

Space Weather Highlights
30 August - 05 September 2021

SWPC PRF 2401
06 September 2021

Solar activity was at low levels. Region 2860 (S29, L=01, class/area Eac/240 on 30 Aug) was the most active region on the disk producing several C-class flares. The largest flare was a C3.0/SN optical at 30/2134 UTC from Region 2860. No notable CME activity was observed.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at moderate to high levels on 30 Aug-03 Sep, 05 Sep. Normal to moderate levels were observed on 04 Sep.

Geomagnetic field activity was at quiet to unsettled levels on 30-31 Aug, 03 Sep, and 05 Sep. Quiet levels were observed on 01-02 Sep, and 04 Sep.

Space Weather Outlook
06 September - 02 October 2021

Solar activity is expected to be at low levels with a slight chance for M-class activity on 16-29 Sep due to the possible return of Region 2860. The remainder of the highlight period is expected to be at very low to low levels.

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 from 06-23 Sep. Moderate to levels are expected on 24 Sep-02 Oct due to recurrent coronal hole high speed stream influences.

Geomagnetic field activity is expected to be at quiet to unsettled levels with a chance for active levels on 21 Sep and 02 Oct due to recurrent CH HSS influences. Quiet levels are expected for the remainder of the outlook 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
30 August	91	41	240	B2.8	6	0	0	9	0	0	0	0
31 August	84	37	250	B1.3	0	0	0	4	0	0	0	0
01 September	84	35	230	B1.2	2	0	0	3	0	0	0	0
02 September	86	33	290	B1.4	1	0	0	0	0	0	0	0
03 September	84	33	190	B1.4	0	0	0	1	0	0	0	0
04 September	87	68	200	B1.8	0	0	0	1	0	0	0	0
05 September	94	66	270	B2.2	0	0	0	10	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	>2MeV	
	30 August	8.4e+04	4.5e+04	1.6e+08
31 August	5.6e+04	4.5e+04	7.7e+07	
01 September	5.9e+04	4.5e+04	1.3e+08	
02 September	5.8e+04	4.5e+04	2.5e+08	
03 September	1.3e+05	4.5e+04	4.5e+07	
04 September	8.3e+04	4.6e+04	2.8e+07	
05 September	6.8e+04	4.6e+04	4.5e+07	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	30 August	9	2-3-3-2-2-1-2-2	8	1-2-1-4-3-1-1-1	7
31 August	9	3-3-3-1-2-2-1-1	8	2-2-3-3-3-1-0-0	7	3-3-2-1-1-1-0-2
01 September	6	2-2-2-2-2-1-1-1	12	1-1-3-5-3-3-0-0	5	2-1-1-2-1-1-0-0
02 September	3	1-0-0-1-2-1-1-1	5	0-1-0-3-3-1-1-0	4	1-1-1-1-2-1-1-0
03 September	6	0-1-2-3-2-2-1-2	20	1-1-3-6-5-2-0-1	6	1-1-2-3-2-2-1-2
04 September	5	1-1-2-1-2-2-1-2	6	1-1-2-4-2-0-0-1	5	2-1-2-2-1-1-1-2
05 September	8	2-3-2-2-3-1-1-1	10	1-1-2-3-5-1-0-0	7	2-3-1-2-2-1-0-1

