Space Weather Highlights **SWPC PRF 1985**
09 September - 15 September 2013 **16 September 2013**

Solar activity was at very low levels with only a few weak B-class flares observed. The spotted regions on the disk were unremarkable. No Earth-directed CMEs were detected.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels on 09 - 10 September with normal to moderate flux levels the remainder of the period.

Geomagnetic field activity was predominately at quiet levels. Isolated unsettled to active levels were observed 12 - 14 September due to weak coronal hole high speed stream (CH HSS) effects. ACE satellite wind parameters observed wind speeds at about 375 km/s to begin the period. These speeds persisted through late on 12 September where an increase to about 500 km/s was observed. A further increase to near 600 km/s was observed early on 14 September. The interplanetary magnetic field (IMF) Bt averaged about 5 nT reaching a high of 10 nT at 12/1940 UTC. The Bz component of the IMF generally varied between +/- 3 nT with a maximum southward extent of -9 nT reached at 13/1534 UTC. The phi angle began the period in a positive (away) orientation through 10/0852 UTC where a switch to negative (towards) occurred. The angle remained in a negative orientation for the remainder of the period.

Space Weather Outlook
16 September - 12 October 2013

Solar activity is expected to be at very low to low levels through the outlook period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at high levels 19 - 23 September and 29 September - 07 October. Flux levels are expected to be at normal to moderate levels the remainder of the outlook period.

Geomagnetic field activity is expected to be predominately at quiet levels. CH HSS effects are expected on 16 - 18 September, 22 September, 26 - 28 September and 10 - 11 October where quiet to unsettled levels with isolated active periods are expected.

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
09 September	94	13	10	B1.4	0	0	0	0	0	0	0	0
10 September	95	23	10	B1.3	0	0	0	1	0	0	0	0
11 September	93	53	80	B1.2	0	0	0	0	0	0	0	0
12 September	93	58	81	A7.9	0	0	0	0	0	0	0	0
13 September	92	40	90	A9.5	0	0	0	0	0	0	0	0
14 September	93	24	60	A7.4	0	0	0	0	0	0	0	0
15 September	93	12	30	A8.3	0	0	0	0	0	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
09 September	1.3e+05	1.0e+04	2.5e+03		5.6e+07	
10 September	2.0e+05	1.0e+04	2.5e+03		4.1e+07	
11 September	8.0e+04	1.0e+04	2.5e+03		4.9e+06	
12 September	1.0e+05	1.0e+04	2.5e+03		5.5e+06	
13 September	2.3e+05	1.1e+04	2.6e+03		2.3e+06	
14 September	1.2e+05	1.0e+04	2.5e+03		3.0e+06	
15 September	2.3e+05	1.0e+04	2.5e+03		4.9e+06	

