Space Weather Highlights **SWPC PRF 1895**
19 December - 25 December 2011 **27 December 2011**

Solar activity was at very low levels on 19 December and increased to low levels from 20-24 December, and finally ending the period (25 December) at moderate levels. Region 1376 (N19, L = 308, class/area Dko/440 on 22 December) was the most active group with frequent B- and C-class flare production until 25 December when new Region 1387 (S22, L = 226, class/area Dai/440 on 22 December) began producing multiple C-class flares and one M-class flare. On 22 December at 0208 UTC, Region 1381 (S18, L = 263, class/area Dai/180 on 22 December) produced a C5/Sf flare associated with weak Types II and IV radio sweeps and a faint CME, determined to be non-geoeffective. Region 1386 (S17, L = 147, class/area Esi/200 on 26 December) produced a C5/Sf flare at 24/0839 UTC. Region 1376 produced a long-duration C4 flare on the west limb at 24/1236 UTC associated with a non-Earth-directed CME. On 25 December at 1816 UTC, Region 1387 produced an M4/1N flare that was accompanied by Type II (1019km/s) and Type IV radio emissions.

A slight proton enhancement was observed at geosynchronous orbit on 25 December and achieved a max flux of 3 pfu at 26/0135 UTC.

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

The geomagnetic field was at predominately quiet levels during most of the period.

Space Weather Outlook
28 December - 23 January 2012

Solar activity is expected to be at low to moderate levels until 31 December when Region 1387 is forecast to rotate off the disk. Activity is expected to return to low levels with a slight chance for isolated M-class activity for the remainder of the period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels during the period.

Geomagnetic field activity is expected to be at active levels from 28-29 December due to CME arrivals. Diminishing effects from said CME’s are expected to bring geomagnetic field activity to unsettled levels on 30 December. Mostly quiet conditions are predicted on 31 December, 3-4 and 7-23 January. Activity is expected to be at predominately quiet to unsettled levels 1-2 and 5-6 January due to recurrent coronal hole high speed streams.

Daily Solar Data

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10^{-6} hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
19 December	128	133	400	B3.6	0	0	0	0	0	0	0	0
20 December	137	139	510	B5.1	6	0	0	9	0	0	0	0
21 December	145	93	530	B7.8	16	0	0	19	0	0	0	0
22 December	146	105	990	B7.0	2	0	0	6	0	0	0	0
23 December	138	123	1040	B4.7	4	0	0	1	0	0	0	0
24 December	143	101	840	B5.7	4	0	0	2	0	0	0	0
25 December	144	66	590	B5.8	5	1	0	5	1	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	>0.6 MeV	>2MeV	>4 MeV
19 December	7.0e+05	1.4e+04	3.0e+03		1.4e+06	
20 December	3.4e+05	1.3e+04	3.1e+03		1.1e+06	
21 December	4.7e+05	1.3e+04	2.9e+03		1.2e+06	
22 December	1.2e+05	1.2e+04	3.1e+03		8.3e+05	
23 December	1.0e+05	1.2e+04	3.0e+03		9.1e+05	
24 December	1.8e+05	1.3e+04	3.1e+03		9.6e+05	
25 December	2.5e+05	3.3e+04	3.3e+03		8.8e+05	

