

Space Weather Highlights
16 January - 22 January 2012

SWPC PRF 1899
24 January 2012

Solar activity reached moderate levels as Regions 1401 (N18, L=213, class/area Eki/540 on 19 January) and 1402 (N28, L=214, class/area Eko/630 on 17 January) both produced M-class events. Region 1401 produced an M1/1n on 17/0453Z and an M1/1n on 18/1912Z. Region 1402 followed with an M3/2n on 19/1605Z. The 19 January event was associated with and Type IV radio emission and a full halo CME. Type II emissions were detected on 19/1252Z and 19/1933Z with speeds of 933 km/s and 694 km/s respectively. Partial halo CMEs were also observed on 16 and 18 January. Activity decreased to very low levels late on 19 January. Isolated low-level C-class flares were observed on 20 - 22 January. Plage Region 1396 (N27, L=287, class/area Dao/110 on 17 January) produced a C1 flare at 20/2112Z associated with a Type II radio sweep (945 km/s) and a non-Earth-directed CME. Region 1402 produced a long-duration C1 flare at 20/2333Z associated with a weak Type IV radio sweep.

An enhancement of the greater than 10 MeV proton flux at geosynchronous orbit began around 20/0800Z and continued through the end of the period.

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

Geomagnetic field conditions ranged from quiet to unsettled levels, with a brief excursion into active-major storm levels at high latitudes on 22 January. Field conditions were predominately quiet from 17-21 January. On 22 January, an interplanetary shock passed the ACE spacecraft at approximately 22/0514Z, likely indicating the arrival of the full-halo CME observed on 19 January in LASCO imagery. This was followed by a geomagnetic sudden impulse (SI) at 22/0614Z (31 nT observed by the boulder magnetometer). Field activity increased to unsettled to major storm levels at high latitudes following the SI.

Space Weather Outlook
25 January - 20 February 2012

Solar activity is expected to be low with M-class flares likely until Regions 1401 and 1402 depart on 28 January. Predominantly quiet levels are expected for the remained of the period.

Protons greater than than 10 MeV are expected to remain above event threshold from 25 - 26 January. A return to background levels is expected for the remainder of the period.

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

The geomagnetic field is expected to be at active to minor storm levels on 25 January as effects from the CME from 23 January wane. Quiet levels are expected on 26 January. Quiet to unsettled levels are expected on 27 January as a coronal hole high speed stream (CH HSS) becomes geoeffective. A return to quiet levels is expected until 02 - 03 February, with quiet to unsettled levels expected as another CH HSS becomes geoeffective. Predominantly quiet levels are expected from 04-08 February. Another CH HSS is expected to become geoeffective with



quiet to unsettled levels expected from 09-10 February. Predominantly quiet levels are expected for the remainder of the period.



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
16 January	140	120	1070	C1.0	5	0	0	4	0	0	0	0
17 January	139	152	1270	B5.2	3	1	0	3	1	0	0	0
18 January	148	122	1130	B5.7	3	1	0	1	1	0	0	0
19 January	157	117	1140	B5.9	2	1	0	4	0	1	0	0
20 January	141	88	780	B6.0	2	0	0	0	0	0	0	0
21 January	142	102	930	B4.9	2	0	0	2	0	0	0	0
22 January	141	103	790	B5.5	4	0	0	10	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
	16 January	6.1e+05	1.3e+04	3.0e+03		1.3e+06
17 January	2.3e+05	1.4e+04	3.2e+03		9.7e+05	
18 January	2.7e+05	1.4e+04	3.3e+03		1.4e+06	
19 January	3.4e+05	1.4e+04	3.2e+03		1.9e+06	
20 January	2.2e+06	6.9e+04	3.0e+03		1.8e+06	
21 January	5.6e+06	8.0e+04	3.0e+03		1.8e+06	
22 January	1.5e+07	9.8e+04	2.8e+03		1.2e+06	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	16 January	8	1-1-1-2-3-2-3-2	15	2-1-0-4-5-4-2-1	8
17 January	4	2-1-1-1-1-1-1-1	4	2-1-1-2-2-1-0-0	5	3-1-1-1-1-1-2-1
18 January	4	1-1-0-2-2-1-2-1	2	0-0-0-2-1-1-0-0	4	2-1-0-1-1-1-1-1
19 January	1	0-1-0-0-1-1-0-0	1	0-0-0-1-0-1-0-0	3	0-1-0-1-0-1-1-1
20 January	3	2-2-1-1-0-1-0-0	3	0-1-2-1-2-1-1-0	4	1-1-1-0-0-1-1-0
21 January	6	2-2-1-1-2-2-2-2	12	0-1-3-5-4-0-1-1	6	2-2-1-2-2-1-2-2
22 January	22	1-1-4-4-4-3-5-4	38	0-1-4-5-6-5-5-5	21	1-1-4-3-4-3-5-4

