Space Weather Highlights **SWO PRF 1316**
13 - 19 November 2000 **21 November 2000**

Solar activity reached moderate levels twice during the period. The week began with activity at low levels due to isolated C-class subflares. Activity increased to moderate levels on 14 November due to an optically uncorrelated M1 X-ray flare at 14/1634 UTC. Region 9231 (S23, L = 056, class/area Dao/140 on 14 November) produced a C7/2n flare at 14/0806 UTC. A Type IV radio sweep is believed to have been associated with the C7. A Type II radio sweep occurred at 14/0902 UTC. Activity decreased to low levels during 15 - 17 November due to isolated to occasional C-class subflares. An impressive full-halo CME occurred early on 16 November but was judged to be from a source on the far side of the Sun. A C8 X-ray flare occurred at 16/0400 UTC associated with a Type II radio sweep and a CME determined to be not Earth-directed. Activity reached moderate levels once again on 18 November due to an M1/1f flare at 18/1325 UTC from Region 9235 (N14, L = 025, class/area Dso/140 on 18 November). A Type II radio sweep and a CME (not Earth-directed) was associated with this event. Region 9231 (S24, L = 057, class/area Fai/330 on 18 November) produced an M1/Sf flare at 18/1100 UTC. Activity decreased to low levels on 19 November due to occasional C-class subflares.

Data were available from the Advanced Composition Explorer (ACE) spacecraft for most of the period. No CME passages were noted during the interval. A weak positive polarity coronal hole signature was evident with peak velocities of 380 Km/s noted on 19 November. Peak wind velocities of 770 Km/s occurred on 13 November, then gradually declined during most of the period. IMF Bz fluctuated between plus 6 to minus 8 nT (GSM) from 13 - 19 November.

On 13 November the greater than 10 MeV proton event that began at 08/2350 UTC ended at 13/0745 UTC. This event reached a max flux of 14,800 pfu (corrected) on 09/1555 UTC.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels from 13 - 18 November.

The geomagnetic field was at quiet to unsettled levels during 13 -19 November.

Space Weather Outlook
22 November - 18 December 2000

Solar activity is expected to increase to moderate levels. Activity may reach high levels beginning around 23 November with the return of previously active heliographic longitudes.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit may reach moderate to high levels during 10 - 11 December. Otherwise, normal to moderate fluxes are expected.

Geomagnetic field activity is expected to be at quiet to unsettled levels during most of the period, barring an Earth-directed CME. However, active to minor storm periods will be possible during 08 - 10 December due to coronal hole effects.

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
13 November	144	99	690	B4.8	3	0	0	1	0	0	0	0
14 November	149	131	880	B4.7	8	1	0	12	0	1	0	0
15 November	147	144	900	B5.1	4	0	0	2	1	0	0	0
16 November	154	142	930	B9.9	3	0	0	4	0	0	0	0
17 November	163	140	760	B6.3	7	0	0	7	2	0	0	0
18 November	177	171	680	B8.3	14	2	0	11	2	0	0	0
19 November	175	174	890	C1.4	7	0	0	3	1	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
13 November	4.1E+6	6.6E+5	4.8E+3		2.4E+8	
14 November	2.1E+6	3.6E+5	3.8E+3		2.4E+8	
15 November	1.9E+6	2.4E+5	3.5E+3		2.4E+8	
16 November	1.9E+6	1.7E+5	3.2E+3		2.5E+8	
17 November	2.2E+6	1.4E+5	2.9E+3		1.6E+8	
18 November	3.7E+6	1.0E+5	3.2E+3		2.0E+8	
19 November	5.4E+5	8.9E+4	2.9E+3		1.0E+7	

