

Space Weather Highlights
31 October – 06 November 2005

SWO PRF 1575
08 November 2005

Solar activity was at very low to low levels. Region 820 (S17, L=281, class/area, Dao/070 on 06 November) produced a C1 flare at 06/1443 UTC. This region developed on the visible disk as a simple beta magnetic group on 05 November and had displayed a relatively small increase in area by 06 November.

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 04 – 06 November.

The geomagnetic field ranged from quiet to active levels with minor to major storm periods at high latitudes. Solar wind speed ranged from a low of approximately 350 km/s on 31 October to a high of 750 km/s on 04 November. Early on 31 October, a prolonged period of southward Bz around – 10 nT was observed. The geomagnetic field responded with minor to major storm periods at high latitudes until late on 31 October. Conditions persisted at mostly quiet to unsettled levels until late on 02 November, when a coronal hole high speed stream moved into geoeffective position. Wind speed increased to 610 km/s by the end of the day on 02 November with the IMF Bz fluctuating briefly between +/- 15 nT. Unsettled to active periods were observed at middle latitudes with unsettled to major storm periods at high latitudes on 03 through 04 November. By 04 November, wind speed reached a maximum around 750 km/s; while the IMF Bz settled down to around +/- 5 nT. Solar wind began to slowly decrease thereafter and geomagnetic conditions at middle and high latitudes calmed to mostly unsettled conditions through the rest of the period. The period ended with a solar wind speed around 600 km/s.

Space Weather Outlook
09 November - 05 December 2005

Solar activity is expected to be very low to low.

No greater than 10 MeV proton events are expected.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels on 09 – 11 November, 16 – 17 November, and 01 – 05 December.

The geomagnetic field is expected to range from quiet to minor storm levels. Unsettled to minor storm levels are possible on 11 November, 21 November, and 30 November – 01 December due to recurrent coronal hole high speed wind streams. Otherwise, expect quiet to unsettled conditions.



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 | |
| 31 October | 78 | 29 | 60 | A2.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01 November | 77 | 33 | 80 | A3.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02 November | 78 | 36 | 70 | A3.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03 November | 77 | 24 | 40 | A3.3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 04 November | 77 | 22 | 20 | A3.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05 November | 79 | 18 | 50 | A3.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06 November | 82 | 34 | 70 | A4.3 | 1 | 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 |
| | 31 October | 6.8E+5 | 1.4E+4 | 3.2E+3 | | 2.5E+6 |
| 01 November | 2.7E+5 | 1.3E+4 | 3.2E+3 | | 1.8E+6 | |
| 02 November | 8.5E+5 | 1.4E+4 | 3.3E+3 | | 7.1E+6 | |
| 03 November | 2.1E+6 | 1.4E+4 | 3.1E+3 | | 9.4E+6 | |
| 04 November | 2.0E+6 | 1.3E+4 | 3.0E+3 | | 9.3E+7 | |
| 05 November | 1.9E+6 | 1.4E+4 | 3.2E+3 | | 1.8E+8 | |
| 06 November | 1.1E+6 | 1.4E+4 | 3.2E+3 | | 1.5E+8 | |

Daily Geomagnetic Data

| Date | Middle Latitude Fredericksburg | | High Latitude College | | Estimated Planetary | |
|-------------|-----------------------------------|-----------------|--------------------------|-----------------|------------------------|-----------------|
| | A | K-indices | A | K-indices | A | K-indices |
| | 31 October | 6 | 0-2-1-1-2-2-2-3 | 35 | 1-1-1-5-6-6-5-3 | 13 |
| 01 November | 7 | 3-1-0-2-1-2-1-3 | 12 | 3-1-0-4-4-3-2-1 | 8 | 3-2-0-2-2-3-1-2 |
| 02 November | 5 | 1-1-0-0-1-1-3-3 | 5 | 2-1-0-0-1-1-3-2 | 6 | 1-1-0-0-0-1-3-3 |
| 03 November | 19 | 4-4-3-3-3-2-3-4 | 43 | 2-5-3-6-6-5-5-3 | 24 | 3-5-3-4-3-4-3-4 |
| 04 November | 16 | 4-4-4-2-2-3-3-1 | 22 | 3-4-3-4-4-4-4-2 | 20 | 4-4-3-3-3-3-4-2 |
| 05 November | 10 | 3-2-4-1-2-2-1-2 | 14 | 3-3-4-2-3-3-2-2 | 10 | 2-3-4-1-2-2-1-2 |
| 06 November | 12 | 4-2-2-2-2-3-3-2 | 15 | 2-2-2-5-3-3-3-2 | 10 | 3-3-2-2-2-2-3-2 |