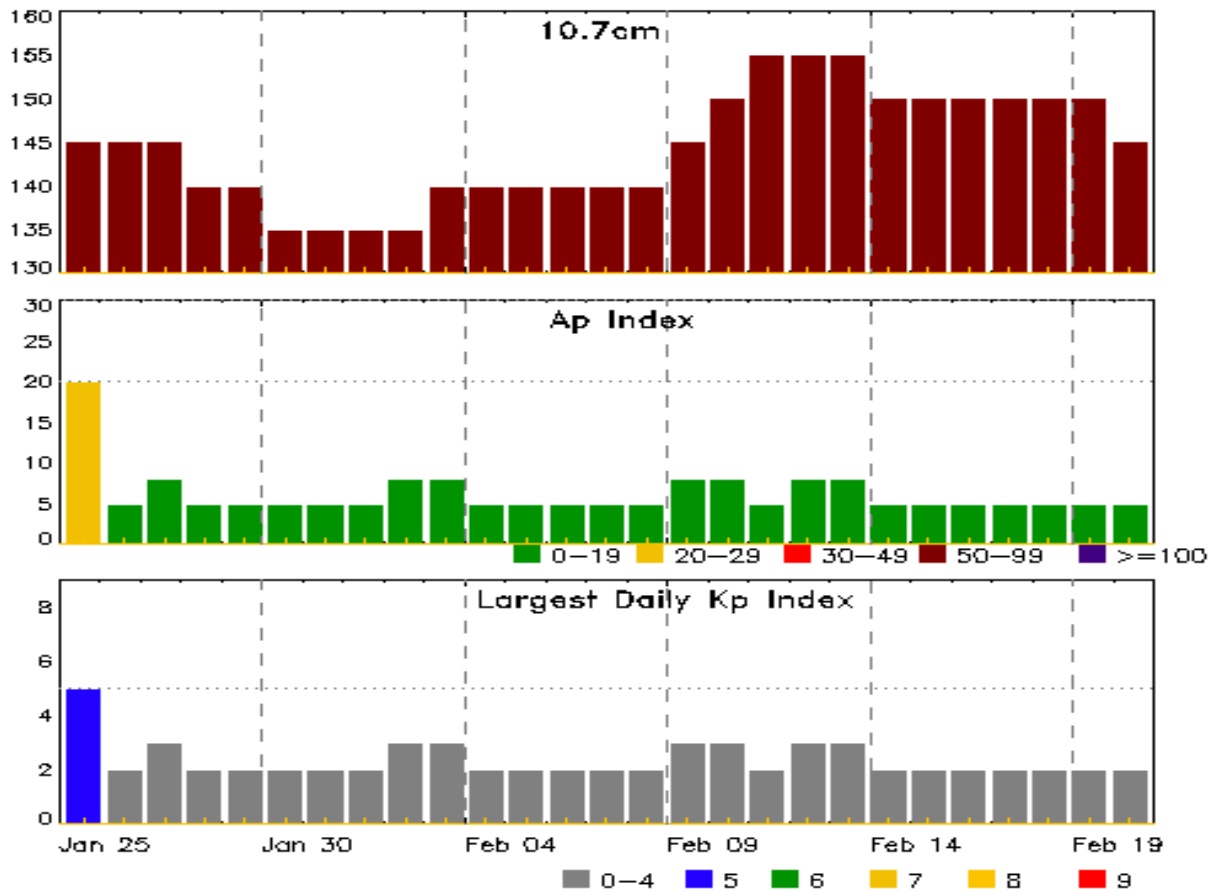


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
16 Jan 1335	WARNING: Geomagnetic K = 4	16/1334 - 2359
19 Jan 0014	ALERT: Type II Radio Emission	18/2323
19 Jan 1345	ALERT: Type II Radio Emission	19/1252
19 Jan 1951	ALERT: Type IV Radio Emission	19/1438
19 Jan 2007	ALERT: Type II Radio Emission	18/1933
20 Jan 2123	WATCH: Geomagnetic A \geq 20	23/
20 Jan 2326	ALERT: Type IV Radio Emission	20/1748
20 Jan 2326	ALERT: Type II Radio Emission	20/2116
21 Jan 0243	ALERT: Type IV Radio Emission	20/2214
21 Jan 0450	WARNING: Geomagnetic Sudden Impulse expected	21/0448 - 0648
21 Jan 0525	SUMMARY: Geomagnetic Sudden Impulse	21/0502
21 Jan 0526	CANCELLATION: Geomagnetic Sudden Impulse expected	
22 Jan 0541	WARNING: Geomagnetic Sudden Impulse expected	22/0539 - 0700
22 Jan 0623	WARNING: Geomagnetic K = 4	22/0621 - 1205
22 Jan 0630	SUMMARY: Geomagnetic Sudden Impulse	22/0614
22 Jan 0902	ALERT: Geomagnetic K = 4	22/0859
22 Jan 1150	EXTENDED WARNING: Geomagnetic K = 4	22/0621 - 1800
22 Jan 1231	WARNING: Geomagnetic K = 5	22/1230 - 1800
22 Jan 1756	EXTENDED WARNING: Geomagnetic K = 4	22/0621 - 23/0000
22 Jan 1803	CANCELLATION: Geomagnetic A \geq 20	
22 Jan 1942	WARNING: Geomagnetic K = 5	22/1940 - 23/0000
22 Jan 2022	ALERT: Geomagnetic K = 5	22/2021
22 Jan 2340	EXTENDED WARNING: Geomagnetic K = 4	22/0621 - 23/1200
22 Jan 2340	EXTENDED WARNING: Geomagnetic K = 5	22/1940 - 23/0900



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
25 Jan	145	20	5	08 Feb	140	5	2
26	145	5	2	09	145	8	3
27	145	8	3	10	150	8	3
28	140	5	2	11	155	5	2
29	140	5	2	12	155	8	3