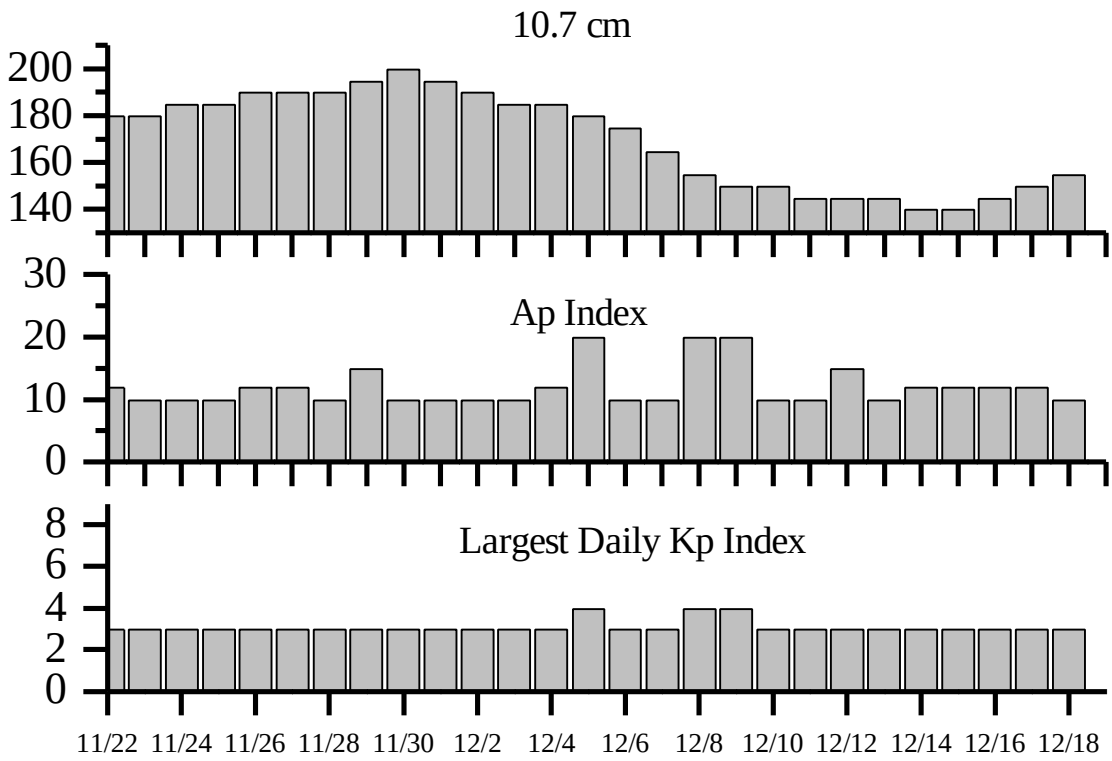
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg A	K-indices	High Latitude College A	K-indices	Estimated Planetary A	K-indices
13 November	5	1-3-0-1-2-1-2-1	10	1-1-0-3-4-3-2-2	8	1-3-1-2-2-3-3-3
14 November	4	2-3-0-1-0-1-0-1	3	1-2-0-1-2-1-1-0	5	1-2-0-1-2-2-2-2
15 November	3	1-1-0-1-1-1-1-1	3	1-1-2-0-1-0-1-1	5	1-1-2-1-2-2-2-2
16 November	1	1-0-0-0-0-0-0-1	*	0-0-4-0-0-0-0-*	4	1-0-1-1-2-1-2-3
17 November	3	1-1-1-2-2-1-0-0	*	*-*-*-*-*-*-0-0	4	1-0-1-2-2-2-1-1
18 November	4	0-0-0-0-2-2-2-2	2	0-0-0-0-0-1-1-2	6	0-0-1-1-2-2-3-3
19 November	7	1-2-2-2-2-1-3-2	16	1-1-4-6-2-1-0-1	7	1-2-2-3-2-2-2-2