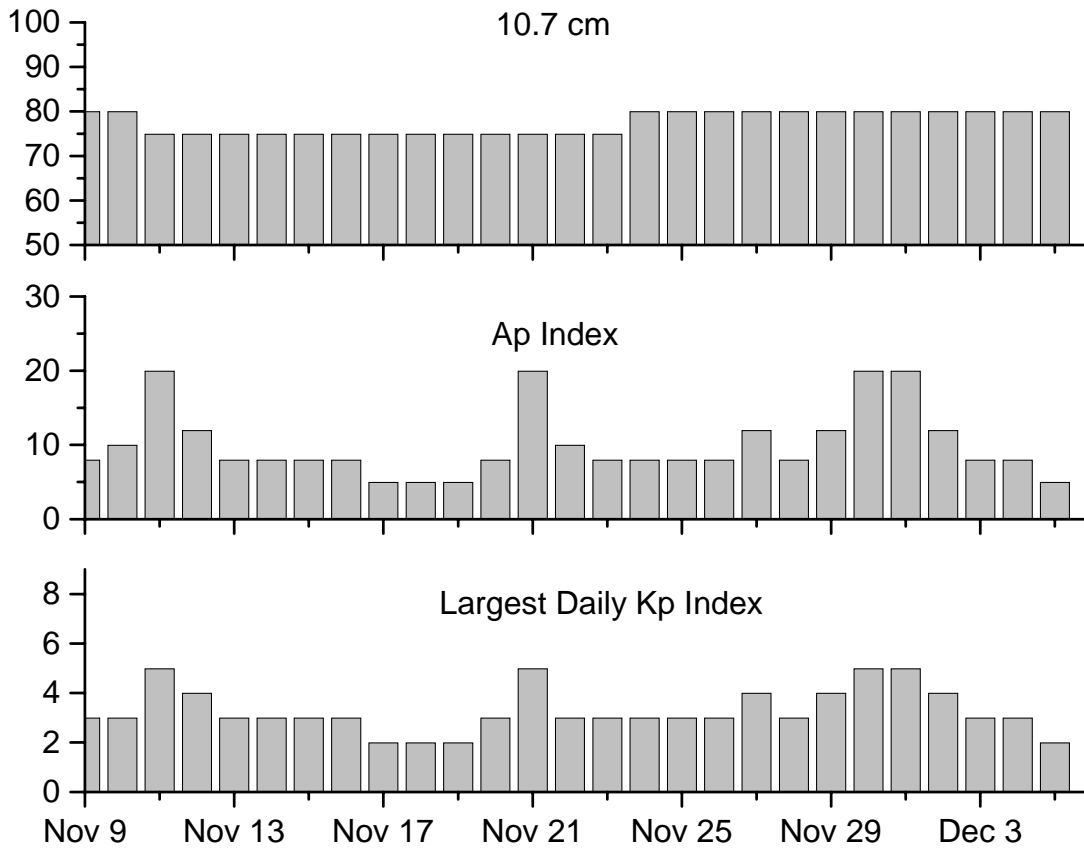


Alerts and Warnings Issued

| <u>Date & Time of Issue</u> | <u>Type of Alert or Warning</u> | <u>Date & Time of Event UTC</u> |
|---------------------------------|--|-------------------------------------|
| 31 Oct 1642 | WARNING: Geomagnetic K = 4 | 31 Oct 1643 - 2359 |
| 31 Oct 1713 | ALERT: Geomagnetic K = 4 | 31 Oct 1711 |
| 03 Nov 0443 | ALERT: Geomagnetic K = 4 | 03 Nov 03 0440 |
| 03 Nov 0500 | ALERT: Geomagnetic K = 5 | 03 Nov 03 0455 |
| 03 Nov 0507 | WARNING: Geomagnetic K = 4 | 03 Nov 0508 - 1600 |
| 03 Nov 1555 | EXTENDED WARNING: Geomagnetic K = 4 | 03 Nov 0508 - 2359 |
| 03 Nov 2204 | WATCH: Geomagnetic A \geq 20 | 04 Nov |
| 04 Nov 0038 | EXTENDED WARNING: Geomagnetic K= 4 | 03 Nov 0508 -04 Nov 1600 |
| 04 Nov 0154 | ALERT: Geomagnetic K= 5 | 04 Nov 0130 |
| 04 Nov 0534 | WARNING: Geomagnetic K = 4 | 04 Nov 0535 - 1600 |
| 04 Nov 0535 | WARNING: Geomagnetic K = 5 | 04 Nov 0535 - 1600 |
| 04 Nov 0537 | ALERT: Geomagnetic K= 5 | 04 Nov 0535 |
| 04 Nov 1132 | ALERT: Electron 2MeV Integral Flux > 1000pfu | 04 Nov 1115 |
| 04 Nov 1601 | EXTENDED WARNING: Geomagnetic K = 4 | 04 Nov 0535 - 2359 |
| 05 Nov 0039 | EXTENDED WARNING: Geomagnetic K = 4 | 04 Nov 0535 – 05 Nov 1600 |
| 05 Nov 0740 | ALERT: Electron 2MeV Integral Flux > 1000pfu | 05 Nov 0724 |
| 05 Nov 1602 | EXTENDED WARNING: Geomagnetic K = 4 | 04 Nov 0535 – 05 Nov 2359 |
| 06 Nov 0049 | EXTENDED WARNING: Geomagnetic K = 4 | 04 Nov 0535 -06 Nov 1600 |
| 06 Nov 0746 | ALERT: Electron 2MeV Integral Flux > 1000pfu | 06 Nov 0715 |