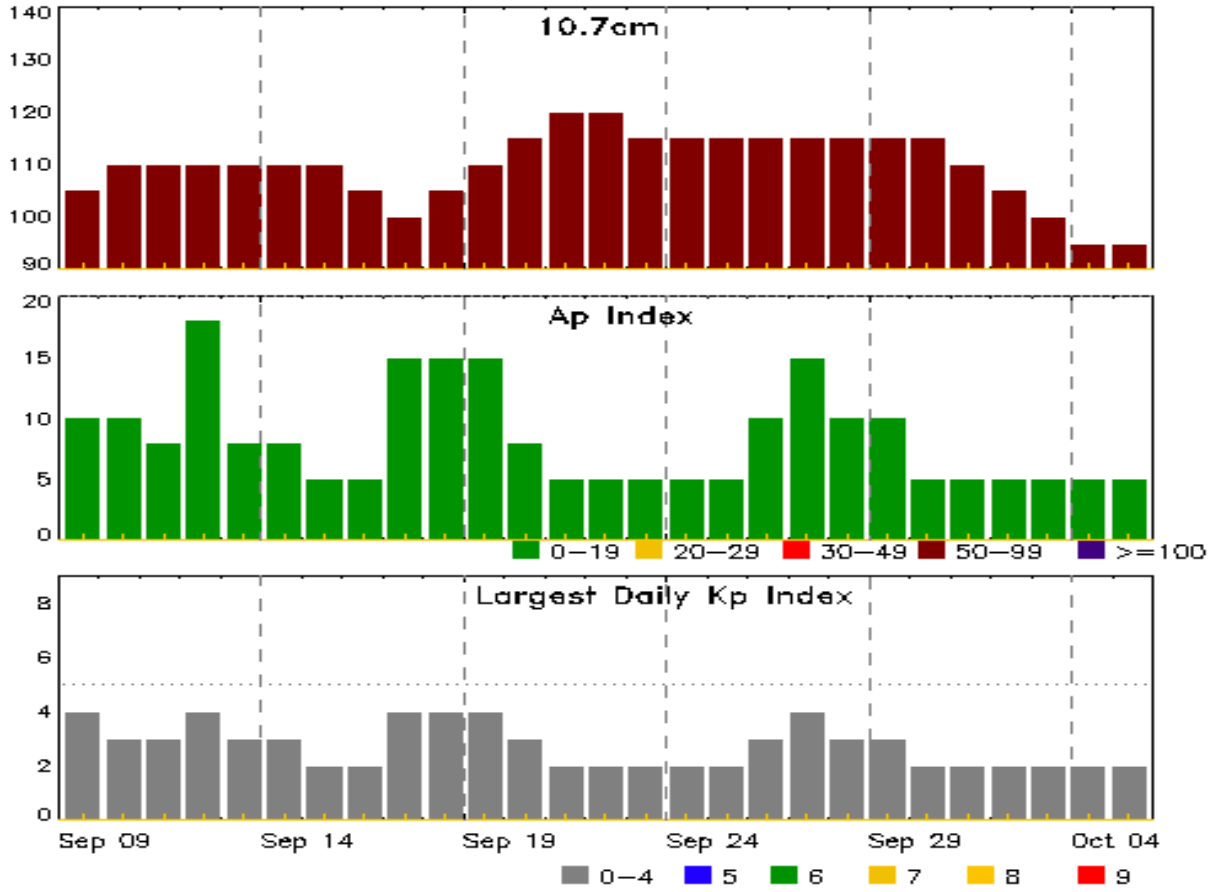
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
09 September	4	0-1-1-2-2-1-1-1	2	0-0-2-2-1-0-0-0	4	0-1-1-1-1-1-1-1
10 September	6	0-0-0-2-3-2-3-2	9	0-0-0-5-2-2-1-2	7	0-0-0-2-2-3-3-2
11 September	6	2-1-1-2-3-1-2-1	11	2-0-2-5-3-1-1-1	6	2-1-1-2-2-2-2-2
12 September	5	1-1-1-2-2-1-2-2	6	1-1-3-2-0-1-2-2	7	2-1-2-1-1-1-2-3
13 September	10	3-1-2-1-3-3-3-1	11	3-2-3-2-3-3-2-2	9	3-1-2-1-2-4-2-1
14 September	6	2-2-2-1-2-2-1-1	6	2-1-3-3-1-0-1-0	6	2-2-3-1-2-1-1-1
15 September	3	2-1-0-1-1-1-0-1	1	1-0-0-0-0-0-0-1	2	1-0-0-0-0-1-0-1

Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
09 Sep 1517	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	02/1315
10 Sep 1716	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	02/1315
13 Sep 1732	WARNING: Geomagnetic K = 4	13/1732 - 14/0700
13 Sep 1805	ALERT: Geomagnetic K = 4	13/1800

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
16 Sep	95	13	4	30 Sep	100	5	2
17	100	10	3	01 Oct	95	5	2
18	100	8	3	02	95	5	2
19	100	5	2	03	95	5	2
20	100	5	2	04	95	5	2
21	100	5	2	05	95	5	2
22	100	8	3	06	95	5	2
23	100	5	2	07	95	5	2
24	100	5	2	08	95	5	2
25	100	5	2	09	95	5	2
26	100	10	3	10	95	10	3
27	100	12	4	11	95	8	3
28	100	12	4	12	95	5	2
29	100	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