Alerts and Warnings Issued

Date & Time of Issue	Type of Alert or Warning	Date & Time of Event UT
13 Nov 0012	1 – 245 MHz Burst	12 Nov
13 Nov 0028	CONTINUED Electron Event >2MeV >=1000pfu	12 Nov 0425
13 Nov 0053	CONTINUED Protons Event >10 MeV >=10pfu	08 Nov 2350
13 Nov 0300	ENDED A-Index >=20 Observed	12 Nov 1200
13 Nov 1324	ENDED Protons Event >10 MeV >=10pfu	08 Nov 2350
14 Nov 0024	CONTINUED Electron Event >2MeV >=1000pfu	12 Nov 0425
14 Nov 0916	Type IV Radio Emission	14 Nov 0831
14 Nov 0928	Type II Radio Emission	14 Nov 0902
15 Nov 0008	3 – 245 MHz Bursts	14 Nov
15 Nov 0008	245 MHZ Radio Noise Storm	14 Nov
15 Nov 0123	CONTINUED Electron Event >2MeV >=1000pfu	12 Nov 0425
16 Nov 0016	CONTINUED Electron Event >2MeV >=1000pfu	12 Nov 0425
16 Nov 0013	1 – 245 MHz Burst	15 Nov
16 Nov 0051	Type II Radio Emission	16 Nov 0037
17 Nov 0018	1 – 245 MHz Burst	16 Nov
17 Nov 0020	CONTINUED Electron Event >2MeV >=1000pfu	12 Nov 0425
18 Nov 0005	CONTINUED Electron Event >2MeV >=1000pfu	12 Nov 0425
18 Nov 1348	Type II Radio Emission	18 Nov 1316
19 Nov 0041	CONTINUED Electron Event >2MeV >=1000pfu	12 Nov 0425
19 Nov 0054	3 – 245 MHz Bursts	18 Nov

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
22 Nov	180	12	3	06 Dec	175	10	3
23	180	10	3	07	165	10	3
24	185	10	3	08	155	20	4
25	185	10	3	09	150	20	4
26	190	12	3	10	150	10	3
27	190	12	3	11	145	10	3
28	190	10	3	12	145	15	3
29 Nov	195	15	3	13	145	10	3
30	200	10	3	14	140	12	3
01 Dec	195	10	3	15	140	12	3
02	190	10	3	16	145	12	3
03	185	10	3	17	150	12	3
04	185	12	3	18	155	10	3
05	180	20	4				

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
14 Nov	1619	1634	1653	M1.0	.014					140		
18 Nov	1051	1100	1109	M1.5	.011	SF	S25E08	9231	240	79		
18 Nov	1302	1325	1350	M1.5	.031	1F	N11E37	9235	1400	61	2	

Flare List

Date	Time			X-ray	Optical		Rgn
	Begin	Max	End	Class.	Imp / Brtns	Location Lat CMD	
13 November	1205	1211	1216	C2.2			
	1343	1346	1348	C1.4			
	1625	1630	1650	C1.7	SF	S11W15	9227
14 November	0025	0025	0031		SF	S23E68	9231
	0224	0224	0227		SF	S23E67	9231
	0228	0233	0238	C2.5			
	0534	0545	0553	C2.0			
	0600	0600	0607	C1.9	SF	S23E65	9231
	0728	0729	0732		SF	S12W50	9221
	0746	0803	0901	C7.1	2N	S26E65	9231
	1126	1142	1149		SF	S26E62	9231
	1318	1321	1326	C1.4	SF	S25E60	9231
	1450	1452	1459	C1.4	SF	S25E60	9231
	1508	1509	1521	C2.0	SF	S26E60	9231
	1523	1537	1539		SF	S23E62	9231
	1619	1634	1653	M1.0			
	1828	1829	1856	C1.7	SF	S25E57	9231
	1915	1915	1929		SF	S13W45	9223
	2018	2033	2039		SF	S25E62	9231
15 November	0243	0244	0308	C5.7	1B	S15W48	9223
	0848	0851	0853	B9.1			
	1819	1821	1829	C1.7	SF	S26E42	9231
	1832	1834	1841		SF	S26E42	9231
	2044	2047	2052	B9.9			
	2129	2134	2137	C1.8			
	2215	2229	2250	C3.0			
16 November	0020	0040	0102	C8.9			9231
	0215	0219	0221	C3.5			
	0654	0655	0657	B9.1	SF	S25E39	9231
	1838	1839	1843		SF	N13E62	9233
	1935	1935	1938		SF	N12E62	
	2133	2142	2204	C3.5	SF	N12E59	9235

Flare List- continued.

