

Space Weather Highlights
21 September - 27 September 2020

SWPC PRF 2352
28 September 2020

Solar activity was very low on 21-24 and 26-27 Sep. Solar activity reached low levels on 25 Sep when Region 2773 (N28, L=083, class/area=Bxo/10 on 23 Sep) produced a single C1 flare at 0038 UTC. No Earth-directed CMEs were detected this period.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on 24-27 Sep. Normal to moderate flux levels were observed throughout the remainder of the period.

Geomagnetic field activity reached G1-G2 (Minor-Moderate) storm levels on 27 Sep, with G1 (Minor) storm levels observed on 24-26 Sep, due to the influences of a pair of positive polarity coronal hole/high speed streams. Active conditions were observed on 23 Sep. Quiet and quiet to unsettled conditions prevailed throughout the remainder of the week.

Space Weather Outlook
28 September - 24 October 2020

Solar activity is expected to be very low throughout the outlook period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to reach high levels on 28 Sep-10 Oct and 21-24 Oct. Normal and normal to moderate flux levels are expected to persist throughout the remainder of the outlook period.

Geomagnetic field activity is anticipated to reach G1-G2 (Minor-Moderate) storm levels on 28-29 Sep, with G1 (Minor) storm levels likely on 30 Sep, and 21-23 Oct, due to CH HSS influence. Active conditions are likely on 01, 20, and 24 Oct. Quiet and quiet to unsettled conditions are expected to prevail throughout 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	
21 September	71	0	0	A4.8	0	0	0	0	0	0	0	0	0
22 September	72	0	0	A4.0	0	0	0	0	0	0	0	0	0
23 September	73	13	10	A4.4	0	0	0	0	0	0	0	0	0
24 September	74	0	0	A3.9	0	0	0	0	0	0	0	0	0
25 September	73	11	10	A3.8	1	0	0	0	0	0	0	0	0
26 September	73	0	0	A2.8	0	0	0	0	0	0	0	0	0
27 September	74	0	0	A2.8	0	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	>2MeV	
	21 September	1.2e+05	4.7e+04	2.0e+06
22 September	7.4e+04	4.6e+04	1.2e+06	
23 September	2.4e+06	4.6e+04	1.9e+06	
24 September	4.1e+05	4.6e+04	3.6e+07	
25 September	2.6e+05	4.5e+04	1.7e+08	
26 September	5.2e+05	4.5e+04	5.4e+07	
27 September	5.6e+05	4.5e+04	3.1e+08	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
	21 September	3	1-1-0-1-1-1-1-1	0	0-0-0-0-0-0-1-0	3
22 September	5	1-3-2-2-1-1-1-0	9	1-1-4-4-2-1-1-0	6	2-3-2-2-1-1-1-1
23 September	10	1-1-3-3-3-1-3-2	29	0-0-3-5-7-3-2-2	11	2-1-2-2-4-2-4-3
24 September	11	3-3-4-2-2-2-1-2	48	2-4-7-6-6-5-0-1	19	3-4-5-4-3-3-1-1
25 September	17	3-3-3-3-2-4-3-4	29	1-2-4-6-3-6-2-3	20	3-4-3-3-2-5-3-4
26 September	18	4-4-4-3-4-2-2-2	48	3-4-6-7-6-4-2-2	27	4-5-4-4-5-3-2-3
27 September	16	2-3-2-2-1-3-4-5	22	2-3-2-3-4-4-4-5	9	2-4-2-2-2-3-5-6



Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
23 Sep 1231	WARNING: Geomagnetic K = 4	23/1230 - 1800
23 Sep 1253	ALERT: Geomagnetic K = 4	23/1242
23 Sep 1958	WARNING: Geomagnetic K = 4	23/1956 - 24/0300
23 Sep 2128	ALERT: Geomagnetic K = 4	23/2100
24 Sep 0257	EXTENDED WARNING: Geomagnetic K = 4	23/1956 - 24/0900
24 Sep 0722	EXTENDED WARNING: Geomagnetic K = 4	23/1956 - 24/1800
24 Sep 0733	WARNING: Geomagnetic K = 5	24/0733 - 1500
24 Sep 0747	ALERT: Geomagnetic K = 5	24/0741
24 Sep 0807	WARNING: Geomagnetic K = 6	24/0806 - 1200
24 Sep 1703	ALERT: Electron 2MeV Integral Flux \geq 1000pfu	24/1540
25 Sep 0426	WARNING: Geomagnetic K = 4	25/0425 - 0900
25 Sep 0601	ALERT: Geomagnetic K = 4	25/0559
25 Sep 0849	EXTENDED WARNING: Geomagnetic K = 4	25/0425 - 1500
25 Sep 1041	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	24/1540
25 Sep 1434	EXTENDED WARNING: Geomagnetic K = 4	25/0425 - 2359
25 Sep 1706	WARNING: Geomagnetic K = 5	25/1705 - 2100
25 Sep 1759	ALERT: Geomagnetic K = 5	25/1759
25 Sep 2023	WATCH: Geomagnetic Storm Category G1 predicted	
25 Sep 2354	EXTENDED WARNING: Geomagnetic K = 4	25/0425 - 26/1200
26 Sep 0457	WARNING: Geomagnetic K = 5	26/0455 - 1200
26 Sep 0517	ALERT: Geomagnetic K = 5	26/0516
26 Sep 1107	EXTENDED WARNING: Geomagnetic K = 4	25/0425 - 26/1800
26 Sep 1316	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	24/1540
26 Sep 1331	WARNING: Geomagnetic K = 5	26/1330 - 1800
26 Sep 1338	ALERT: Geomagnetic K = 5	26/1338
26 Sep 1738	EXTENDED WARNING: Geomagnetic K = 5	26/1330 - 27/0900
26 Sep 1738	EXTENDED WARNING: Geomagnetic K = 4	25/0425 - 27/0900
26 Sep 1738	WATCH: Geomagnetic Storm Category G2 predicted	