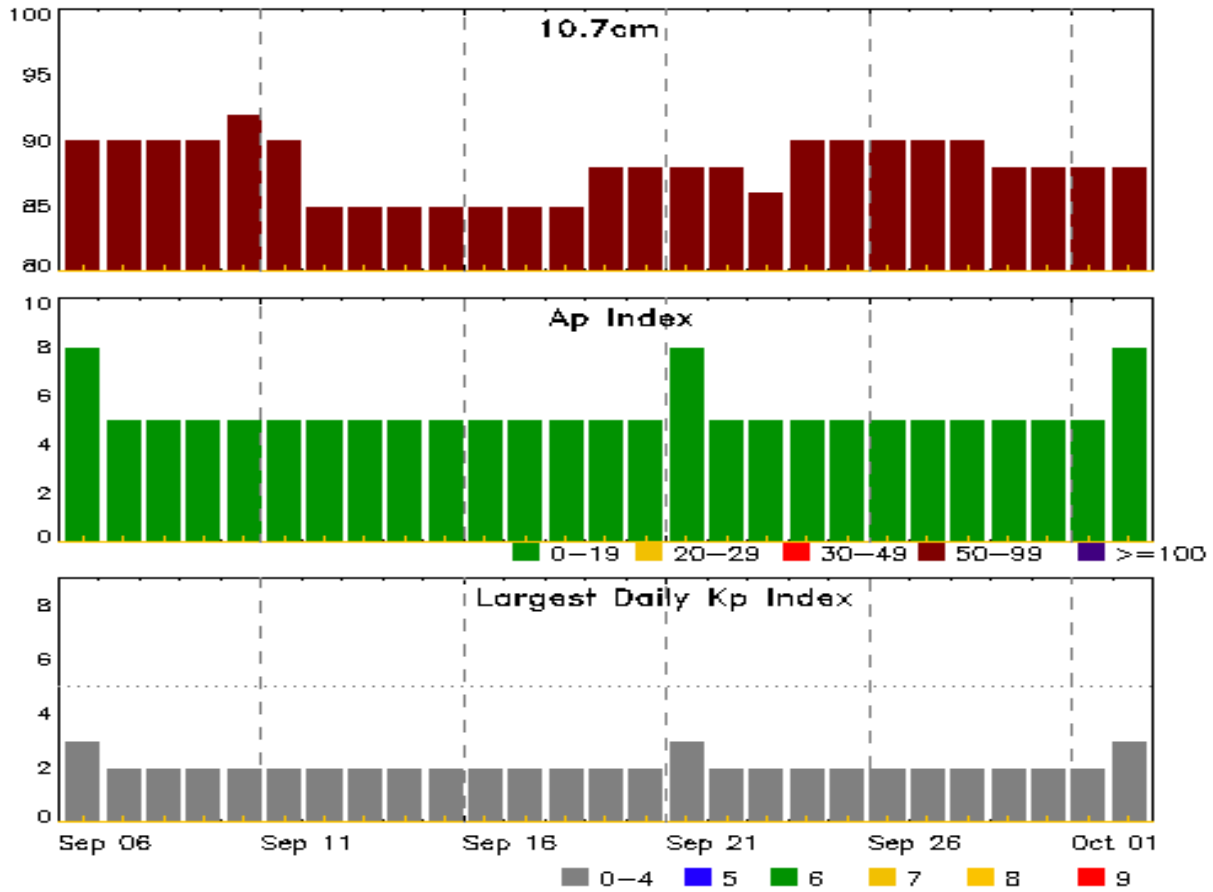


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
30 Aug 0526	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	28/0205
30 Aug 2039	WATCH: Geomagnetic Storm Category G2 predicted	
31 Aug 1236	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	28/0205
01 Sep 0906	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	28/0205
02 Sep 0531	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	28/0205
02 Sep 1821	CANCELLATION: Geomagnetic Storm Category G2 predicted	
03 Sep 1222	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	28/0205
05 Sep 1445	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	05/1345



