

# Witness the unveiling of a 'New Star' in the celestial symphony: A Stellar Spectacle

This year, our night sky is expected to be decorated by a special opportunity to stargaze - a nova outburst

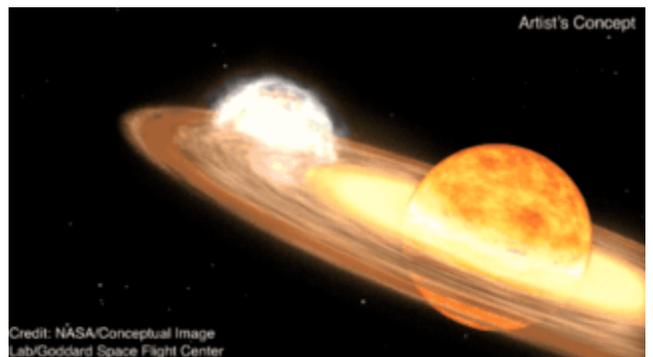
## What is a Nova Outburst?



A **nova outburst** is when a star suddenly becomes much brighter in the sky. This happens when materials from a nearby star falls onto the surface of a **white dwarf star**. The material that falls on the surface of the white dwarf typically consists of **hydrogen gas**. As this material accumulates on the surface of the white dwarf, **nuclear fusion** reactions can occur, which increases the brightness suddenly. This temporary increase in brightness can be viewed from Earth

## Where does the outburst take place?

The Star System at which we will be able to see this once in a lifetime event is called **T Coronae Borealis**, which is located about 3,000 light years away from Earth. The T Coronae Borealis consists of a Red Giant Star and a White Dwarf. The Red Giant becomes unstable due to its high and increasing pressure and temperature, leading it to ejecting or 'shooting off' its layers. This matter is collected by the White Dwarf on its surface. The White dwarf eventually heats up to the point



where it can cause a [runaway thermonuclear reaction](#) or in other words, a nova outburst, which is visible from Earth.

This rare stargazing opportunity will be visible in the constellation [Corona Borealis](#), and is expected to occur between the months of February and September of this year. This magnificent sight should be visible for several days to the naked eye, and can extend to just over a week with the help of binoculars.

## About the constellation

Corona Borealis, also known as the Northern Crown, is in the shape of a small, semicircular arc. It is located between the constellations

of [Boötes the Herdsman](#) and [Hercules the Strongman](#).

The Star system, T Coronae Borealis, normally exists with a magnitude of +10

meaning that it is too dim to see without special equipment. However, once the nova outburst occurs, the magnitude jumps to +2, making it much brighter to see, and is roughly around the same brightness as the [North Star, Polaris](#)



## What makes this special?

The T Coronae Borealis is considered to be a recurrent nova, and is one of only five in our galaxy. This sequence of events leading up to the nova outburst happens over a course of 80 years, meaning that we only see this happen every 80 years, with the last occurrence being in 1946. This star system and its outburst was first observed in 1866, by [John Birmingham](#).

During the outburst, its brightness increases by five times, making it appear as a new star in the sky. The T Coronae Borealis is also referred to as the '[Blaze Star](#)' due to its sudden increase in light intensity during the nova outbursts.

Citations:

<https://earthsky.org/space/a-new-star-from-a-nova-outburst-is-expected-soon/>

<https://www.thenationalnews.com/future/space/2024/03/13/stellar-fireworks-a-nova-explosion-could-be-visible-from-earth-this-year/>

<https://www.space.com/new-star-night-sky-nova-explosion-rare>