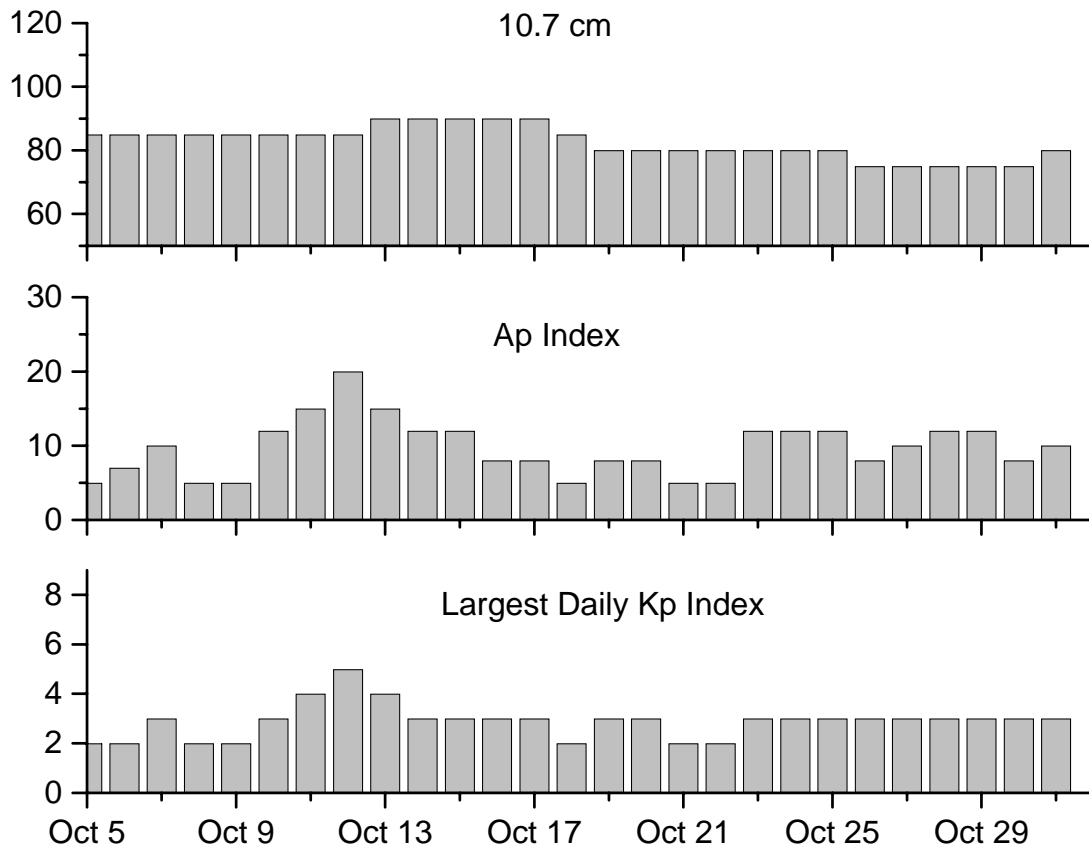


Alerts and Warnings Issued

| <u>Date & Time of Issue</u> | <u>Type of Alert or Warning</u> | <u>Date & Time of Event UTC</u> |
|---------------------------------|---|-------------------------------------|
| 26 Sep 0240 | ALERT: Geomagnetic K=4 | 26 Sep 0238 |
| 26 Sep 1439 | ALERT: Geomagnetic K = 4 | 26 Sep 1437 |
| 26 Sep 1439 | WARNING: Geomagnetic K = 4 | 26 Sep 1439 - Sep 26 2200 |
| 27 Sep 0410 | ALERT: Geomagnetic K = 4 | 27 Sep 0406 |
| 28 Sep 0151 | ALERT: Geomagnetic K = 4 | 28 Sep 0145 |
| 28 Sep 0519 | WARNING: Geomagnetic K = 4 | 28 Sep 0519 - 1500 |
| 30 Sep 1408 | ALERT: Geomagnetic K = 4 | 30 Sep 1406 |
| 01 Oct 0011 | WARNING: Geomagnetic K = 4 | 01 Oct 0015 - 02 Oct 1600 |
| 01 Oct 0452 | ALERT: Geomagnetic K = 4 | 01 Oct 0450 |
| 01 Oct 1837 | CANCEL WARNING: Geomagnetic K = 4 | 01 Oct 0011 |
| 02 Oct 0025 | WARNING: Geomagnetic K = 4 | 02 Oct 0030 - 1600 |
| 02 Oct 0147 | ALERT: Geomagnetic K = 4 | 02 Oct 0145 |
| 02 Oct 1316 | ALERT: Electron 2MeV Integral Flux >1000pfu | 02 Oct 1255 |



