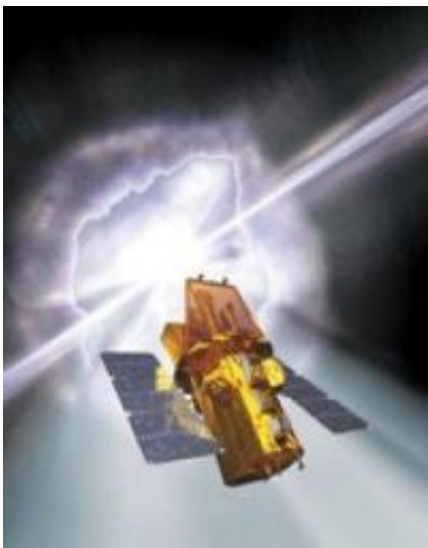


Space telescopes reveal previously unknown brilliant X-ray explosion in our Milky Way galaxy

October 22 2010



This is an artist's rendering of the Swift spacecraft with a gamma-ray burst going off in the background. Credit: Spectrum Astro

Astronomers in Japan, using an X-ray detector on the International Space Station, and at Penn State University, using NASA's Swift space observatory, are announcing the discovery of an object newly emitting X-rays, which previously had been hidden inside our Milky Way galaxy in the constellation Centaurus.

The object -- a binary system -- was revealed recently when an

instrument on the [International Space Station](#) named MAXI (Monitor of All-Sky X-ray Image) on the Exposed Facility of the Japanese Experiment Module "Kibo" caught it in the act of erupting with a massive blast of X-rays known as an X-ray nova. The MAXI mission team quickly alerted astronomers worldwide to the discovery of the new X-ray source at 2:00 a.m. EDT on 20 October, and NASA's Swift Observatory quickly conducted an urgent "target-of-opportunity" observation nine hours later, which allowed for the location of the X-ray nova to be measured accurately.

"The collaboration between the MAXI and Swift teams allowed us to quickly and accurately identify this new object," said Jamie Kennea, the Swift X-ray Telescope instrument scientist at Penn State University who is leading the Swift analysis. "MAXI and Swift's abilities are uniquely complementary, and in this case have provided a discovery that would not have been possible without combining the knowledge obtained from both."

The Swift detection confirmed the presence of the previously unknown bright X-ray source, which was named MAXI J1409-619. "The Swift observation suggests that this source is probably a neutron star or a black hole with a massive [companion star](#) located at a distance of a few tens of thousands of light years from Earth in the [Milky Way](#)," said David Burrows, professor of astronomy and astrophysics at Penn State and the lead scientist for Swift's X-ray Telescope. "The contribution of Swift's X-ray Telescope to this discovery is that it can swing into position rapidly to focus on a particular point in the sky and it can image the sky with high sensitivity and high spatial resolution."



This is a view of MAXI attached to the Japanese Experiment Module - Exposed Facility (JEF). This photo was taken during STS-127 / Expedition 20 Joint Operations. Credit: Image courtesy of NASA

"MAXI has demonstrated its capability to discover X-ray novae at great distances," said Kazutaka Yamaoka, assistant professor at Aoyama Gakuin University and a member of the MAXI team. "The MAXI team is planning further coordinated observations with NASA satellites to reveal the identity of this source."

Provided by Pennsylvania State University

Citation: Space telescopes reveal previously unknown brilliant X-ray explosion in our Milky Way galaxy (2010, October 22) retrieved 27 January 2023 from <https://phys.org/news/2010-10-space-telescopes-reveal-previously-unknown.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.