

Solar activity ranged from very low to high levels during the period. Activity was very low during 11 – 12 December with numerous B-class flares from Region 930 (S05, L = 010, class/area, Dki/680 on 12 December). Activity increased to high levels on 13 December by virtue of an X3/4B flare at 13/0240 UTC from Region 930 with an associated Type II (est. shock velocity 1534 km/sec) and Type IV radio sweeps, a 44000 sfu Tenflare, and a fast, full-halo CME (est. plane-of-sky velocity 1500 km/sec). Activity remained high on 14 December due to another major flare from Region 930, an X1 at 14/2215 UTC accompanied by Type II (est. shock velocity 1277 km/sec) and Type IV radio sweeps, a 620 sfu Tenflare, and an asymmetric, full-halo CME (est. plane-of-sky velocity 1500 km/sec). Activity decreased to very low levels during 15 – 17 December with occasional B-class flares from Region 930. The region rotated around the west limb early on 18 December.

The greater than 10 MeV event that began at 06/1555 UTC (following the X9/2N flare on 05 December), reached a maximum flux of 1980 pfu at 07/1930 UTC, and ended at 12/1040 UTC. Another greater than 100 MeV and greater than 10 MeV events occurred on 13 December and were associated with the X3 flare. The greater than 100 MeV event began at 13/0300 UTC, reached a maximum of 88.7 pfu at 13/0525 UTC, and ended at 14/1150 UTC. The greater than 10 MeV proton event began at 13/0310 UTC, reached a maximum of 698 pfu at 13/0925 UTC, and ended at 15/1620 UTC. The X1 flare of 14 December spawned a greater than 100 MeV event. It began at 14/2255 UTC, reached a maximum of 2.3 pfu at 15/0015 UTC, and ended at 15/0325 UTC.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels during 11 – 17 December.

Field activity was at quiet to severe storm conditions at all latitudes. Quiet to active conditions occurred on 11 December. On 12 December activity ranged from quiet to active levels at middle latitudes with periods of minor to major storming at high latitudes. Field activity decreased to mostly quiet levels on 13 December. Quiet conditions persisted during the first half of 14 December. ACE data indicated a CME-induced shock arrival at 14/1356 UTC (from the X3/4B flare on 13 December) followed by a sudden impulse (SI) at 14/1416 UTC (26 nT, Boulder magnetometer). The SI was followed by minor to severe geomagnetic storm levels which continued until approximately 15/1800 UTC, then decreased to unsettled to active levels. Activity decreased to quiet to unsettled levels on 16 December. ACE data indicated another CME-induced shock arrival (from the X1 flare on 14 December) at 16/1722 UTC followed by an SI at 16/1756 UTC (13 nT, Boulder magnetometer), however field activity remained at mostly quiet to unsettled levels.



Space Weather Outlook
20 December 2006 – 15 January 2007

Solar activity is expected to range from very low to low levels until old Region 930 returns on the visible disk on 31 December. Moderate level activity is possible until 14 January when old Region 930 departs the visible disk.

A greater than 10 MeV proton event is possible from 31 December to 14 January with the return of old Region 930. No proton events are expected during the rest of the period.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels during 22 - 27 December and 03 – 15 January.

Field activity is expected to be at active to minor storm levels with isolated major storm conditions possible at higher latitudes during 20 – 23 December due to a recurrent coronal hole high-speed stream. A decrease to quiet levels is expected during 24 – 26 December. Active levels are expected on 27 December due to a recurrent solar sector boundary passage. Another coronal hole stream is expected to cause active to minor storm conditions on 02 – 04 January.