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 |
|--------|-----------------------|----------------------|---------------------|--------|-----------------------|----------------------|---------------------|
| 05 Oct | 85 | 5 | 2 | 19 Oct | 80 | 8 | 3 |
| 06 | 85 | 7 | 2 | 20 | 80 | 8 | 3 |
| 07 | 85 | 10 | 3 | 21 | 80 | 5 | 2 |
| 08 | 85 | 5 | 2 | 22 | 80 | 5 | 2 |
| 09 | 85 | 5 | 2 | 23 | 80 | 12 | 3 |
| 10 | 85 | 12 | 3 | 24 | 80 | 12 | 3 |
| 11 | 85 | 15 | 4 | 25 | 80 | 12 | 3 |
| 12 | 85 | 20 | 5 | 26 | 75 | 8 | 3 |
| 13 | 90 | 15 | 4 | 27 | 75 | 10 | 3 |
| 14 | 90 | 12 | 3 | 28 | 75 | 12 | 3 |
| 15 | 90 | 12 | 3 | 29 | 75 | 12 | 3 |
| 16 | 90 | 8 | 3 | 30 | 75 | 8 | 3 |
| 17 | 90 | 8 | 3 | 31 | 75 | 10 | 3 |
| 18 | 85 | 5 | 2 | | | | |



Energetic Events

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

No Events Observed

Flare List

| Date | Time | | | Optical | Imp / Brtns | Location Lat CMD | Rgn |
|--------------|--------------------|------|------|-----------------|----------------|---------------------|-----|
| | Begin | Max | End | X-ray Class. | | | |
| 26 September | No Flares Observed | | | | | | |
| 27 September | 0723 | 0732 | 0738 | | B1.3 | | |
| 28 September | No Flares Observed | | | | | | |
| 29 September | No Flares Observed | | | | | | |
| 30 September | No Flares Observed | | | | | | |
| 01 October | No Flares Observed | | | | | | |
| 02 October | No Flares Observed | | | | | | |



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 810</i> | | | | | | | | | | | | | | | | | |
| 17 Sep | N10E78 | 102 | 0050 | 02 | Hsx | 001 | A | | | | | | | | | | |
| 18 Sep | N10E69 | 098 | 0170 | 09 | Dao | 008 | B | | | | | | | | | | |
| 19 Sep | N10E51 | 103 | 0180 | 11 | Eao | 009 | B | | | | | | | | | | |
| 20 Sep | N10E37 | 104 | 0250 | 12 | Eai | 013 | B | | | | | | | | | | |
| 21 Sep | N08E21 | 107 | 0210 | 09 | Cai | 009 | B | | | | | | | | | | |
| 22 Sep | N09E07 | 107 | 0230 | 09 | Dki | 018 | B | | | | | | | | | | |
| 23 Sep | N09W06 | 107 | 0250 | 12 | Eki | 025 | Bg | 1 | | | 1 | | | | | | |
| 24 Sep | N08W19 | 107 | 0190 | 09 | Eko | 010 | B | | | | | | | | | | |
| 25 Sep | N08W35 | 110 | 0150 | 08 | Cao | 005 | B | | | | | | | | | | |
| 26 Sep | N08W49 | 111 | 0140 | 04 | Cho | 003 | B | | | | | | | | | | |
| 27 Sep | N08W62 | 110 | 0190 | 04 | Hsx | 001 | A | | | | | | | | | | |
| 28 Sep | N08W74 | 109 | 0180 | 03 | Hax | 001 | A | | | | | | | | | | |
| 29 Sep | N08W89 | 111 | 0150 | 03 | Hax | 001 | A | | | | | | | | | | |
| | | | | | | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Crossed West Limb. | | | | | | | | | | | | | | | | | |
| Absolute heliographic longitude: 107 | | | | | | | | | | | | | | | | | |
| <i>Region 812</i> | | | | | | | | | | | | | | | | | |
| 23 Sep | S01E73 | 028 | 0030 | 03 | Cso | 004 | B | | | | | | | | | | |
| 24 Sep | S03E62 | 026 | 0030 | 05 | Cao | 003 | B | | | | | | | | | | |
| 25 Sep | S02E45 | 030 | 0020 | 05 | Cso | 003 | B | | | | | | | | | | |
| 26 Sep | S01E32 | 030 | 0020 | 01 | Hsx | 002 | A | | | | | | | | | | |
| 27 Sep | S02E20 | 028 | 0020 | 04 | Hax | 002 | A | | | | | | | | | | |
| 28 Sep | S02E05 | 030 | 0020 | 01 | Hax | 001 | A | | | | | | | | | | |
| 29 Sep | S03W08 | 030 | 0020 | 01 | Hsx | 001 | A | | | | | | | | | | |
| 30 Sep | S03W20 | 029 | 0020 | 02 | Cso | 003 | B | | | | | | | | | | |
| 01 Oct | S03W33 | 029 | | | | | | | | | | | | | | | |
| | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Still on Disk. | | | | | | | | | | | | | | | | | |
| Absolute heliographic longitude: 030 | | | | | | | | | | | | | | | | | |

