

Space Weather Highlights 07 - 13 April 2003

**SWO PRF 1441
15 April 2003**

Solar activity ranged from very low to moderate levels. The period began on 07-08 April with low and very low activity, respectively. On 09 April, Region 326 (S12, L=156, class/area Dao/90 on 09 April) exhibited rapid growth as it approached the west limb and produced an M2.5/1f flare at 2329 UTC with an associated Type II radio sweep and a ten-flare radio burst. A narrow CME was also associated with the M2 but did not appear to be Earth directed. Region 326 also produced numerous B and C-class flares on 09 April as it rotated beyond the west limb. Activity on 10 April was at very low levels. Low level activity was observed on 11 April due to a C7 flare from Region 326 beyond the west limb. Region 330 (N08, L=80, class/area Dko/420 on 09 April) was the largest region on the disk during the period and developed a beta-gamma magnetic configuration on 08 April. Region 330 was the source of most of the activity for the last two days of the period resulting in very low and low level activity on 12 and 13 April, respectively.

Solar wind data were available from the NASA Advanced Composition Explorer (ACE) spacecraft for most of the summary period. Solar wind was near 400 km/s early in the period. Late on 09 April, a large equatorial coronal hole rotated into a geo-effective position marked by a significant rise in solar wind speed. Solar wind speed rose through 10 April and peaked near 800 km/s. The Bz component of the interplanetary magnetic field due to the coronal hole exhibited minor oscillations between +/- 5 nT. Solar wind speed was in gradual decline from 11 – 13 April and ended the period near 450 km/s

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

The greater than 2 MeV electron flux at geo-synchronous orbit reached high levels on 07 April and again on 11 – 13 April.

The geomagnetic field ranged from quiet to minor storm levels. A weak CME shock on 08 April produced a 33 nT sudden impulse at 0115 UTC as measured on the Boulder magnetometer. The CME shock resulted in unsettled to minor storm levels of activity. The arrival of the large equatorial coronal hole on 09 –10 April produced unsettled to minor storm levels.

Space Weather Outlook 16 April - 12 May 2003

Solar activity is expected to be very low to low with a chance of isolated M-class activity.

No greater than 10 MeV proton events are expected during the forecast period.

The greater than 2 MeV electron flux may reach high levels on 19 - 21 April, 27 – 28 April, 02 – 03 May and again on 08 – 10 May. These high flux levels are all due to returning coronal holes.

The geomagnetic field is expected to range from quiet to minor storm levels. Quiet to isolated active levels are possible early in the period until the return of a large coronal hole on 23 April. This coronal hole may produce unsettled to minor storm levels through 27 April. Two weaker coronal holes are due to return to a geo-effective position on 29 April – 02 May and 06 – 08 May with unsettled to active conditions expected.

Activity is expected to be very low until the return of Region 321 and 324 on 19 and 21 April respectively. These regions are expected to produce low level activity with a slight chance of an isolated M-class event. At the end of the period Region 326 is due to return to the visible disk and is expected to have low level activity with isolated M-class potential.



*** Note:** On April 8, SEC began using data from the GOES 12 satellite, and stop using GOES 8 data. SEC tracks two GOES satellites and designates one as the primary GOES satellite and the other the secondary GOES satellite. With the end of GOES 8, the primary/secondary designations will change. GOES 10 is the primary GOES satellite for magnetometer, XRS x-ray measurements, and energetic particles, with GOES 12 as the secondary source where available.

