Fun Facts:

**M57: RING NEBULA**

Computer Code: M57

* **Other Names:**
  + NGC 6720
* **Basics:**
  + Description: Planetary Nebula in Lyra
    - Planetary Nebula are the remains of a sun-like star that has used all of its hydrogen gas (fuel). In the center (difficult to see) is a white dwarf star. The Sun will become an object like this in 5 to 6 billion years. The glowing gases were once thought to be planets in the process of forming, hence the name “planetary nebula”.
  + Visual Magnitude: +8.80 (not visible to naked eye or even really in binoculars)
    - Best viewed through at least an 8-inch telescope
  + Apparent Size: 1.4 x 1.2 arcminutes
  + Distance: 1,400 light years away
    - Light we’re seeing now left M57 around 600 AD.
    - This is what was happening on Earth around 600 AD:
      * Islam was just getting going
      * There were only about 208,000 million people in the world
      * English poetry was being invented
  + Diameter: about 1 light year across
* **History:**
  + First discovered by French astronomer, Antoine Darquier de Pellepoix in January, 1779. He described it as, “a dull nebula, but perfectly outlined; as large as Jupiter and looks like a fading planet.”
  + Charles Messier discovered it independently only a few days later.
  + Messier & William Herschel assumed that the fuzziness was due to an unresolved “ring of stars.”
  + In 1800, Count Friedrich von Hahn discovered the faint central star at the heart of the nebula.
  + In 1864, William Huggins examined the spectrum of M57 & discovered that the light was from fluorescing gases, not unresolved stars. He concluded (correctly) that planetary nebula were not unresolved stars, but clouds of glowing gas.
* **Other Notes:**
  + The central star is a very faint magnitude 15.75, barely visible even with large telescopes.
  + It is approaching us at 21 km/sec.
  + It is likely not a shell or sphere of gas. It is more likely a tube or hour-glass shape that we are looking down the mouth of. It is probably similar to the Dumbbell Nebula, just seen from a different angle.
  + The inner regions appear darker because those parts are emitting mostly UV radiation, not visible light.
  + Planetary nebulae are formed by medium or low-mass stars (like our Sun). When they exhaust their hydrogen supply, they become red giant stars. Their internal nature then becomes unstable and causes their outer atmospheres to be expelled in energetic pulses. The escaping gasses form the nebula, leaving behind a super hot white dwarf star that illuminates the gaseous cloud with UV radiation.