

Space Weather Forecast

Issued on Saturday, 04 December 2021 at 00:53 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: Chance of G1/Minor Storm activity mainly day 1 (4th)

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity was very low, with no significant flares detected. There are currently two sunspot regions visible, however both regions are currently small and weak. A filament, which is a line of plasma material held above the Sun's surface by its magnetic field, lifted off from the surface on the morning of the 3rd, analysis suggests this is not Earth-directed. No other Earth-directed CMEs are in the forecast.

Solar Wind / Geomagnetic Activity: The solar winds remained slightly elevated, with only a weak magnetic field. Geomagnetic activity remained Quiet to Unsettled (Kp 1-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to remain mostly very low, with a slight chance of common class flares.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs have been observed. Faster solar winds from a coronal hole are expected to soon arrive on day 1 (4th), with solar winds likely becoming elevated. Ongoing fast wind influence is then expected into day 2 (5th), with coronal hole 28, before easing later in the period. Geomagnetic activity is forecast to become Unsettled to Active with a chance isolated G1/Minor storm intervals on day 1 (4th). Quiet to unsettled activity expected to return by day 3 (6th).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to persist at background with no solar radiation storms expected.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	40	20	10	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	1	1	1	1
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)