

What is a Spider Star System?

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About Spider Star System:

- It is a **binary star system** in which a **superdense star (pulsar)** spins quickly, eats another star.
- The super-dense object that begins to pull a matter from the companion **resembles the habits of spiders of the genus Latrodectus**, in which the female eats the male after mating, hence the name came.
- Initially, the **dense pulsar strips material from the outer atmosphere of its companion**, periodically shedding the gathered material in violent explosions.
- In the **later stage** of their lifetimes, the **energetic particles streaming out** of the pulsar can **strip the atmosphere of its companion**.
- In either case, the **pulsar slowly erodes its companion over time**.
- **Two Types:**
 - **Black widows:** Binary pulsar systems, in which the **mass of a companion star is less than 5 percent of the pulsar**.
 - **Redback:** Binary pulsar systems in which mass of the **companion star is from 10 to 50 percent of the pulsar**.

What is a Binary Star System?

- A binary system is one in which **two stars orbit around a common centre of mass**, that is they are **gravitationally bound to each other**.

What are Pulsars?

- Pulsars are **rapidly spinning neutron stars, extremely dense stars** composed almost **entirely of neutrons** and having a **diameter of only 20 km (12 miles) or less**.
- They **emit concentrated streams of radiation** far across the cosmos.

What are Neutron Stars?

- They are the **remnants of giant stars that died in a fiery explosion known as a supernova**.
- After such an outburst, the **cores of these former stars compact into an ultradense object** with the mass of the sun packed into a ball the size of a city.

Q1) What is a supernova?

A supernova is what happens when a star has reached the end of its life and explodes in a brilliant burst of light. Supernovae can briefly outshine entire galaxies([opens in new tab](#)) and radiate more energy than our sun([opens in new tab](#)) will in its entire lifetime. They're also the primary source of heavy elements in the universe.

Source: [Scientists spot 1st gamma-ray eclipses from strange 'spider' star systems](#)

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