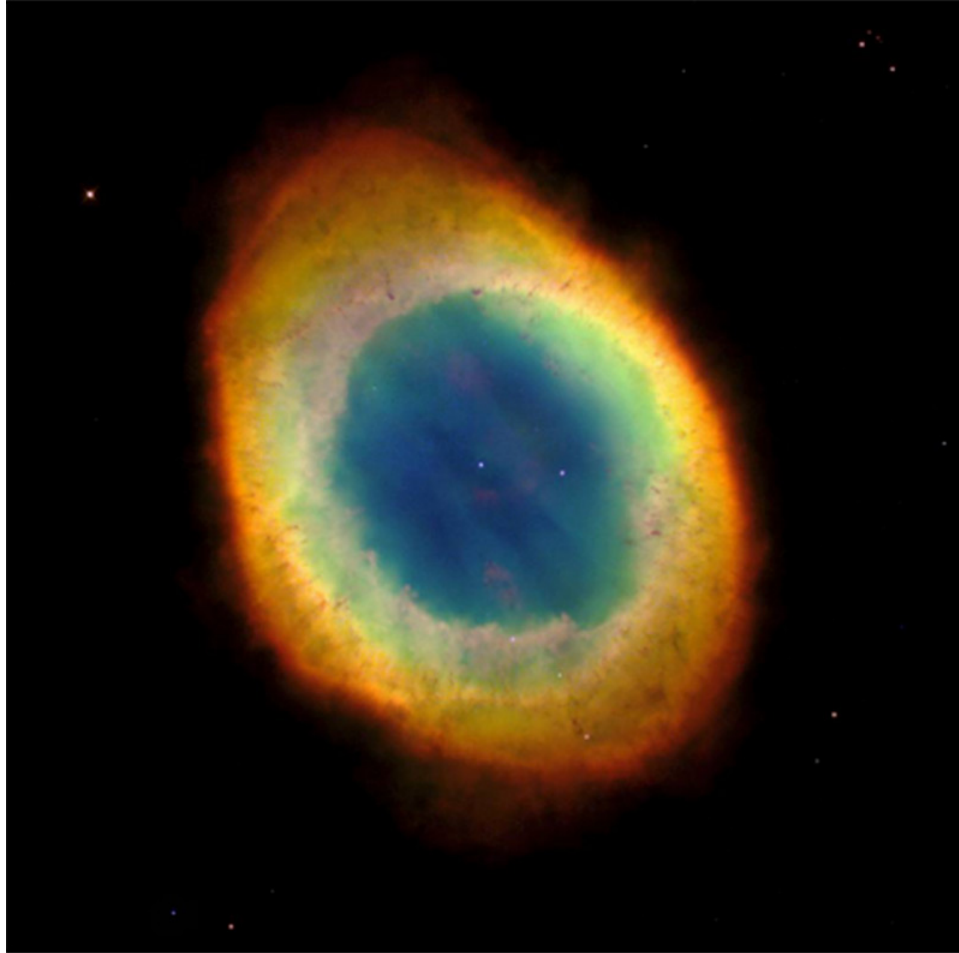


## 12.8: Planetary Nebula

The star's **planetary nebula** is created when a shell of gas is ejected by the star and illuminated by its central, White Dwarf. The term planetary nebula was coined by astronomer William Herschel in the 1780s as he was observing these objects. He brought attention to their round shapes, which reminded Herschel of planets. Planetary nebula are only visible tens of thousands of years, a short period in the life of a low-mass star. We see them due to the ultraviolet energy released by the White Dwarf. Once the White Dwarf cools and fades, neither the planetary nebula nor White Dwarf is visible. What remains is an expanding cloud of gas and dust and a carbon sphere.

**Note:** In the end, all that remains is a cold, dark mass composed mainly of carbon. These are occasionally referred to as **black dwarfs**, although there is debate if the Universe is old enough for any black dwarfs to exist.



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