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
11 December	92	28	480	A6.6	3	0	0	4	1	0	0	0
12 December	102	27	680	A9.8	0	0	0	4	0	1	0	0
13 December	94	21	670	B1.8	2	0	1	6	0	1	0	1
14 December	93	23	620	B1.2	2	0	1	6	0	0	0	0
15 December	87	19	550	A9.2	0	0	0	3	0	0	0	0
16 December	82	20	480	A5.9	0	0	0	3	0	0	0	0
17 December	81	11	230	A5.8	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	>.6 MeV	>2MeV	>4 MeV
	11 December	2.2E+7	3.5E+6	2.9E+3		1.2E+8
12 December	5.1E+7	8.9E+5	3.0E+3		2.0E+8	
13 December	4.4E+7	2.7E+7	1.8E+6		4.6E+8	
14 December	4.5E+8	1.0E+7	9.2E+4		4.7E+8	
15 December	2.2E+8	2.2E+6	3.6E+4		5.4E+8	
16 December	1.4E+7	1.8E+5	3.4E+3		1.0E+9	
17 December	1.0E+7	3.7E+4	2.6E+3		6.7E+8	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	11 December	11	3-3-3-1-1-1-2-4	19	3-4-4-4-3-2-2-4	15
12 December	15	2-3-3-2-3-3-2-4	50	4-6-6-5-6-4-4-4	26	3-5-3-3-4-3-5-4
13 December	5	2-3-0-0-1-1-1-2	5	3-2-0-1-1-1-1-1	5	3-3-0-0-0-0-0-2
14 December	30	2-1-2-3-5-5-3-6	68	1-4-3-4-7-7-7-5	63	2-1-2-2-6-7-6-8
15 December	48	7-6-5-5-4-2-3-3	120	6-7-8-8-7-6-4-3	104	8-8-7-6-7-4-4-3
16 December	10	2-3-1-1-1-3-3-3	7	3-3-1-1-0-2-2-2	11	3-4-1-1-0-2-4-3
17 December	3	2-1-0-0-0-1-2-1	4	2-2-0-0-1-1-2-1	4	2-1-0-0-0-1-1-1



Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
11 Dec 0052	ALERT: Proton 10 MeV Flux > 100 pfu	09 Dec 0034
11 Dec 0958	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	11 Dec 0940
11 Dec 1556	EXTENDED WARNING: Proton 10 MeV Flux > 10 pfu	06 Dec 0945 – 12/1600
11 Dec 1611	SUMMARY: Proton 10 MeV Flux > 100 pfu	10 Dec 1220
11 Dec 2233	WARNING: Geomagnetic K = 4	11 Dec 2234 – 12/1600
11 Dec 2238	ALERT: Geomagnetic K = 4	11 Dec 2237
12 Dec 0003	CONTINUED ALERT: Proton 10 MeV Flux > 10 pfu	06 Dec 1555
12 Dec 0358	WARNING: Geomagnetic K = 5	12 Dec 1400 – 1600
12 Dec 0548	ALERT: Geomagnetic K = 5	12 Dec 0546
12 Dec 0849	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	12 Dec 0830
12 Dec 1556	EXTENDED WARNING: Proton 10 MeV Flux > 10 pfu	06 Dec 0945 – 2359
12 Dec 1559	EXTENDED WARNING: Geomagnetic K = 4	11 Dec 2234 – 12/2359
12 Dec 2348	SUMMARY: Proton 10 MeV Flux > 10 pfu	12 Dec 1040
12 Dec 2355	EXTENDED WARNING: Geomagnetic K = 4	11 Dec 2234 – 13/1600
13 Dec 0225	ALERT: X-ray Flux M5	13 Dec 0224
13 Dec 0253	ALERT: Type II Radio Emission	13 Dec 0226
13 Dec 0301	WARNING: Proton 100 MeV Flux > 1 pfu	13 Dec 0301 – 2359
13 Dec 0310	WARNING: Proton 10 MeV Flux > 10 pfu	13 Dec 0310 – 2359
13 Dec 0312	ALERT: Proton 100 MeV Flux > 1 pfu	13 Dec 0300
13 Dec 0324	ALERT: Proton 10 MeV Flux > 10 pfu	13 Dec 0310
13 Dec 0333	SUMMARY: X-ray Flux \geq X1	13 Dec 0257
13 Dec 0406	ALERT: Proton 10 MeV Flux > 100pfu	13 Dec 0345
13 Dec 0421	SUMMARY: 10cm Radio Burst	13 Dec 0346
13 Dec 0421	SUMMARY: 10cm Radio Burst	13 Dec 0404
13 Dec 0515	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	13 Dec 0500
13 Dec 0536	ALERT: Type IV Radio Emission	13 Dec 0225
13 Dec 0758	SUMMARY: 10cm Radio Burst	13 Dec 0437
13 Dec 1204	ALERT: Type IV Radio Emission	13 Dec 0627
13 Dec 1615	WATCH: Geomagnetic A \geq 50	14 Dec
13 Dec 1615	WATCH: Geomagnetic A \geq 50	15 Dec
14 Dec 0043	EXTENDED WARNING: Proton 100MeV Flux > 1 pfu	13 Dec 0301 – 15/0100
14 Dec 0047	EXTENDED WARNING: Proton 10 MeV Flux > 10 pfu	13 Dec 0310 – 15/0100
14 Dec 0412	CONTINUED ALERT: Proton 100MeV Flux > 1 pfu	13 Dec 0300
14 Dec 0415	CONTINUED ALERT: Proton 10 MeV Flux > 100 pfu	13 Dec 0345
14 Dec 0504	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	14 Dec 0500
14 Dec 1401	WARNING: Geomagnetic Sudden Impulse	14 Dec 1410 – 1445
14 Dec 1403	WARNING: Geomagnetic K = 5	14 Dec 1402 – 15/1600
14 Dec 1404	WARNING: Geomagnetic K = 6	14 Dec 1405 – 2359
14 Dec 1425	SUMMARY: Geomagnetic Sudden Impulse	14 Dec 1416
14 Dec 1443	ALERT: Geomagnetic K = 5	14 Dec 1442
14 Dec 1519	ALERT: Geomagnetic K = 4	14 Dec 1519
14 Dec 1625	ALERT: Geomagnetic K = 6	14 Dec 1624
14 Dec 1821	SUMMARY: Proton 100 MeV Flux > 1 pfu	14 Dec 1150
14 Dec 2120	CANCEL WATCH: Geomagnetic A \geq 50	15 Dec

