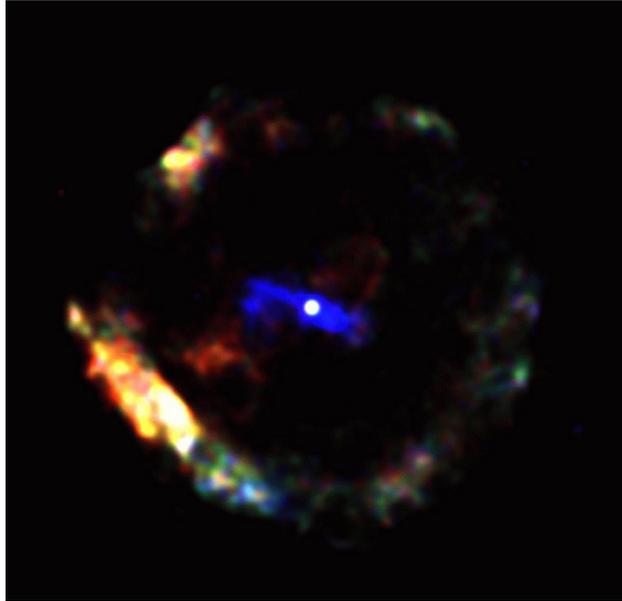




Chandra Science Highlights

Supernova Remnant G11.2-30 with central pulsar



The Chandra image of the supernova remnant G11.2-0.3 reveals a shell structure surrounding a bright central source. The central source has been identified as a rotating neutron star, or pulsar, that was created in the supernova observed in 386 A.D. by Chinese astronomers. A pulsar wind nebula is also visible around the source. The three color image was made by making maps in energy bands of 0.6-1.65 keV (red), 1.65-2.25 keV (green), and 2.25-7.5 keV (blue).

Credit: NASA/McGill U./V.Kaspi et al.

Chandra X-ray Observatory ACIS Image

Scale: Image is 5.8 arcmin x 5.4 arcmin

- The location of the bright X-ray source in the center of the nebula provides strong evidence for the association of the pulsar with the supernova remnant and hence Supernova 386 A.D.
- Identification of the pulsar with the supernova 386 A.D. fixes the age of the pulsar at just over 1600 years, making it only the second pulsar (after the Crab Nebula pulsar) with a known age.
- The age is much less than the spin-down time scale of 24,000 years observed by the ASCA X-ray satellite, suggesting that the pulsar was created with a spin period approximately equal to its presently observed period of 69 milliseconds. This is contrary to conventional wisdom that all pulsars are created with much shorter spin periods, so this observation has important consequences for understanding the process by which pulsars are created in supernovas.

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