

Space Weather Highlights
21 September - 27 September 2026

SWPC PRF 2665
28 September 2026

Solar activity was at low levels throughout the summary period. Region 4534 (N11, L=075, class/area=Dai/050 on 22 Sep) produced the strongest flare of the period, an impulsive C3.1 flare at 26/1655 UTC. There were 13 other numbered active regions recorded on the visible disk this week but they all remained relatively simple and absent of any significant activity. No Earth-directed CMEs were observed in available coronagraph imagery.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit reached high levels on 23 Sep, and 26-27 Sep due to influence from a positive polarity CH HSS.

Geomagnetic field activity was at quiet levels from 21-23 Sep. A CIR ahead of a positive polarity CH HSS caused active levels over 24-27 Sep. Total magnetic field strength reached 15 nT during the CIR on 24 Sep, with the Bz component rotating as far south as -12 nT. Solar wind speeds steadily increased from below 300 km/s on 23 Sep to a peak of ~525 km/s by 25 Sep. Both total magnetic field strength and solar wind speeds gradually declined during the waning phase of the coronal hole HSS over 26-27 Sep.

Space Weather Outlook
28 September - 24 October 2026

Solar activity is likely to continue at very low to low levels 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 be at high levels from 28 Sep-03 Oct, 05 Oct-11 Oct, and 23-24 Oct due to anticipated influence from multiple, recurrent, CH HSSs. Moderate levels are likely over the remainder of the outlook period.

Geomagnetic field activity is likely to reach G1 (Minor) geomagnetic storm levels on 22 Oct. Active conditions are likely over 04-06 Oct, 21 Oct, and 23-24 Oct. Unsettled conditions are likely over 07-08 Oct and 11-14 Oct. All increases in geomagnetic activity are associated with anticipated influence from multiple, recurrent, coronal hole HSSs. The remainder of the outlook period is likely to be at mostly quiet levels.



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	104	85	140	B2.6	2	0	0	1	0	0	0	0
22 September	118	126	270	B4.0	3	0	0	1	0	0	0	0
23 September	121	142	240	B5.2	3	0	0	3	0	0	0	0
24 September	112	124	390	B4.3	1	0	0	0	0	0	0	0
25 September	105	110	330	B4.0	3	0	0	0	0	0	0	0
26 September	101	88	220	B3.9	4	0	0	1	0	0	0	0
27 September	97	67	170	B4.1	5	0	0	4	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	3.4e+05	2.0e+04	2.9e+07	
22 September	4.0e+05	2.1e+04	2.9e+07	
23 September	1.9e+06	2.2e+04	3.5e+07	
24 September	7.0e+05	2.1e+04	1.4e+07	
25 September	1.7e+05	2.1e+04	1.4e+07	
26 September	2.7e+05	2.1e+04	3.9e+07	
27 September	3.3e+05	2.3e+04	1.3e+08	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
21 September	2	1-1-0-1-2-1-0-0	0	1-0-0-0-0-0-0-0	3	2-1-0-1-1-0-0-1
22 September	2	1-0-0-1-1-1-0-0	0	1-0-0-0-0-0-0-0	3	2-1-0-0-0-1-1-1
23 September	4	0-1-0-1-2-1-2-2	0	0-0-0-0-0-0-0-1	4	0-0-0-1-1-1-2-2
24 September	13	2-2-3-4-4-2-1-2	35	1-1-5-7-5-4-2-2	16	3-2-3-4-4-3-2-3
25 September	16	3-3-4-4-3-2-2-3	35	2-3-6-6-5-4-3-2	20	4-4-4-4-4-2-3-4
26 September	11	3-4-3-2-2-1-2-2	14	2-4-4-4-2-1-1-2	13	3-4-3-3-2-1-2-3
27 September	8	4-3-2-1-2-0-1-0	8	2-2-3-4-2-1-0-0	27	4-3-2-1-1-0-0-0

