

What is Nova Explosion?

October 27, 2025 • vajiramandravi.com



About Nova Explosion:

- It is the dramatic **instance of a star exploding** as it interacts with another, nearby star.
- It's a one of many, repeated moments during the long, **slow, death of two neighboring stars** in the same system.
- Astronomers are waiting for the fiery explosion of **T Coronae Borealis**, also dubbed the “Blaze Star” and known to astronomers as “**T CrB**”.
 - For T CrB, this nova event happens roughly **every 80 years** — it's like Halley's Comet event every 76 years — so, astronomers call T CrB a “**recurrent**” nova.
 - They believe T CrB's prior eruptions were observed as long ago as December 1787 and even in October 1217 AD.
 - When T CrB erupts, its luminosity will increase dramatically, making it **visible to the naked eye for several days**.
- **Process**
 - The system contains two stars — a **white dwarf and a red giant**.
 - The **white dwarf** is an incredibly dense remnant of a once larger star. It's about the size of planet Earth but with the same mass as our sun.

- Its neighbor, the red giant, is in its **final years of existence** and is slowly being stripped of hydrogen by the gravitational pull of the denser white dwarf.
 - This star “cannibalism” causes a **tremendous buildup of pressure** and heat, which eventually triggers a huge thermonuclear explosion.
 - The explosion doesn’t completely destroy the stars, however, and so this event repeats over time. It can **carry on for hundreds of thousands of years**.
 - Different nova events have **different cycles**, ranging from a few years to hundreds of thousands of years.
-

Q1: What is a white dwarf ?

It is the stellar core left behind after a dying star has exhausted its nuclear fuel and expelled its outer layers to form a planetary nebula. It is what stars like the Sun become after they have exhausted their nuclear fuel.

Source: [How to see the September 2024 nova explosion without a telescope](#)

Source: <https://vajiramandravi.com/current-affairs/nova-explosion/>

© Vajiram & Ravi. For personal use only.