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
07 April	116	77	730	B2.6	2	0	0	0	0	0	0	0
08 April	112	52	700	B1.9	0	0	0	1	0	0	0	0
09 April	109	88	660	B2.0	5	1	0	2	1	0	0	0
10 April	104	66	520	B1.3	0	0	0	0	0	0	1	0
11 April	103	49	480	B1.3	2	0	0	0	0	0	0	0
12 April	102	60	460	B1.2	0	0	0	0	0	0	0	0
13 April	102	61	490	B1.2	1	0	0	1	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
	07 April	7.9E+5	2.3E+4	2.5E+3		9.0E+7
08 April	6.0E+6	2.2E+4	3.8E+3		1.4E+7	
09 April	4.2E+6	1.3E+4	3.7E+3		2.4E+7	
10 April	1.5E+6	1.1E+4	3.4E+3		1.2E+7	
11 April	3.0E+6	9.8E+4	3.7E+3		7.8E+8	
12 April	4.0E+6	1.0E+4	3.6 E+3		3.1E+8	
13 April	1.3E+6	1.0E+4	3.5 E+3		2.9E+7	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	07 April	4	1-0-0-2-2-2-1-1	9	1-0-0-4-4-3-0-0	6
08 April	17	4-3-3-4-4-3-1-2	36	3-3-4-6-6-5-3-2	20	2-3-4-5-4-4-2-3
09 April	14	4-2-4-3-3-2-2-2	41	3-4-6-6-6-4-3-2	25	4-3-5-4-5-3-3-2
10 April	17	2-4-3-3-4-3-3-3	30	3-5-5-5-4-4-3-3	26	3-5-5-5-3-3-4-3
11 April	13	3-3-2-2-2-2-3-4	22	3-3-2-5-3-5-3-3	14	3-3-2-3-3-3-3-3
12 April	7	3-2-1-1-2-2-1-2	11	3-1-1-3-4-3-1-1	7	3-2-2-2-3-2-2-2
13 April	8	3-3-2-2-2-1-1-2	13	2-2-2-4-5-1-1-1	10	3-3-2-2-3-2-2-2