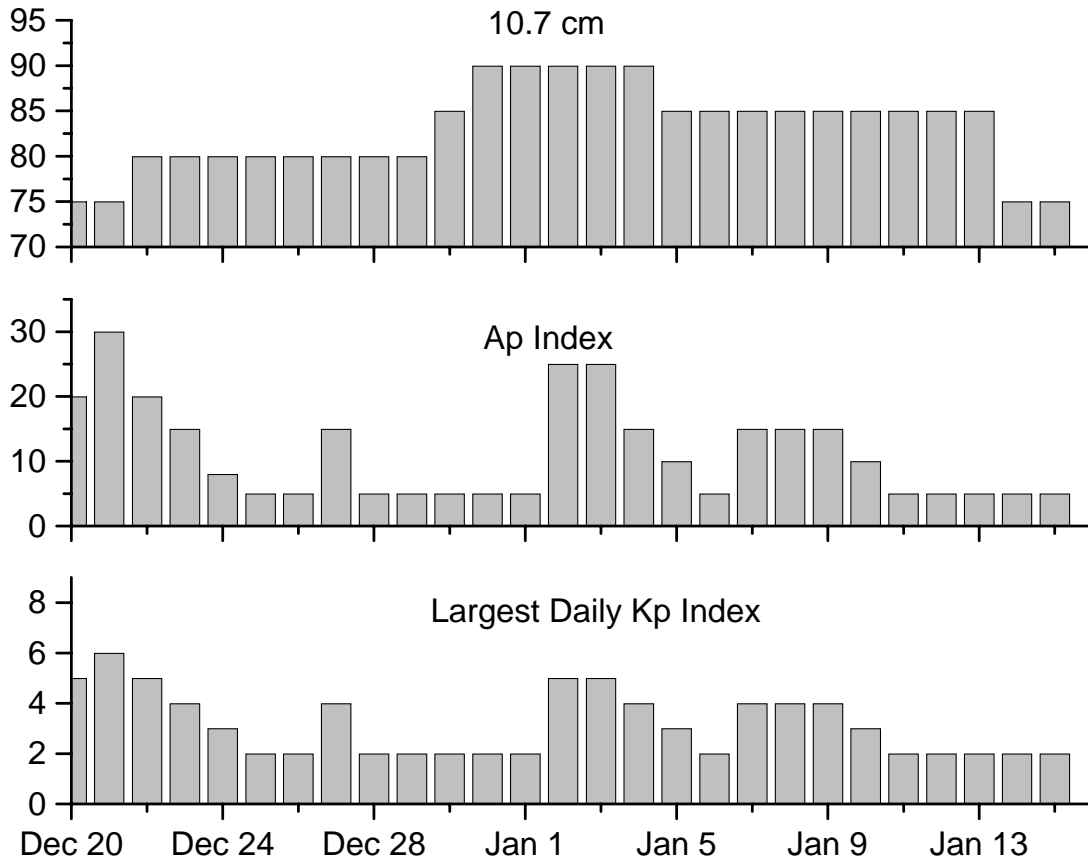


Alerts and Warnings Issued – Continued.