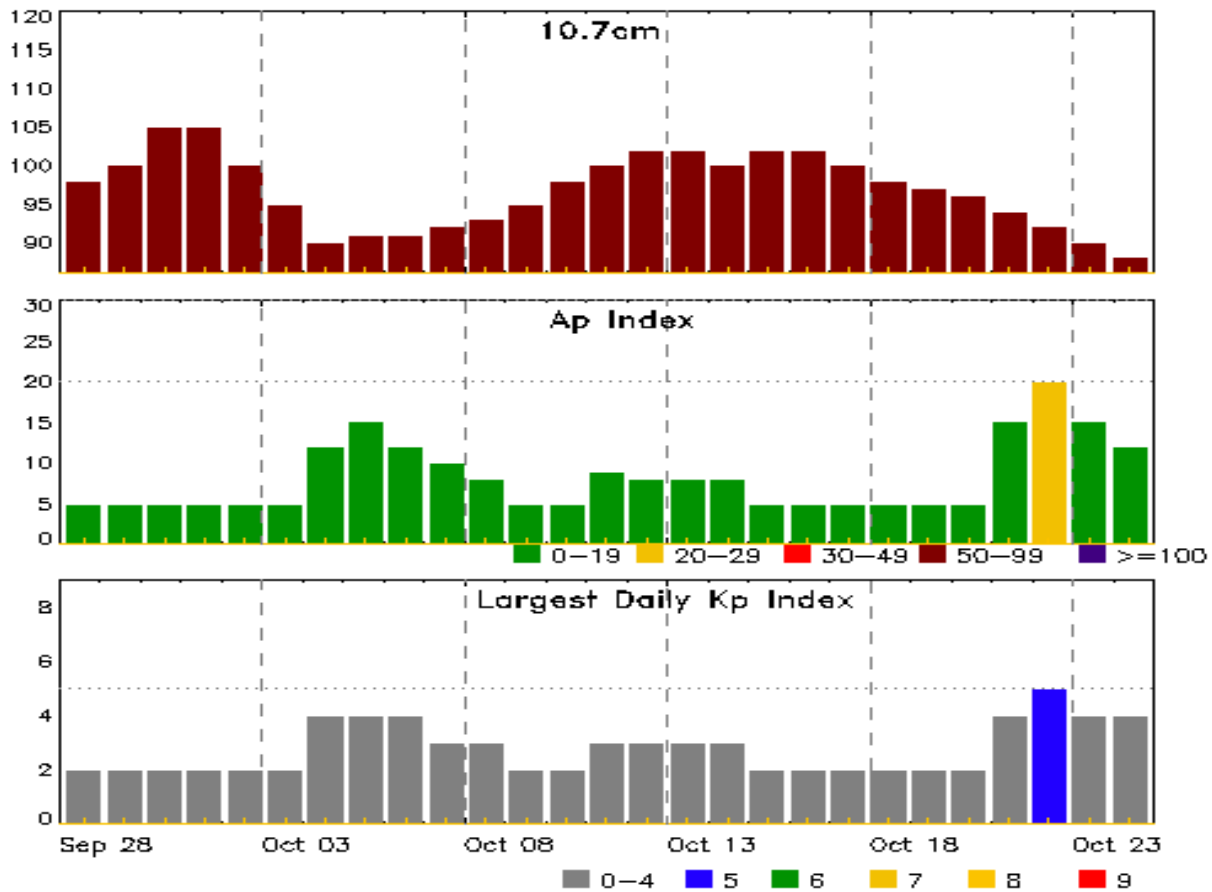


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
21 Sep 1832	WATCH: Geomagnetic Storm Category G1 predicted	
24 Sep 0945	WARNING: Geomagnetic K = 4	24/0944 - 1500
24 Sep 0952	ALERT: Geomagnetic K = 4	24/0945
24 Sep 1430	EXTENDED WARNING: Geomagnetic K = 4	24/0944 - 2100
25 Sep 0226	WARNING: Geomagnetic K = 4	25/0226 - 1800
25 Sep 0300	ALERT: Geomagnetic K = 4	25/0257
25 Sep 0835	WARNING: Geomagnetic K = 5	25/0835 - 1200
25 Sep 2155	WARNING: Geomagnetic K = 4	25/2154 - 26/1200
25 Sep 2158	ALERT: Geomagnetic K = 4	25/2158
26 Sep 1551	ALERT: Electron 2MeV Integral Flux ≥ 1000 pfu	26/1535
27 Sep 0035	WARNING: Geomagnetic K = 4	27/0033 - 1200
27 Sep 0040	ALERT: Geomagnetic K = 4	27/0040
27 Sep 0502	CONTINUED ALERT: Electron 2MeV Integral Flux ≥ 1000 pfu	26/1535



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	98	5	2	12 Oct	102	8	3
29	100	5	2	13	102	8	3
30	105	5	2	14	100	8	3
01 Oct	105	5	2	15	102	5	2
02	100	5	2	16	102	5	2
03	95	5	2	17	100	5	2
04	90	12	4	18	98	5	2
05	91	15	4	19	97	5	2
06	91	12	4	20	96	5	2
07	92	10	3	21	94	15	4
08	93	8	3	22	92	20	5
09	95	5	2	23	90	15	4
10	98	5	2	24	88	12	4
11	100	9	3				