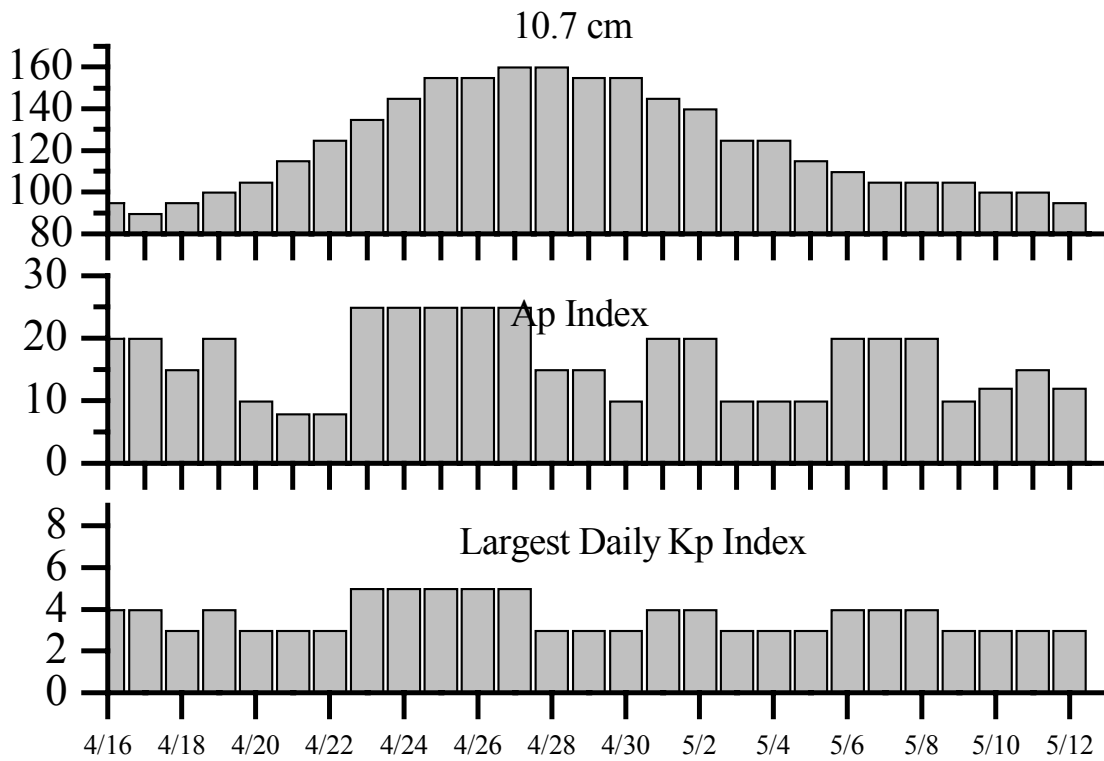


Alerts and Warnings Issued

<u>Date & Time of Issue</u>	<u>Type of Alert or Warning</u>	<u>Date & Time of Event UT</u>
07 Apr 1120	ALERT: Electron 2MeV Integral Flux > 1000pfu	07 Apr 1055
07 Apr 2056	WATCH: Geomagnetic $A \geq 20$	10 Apr
08 Apr 0118	SUMMARY: Geomagnetic Sudden Impulse	08 Apr 0115
08 Apr 0738	WARNING: Geomagnetic $K = 4$	08 Apr 0740 -1500
08 Apr 0744	ALERT: Geomagnetic $K = 4$	08 Apr 0744
08 Apr 1401	EXTENDED WARNING: Geomagnetic $K = 4$	08 Apr 0740 - 2359
08 Apr 2122	WATCH: Geomagnetic $A \geq 20$	11 Apr
09 Apr 0215	ALERT: Geomagnetic $K = 4$	09 Apr 0213
09 Apr 0219	ALERT: Geomagnetic $K = 5$	09 Apr 0217
09 Apr 0241	WARNING: Geomagnetic $K = 4$	09 Apr 0245 -1500
09 Apr 0650	ALERT: Geomagnetic $K = 4$	09 Apr 0650
09 Apr 0707	ALERT: Geomagnetic $K = 5$	09 Apr 0706
09 Apr 1313	EXTENDED WARNING: Geomagnetic $K = 4$	09 Apr 0245 -10 Apr 1500
09 Apr 2341	SUMMARY: 10cm Radio Burst	09 Apr 2327
09 Apr 2355	ALERT: Type II Radio Emission	09 Apr 2340
10 Apr 0542	WARNING: Geomagnetic $K = 5$	10 Apr 0543 -10 Apr 1500
10 Apr 0550	ALERT: Geomagnetic $K = 5$	10 Apr 0549
10 Apr 1459	EXTENDED WARNING: Geomagnetic $K = 5$	10 Apr 0543 -11 Apr 1500
11 Apr 0125	5 - 245 MHz Bursts	10 Apr
11 Apr 1454	WARNING: Geomagnetic $K = 4$	11 Apr 1455 - 12 Apr 1500
11 Apr 1651	ALERT: Electron 2MeV Integral Flux > 1000pfu	11 Apr 1620
12 Apr 1122	ALERT: Electron 2MeV Integral Flux > 1000pfu	12 Apr 0920
13 Apr 0109	4 - 245 MHz Bursts	12 Apr
13 Apr 1158	ALERT: Electron 2MeV Integral Flux > 1000pfu	13 Apr 0900



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
16 Apr	95	20	4	30 Apr	155	10	3
17	90	20	4	01 May	145	20	4
18	95	15	3	02	140	20	4
19	100	20	4	03	125	10	3
20	105	10	3	04	125	10	3
21	115	8	3	05	115	10	3
22	125	8	3	06	110	20	4
23	135	25	5	07	105	20	4
24	145	25	5	08	105	20	4
25	155	25	5	09	105	10	3
26	155	25	5	10	100	12	3
27	160	25	5	11	100	15	3
28	160	15	3	12	95	12	3
29	155	15	3				



Energetic Events

Date	Time			*X-ray		Optical Information			Peak		Sweep Freq		
	Begin	Max	½	Class	Integ Flux	Imp/ Brtns	Location		Rgn #	Radio Flux		Intensity	
			Max				Lat	CMD		245	2695	II	IV
09 Apr	2323	2329	2334	M2.5	.009	1f	S10W78		326		140		