No Events Observed

Flare List

	Time				Optical		
Date	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
10 Sep	0412	0525	0604	B4.1			
10 Sep	1022	1054	1103	B2.9			1838
10 Sep	B1033	U1033	A1042		SF	S04E15	1838
12 Sep	1058	1106	1116	B2.6			1841

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 1836												
27 Aug	N10E68	342	70	3	Hsx	1	A								
28 Aug	N10E55	342	140	2	Hax	2	A								
29 Aug	N12E42	343	160	3	Hax	3	A	1							
30 Aug	N11E33	339	180	10	Cao	5	B	1				1			
31 Aug	N11E19	338	170	14	Eao	9	BG	1			2				
01 Sep	N11E04	339	150	14	Eso	12	BG								
02 Sep	N11W05	336	160	13	Eso	13	BG								
03 Sep	N12W22	339	110	6	Hsx	8	A				1				
04 Sep	N12W39	342	110	5	Dso	7	B	1			4				
05 Sep	N13W56	345	120	9	Cso	10	B	1			2				
06 Sep	N11W67	345	130	8	Cao	5	B								
07 Sep	N10W78	344	90	2	Cao	2	B								
08 Sep	N10W91	344	60	2	Hax	1	A								
								5	0	0	9	1	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 339

			Region 1838												
05 Sep	S03E68	223	30	2	Hsx	1	A								
06 Sep	S05E55	223	20	1	Hsx	1	A								
07 Sep	S05E41	225	30	1	Hax	1	A								
08 Sep	S03E27	226	30	2	Hax	3	A				1				
09 Sep	S04E15	223	10	2	Axx	3	A								
10 Sep	S04E02	223	0		Axx	1	A				1				
11 Sep	S04W13	226	10	2	Axx	3	A								
12 Sep	S05W25	224	10	1	Axx	2	A								
13 Sep	S05W40	227	plage												
14 Sep	S05W55	228	plage												
15 Sep	S05W70	230	plage												
								0	0	0	2	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 223

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 1839												
10 Sep	S13W27	253	10	2	Hrx	2	A								
11 Sep	S12W40	252	20	4	Cro	4	B								
12 Sep	S12W52	252	10	1	Bxo	1	B								
13 Sep	S12W66	253	30	4	Cro	6	B								
14 Sep	S12W83	256	20	1	Hrx	1	A								
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 253

			Region 1840												
11 Sep	S12W03	215	20	5	Cro	5	B								
12 Sep	S11W19	218	1	2	Axx	2	A								
13 Sep	S11W33	220	plage												
14 Sep	S11W47	220	plage												
15 Sep	S11W61	221	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 215

			Region 1841												
11 Sep	S05E69	143	30	2	Hsx	1	A								
12 Sep	S06E54	144	40	2	Cao	1	B								
13 Sep	S06E41	146	50	3	Cso	3	B								
14 Sep	S06E28	145	40	2	Cso	3	B								
15 Sep	S05E14	146	30	2	Hax	2	A								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 146