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 |
|--------|-----------------------|----------------------|---------------------|--------|-----------------------|----------------------|---------------------|
| 09 Nov | 80 | 8 | 3 | 23 Nov | 75 | 8 | 3 |
| 10 | 80 | 10 | 3 | 24 | 80 | 8 | 3 |
| 11 | 75 | 20 | 5 | 25 | 80 | 8 | 3 |
| 12 | 75 | 12 | 4 | 26 | 80 | 8 | 3 |
| 13 | 75 | 8 | 3 | 27 | 80 | 12 | 4 |
| 14 | 75 | 8 | 3 | 28 | 80 | 8 | 3 |
| 15 | 75 | 8 | 3 | 29 | 80 | 12 | 4 |
| 16 | 75 | 8 | 3 | 30 | 80 | 20 | 5 |
| 17 | 75 | 5 | 2 | 01 Dec | 80 | 20 | 5 |
| 18 | 75 | 5 | 2 | 02 | 80 | 12 | 4 |
| 19 | 75 | 5 | 2 | 03 | 80 | 8 | 3 |
| 20 | 75 | 8 | 3 | 04 | 80 | 8 | 3 |
| 21 | 75 | 20 | 5 | 05 | 80 | 5 | 2 |
| 22 | 75 | 10 | 3 | | | | |



Energetic Events

| Date | Time | | X-ray | Optical Information | | | Peak | | Sweep Freq | |
|------|-------|-----|-------|---------------------|----------|-----|------------|-----|------------|----|
| | Begin | Max | Integ | Imp/ | Location | Rgn | Radio Flux | | Intensity | |
| | | | Class | Flux | 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. | | | |
| 31 October | 1630 | 1643 | 1659 | B8.7 | | | |
| 01 November | No Flares Observed | | | | | | |
| 02 November | 1352 | 1406 | 1416 | B1.7 | | | |
| | 1443 | 1448 | 1452 | B2.0 | | | 818 |
| 03 November | 0448 | 0449 | 0455 | B9.1 | Sf | S10W03 | 819 |
| | 0708 | 0720 | 0736 | B3.0 | | | 819 |
| 04 November | No Flares Observed | | | | | | |
| 05 November | 1614 | 1619 | 1630 | B1.2 | | | 820 |
| | 1724 | 1728 | 1733 | B1.2 | | | 820 |
| | 1817 | 1823 | 1831 | B2.0 | | | |
| | 2055 | 2103 | 2108 | B6.4 | | | 820 |
| | 2150 | 2154 | 2158 | B3.0 | | | 820 |
| | 2249 | 2303 | 2310 | B3.2 | | | 820 |
| 06 November | 0049 | 0054 | 0101 | B1.4 | | | |
| | 0152 | 0202 | 0211 | B3.5 | | | 820 |
| | 0533 | 0544 | 0553 | B4.5 | | | 820 |
| | 0706 | 0710 | 0713 | B1.2 | | | |
| | 1438 | 1443 | 1446 | C1.1 | | | 820 |
| | 2314 | 2320 | 2327 | B4.4 | | | 820 |



