
Space Weather Forecast

Issued on Friday, 03 December 2021 at 00:51 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 minor geomagnetic storms.

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, as a previous region has rotated off the western limb during the period. One numbered region is small, weak and simple while the other numbered region is slightly larger and magnetically more complex. No Earth-directed coronal mass ejections (CMEs) were seen, though a CME that left the Sun on the 29th may give Earth a glancing blow this morning.

Solar Wind / Geomagnetic Activity: The solar wind indicated connection to an enhanced solar wind from a coronal hole, with speeds starting at elevated levels and then gradually decreasing to slightly elevated levels. The solar wind's magnetic field remained weak, with the important north-south component occasionally becoming weakly southward. Resultant geomagnetic activity was at Quiet to Unsettled levels (Kp 1 to 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 chance of common class flares, mainly from the larger sunspot region in the northwest. No significant regions are expected to rotate onto the visible disc.

Solar Wind / Geomagnetic Activity: The influence of a previous coronal hole feature has started to decline, but before the solar wind reaches background levels further solar wind enhancements are expected from today. The influence is expected to persist through tomorrow (4th), followed by a further possible solar wind enhancement for days 3 and 4 (5th and 6th). A filament eruption which left the Sun on the 29th may also bring a brief enhancement to solar winds this morning from a glancing blow to Earth. Mostly Quiet to Unsettled geomagnetic activity is expected, with isolated Active intervals, and a chance of isolated Minor Storm intervals.

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	20	20	20	20
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)