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UTC
14 Dec 2122	WATCH: Geomagnetic A \geq 30	15 Dec
14 Dec 2143	SUMMARY: Proton 10 MeV Flux > 100 pfu	14 Dec 1530
14 Dec 2210	ALERT: X-ray Flux M5	14 Dec 2209
14 Dec 2238	SUMMARY: X-ray Flux \geq X1	14 Dec 2226
14 Dec 2239	ALERT: Type II Radio Emission	14 Dec 2209
14 Dec 2252	WARNING: Proton 100 MeV Flux > 1 pfu	14 Dec 2252 – 15/1600
14 Dec 2307	ALERT: Type IV Radio Emission	14 Dec 2220
14 Dec 2312	ALERT: Proton 100 MeV Flux > 1 pfu	14 Dec 2255
14 Dec 2313	EXTENDED WARNING: Geomagnetic K = 6	14 Dec 1405 – 15/2359
14 Dec 2314	WARNING: Geomagnetic K \geq 7	14 Dec 2315 – 15/1600
14 Dec 2333	SUMMARY: 10cm Radio Burst	14 Dec 2313
14 Dec 2337	ALERT: Geomagnetic K = 6	14 Dec 2337
14 Dec 2348	ALERT: Geomagnetic K = 7	14 Dec 2347
14 Dec 2359	EXTENDED WARNING: Proton 10 MeV Flux > 10 pfu	13 Dec 0310 – 15/2359
15 Dec 0028	ALERT: Proton 10 MeV Flux > 1000 pfu	15 Dec 0005
15 Dec 0133	ALERT: Geomagnetic K = 6	15 Dec 0132
15 Dec 0248	ALERT: Geomagnetic K = 7	15 Dec 0246
15 Dec 0346	ALERT: Geomagnetic K = 6	15 Dec 0342
15 Dec 0439	ALERT: Geomagnetic K = 7	15 Dec 0435
15 Dec 0756	ALERT: Geomagnetic K = 6	15 Dec 0755
15 Dec 1112	ALERT: Geomagnetic K = 6	15 Dec 1110
15 Dec 1220	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	15 Dec 1205
15 Dec 1412	ALERT: Geomagnetic K = 6	15 Dec 1410
15 Dec 1509	SUMMARY: Proton 100 MeV Flux > 1 pfu	15 Dec 0325
15 Dec 1605	SUMMARY: Proton 10 MeV Flux > 100 pfu	15 Dec 0130
15 Dec 2110	WATCH: Geomagnetic A \geq 30	16 Dec
15 Dec 2111	WATCH: Geomagnetic A \geq 30	17 Dec
15 Dec 2112	SUMMARY: Proton 10 MeV Flux > 10 pfu	15 Dec 1620
16 Dec 0336	WARNING: Geomagnetic K = 4	16 Dec 0338 – 1600
16 Dec 0353	ALERT: Geomagnetic K = 4	16 Dec 0347
16 Dec 0501	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	16 Dec 0500
16 Dec 1733	WARNING: Geomagnetic Sudden Impulse	16 Dec 1745 – 1830
16 Dec 1805	SUMMARY: Geomagnetic Sudden Impulse	16 Dec 1756
16 Dec 1900	WARNING: Geomagnetic K = 4	16 Dec 1900 – 17/1600
17 Dec 0502	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	17 Dec 0500



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
20 Dec	75	20	5	03 Jan	90	25	5
21	75	30	6	04	90	15	4
22	80	20	5	05	85	10	3
23	80	15	4	06	85	5	2
24	80	8	3	07	85	15	4
25	80	5	2	08	85	15	4
26	80	5	2	09	85	15	4
27	80	15	4	10	85	10	3
28	80	5	2	11	85	5	2
29	80	5	2	12	85	5	2
30	85	5	2	13	85	5	2
31	90	5	2	14	75	5	2
01 Jan	90	5	2	15	75	5	2
02	90	25	5				