30	135	5	2	13	155	8	3
31	135	5	2	14	150	5	2
01 Feb	135	5	2	15	150	5	2
02	135	8	3	16	150	5	2
03	140	8	3	17	150	5	2
04	140	5	2	18	150	5	2
05	140	5	2	19	150	5	2
06	140	5	2	20	145	5	2
07	140	5	2				



Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location	Rgn #	Radio Flux		Intensity	
							Lat CMD		245	2695	II	IV
17 Jan	0441	0453	0507	M1.0	0.011	1N	N18E54	1401				
18 Jan	1904	1912	1927	M1.7	0.015	1N	N17E33	1401				
19 Jan	1344	1605	1750	M3.2	0.270	SF	N32E22	1402				

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Location	Rgn #
	Begin	Max	End				
16 Jan	0014	0018	0022	C2.5	SF	N17E68	1401
16 Jan	0236	0444	0646	C6.5			1402
16 Jan	0808	0812	0818	C3.9	SF	N19E67	1401
16 Jan	1031	1038	1122	C5.5			1401
16 Jan	2250	2316	2357	C3.9	SN	N18E55	1401
16 Jan	2315	2316	2325		SF	S20E16	1403
17 Jan	0332	0333	0335		SF	N29E53	1402
17 Jan	0441	0453	0507	M1.0	1N	N18E54	1401
17 Jan	0550	0557	0615		SF	N26E50	1402
17 Jan	1719	1723	1725	C1.4			1401
17 Jan	1832	1837	1840	C2.2			1401
17 Jan	2353	2357	0003	C1.0	SF	N18E37	1401
18 Jan	0117	0121	0126	B8.5			1403
18 Jan	0139	0139	0142		SF	N28E43	1402
18 Jan	0809	0814	0818	B9.7			1401
18 Jan	0905	0910	0917	B8.6			1401
18 Jan	0951	0954	0956	C1.0			1401
18 Jan	1016	1030	1045	C2.4			1401
18 Jan	1210	1230	1233	B9.6			1399
18 Jan	1904	1912	1927	M1.7	1N	N17E33	1401
18 Jan	2257	2320	2333	C5.1			1396
19 Jan	0352	0355	0357	C1.2			
19 Jan	1022	1026	1031	B8.9			1402
19 Jan	1241	1250	1300	C3.2	SF	N24W55	1396
19 Jan	1344	1605	1750	M3.2	SF	N32E22	1402
19 Jan	1414	1414	1418		SF	N23W61	1395
19 Jan	1524	1607	2001		2N	N30E30	1402
19 Jan	2001	2003	2012		SF	N28E26	1402