Date	Time Begin	Time Max	Time End	X-ray Class.	Optical Imp / Brtns	Optical Location Lat CMD	Rgn
17 November	0204	0209	0211	C1.1	SF	N14W33	
	0219	0223	0225	C1.3			
	0253	0256	0300	C1.1			
	0720	0720	0733		SF	S24E24	9231
	B1112	U1113	A1131	C2.3	SF	S25E14	9231
	1610	1614	1619	B9.9			
	1846	1847	1931	C2.3	SF	N09E52	9235
	2007	2009	2011		SF	S09W72	9227
	2024	2028	2042		SF	S11W64	9227
	2036	2046	2110	C2.4	1F	S24E06	9231
	2218	2224	2242	C1.6	SF	N12E49	9235
	2350	0020	0037	C3.7	1F	S12W73	9227
18 November	0146	0147	0155	C1.5	SF	N13E41	9235
	0228	0233	0246	C3.8	1F	S14W76	9227
	0258	0307	0317	C3.2	SF	N13E41	9235
	0556	0558	0603	C1.2	SF	S24E10	9231
	0610	0612	0616	C1.2	SF	S23E03	9231
	0706	0708	0716	C2.1	SF	N13E39	9235
	0818	0822	0826	C1.6	SF	S21E06	9231
	0913	0915	0917	C1.2	SF	S22E00	9231
	B1100	U1101	1125	M1.5	SF	S25E08	9231
	1130	1132	1152		SF	N12E38	9235
	1306	1315	1419	M1.5	1F	N11E37	9235
	1416	1419	1423		SF	S11W85	9227
	1645	1650	1657	C5.9			
	1805	1824	1835	C1.9			
	1852	1852	1858	C1.7	SF	S22W04	9231
	1911	1925	1933	C2.3			
	2244	2309	2331	C4.1			
19 November	0122	0123	0128		SF	S21W09	9231
	0201	0207	0213	C9.1			
	0724	0725	0733		SF	S24W06	9231
	0933	0941	0946	C1.7			
	0951	0957	1001	C1.7			
	1140	1141	1155	C1.5	1N	N20W25	9234
	1403	1409	1444	C2.4			
	1831	1833	1838		SF	N11W29	9237
	2203	2208	2217	C1.2			
	2352	0036	0103	C7.2			9231

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	X-ray M	X-ray X	Optical S	Optical 1	Optical 2	Optical 3	Optical 4
	Region 9219														
01 Nov	N06E66	222	0110	02	HSX	001	A								
02 Nov	N06E53	221	0120	02	HSX	001	A								
03 Nov	N06E39	222	0140	03	HSX	001	A								
04 Nov	N06E26	222	0130	02	HSX	001	A								
05 Nov	N06E12	223	0110	02	HSX	001	A								
06 Nov	N06W02	224	0120	02	HSX	002	A								
07 Nov	N07W15	223	0150	03	HSX	002	A								
08 Nov	N05W28	222	0160	03	HSX	001	A								
09 Nov	N06W42	223	0110	02	HSX	001	A								
10 Nov	N07W56	224	0130	02	HSX	001	A								
11 Nov	N06W68	223	0110	03	HSX	001	A								
12 Nov	N06W81	223	0090	02	HSX	001	A								
13 Nov	N07W93	221	0050	02	HSX	001	A								
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 224

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 9220														
01 Nov	N08E75	213	0010	01	AXX	001	A								
02 Nov	N09E62	212	0010	01	AXX	002	A								
03 Nov	N09E46	215	0000	00	AXX	001	A								
04 Nov	N06E37	211	0030	08	CRO	007	B								
05 Nov	N07E23	212	0020	08	CRO	006	B								
06 Nov	N08E08	213	0010	09	BXO	004	B								
07 Nov	N08W05	214	0000	00		000									
08 Nov	N12W15	209	0040	05	DAO	007	B								
09 Nov	N15W29	210	0050	06	DAO	012	B								
10 Nov	N12W44	212	0020	08	CRO	009	B								
11 Nov	N12W58	213	0010	02	BXO	002	B								
12 Nov	N12W73	215	0000	00	AXX	001	A								
13 Nov	N12W86	215													
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 214

