

Solar activity was at very low levels. During the period, three magnetically simple spot groups existed on the disk. Only weak B-level activity was observed. The remainder of the disk and limb was quiet.

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 20 - 21 October.

The geomagnetic field ranged from quiet to active levels with minor storm periods at high latitudes. Solar wind speed ranged from a high of about 450 km/s on 17 October to a low of 300 km/s on 21 October. Minor storm periods were observed at high latitudes on 17 October. Conditions calmed to quiet to active periods on 18 and 19 October. Heightened activity at high latitudes was due to prolonged periods of southward Bz. Through late on 21 October, the Bz component of the IMF was weak, not varying much beyond +/- 5 nT. Late on 21 October, a solar sector boundary crossing was detected in the ACE SWEPAM data. The IMF Bz briefly varied between +/- 10 nT for about six hours, and wind speed increased from about 300 km/s to near 400 km/s. Middle latitudes responded with a brief active period early on 22 October. The period ended with wind speed around 360 km/s.

**Space Weather Outlook**  
**26 October 2005 - 21 November 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 29 October – 02 November, 05 – 11 November, and 16 – 17 November.

The geomagnetic field is expected to range from quiet to minor storm levels. Unsettled to minor storm levels are possible on 04 November due to a recurrent coronal hole high speed wind stream. Otherwise, expect quiet to unsettled conditions.



### Daily Solar Data

Date	Radio Flux 10.7 cm	Sun spot No.	Sunspot Area (10 <sup>-6</sup> hemi.)	X-ray Background	Flares							
					X-ray Flux			Optical				
					C	M	X	S	1	2	3	4
17 October	78	11	40	A2.8	0	0	0	0	0	0	0	0
18 October	78	11	30	A3.0	0	0	0	0	0	0	0	0
19 October	78	30	50	A2.4	0	0	0	0	0	0	0	0
20 October	77	15	20	A1.2	0	0	0	0	0	0	0	0
21 October	75	15	20	<A1.0	0	0	0	0	0	0	0	0
22 October	75	13	20	<A1.0	0	0	0	0	0	0	0	0
23 October	74	11	10	<A1.0	0	0	0	0	0	0	0	0

### Daily Particle Data

Date	Proton Fluence (protons/cm <sup>2</sup> -day-sr)			Electron Fluence (electrons/cm <sup>2</sup> -day-sr)		
	>1 MeV	>10 MeV	>100 MeV	>.6 MeV	>2MeV	>4 MeV
	17 October	7.1E+5	1.5E+4	3.6E+3		9.2E+6
18 October	5.5E+5	1.5E+4	3.7E+3		2.2E+7	
19 October	3.9E+5	1.5E+4	3.7E+3		2.7E+7	
20 October	4.8E+5	1.4E+4	3.5E+3		5.4E+7	
21 October	1.3E+6	1.5E+4	4.1E+3		6.8E+7	
22 October	4.3E+5	1.4E+4	3.5E+3		7.6E+5	
23 October	2.8E+5	1.4E+4	3.6E+3		7.1E+5	