Flare List

Date	Time			*X-ray Class.	Imp / Brtns	Optical		Rgn
	Begin	Max	End			Location	Lat CMD	
07 April	0245	0304	0316	C2.6				324
	0925	1030	1149	B7.3				
	1843	1849	1855	C1.2				324
08 April	0441	0520	0528	B7.7				
	1417	1421	1427	B3.2				
	1915	1920	1924	B3.8				
09 April	B1941	U1941	A1952		Sf	S10W63		326
	0015	0027	0052	B8.0				
	0117	0121	0130	B4.4	Sf	S10W71		326
	0235	0254	0307	C1.1				
	0350	0352	0403	C3.8	Sf	S08W76		326
	0510	0513	0516	B6.4				
	0531	0537	0545	C1.1				
	0554	0613	0619	C4.7				
	0922	0933	0949	C6.4				
	1154	1159	1207	B7.9				
10 April	1327	1331	1335	B4.2				
	1701	1704	1706	B3.8				
	2327	2329	2335	M2.5	1f	S10W78		326
	0030	0030	A0120		3f	S10E77		
	1031	1035	1042	B7.3				
	1551	1554	1556	B2.6				
	1617	1620	1622	B2.3				
11 April	1628	1631	1633	B2.1				
	1652	1655	1657	B2.3				
	0436	0440	0442	C1.4				
	0707	0712	0714	B9.3				
	0723	0730	0732	C7.4				
	0915	0921	0923	B3.5				
	0940	0943	0945	B2.8				
	1024	1027	1029	B3.1				
	1159	1204	1207	B3.5				
	1740	1745	1748	B9.8				
12 April	1808	1833	1857	B6.1				
	0047	0051	0053	B2.3				
	0213	0217	0219	B2.6				

* see note on page 2.



Flare List - continued.

Date	Time			*X-ray Class.	Optical		Rgn
	Begin	Max	End		Imp / Brtns	Location Lat CMD	
12 April	0253	0256	0258	B4.0			
	0419	0422	0424	B2.7			
	0509	0513	0515	B2.8			
	0538	0546	0548	B6.5			
	0616	0620	0622	B4.7			
	0703	0712	0716	B8.9			
	1126	1130	1132	B2.6			
	1242	1250	1252	B2.1			
	1352	1355	1358	B3.0			
	1652	1656	1701	B2.6			
	1820	1831	1844	B2.3			
	1855	1905	1914	B3.9			
	13 April	0252	0257	0302	B4.0		
0432		0437	0441	B6.3			
0446		0449	0452	B3.6			
0851		0854	0906	C2.7	Sf	N07W49	330
0956		1001	1005	B3.6			
1323		1327	1333	B3.0			
1439		1443	1446	B5.3			
1624		1628	1630	B2.4			
1836	1839	1843	B2.2				

** see note on page 2.*



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 324</i>																		
27 Mar	S16E68	181	0080	03	Dao	005	B											
28 Mar	S14E53	183	0060	05	Dao	003	B											
29 Mar	S14E41	182	0020	04	Bxo	003	B											
30 Mar	S13E23	187	0050	11	Eso	011	B											
31 Mar	S12E06	190	0020	05	Cao	009	B											
01 Apr	S11W08	191	0060	06	Dao	011	B											
02 Apr	S12W21	191	0120	07	Dao	022	B	4			4							
03 Apr	S11W35	192	0200	08	Dai	021	Bg	5			5	1						
04 Apr	S11W45	189	0340	10	Dac	034	Bgd	6	1		6	1						
05 Apr	S11W62	192	0240	10	Dai	019	Bgd	1			2							
06 Apr	S12W74	191	0120	09	Dai	010	Bg	2			1							
07 Apr	S13W85	189	0040	01	Hsx	001	A											
								18	1	0	18	2	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 190