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
20 Jan	1458	1501	1504	B9.1			
20 Jan	2101	2112	2122	C1.3			1396
20 Jan	2148	2333	0036	C1.4			
21 Jan	1335	1342	1347	C2.4			
21 Jan	2044	2120	2143	C1.3			1402
21 Jan	2047	2049	2106		SF	N18W07	1401
21 Jan	2107	2108	2146		SF	N27W03	1402
22 Jan	0232	0257	0306	C7.1			
22 Jan	0330	0339	0430		1F	N18W13	1401
22 Jan	0820	0820	0826		SF	N18W14	1401
22 Jan	0847	0854	0901	C2.2	SF	N18W14	1401
22 Jan	1200	1200	1209		SF	N16W18	1401
22 Jan	1238	1255	1347	C3.7	SF	N16W19	1401
22 Jan	1832	1835	1843		SF	N32W15	1402
22 Jan	1915	1918	1920	B9.5			
22 Jan	1926	1930	1934		SF	N32W16	1402
22 Jan	2022	2026	2031	B9.8	SF	N33W16	1402
22 Jan	2045	2046	2049		SF	N33W16	1402
22 Jan	2047	2053	2059	C2.0	SF	N19W20	1401
22 Jan	2150	2150	2155		SF	N19W36	1407



Region Summary

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 1391</i>																							
02 Jan	N13E81		10	120	9	Hsx	1	A															
03 Jan	N12E65		12	240	3	Hsx	1	A															
04 Jan	N12E54		10	510	8	Cho	4	B					1										
05 Jan	N13E40		11	420	9	Dho	10	B															
06 Jan	N13E28		10	420	10	Dki	19	B															
07 Jan	N13E14		10	370	9	Dko	12	B															
08 Jan	N13W00		10	300	10	Dko	12	B															
09 Jan	N12W12		11	280	10	Dsc	22	BG	2														
10 Jan	N12W25		11	270	10	Dki	22	B	1				1										
11 Jan	N12W37		10	270	12	Ekc	20	B															
12 Jan	N12W51		11	180	9	Cao	11	B															
13 Jan	N12W67		14	120	6	Dao	11	B	1				1										
14 Jan	N12W80		13	120	5	Dao	9	B															
									4	0	0	3	0	0	0	0	0						

Crossed West Limb.
 Absolute heliographic longitude: 10

<i>Region 1394</i>																							
06 Jan	N18E42		356	10	6	Axx	2	A															
07 Jan	N18E26		358	10	3	Bxo	2	B															
08 Jan	N18E12		358	plage																			
09 Jan	N18W02		1	plage																			
10 Jan	N18W16		2	plage																			
11 Jan	N18W28		1	plage																			
12 Jan	N18W42		2	plage																			
13 Jan	N18W56		3	plage																			
14 Jan	N18W70		3	plage																			
15 Jan	N18W84		4	plage																			
									0	0	0	0	0	0	0	0	0						

Crossed West Limb.
 Absolute heliographic longitude: 1



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares																
	Lat CMD	Lon	Helio 10 ⁶ hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical											
									C	M	X	S	1	2	3	4							
Region 1395																							
08 Jan	N22E59	312	120	3	Hsx	1	A																
09 Jan	N22E48	311	160	2	Hsx	1	A	1					1										
10 Jan	N22E35	311	180	3	Cao	3	B																
11 Jan	N21E21	312	90	2	Hsx	4	A	2					1										
12 Jan	N21E07	313	70	1	Hsx	2	A	1					1										
13 Jan	N21W06	312	40	2	Hsx	2	A																
14 Jan	N21W18	311	20	2	Hsx	2	A																
15 Jan	N20W31	311	10	1	Hsx	2	A																
16 Jan	N20W44	311	10	2	Hsx	1	A																
17 Jan	N20W58	312	plage																				
18 Jan	N20W72	313	plage																				
19 Jan	N20W86	314	plage										1										
								4	0	0			4	0	0	0	0						