### Daily Geomagnetic Data

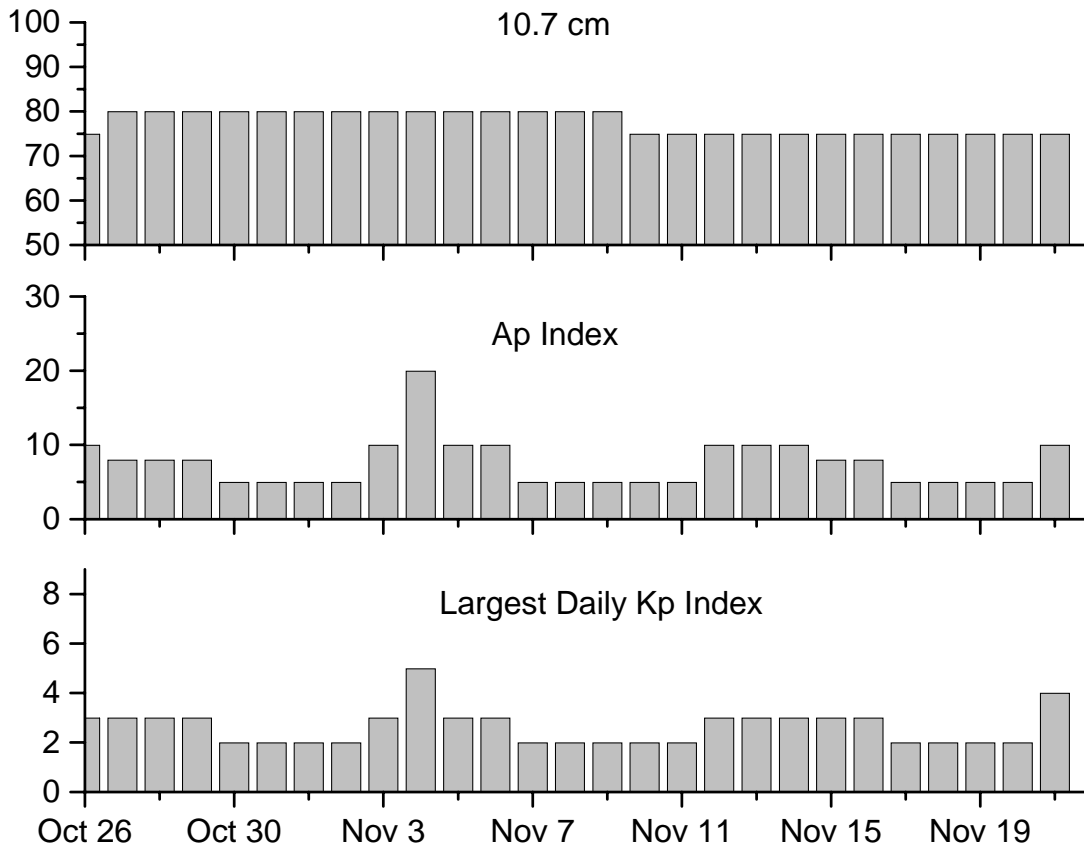
Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	17 October	7	2-3-3-2-1-2-1-0	26	3-4-5-5-5-3-1-0	13
18 October	5	1-2-1-1-2-2-1-1	16	4-1-4-4-4-3-1-0	5	1-3-1-1-2-1-1-1
19 October	3	1-2-1-1-2-1-0-0	13	1-1-4-3-4-4-0-0	7	2-2-2-2-2-3-0-1
20 October	2	1-0-2-1-0-0-0-0	2	0-0-1-3-0-0-0-0	3	1-0-2-1-0-0-0-1
21 October	1	0-0-0-0-0-0-0-2	0	0-0-0-0-0-0-0-1	2	0-0-0-0-0-1-1-3
22 October	7	4-3-1-0-1-0-1-1	4	3-1-1-0-2-0-1-1	6	4-2-1-0-1-0-1-1
23 October	2	1-0-0-0-1-1-1-0	1	0-0-0-0-1-1-0-0	2	0-0-0-0-1-1-1-1

### Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
17 Oct 0525	ALERT: Geomagnetic K= 4	17 Oct 0523
17 Oct 0628	WARNING: Geomagnetic K= 4	17 Oct 0630 -1600
17 Oct 0631	ALERT: Geomagnetic K = 4	17 Oct 0631
18 Oct 1502	ALERT: Geomagnetic K= 4	18 Oct 1459
20 Oct 1424	ALERT: Electron 2MeV Integral Flux > 1000pfu	20 Oct 1405
21 Oct 1246	ALERT: Electron 2MeV Integral Flux > 1000pfu	21 Oct 1215
22 Oct 0045	ALERT: Geomagnetic K-index of 4	22 Oct 0044



### 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
26 Oct	75	10	3	09 Nov	80	5	2
27	80	8	3	10	75	5	2
28	80	8	3	11	75	5	2
29	80	8	3	12	75	10	3
30	80	5	2	13	75	10	3
31	80	5	2	14	75	10	3
01 Nov	80	5	2	15	75	8	3
02	80	5	2	16	75	8	3
03	80	10	3	17	75	5	2
04	80	20	5	18	75	5	2
05	80	10	3	19	75	5	2
06	80	10	3	20	75	5	2
07	80	5	2	21	75	10	3
08	80	5	2				



***Energetic Events***

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

***No Events Observed***

***Flare List***

Date	Time			Optical	Rgn
	Begin	Max	End	X-ray Class.	
17 October	No Flares Observed				
18 October	No Flares Observed				
19 October	No Flares Observed				
20 October	No Flares Observed				
21 October	0440	0450	0501	B3.0	
22 October	No Flares Observed				
23 October	No Flares Observed				



### Region Summary

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

#### Region 814

11 Oct	S06W11	235	0020	04	Bxo	003	B												
12 Oct	S07W23	234	0040	10	Hax	007	A	1				1							
13 Oct	S13W31	228	0010	01	Axx	001	A												
14 Oct	S13W44	228																	
15 Oct	S13W57	228																	
16 Oct	S13W70	228																	
17 Oct	S13W83	228																	
												1	0	0	1	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 235