<i>Region 325</i>																		
27 Mar	N12E80	169	0200	03	Hhx	001	A	1										
28 Mar	N12E65	171	0260	06	Hhx	001	A											
29 Mar	N13E54	169	0300	03	Hax	001	A											
30 Mar	N13E40	170	0320	05	Hkx	005	A											
31 Mar	N12E26	170	0330	06	Dho	009	B											
01 Apr	N12E14	169	0310	09	Cko	008	B											
02 Apr	N10E05	165	0360	13	Ehi	021	B											
03 Apr	N11W09	166	0360	10	Dko	011	B											
04 Apr	N12W24	168	0310	07	Cko	007	B											
05 Apr	N13W38	168	0340	04	Hkx	002	A											
06 Apr	N13W49	166	0250	06	Cko	007	B											
07 Apr	N15W63	167	0300	03	Cho	003	B											
08 Apr	N14W77	168	0270	04	Dso	002	A											
09 Apr	N15W92	170	0100	04	Dso	003	B											
								1	0	0	0	0	0	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 165



Region Summary - continued.

Date	Location		Sunspot Characteristics				Flares											
	° Lat ° CMD)	Helio Lon	Area (10 ⁻⁶ hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical							
								C	M	X	S	1	2	3	4			
<i>Region 326</i>																		
28 Mar	S12E74	162	0060	03	Hsx	001	A											
29 Mar	S13E62	161	0050	01	Hsx	001	A											
30 Mar	S13E49	161	0050	01	Hsx	002	A											
31 Mar	S13E32	164	0040	01	Hsx	001	A	1				1						
01 Apr	S13E21	162	0030	01	Hsx	001	A											
02 Apr	S11E09	161	0030	01	Hsx	002	A											
03 Apr	S11W04	161	0030	06	Cso	004	B											
04 Apr	S11W17	161	0020	01	Hsx	002	A											
05 Apr	S11W31	161	0010	01	Axx	002	A											
06 Apr	S11W44	161	0010	01	Hsx	001	A											
07 Apr	S10W57	161	0010	01	Hsx	001	A											
08 Apr	S10W70	161										1						
09 Apr	S12W78	156	0090	07	Dao	004	B	1	1			2	1					
								2	1	0	4	1	0	0	0	0		

Crossed West Limb.

Absolute heliographic longitude: 161

Region 328

31 Mar	S03E14	182	0000	01	Axx	001	A											
01 Apr	S13E02	181	0010	03	Hsx	004	B											
02 Apr	S12W13	183	0010	03	Axx	005	A											
03 Apr	S12W26	183																
05 Apr	S12W52	183																
06 Apr	S12W65	183																
07 Apr	S12W78	183																
												0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 181

Region 329

03 Apr	N01E18	139	0020	03	Cso	004	B											
04 Apr	N02E04	140	0020	04	Cso	002	B											
05 Apr	N02W09	140																
06 Apr	N02W22	140																
07 Apr	N02W35	140																
08 Apr	N02W48	140																
09 Apr	N02W61	140																
10 Apr	N02W74	140																
11 Apr	N02W87	140																
												0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 140



Region Summary - continued.

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

Region 330

03 Apr	N07E74	083	0140	04	Hhx	001	A											
04 Apr	N07E62	082	0330	04	Hhx	001	A											
05 Apr	N07E49	081	0400	03	Hkx	001	A											
06 Apr	N07E38	079	0380	06	Dko	003	B											
07 Apr	N07E24	080	0330	07	Cko	005	B											
08 Apr	N07E10	081	0390	06	Cko	007	Bg											
09 Apr	N08W02	080	0420	06	Dko	014	Bg											
10 Apr	N07W16	081	0380	06	Chi	016	B											
11 Apr	N07W31	082	0360	06	Cho	013	B											
12 Apr	N07W43	081	0340	06	Dho	018	B											
13 Apr	N07W57	082	0330	06	Dho	009	B	1				1						
								1	0	0	0	1	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 080

Region 331

05 Apr	S07W09	139	0010	04	Bxo	004	B											
06 Apr	S07W22	139	0040	06	Dso	004	B											
07 Apr	S07W34	138	0030	05	Cao	006	B											
08 Apr	S08W48	139	0020	01	Hsx	001	A											
09 Apr	S08W62	140	0010	02	Axx	002	A											
10 Apr	S08W74	139	0020	04	Cro	002	B											
11 Apr	S08W87	139																
								0	0	0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 139

Region 332

07 Apr	N11E58	046	0020	01	Hsx	001	A											
08 Apr	N11E45	046	0020	01	Bxo	002	A											
09 Apr	N11E31	047	0030	02	Cso	003	B											
10 Apr	N11E18	047	0010	01	Axx	002	A											
11 Apr	N10E04	047	0000	01	Axx	002	A											
12 Apr	N12W07	045	0010	03	Cso	006	B											
13 Apr	N12W20	045	0020	02	Cso	004	B											
								0	0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 047



Region Summary - continued.