Energetic Events

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

No Events Observed

Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
21 Sep	0059	0113	0125	C1.1			4534
21 Sep	0313	0319	0325	B5.5			4534
21 Sep	0621	0629	0635	C1.2	SF	N10W13	4534
21 Sep	0942	0949	0953	B3.9			4534
21 Sep	0953	0956	0959	B4.0			4534
21 Sep	1108	1117	1125	B6.8			4535
21 Sep	2352	2357	0001	B6.5			4534
22 Sep	0300	0309	0318	B6.6			4534
22 Sep	0427	0451	0501	C2.0			4536
22 Sep	1411	1416	1419	B7.2			
22 Sep	1656	1700	1704	B8.9	SF	N10W28	4534
22 Sep	1711	1720	1725	C2.4			4534
22 Sep	1743	1758	1850	C1.1			4536
23 Sep	0608	0621	0637	C1.3	SF	N11E48	4535
23 Sep	1114	1131	1145	C1.6			4537
23 Sep	1456	1504	1517	B9.6			4538
23 Sep	1522	1532	1535	C1.1			4538
23 Sep	1530	1534	1538		SF	N10W33	4537
23 Sep	1532	1532	1536		SF	N11W28	4538
24 Sep	0824	0837	0842	B7.8			4537
24 Sep	0852	0903	0911	C1.5			4536
25 Sep	0231	0244	0257	C1.1			4536
25 Sep	0806	0816	0826	C1.2			
25 Sep	1118	1126	1135	B7.9			4535
25 Sep	1419	1427	1437	B6.2			4536
25 Sep	1820	1830	1841	C1.2			4534
26 Sep	0104	0112	0115	B8.1			4534
26 Sep	0424	0431	0440	B6.9			4536
26 Sep	0911	0918	0925	C1.0			4534
26 Sep	1302	1308	1315	B5.7			
26 Sep	1318	1323	1331	C1.5			4534



Flare List

Date	Time			Optical			
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
26 Sep	1624	1631	1633	B7.3	SF	N03W63	4536
26 Sep	1650	1655	1700	C3.1			4534
26 Sep	2042	2049	2059	B6.9			4536
26 Sep	2104	2109	2113	C1.4			4534
26 Sep	2341	2349	2359	B7.6			4536
27 Sep	0212	0222	0228	C1.1			4536
27 Sep	0243	0246	0248	C1.1			4534
27 Sep	0431	0437	0444	C1.9			4536
27 Sep	0532	0539	0552	B8.6			4534
27 Sep	0752	0757	0808	B5.5			4534
27 Sep	1348	1354	1358	B6.8			
27 Sep	1554	1601	1607	C1.2	SF	N11W14	4535
27 Sep	1814	1821	1824	B5.2	SF	N11W16	4535
27 Sep	1858	1905	1909	C1.3	SF	N11W16	4535
27 Sep	1914	1914	1917		SF	N11W16	4535
27 Sep	2334	2339	2347	B5.2			



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 4529																
06 Sep	N13E63	188	100	2	Hsx	1	A									
07 Sep	N12E50	188	90	2	Hax	1	A									
08 Sep	N12E37	187	85	2	Hsx	1	A									
09 Sep	N12E24	187	70	2	Hsx	3	A									
10 Sep	N12E10	188	80	2	Hax	1	A									
11 Sep	N12W04	189	80	2	Hax	1	A									
12 Sep	N12W18	190	60	3	Cao	3	B									
13 Sep	N12W32	191	60	3	Cao	3	B									
14 Sep	N12W45	190	10	2	Bxo	6	B					1				
15 Sep	N14W42	189	plage													
16 Sep	N14W56	190	plage													
17 Sep	N14W70	187	plage													
18 Sep	N14W84	187	plage													
19 Sep	N14W98	187	plage													
								0	0	0	1	0	0	0	0	

Crossed West Limb.

