



**Chandra X-ray
Observatory Center**

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Abell 30: The planetary nebula Abell 30, (a.k.a. A30), is located about 5500 light years from Earth. (Credit: Inset X-ray (NASA/CXC/IAA-CSIC/M.Guerrero et al); Inset Optical (NASA/STScI); Widefield X-ray (ESA/XMM-Newton); Widefield Optical (NSF/NOAO/KPNO))

Caption: The inset image on the right is a close-up view of A30 showing X-ray data from NASA's Chandra X-ray Observatory in purple and Hubble Space Telescope data showing optical emission from oxygen ions in orange. On the left is a larger view showing optical and X-ray data from the Kitt Peak National Observatory and ESA's XMM-Newton, respectively, where the optical data shows emission from oxygen (orange) and hydrogen (green and blue), and X-ray emission is colored purple. A planetary nebula is formed in the late stage of the evolution of a sun-like star, after it expands to become a red giant. In the case of A30, a planetary nebula formed but then the star briefly reverted to being a red giant. The evolution of the planetary nebula then restarted, making it reborn, a special phase of evolution that is rarely seen.

Scale: Inset is 37 arcsec across (1 light years), Widefield image is 3.5 arcmin across (5.6 light years)

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory