



# Taken from the Hubble Telescope

*Image Credit: NASA, ESA and STScI*

- Pictured are the giant red nebula and its blue neighbor. These are part of a vast star-forming region in the Large Magellanic Cloud, a satellite galaxy of our own Milky Way, and located 163,000 light-years away.
- **Answer one of these and be prepared to share your findings:**
  - What is a nebula? What is a lightyear?
  - What is the Hubble telescope?
  - When was the scope launched, and what problems surfaced after its launch?



# Solutions

- Nebula = a giant cloud of dust and gas in space. Some nebulae (plural) come from the gas and dust thrown out by the explosion of a dying star, such as a supernova. Other nebulae are regions where new stars are beginning to form. <https://spaceplace.nasa.gov/nebula/en/>
- Light-year = a measurement of distance and not time (as the name might suggest). A light-year is the distance a beam of light travels in a single Earth year, or 6 trillion miles (9.7 trillion kilometers). <https://www.space.com/light-year.html>
- Hubble Telescope = Launched in 1990 by the space shuttle Discovery, the Hubble Space Telescope is a large solar powered scope. Hubble orbits about 547 kilometers (340 miles) above Earth. The length of a large school bus, it weighs as much as two adult elephants. Hubble travels about 5 miles per second: That is like traveling from the east to west coast of the United States in 10 minutes. Hubble takes sharp pictures of objects in the sky such as planets, stars and galaxies, and has made more than one million observations. We've seen detailed pictures of the birth and death of stars, galaxies billions of light years away, and comet pieces crashing into Jupiter's atmosphere. <https://www.nasa.gov/audience/forstudents/5-8/features/nasa-knows/what-is-the-hubble-space-telescope-58.html>
- Problems= It's most famous problem was that the primary mirror had been polished too flat. The flaw was tiny, 2/50 as broad as a human hair, but that was more than enough to keep Hubble from delivering the razor-sharp imagery that NASA had hoped. <https://www.skyatnightmagazine.com/space-missions/what-was-wrong-with-hubble-mirror-how-was-it-fixed/>