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 9221														
04 Nov	S16E75	173	0060	09	DSO	002	B								
05 Nov	S15E58	177	0120	05	DSO	003	B								
06 Nov	S14E46	176	0120	06	DAO	011	B								
07 Nov	S12E32	176	0110	07	DAO	007	B								
08 Nov	S12E20	174	0090	08	DAO	011	B								
09 Nov	S14E06	175	0080	05	CAO	008	B		1		1				
10 Nov	S12W08	176	0090	04	CAO	006	B								
11 Nov	S12W20	175	0080	06	CAO	008	B								
12 Nov	S12W35	177	0070	04	CAO	005	B								
13 Nov	S12W47	175	0070	02	CAO	003	B								
14 Nov	S12W61	176	0040	02	CSO	003	B				1				
15 Nov	S11W74	176	0020	01	HRX	001	A								
16 Nov	S11W87	176													
								0	1	0	2	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 175

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 9223														
05 Nov	S19E71	164	0040	01	HSX	001	A								
06 Nov	S18E58	164	0060	02	HSX	002	A								
07 Nov	S16E45	163	0060	04	CAO	002	B								
08 Nov	S16E33	161	0080	04	CAO	003	B								
09 Nov	S18E20	161	0080	03	HSX	002	A								
10 Nov	S17E05	163	0090	02	HSX	001	A								
11 Nov	S16W07	162	0080	02	HSX	001	A								
12 Nov	S16W20	162	0070	04	CAO	004	B								
13 Nov	S16W34	162	0050	02	CAO	003	B								
14 Nov	S14W47	162	0050	04	CSO	005	B				1				
15 Nov	S14W61	163	0030	02	HSX	003	A	1				1			
16 Nov	S16W76	165	0010	01	AXX	001	A								
17 Nov	S15W89	165	0010	00	HRX	001	A								
								1	0	0	1	1	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 163

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 9225														
07 Nov	S19W16	224	0020	02	DSO	002	B				1				
08 Nov	S20W30	224	0040	05	DSO	008	B								
09 Nov	S21W44	225	0050	04	CRO	003	B					1			
10 Nov	S20W48	216	0030	05	CAO	006	B								
11 Nov	S20W60	215	0040	08	CSO	007	B								
12 Nov	S20W78	220	0020	01	HAX	002	A								
13 Nov	S20W91	220													
								0	0	0	1	1	0	0	0
Crossed West Limb.															
Absolute heliographic longitude:		224													
	Region 9227														
08 Nov	S13E52	142	0100	08	DAO	007	B				1				
09 Nov	S13E38	143	0120	10	DAO	016	B								
10 Nov	S13E24	144	0180	12	EAO	010	B								
11 Nov	S12E12	143	0130	13	EAO	012	B								
12 Nov	S11W02	144	0180	12	EAO	015	B	1				1			
13 Nov	S11W14	142	0190	13	EKO	010	B	1			1				
14 Nov	S10W28	143	0260	13	EKO	016	B								
15 Nov	S11W41	143	0260	14	EKO	010	B								
16 Nov	S10W60	149	0200	03	HAX	005	A								
17 Nov	S10W72	148	0130	03	HAX	003	A				2	1			
18 Nov	S09W85	148	0100	03	CSO	003	B	2			1	1			
								4	0	0	5	3	0	0	0
Still on Disk.															
Absolute heliographic longitude:		144													
	Region 9228														
09 Nov	N20E29	152	0010	04	BXO	004	B								
10 Nov	N20E18	150	0000	01	AXX	002	A								
11 Nov	N20E03	152	0010	01	AXX	001	A								
12 Nov	N20W16	158	0000	00	AXX	001	A								
13 Nov	N20W29	158													
14 Nov	N23W42	157	0030	02	BXO	003	B								
15 Nov	N21W55	157	0030	04	CSO	004	B								
16 Nov	N21W68	157													
17 Nov	N21W81	157													
								0	0	0	0	0	0	0	0
Crossed West Limb.															
Absolute heliographic longitude:		152													