Region Summary

| Date | Location | | Sunspot Characteristics | | | | Flares | | | | | | | | | | | | | | | |
|--------------------------------------|----------------|-------|---------------------------------|-------------------|---------------|---------------|--------------|-------|---|---|---------|---|---|---|---|--|--|--|--|--|-----------------|-----------------|
| | (° Lat ° CMD) | Helio | Area (10 ⁻⁶ hemi) | Extent (helio) | Spot Class | Spot Count | Mag Class | X-ray | | | Optical | | | | | | | | | | | |
| | | Lon | | | | | | C | M | X | S | 1 | 2 | 3 | 4 | | | | | | | |
| <i>Region 818</i> | | | | | | | | | | | | | | | | | | | | | | |
| 29 Oct | S08E66 | 284 | 0010 | 01 | Axx | 001 | A | | | | | | | | | | | | | | | |
| 30 Oct | S06E47 | 285 | 0040 | 06 | Cso | 004 | B | | | | | | | | | | | | | | | |
| 31 Oct | S08E32 | 287 | 0040 | 06 | Dso | 006 | B | | | | | | | | | | | | | | | |
| 01 Nov | S08E19 | 287 | 0050 | 06 | Dso | 007 | B | | | | | | | | | | | | | | | |
| 02 Nov | S08E06 | 289 | 0040 | 07 | Bxo | 009 | B | | | | | | | | | | | | | | | |
| 03 Nov | S08W08 | 288 | 0030 | 03 | Cso | 003 | B | | | | | | | | | | | | | | | |
| 04 Nov | S08W21 | 287 | 0010 | 01 | Axx | 001 | A | | | | | | | | | | | | | | | |
| 05 Nov | S16W27 | 280 | | | | | | | | | | | | | | | | | | | | |
| 06 Nov | S16W40 | 280 | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | 0 0 0 0 0 0 0 0 | |
| Still on Disk. | | | | | | | | | | | | | | | | | | | | | | |
| Absolute heliographic longitude: 289 | | | | | | | | | | | | | | | | | | | | | | |
| <i>Region 819</i> | | | | | | | | | | | | | | | | | | | | | | |
| 31 Oct | S09E26 | 293 | 0020 | 03 | Cso | 003 | B | | | | | | | | | | | | | | | |
| 01 Nov | S09E12 | 294 | 0030 | 04 | Cso | 006 | B | | | | | | | | | | | | | | | |
| 02 Nov | S09W01 | 294 | 0030 | 06 | Bxo | 007 | B | | | | | | | | | | | | | | | |
| 03 Nov | S09W14 | 294 | 0010 | 01 | Axx | 001 | A | | | | | | | | | | | | | | 1 | |
| 04 Nov | S07W28 | 294 | 0010 | 01 | Axx | 001 | A | | | | | | | | | | | | | | | |
| 05 Nov | S07W41 | 294 | | | | | | | | | | | | | | | | | | | | |
| 06 Nov | S11W57 | 297 | 0000 | 01 | Axx | 001 | A | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 0 0 0 1 0 0 0 0 |
| Still on Disk. | | | | | | | | | | | | | | | | | | | | | | |
| Absolute heliographic longitude: 294 | | | | | | | | | | | | | | | | | | | | | | |
| <i>Region 820</i> | | | | | | | | | | | | | | | | | | | | | | |
| 05 Nov | S16W27 | 280 | 0050 | 04 | Dao | 008 | B | | | | | | | | | | | | | | | |
| 06 Nov | S17W41 | 281 | 0070 | 09 | Dao | 013 | B | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | | | | | | | | | | | 1 0 0 0 0 0 0 0 |
| Still on Disk. | | | | | | | | | | | | | | | | | | | | | | |
| Absolute heliographic longitude: 280 | | | | | | | | | | | | | | | | | | | | | | |

