

Solar activity ranged from very low to low levels. Very low levels were observed on 26 Aug while low levels were observed from 21-25 Aug and again on 27 Aug. Regions 2671 (N11, L=305, class/area Fkc/430 on 21 Aug) and 2672 (N08, L=227, class/area Dao/270 on 22 Aug) were the only regions on the visible disk and were responsible for a total of 34 C-class flares between the two. The largest events of the period were a C6/1f at 27/1516 UTC from Region 2671, a C5/Sf at 21/0316 UTC from Region 2672, and another C5/1n at 25/0727 UTC with an associated 100 sfu Tenflare from Region 2672. No Earth-directed coronal mass ejections (CMEs) were observed during the period.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels from 22-27 Aug while very high levels were observed on 21 Aug. The largest flux of the period was 52,010 pfu observed at 21/1725 UTC.

Geomagnetic field activity ranged from quiet to G2 (Moderate) storm levels. The period began under the waning influence of a positive polarity coronal hole high speed stream (CH HSS). Solar wind speed was decreasing from approximately 700 km/s to around 580 km/s by late on 21 Aug with total field values near 4 nT. By approximately 21/2100 UTC, total field began to increase to 9 nT while the Bz component deflected southward briefly to -8 nT. Solar wind speed increased once again to near 675 km/s at 22/0655 UTC before slowly decreasing once more. A prolonged period of southward Bz was observed between 22/1840-24/1310 UTC reaching a maximum of -6 nT. The geomagnetic field responded with quiet to unsettled levels on 21 Aug, quiet to G2 (Moderate) geomagnetic storm levels on 22 Aug, and unsettled to G1 (Minor) geomagnetic storm levels on 23 Aug. Solar wind speed continued to decline to around 330 km/s by early on 25 Aug. Another enhancement in total field was observed at the end of the period to 10 nT with another prolonged period of southward Bz after 27/1200 UTC. The geomagnetic field responded with quiet to unsettled conditions on 24 and 27 Aug while quiet conditions were observed on 25-26 Aug.

Space Weather Outlook

28 August - 23 September 2017

Solar activity is expected to be at very low to low levels throughout the forecast period. There is a slight chance for M-class (R1-R2, Minor-Moderate) flares from 28 Aug-02 Sep as Region 2672 transits across the visible disk.

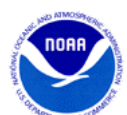
No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at mostly high levels throughout the forecast period due to recurrent CH HSS influence. A decrease to moderate



levels is expected on 30-31 Aug, 08 Sep, and again on 13 Sep due to electron redistribution associated with the arrival of the CH HSSs.

Geomagnetic field activity is expected to be at unsettled to active levels on 28 Aug, 30 Aug-02 Sep, 08-09 Sep, 13-17 Sep, and 23 Sep with G1 (Minor) geomagnetic storm levels likely on 31 Aug and 13-16 Sep and G2 (Moderate) geomagnetic storm levels likely on 14-15 Sep due to recurrent CH HSS activity.



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
21 August	87	43	590	B2.6	4	0	0	10	1	0	0	0
22 August	90	48	520	B1.7	3	0	0	14	0	0	0	0
23 August	85	40	460	B1.1	4	0	0	5	1	0	0	0
24 August	79	43	440	Unk	2	0	0	6	0	0	0	0
25 August	81	39	280	B1.2	1	0	0	5	1	0	0	0
26 August	78	35	250	B1.1	0	0	0	2	0	0	0	0
27 August	78	22	150	B1.1	1	0	0	1	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
	21 August	4.8e+07	1.5e+04	3.1e+03	2.1e+09	
22 August	7.5e+07	1.5e+04	3.2e+03	2.3e+08		
23 August	1.2e+08	1.6e+04	3.4e+03	7.9e+07		
24 August	1.0e+08	1.6e+04	3.5e+03	9.1e+07		
25 August	8.1e+07	1.6e+04	3.4e+03	2.9e+08		
26 August	1.3e+08	1.7e+04	3.5e+03	4.4e+08		
27 August	1.2e+08	1.6e+04	3.5e+03	3.8e+08		

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	21 August	13	2-3-3-4-3-1-2-3	16	3-2-5-4-3-1-2-2	11
22 August	16	5-4-3-2-3-1-2-2	37	6-5-5-5-5-3-1-2	23	6-5-3-2-3-2-2-3
23 August	17	3-4-3-3-4-3-3-2	72	3-4-5-5-7-8-5-2	25	3-4-4-3-5-4-5-3
24 August	16	4-4-4-3-3-2-1-1	38	2-5-6-6-6-2-0-0	11	3-3-3-3-3-2-1-1
25 August	7	1-2-2-2-3-2-1-1	6	1-1-1-3-3-1-1-1	5	1-1-2-2-2-1-1-2
26 August	5	1-1-2-1-2-2-2-1	2	0-1-1-0-1-2-1-0	5	1-1-2-1-1-2-1-1
27 August	6	2-1-0-2-2-2-2-2	14	2-1-0-4-2-5-3-2	12	3-1-1-3-2-3-3-3



Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
21 Aug 0254	EXTENDED WARNING: Geomagnetic K = 4	17/0752 - 21/1200
21 Aug 0502	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	18/1650
21 Aug 1121	EXTENDED WARNING: Geomagnetic K = 4	17/0752 - 21/1800
21 Aug 2226	WARNING: Geomagnetic K = 4	21/2225 - 22/0600
22 Aug 0052	ALERT: Geomagnetic K = 4	22/0052
22 Aug 0152	WARNING: Geomagnetic K = 5	22/0155 - 0600
22 Aug 0244	ALERT: Geomagnetic K = 5	22/0244
22 Aug 0256	WARNING: Geomagnetic K = 6	22/0255 - 0800
22 Aug 0303	ALERT: Geomagnetic K = 6	22/0259
22 Aug 0305	EXTENDED WARNING: Geomagnetic K = 4	21/2225 - 22/1200
22 Aug 0305	EXTENDED WARNING: Geomagnetic K = 5	22/0155 - 0900
22 Aug 0535	ALERT: Geomagnetic K = 5	22/0535
22 Aug 1111	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	18/1650
22 Aug 2219	WARNING: Geomagnetic K = 4	22/2220 - 23/0600
23 Aug 0446	ALERT: Geomagnetic K = 4	23/0445
23 Aug 0555	EXTENDED WARNING: Geomagnetic K = 4	22/2220 - 23/1200
23 Aug 1029	EXTENDED WARNING: Geomagnetic K = 4	22/2220 - 23/1800
23 Aug 1412	WARNING: Geomagnetic K = 5	23/1411 - 1800
23 Aug 1502	ALERT: Geomagnetic K = 5	23/1500
23 Aug 1518	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	18/1650
23 Aug 1724	EXTENDED WARNING: Geomagnetic K = 4	22/2220 - 23/2300
23 Aug 1922	WARNING: Geomagnetic K = 5	23/1925 - 2359
23 Aug 2103	ALERT: Geomagnetic K = 5	23/2059
23 Aug 2121	EXTENDED WARNING: Geomagnetic K = 4	22/2220 - 24/0600
24 Aug 0513	EXTENDED WARNING: Geomagnetic K = 4	22/2220 - 24/1200
24 Aug 0556	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	18/1650
25 Aug 0807	SUMMARY: 10cm Radio Burst	25/0726 - 0727