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 9229														
10 Nov	N04E70	098	0080	02	HAX	002	A								
11 Nov	N05E58	097	0080	02	HSX	002	A								
12 Nov	N06E45	097	0060	02	HAX	003	A								
13 Nov	N06E31	097	0070	02	HSX	003	A								
14 Nov	N05E17	098	0070	03	HAX	003	A								
15 Nov	N06E05	097	0070	02	HAX	003	A								
16 Nov	N06W09	098	0080	02	HSX	002	A								
17 Nov	N07W22	098	0060	02	CSO	004	B								
18 Nov	N08W35	098	0050	03	CSO	003	B								
19 Nov	N07W49	099	0040	02	HAX	001	A								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		097													
	Region 9230														
10 Nov	N05W39	207	0010	04	BXO	003	B								
11 Nov	N07W52	207	0010	03	BXO	004	B								
12 Nov	N07W65	207													
13 Nov	N07W78	207													
								0	0	0	0	0	0	0	0
Crossed West Limb.															
Absolute heliographic longitude:		207													
	Region 9231														
13 Nov	S23E72	056	0140	09	DAO	006	B								
14 Nov	S24E56	059	0250	11	EAI	014	B	6			10		1		
15 Nov	S24E44	058	0320	14	EAI	022	B	1			2				
16 Nov	S23E30	059	0370	20	FAC	032	B	1			1				
17 Nov	S24E19	057	0330	18	FAI	034	BG	2			2	1			
18 Nov	S24E05	058	0200	18	FAI	037	BG	5	1		6				
19 Nov	S24W10	060	0270	20	FAI	040	BG	1			2				
								16	1	0	23	1	1	0	0
Still on Disk.															
Absolute heliographic longitude:		058													

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 9232														
13 Nov	N26E76	052	0120	08	DAO	003	B								
14 Nov	N24E61	054	0130	10	DSO	005	B								
15 Nov	N24E48	054	0110	11	EAO	006	B								
16 Nov	N26E35	054	0070	12	CAO	009	B								
17 Nov	N24E22	054	0040	07	CAO	007	B								
18 Nov	N23E07	056	0020	05	CSO	005	B								
19 Nov	N23W06	056	0010	02	HRX	004	A								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		056													
	Region 9233														
14 Nov	N13E76	039	0050	02	HSX	002	A								
15 Nov	N12E63	039	0050	02	HSX	001	A								
16 Nov	N13E54	035	0060	07	CAO	005	B				1				
17 Nov	N12E39	037	0050	02	HSX	001	A								
18 Nov	N11E22	041	0010	01	HAX	001	A								
19 Nov	N11E09	041	0010	01	HSX	001	A								
								0	0	0	1	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		041													
	Region 9234														
15 Nov	N20E22	080	0010	02	BXO	004	B								
16 Nov	N23E08	081	0010	01	AXX	001	A								
17 Nov	N20W04	080	0000	01	AXX	001	A								
18 Nov	N19W21	084	0010	03	BXO	003	B								
19 Nov	N19W34	084	0000	00	AXX	001	A	1				1			
								1	0	0	0	1	0	0	0
Still on Disk.															
Absolute heliographic longitude:		080													
	Region 9235														
16 Nov	N14E63	026	0130	11	CAO	007	B	1			1				
17 Nov	N14E51	025	0140	08	DSO	009	B	2			2				
18 Nov	N12E34	029	0150	12	EAI	021	B	3	1		4	1			
19 Nov	N13E20	030	0210	12	EAI	029	BG								
								6	1	0	7	1	0	0	0
Still on Disk.															
Absolute heliographic longitude:		030													