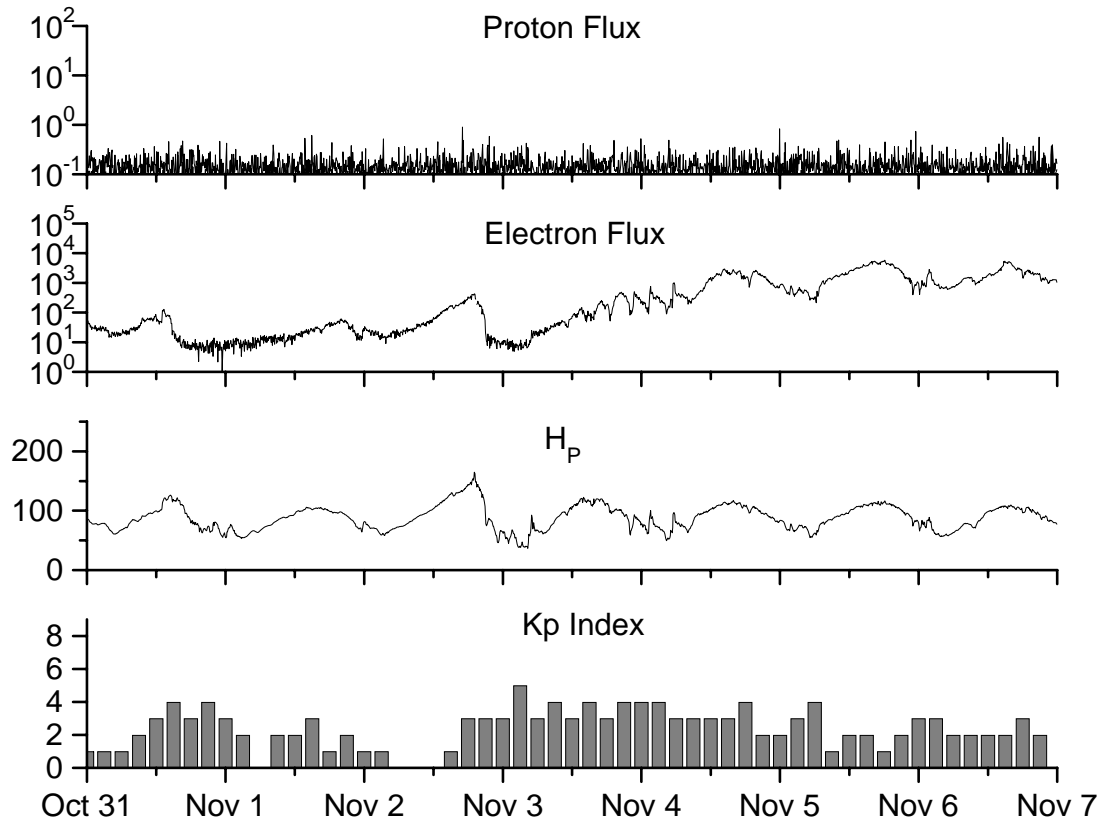


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

| 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 | | | | | | | | | |
| 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 | 52.6 | 31.7 | 85.9 | 95.5 | 12 | 15.7 |
| 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 | |
| October | 13.0 | 8.5 | 0.65 | | | 76.7 | | 7 | |

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 31 October 2005

Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by GOES-11 (W112) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