Energetic Events

Date	Time		X-ray		Optical Information			Peak		Sweep Freq		
	Begin	Max	Max	Class	Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
									245	2695	II	IV
13 Dec	0214	0240	0257	X3.4	.510	4b	S06W24	930	10000044000	3	2	
14 Dec	2107	2215	2226	X1.5	.120	Sf	S05W31	930	99 620	2	1	

Flare List

Date	Time			Optical	Imp/ Brtns	Location Lat CMD	Rgn
	Begin	Max	End	X-ray Class.			
11 December	0104	0105	0110	C1.4	Sf	S08E06	930
	0511	0516	0604	C2.6	1f	S07E03	930
	0615	0616	0618	B1.6	Sf	S07E01	930
	0817	0818	0838	C5.7	Sb	S07E00	930
	0940	0940	0946	B5.5	Sf	S07W01	930
	1017	1022	1025	B4.7			930
	1103	1107	1109	B4.1			930
	1121	1124	1126	B4.0			930
	1141	1145	1148	B4.5			930
	1320	1328	1330	B3.5			930
	1331	1341	1348	B4.2			930
	1436	1441	1447	B1.6			
	1535	1539	1541	B1.8			930
	1546	1549	1551	B1.0			930
	1718	1727	1731	B1.8			
	1741	1747	1753	B2.0			
	12 December	2230	2234	2237	B2.3		
0022		0025	0030	B1.3			
0111		0115	0120	B1.2			
0200		0228	0307	B1.4	Sf	S06W10	930
0223		0226	0228	B1.7			
0307		0308	0345		Sf	S07W11	930
0742		0751	0755		Sf	S09W10	930
0826		0856	0908	B3.7			930
0846		0847	0855		Sf	S07W16	930
1330		1333	1335	B1.9			930
13 December	1645	1708	1747	B7.7			
	2332	2335	2338		2f	S06W22	930
	0220	0234	0618	X3.4	4b	S06W24	930
	0619	0619	0625		Sf	S06W26	930
	0626	0631	0634		Sf	S08W26	930
	0643	0643	0703		Sf	S06W26	930
	0704	0704	0712		2f	S06W26	930
	1011	1018	A1050		Sf	S06W27	930



Flare List - Continued

Date	Time			Optical X-ray Class.	Imp/ Brtns	Location Lat CMD	Rgn
	Begin	Max	End				
13 December	1122	1134	1140	B7.8			930
	1322	1331	1338	B7.4			930
	1414	1423	1433	C2.2			930
	1821	1825	1838	C1.7	Sf	S07W31	930
	1929	1940	1945	B3.1			930
	2217	2221	2226		Sf	S06W35	930
14 December	0056	0057	0102	B6.8	Sf	S06W36	930
	0541	0545	0548	B1.7			
	0610	0615	0622	B2.8			
	0831	0838	0842	B2.8			930
	0933	0937	0939	B2.4			
	1107	1110	1113	B1.8			
	1156	1210	1229	C1.0			930
	1413	1416	1426	B3.2			
	1429	1434	1436	B2.3			
	1549	1553	1555	B2.6			930
	1641	1648	1811	C1.2	Sf	S06W45	930
	1856	1857	1905	B7.1	Sf	S06W44	930
	1935	1936	1939	B3.1	Sf	S06W47	930
	1952	1954	2005	B7.0	Sf	S06W47	930
	2031	2035	2039	B2.9			
2215	2215	2221	X1.5	Sf	S05W31	930	
15 December	0259	0300	0306		Sf	S06W51	930
	0756	0802	0841	B7.0	Sf	S09W49	930
	0848	0909	0926		Sf	S09W49	930
	1234	1250	1257	B3.3			930
	1317	1338	1355	B7.5			930
	1627	1633	1640	B1.8			
	1750	1809	1819	B3.1			930
	1851	1855	1903	B3.1			930
2028	2033	2040	B1.2				
16 December	0053	0058	0112	B1.0			
	0300	0344	0350	B2.7			930
	0711	0722	0737	B5.9	Sf	S07W62	930
	0830	0831	0852		Sf	S07W62	930
	0853	0910	0935	B8.8	Sf	S08W67	930
	1142	1146	1151	B1.4			
	1421	1425	1428	B1.3			
	1504	1508	1512	B1.2			
	1548	1554	1559	B1.5			
	1849	1920	1929	B2.3			930
2017	2023	2034	B3.7			930	