Crossed West Limb.
Absolute heliographic longitude: 312

Region 1396																							
12 Jan	N25E32	287	10	3	Bxo	2	B																
13 Jan	N26E18	288	70	5	Dai	10	B						1										
14 Jan	N27E06	287	110	7	Dao	15	B	1					1										
15 Jan	N25W07	287	80	4	Dao	10	B																
16 Jan	N25W19	286	40	4	Dso	10	B																
17 Jan	N24W33	287	30	4	Dro	17	B																
18 Jan	N25W44	285	10	2	Bxo	4	B	1															
19 Jan	N25W58	286	plage					1					1										
20 Jan	N25W72	286	plage					1															
21 Jan	N25W86	287	plage																				
								4	0	0			3	0	0	0	0						

Crossed West Limb.
Absolute heliographic longitude: 287



Region Summary - continued

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

Region 1397

13 Jan	S20E28	277	40	3	Dao	4												
14 Jan	S20E14	278	30	5	Dao	4	B											
15 Jan	S20E02	278	15	5	Cao	3	B											
16 Jan	S20W12	279	plage															
17 Jan	S20W26	280	plage															
18 Jan	S20W40	281	plage															
19 Jan	S20W54	282	plage															
20 Jan	S20W68	282	plage															
21 Jan	S20W82	283	plage															
										0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 278

Region 1398

13 Jan	N13W08	314	15	3	Dao	4	B											
14 Jan	N14W22	315	50	6	Dao	13	B											
15 Jan	N12W36	315	50	6	Dao	9	B											
16 Jan	N12W50	317	50	5	Cro	5	B											
17 Jan	N11W64	318	10	1	Bxo	3	B											
18 Jan	N11W78	319	plage															
										0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 314

Region 1399

14 Jan	S24E69	224	30	3	Cao	4	B											
15 Jan	S23E54	225	20	1	Hax	2	A											
16 Jan	S22E43	224	20	1	Hsx	1	A											
17 Jan	S23E29	225	20	2	Hrx	1	A											
18 Jan	S23E17	224	20	1	Hsx	1	A											
19 Jan	S23E03	223	10	1	Axx	1	A											
20 Jan	S23W11	225	plage															
21 Jan	S23W25	226	plage															
22 Jan	S23W39	227	plage															
										0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 223



Region Summary - continued

Date	Location		Sunspot Characteristics				Flares									
	Lat CMD	Lon	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
			10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4	
Region 1403																
15 Jan	S19E29	250	10	2	Bxo	2	B									
16 Jan	S19E15	252	plage									1				
17 Jan	S19E02	252	10	3	Bxo	5	B									
18 Jan	S19W11	252	20	3	Cro	5	B									
19 Jan	S19W24	250	30	4	Cro	5	B									
20 Jan	S19W38	252	plage													
21 Jan	S19W52	253	plage													
22 Jan	S19W66	254	plage													
									0	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 252

Region 1404																
16 Jan	N12W29	296	30	3	Dso	3	B									
17 Jan	N11W42	296	10	3	Bxo	3	B									
18 Jan	N11W56	297	plage													
19 Jan	N11W70	298	plage													
20 Jan	N11W84	298	plage													
									0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 296

Region 1405																
16 Jan	N13E65	202	20	2	Hsx	1	A									
17 Jan	N13E51	203	50	1	Hsx	1	A									
18 Jan	N11E39	202	40	2	Hsx	2	A									
19 Jan	N13E25	201	40	1	Hsx	1	A									
20 Jan	N11E13	200	30	1	Hsx	1	A									
21 Jan	N13E01	200	30	4	Cso	4	B									
22 Jan	N12W13	200	10	1	Axx	1	A									
									0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 200



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

Region 1406

17 Jan	S23W55	309	30	4	Dro	7	B										
18 Jan	S24W68	309	30	4	Cso	2	B										
19 Jan	S24W84	310	10	1	Axx	1	A										
									0	0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 309

Region 1407

18 Jan	N17E13	228	10	1	Bxo	2	B										
19 Jan	N17W00	227	10	4	Bxo	5	B										
20 Jan	N17W13	227	50	6	Dso	8	B										
21 Jan	N17W28	229	70	8	Dro	10	B										
22 Jan	N17W41	228	70	9	Dso	8	B				1						
									0	0	0	1	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 227