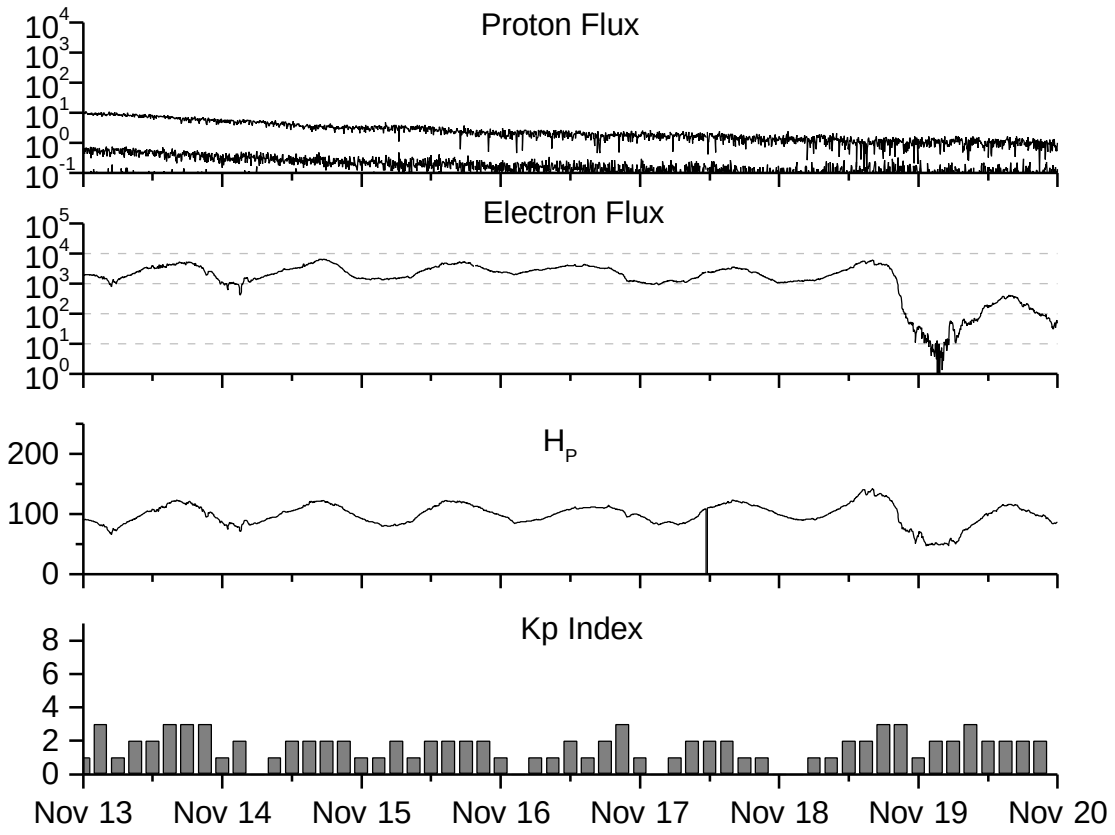
Region Summary-continued

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 9236														
18 Nov	N19E71	352	0120	05	DSO	004	B								
19 Nov	N19E57	353	0310	13	EAO	006	B								
								0	0	0	0	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		353													
	Region 9237														
18 Nov	N10W19	082	0020	02	CSO	004	B								
19 Nov	N10W33	083	0040	06	DRO	012	B				1				
								0	0	0	1	0	0	0	0
Still on Disk.															
Absolute heliographic longitude:		082													

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				
November	99.5	74.0	0.74	101.3	73.0	140.2	130.0	16	12.4
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			184.5		15	
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	