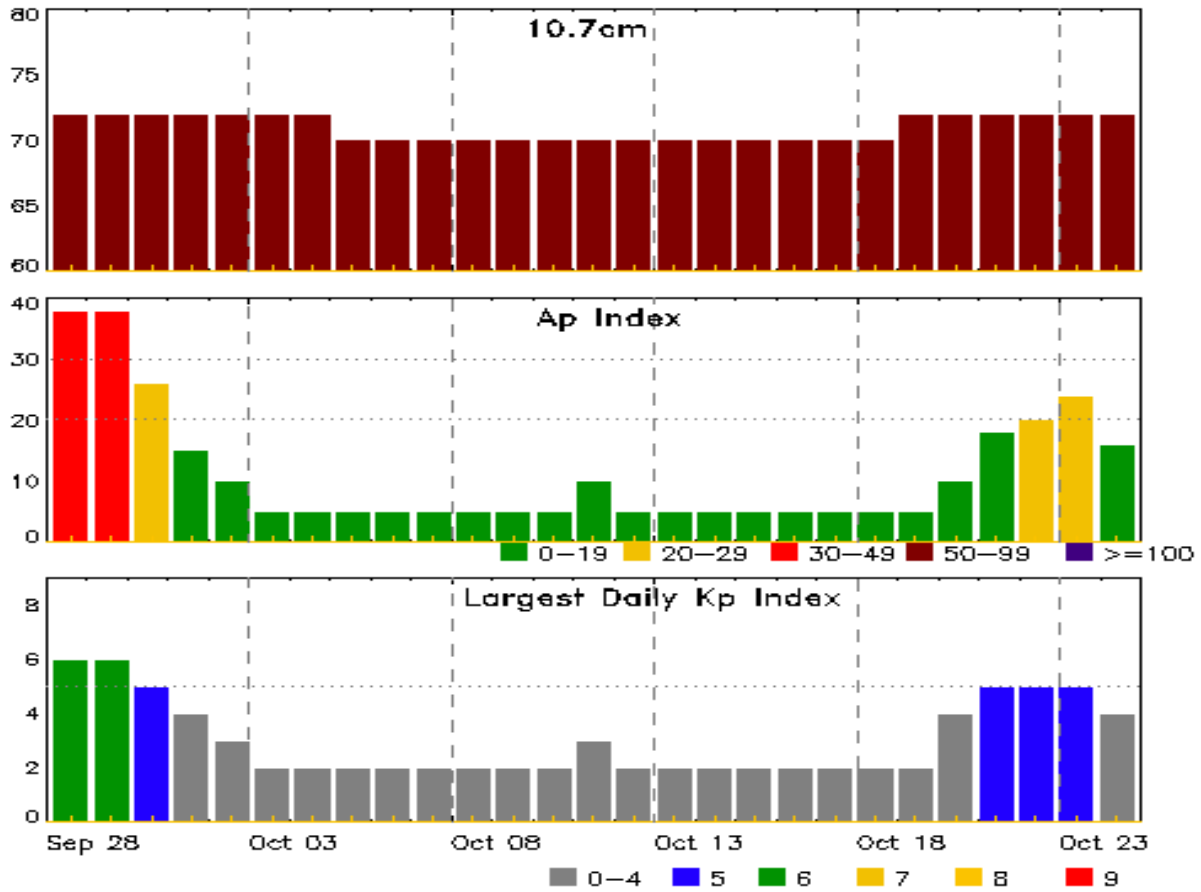


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
27 Sep 0503	CONTINUED ALERT: Electron 2MeV Integral Flux \geq 1000pfu	24/1540
27 Sep 1918	WARNING: Geomagnetic K = 4	27/1920 - 28/1200
27 Sep 1933	ALERT: Geomagnetic K = 4	27/1933
27 Sep 1936	WARNING: Geomagnetic K = 5	27/1935 - 28/0900
27 Sep 2019	ALERT: Geomagnetic K = 5	27/2019
27 Sep 2045	WATCH: Geomagnetic Storm Category G2 predicted	
27 Sep 2323	WARNING: Geomagnetic K = 6	27/2322 - 28/0900



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
28 Sep	72	38	6	12 Oct	70	5	2
29	72	38	6	13	70	5	2
30	72	26	5	14	70	5	2
01 Oct	72	15	4	15	70	5	2
02	72	10	3	16	70	5	2
03	72	5	2	17	70	5	2
04	72	5	2	18	70	5	2
05	70	5	2	19	72	5	2
06	70	5	2	20	72	10	4
07	70	5	2	21	72	18	5
08	70	5	2	22	72	20	5
09	70	5	2	23	72	24	5
10	70	5	2	24	72	16	4
11	70	10	3				



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 245	Radio Flux 2695	Intensity II

No Events Observed

Flare List

Date	Time			X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
	Begin	Max	End				
21 Sep	0046	0051	0055	B1.1			
21 Sep	0156	0201	0205	B1.4			
21 Sep	0207	0213	0218	B1.7			
21 Sep	0702	0707	0713	B1.2			
21 Sep	0844	0848	0852	B2.0			
21 Sep	0940	0957	1005	B2.1			
21 Sep	1005	1018	1026	B2.6			
21 Sep	1049	1052	1103	B3.1			
21 Sep	1224	1242	1252	B4.3			
21 Sep	1318	1325	1330	B2.1			
21 Sep	1352	1358	1405	B1.1			
21 Sep	1634	1637	1641	B1.4			
21 Sep	1932	1945	1957	B1.4			
22 Sep	0110	0119	0135	B1.0			
23 Sep	1220	1231	1252	B1.6			
24 Sep	0020	0037	0049	B4.7			2773
25 Sep	1835	1854	1915	B2.9			2773
25 Sep	2249	2256	2305	B1.8			2773
25 Sep	2359	0038	0052	C1.0			2773



Region Summary

Date	Location		Sunspot Characteristics				Flares															
	Lat CMD	Lon	Heli 10 ⁻⁶ hemi.	Area	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical										
									C	M	X	S	1	2	3	4						
<i>Region 2773</i>																						
23 Sep	N28E62		83	10	4	Bxo	3	B														
24 Sep	N28E48		84	plage																		
25 Sep	N27E32		87	10		Axx	1	A	1													
26 Sep	N27E18		88	plage																		
27 Sep	N27E04		89	plage																		
									1	0	0	0	0	0	0	0	0	0	0	0	0	

Still on Disk.

Absolute heliographic longitude: 89



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

Published every Monday by the Space Weather Prediction Center.

U.S. Department of Commerce
NOAA / National Weather Service
Space Weather Prediction Center
325 Broadway, Boulder CO 80305

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.

<https://www.swpc.noaa.gov/products/weekly-highlights-and-27-day-forecast> --

Current

<ftp://ftp.swpc.noaa.gov/pub/warehouse> -- Online archive from 1997

<https://www.ngdc.noaa.gov/stp/satellite/goes-r.html> -- NCEI GOES data
textarchive

<https://www.swpc.noaa.gov/products/solar-cycle-progression> -- Solar Cycle
Progression web site

<https://www.swpc.noaa.gov/content/contact-us> -- Contact and Copyright
information

https://www.swpc.noaa.gov/sites/default/files/images/u2/Usr_guide.pdf -- User
Guide