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
06 Sep	90	8	3	20 Sep	88	5	2
07	90	5	2	21	88	8	3
08	90	5	2	22	88	5	2
09	90	5	2	23	86	5	2
10	92	5	2	24	90	5	2
11	90	5	2	25	90	5	2
12	85	5	2	26	90	5	2
13	85	5	2	27	90	5	2
14	85	5	2	28	90	5	2
15	85	5	2	29	88	5	2
16	85	5	2	30	88	5	2
17	85	5	2	01 Oct	88	5	2
18	85	5	2	02	88	8	3
19	88	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				
30 Aug	0121	0129	0136	B7.2			
30 Aug	0142	0154	0200	C1.6	SF	S30W23	2860
30 Aug	0302	0306	0310	B7.2	SF	S27W25	2860
30 Aug	0348	0358	0404	C1.3	SF	S28W26	2860
30 Aug	0438	0438	0441		SF	S28W26	2860
30 Aug	0448	0453	0457	B3.6			
30 Aug	0752	0758	0806	B3.6			
30 Aug	0929	0939	0954	C1.1	SF	S26W27	2860
30 Aug	1330	1342	1355	C1.1			
30 Aug	1440	1449	1453	B7.0			
30 Aug	1457	1504	1515	B7.7	SF	S28W31	2860
30 Aug	1607	1616	1620	C2.0	SF	S27W29	2860
30 Aug	1817	1826	1834	B7.6			
30 Aug	1929	1940	1945	C1.7	SF	S25W30	2860
30 Aug	2044	2052	2103	B7.8	SF	S26W31	2860
30 Aug	2126	2134	2138	C3.0	SN	S27W31	2860
31 Aug	0700	0704	0708	B2.1			
31 Aug	1055	1101	1128	B1.9			2860
31 Aug	1255	1301	1306	B2.6			2860
31 Aug	1314	1319	1326	B3.5	SF	S27W45	2860
31 Aug	1408	1421	1428	B7.2			2860
31 Aug	1442	1450	1454	B5.6	SF	S26W46	2860
31 Aug	1619	1627	1631	B2.7			2860
31 Aug	1641	1650	1654	B6.5			2860
31 Aug	1746	1749	1757	B2.0			2860
31 Aug	1822	1828	1832	B2.3			2860
31 Aug	1857	1911	1924	B7.1	SF	S27W45	2860
31 Aug	1942	1946	1950	B2.3			2860
31 Aug	1955	2002	2006	B2.8			2860
31 Aug	2010	2011	2013		SF	S26W49	2860
31 Aug	2101	2107	2111	B2.0			2860



Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
01 Sep	0040	0048	0055	B1.9			2860
01 Sep	0303	0310	0316	B1.8			2680
01 Sep	0427	0433	0437	B2.6			2680
01 Sep	0640	0644	0648	B2.5	SF	S25W50	2860
01 Sep	0844	0854	0859	C1.2	SF	S30W57	2860
01 Sep	1048	1103	1111	B2.0			
01 Sep	1320	1331	1343	C1.2			2860
01 Sep	B1401	U1402	1404		SF	S18E49	2860
02 Sep	0041	0046	0050	B3.7			2863
02 Sep	0327	0338	0349	B2.8			2860
02 Sep	0349	0352	0358	B3.9			2863
02 Sep	0546	0551	0558	B2.0			2863
02 Sep	1137	1150	1158	B4.2			
02 Sep	2031	2055	2120	C1.2			2860
02 Sep	2337	2342	2348	B3.4			2863
03 Sep	0039	0047	0058	B3.6			2863
03 Sep	0630	0639	0645	B4.7			2863
03 Sep	0936	0942	0946	B2.9			2863
03 Sep	1559	1606	1627	B6.1	SF	S18E21	2863
03 Sep	2047	2112	2130	B5.7			2860
04 Sep	0002	0014	0027	B3.9			2860
04 Sep	0141	0149	0153	B3.5			2860
04 Sep	0417	0430	0443	B5.4			2860
04 Sep	0714	0721	0727		SF	S17E72	2866
04 Sep	0737	0750	0817	B8.1			2860
04 Sep	1137	1146	1155	B5.7			2860
04 Sep	1214	1222	1231	B4.5			2860
04 Sep	1300	1307	1326	B5.0			2860
04 Sep	1456	1532	1555	B6.3			2860
05 Sep	0014	0017	0021		SF	S21E48	
05 Sep	0210	0216	0220	B4.6			
05 Sep	0310	0324	0342	B6.3	SF	S21E48	
05 Sep	0417	0419	0422		SF	S17E61	2866
05 Sep	0426	0426	0429		SF	S21E45	
05 Sep	0459	0505	0508		SF	S17E61	2866
05 Sep	0500	0501	0502		SF	S21E44	2866
05 Sep	0536	0541	0544		SF	S17E61	2866
05 Sep	0545	0549	0553		SF	S17E61	2866



Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
05 Sep	0615	0616	0617		SF	S17E61	2866
05 Sep	0905	0906	0909		SF	S15E56	2866
05 Sep	1056	1111	1132	B5.1			2868
05 Sep	1252	1300	1306	B5.1			2866



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								
Region 2859																							
21 Aug	N20E72	12	80	3	Cao	3	B						1										
22 Aug	N19E59	10	140	4	Cao	6	B	3					3										
23 Aug	N19E46	11	160	5	Cao	4	B																
24 Aug	N19E32	12	150	5	Hsx	4	A	1					4										
25 Aug	N19E18	13	70	3	Hsx	3	A																
26 Aug	N16E06	11	50	1	Dso	4	B	1					1	1									
27 Aug	N17W07	11	50	3	Cso	6	B																
28 Aug	N18W18	9	40	6	Cao	7	B																
29 Aug	N18W34	12	10	1	Hrx	1	A																
30 Aug	N18W47	12	0	1	Axx	1	A																
31 Aug	N18W60	10	10	1	Axx	1	A																
01 Sep	N18W73	11	10	1	Axx	1	A																
02 Sep	N18W86	11	plage																				
								9	0	0		9	1	0	0	0							

Crossed West Limb.

Absolute heliographic longitude: 11

Region 2860

24 Aug	S28E41	2	110	6	Bxo	5	B														
25 Aug	S27E28	3	170	5	Dao	6	B	1													
26 Aug	S30E14	3	150	6	Dao	12	B	2					3								
27 Aug	S28E03	1	330	12	Eki	22	BG	1					4	1							
28 Aug	S29W10	1	340	12	Eki	27	BG	6	1				11	1							
29 Aug	S29W23	1	320	14	Ekc	23	BG	3					3	1							
30 Aug	S29W36	1	240	11	Eac	20	BG	5					9								
31 Aug	S27W51	1	240	9	Dai	16	B						4								
01 Sep	S27W64	2	220	9	Dai	14	B	2					3								
02 Sep	S29W77	2	220	10	Dai	6	B	1													
								21	1	0		37	3	0	0	0					

Died on Disk.

Absolute heliographic longitude: 1



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 2861

26 Aug	N15E53	323	10		Bxo	1	B											
27 Aug	N15E38	326	10	1	Axx	1	A											
28 Aug	N16E28	323	10	1	Axx	1	A											
29 Aug	N16E15	323	plage															
30 Aug	N16E02	323	plage															
31 Aug	N16W12	323	plage															
01 Sep	N16W25	323	plage															
02 Sep	N16W38	323	plage															
03 Sep	N16W51	323	plage															
04 Sep	N16W64	323	plage															
05 Sep	N16W78	323	plage															
										0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 323

Region 2863

02 Sep	S16E28	256	70	4	Cao	7	B											
03 Sep	S16E15	257	160	5	Dso	9	B				1							
04 Sep	S16E02	256	90	5	Cso	5	B											
05 Sep	S16W10	255	40	6	Cso	4	B											
										0	0	0	1	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 256

Region 2864

03 Sep	S23E22	250	30	3	Cro	4	B											
04 Sep	N24E10	248	50	4	Dao	7	B											
05 Sep	N24W05	250	90	7	Dao	8	B											
										0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 250

Region 2865

04 Sep	N22E25	233	10	4	Bxo	3	B											
05 Sep	N23E13	232	plage															
										0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 232



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 2866

04 Sep	S18E63	195	40	2	Bxo	2	B					1					
05 Sep	S17E48	197	80	6	Dai	8	B					7					
								0	0	0	8	0	0	0	0		

Still on Disk.

Absolute heliographic longitude: 197

Region 2867

04 Sep	S18W74	332	10	1	Axx	1	A										
05 Sep	S18W85	330	plage														
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

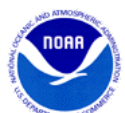
Absolute heliographic longitude: 332

Region 2868

05 Sep	S21E33	212	60	7	Dso	6	B										
								0	0	0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 212



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

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