Flare List - Continued

Date	Time			Optical	Imp / Brtns	Location Lat CMD	Rgn
	Begin	Max	End	X-ray Class.			
16 December	2343	0055	0126	B2.4			930
	2343	0055	0127	B2.6			
17 December	0629	0635	0639	B1.3			
	0658	0705	0711	B1.9			930
	1447	1711	1837	C2.0			930
	2308	2313	2318	B3.6			930

Region Summary

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

Region 929

04 Dec	N02E67	028	0030	03	Bxo	002	B	4									
05 Dec	N03E54	027	0010	05	Bxo	002	B										
06 Dec	N03E41	027															
07 Dec	N03E28	027															
08 Dec	N03E15	027															
09 Dec	N03E02	027															
10 Dec	N03W11	027															
11 Dec	N03W24	027															
12 Dec	N03W37	027															
13 Dec	N03W50	027															
14 Dec	N03W63	027															
15 Dec	N03W76	027															
16 Dec	N03W89	027															

4 0 0 0 0 0 0 0

Crossed West Limb.

Absolute heliographic longitude: 027



Region Summary – Continued.

Location		Sunspot Characteristics													
Date	(° Lat ° CMD)	Helio Lon	Flares				X-ray			Optical					
			Area (10 ⁻⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	C	M	X	S	1	2	3	4
<i>Region 930</i>															
04 Dec	S07E79	016	0000	00		000		7							
05 Dec	S06E72	009	0390	04	Dko	005	B	9	1	1	7	1	1		
06 Dec	S05E60	008	0490	07	Dkc	008	Bgd	12	3	1	10			1	
07 Dec	S06E45	010	0430	08	Dki	014	Bgd	5	1		3	2			
08 Dec	S05E32	010	0420	08	Cko	011	Bg								
09 Dec	S04E19	010	0380	06	Cko	003	B	1			1				
10 Dec	S05E06	009	0440	07	Cki	013	Bgd				2				
11 Dec	S05W07	009	0480	07	Dki	018	Bgd	3			4	1			
12 Dec	S06W21	010	0680	08	Dki	017	Bgd				4		1		
13 Dec	S05W33	009	0670	08	Dki	011	Bgd	2		1	6		1		1
14 Dec	S05W47	010	0620	07	Dkc	013	Bgd	2		1	6				
15 Dec	S06W59	009	0550	09	Dki	009	Bgd				3				
16 Dec	S06W72	007	0480	08	Dkc	010	Bgd				3				
17 Dec	S06W88	010	0230	12	Dkc	001	Bgd	1							
								42	5	4	49	4	3	1	1

Still on Disk.