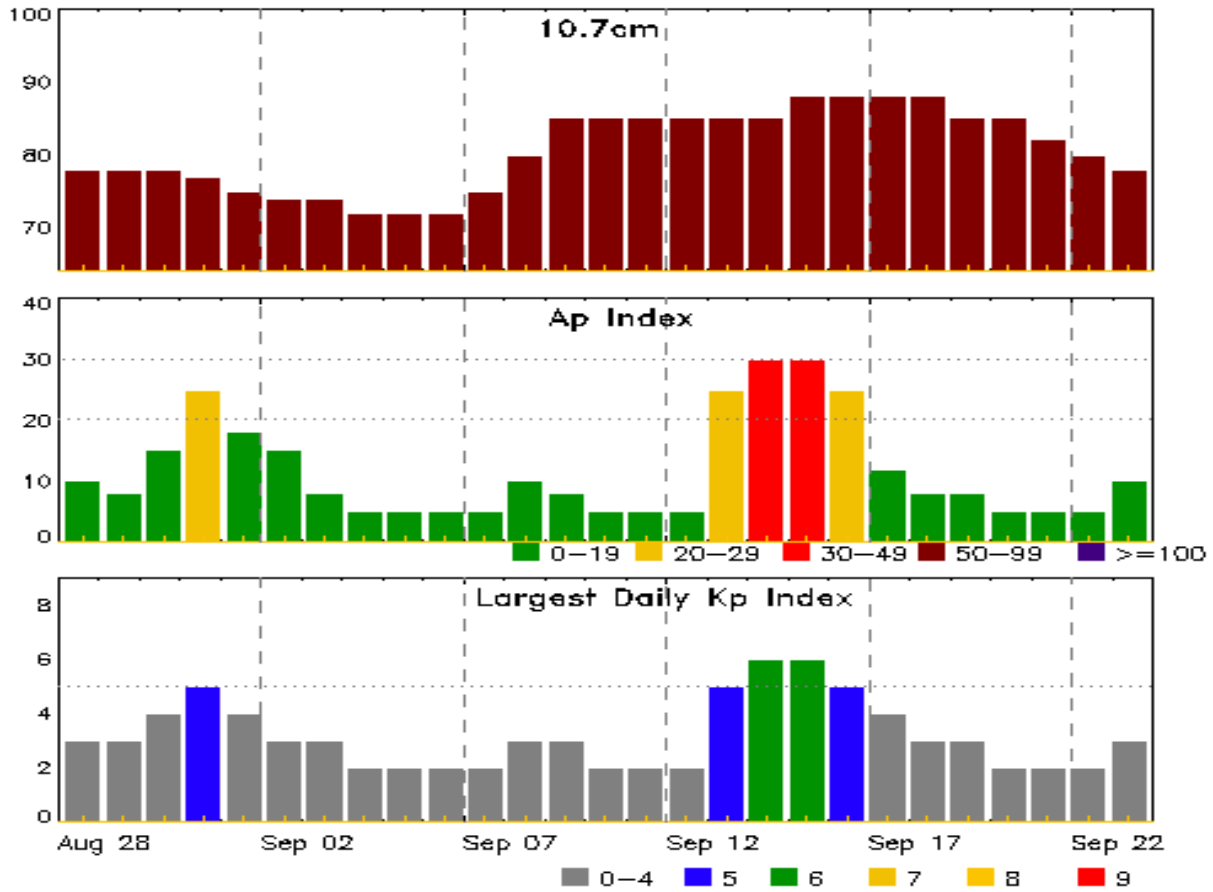


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
25 Aug 0846	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	18/1650
26 Aug 0513	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	18/1650
27 Aug 0501	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	18/1650
27 Aug 1846	WARNING: Geomagnetic K = 4	27/1845 - 28/0600



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 Aug	78	10	3	11 Sep	85	5	2
29	78	8	3	12	85	5	2
30	78	15	4	13	85	25	5
31	77	25	5	14	85	30	6
01 Sep	75	18	4	15	88	30	6
02	74	15	3	16	88	25	5
03	74	8	3	17	88	12	4
04	72	5	2	18	88	8	3
05	72	5	2	19	85	8	3
06	72	5	2	20	85	5	2
07	75	5	2	21	82	5	2
08	80	10	3	22	80	5	2
09	85	8	3	23	78	10	3
10	85	5	2				



Energetic Events

Date	Time			X-ray	Optical Information			Peak		Sweep Freq		
	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
									245	2695	II	IV