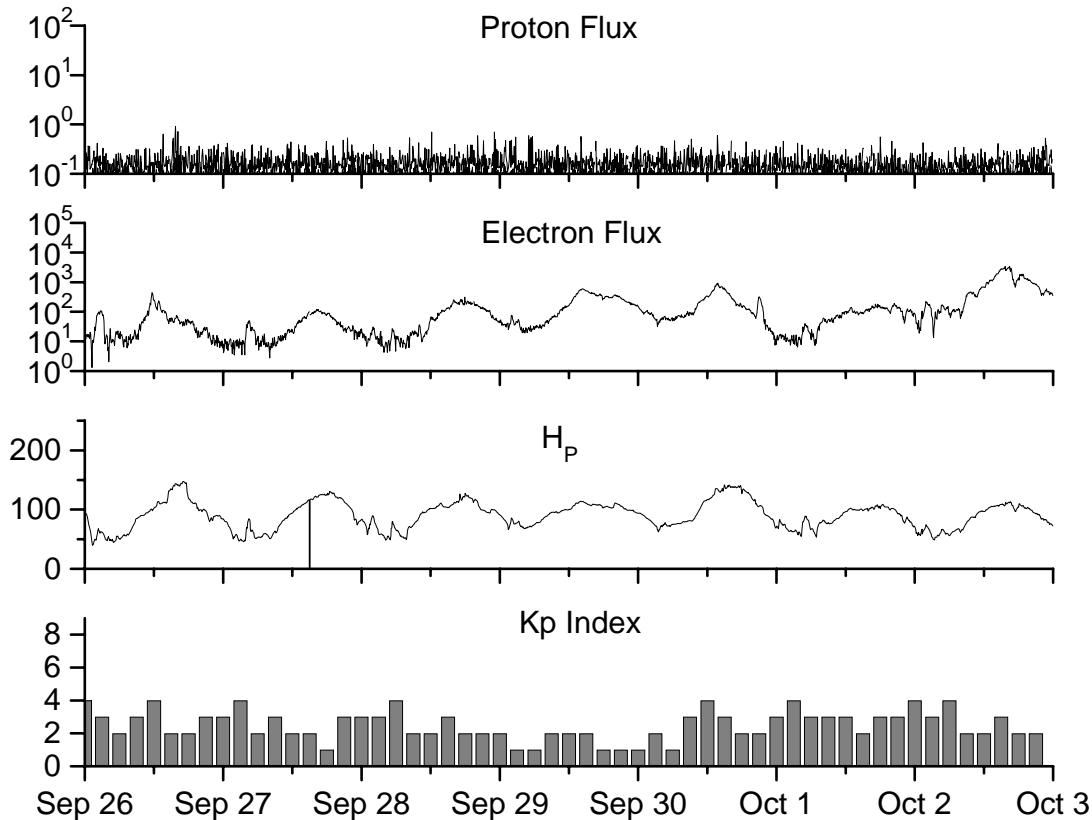


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

| 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 |
| 2003 | | | | | | | | | |
| October | 118.9 | 65.5 | 0.55 | 96.6 | 58.4 | 153.1 | 121.8 | 35 | 21.1 |
| November | 118.9 | 67.3 | 0.57 | 93.6 | 57.0 | 153.1 | 120.1 | 28 | 20.0 |
| December | 75.4 | 46.5 | 0.62 | 91.4 | 55.0 | 115.1 | 118.0 | 16 | 18.6 |
| 2004 | | | | | | | | | |
| January | 62.3 | 37.7 | 0.61 | 87.9 | 52.0 | 114.1 | 116.3 | 22 | 18.1 |
| February | 75.6 | 45.8 | 0.61 | 84.2 | 49.4 | 107.0 | 115.5 | 13 | 17.7 |
| March | 81.0 | 49.1 | 0.61 | 80.9 | 47.2 | 112.2 | 114.6 | 14 | 16.9 |
| April | 59.3 | 39.3 | 0.66 | 77.9 | 45.6 | 101.2 | 112.3 | 11 | 15.5 |
| May | 77.3 | 41.5 | 0.54 | 74.1 | 43.9 | 99.8 | 109.2 | 8 | 14.3 |
| June | 78.9 | 43.2 | 0.55 | 70.4 | 41.7 | 97.4 | 107.2 | 8 | 14.0 |
| July | 87.8 | 51.0 | 0.58 | 68.3 | 40.2 | 118.5 | 105.9 | 23 | 13.8 |
| August | 69.5 | 40.9 | 0.59 | 66.6 | 39.3 | 110.1 | 105.0 | 11 | 13.8 |
| September | 50.0 | 27.7 | 0.55 | 63.7 | 37.6 | 103.1 | 103.7 | 10 | 13.6 |
| October | 77.9 | 48.4 | 0.62 | 61.3 | 35.9 | 105.7 | 102.1 | 9 | 13.5 |
| November | 70.5 | 43.7 | 0.62 | 60.0 | 35.4 | 113.2 | 101.5 | 26 | 14.1 |
| December | 34.7 | 17.9 | 0.52 | 58.8 | 35.3 | 94.6 | 101.3 | 11 | 14.8 |
| 2005 | | | | | | | | | |
| January | 52.0 | 31.3 | 0.60 | 57.3 | 34.7 | 102.4 | 100.3 | 22 | 14.7 |
| February | 45.4 | 29.1 | 0.64 | 56.4 | 34.0 | 97.3 | 98.5 | 11 | 14.6 |
| March | 41.0 | 24.8 | 0.60 | 55.8 | 33.6 | 90.0 | 97.2 | 12 | 15.3 |
| April | 41.5 | 24.4 | 0.59 | | | 85.9 | | 12 | |
| May | 65.4 | 42.6 | 0.65 | | | 99.5 | | 20 | |
| June | 59.8 | 39.6 | 0.66 | | | 93.7 | | 13 | |
| July | 71.0 | 39.9 | 0.56 | | | 96.6 | | 16 | |
| August | 65.6 | 36.4 | 0.55 | | | 90.7 | | 16 | |
| September | 39.2 | 22.1 | 0.56 | | | 90.8 | | 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 26 September 2005

Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-11 (W113) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

