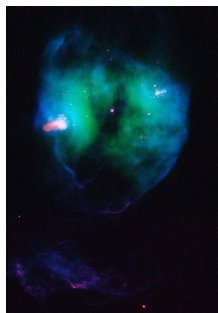


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By: Gabriel Gache, Science News Editor



NGC 2371 planetary nebula, in false colors
NASA/ESA - Hubble Space Telescope

Death of a Star

Hubble probes the nebula around a dead star

Take a good look at the picture of this nebula, this is how our solar system will look like in about 5 billion years or so. NGC 2371's glowing bubble of gas surrounding a white dwarf is a planetary nebula probably resulted in the explosion of an average star, relatively similar to the Sun. All that is left of the original central body is the core of the red giant after the ejection of the outer layers. The white dwarf remnant burns with a temperature of 133,315 degrees Celsius and is located in the direction of the Gemini constellation nearly 4,300 light years away. Upon closer investigation, the NASA/ESA Hubble Space Telescope was able to reveal some features that eluded all previous observations. The pink cloud of gas observed in the center left of the nebula is a clear indication that the matter in that region of space might have cooled and pulled together, while the rest of the nebula still seems to be hot. Similar dot-like features can be seen sprinkled throughout the nebula, possibly the presence of dense, small accumulations of cooled gas, opposite in relation to the position of the white dwarf. It is not yet certain what phenomenon could have created these pink features, but the most likely explanation could be asymmetric supernova explosions which favored the ejection of gas in a horizontal direction, as seen in the picture. Alternatively, similar effects could be determined by the presence of a second star orbiting around the white dwarf. NGC 2371 glows bright ultraviolet light, emitted by the central white dwarf. Planetary nebulae expand in space with the passing of time, a process further accelerated by solar winds produced by the hot stellar remnant. As it approaches the final stages of life, the white dwarf starts a gradual cooling, loses brightness and fades into the black background of space, as it turns into a brown dwarf. This is a picture represented in false colors, purely for the detection of light emitted by different chemical elements, such as nitrogen which shines in red, hydrogen represented in green, and oxygen in blue.