Space Weather Highlights **SWO PRF 1319**
04 - 10 December 2000 **12 December 2000**

Solar activity ranged from very low to moderate levels. The period began with activity at very low levels. Activity increased to low levels on 05 December with isolated low-level C-class subflares. A further increase to moderate levels occurred on 06 December by virtue of an isolated M1/Sf flare at 06/2230 UTC from Region 9246 (S12, L = 248, class/area Eao/250 on 07 December). Region 9246 was of moderate size and magnetic complexity, but gradually decaying at the time of this flare. Solar activity dropped to low levels for the rest of the period due to isolated to occasional C-class subflares. The visible regions were either stable or declining at the close of the summary period.

Data were available from the Advanced Composition Explorer (ACE) spacecraft for most of the period. Solar wind conditions were largely unremarkable through 06 December with the exception of a few periods of sustained southward IMF Bz with deflections to minus 09 nT (GSM). A recurrent coronal hole wind stream began on 07 December and continued through the rest of the period with velocities peaking at 710 km/sec during 09 - 10 December.

There were no proton events detected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at normal to moderate levels.

The geomagnetic field was at mostly quiet to unsettled levels during 4 - 7 December with isolated active periods. The field was disturbed during 8 - 9 December due to a high speed stream associated with a recurrent, negative polarity coronal hole. Unsettled to active levels occurred during this period with brief minor to major storm intervals detected at some high latitude stations. Activity subsided to quiet to unsettled levels on the last day of the period.

Space Weather Outlook
13 December - 08 January 2001

Solar activity is expected to be at low to moderate levels. An increasing trend is expected to begin 13 December with the return of previously active longitudes. There will also be a chance for a major flare during the first half of the period.

Chances for a proton event are expected to increase during the first half of the period due to the return of previously active longitudes.

The greater than 2 MeV electron flux at geosynchronous orbit may reach moderate to high levels during 05 - 06 January. Otherwise, normal to moderate fluxes are expected.

Active levels will be possible around 04 - 05 January due to coronal hole effects. Quiet to unsettled levels are expected during the rest of the period, barring an Earth-directed CME.

Daily Solar Data

Date	Radio Flux 10.7 cm	Sun spot No.	Sunspot Area (10^{-6} hemi.)	X-ray Background	Flares: X-ray Flux C	M	X	Flares: Optical S	1	2	3	4
04 December	152	120	490	B4.6	0	0	0	1	0	0	0	0
05 December	147	90	320	B4.8	4	0	0	1	0	0	0	0
06 December	141	99	360	B6.9	5	1	0	3	0	0	0	0
07 December	144	125	460	C1.0	8	0	0	2	1	0	0	0
08 December	138	81	190	B8.1	8	0	0	0	0	0	0	0
09 December	135	73	250	B7.7	4	0	0	2	0	0	0	0
10 December	147	58	170	B5.8	2	0	0	1	0	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm ^{2}-day-sr) >1MeV	>10MeV	>100MeV	Electron Fluence (electrons/cm^2-day-sr) >.6MeV	>2MeV	>4MeV
04 December	2.9E+6	4.2E+4	2.3E+3		2.4E+6	
05 December	8.6E+5	2.6E+4	2.2E+3		2.9E+6	
06 December	5.1E+5	1.9E+4	2.3E+3		3.7E+6	
07 December	8.0E+5	1.3E+4	2.5E+3		2.5E+6	
08 December	1.2E+6	1.1E+4	2.7E+3		2.4E+6	
09 December	1.1E+6	9.5E+3	2.8E+3		7.6E+6	
10 December	4.2E+5	9.1E+3	2.7E+3		2.8E+7	

