



Chandra Science Highlight

SN 1996cr: Powerful Supernova in the Nearby Circinus Galaxy



Scale: Image is 43 arcsec across.

Estimated Distance: About 12 million light years.

Reference: F. Bauer et al. 2008 astro-ph arXiv:0804.3597

Credit: X-ray (NASA/CXC/Columbia/F.Bauer et al.)

Optical (NASA/STScI/UMD/A.Wilson et al.)

This composite image shows the central regions of the nearby Circinus galaxy, located about 12 million light years away. Data from NASA's Chandra X-ray Observatory is shown in blue and data from the Hubble Space telescope is shown in yellow ("I-band"), red (hydrogen emission), cyan ("V-band") and light blue (oxygen emission). The bright, blue source near the lower right hand corner of the image is the supernova SN 1996cr, that has been identified more than a decade after it exploded.

- Optical images from the archives of the Anglo-Australian Telescope in Australia show that SN 1996cr exploded between February 28, 1995 and March 15, 1996.
- Among the five nearest supernovas of the last 25 years, SN 1996cr is the only one that was not seen shortly after the explosion, possibly because it was only visible in the southern hemisphere.
- Archival X-ray and radio data imply that the massive progenitor of SN 1996cr shed its outer layers at a late evolutionary stage and evacuated a large cavity before exploding.
- The supernova blast wave likely spent ~ 1-2 years in free expansion before striking the dense circumstellar shell and becoming a bright X-ray source