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

Region 333

09 Apr	N11W36	114	0010	02	Axx	002	A												
10 Apr	N11W49	114																	
11 Apr	N11W62	114																	
12 Apr	N11W75	114																	
13 Apr	N11W88	114																	
												0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 114

Region 334

10 Apr	S08E69	356	0110	03	Cao	006	B												
11 Apr	S08E55	356	0120	03	Cao	004	B												
12 Apr	S08E43	355	0110	03	Cao	006	B												
13 Apr	S08E29	356	0100	03	Cao	005	B												
												0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 356

Region 335

13 Apr	S21E56	329	0040	03	Cso	003	B												
												0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 329

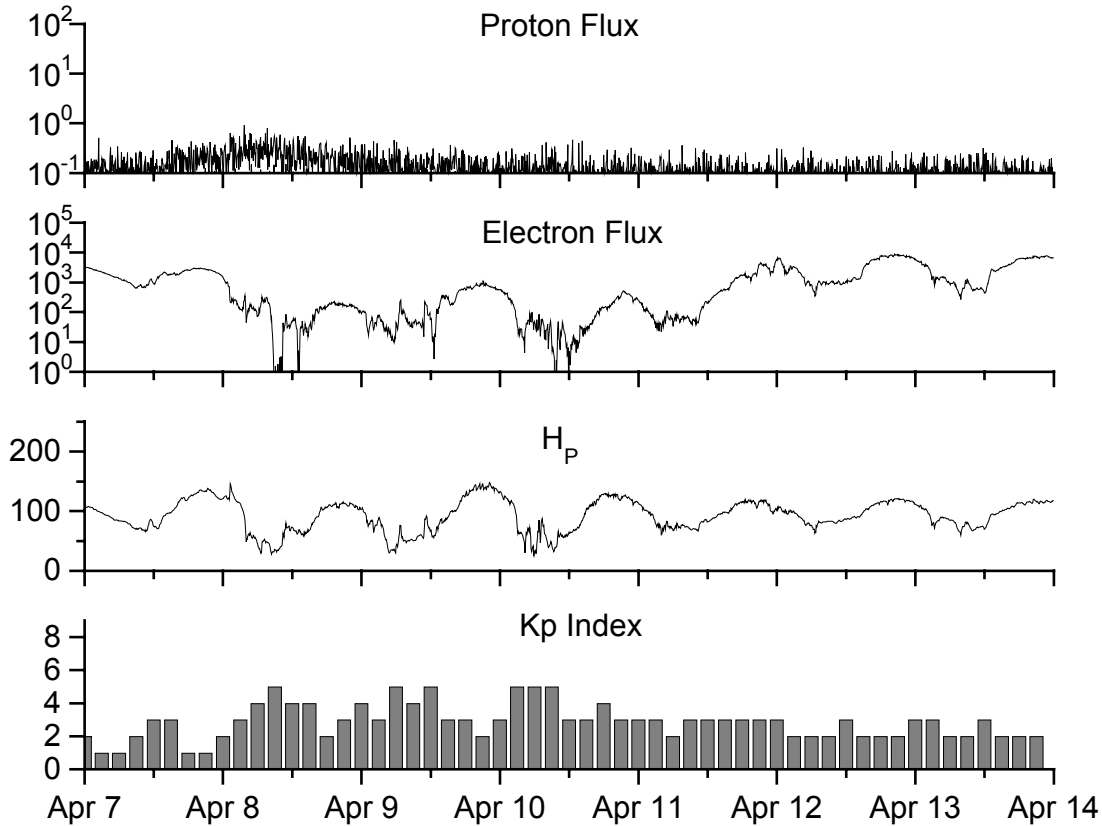


**Recent Solar Indices (preliminary)
of the observed monthly mean values**

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
2001									
April	163.6	108.2	0.66	159.4	107.7	178.1	171.7	18	12.7
May	135.1	97.3	0.72	163.1	108.8	147.9	174.8	12	12.5
June	196.7	134.0	0.68	167.2	109.9	173.7	178.8	12	12.4
July	124.6	82.2	0.66	172.1	111.8	131.3	183.9	11	12.4
August	159.4	106.8	0.67	176.7	113.8	163.1	188.8	13	12.5
September	229.1	150.7	0.66	178.8	114.3	233.8	191.3	13	12.8
October	197.4	125.6	0.64	179.5	114.1	208.1	191.9	20	12.0
November	178.6	106.5	0.60	183.7	115.6	212.7	193.7	16	12.0
