

# How is T Coronae Borealis getting ready for its next nova eruption?

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The 2021 eruption of the recurrent nova, RS Ophiuchi, has provided a lot of excitement for AAVSO observers and professional astronomers alike. T Coronae Borealis is a similar system – both T CrB and RS Oph are symbiotic stars *and* confirmed recurrent novae – and can reach magnitude 2.0 at the peak of its eruption. Given that the previous eruptions were seen in 1866 and 1946, a naïve extrapolation would suggest its next eruption will be in or around 2026. Many observers are preparing for this anticipated spectacle – but we shouldn't just observe it during eruption. We can learn a lot by also studying T CrB as it approaches its next eruption.

Nova eruptions are powered by nuclear fusion of accreted material on the white dwarf surface. A key question in recurrent nova research is how much matter is accreted to fuel these eruptions. The accretion rate can be estimated using UV and X-ray observations. Optical data indicate that T CrB began to brighten starting in 2014, in a manner strikingly similar to the historical brightening observed during 1938-1945, just before the 1946 eruption. By combining insights gained from the optical monitoring and occasional UV and X-ray observations, we (Luna et al. 2020, ApJLett, 902, L14) have suggested that T CrB accumulates much of the fuel for nova during these high states, lasting for about a decade each. We plan to continue our high energy observations using Swift, XMM-Newton, and HST as often as the time allocation committees let us. In the meantime, we are counting on the AAVSO observers to provide densely sampled optical light curves so that we can track the accretion rate until T CrB erupts again as a spectacular nova.