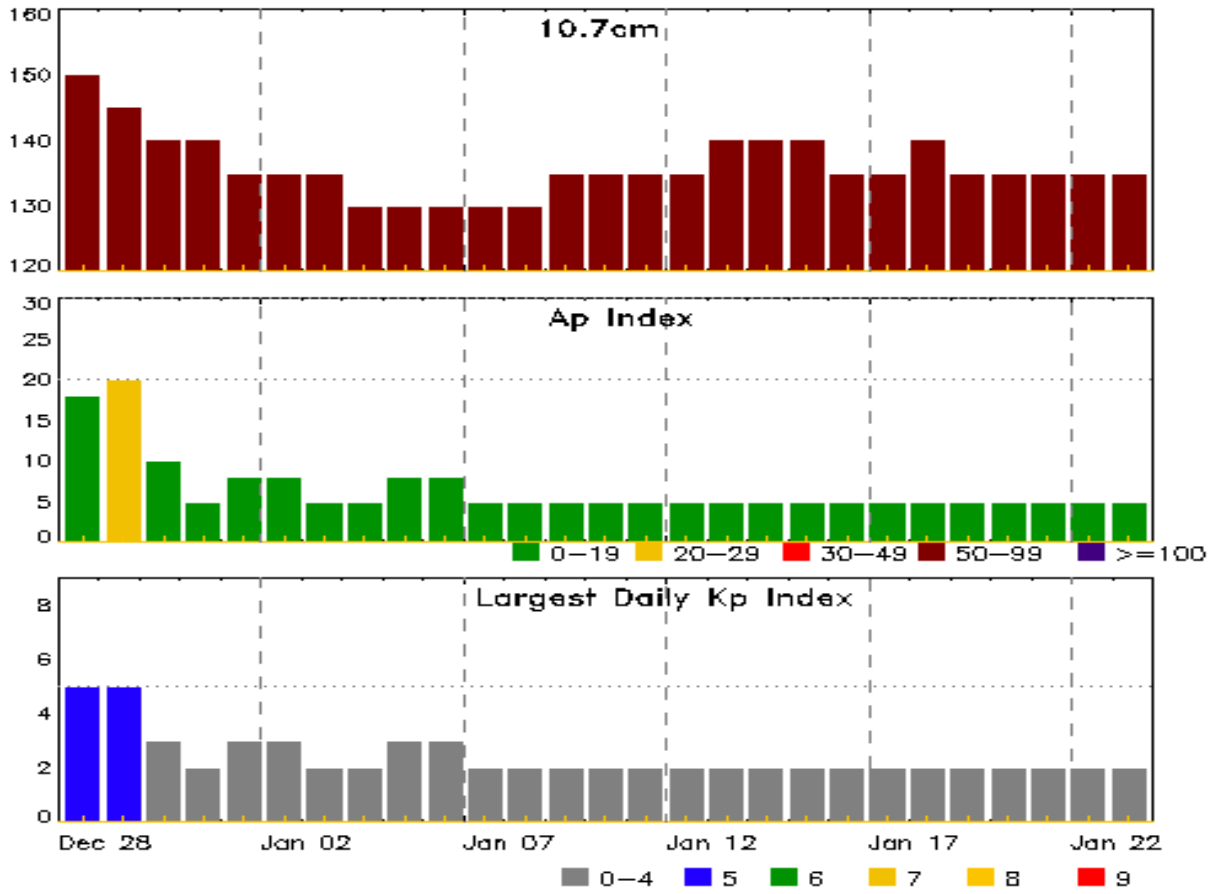
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
19 December	6	1-2-1-1-2-2-2-2	5	0-0-2-1-2-1-3-2	4	1-1-0-0-1-1-2-2
20 December	5	2-1-1-1-2-2-2-1	2	0-1-1-2-0-0-1-0	3	1-0-1-1-0-1-1-0
21 December	5	0-1-0-1-2-2-2-3	5	0-0-0-3-3-1-1-1	3	0-1-0-0-1-1-1-2
22 December	4	2-1-0-0-2-2-1-1	2	2-1-0-1-0-0-0-0	2	1-0-0-0-0-0-0-0
23 December	2	0-0-0-1-0-2-2-0	0	0-0-0-0-0-0-0-0	1	0-0-0-0-0-0-0-0
24 December	2	0-0-0-0-2-2-1-0	0	0-0-0-0-0-0-0-0	1	0-0-0-1-0-0-0-0
25 December	3	1-1-1-0-2-0-2-0	0	0-0-0-0-0-0-0-0	1	0-1-1-0-0-0-1-0

Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
22 Dec 0343	ALERT: Type II Radio Emission	22/0204
22 Dec 0346	ALERT: Type IV Radio Emission	22/0212
25 Dec 1911	ALERT: Type II Radio Emission	25/1820
25 Dec 1943	ALERT: Type IV Radio Emission	25/1817