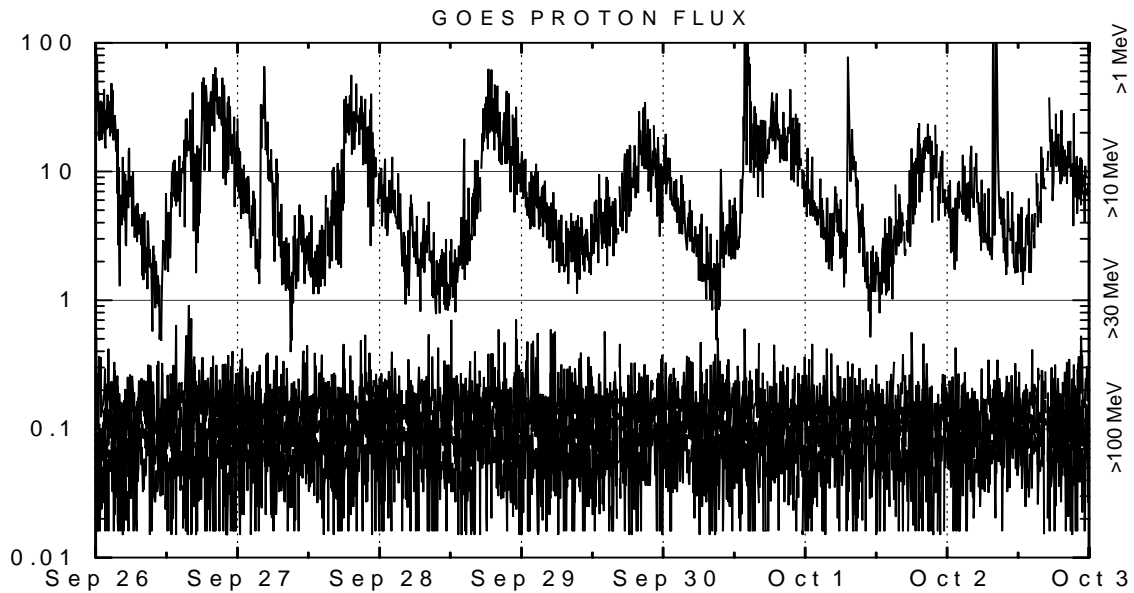
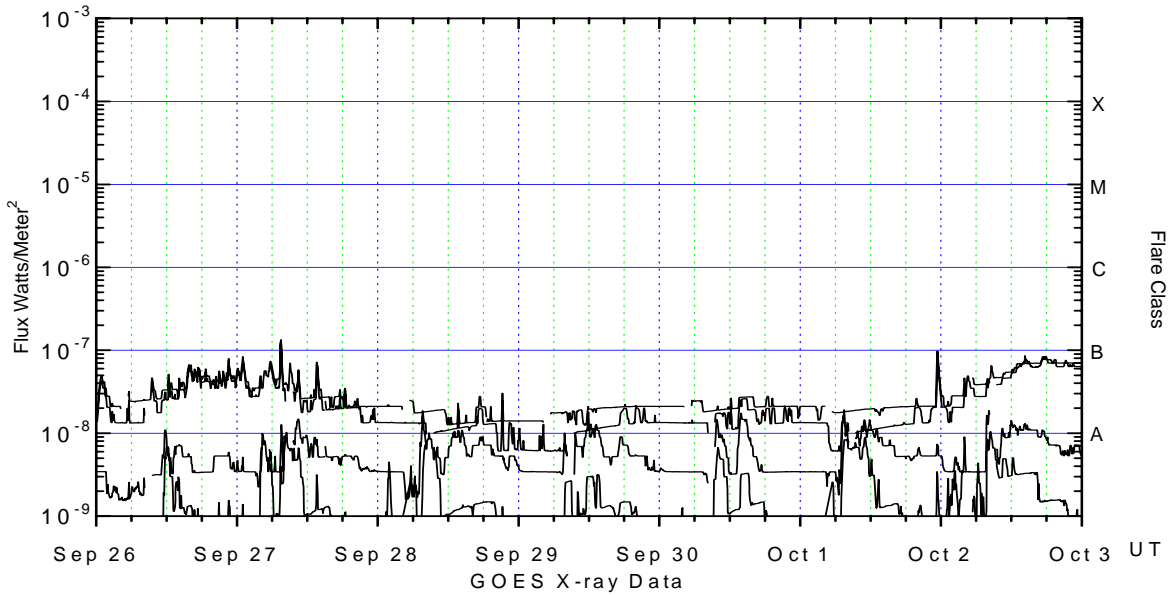
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec-sr) with energies greater than 2 MeV at GOES-12 (W75).

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 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