Region 1408

21 Jan	N06E68	132	120	3	Hax	1	A										
22 Jan	N08E57	131	70	2	Hsx	2	A										
									0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 131

Region 1409

21 Jan	N16E50	150	0		Axx	1	A										
22 Jan	N19E40	147	10	2	Bxo	3	B										
									0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 147

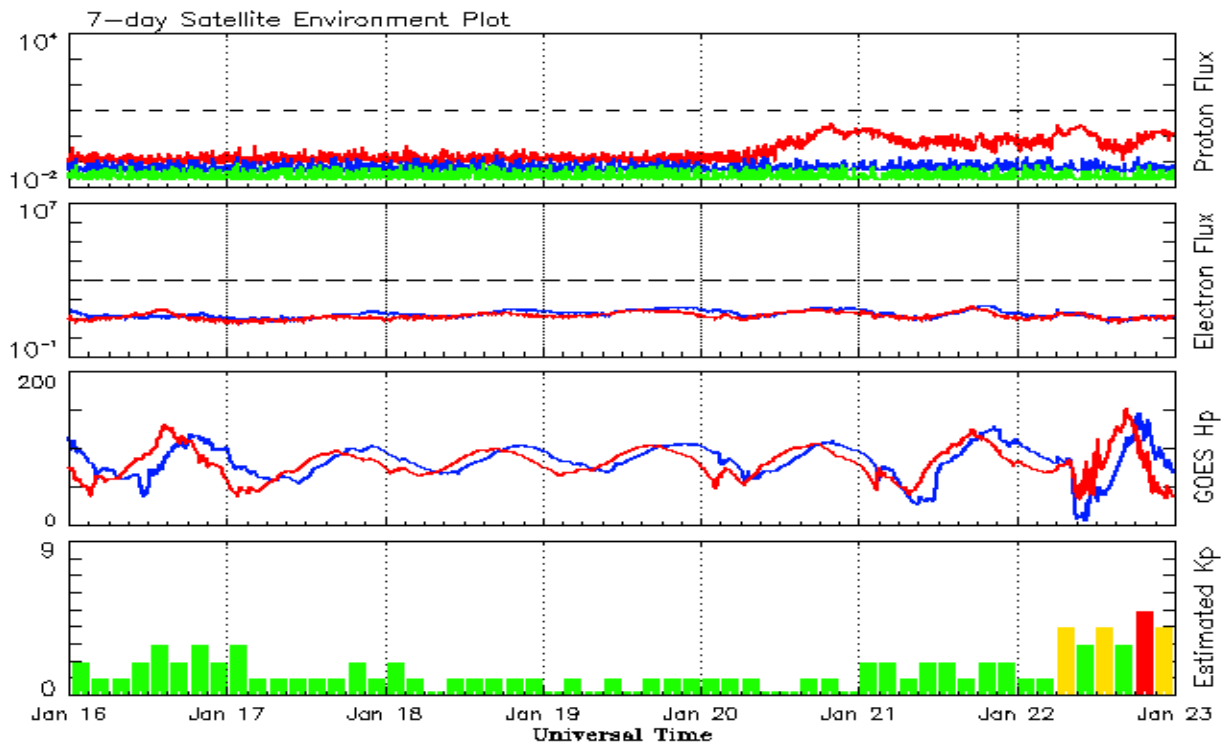


Recent Solar Indices (preliminary)
Observed monthly mean values

Month	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values		Ratio	Smooth values		Penticton	Smooth	Planetary	Smooth
	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
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	76.5	53.2	95.8	110.9	8	7.4
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	
December	106.3	73.0	0.69			141.2		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 16 January 2012*

The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-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.

