

## Blaze Star

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### About Blaze Star:

- Blaze Star, officially known as **T Coronae Borealis (T CrB)**, is a dim star located 3,000 light-years away from our solar system.
- It is found in the constellation **Corona Borealis** (the “Northern Crown”).
- The Blaze Star is a rare example of a **recurrent nova**, occurring once in every 80 years.
- **Stellar components:** The nova involves a binary star system comprising a **white dwarf** and a **red giant**.
  - The **white dwarf** draws material from the red giant, leading to periodic explosive increases in brightness.
  - The explosion occurs when the red giant’s surface temperature escalates dramatically, causing it to shed material onto the white dwarf, which then ignites a **thermonuclear explosion**.
- The upcoming stellar explosion is expected to be visible with the naked eye and shine as brightly as **Polaris, the North Star**, for about a week.
  - **NASA** predicts this event to occur sometime between **now** and **September 2024**.

- Past notable eruptions of T CrB were recorded in the years **1946** and **1866**, with earlier documented observations dating back to **1787** and **1217**.
  - **Frequency and Impact:** Novae like T CrB occur once every few decades to a century, differing from supernovae in scale, frequency, and consequences.
    - Unlike supernovae, novae do not destroy the star system but allow it to reset and repeat the cycle.
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## Q1. What is a Chandrasekhar limit?

The Chandrasekhar limit is the maximum mass of a stable white dwarf star, approximately 1.4 times the mass of the Sun, beyond which it collapses into a neutron star or **black hole**.

**Source:** A 'new star' could appear in the sky any night now. Here's how to see the Blaze Star ignite.

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Source: <https://vajiramandravi.com/current-affairs/blaze-star/>

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