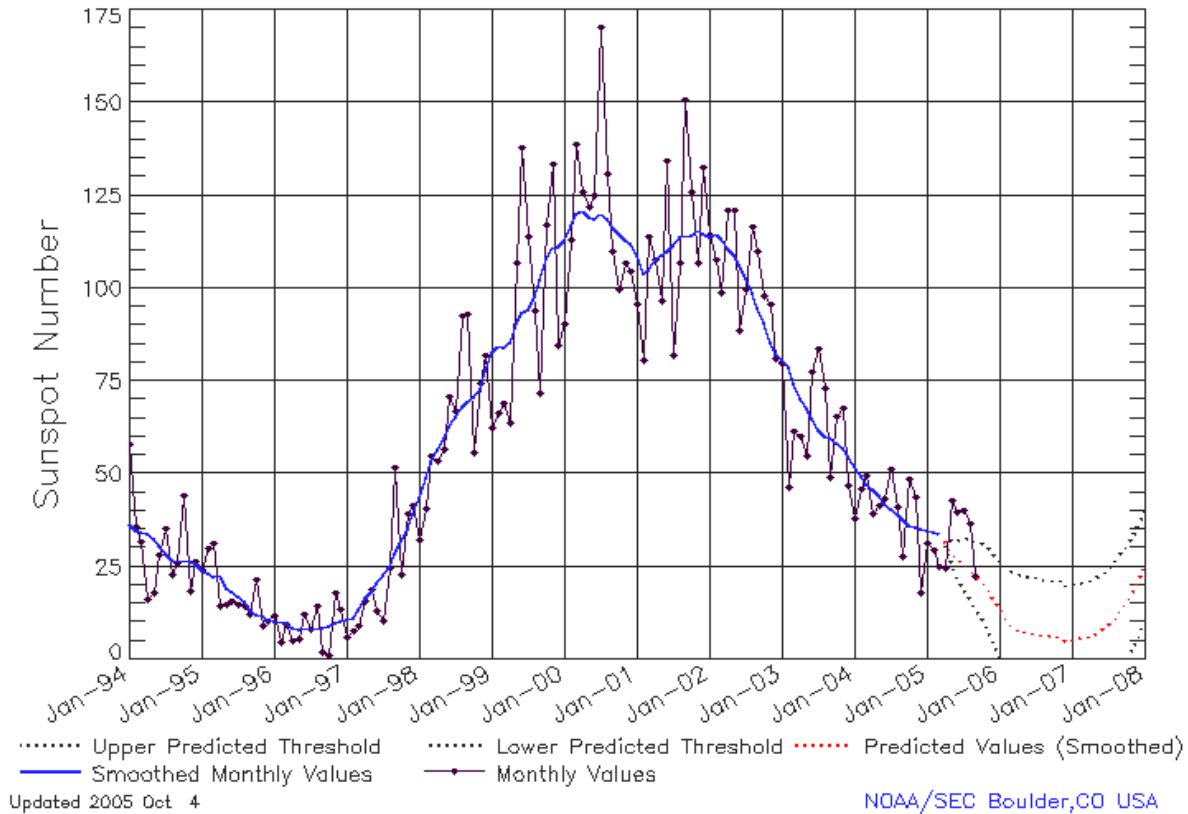
X-ray plot contains five-minute averaged x-ray flux (watts/m²) as measured by GOES 12 (W75) and GOES 10 (W135) in two wavelength bands, .05 - .4 and .1 - .8 nm. The letters A, B, C, M and X refer to x-ray event levels for the .1 - .8 nm band.