No Events Observed

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
21 Aug	0050	0102	0107	B4.9	SF	N11W03	2671
21 Aug	0229	0234	0242	B7.3			2672
21 Aug	0305	0316	0330	C5.9	SF	N10E78	2672
21 Aug	0559	0610	0618	B5.0			2671
21 Aug	0722	0740	0746	B9.3	SF	N10W10	2671
21 Aug	B0830	U0831	0836		SF	N11W09	2671
21 Aug	0948	0951	0954	B3.4			2671
21 Aug	1031	1103	1138	B8.6	SF	N10W13	2671
21 Aug	1119	1128	1132		SF	N11W10	2671
21 Aug	1133	1134	1135		SF	N07E70	2672
21 Aug	1323	1323	1345		SF	N11W13	2671
21 Aug	1618	1623	1633		SF	N08E66	2672
21 Aug	1739	1757	1801	C3.0			
21 Aug	2012	2022	2026	C1.5	SF	N09W23	2671
21 Aug	2147	2238	2258	C1.5	1F	N10W20	2671
22 Aug	0153	0201	0209	B4.3			
22 Aug	B0322	0323	0328		SF	N05E49	2672
22 Aug	0415	0420	0424	B6.2	SF	N08W30	2671
22 Aug	0702	0708	0711	B6.3	SF	N10W21	2671
22 Aug	0831	0836	0839	B5.5			
22 Aug	1109	1113	1116	C1.0	SF	N09W33	2671
22 Aug	B1152	U1152	A1158		SF	N11W22	2671
22 Aug	1307	1307	1324		SF	N07E63	2672
22 Aug	1430	1438	1445	B6.7	SF	N07E55	2672
22 Aug	1511	1517	1525	B6.6	SF	N11W24	2671
22 Aug	1605	1608	1611	B5.6	SF	N11W26	2671
22 Aug	1735	1735	1738		SF	N09W37	2671
22 Aug	1742	1750	1753	C1.9	SF	N09W37	2671
22 Aug	1929	1937	1952	C1.9	SF	N10W38	2671
22 Aug	2227	2230	2237		SF	N05E50	2672
22 Aug	2317	2320	2322	B1.9	SF	N05E50	2672



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
22 Aug	2323	2328	2332	B4.0			2671
23 Aug	0025	0045	0049	B3.0	SF	N02E46	2672
23 Aug	0145	0153	0156	B3.3			
23 Aug	0624	0647	0657	C1.6	SF	N10W33	2671
23 Aug	1324	1343	1355	C2.2	SF	N07E41	2672
23 Aug	1343	1347	1358		SF	N09E43	2672
23 Aug	1743	1755	1852	C1.9	1F	N10W45	2671
23 Aug	1910	1931	1941	C1.2	SF	N06E39	2672
24 Aug	0006	0014	0018	B8.1	SF	N07E37	2672
24 Aug	0030	0037	0045	C3.0	SF	N11W44	2671
24 Aug	0119	0126	0144	C1.6	SF	N09W49	2671
24 Aug	1540	1541	1547		SF	N11W53	2671
24 Aug	1547	1558	1607	B8.4	SF	N11W53	2671
24 Aug	1550	1555	1613		SF	N08E27	2672
24 Aug	2111	2115	2119	B2.1			2671
24 Aug	2249	2253	2258	B1.9			2672
25 Aug	0007	0012	0021	B3.0	SF	N11W58	2671
25 Aug	0045	0046	0047		SF	N11W63	2671
25 Aug	0120	0121	0122		SF	N11W63	2671
25 Aug	0207	0214	0225	B4.6			2671
25 Aug	0308	0312	0315	B5.3			2672
25 Aug	0555	0600	0606	B3.4			2672
25 Aug	0715	0727	0746	C5.5	1N	N05E19	2672
25 Aug	1002	1005	1008	B1.9			2672
25 Aug	1210	1218	1230	B3.8	SF	N09E13	2672
25 Aug	1406	1501	1611	B4.0			2672
25 Aug	2146	2149	2157	B2.7			2672
25 Aug	2333	2334	2337		SF	N11W63	2671
26 Aug	0106	0111	0117	B2.9	SF	N07E11	2672
26 Aug	0208	0215	0231	B3.7			2671
26 Aug	0258	0301	0305	B3.4			2672
26 Aug	0839	0843	0845	B1.4			2671
26 Aug	1334	1338	1350	B2.0			2671
26 Aug	1854	1903	1909	B3.5			2671
26 Aug	2017	2100	2127	B5.4	SF	N05W05	2672
27 Aug	0011	0029	0038	B1.6			2672
27 Aug	0113	0118	0120	B3.0	SF	N18W76	2671
27 Aug	0602	0607	0612	B4.3			2671