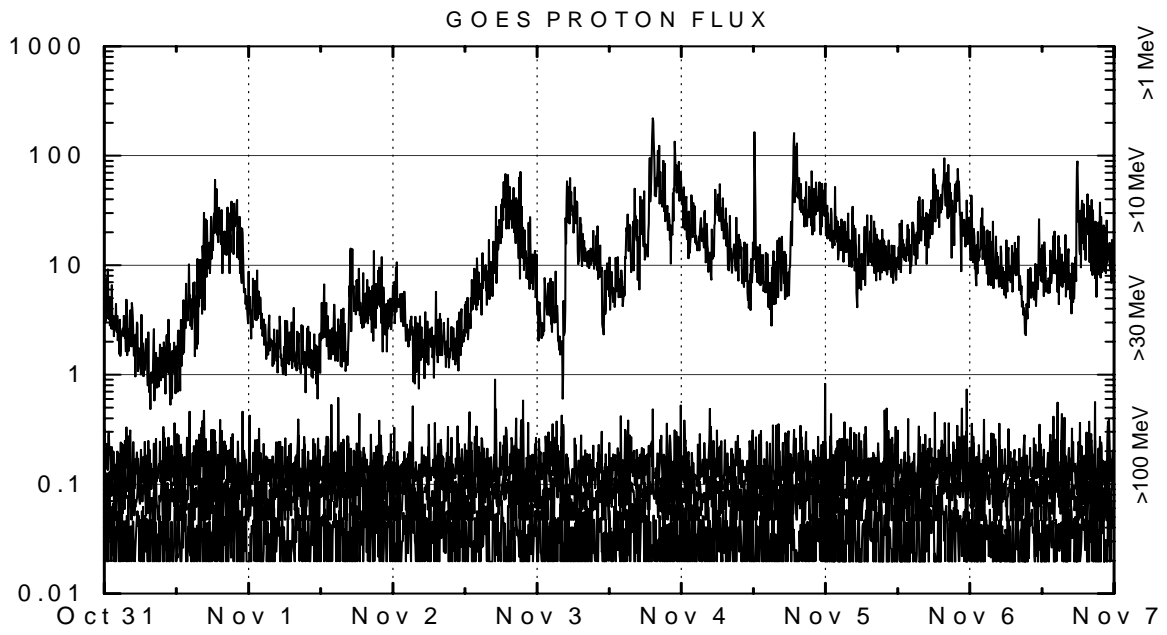
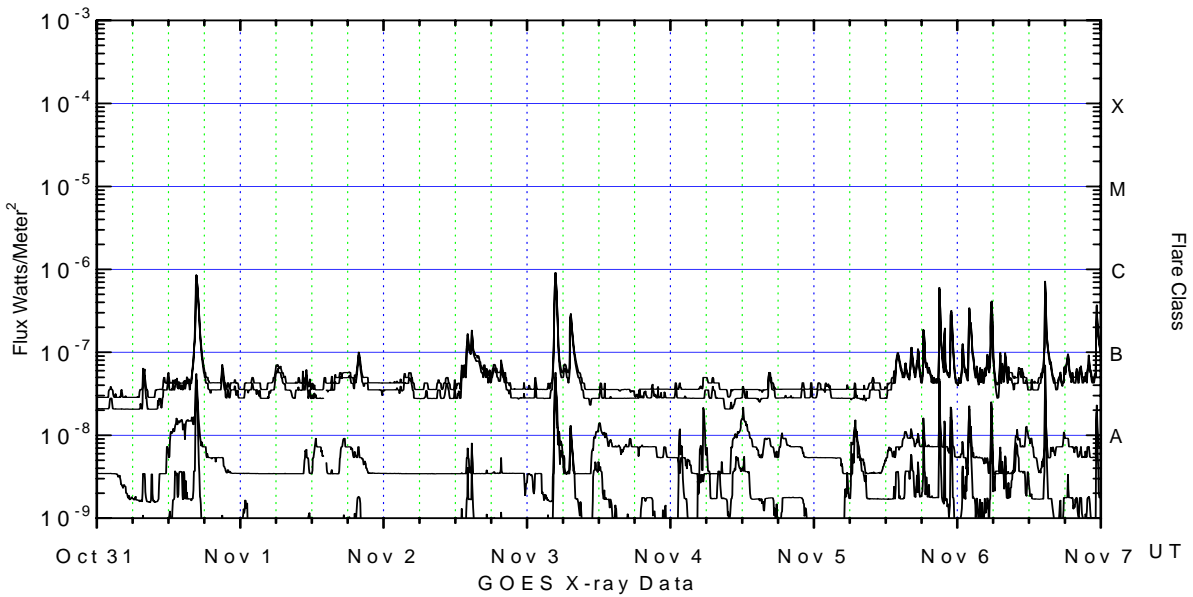
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-12 (W76).

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

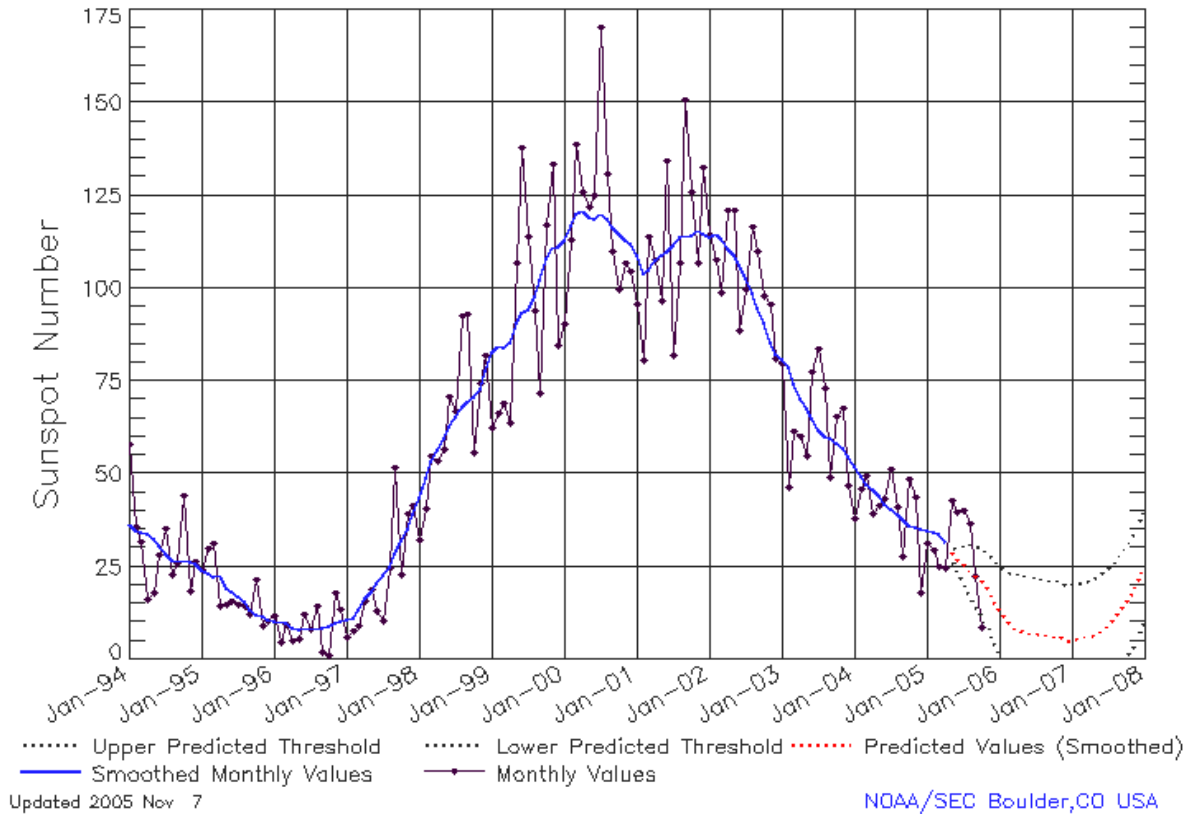
X-ray plot contains five-minute averaged x-ray flux (watts/m²) as measured by GOES 12 (W76) and GOES 10 (W135) in two wavelength bands, .05 - .4 and .1 - .8 nm. The letters A, B, C, M and X refer to x-ray event levels for the .1 - .8 nm band.

