

Sun unleashes powerful X-class solar flare

March 6 2012, By Nancy Atkinson

The Sun has been quiet recently but early today (04:13 UTC on March 5, 2012) it unleashed a powerful X1-class solar flare and coronal mass ejection. The latest estimates indicate the CME will probably miss Earth, but hit Mercury and Venus. Even so, the science team from the Solar Dynamics Observatory says that high-latitude skywatchers should still be alert for auroras in the nights ahead. There was also an M2-class eruption from the same big and active sunspot, Active Region 1429, on March 4th which produced another, wider CME that might yet intersect Earth. The cloud is expected to deliver a glancing blow to our planet's magnetic field on March 6th at 04:30 UT (+/- 7 hrs).

Check the [latest forecast](#) of the CME's arrival from the NASA Goddard Space Weather Lab, which includes a great animation.

So, what's the difference in the classes of solar flares and how could they affect us on Earth?

Flares happen when the powerful magnetic fields in and around the sun reconnect. They're usually associated with active regions, which we call sunspots, where the magnetic fields are strongest.

Flares are classified according to their strength. The smallest ones are B-class, followed by C, M and X, the largest. Similar to the Richter scale for earthquakes, each letter represents a ten-fold increase in energy output. So an X is 10 times an M and 100 times a C. Within each letter class, there is a finer scale from 1 to 9. Although X is the last letter, there are flares more than 10 times the power of an X1, so X-class flares

can go higher than 9.

C-class flares are too weak to noticeably affect Earth. M-class flares can cause brief radio blackouts at the poles and minor radiation storms that might endanger astronauts. The most powerful flare on record was in 2003, during the last solar maximum. It was so powerful that it overloaded the sensors measuring it. They cut-out at X28. A powerful X-class flare like that can create long lasting radiation storms, which can harm satellites and even give airline passengers, flying near the poles, small radiation doses. X flares also have the potential to create global transmission problems and world-wide blackouts.

Source: [Universe Today](#)

Citation: Sun unleashes powerful X-class solar flare (2012, March 6) retrieved 25 April 2024 from <https://phys.org/news/2012-03-sun-unleashes-powerful-x-class-solar.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.