Hubble Captures Amazing Photo of Little Gem Nebula

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When stars like the Sun enter retirement, they shed their outer layers into space to create glowing clouds of gas called planetary nebulae. This ejection of mass is uneven, and planetary nebulae can have very complex shapes.

NGC 6818, also known as the Little Gem Nebula or IRAS 19411-1416, is a bright, fairly regular planetary nebula just over half a light-year across. It was discovered by the noted British astronomer Sir William Herschel in 1787.

The nebula lies in the constellation Sagittarius, around 6,700 light-years away.

It shows knotty filament-like structures and distinct layers of material, with a bright and enclosed central bubble surrounded by a larger, more diffuse cloud.

Scientists believe that a fast wind – material propelled by radiation from the hot central star – is creating the inner elongated shape of NGC 6818.

The material in the wind is traveling so fast that it smashes through older, slower-moving stellar debris, causing a ‘blowout’ at both ends of the bubble.

The central star of the nebula is rather faint and possibly of the Wolf-Rayet type.

With a temperature as high as 155,000 Kelvin and a luminosity estimated between 1,000 and 2,000 Suns, the star seems to be near its maximum temperature, after which it will cool and dim

to become a common sort of white dwarf.

The Hubble Space Telescope previously imaged NGC 6818 back in 1997, using a mix of filters that highlighted emission from ionized oxygen and hydrogen. The new image uses different filters to reveal a different view of the nebula.

Amateur astronomer Judy Schmidt submitted a version of the image to the Hubble's Hidden Treasures image processing competition.