

## Space Weather Forecast

Issued on Friday, 10 December 2021 at 00:43 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>

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### Space Weather Forecast Headline: Slight chance of Minor Storms.

#### Analysis of Space Weather Activity over past 24 hours

**Solar Activity:** Solar activity was Very Low over the past 24 hours with no notable flares. There are no sunspots currently on the visible disc. No Earth-directed coronal mass ejections (CMEs) have been observed in the past 24 hours.

**Solar Wind / Geomagnetic Activity:** The solar wind speed remained at background speeds. The Interplanetary Magnetic Field was weak with the important north-south component also varying weakly. The resultant geomagnetic activity was Quiet.

**Energetic Particles / Solar Radiation:** No solar radiation storms were observed.

#### Four-Day Space Weather Forecast Summary

**Solar Activity:** Solar activity is expected to stay predominantly Very Low during the forecast period, with the current absence of any regions on the visible disc. However, towards the end of the period new regions may rotate onto the visible disc and potentially increase the activity.

**Solar Wind / Geomagnetic Activity:** There are two potentially Earth-directed CMEs in the forecast. The first CME was due to arrive yesterday evening, although with low confidence, and it may still arrive early today. The second CME could arrive at Earth as a weak feature today. After starting at background levels, minor fast wind enhancements are possible for the solar wind today from the aforementioned CMEs. Another enhancement of the solar wind up to slightly elevated levels is more likely tomorrow and day 3 (11th and 12th) due to the expected arrival of weak coronal hole influence, this persisting through day 4 (13th). Mainly Quiet to Unsettled geomagnetic activity is expected through the period, with a chance of isolated Active periods and a slight chance of Minor Storms.

**Energetic Particles / Solar Radiation:** No solar radiation storms are 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	10	10	5	5
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 <sup>-2</sup> sr <sup>-1</sup> s <sup>-1</sup> )	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<sup>-2</sup>sr<sup>-1</sup>s<sup>-1</sup>)