

NGC 7293; The Helix Nebula

by Greg Morgan

The Helix Nebula, also known as the Sunflower Nebula, is a fluorescing cylinder of gigantic proportions pointed directly at Earth. From our vantage point, we are looking straight down a long tunnel of glowing gases, 1.5 light years in diameter, making it look more like a double ring than a cylinder. The expelled fluorescing gases of the outer rings appear red and are predominantly from nitrogen and hydrogen atoms being energized by the ultraviolet radiation from the central star. The greenish middle portion is evidence of excited oxygen atoms. The remnant central stellar core is destined to become a white dwarf.

The Helix Nebula is one of the closest of all planetary nebulae at a distance of 450 light years. It is the only planetary nebula for which a parallax could be obtained by ground-based observations. It is also one of the largest planetaries known. Its apparent diameter of 28 arc minutes is almost the same apparent size of the moon. Although the nebula is quite bright, its light is spread over this large area and offers a good challenge for visual observing. Caroline and William Herschel never cataloged it.

One day our Sun may evolve to look something like this. The Helix Nebula offers a dramatic snapshot of a brief final evolutionary stage in the life of a solar-type star.

Figure 1: NGC 7293; The Helix Nebula was imaged with a 10 inch Meade LX200 f/6.3 telescope with a focal reducer that gave an effective focal ratio of f/4.8 and ST-10XME CCD camera. Data were collected on 9/17/03. There were 30 Luminance, 30 Red, 30 Green and 60 blue images of 30 seconds each median combined for a total of only a 2.5 minute exposure.