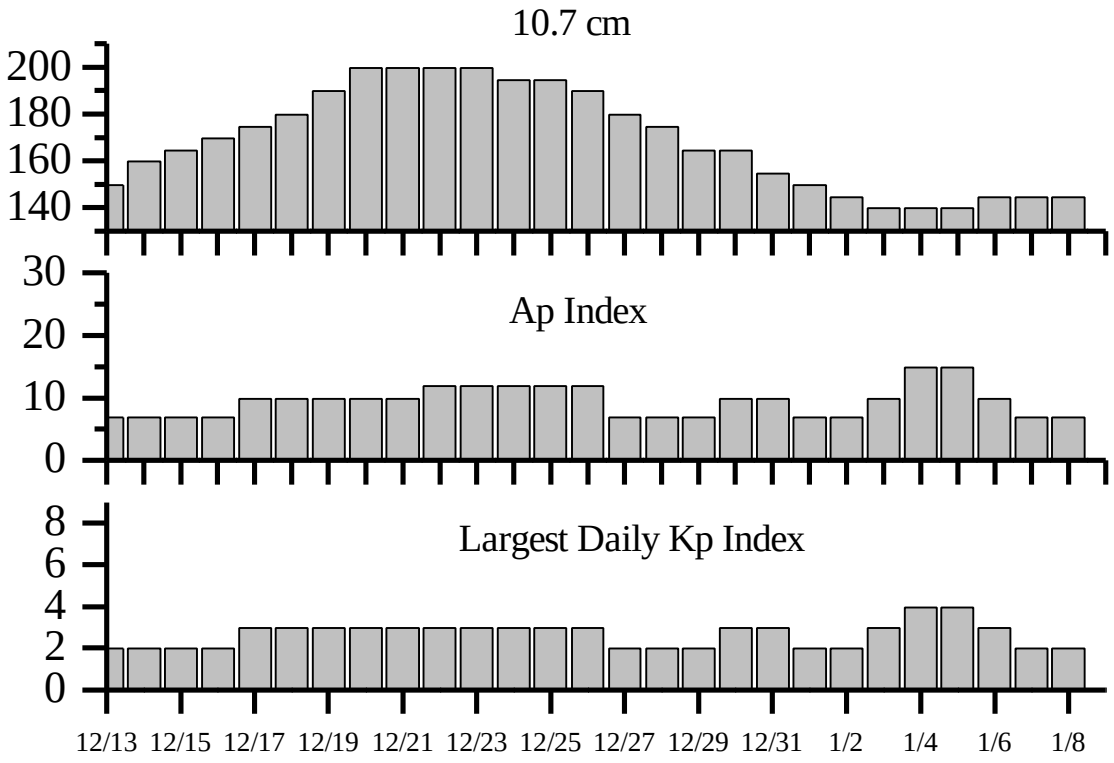
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg A	K-indices	High Latitude College A	K-indices	Estimated Planetary A	K-indices
04 December	8	1-2-2-2-1-1-1-4	14	0-3-3-5-4-0-1-1	10	2-3-3-3-2-2-3-2
05 December	4	1-1-0-1-3-1-1-1	*	1-1-1-*-*-*-1-0	4	1-1-1-1-2-2-2-1
06 December	6	1-1-2-1-2-2-2-2	10	0-0-3-2-4-4-1-1	7	0-1-3-2-2-3-2-2
07 December	8	2-2-3-2-2-1-1-3	24	2-3-3-5-5-4-3-3	13	2-3-3-3-4-3-2-3
08 December	11	3-3-2-3-3-2-2-2	28	2-2-4-3-6-5-4-3	17	4-4-3-3-4-4-3-2
09 December	13	2-3-3-2-3-3-3-3	*	4-3-*-*-*-*-*-*	16	3-4-3-3-3-3-3-4
10 December	9	3-2-2-3-2-2-2-2	*	*-*-*-*-*-*-*-*	9	3-3-2-3-2-3-2-2

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UT
06 Dec 0026	1 – 245 MHz Burst	05 Dec
07 Dec 0026	1 – 245 MHz Burst	06 Dec
07 Dec 1131	K= 4 Warning	07 Dec 1135 - 1500
07 Dec 1158	K= 4 Observed	07 Dec 0900 -1200
07 Dec 1624	A >=20 Watch	09 Dec
08 Dec 0016	3 – 245 MHz Bursts	07 Dec
08 Dec 0300	K=4 Observed	08 Dec 0000 - 0300
08 Dec 1320	Stratwarm Alert Exists Friday	
08 Dec 1501	K= 4 Warning	08/1501 - 09/1500 Dec
08 Dec 1502	K= 4 Observed	08 Dec 1200 - 1500
09 Dec 1343	Stratwarm Alert Exists Saturday	
09 Dec 1458	EXTENDED K= 4 Warning	08/1501 -10/1500 Dec
10 Dec 1232	Stratwarm Alert Exists Sunday	