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
27 Aug	0732	0737	0746	B1.7			2671
27 Aug	0925	0929	0934	B2.0			2672
27 Aug	1111	1114	1118	B1.4			2672
27 Aug	1511	1516	1519	C6.3	1F	N00E00	2671
27 Aug	1656	1703	1716	B3.0			
27 Aug	1746	1811	1830	B3.5			2671



Region Summary

Date	Location		Sunspot Characteristics					Flares															
	Lat CMD	Lon	Helio 10 ⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical												
								C	M	X	S	1	2	3	4								
Region 2671																							
14 Aug	N11E73	306	70	4	Hax	2	A	3				8	1										
15 Aug	N10E61	305	170	11	Eai	11	B	2				25											
16 Aug	N11E49	304	380	15	Ehc	20	BGD					12											
17 Aug	N11E34	306	280	16	Fkc	20	BG					10											
18 Aug	N11E22	305	410	18	Fkc	31	BG	1				3	1										
19 Aug	N12E08	305	360	19	Fkc	23	BG	3				5											
20 Aug	N12W06	306	410	20	Fkc	20	BG	2				5											
21 Aug	N11W18	305	430	22	Fkc	18	BG	2				7	1										
22 Aug	N10W31	304	250	22	Fsi	18	BG	3				9											
23 Aug	N11W45	306	220	23	Fsi	12	BG	2				1	1										
24 Aug	N11W56	303	200	23	Fsi	11	BG	2				4											
25 Aug	N13W68	301	140	23	Fai	7	BG					4											
26 Aug	N14W84	304	120	24	Fai	5	BG																
								20	0	0	93	4	0	0	0								

Crossed West Limb.

Absolute heliographic longitude: 306

Region 2672																							
18 Aug	N05E0*	225	plage									1											
19 Aug	N05E90	225	plage									6											
20 Aug	N05E75	225	120	5	Dao	4	B	2	1			2											
21 Aug	N07E61	226	160	10	Dao	5	B	1				3											
22 Aug	N08E47	227	270	10	Dao	10	B					5											
23 Aug	N08E34	227	240	11	Esi	8	BG	2				4											
24 Aug	N07E21	226	240	11	Esi	12	BG					2											
25 Aug	N07E07	227	140	12	Eai	12	BG	1				1	1										
26 Aug	N07W07	228	130	13	Eai	10	BG					2											
27 Aug	N07W20	228	150	12	Eso	12	B																
								13	1	0	19	1	0	0	0								

Still on Disk.