December	217.5	132.2	0.61	184.5	114.6	235.6	193.9	09	12.2
2002									
January	189.0	114.1	0.60	184.8	113.5	227.3	194.6	08	12.4
February	194.5	107.4	0.55	188.6	114.7	205.0	197.2	10	12.8
March	153.1	98.4	0.64	188.9	113.4	180.3	195.7	10	13.0
April	194.9	120.7	0.62	186.2	110.5	189.8	191.5	15	13.2
May	204.1	120.8	0.59	183.6	108.9	178.4	188.0	15	13.3
June	146.0	88.3	0.61	179.9	106.3	148.7	183.0	11	13.5
July	183.5	99.9	0.54	175.4	102.7	173.5	176.3	13	13.9
August	191.0	116.4	0.61	169.3	98.7	183.9	169.5	16	14.3
September	206.4	109.6	0.53	163.4	94.6	175.8	164.2	14	14.9
October	153.9	97.5	0.63			167.0		23	
November	159.8	95.5	0.60			168.7		16	
December	147.9	80.8	0.55			158.6		13	
2003									
January	149.3	79.5	0.53			144.6		13	
February	87.9	46.2	0.53			124.6		15	
March	119.7	61.5	0.51			132.3		19	

NOTE: All smoothed values after June 1999 and monthly values after December 2000 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 22, RI= 158.5, occurred July 1989. *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 07 April 2003

Protons plot contains the five-minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-8* (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

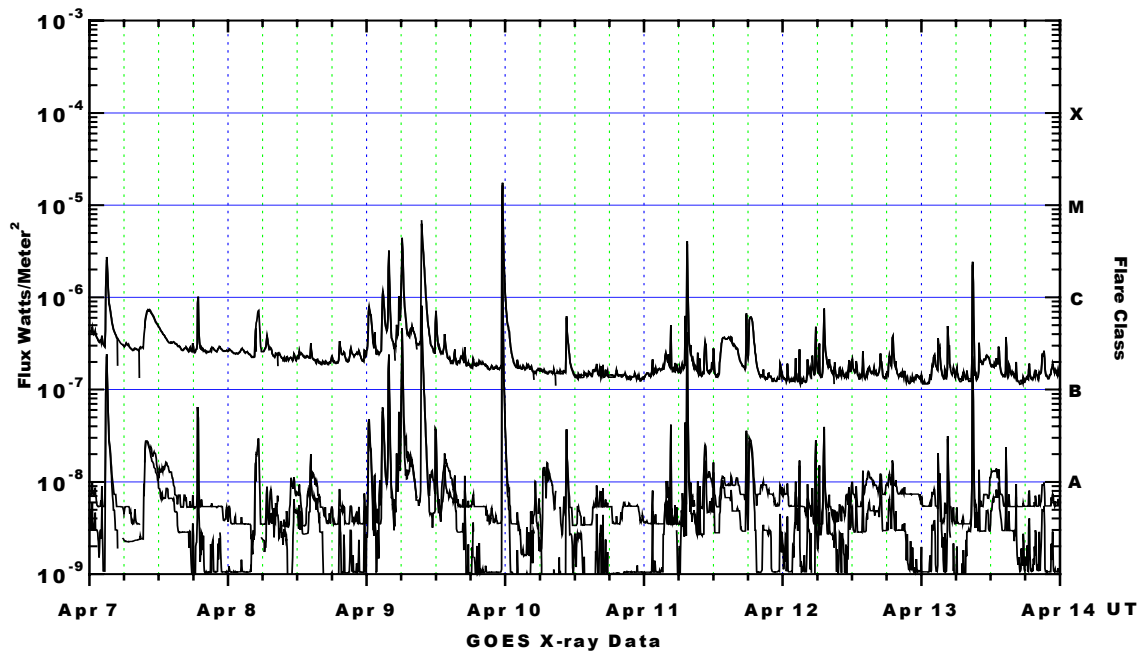
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm²-sec-sr) with energies greater than 2 MeV at GOES-8.

