

Solar flare power outage 2023





Overview

The Sun recently erupted in a flare that caused a brief but intense radio blackout in the western US and the Pacific Ocean as it lashed Earth's upper atmosphere. On 2 July 2023, at 7.14 PM Eastern Standard Time, an active sunspot region called AR 3354 unleashed an X-class solar flare - the most powerful category of which our Sun is capable. What is a solar flare?

Solar flares are powerful bursts of energy. Flares and solar eruptions can impact radio communications, electric power grids, navigation signals, and pose risks to spacecraft and astronauts. This flare is classified as an X5.0 flare. X-class denotes the most intense flares, while the number provides more information about its strength.

What emitted the largest solar flare in solar cycle 25?

The Sun emitted the largest solar flare yet in Solar Cycle 25 (as of March 2023). The X2 flare emitted its own burst of radio waves, as well as disrupting radio wave propagation through the ionosphere causing a level 3 radio blackout. This region also produced multiple weaker (M class and C class) flares. The sunspot number spiked in January.

What was the largest solar flare in 2023?

(Image credit: NOAA Satellites) While many cities and towns across the globe ended 2023 with fireworks, the sun was busy producing some excitement of its own —an X5 solar flare. This was the largest solar flare observed by NOAA's Space Weather Prediction Center (SWPC) since 2017.

Can solar flares interfere with radio signals?

According to the SWPC, these energetic blasts can interfere with radio signals, which is what happened after a strong solar flare briefly interrupted aircraft communications on December 14, 2023. Some flares are accompanied by CMEs, which are highly-charged bubbles of the sun's plasma emerging from the sun's outer atmosphere, known as the corona.



How did a solar flare affect space weather?

A powerful solar flare disrupted radio and navigation signals across North America on Monday and prompted space weather forecasters to issue warnings because of energetic particles hitting Earth.

Did a solar flare cause a blackout?

A powerful solar flare erupted from the sun in August 23. (Image credit: NASA) According to solar physicist Keith Strong, the blackout caused by the Monday flare was a strong category 3 on the five-point scale developed by the U.S. National Oceanic and Atmospheric Administration (NOAA).



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NOAA: "Geostorm Warming" as recent solar flares hit ...

On Thursday afternoon, an extraordinary solar event unfolded as the sun unleashed its most powerful solar flare in over six years, resulting in widespread radio blackouts, especially across South America. This significant ...

Solar flares

The plot on this page shows us the most recent 24-hour solar X-ray data from the primary GOES satellite. You can zoom in on this plot by selecting a time period that you wish to view and even export the graph as a JPG, PDF, SVG or PNG file. Beneath that we have a collection of live imagery which



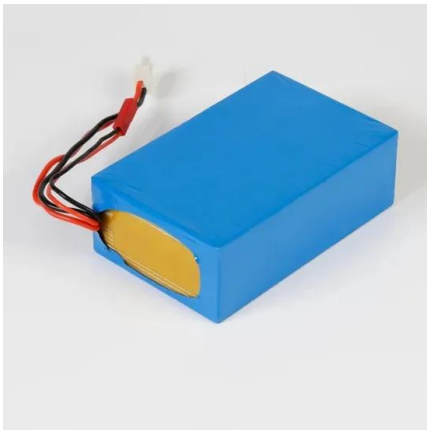
'Internet apocalypse:' Can NASA's solar storm studies save

The emergence of an impending solar storm has brought with it the remote possibility that within the next decade, the people of Earth could be left without internet access for months. If the



Strong solar storm hits Earth, could disrupt communications and ...

CAPE CANAVERAL, Fla. (AP) -- An unusually strong solar storm hitting Earth could produce northern lights in the U.S. this weekend and potentially disrupt power and communications. The National



Sun's strongest solar flare in years knocks out radio ...

The Sun sent out a monster solar flare of high-energy radiation that NASA captured on Thursday in what NOAA Space Weather said was "likely one of the largest" such events ever recorded. Why it matters: These powerful ...

[December 2023 - Solar Cycle 25](#)

Flares and solar eruptions can impact radio communications, electric power grids, navigation signals, and pose risks to spacecraft and astronauts. This flare is classified as ...



Sun Releases Strong Solar Flare - Solar Cycle 25

Flares and solar eruptions can impact radio communications, electric power grids, navigation signals, and pose risks to spacecraft and astronauts. This flare is classified as an X1.0 flare. X-class denotes the most intense flares, while the number provides more information about its strength.





Rare Solar Storm Could Blast Power Grids, More Likely in ...

Powerful solar storms that can knock out power grids are extremely rare. But these are more likely to happen in coming years, here's why. A vertical stack of three evenly spaced horizontal lines



How to Prepare for a Solar Flare Hitting Earth ...

An explanation of what solar flares are, why they happen, what effect they have on earth, and what a regular person can do to prepare for one hitting the planet.



Strong Solar Flare Erupts from Sun - Solar Cycle 25

Flares and solar eruptions can impact high-frequency (HF) radio communications, electric power grids, navigation signals, and pose risks to spacecraft and ...



What to expect from the peak of Solar Cycle 25

According to the SWPC, these energetic blasts can interfere with radio signals, which is what happened after a strong solar flare briefly interrupted aircraft communications on December 14, 2023. Some flares are ...



NOAA warns X-class solar flare could hit today, with smaller ...

