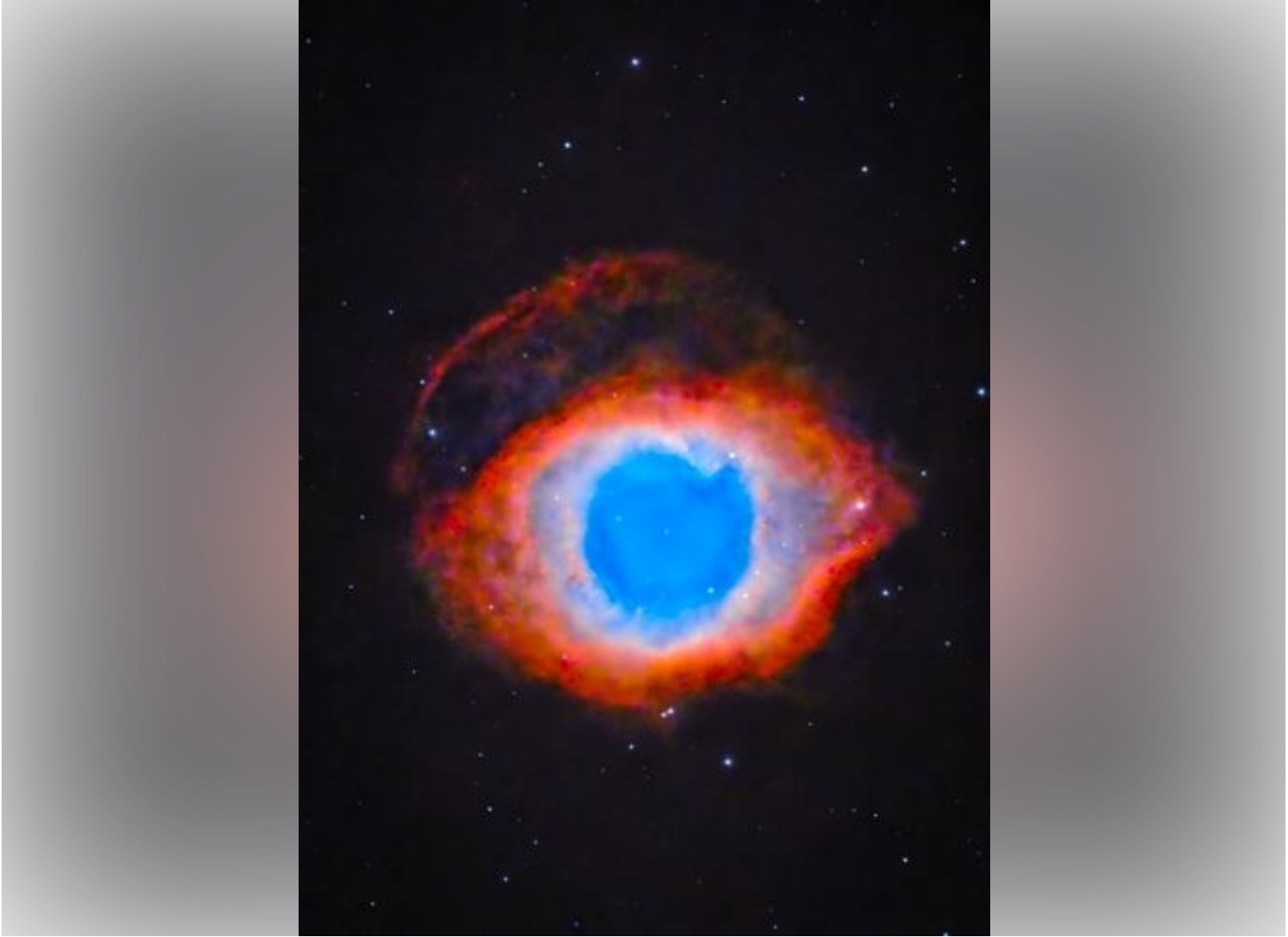


'EYE OF GOD'

Apr 27, 2023



The Helix Nebula is 650 light years from Earth and resides in the Aquarius constellation.

DR. CARLOS ROTELLAR

The Helix Nebula, also known as the “Eye of God,” is a planetary nebula located 650 light years from earth in the constellation Aquarius.

A planetary nebula is formed after a medium size star, like our sun, runs out of fuel and blows off its outer layers creating a cloud that resembles a ring. The core becomes very hot and glows in the center. Though these nebulae are called planetary nebulae, they have nothing to do with planets. Two hundred years ago William Herschel called these clouds planetary because they were rounded like a planet.

The Helix Nebula is the closest planetary nebula to earth, as well as the brightest and it is about 10,000 years old. The blue glow in the center comes from atoms of oxygen. Further out from the center we can see the ring of gaseous knots in a light orange. The most visible gaseous knots, although they appear small, are actually huge. The head of each knot is about twice the size of our solar system and their tails expand for billions of miles. The red ring contains mostly hydrogen and nitrogen.

Our sun is about 4.5 billion years old and has another 7 to 8 billion years to live. It is not big enough to go out as a massive supernova, but rather as a planetary nebula. In about 5 billion years, the sun will run out of hydrogen becoming unstable and it will start burning helium. Then, our star will expand and it will become a red giant which will engulf the inner planets, including earth. Eventually, the sun's core will collapse becoming a very hot white dwarf and it will expel its outer layers creating a planetary nebula. With time a white dwarf cools down and becomes a black dwarf that produces neither light nor energy. There are no black dwarf stars known in the universe because the time it takes to become a black dwarf is believed to be longer than the age of the universe itself, which is about 13.8 billion years old.

However, life on earth will cease to exist long before the sun dies. It is estimated that humanity has only about 1 billion years left on this earth. The sun increases in brightness 10% every billion years, although that does not sound like a lot, it will make earth too hot to sustain life.

Humanity has a billion years to find another home before time is up!

– Dr. Carlos Rotellar is a Bowling Green nephrologist who has had an interest in astrophotography and has been taking images of the universe from his driveway for several years. Website: Skyastrophotos.com