H_p plot contains the five minute averaged magnetic field H - component in nanoteslas (nT) as measured by GOES-8*. The H component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

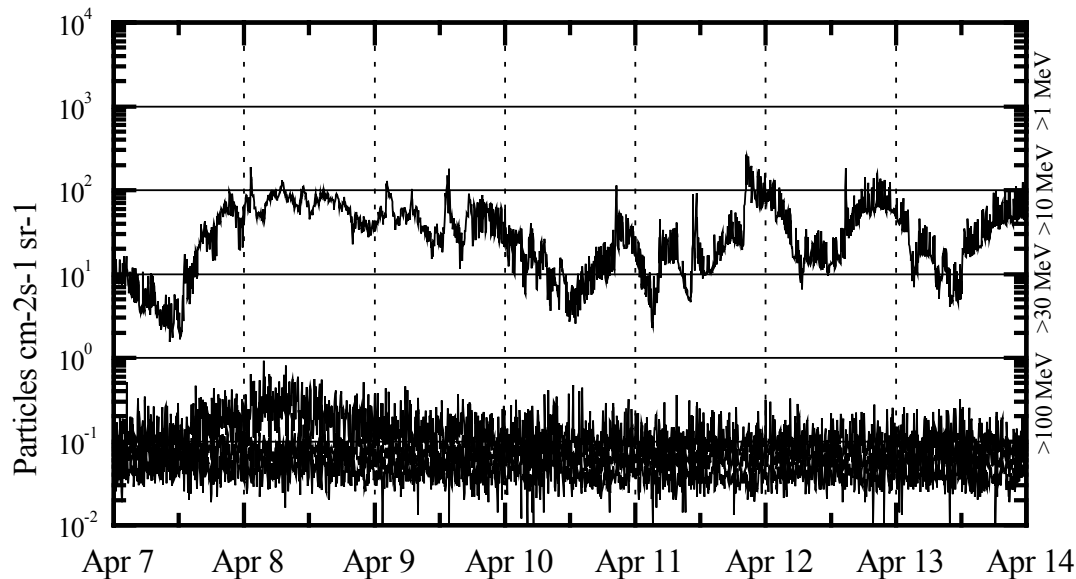
K_p plot contains the estimated planetary 3-hour K-index (derived by the Air Force Weather Agency) in real time from magnetometers at Meanook, Canada; Sitka, AK; Glenlea, Canada; St. Johns, Canada; Ottawa, Canada; Newport, WA; Fredericksburg, VA; Boulder, CO; Fresno, CA and Heartland, UK. These data are made available through cooperation from the Geological Survey of Canada (GSC) 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.

** see note on page 2*





GOES PROTON FLUX



Weekly GOES Satellite X-ray and Proton Plots

X-ray plot contains five-minute averaged x-ray flux (watts/m²) as measured by GOES 8* and 10 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-8* (W75) 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

* see note on page 2



Quiet ($A_p \leq 7$) Geomagnetic Conditions



Space Environment Center

Comparison of Cycles at current month in cycle