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
13 Dec	150	7	2	27 Dec	180	7	2
14	160	7	2	28	175	7	2
15	165	7	2	29	165	7	2
16	170	7	2	30	165	10	3
17	175	10	3	31	155	10	3
18	180	10	3	01 Jan	150	7	2
19	190	10	3	02	145	7	2
20	200	10	3	03	140	10	3
21	200	12	3	04	140	15	4
22	200	12	3	05	140	15	4
23	200	12	3	06	145	10	3
24	195	12	3	07	145	7	2
25	190	12	3	08	145	7	2
26	180	12	3				

Energetic Events

Date	Time			X-ray		Optical Information			Peak Radio Flux		Sweep Freq Intensity	
	Begin	Max	½ Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	245	2695	II	IV
06 Dec	2216	2230	2251	M1.6	.022	SF	S10W66	9246	250	36		

Flare List

Date	Time Begin	Time Max	Time End	X-ray Class.	Optical Imp / Brtns	Optical Location Lat CMD	Rgn
04 December	0025	0025	0034	B6.9	SF	N20W54	9242
	0256	0259	0302	B6.8			
05 December	0442	0446	0500	C2.2	SF	N05W74	9248
	1348	1353	1358	C1.0			
	1756	1823	1903	C1.6			9246
	2023	2058	2157	C1.6			
06 December	0806	0810	0816	C1.0			
	0932	0934	0940	B8.5	SF	S10W64	9246
	1036	1044	1052	C2.0			
	1247	1254	1259	C2.4			
	1512	1518	1522	C7.1			
	1814	1815	1821	C2.7	SF	S09W68	9246
	2223	2233	2247	M1.6	SF	S10W66	9246
07 December	B0049	U0050	A0135	C5.4	SF	S10W63	9246
	0242	0245	0247	C1.0			
	0336	0339	A0445	C1.7	1F	S09W69	9246
	0602	0703	0723	C2.1	SF	S10W65	9246
	0642	0645	0648	C1.0			9246
	0724	0737	0746	C4.6			
	1245	1249	1251	C1.1			
	1914	1940	2036	C5.4			
08 December	0041	0044	0046	C1.3			
	0513	0517	0519	C1.4			
	1129	1134	1141	C1.1			
	1448	1453	1455	C1.9			
	1508	1513	1515	C3.4			
	1615	1623	1630	C4.3			
	1848	1855	1905	C2.0			
	2328	2332	2342	C3.5			
09 December	0402	0407	0412	C1.3			
	0420	0423	0427	C3.1	SF	N11E61	9262
	0536	0548	0554	C2.9			
	1548	1552	1556	C1.1			
	1722	1723	1727	B9.7	SF	N10W15	9254
10 December	0452	0453	0500	C3.3	SF	N13E56	9262
	1024	1028	1034	B8.3			
	1917	1935	1948	C2.8			

Region Summary

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	M	X	Optical S	1	2	3	4
	Region 9240														
22 Nov	N09E72	299	0120	08	CAO	004	B	1			2				
23 Nov	N09E58	300	0250	07	DSO	005	B				1				
24 Nov	N09E46	298	0180	06	CAO	004	B				1				
25 Nov	N09E34	297	0220	06	CHO	004	B		1				1		
26 Nov	N08E22	296	0300	10	DHO	015	B								
27 Nov	N08E09	296	0210	12	CAO	017	B	1			1				
28 Nov	N09W02	294	0280	10	DAC	023	B								
29 Nov	N09W17	296	0300	09	DAO	024	B								
30 Nov	N09W31	296	0230	09	DSO	017	B								
01 Dec	N09W43	295	0130	09	DSO	011	B	1			1				
02 Dec	N10W60	299	0130	02	HSX	001	A								
03 Dec	N09W74	300	0140	02	HSX	001	A								
04 Dec	N09W85	298	0130	02	HSX	001	A								
								3	1	0	6	0	1	0	0

Crossed West Limb.
Absolute heliographic longitude: 294

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	M	X	Optical S	1	2	3	4
	Region 9242														
24 Nov	N22E68	276	0040	06	BXO	002	B								
25 Nov	N21E57	274	0020	00	AXX	001	A								
26 Nov	N19E39	279	0020	06	BXO	004	B								
27 Nov	N19E23	282	0050	04	CAO	007	B	3			5				
28 Nov	N19E11	281	0140	06	DAO	012	B	2			6				
29 Nov	N20W02	281	0160	08	DAO	009	B	2			2				
30 Nov	N21W15	280	0200	09	DSO	011	B								
01 Dec	N21W28	280	0170	10	DAI	011	B	1			1				
02 Dec	N21W41	280	0180	10	DSO	012	B								
03 Dec	N20W54	280	0180	09	DSO	010	B				1				
04 Dec	N19W68	281	0200	08	DSO	007	B				1				
05 Dec	N19W81	280	0120	05	CAO	002	B								
06 Dec	N20W94	280	0060	01	HSX	001	A								
								8	0	0	16	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 281

Region Summary - continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics: Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares: X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9243												
27 Nov	S12E30	275	0020	03	BXO	007	B								
28 Nov	S12E16	276	0050	06	DAO	008	B								
29 Nov	S11E01	278	0050	06	DAO	007	B								
30 Nov	S11W12	277	0060	08	DAO	016	B								
01 Dec	S10W27	279	0030	06	DSO	007	B								
02 Dec	S11W40	279	0030	08	DSO	008	B								
03 Dec	S10W53	279	0030	08	DSO	006	B								
04 Dec	S08W70	283	0010	00	HRX	001	A								
05 Dec	S08W83	283													
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 278

			Region 9245												
28 Nov	N04E65	227	0030	01	HSX	001	A								
29 Nov	N04E53	226	0040	01	HSX	001	A								
30 Nov	N04E40	225	0030	01	HSX	001	A								
01 Dec	N04E26	226	0020	01	HSX	001	A								
02 Dec	N04E14	225	0020	01	HSX	001	A								
03 Dec	N04E00	226	0020	01	HSX	001	A								
04 Dec	N05W11	224	0010	02	HSX	001	A								
05 Dec	N04W25	224	0010	01	AXX	002	A								
06 Dec	N04W39	225	0010	01	AXX	002	A								
07 Dec	N04W52	225													
08 Dec	N04W65	225													
09 Dec	N04W78	225													
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 226

Region Summary - continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
	Region 9246														
28 Nov	S12E47	245	0030	06	BXO	006	B				3				
29 Nov	S12E33	246	0120	09	DSO	015	B	8			9				
30 Nov	S12E19	246	0220	11	EAI	024	B		1		7				
01 Dec	S12E04	248	0190	12	EAI	025	BG	2			2				
02 Dec	S12W08	247	0150	12	ESI	019	B	1			1				
03 Dec	S12W21	247	0130	12	EAO	017	B								
04 Dec	S12W35	248	0090	10	DSO	012	B								
05 Dec	S12W52	251	0100	08	CSO	013	B	1							
06 Dec	S11W62	248	0110	10	DAO	009	B	1	1		3				
07 Dec	S11W75	248	0250	13	EAO	007	B	4			2	1			
08 Dec	S11W94	254	0000	00	AXX	001	A								
								17	2	0	27	1	0	0	0
Crossed West Limb.															
Absolute heliographic longitude:		248													
	Region 9247														
29 Nov	N13E20	259	0000	00	AXX	001	A								
30 Nov	N13E07	259						1			2				
01 Dec	N13W06	259													
02 Dec	N14W20	259	0000	00	AXX	001	A								
03 Dec	N14W33	259													
04 Dec	N14W46	259													
05 Dec	N14W59	259													
06 Dec	N14W72	259													
07 Dec	N14W85	259													
								1	0	0	2	0	0	0	0
Crossed West Limb.															
Absolute heliographic longitude:		259													
	Region 9248														
30 Nov	N04W17	282	0010	02	AXX	003	A								
01 Dec	N04W28	280	0000	01	AXX	002	A								
02 Dec	N05W42	281	0000	03	BXO	003	B								
03 Dec	N05W54	280	0020	04	DAO	005	B								
04 Dec	N06W67	280	0010	00	HRX	001	A								
05 Dec	N06W80	280						1			1				
								1	0	0	1	0	0	0	0
Crossed West Limb.															
Absolute heliographic longitude:		282													

Region Summary- continued.

Date	Location (° Lat ° CMD)	Helio Lon	Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9249												
30 Nov	N11E45	220	0010	02	BXO	002	B								
01 Dec	N11E31	221	0000	00	AXX	001	A								
02 Dec	N12E17	222	0000	01	AXX	002	A								
03 Dec	N12E04	222													
04 Dec	N12W09	222													
05 Dec	N12W22	222													
06 Dec	N12W35	221													
07 Dec	N09W48	221	0000	00	AXX	001	A								
08 Dec	N09W61	221													
09 Dec	N09W74	221													
10 Dec	N09W87	221													
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		222													
			Region 9251												
03 Dec	S22W34	260	0030	04	CSO	005	B								
04 Dec	S22W47	260													
05 Dec	S22W60	260													
06 Dec	S22W73	260													
								0	0	0	0	0	0	0	0
Crossed West Limb.															
Absolute heliographic longitude:		260													
			Region 9252												
03 Dec	S02W36	262	0020	04	CAO	004	B								
04 Dec	S02W49	262													
05 Dec	S02W62	262													
06 Dec	S02W75	262													
								0	0	0	0	0	0	0	0
Crossed West Limb.															
Absolute heliographic longitude:		262													

Region Summary- continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
	Region 9253														
03 Dec	S14E11	215	0020	02	CSO	002	B								
04 Dec	S14W02	215													
05 Dec	S14W15	215													
06 Dec	S14W28	215													
07 Dec	S14W41	215													
08 Dec	S14W54	215													
09 Dec	S14W67	215													
10 Dec	S14W80	215													
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 215

	Region 9254														
03 Dec	N10E59	167	0010	01	HSX	001	A								
04 Dec	N09E48	165	0010	04	BXO	003	B								
05 Dec	N10E36	163	0070	05	DAO	010	B								
06 Dec	N10E23	163	0150	06	DAO	010	B								
07 Dec	N10E10	163	0160	06	DAO	010	B								
08 Dec	N11W04	164	0120	05	DAO	010	B								
09 Dec	N10W19	166	0080	05	DAO	014	B				1				
10 Dec	N10W32	166													
								0	0	0	1	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 164

	Region 9255														
03 Dec	N21E64	162	0010	01	HSX	001	A								
04 Dec	N22E54	159	0020	01	HRX	001	A								
05 Dec	N22E40	159	0010	01	AXX	001	A								
06 Dec	N23E26	160	0010	01	HRX	001	A								
07 Dec	N23E14	159	0000	00	AXX	001	A								
08 Dec	N23E01	159													
09 Dec	N23W12	159													
10 Dec	N23W25	159													
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 159

Region Summary- continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
	Region 9256														
04 Dec	S16E65	148	0010	01	AXX	003	A								
05 Dec	S17E51	148	0010	01	AXX	002	A								
06 Dec	S17E37	149	0010	01	HSX	002	A								
07 Dec	S16E24	149													
08 Dec	S16E11	149													
09 Dec	S16W02	149													
10 Dec	S16W15	149													
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		149													
	Region 9257														
06 Dec	N19E38	148	0010	02	HRX	004	A								
07 Dec	N19E24	149	0010	03	BXO	004	B								
08 Dec	N20E09	151	0000	00	AXX	001	A								
09 Dec	N19W03	150	0020	03	CRO	003	B								
10 Dec	N19W16	150													
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		150													
	Region 9258														
07 Dec	N14E48	125	0010	02	BXO	002	B								
08 Dec	N14E35	125													
09 Dec	N14E22	125													
10 Dec	N14E09	125													
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		125													
	Region 9259														
07 Dec	S10W24	197	0010	03	BXO	004	B								
08 Dec	S09W35	195	0020	06	BXO	003	B								
09 Dec	S09W48	195													
10 Dec	S09W61	195													
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		197													

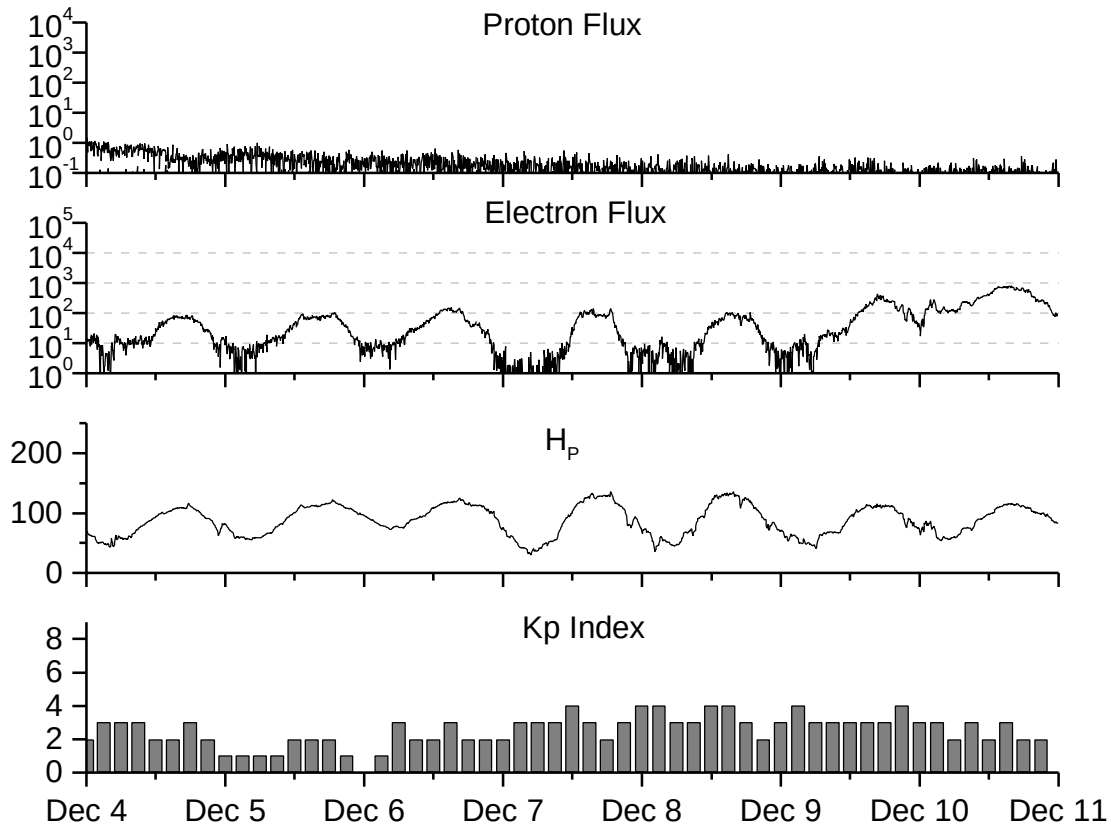
Region Summary- continued.

