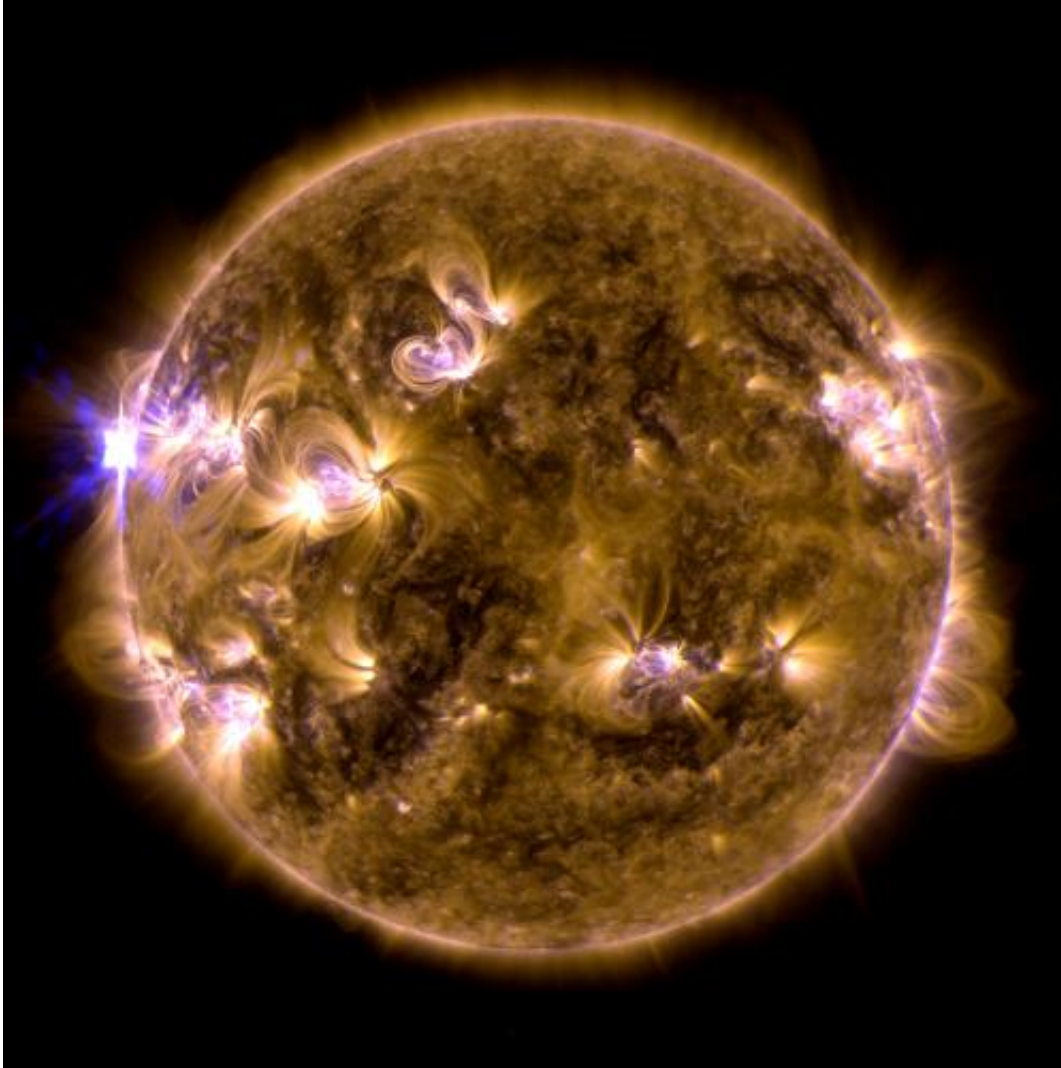


First X-class solar flare of 2013

May 13 2013



The sun erupted with an X1.7-class solar flare on May 12, 2013. This is a blend of two images of the flare from NASA's Solar Dynamics Observatory: One image shows light in the 171-angstrom wavelength, the other in 131 angstroms. Credit: NASA/SDO/AIA

(Phys.org) —On May 12, 2013, the sun emitted a significant solar flare, peaking at 10 p.m. EDT. This flare is classified as an X1.7, making it the first X-class flare of 2013. The flare was also associated with another solar phenomenon, called a coronal mass ejection (CME) that can send solar material out into space. This CME was not Earth-directed.

[Solar flares](#) are powerful bursts of radiation. [Harmful radiation](#) from a flare cannot pass through Earth's atmosphere to physically affect humans on the ground, however—when intense enough—they can disturb the atmosphere in the layer where GPS and communications signals travel. This disrupts the [radio signals](#) for as long as the flare is ongoing – the radio blackout associated with this flare has since subsided.

"X-class" denotes the most intense flares, while the number provides more information about its strength. An X2 is twice as intense as an X1, an X3 is three times as intense, etc.

This flare erupted from an active region just out of sight over the left side of the sun, a region that will soon rotate into view. This region has produced two smaller M-class flares as well.

The May 12 flare was also associated with a [coronal mass ejection](#), another solar phenomenon that can send billions of tons of [solar particles](#) into space, which can affect electronic systems in satellites and on the ground. Experimental NASA research models show that the CME left the sun at 745 miles per second and is not Earth-directed, however its flank may pass by the STEREO-B and Spitzer spacecraft, and their mission operators have been notified. If warranted, operators can put spacecraft into safe mode to protect the instruments from solar material. There is some [particle radiation](#) associated with this event, which is what can concern operators of interplanetary spacecraft since the particles can trip computer electronics on board.

Increased numbers of flares are quite common at the moment because the sun's normal 11-year activity cycle is ramping up toward solar maximum, which is expected in 2013. Humans have tracked the solar cycle continuously since it was discovered in 1843, and it is normal for there to be many flares a day during the sun's peak activity. The first X-class flare of the current solar cycle occurred on Feb. 15, 2011, and there have been another 15 X-[class flares](#) since, including this one. The largest X-class flare in this cycle was an X6.9 on Aug. 9, 2011.

Provided by NASA's Goddard Space Flight Center

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