Twenty-seven Day Outlook



Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index
28 Dec	150	18	5	11 Jan	135	5	2
29	145	20	5	12	135	5	2
30	140	10	3	13	140	5	2
31	140	5	2	14	140	5	2
01 Jan	135	8	3	15	140	5	2
02	135	8	3	16	135	5	2
03	135	5	2	17	135	5	2
04	130	5	2	18	140	5	2
05	130	8	3	19	135	5	2
06	130	8	3	20	135	5	2
07	130	5	2	21	135	5	2
08	130	5	2	22	135	5	2
09	135	5	2	23	135	5	2
10	135	5	2				

Energetic Events

	Time			X-ray		Optical Information			Peak Radio Flux		Sweep Freq Intensity	
Date	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	245	2695	II	IV
25 Dec	1811	1816	1820	M4.0	0.011	1N	S22W26	1387	12000	120	2	3

Flare List

	Time				Optical		
Date	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
19 Dec	1405	1413	1415	B8.1			1376
19 Dec	2123	2126	2132	B6.2			
20 Dec	0038	0044	0050	C1.5			1381
20 Dec	0327	0336	0353	B9.8	SF	N18W38	1376
20 Dec	0555	0555	0600		SF	N18W42	
20 Dec	0843	0849	0856	B9.0	SF	N25W25	1376
20 Dec	1147	1152	1154	C2.1	SF	N18W40	1376
20 Dec	1647	1658	1709		SF	N19W40	1376
20 Dec	1817	1821	1828	C1.4			
20 Dec	2004	2036	2057	C2.9			1376
20 Dec	2155	2202	2206	C2.3			
20 Dec	2233	2234	2242		SF	S18E05	1382
20 Dec	2234	2248	2336	C6.2	SN	N18W44	1376
20 Dec	2343	2345	2352		SF	N18W44	1376
20 Dec	2354	2354	0001		SF	N17W44	1376
21 Dec	0054	0059	0103	C1.5	SF	N18W45	1376
21 Dec	0210	0221	0226		SF	N17W46	1376
21 Dec	0257	0312	0316	C3.1	SF	S19E04	1382
21 Dec	0311	0312	0318		SF	S19E04	1382
21 Dec	0338	0345	0350		SF	S17W65	1378
21 Dec	0448	0455	0459	C4.3			1382
21 Dec	0622	0627	0633	C3.6	SF	S20E02	1382
21 Dec	0656	0659	0703	C2.0	SF	N11E62	1384
21 Dec	0658	0659	0704		SF	S20E01	1382
21 Dec	0718	0718	0721		SF	S18W01	1382
21 Dec	0724	0726	0732		SF	S20E01	1382
21 Dec	0735	0740	0743	C3.9	SF	S20E01	1382
21 Dec	0903	0909	0915	C2.2	SF	S20W00	1382
21 Dec	1034	1038	1041	C2.5			1384
21 Dec	1102	1105	1107	C2.1			1384

Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
21 Dec	1231	1235	1237	C1.3			1384
21 Dec	1302	1307	1309	C2.0			1384
21 Dec	1521	1528	1533	C2.5	SF	S19W03	1382
21 Dec	1719	1724	1732		SF	N19W53	1376
21 Dec	1724	1725	1730		SF	S19W12	1381
21 Dec	1807	1812	1817	C1.9	SF	N22W58	1376
21 Dec	1850	1853	1857		SF	N19W54	1376
21 Dec	1900	1903	1929	C1.7	SF	N19W52	1376
21 Dec	1936	2013	2054	C1.5	SF	N23W46	1376
21 Dec	2237	2243	2247	C2.0			1376
22 Dec	0156	0208	0220	C5.4	SF	S19W18	1381
22 Dec	0741	0750	0754		SF	S19W15	1382
22 Dec	0755	0801	0807		SF	S19W15	1382
22 Dec	1304	1320	1341	C1.9			1281
22 Dec	1617	1619	1623		SF	S19W28	1381
22 Dec	1658	1700	1705		SF	N20W67	1376
22 Dec	1749	1751	1756		SF	S19W18	1382
23 Dec	0410	0415	0434	C1.8			
23 Dec	1009	1014	1017	C1.5	SF	N13E33	1384
23 Dec	1912	1918	1925	C3.4			1376
23 Dec	2135	2139	2143	C1.6			1382
24 Dec	0354	0354	0400		SF	N10E23	1384
24 Dec	0827	0839	0848	C5.2	SF	S19E66	1386
24 Dec	1104	1116	1122	C1.1			1386
24 Dec	1125	1236	1316	C4.9			1376
24 Dec	1910	1919	1944	C1.5			
25 Dec	0447	0452	0455	C1.6	SF	S21W17	1387
25 Dec	0847	0852	0911	C5.5	SN	S21W20	1387
25 Dec	1120	1126	1131	C8.4			1387
25 Dec	1655	1701	1708	C2.2			
25 Dec	1811	1816	1820	M4.0	1N	S22W26	1387
25 Dec	1815	1815	1819		SF	S21W31	1380
25 Dec	1823	1825	1911		SF	S20W34	1380
25 Dec	2023	2029	2033	C7.7	SF	S21W24	1387

Region Summary

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
		Region 1372													
07 Dec	N10E28	45	0	9	Bxo	2	B								
08 Dec	N10E14	47	0	9	Bxo	2	B								
09 Dec	N08E03	43	40	4	Dso	6	B								
10 Dec	N08W10	44	40	6	Dso	9	B								
11 Dec	N08W22	43	10	7	Bxo	6	B								
12 Dec	N10W36	43	10	6	Bxo	6	B								
13 Dec	N08W49	43	10	3	Bxo	2	B								
14 Dec	N08W63	45	plage												
15 Dec	N08W77	46	plage												
								0	0	0	0	0	0	0	0

Died on Disk.
Absolute heliographic longitude: 43

		Region 1374													
08 Dec	S16E68	351	150	3	Cso	2	B	1							
09 Dec	S17E54	353	160	3	Hsx	2	A	1			2				
10 Dec	S17E41	353	140	3	Hsx	2	A	2			1				
11 Dec	S17E29	352	210	3	Dso	9	B				2				
12 Dec	S17E15	352	150	4	Dso	6	BD	1			2				
13 Dec	S18E01	353	140	4	Cao	7	B								
14 Dec	S18W11	352	120	3	Dso	4	B								
15 Dec	S18W25	352	160	3	Dso	5	B								
16 Dec	S18W37	351	100	3	Dso	4	B								
17 Dec	S18W50	352	100	3	Cao	4	B								
18 Dec	S18W63	351	80	2	Hsx	1	A								
19 Dec	S18W76	351	70	2	Hsx	1	A								
20 Dec	S19W90	352	50	2	Hsx	1	A								
								5	0	0	7	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 353

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
		Region 1375													
07 Dec	N08E84	354	plage					1							
08 Dec	N08E70	354	10	3	Bxo	3	B	1							
09 Dec	N09E52	356	70	6	Cso	3	B				1				
10 Dec	N09E39	355	80	7	Cso	4	B	1							
11 Dec	N09E25	356	140	5	Cso	9	B								
12 Dec	N08E11	356	70	4	Cso	4	B								
13 Dec	N08W03	357	50	3	Cso	3	B								
14 Dec	N08W16	357	40	1	Hsx	2	A								
15 Dec	N08W30	358	50	2	Hsx	1	A								
16 Dec	N08W43	358	40	1	Hsx	1	A								
17 Dec	N09W57	358	30	2	Hsx	1	A								
18 Dec	N09W70	358	20	1	Hrx	1	A								
19 Dec	N08W83	357	40	2	Hsx	1	A								
								3	0	0	1	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 357