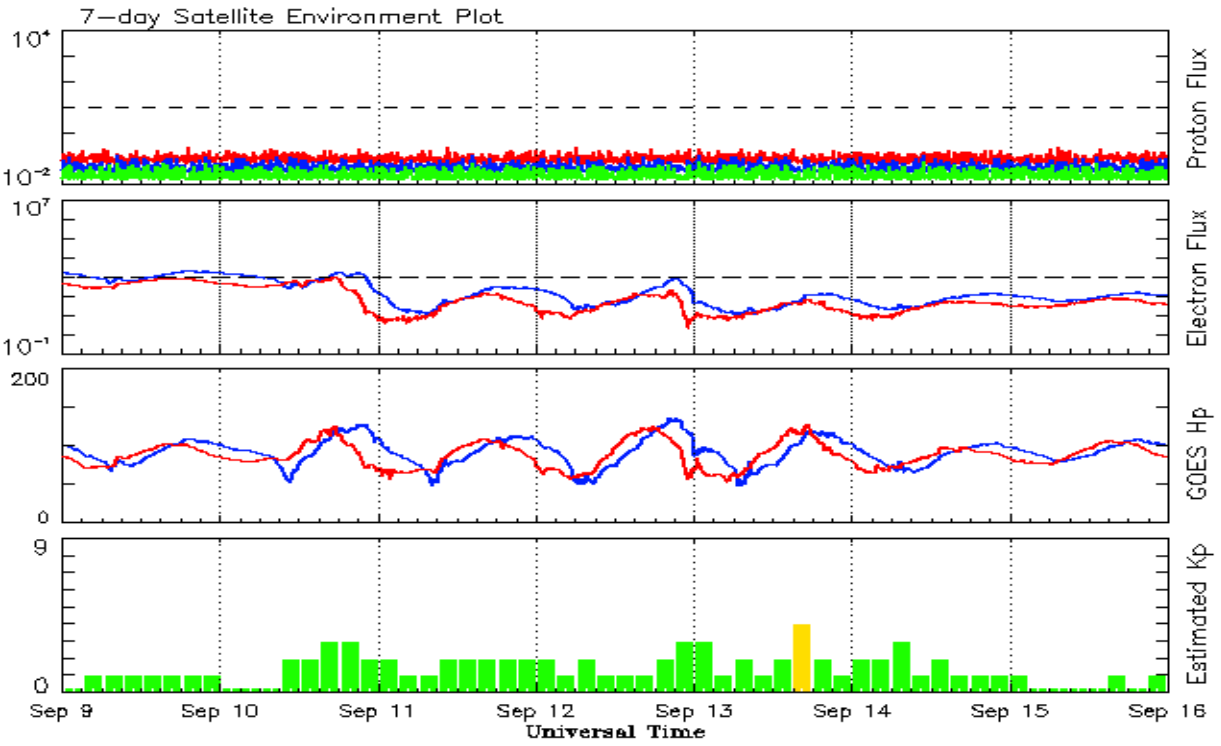
			Region 1842												
12 Sep	N04W62	261	20	4	Cro	2	B								
13 Sep	N04W76	263	10	1	Axx	1	A								
								0	0	0	0	0	0	0	0

Died on Disk.
Absolute heliographic longitude: 261

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
				2011					
September	106.4	78.0	0.73	84.6	59.5	134.5	118.4	13	7.7
October	116.8	88.0	0.75	84.6	59.9	137.2	118.4	7	8.0
November	133.1	96.7	0.73	86.3	61.1	153.1	119.5	3	8.0
December	106.3	73.0	0.69	89.2	63.4	141.2	121.6	3	8.0
				2012					
January	91.3	58.3	0.64	92.0	65.5	133.1	124.4	6	8.3
February	50.1	32.9	0.66	94.2	66.9	106.7	126.7	7	8.4
March	77.9	64.3	0.82	94.1	66.8	115.1	126.8	14	8.1
April	84.4	55.2	0.65	91.3	64.6	113.1	125.8	9	8.0
May	99.5	69.0	0.69	87.7	61.7	121.5	123.8	8	8.2
June	88.6	64.5	0.73	83.9	58.9	120.5	121.1	10	8.3
July	99.6	66.5	0.67	82.4	57.8	135.6	119.5	13	8.3
August	85.8	63.0	0.74	83.1	58.2	115.7	119.2	7	8.1
September	84.0	61.4	0.73	83.7	58.1	123.2	118.9	8	7.8
October	73.5	53.3	0.73	85.0	58.6	123.3	119.2	9	7.4
November	89.2	61.8	0.69	87.3	59.7	120.9	120.1	6	7.3
December	60.4	40.8	0.68	88.0	59.6	108.4	120.1	3	7.5
				2013					
January	99.8	62.9	0.63	87.1	58.7	127.1	118.9	4	7.5
February	60.0	38.1	0.63	86.7	58.4	104.4	118.0	5	7.4
March	81.0	57.9	0.71			111.2		9	
April	112.8	72.4	0.64			125.0		5	
May	125.5	78.7	0.63			131.3		10	
June	80.1	52.5	0.66			110.2		13	
July	86.1	57.0	0.66			115.6		9	
August	90.2	66.0	0.73			114.7		9	