Date	Location (° Lat ° CMD)	Helio Lon	Sunspot Characteristics Area (10^{-6} hemi)	Extent (helio)	Spot Class	Spot Count	Mag Class	Flares X-ray C	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
			Region 9260												
07 Dec	S04W47	220	0010	03	BXO	004	B								
08 Dec	S05W59	219	0040	07	CSO	004	B								
09 Dec	S05W71	218	0030	01	HSX	001	A								
10 Dec	S04W91	224	0000	00	AXX	001	A								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		220													
			Region 9261												
07 Dec	N05W69	242	0010	02	BXO	002	B								
08 Dec	N05W82	242													
								0	0	0	0	0	0	0	0
Crossed West Limb.															
Absolute heliographic longitude:		242													
			Region 9262												
08 Dec	N13E70	090	0010	06	BXO	002	B								
09 Dec	N14E58	089	0110	07	DAO	004	B				1				
10 Dec	N13E43	090	0080	08	DAO	004	B	1			1				
								1	0	0	2	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		090													
			Region 9263												
09 Dec	N18E67	080	0010	01	HRX	001	A								
10 Dec	N16E51	082	0000	00	AXX	001	A								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		082													
			Region 9264												
10 Dec	S21E65	068	0060	03	HSX	001	A								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		068													
			Region 9265												
10 Dec	N19E70	063	0030	02	HSX	001	A								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		063													

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

	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values		Ratio	Smooth values		*Penticton	Smooth	Planetary	Smooth
Month	SWO	RI	RI/SWO	SWO	RI	10.7 cm	Value	Ap	Value
				1998					
December	120.8	81.9	0.68	108.8	77.9	150.1	134.3	08	11.9
				1999					
January	94.3	62.0	0.66	116.5	82.6	142.6	139.0	10	11.7
February	93.4	66.3	0.71	120.2	84.6	142.0	142.6	12	11.6
March	100.5	68.8	0.68	120.5	83.8	126.3	144.0	14	11.7
April	92.9	63.7	0.69	123.8	85.5	117.2	145.8	12	12.2
May	140.5	106.4	0.76	131.7	90.5	148.6	149.9	08	12.4
June	208.3	137.7	0.66	136.0	93.1	169.8	152.9	07	12.4
July	169.2	113.5	0.67	138.0	94.3	165.6	154.4	10	12.6
August	136.1	93.7	0.69	142.8	97.5	170.8	156.3	15	12.9
September	107.4	71.5	0.67	150.0	102.3	135.7	161.0	19	12.8
October	167.7	116.7	0.70	158.5	107.8	164.8	167.2	19	12.7
November	199.3	133.2	0.67	164.7	110.9	191.5	171.5	14	13.1
December	123.5	86.4	0.69	165.9	111.0	169.8	173.4	10	13.8
				2000					
January	140.8	90.1	0.64	168.0	112.8	158.1	175.5	13	14.5
February	161.9	112.9	0.70	172.1	116.6	173.2	176.8	15	15.1
March	203.6	138.5	0.68	175.4	119.8	208.2	178.4	09	15.1
April	193.4	125.3	0.65	176.3	120.7	184.2	180.5	15	14.9
May	188.8	120.8	0.64	173.1	118.9	184.5	180.1	15	14.8
June	190.3	124.9	0.66			179.8		15	
July	236.7	169.1	0.71			204.7		21	
August	166.6	130.5	0.78			163.1		18	
September	157.9	109.9	0.70			182.1		16	
October	138.9	100.1	0.72			167.8		16	
November	149.9	106.5	0.71			178.8		16	

NOTE: All smoothed values after September 1999 and monthly values after March 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 04 December 2000