Proton plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-11 (W113) 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.



ISES Solar Cycle Sunspot Number Progression

Data Through 30 Sep 05



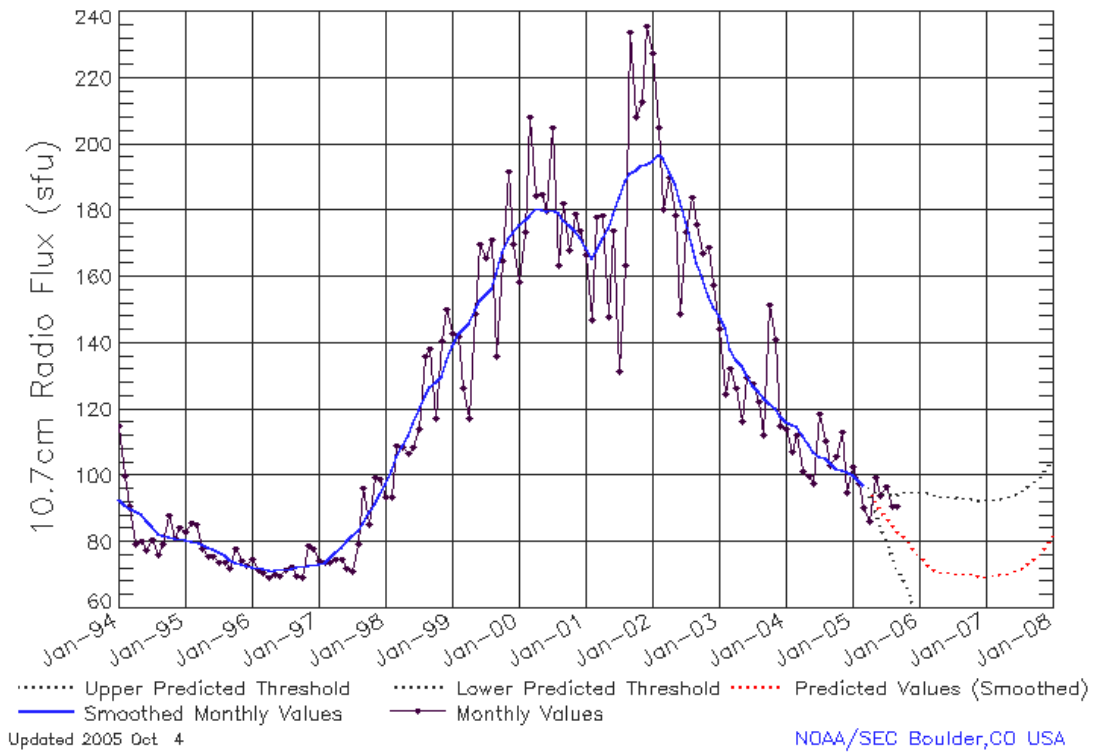
SEC Prediction of Smoothed Sunspot Number