		Region 1376													
13 Dec	N21E52	302	10	10	Bxo	3	B	1							
14 Dec	N20E39	301	10	5	Bxo	4	B								
15 Dec	N20E25	304	plage												
16 Dec	N20E11	304	plage												
17 Dec	N21W04	306	0		Axx	1	A	2			1				
18 Dec	N20W18	306	20	2	Dro	3	B	2			3				
19 Dec	N19W31	306	20	2	Cro	7	B								
20 Dec	N19W46	308	40	4	Dai	14	B	3			6				
21 Dec	N20W59	308	90	8	Dsi	11	B	5			7				
22 Dec	N18W72	308	440	10	Dko	13	B				1				
23 Dec	N16W84	308	330	8	Dko	7	B	1							
								14	0	0	18	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 306

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 1377												
14 Dec	N12E43	297	60	5	Dro	4	B								
15 Dec	N11E29	298	70	6	Dso	8	B								
16 Dec	N12E15	299	70	7	Dso	9	B								
17 Dec	N12E03	298	50	8	Dso	9	B								
18 Dec	N12W11	299	40	8	Dao	4	B								
19 Dec	N13W24	298	20	7	Cro	3	B								
20 Dec	N12W40	302	10	1	Bxo	3	B								
21 Dec	N12W54	303	plage												
22 Dec	N12W68	304	plage												
23 Dec	N12W82	305	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 298

			Region 1378												
16 Dec	S17W09	324	40	5	Dso	6	B								
17 Dec	S17W21	323	10	4	Bxo	4	B								
18 Dec	S17W35	324	plage												
19 Dec	S17W49	325	plage												
20 Dec	S17W63	326	plage												
21 Dec	S17W77	326	plage								1				
								0	0	0	1	0	0	0	0

Died on Disk.
Absolute heliographic longitude: 324

			Region 1379												
17 Dec	S29W22	324	30	3	Cro	5	B								
18 Dec	S29W33	321	10	1	Axx	2	A								
19 Dec	S29W47	322	20	4	Cro	3	B								
20 Dec	S29W61	324	plage												
21 Dec	S29W75	324	plage												
22 Dec	S29W89	325	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 324

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 1380												
17 Dec	S20E70	232	30	1	Hrx	1	A								
18 Dec	S20E55	233	30	2	Hrx	2	A								
19 Dec	S20E43	231	30	2	Cao	6	B								
20 Dec	S21E31	230	30	3	Cao	4	B								
21 Dec	S21E17	232	plage												
22 Dec	S21E03	233	plage												
23 Dec	S21W11	234	plage												
24 Dec	S21W25	235	plage												
25 Dec	S21W39	236	plage								2				
								0	0	0	2	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 233

			Region 1381												
17 Dec	S18E37	265	plage					1							
18 Dec	S18E19	268	40	3	Dao	5	B								
19 Dec	S18E10	265	80	4	Dai	9	B								
20 Dec	S17W01	263	90	7	Dao	8	B	1							
21 Dec	S15W17	265	70	4	Cso	7	B				1				
22 Dec	S18W28	264	180	9	Dai	15	B	1			2				
23 Dec	S20W44	266	40	3	Dao	8	B								
24 Dec	S19W54	264	150	3	Hsx	2	A								
25 Dec	S18W68	265	100	3	Cso	2	B								
								3	0	0	3	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 263

			Region 1382												
18 Dec	S18E25	263	30	3	Dro	5	B								
19 Dec	S18E18	257	100	6	Dai	12	B								
20 Dec	S19E06	256	120	3	Dai	13	B				1				
21 Dec	S14W10	258	140	9	Dsc	17	B	6			9				
22 Dec	S19W21	257	50	4	Dai	9	B				3				
23 Dec	S18W35	257	100	7	Dsi	15	B	1							
24 Dec	S18W48	257	30	7	Cso	8	B								
25 Dec	S18W61	258	plage												
								7	0	0	13	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 256

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 1383												
19 Dec	N04E68	207	20		Hsx	1	A								
20 Dec	N03E53	208	40	2	Hsx	1	A								
21 Dec	N04E39	209	20	1	Hsx	1	A								
22 Dec	N03E25	209	20	1	Hrx	1	A								
23 Dec	N03E13	209	10	2	Axx	3	A								
24 Dec	N03W00	209	20	2	Cso	3	B								
25 Dec	N03W14	211	10	1	Hsx	1	A								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 209