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 09 September 2013

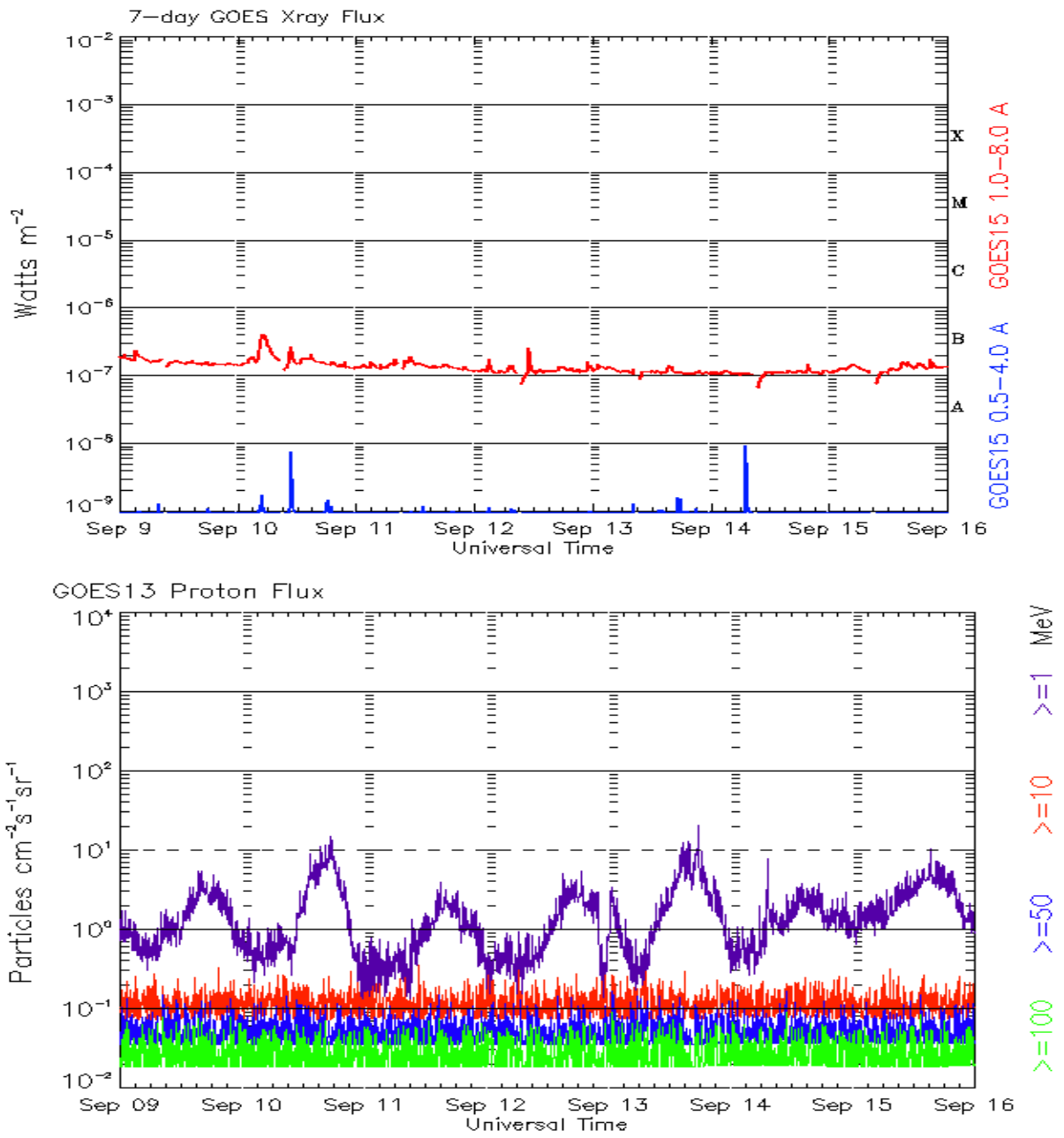
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm^2-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

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 09 September 2013

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.

Preliminary Report and Forecast of Solar Geophysical Data (The Weekly)

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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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