Absolute heliographic longitude: 009

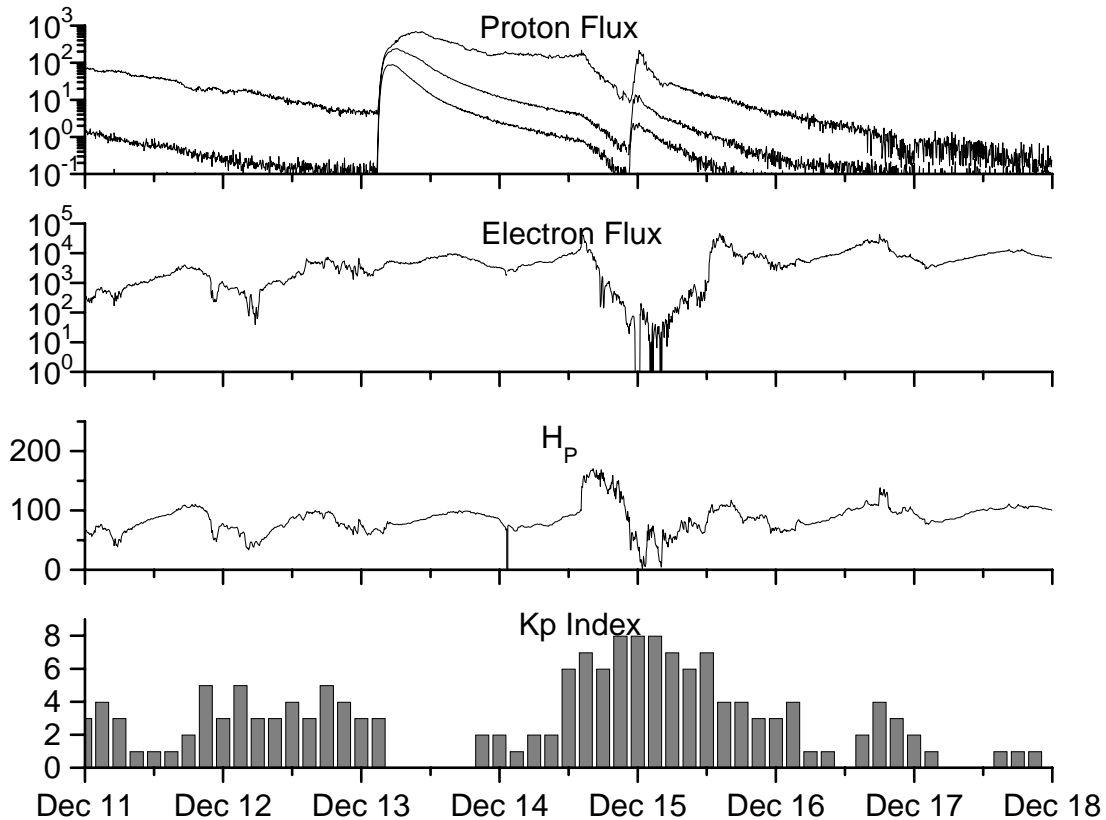


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

Month	Sunspot Numbers			Radio Flux		Geomagnetic			
	Observed SEC	values RI	Ratio RI/SEC	Smooth SEC	values RI	*Penticton 10.7 cm	Smooth Value	Planetary Ap	Smooth Value
2004									
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	48.3	29.0	99.5	93.2	20	14.8
June	59.8	39.6	0.66	47.9	28.9	93.7	91.9	13	13.9
July	71.0	39.9	0.56	48.1	29.2	96.6	90.9	16	13.1
August	65.6	36.4	0.55	45.4	27.5	90.7	89.3	16	12.2
September	39.2	22.1	0.56	42.9	25.9	90.8	87.8	21	11.8
October	13.0	8.5	0.65	42.6	25.5	76.7	87.4	7	11.6
November	32.2	18.0	0.56	42.1	24.9	86.3	86.7	8	11.1
December	62.6	41.2	0.66	40.1	23.0	90.8	85.4	7	10.4
2006									
January	28.0	15.4	0.55	37.2	20.8	83.8	84.0	6	9.9
February	5.3	4.7	0.89	33.4	18.7	76.6	82.6	6	9.2
March	21.3	10.8	0.51	31.0	17.4	75.5	81.6	8	8.4
April	55.2	30.2	0.55	30.6	17.1	89.0	80.9	11	7.9
May	39.6	22.2	0.56	30.7	17.3	81.0	80.8	8	7.9
June	37.7	13.9	0.37			80.1		8	
July	22.6	12.2	0.54			75.8		7	
August	22.8	12.9	0.57			79.0		9	
September	25.2	14.5	0.58			77.8		8	
October	15.7	10.4	0.66			74.3		7	
November	31.5	21.5	0.68			86.4		8	

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 11 December 2006

Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by GOES-11 (W135) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

