

NASA image: Stellar sparklers that last

July 3 2015



This new composite image of stellar cluster NGC 1333 combines X-rays from

NASA's Chandra X-ray Observatory (pink); infrared data from NASA's Spitzer Space Telescope (red); and optical data from the Digitized Sky Survey and the National Optical Astronomical Observatories' Mayall 4-meter telescope on Kitt Peak near Tucson, Arizona. The Chandra data reveal 95 young stars glowing in X-ray light, 41 of which had not been seen previously using Spitzer because they lacked infrared emission from a surrounding disk. Credit: NASA/CXC/JPL-Caltech/NOAO/DSS

While fireworks only last a short time here on Earth, a bundle of cosmic sparklers in a nearby cluster of stars will be going off for a very long time. NGC 1333 is a star cluster populated with many young stars that are less than 2 million years old—a blink of an eye in astronomical terms for stars like these expected to burn for billions of years.

This new composite image combines X-rays from NASA's Chandra X-ray Observatory (shown in pink) with infrared data from NASA's Spitzer Space Telescope (shown in red) as well as optical data from the Digitized Sky Survey and the National Optical Astronomical Observatories' Mayall 4-meter telescope on Kitt Peak (red, green, blue). The Chandra data reveal 95 young stars glowing in X-ray light, 41 of which had not been seen previously using Spitzer because they lacked infrared emission from a surrounding disk.

To make a detailed study of the X-ray properties of young stars, a team of astronomers, led by Elaine Winston from the University of Exeter, United Kingdom, analyzed the Chandra X-ray data of both NGC 1333, located about 780 light-years from Earth, and the Serpens cloud, a similar cluster of young stars about 1,100 light-years away. They then compared the two datasets with observations of the [young stars](#) in the Orion Nebula Cluster, perhaps the most well-studied young [star cluster](#) in the Milky Way galaxy.

The researchers found that the X-ray brightness of the stars in NGC 1333 and the Serpens cloud depends on the total brightness of the stars across the electromagnetic spectrum, as found in previous studies of other clusters. They also found that the X-ray brightness mainly depends on the size of the star. In other words, the bigger the stellar sparkler, the brighter it will glow in X-rays.

These results were published in the July 2010 issue of the *Astronomical Journal*.

Provided by NASA

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