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Exploded Star 5 Times Brighter Than Any Supernova Seen Before

This one is way above anything else known. It's really astonishing."
- Nathan Smith, Ph.D., UC-Berkeley

May 8, 2007 Cambridge, Massachusetts - The brightest supernova ever seen by human eyes was discovered in Fall 2006 by NASA's orbiting Chandra X-ray Observatory and the Lick Observatory ground-based optical telescope. The exploded star is called "SN 2006gy" and is *five times brighter* than hundreds of supernovae seen before. SN 2006gy is also the most energetic stellar explosion ever recorded. In fact, astronomers wonder if it is a new type of explosion that did not become a black hole like other supernovae, took 70 days to reach its supernova peak and remained brighter than other known supernovae for several months.

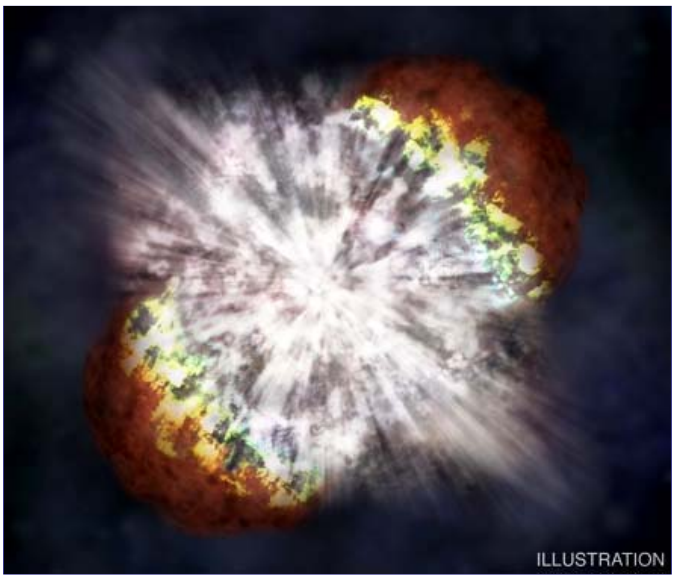

Illustration of SN 2006gy supernova in the constellation Perseus
about 238,000,000 light-years from Earth. Illustration courtesy NASA/CXC/M.Weiss.

The Chandra X-Ray Observatory science team in Cambridge, Massachusetts, reports: "The fireworks-like material in white shows the explosion of an extremely massive star. This debris is pushing back two lobes of cool, red gas that were expelled in a large eruption from the star before it exploded. The green, blue and yellow regions in these lobes shows where gas is being heated in a shock front as the explosion material crashes into it and pushes it backwards. Most of the optical light generated by the supernova is thought to come from debris that has been heated by radioactivity, but some likely comes from the shocked gas."

Lick Infrared and Chandra X-ray Images of SN 2006gy

Left: Infrared image, using adaptive optics at the Lick Observatory, of galaxy NGC 1260's center (dimmer) that contains SN 2006gy (brighter). Right: Chandra's X-ray image of same nucleus of galaxy NGC 1260 and supernova SN 2006gy. Lick infrared image courtesy UC Berkeley/J.Bloom & C.Hansen. Chandra X-ray image courtesy NASA/CXC/UC Berkeley/N.Smith et al.

Chandra science team: "The Chandra observation allowed astronomers to determine that SN 2006gy was indeed caused by the collapse of an extremely massive star, and not the other alternative explanation that it was the destruction of a low-mass star. The reason it's not the explosion of a low-mass star is that if it had been a white dwarf star exploding into a dense, hydrogen-rich environment, SN 2006gy would have been about 1,000 times brighter in X-rays than what Chandra detected."

More Information:

For further information about astronomical events, please see reports below in the **Earthfiles Archive:**

Websites:

Chandra X-Ray Observatory: http://chandra.harvard.edu/

Lick Observatory: http://www.ucolick.org/

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