

Eskimo Nebula



Star Death in the Eskimo Nebula

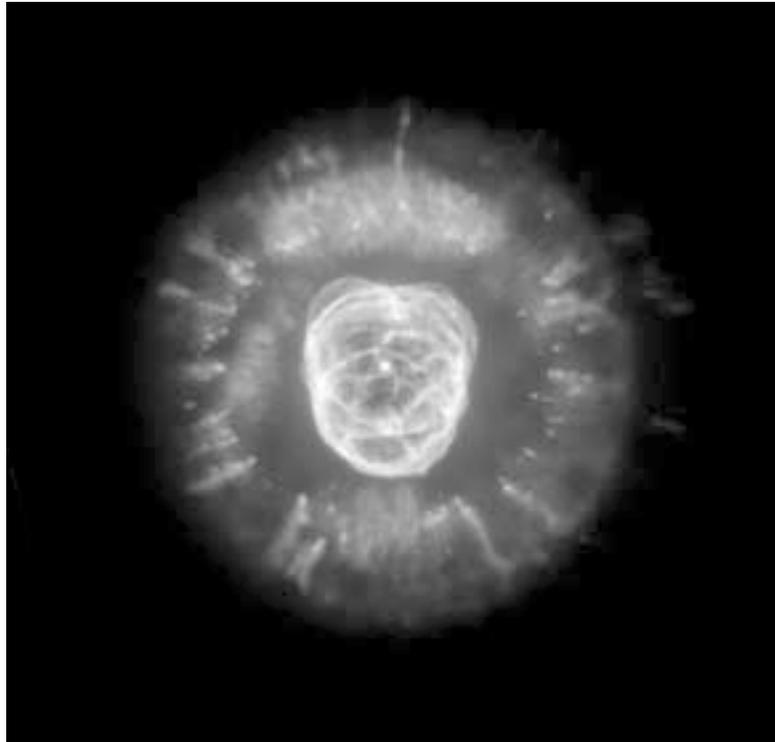
NASA's Hubble Space Telescope captured a majestic view of planetary nebula NGC 2392, which astronomers nicknamed "Eskimo Nebula" because of its resemblance to a face surrounded by a fur parka. This stellar relic, which represents the glowing remains of a dying, Sun-like star, was first observed in 1787 by astronomer William Herschel.

The planetary nebula began forming about 10,000 years ago, when the dying star began flinging material into space. It is composed of two elliptically-shaped lobes of matter streaming away from the dying star. In this photo, one bubble lies in front of the other, obscuring part of the second lobe.

Scientists theorize that a ring of dense material around the star's equator, ejected during its red giant phase, created the nebula's shape. This dense waist of material is plodding along at 72,000 mph (115,000 kph), preventing high-velocity stellar winds from pushing matter along the equator. Instead, the 900,000-mph (1.5 million-kph) winds are sweeping the material above and below the star, creating the elongated bubbles. The bubbles are not smooth like balloons, but rather have filaments of denser matter. Each bubble is roughly one light-year long and half a light-year wide.

Although astronomers are still puzzled about the origin of the comet-shaped features in the ring, a possible explanation is that these objects formed from a collision of slow- and fast-moving gases.

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About the Image

Astronomers used Hubble's Wide Field and Planetary Camera 2 to reveal fascinating details of the Eskimo Nebula. The "parka" in this image is actually a disk of material embellished with a ring of comet-shaped objects whose tails are streaming away from the central dying star. The bright central region is a bubble of material being blown into space by the central star's intense "wind" of high-speed material. The nebula's glowing gases produce the colors in this image: nitrogen (red), hydrogen (green), oxygen (blue), and helium (violet).

Credits: NASA, A. Fruchter and the ERO Team (STScI)

Why Study Star Death?

Studying the demise of Sun-like stars is important for understanding how two of the elements critical to human life—carbon and nitrogen, which are formed from the hydrogen and helium inside stars—are expelled into the interstellar medium. Eventually, these elements become the building blocks of new stars and planets.

The image was taken January 10-13, 2000, shortly after the space shuttle *Discovery* crew visited Hubble to restore it to full capability.

Definitions

New General Catalogue (NGC):

A catalogue of star clusters, nebulae, and galaxies compiled in 1888.

Planetary nebula: *A well-defined shell of gaseous material ejected by a dying, Sun-like star. The material glows from the radiation emitted by the central hot star it surrounds.*

Red giant: *A large, cool star near the end of its life. Red giants are hundreds of times larger than our Sun.*

Stellar winds: *Streams of material flowing outward from a star.*

Fast Facts

Location

In the constellation Gemini

Distance from Earth

5,000 light-years

Hubble Online

Hubble Space Telescope images, information, and resources are available on [HubbleSite](http://hubble.stsci.edu).

Point your browser to:

<http://hubble.stsci.edu>