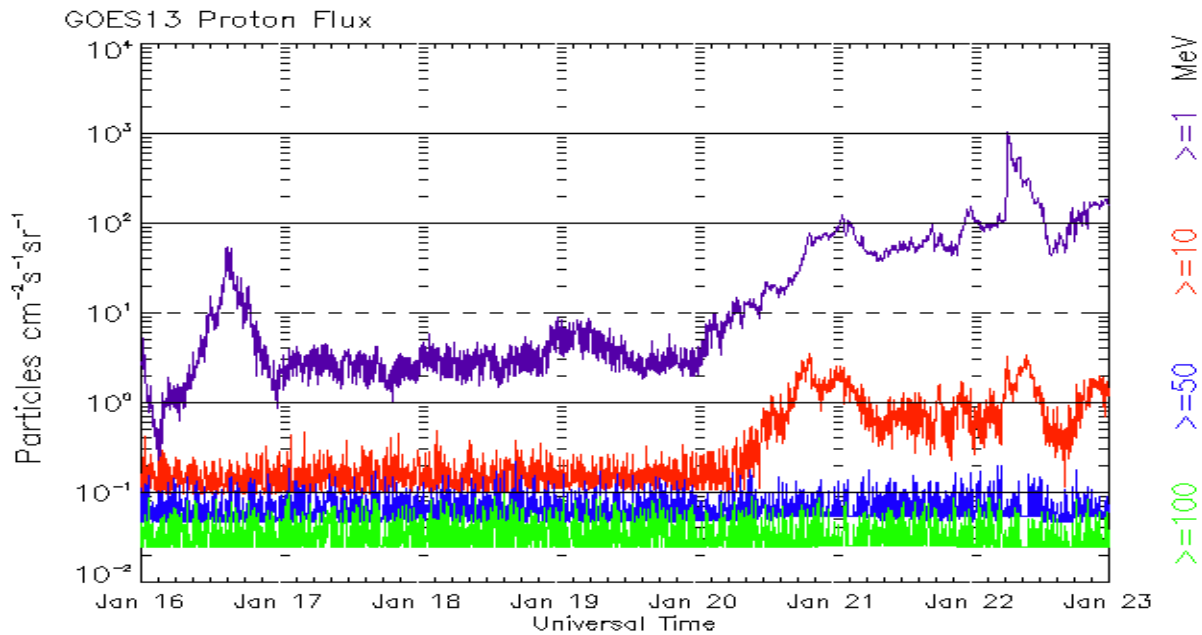
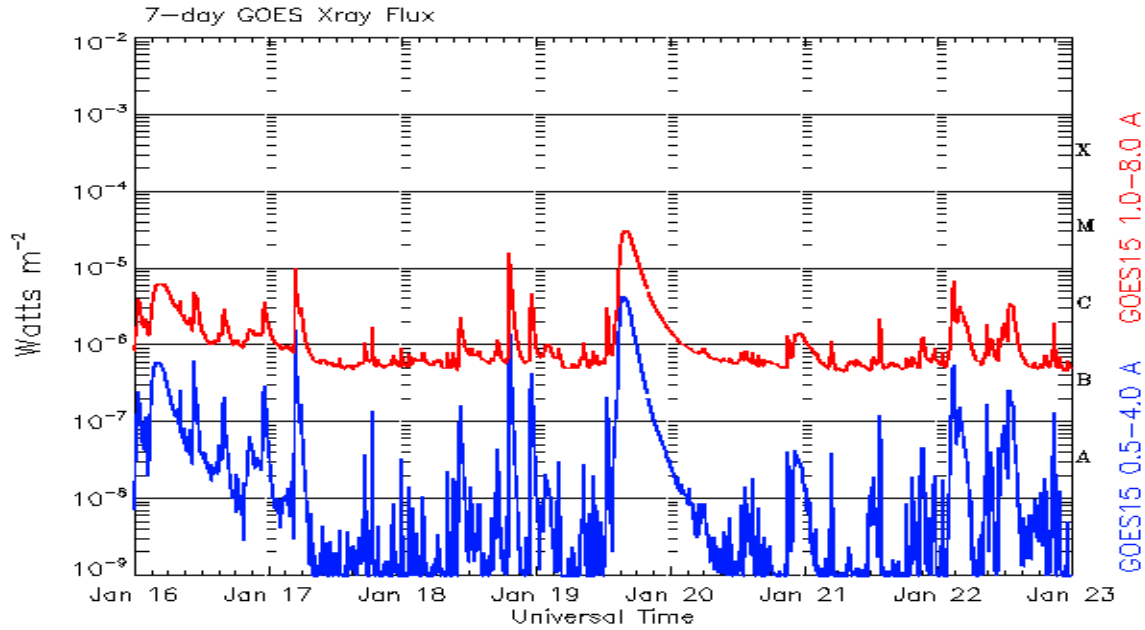
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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 16 January 2012*

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

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