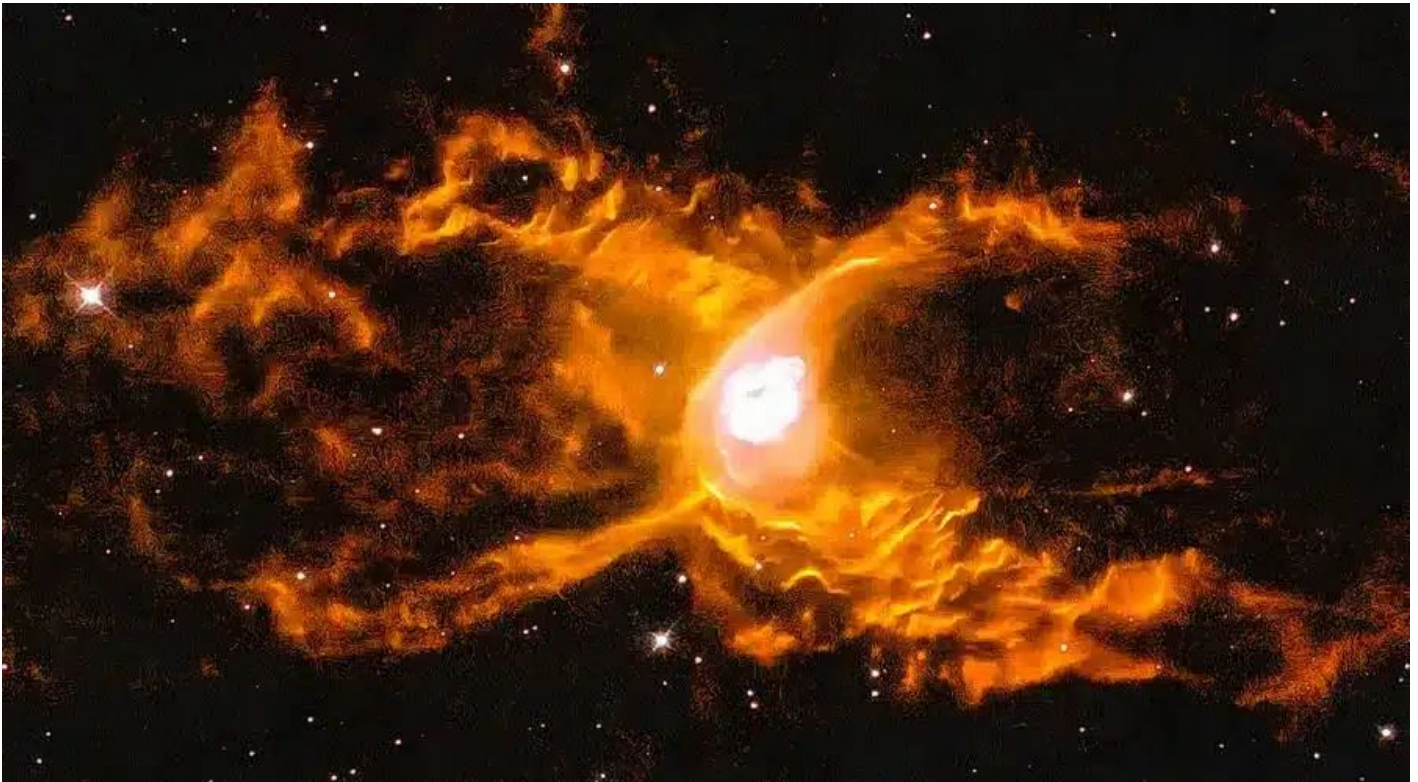


What is a Nebula?

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About Nebula:

- A nebula is a **giant cloud of dust and gas** in space.
- **Some nebulae** (more than one nebula) **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**. For this reason, some nebulae are called "**star nurseries**."
- **How do stars form in a nebula?**
 - Nebulae are made of dust and gases—mostly hydrogen and helium.
 - The dust and gases in a nebula are very spread out, but **gravity** can slowly begin to **pull together clumps of dust and gas**.
 - As these **clumps get bigger** and bigger, their **gravity gets stronger** and stronger.
 - **Eventually**, the **clump of dust and gas** gets so big that it **collapses from its own gravity**.
 - The collapse causes the **material at the center** of the cloud to **heat up-and** this **hot core** is the **beginning of a star**.
- **Nebulae exist** in the space between the stars—also known as **interstellar space**.

- The **closest known** nebula to Earth is called the **Helix Nebula**. It is approximately 700 light-years away from Earth.
- Nebulas come in **many shapes and sizes** and can be further **divided into** several subcategories, including **planetary nebulas, supernova remnants, dark nebulas, and emission nebulas**.

Red Spider Nebula:

- It is a **planetary nebula** located **3,000 light-years from Earth** and can be found in the **constellation of Sagittarius**.
 - It **harbours** one of the **hottest stars known**, which heats the gas around it to form shockwaves 62 billion miles (100 billion km) high.
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Q1: What is a Supernova?

A supernova is the name given to the cataclysmic explosion of a massive star. They are the largest explosion that takes place in space. It can emit more energy in a few seconds than our sun will radiate in its lifetime of billions of years. They're also the primary source of heavy elements in the universe. On average, a supernova will occur once every 50 years in a galaxy the size of the Milky Way.

Source: [Cosmic Spider: Nasa's Hubble Captures Stunning Image Of The Red Spider Nebula's Celestial Beauty](#)

Source: <https://vajiramandravi.com/current-affairs/what-is-a-nebula/>

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