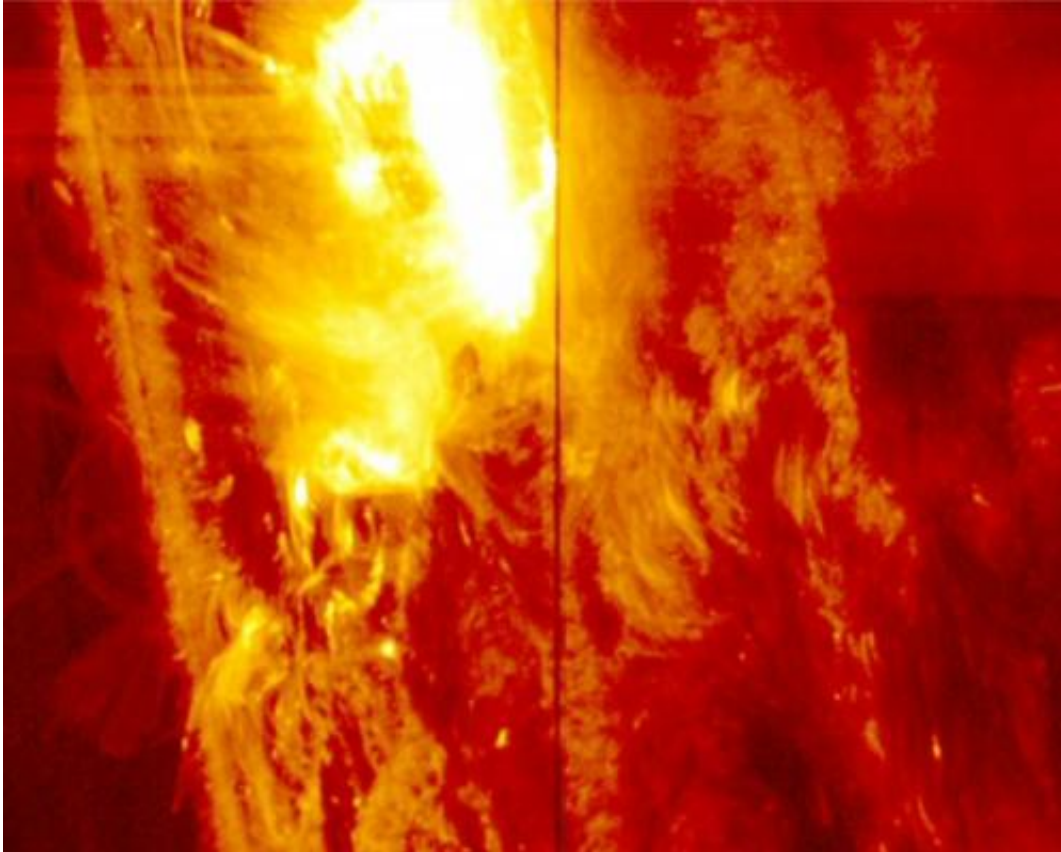


NASA's IRIS spots its largest solar flare

February 21 2014, by Karen C. Fox



On Jan. 28, 2014, NASA's IRIS witnessed its strongest solar flare since it launched in the summer of 2013. Credit: NASA/IRIS

(Phys.org) —On Jan. 28, 2014, NASA's Interface Region Imaging Spectrograph, or IRIS, witnessed its strongest solar flare since it launched in the summer of 2013. Solar flares are bursts of x-rays and light that stream out into space, but scientists don't yet know the fine

details of what sets them off.

IRIS peers into a layer of the sun's lower atmosphere just above the surface, called the chromosphere, with unprecedented resolution. However, IRIS can't look at the entire sun at the same time, so the team must always make decisions about what region might provide useful observations. On Jan. 28, scientists spotted a magnetically active region on the sun and focused IRIS on it to see how the solar material behaved under intense magnetic forces. At 2:40 p.m. EST, a moderate flare, labeled an M-class flare—which is the second strongest class flare after X-class – erupted from the area, sending light and x-rays into space.

IRIS studies the layer of the sun's atmosphere called the chromosphere that is key to regulating the flow of energy and material as they travel from the [sun](#)'s surface out into space. Along the way, the energy heats up the upper atmosphere, the corona, and sometimes powers solar events such as this flare.

IRIS is equipped with an instrument called a spectrograph that can separate out the light it sees into its individual wavelengths, which in turn correlates to material at different temperatures, velocities and densities. The spectrograph on IRIS was pointed right into the heart of this flare when it reached its peak, and so the data obtained can help determine how different temperatures of material flow, giving scientists more insight into how flares work.

The IRIS mission is managed by the Lockheed Martin Solar and Astrophysics Laboratory of the ATC in Palo Alto, Calif. NASA's Ames Research Center in Moffett Field, Calif., is responsible for mission operations and the ground data system. The Ames Pleiades supercomputer is used to carry out many of the numerical simulations that are led by the University of Oslo. The IRIS telescope was designed and built by the Smithsonian Astrophysical Observatory while Montana

State University faculty and students assisted in the design of the spectrograph. A large volume of science data is downlinked via Kongsberg Satellite Services, (KSAT) facilities through a cooperative agreement between NASA and the Norwegian Space Centre. NASA's Goddard Space Flight Center in Greenbelt, Md., oversees the Explorers Program from which IRIS evolved.

Provided by NASA's Goddard Space Flight Center

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