Absolute heliographic longitude: 227

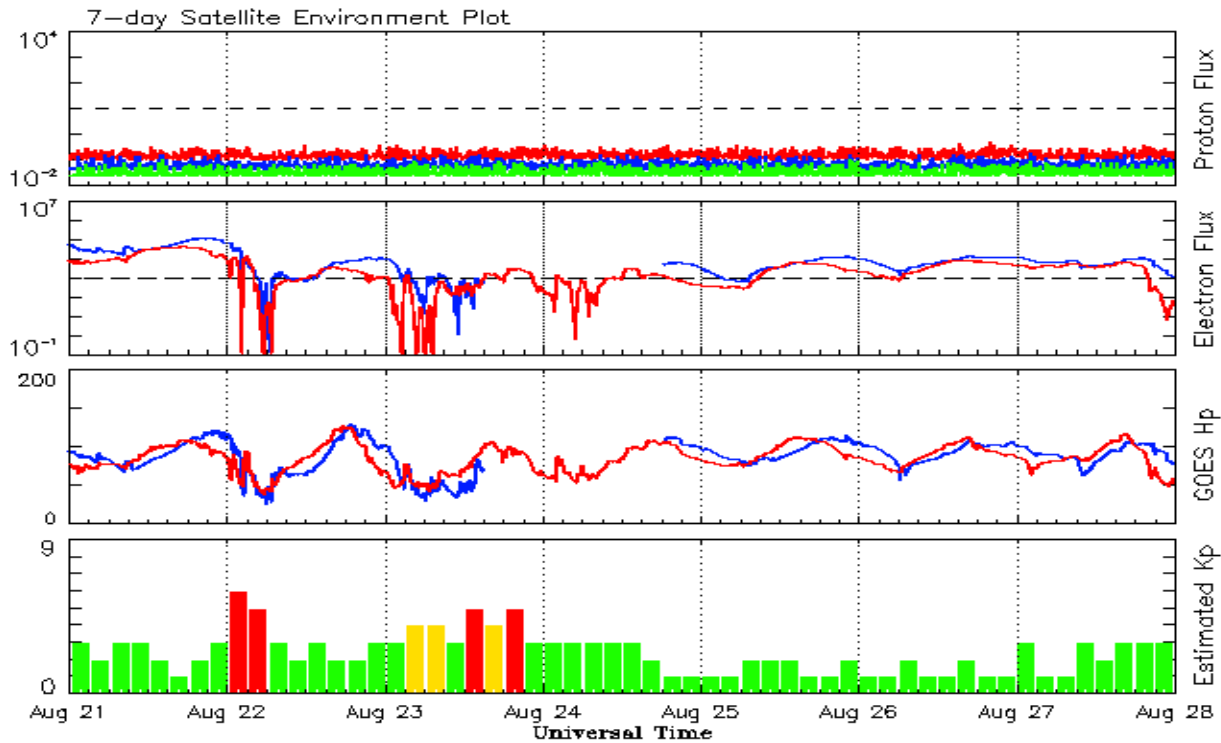


Recent Solar Indices (preliminary)
Observed monthly mean values

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
2015									
August	61.6	38.6	0.63	65.5	39.8	106.2	113.3	16	13.1
September	72.5	47.2	0.65	64.0	39.5	102.1	110.8	16	12.8
October	59.5	38.2	0.62	61.8	38.6	104.1	107.9	15	12.5
November	61.8	37.3	0.61	59.0	36.7	109.6	105.3	13	12.5
December	54.1	34.8	0.64	55.1	34.7	112.8	102.5	15	12.5
2016									
January	50.4	34.2	0.67	51.4	32.6	103.5	99.9	10	12.3
February	56.0	33.8	0.61	49.6	31.5	103.5	98.1	10	12.0
March	40.9	32.5	0.80	47.7	30.2	91.6	96.6	11	11.8
April	39.2	22.7	0.58	45.0	28.7	93.4	95.3	10	11.8
May	48.9	30.9	0.64	42.1	26.9	93.1	93.2	12	11.7
June	19.3	12.3	0.65	39.0	24.9	81.9	90.4	9	11.4
July	36.8	19.4	0.53	36.5	23.1	85.9	87.7	10	11.2
August	50.4	30.1	0.60	34.2	21.6	85.0	85.5	10	11.2
September	37.4	26.8	0.72	32.1	19.9	87.8	83.7	16	11.3
October	30.0	20.0	0.67	31.1	18.9	86.1	82.5	16	11.6
November	22.4	12.8	0.57	29.4	17.9	78.7	81.1	10	11.6
December	17.6	11.1	0.64	28.1	17.1	75.1	80.0	10	11.4
2017									
January	28.1	15.7	0.55	27.3	16.7	77.4	79.4	10	11.3
February	22.0	15.8	0.71			76.9		10	
March	25.4	10.6	0.42			74.6		15	
April	30.4	19.6	0.64			80.9		13	
May	18.1	11.3	0.62			73.5		9	
June	18.0	11.6	0.64			74.8		7	
July	18.8	11.0	0.59			77.7		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 21 August 2017*

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.