Proton plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-11 (W112) 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 31 Oct 05

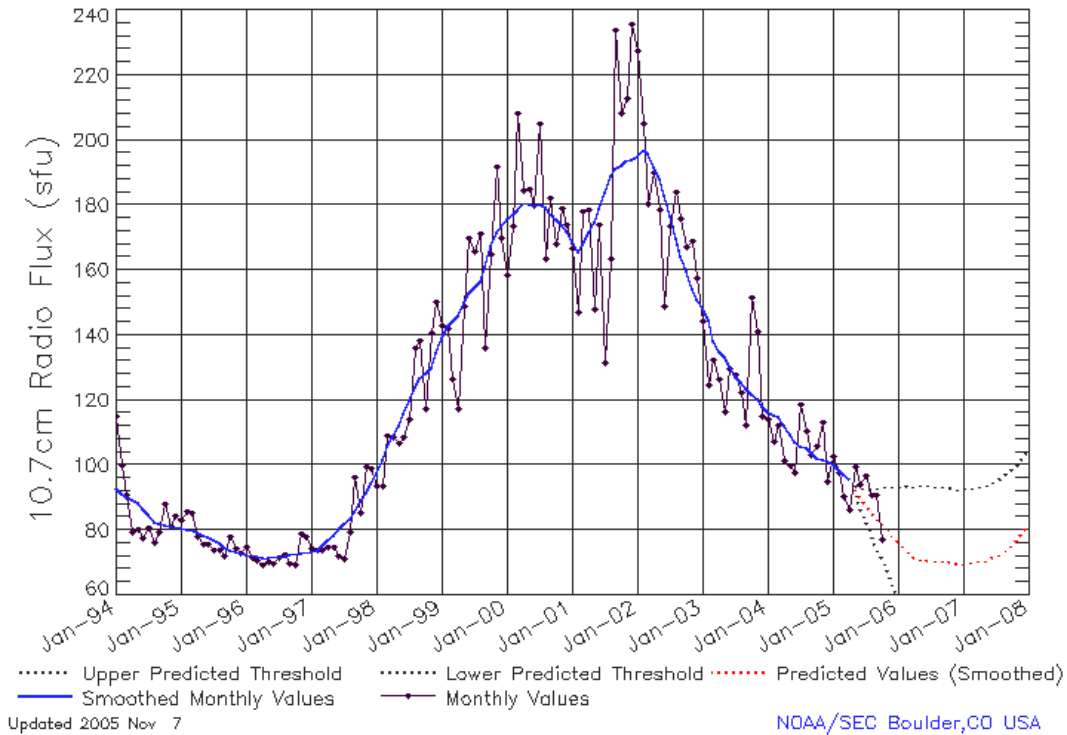


SEC Prediction of Smoothed Sunspot Number

| | 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 (1) | 27 (3) | 26 (5) | 24 (7) | 23 (8) | 21 (9) | 19 (10) | 16 (11) |
| 2006 | 14 (12) | 11 (13) | 9 (14) | 8 (15) | 8 (15) | 7 (15) | 7 (15) | 7 (15) | 7 (15) | 6 (15) | 6 (15) | 5 (15) |
| 2007 | 5 (15) | 6 (15) | 6 (15) | 6 (15) | 7 (15) | 8 (15) | 10 (15) | 11 (15) | 13 (15) | 16 (15) | 18 (15) | 21 (15) |



