

Hubble offers a dazzling 'necklace'

August 11 2011, by Donna Weaver / Ray Villard



The Necklace Nebula is located 15,000 light-years away in the constellation Sagitta (the Arrow). In this composite image, taken on July 2, 2011, Hubble's Wide Field Camera 3 captured the glow of hydrogen (blue), oxygen (green), and nitrogen (red). Credit: NASA, ESA, and the Hubble Heritage Team (STScI/AURA)

(PhysOrg.com) -- A giant cosmic necklace glows brightly in this NASA Hubble Space Telescope image.

The object, aptly named the Necklace Nebula, is a recently discovered

[planetary nebula](#), the glowing remains of an ordinary, Sun-like star. The nebula consists of a bright ring, measuring 12 trillion miles wide, dotted with dense, bright knots of gas that resemble [diamonds](#) in a necklace.

A pair of stars orbiting close together produced the nebula, also called PN G054.2-03.4. About 10,000 years ago one of the aging stars ballooned to the point where it engulfed its companion star. The smaller star continued orbiting inside its larger companion, increasing the giant's rotation rate.

The bloated [companion star](#) spun so fast that a large part of its gaseous envelope expanded into space. Due to centrifugal force, most of the gas escaped along the star's equator, producing a ring. The embedded bright knots are dense gas clumps in the ring.

The pair is so close, only a few million miles apart, they appear as one bright dot in the center. The stars are furiously whirling around each other, completing an orbit in a little more than a day.

The Necklace Nebula is located 15,000 light-years away in the constellation Sagitta. In this composite image, taken on July 2, Hubble's Wide Field Camera 3 captured the glow of hydrogen (blue), oxygen (green), and nitrogen (red).

Provided by JPL/NASA

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