#### Region 815

14 Oct	N08E75	109	0050	03	Hax	001	A												
15 Oct	N08E60	111	0070	02	Hsx	001	A												
16 Oct	N08E47	111	0050	02	Hax	001	A												
17 Oct	N08E33	112	0040	02	Hsx	001	A												
18 Oct	N08E20	112	0030	01	Hax	001	A												
19 Oct	N08E08	110	0030	04	Cao	007	B												
20 Oct	N07W06	111	0020	04	Cso	005	B												
21 Oct	N07W19	111	0020	03	Cao	005	B												
22 Oct	N07W32	111	0020	03	Cao	003	B												
23 Oct	N07W45	111																	
												0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 111

#### Region 816

19 Oct	S14W29	147	0020	03	Bxo	003	B												
20 Oct	S14W42	147																	
21 Oct	S14W55	147																	
22 Oct	S14W68	147																	
23 Oct	S14W81	147																	
												0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 147

#### Region 817

23 Oct	N04E21	045	0010	01	Axx	001	A												
												0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 045

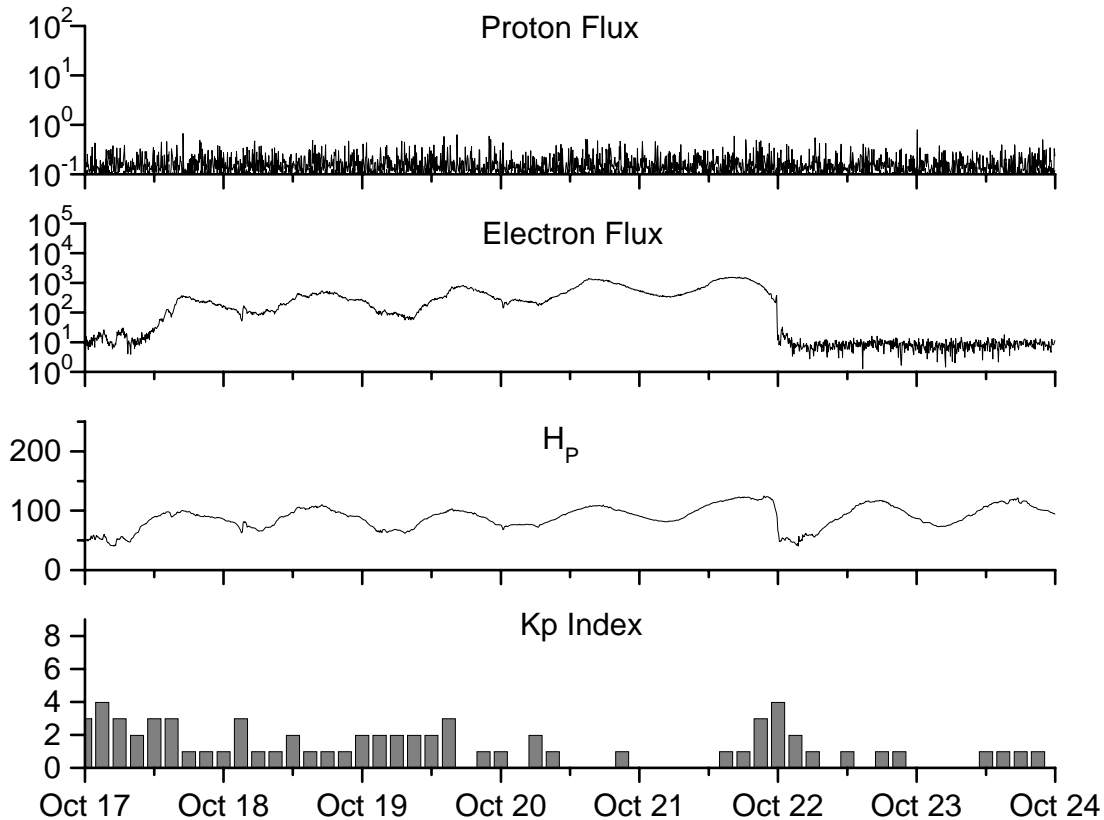


**Recent Solar Indices (preliminary)  
of the observed monthly mean values**

Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	Observed SWO	values RI	Ratio RI/SWO	Smooth SWO	values RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
<b>2003</b>									
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
<b>2004</b>									
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
<b>2005</b>									
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 17 October 2005*

*Protons* plot contains the five-minute averaged integral proton flux (protons/cm<sup>2</sup>-sec -sr) as measured by GOES-11 (W112) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

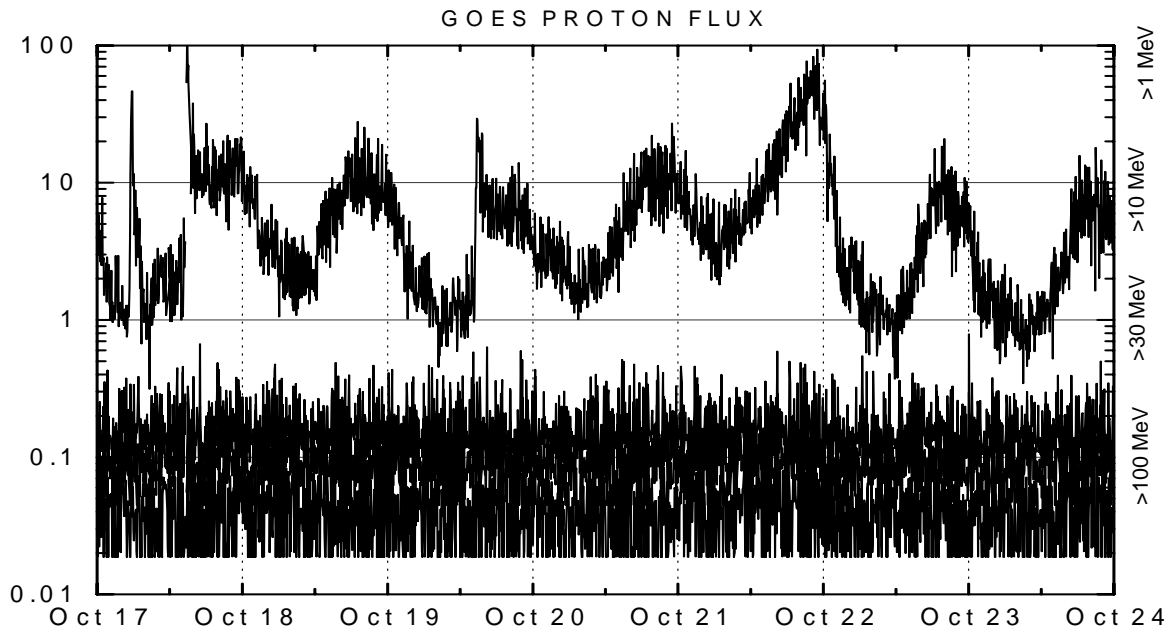
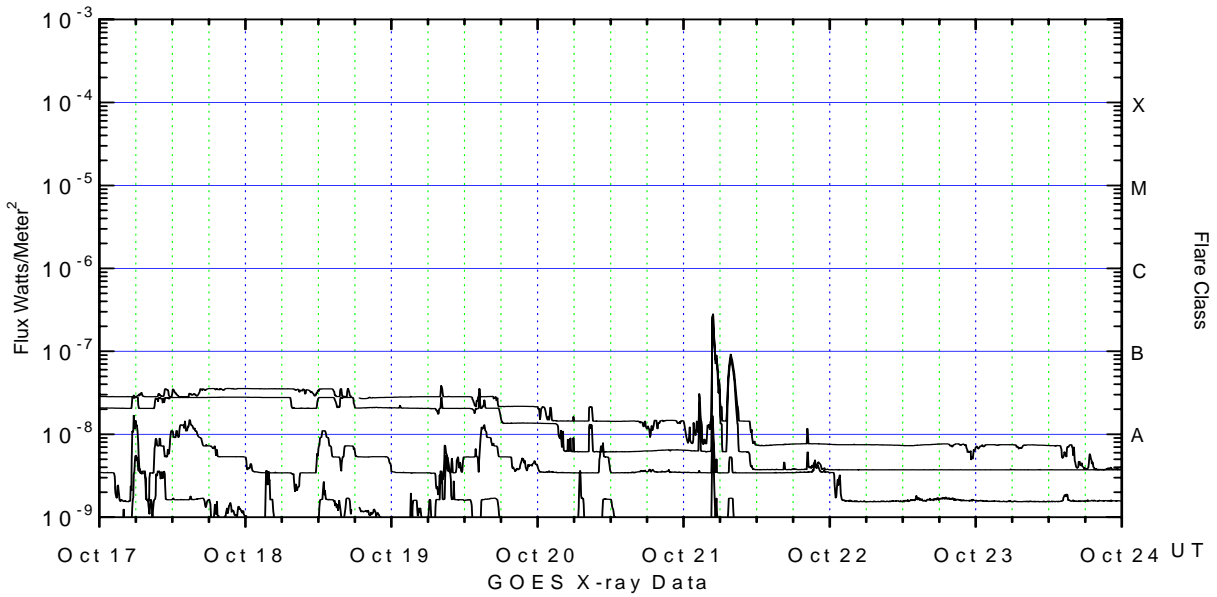
*Electrons* plot contains the five-minute averaged integral electron flux (electrons/cm<sup>2</sup>-sec -sr) with energies greater than 2 MeV at GOES-12 (W76).

*H<sub>p</sub>* 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<sub>p</sub>* 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<sub>p</sub> 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<sub>p</sub> 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/m<sup>2</sup>) 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/cm<sup>2</sup>-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/cm<sup>2</sup>-sec-sr) at greater than 10 MeV.