ISES Solar Cycle F10.7cm Radio Flux Progression
Data Through 31 Oct 05



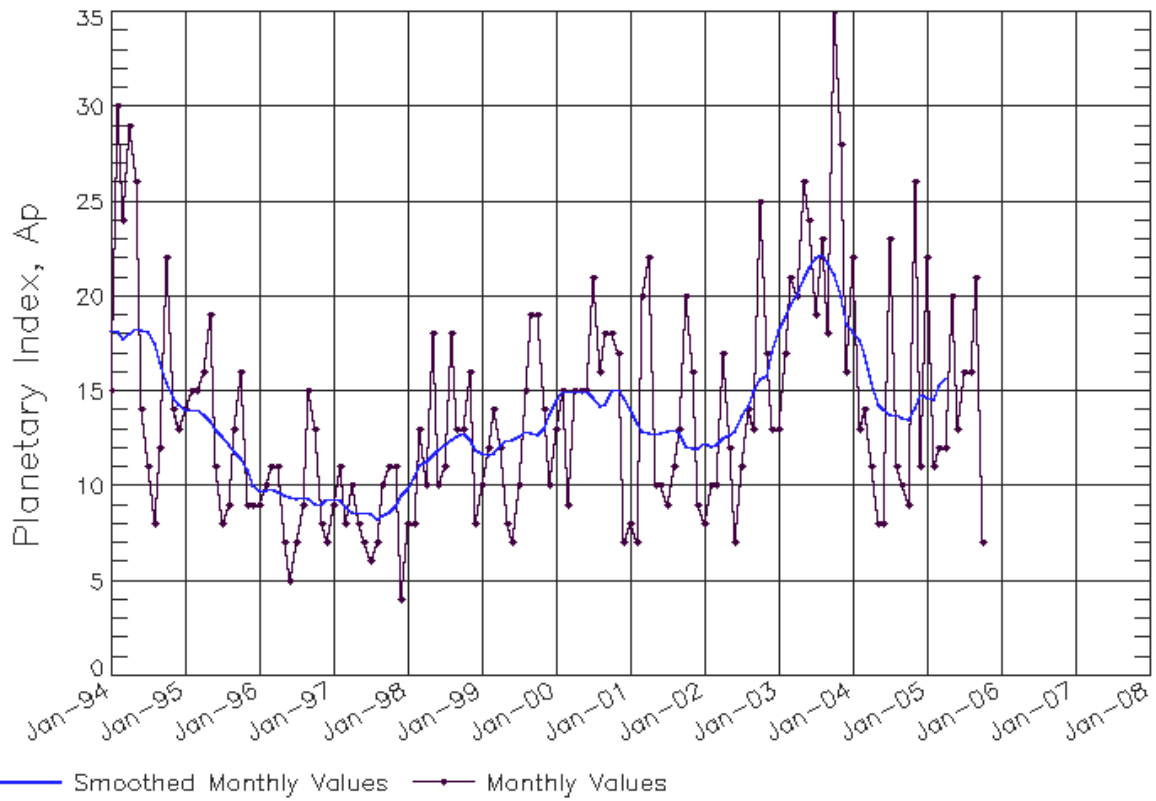
SEC Prediction of Smoothed F10.7cm Radio Flux

| | 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 | 96 | 93 | 90 | 88 | 86 | 84 | 82 | 81 | 78 |
| | (***) | (***) | (***) | (***) | (1) | (3) | (5) | (7) | (9) | (11) | (13) | (15) |
| 2006 | 76 | 74 | 73 | 72 | 71 | 71 | 71 | 71 | 70 | 70 | 70 | 70 |
| | (17) | (19) | (21) | (22) | (23) | (23) | (23) | (23) | (23) | (23) | (23) | (23) |
| 2007 | 70 | 70 | 70 | 70 | 71 | 71 | 72 | 73 | 74 | 76 | 77 | 79 |
| | (23) | (23) | (23) | (23) | (23) | (23) | (23) | (23) | (23) | (23) | (23) | (23) |



ISES Solar Cycle Ap Progression

Data Through 31 Oct 05



Updated 2005 Nov 7

NOAA/SEC Boulder, CO USA