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 13 November 2000

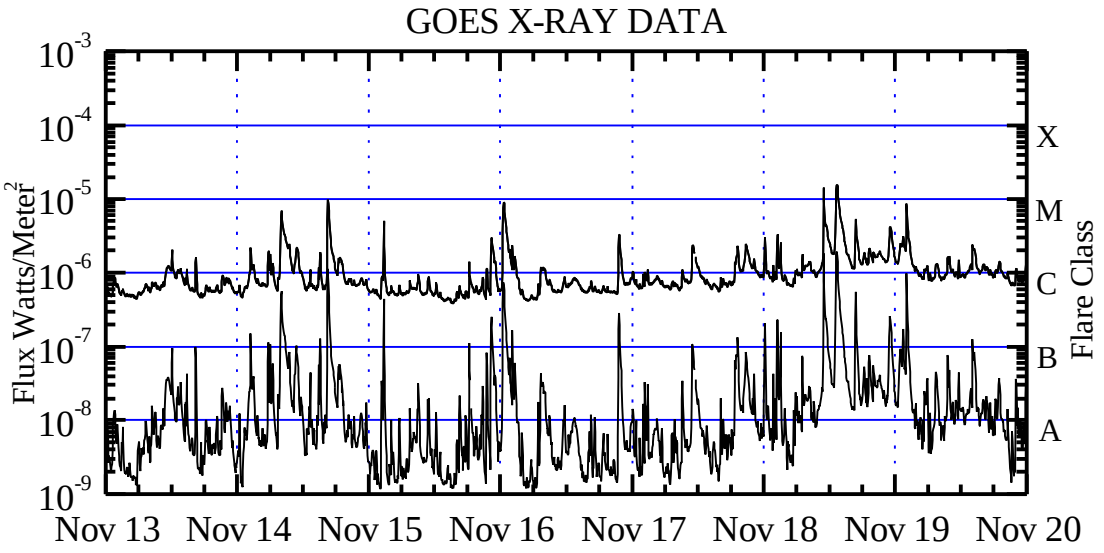
Protons plot contains the five-minute averaged integral proton flux (protons/cm^2–sec –sr) as measured by GOES-8 (W75) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

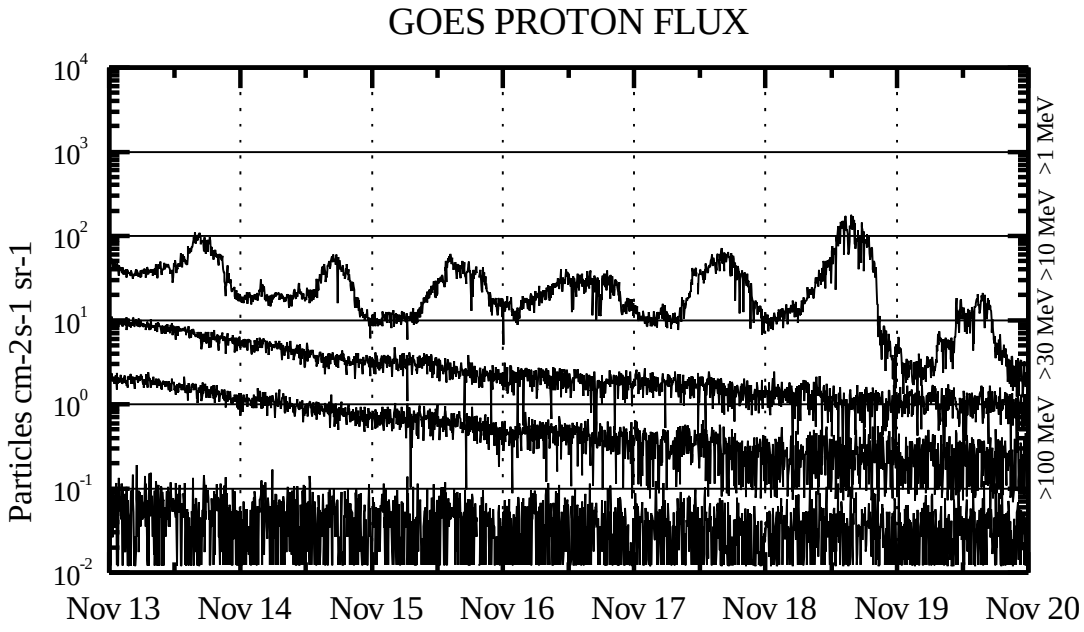
Electrons plot contains the five-minute averaged integral electron flux (electrons/cm^2 –sec –sr) with energies greater than 2 MeV at GOES-8.

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.