Absolute heliographic longitude: 189

Region 4531															
15 Sep	S08W09	141	plage												
16 Sep	S08W23	142	plage												
17 Sep	S08W37	143	plage												
18 Sep	S08W51	144	plage												
19 Sep	S08W65	144	plage												
20 Sep	S08W79	145	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 141

Region 4532															
19 Sep	S06W39	119	10	1	Axx	1	A								
20 Sep	S06W54	120	10	4	Bxo	4	B								
21 Sep	S07W68	121	plage												
22 Sep	S07W82	122	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 119



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	4

Region 4533

20 Sep	S14E64	2	30	2	Hsx	1	A								
21 Sep	S13E50	3	40	1	Hsx	1	A								
22 Sep	S13E36	4	50	2	Hsx	1	A								
23 Sep	S13E23	4	40	2	Hsx	2	A								
24 Sep	S14E09	4	30	2	Hrx	2	A								
25 Sep	S13W03	3	10	3	Bxo	2	B								
26 Sep	S13W17	4	10	2	Bxo	2	B								
27 Sep	S13W31	5	plage												
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 3

Region 4534

20 Sep	N11W08	74	30	5	Dro	8	B	1			4	1			
21 Sep	N11W21	74	30	5	Dri	10	B	2			1				
22 Sep	N11W35	75	50	6	Dai	13	B	1			1				
23 Sep	N11W48	75	40	6	Dai	12	B								
24 Sep	N11W61	75	40	6	Cao	8	B								
25 Sep	N10W76	76	30	5	Cro	8	B	1							
26 Sep	N10W90	77	20	5	Cro	4	B	4							
								9	0	0	6	1	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 74

Region 4535

20 Sep	N12E73	353	20	1	Hrx	1	A	1							
21 Sep	N12E58	355	30	2	Hrx	1	A								
22 Sep	N12E44	356	30	3	Hsx	2	A								
23 Sep	N12E34	353	20	6	Dro	2	B	1			1				
24 Sep	N12E21	351	40	7	Dso	5	B								
25 Sep	N12E10	350	20	8	Cro	3	B								
26 Sep	N11W06	353	20	5	Cro	3	B								
27 Sep	N11W19	353	50	7	Dri	18	B	2			4				
								4	0	0	5	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 353



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 4536															
21 Sep	N03E01	52	20	4	Cri	7	B								
22 Sep	N03W13	53	60	5	Dsi	10	B	2							
23 Sep	N03W26	53	50	6	Dsi	10	B								
24 Sep	N03W39	53	120	7	Dsi	10	B	1							
25 Sep	N02W53	53	150	9	Dsi	7	B	1							
26 Sep	N02W67	54	130	9	Dso	3	B				1				
27 Sep	N02W81	55	100	7	Cso	3	B	2							
								6	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 52

<i>Region 4537</i>															
21 Sep	N07W11	63	10	64	Bxo	3	B								
22 Sep	N08W26	66	30	3	Dri	5	BD								
23 Sep	N07W40	67	20	3	Dri	6	B	1			1				
24 Sep	N07W53	68	80	5	Dao	5	B								
25 Sep	N07W70	70	60	4	Cro	5	B								
26 Sep	N07W81	68	10	1	Axx	1	A								
27 Sep	N07W95	68	plage												
								1	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 63

<i>Region 4538</i>															
21 Sep	N11W09	62	10	3	Bxo	3	B								
22 Sep	N11W23	63	20	3	Cri	7	B								
23 Sep	N11W36	63	20	4	Dri	11	B	1			1				
24 Sep	N11W49	64	60	5	Dsi	11	B								
25 Sep	N12W66	66	30	4	Bxo	3	B								
26 Sep	N12W82	69	10	1	Axx	1	A								
27 Sep	N11W95	69	plage												
								1	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 62



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	4

Region 4539

22 Sep	S09E26	14	20	4	Cro	5	B								
23 Sep	S09E13	14	30	4	Dso	6	B								
24 Sep	S09W01	14	10	1	Axx	1	A								
25 Sep	S10W12	12	10	1	Axx	1	A								
26 Sep	S10W26	13	plage												
27 Sep	S10W40	13	plage												
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 14

Region 4540

22 Sep	S12W52	92	10	3	Bxo	3	B								
23 Sep	S12W63	90	10	2	Bxo	2	B								
24 Sep	S12W77	91	plage												
								0	0	0	0	0	0	0	0

Died on Disk.

Absolute heliographic longitude: 92

Region 4541

23 Sep	S05W68	95	10	3	Axx	1	A								
24 Sep	S05W82	95	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 95

Region 4542

24 Sep	S18E22	351	10	3	Bxo	2	B								
25 Sep	S18E06	354	20	1	Hrx	1	A								
26 Sep	S19W07	354	20	4	Bxo	4	B								
27 Sep	S19W21	355	10	2	Bxo	3	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 354

Region 4543

27 Sep	S09W75	49	10	2	Bxo	3	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 49



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