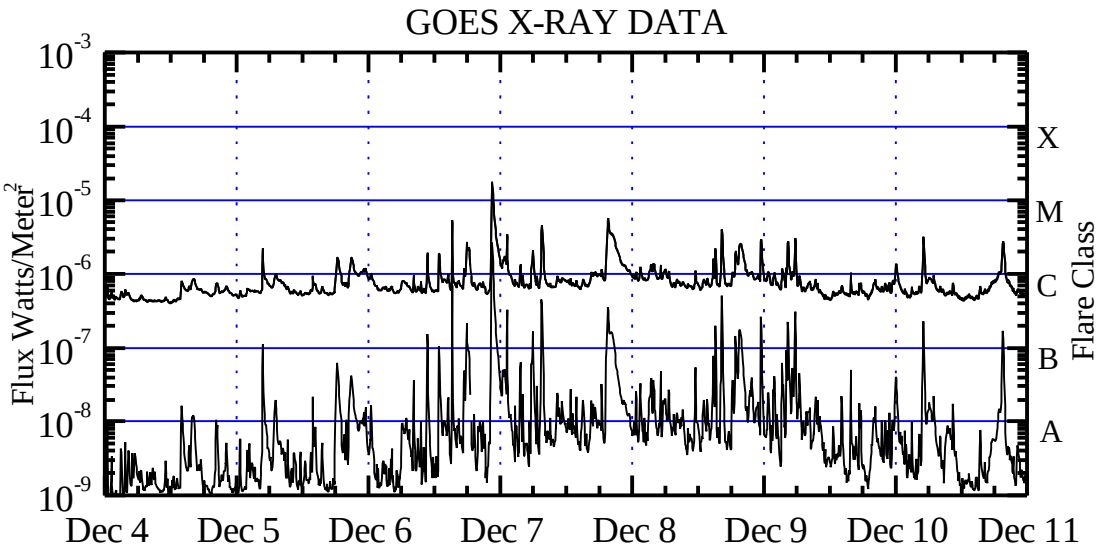
Protons plot contains the five-minute averaged integral proton flux (protons/cm^2 –sec –sr) as measured by GOES-8 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

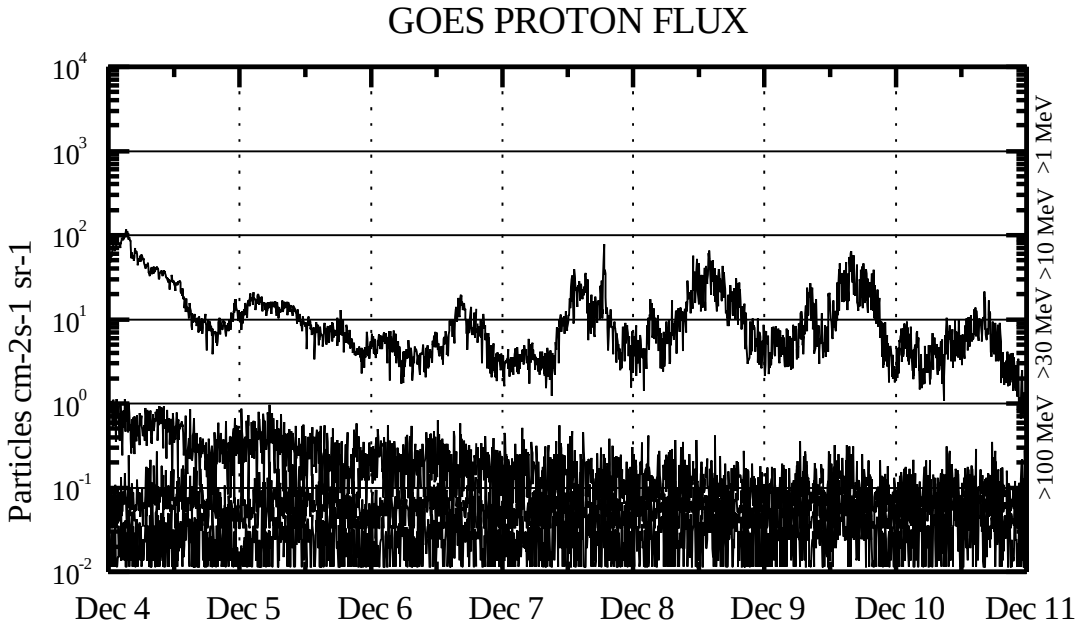
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm^2 –sec –sr) with energies greater than 2 MeV at GOES-8.

Hp 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.

Kp plot contains the estimated planetary 3-hour K-index (derived by the USAF 55th Space Weather Squadron) 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 Kp 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 Kp are " global " parameters that are applicable to a first order approximation over large areas. Hparallel 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$^{2)}$ 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/cm^2 –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/cm^2-sec-sr) at greater than 10 MeV.