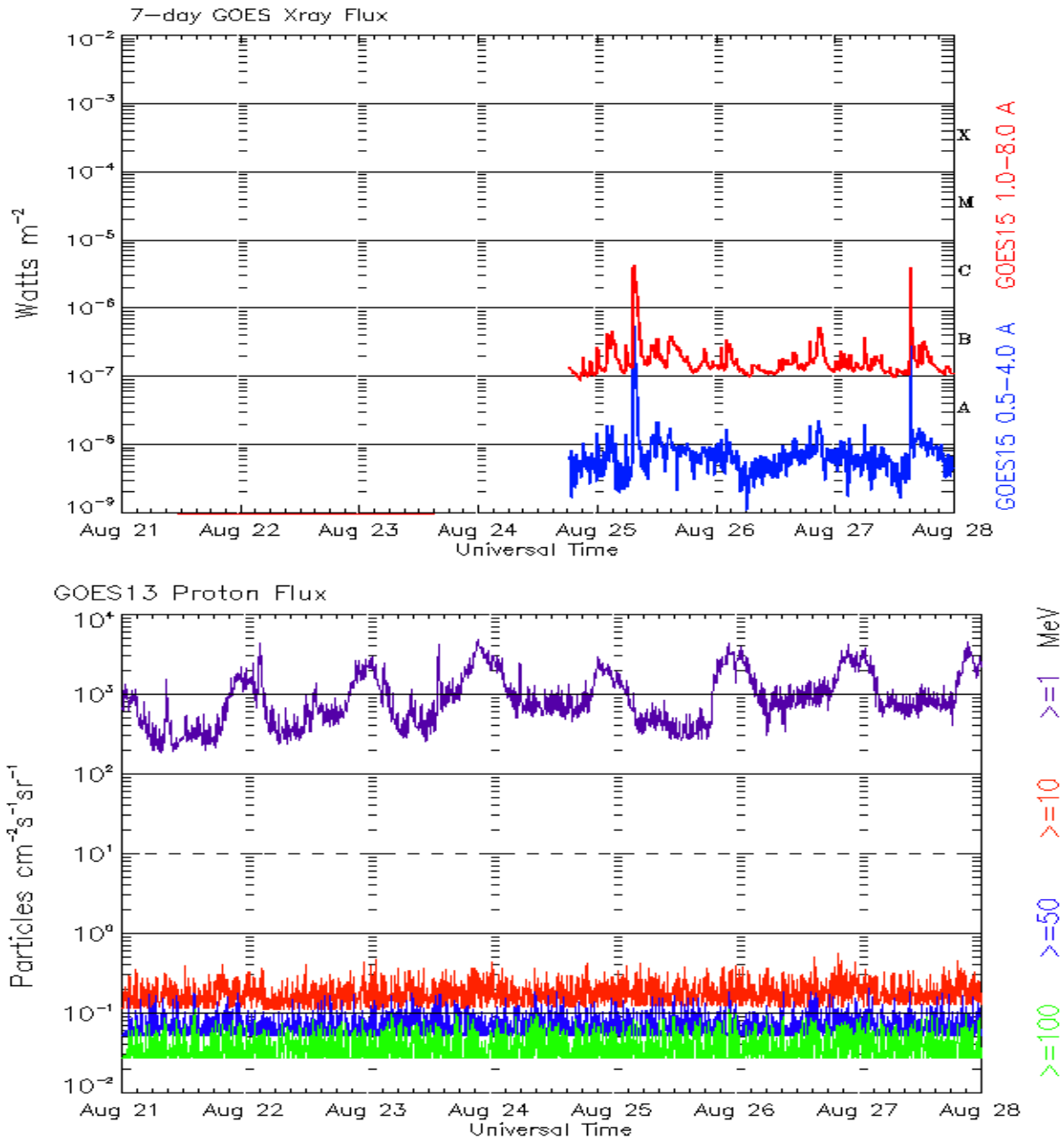
The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

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.

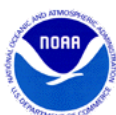




*Weekly GOES Satellite X-ray and Proton Plots
Week Beginning 21 August 2017*

The x-ray plots contains five-minute averages x-ray flux (Watt/m²) 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/cm² -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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<http://spaceweather.gov/SolarCycle/> -- Solar Cycle Progression web site

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