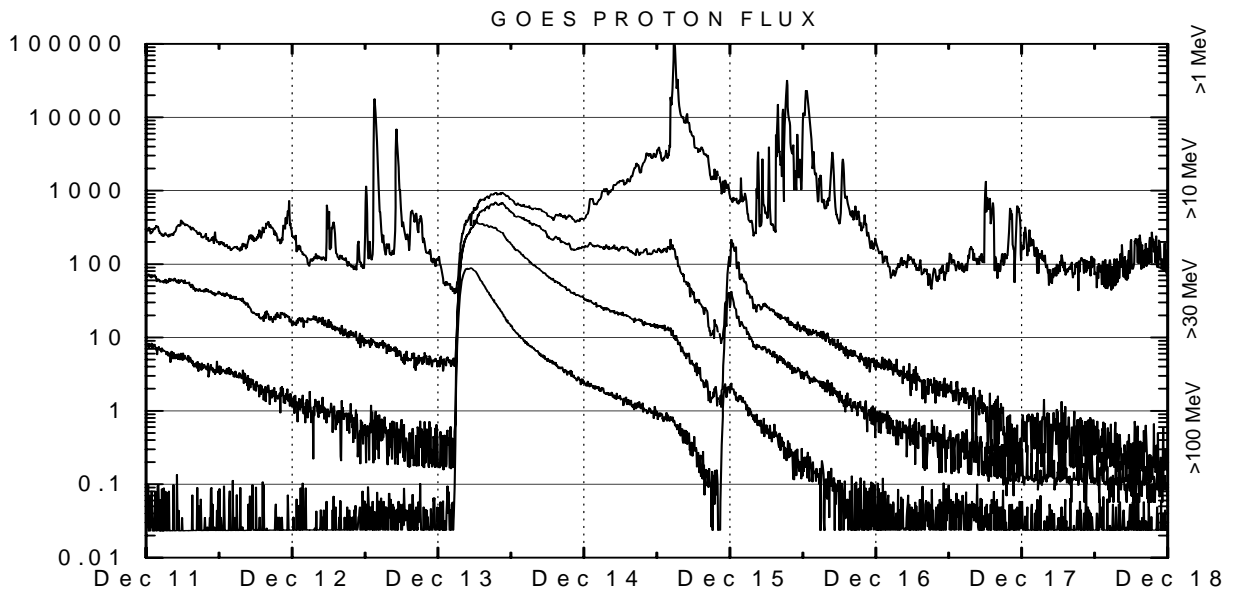
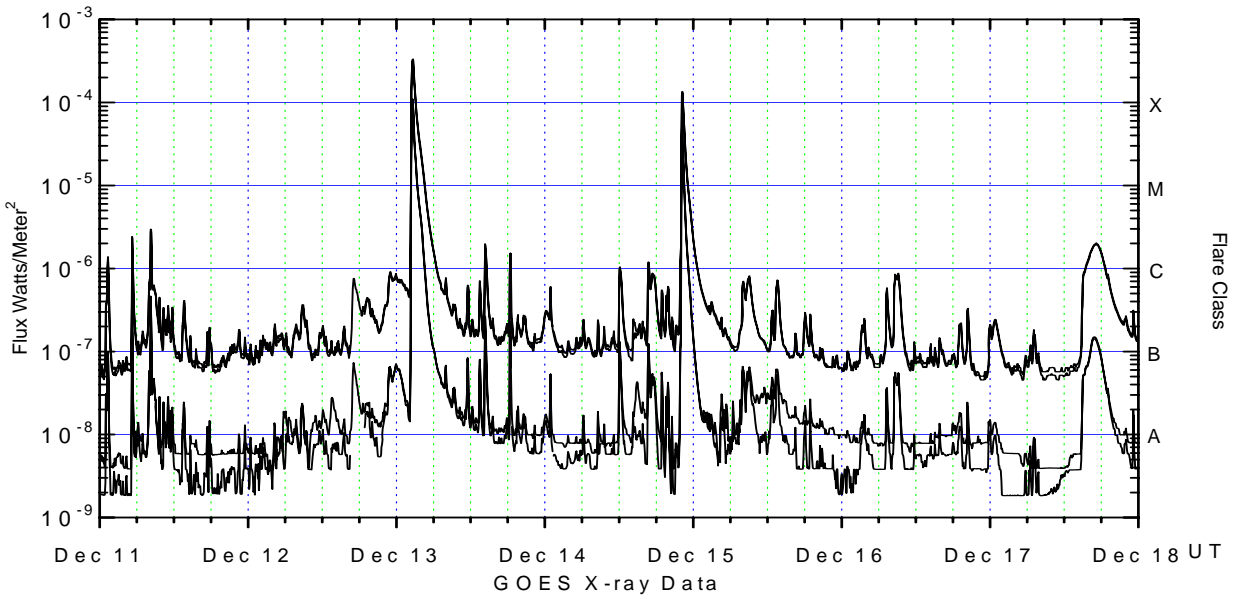
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV at GOES-12 (W075).

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 SEC 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 (W075) and GOES 11 (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 (W135) 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.

