

Chance meeting creates celestial diamond ring

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ring. This cosmic gem is unusually symmetric, appearing to be almost perfectly circular on the sky. Credit: ESO

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Most [stars](#) with masses similar to that of our Sun will end their lives as white dwarfs—small, very dense, and hot bodies that slowly cool down over billions of years. On the way to this final phase of their lives the stars throw their atmospheres out into the space and create planetary nebulae, colourful glowing clouds of gas surrounding the small, bright stellar relics.

This image, captured by ESO's Very Large Telescope (VLT), shows the remarkably round planetary nebula Abell 33, located some 1500 light-years from Earth. Being perfectly round is uncommon for these objects—usually something disturbs the symmetry and causes the [planetary nebula](#) to display irregular shapes.

The strikingly bright star located along the rim of the nebula creates a beautiful illusion in this VLT image. This is just a chance alignment—the star, named HD 83535, lies in the foreground of the nebula about halfway between Earth and Abell 33, in just the right place to make this view even more beautiful. Together, HD 83535 and Abell 33 create a sparkling diamond ring.

The remnant of Abell 33's progenitor star, on its way to becoming a white dwarf, can be seen just slightly off-centre inside the nebula, visible as a tiny white pearl. It is still bright—more luminous than our own Sun—and emits enough ultraviolet radiation to make the bubble of expelled atmosphere glow.

Abell 33 is just one of the 86 objects included in astronomer George Abell's 1966 [Abell Catalogue of Planetary Nebulae](#). Abell also scoured the skies for galaxy clusters, compiling the [Abell Catalogue](#) of over 4000 of these clusters in both the northern and southern hemispheres of the sky.

This image uses data from the FOcal Reducer and low dispersion [Spectrograph \(FORS\)](#) instrument attached to the VLT, which were acquired as part of the ESO Cosmic Gems programme.

Provided by ESO

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