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1998 | 44 | 49 | 53 | 57 | 59 | 63 | 66 | 68 | 70 | 71 | 73 | 78 |
| | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) |
| 1999 | 83 | 85 | 84 | 86 | 91 | 93 | 94 | 98 | 102 | 108 | 111 | 111 |
| | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) |
| 2000 | 113 | 117 | 120 | 121 | 119 | 119 | 120 | 119 | 116 | 115 | 113 | 112 |
| | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) |
| 2001 | 109 | 104 | 105 | 108 | 109 | 110 | 112 | 114 | 114 | 114 | 116 | 115 |
| | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) |
| 2002 | 114 | 115 | 113 | 111 | 109 | 106 | 103 | 99 | 95 | 91 | 85 | 82 |
| | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) |
| 2003 | 81 | 79 | 74 | 70 | 68 | 65 | 62 | 60 | 60 | 58 | 57 | 55 |
| | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) |
| 2004 | 52 | 49 | 47 | 46 | 44 | 42 | 40 | 39 | 38 | 36 | 35 | 35 |
| | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) | (***) |
| 2005 | 35 | 34 | 34 | 32 | 29 | 27 | 26 | 24 | 23 | 21 | 19 | 16 |
| | (***) | (***) | (***) | (1) | (3) | (5) | (7) | (8) | (9) | (10) | (11) | (12) |
| 2006 | 14 | 11 | 9 | 8 | 8 | 7 | 7 | 7 | 7 | 6 | 6 | 5 |
| | (13) | (14) | (15) | (15) | (15) | (15) | (15) | (15) | (15) | (15) | (15) | (15) |
| 2007 | 5 | 6 | 6 | 6 | 7 | 8 | 10 | 11 | 13 | 16 | 18 | 21 |
| | (15) | (15) | (15) | (15) | (15) | (15) | (15) | (15) | (15) | (15) | (15) | (15) |



ISES Solar Cycle F10.7cm Radio Flux Progression

Data Through 30 Sep 05



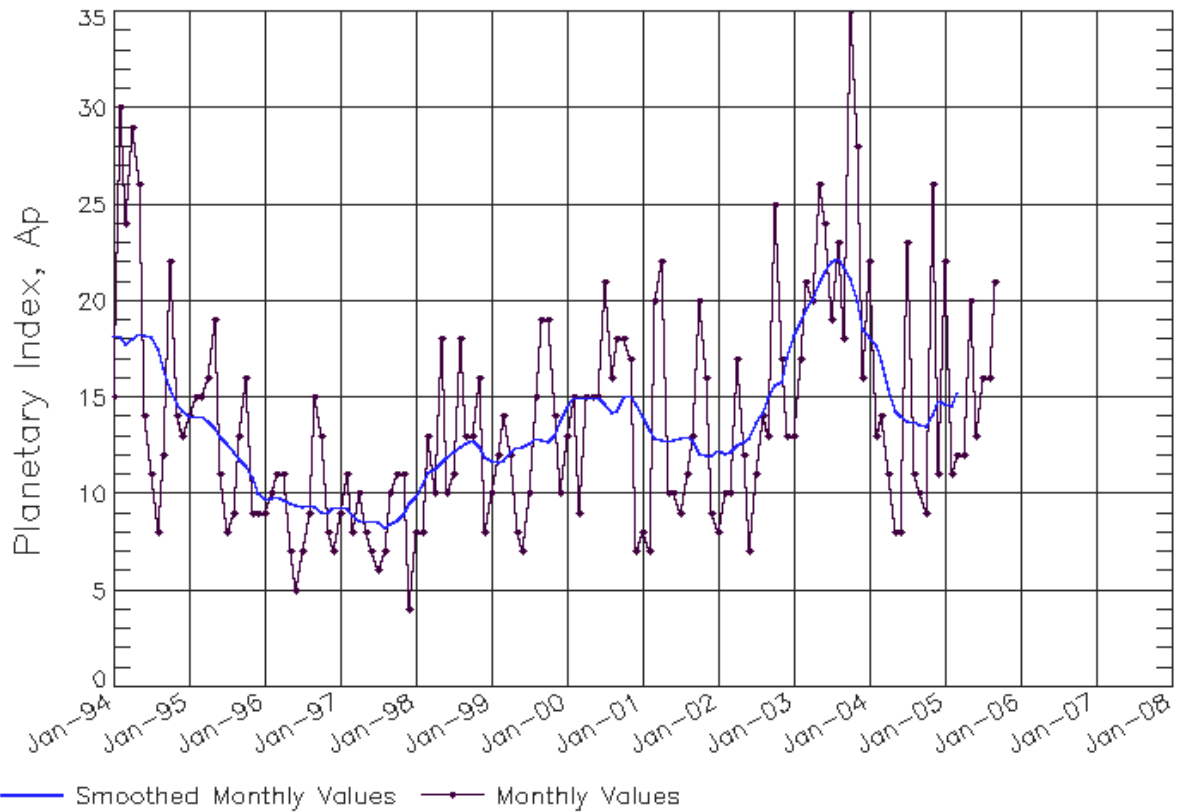
SEC Prediction of Smoothed F10.7cm Radio Flux

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 1998 | 98 (***) | 102 (***) | 106 (***) | 109 (***) | 112 (***) | 116 (***) | 120 (***) | 124 (***) | 127 (***) | 128 (***) | 130 (***) | 134 (***) |
| 1999 | 139 (***) | 143 (***) | 144 (***) | 146 (***) | 150 (***) | 153 (***) | 154 (***) | 156 (***) | 161 (***) | 167 (***) | 172 (***) | 173 (***) |
| 2000 | 176 (***) | 177 (***) | 178 (***) | 181 (***) | 180 (***) | 180 (***) | 180 (***) | 179 (***) | 177 (***) | 176 (***) | 174 (***) | 172 (***) |
| 2001 | 169 (***) | 166 (***) | 168 (***) | 172 (***) | 175 (***) | 179 (***) | 184 (***) | 189 (***) | 191 (***) | 192 (***) | 194 (***) | 194 (***) |
| 2002 | 195 (***) | 197 (***) | 196 (***) | 192 (***) | 188 (***) | 183 (***) | 176 (***) | 170 (***) | 164 (***) | 159 (***) | 154 (***) | 151 (***) |
| 2003 | 148 (***) | 145 (***) | 138 (***) | 135 (***) | 133 (***) | 130 (***) | 127 (***) | 125 (***) | 124 (***) | 122 (***) | 120 (***) | 118 (***) |
| 2004 | 116 (***) | 116 (***) | 115 (***) | 112 (***) | 109 (***) | 107 (***) | 106 (***) | 105 (***) | 104 (***) | 102 (***) | 102 (***) | 101 (***) |
| 2005 | 100 (***) | 99 (***) | 97 (***) | 95 (1) | 92 (3) | 90 (5) | 88 (7) | 85 (9) | 83 (11) | 82 (13) | 80 (15) | 78 (17) |
| 2006 | 76 (19) | 74 (21) | 72 (22) | 71 (23) | 71 (23) | 71 (23) | 71 (23) | 71 (23) | 70 (23) | 70 (23) | 70 (23) | 70 (23) |
| 2007 | 70 (23) | 70 (23) | 70 (23) | 70 (23) | 71 (23) | 71 (23) | 72 (23) | 73 (23) | 74 (23) | 76 (23) | 77 (23) | 79 (23) |



ISES Solar Cycle Ap Progression

Data Through 30 Sep 05



Updated 2005 Oct 4

NOAA/SEC Boulder, CO USA