"Large flares can release enough energy to power the entire United States for a million years," NASA says, adding that the most powerful X-class flare ever recorded was in 2003. That event "was so



Is the 'internet apocalypse' nigh? Breaking down the solar-

The idea of a widespread internet outage caused by a solar superstorm has captured imaginations and sparked A 1989 solar storm took out the Quebec power grid for hours. And in 2012, a storm

Sun Releases Strong Solar Flare - Solar Cycle 25

Flares and solar eruptions can impact radio communications, electric power grids, navigation signals, and pose risks to spacecraft and astronauts. This flare is classified as an X3.3 class flare. X-class denotes the most intense flares, while the number provides more information about its strength.



Time-lapse of Solar Cycle 25 displays increasing activity

A powerful solar flare disrupted radio and navigation signals across North America on Monday (Aug. 7) and prompted space weather forecasters to issue warnings because of energetic particles



Solar Flare Power Outage Explained: Causes and Solutions

As we've learned, while solar flares are a natural part of the sun's activity, their impact on Earth can be significant, especially when it comes to the potential for a solar flare power outage. Understanding why they happen is crucial for developing strategies to protect our energy infrastructure from the effects of these solar events.



Solar flare alert! NASA observatory reveals threat of M-class flare

NASA's Solar Dynamics Observatory has discovered a sunspot that could hurl out M-class solar flares towards Earth soon. Know the details. 5/5 2023 Geomagnetic Storm Risk: Geomagnetic storms are challenging to predict, and the Sun continually releases powerful coronal mass ejections (CMEs), solar flares and more.

Solar superstorm could 'wipe out the internet' for weeks or

The solar cycle is peaking making solar storms more plentiful. Tree rings and ice cores are evidence of much larger super storms in the past. About 14,000 years ago, a solar flare, possibly hundreds of times stronger than the Carrington flare, impacted Earth.



A solar storm like the Carrington Event could knock out

A geomagnetic storm on the scale of the Carrington Event could potentially knock out the backbone of the Internet. Editor's note: This article was first published in 2022 and has been updated



Blackouts, solar flares, and an impending solar storm, Earth goes

As we all know shortwave radio blackouts are the after-effect of a solar flare eruption, two separate flares were also detected going off prior to the blackout. The first one was estimated to have come from sunspot region AR3421 and contained an ...



Frontiers , Investigating the effect of large solar flares on the

Increased solar radiation during solar flare events can cause additional ionization and enhanced absorption Citation: Buzás A, Kouba D, Mielich J, Buresová D, Mosna Z, Koucká Knížová P and Barta V (2023) Investigating the effect of large solar flares on the



Extreme 'X-Class' Solar Flare Hits Earth, Causing Radio Blackout

A powerful solar flare flashed at Earth on Tuesday, sending an eruption of X-ray and ultraviolet radiation to our planet at the speed of light. It was an "X-class" flare - the most powerful kind - and it caused a radio blackout for about one hour on the day side of Earth, in parts of southeast Asia, Australia, and New Zealand.



The Sun Just Erupted With The Most Powerful Solar ...

On 14 December, an active sunspot region named AR 3514 erupted in a class X2.8 solar flare, the most intense category of which our star is capable. The flare is the most powerful we've seen for the current solar cycle, ...





3-Day Forecast , Reports of solar activity and geophysical

Solar flares 1 1997 X12.9 2 2024 X2.3 3 2004 X1.34 4 2004 M8.52 5 2014 M7.85 Dst G 1 2001-292 G4 2 2000-159 G3 3 2023-128 G2 4 1957-87 G2 5 1994-80 G2 *since 1994 Social networks SpaceWeatherLive About Parsec vzw



Lithium Solar Generator: \$150



R2 (Moderate) HF Radio Blackout Event on 28 ...

A R2 (Moderate) HF Radio Blackout Event occurred on 28 November, 2023 at 1950 UTC. The responsible flare peaked at M9.8 at 2:50 pm EST on 28 Nov as measured by the GOES-18 satellite. The flare source was ...

Sun Outage Calculator

Sun outages, also known as solar outages or sun fades, are temporary disruptions in communication and broadcasting signals caused by the sun's interference with communication satellites. These interruptions typically last a few minutes and occur during the spring and fall equinoxes when the sun aligns with geostationary satellites, affecting services ...



Largest solar flare in 6 years could lead to problems on Earth

Within each category, numbers are assigned to events that help determine its scale. This means the 2.8 is on the low end of a strong event. The strongest solar flare in recorded history is believed to have been an X45, which occurred in 2003, but most X-class



Solar storm knocks out farmers'

The May 2024 solar storm was big, but bigger ones have hit the Earth. Geomagnetic storms Stronger solar storms have happened, and one caused havoc with one of the earliest electronic technologies



An EMP or Solar Incident Could Result in Blackout Warfare

In 2008, the Report of the Commission to Assess the Threat to the United States from Electromagnetic Pulse Attack (EMP Commission) reported on the effects of an EMP. The report concluded that, one year after a large-scale EMP or CME, nine of every ten



51.2V 300AH

Sun blasts out powerful X-class solar flare causing ...

A giant sunspot exploded on Sunday, July 2, creating a powerful solar flare that lashed Earth's atmosphere and caused a radio blackout over parts of the U.S. and the pacific ocean.



R2 (Moderate) HF Radio Blackout Event on 28 November, 2023

A R2 (Moderate) HF Radio Blackout Event occurred on 28 November, 2023 at 1950 UTC. The responsible flare peaked at M9.8 at 2:50 pm EST on 28 Nov as measured by the GOES-18 satellite. The flare source was NOAA/SWPC Region 3500 - a moderately





Sun Releases Strong Solar Flare - Solar Cycle 25

Flares and solar eruptions can impact radio communications, electric power grids, navigation signals, and pose risks to spacecraft and astronauts. This flare is classified as an X9.0 flare. X-class denotes the most intense flares, while the number provides more information about its strength.



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