			Region 1384												
20 Dec	N12E61	201	90	4	Dao	4	B								
21 Dec	N14E52	196	210	8	Cao	7	B	5			1				
22 Dec	N12E37	198	300	9	Dko	17	B								
23 Dec	N13E25	197	500	10	Dho	12	B	1			1				
24 Dec	N13E12	197	480	11	Eho	13	B				1				
25 Dec	N13W00	197	330	10	Dhi	7	B								
								6	0	0	3	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 197

			Region 1385												
23 Dec	S31W02	224	30	4	Dso	7	B								
24 Dec	S32W16	225	10	6	Bxo	2	B								
25 Dec	S32W30	227	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 224

			Region 1386												
23 Dec	S16E72	150	30	1	Hsx	1	A								
24 Dec	S18E64	146	120	10	Dso	2	B	2			1				
25 Dec	S18E49	148	120	7	Dso	3	B								
								2	0	0	1	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 148

Region Summary - continued

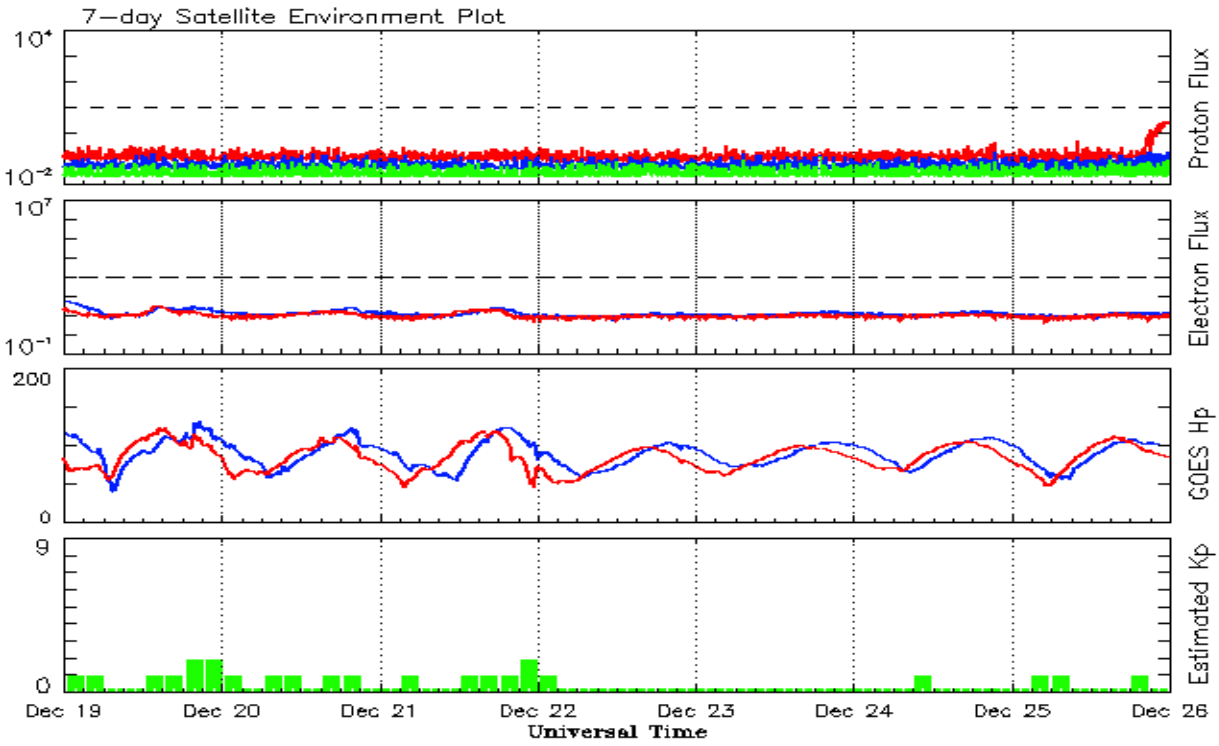
	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
		Region 1387													
25 Dec	S22W28	225	30	4	Dao	3	B	4	1		3	1			
								4	1	0	3	1	0	0	0

Still on Disk.
Absolute heliographic longitude: 225

Recent Solar Indices (preliminary)
Observed monthly mean values

	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values		Ratio	Smooth values		Penticton	Smooth	Planetary	Smooth
Month	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
				2009					
December	15.7	10.8	0.68	13.6	8.3	76.8	74.9	2	4.8
				2010					
January	21.3	13.2	0.62	14.8	9.3	81.1	75.5	3	5.0
February	31.0	18.8	0.60	16.7	10.6	84.7	76.5	5	5.1
March	24.7	15.4	0.62	19.1	12.3	83.3	77.5	5	5.3
April	11.2	8.0	0.71	21.4	14.0	75.9	78.3	10	5.5
May	19.9	8.7	0.44	23.8	15.5	73.8	79.0	8	5.7
June	17.9	13.6	0.75	25.2	16.4	72.6	79.7	7	5.8
July	23.1	16.1	0.70	25.9	16.7	79.9	80.1	5	6.0
August	28.2	19.6	0.70	27.3	17.4	79.7	80.7	8	6.2
September	35.6	25.2	0.71	30.6	19.6	81.1	82.4	5	6.3
October	35.0	23.5	0.67	35.9	23.2	81.6	85.3	6	6.4
November	36.1	21.5	0.60	40.5	26.5	82.5	87.7	5	6.4
December	22.0	14.4	0.66	43.8	28.8	84.3	89.6	4	6.5
				2011					
January	32.1	18.8	0.59	47.2	30.9	83.7	91.2	6	6.7
February	53.2	29.6	0.55	50.6	33.4	94.5	92.7	6	6.8
March	81.0	55.8	0.69	55.2	36.9	115.3	95.8	7	7.2
April	81.7	54.4	0.67	61.5	41.8	112.6	100.4	9	7.5
May	61.4	41.5	0.68	69.0	47.6	95.9	105.6	9	7.5
June	55.5	37.0	0.67			95.8		8	
July	67.0	43.9	0.66			94.2		9	
August	66.1	50.6	0.77			101.7		8	
September	106.4	78.0	0.73			134.5		13	
October	116.8	88.0	0.75			137.2		7	
November	133.1	96.7	0.73			153.1		3	

Note: Values are final except for the most recent 6 months which are considered preliminary. Cycle 24 started in Dec 2008 with an RI=1.7.



Weekly Geosynchronous Satellite Environment Summary
Week Beginning 19 December 2011

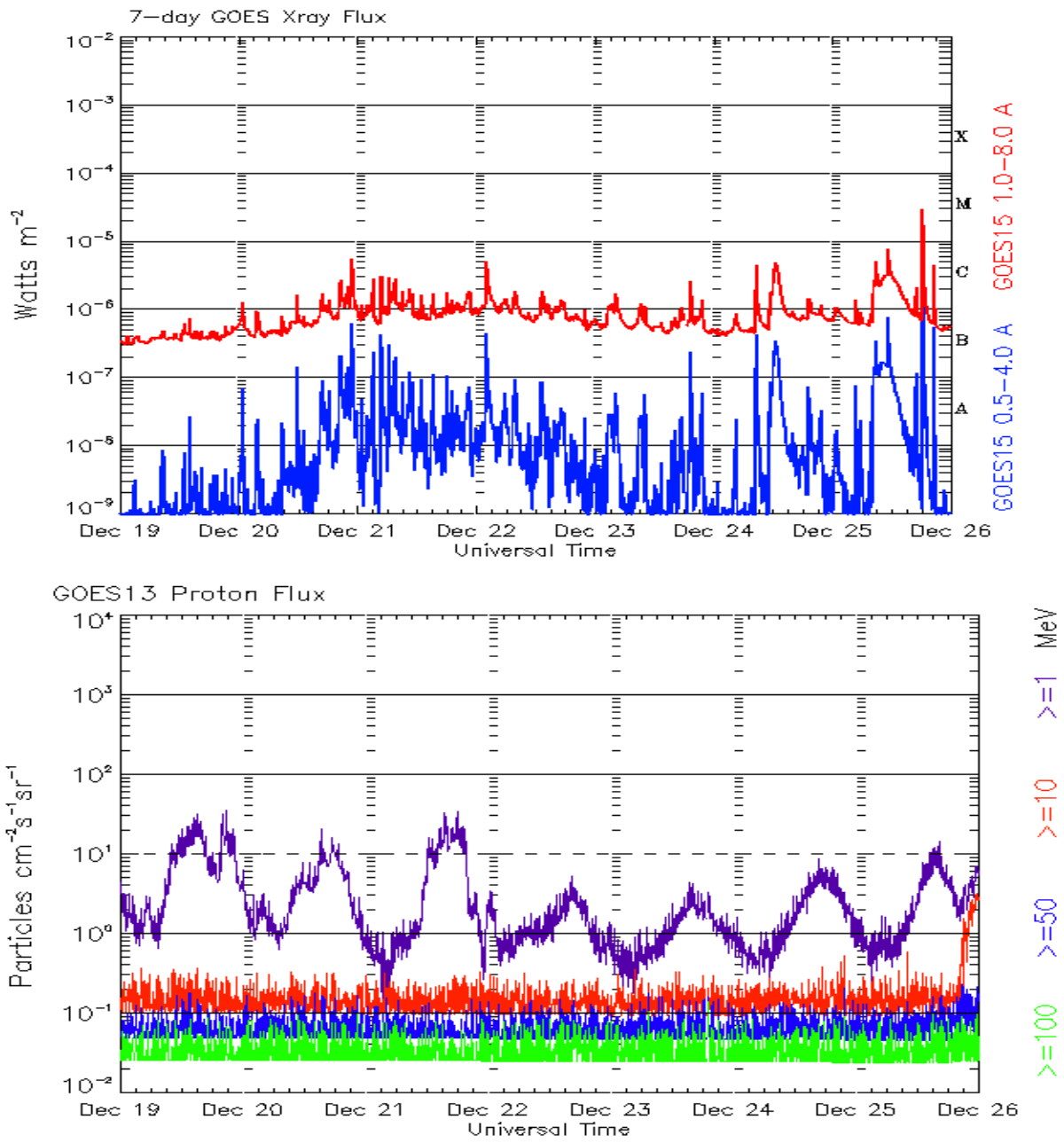
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm^2-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm^2-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

The Hp plot contains the five minute averaged Hp magnetic field component in nanoteslas (nT) as by the SWPC Primary GOES satellite. The Hp component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

The Estimated 3-hour Planetary Kp-index is derived at the NOAA Space Weather Prediction Center using data from the following ground-based magnetometers: Boulder, Colorado; Chambon la Foret, France; Fredericksburg, Virginia; Fresno, California; Hartland, UK; Newport, Washington; Sitka, Alaska. These data are made available thanks to the cooperative efforts between SWPC and data providers around the world, which currently includes the U.S. Geological Survey, the British Geological Survey, and the Institut de Physique du Globe de Paris.

The data included here are those now available in real time at the SWPC 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. 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
Week Beginning 19 December 2011

The x-ray plots contains five-minute averages x-ray flux (Watt/m^2) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged intergral flux units (pfu = protons/cm^2 -sec -sr) as measured by the primary SWPC GOES Proton satellite for each of the energy thresholds: >1, >10, >30, and >100 MeV. The P10 event threshold is 10 pfu at greater than 10 MeV.

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Notice: The 27-day Outlook, Satellite Environment, X-ray and Proton plots have been redesigned. Comments and suggestions are welcome SWPC.Webmaster@noaa.gov

The Weekly has been published continuously since 1951 and is available online since 1997.

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