

Our Night Sky for May 6th, 2024

I recently mentioned Corona Borealis. Currently this small crown shaped constellation is about 30 degrees elevation from due east and has been in the news recently. The prediction is that there will be a nova in the next few months. I made a prediction about Betelgeuse going nova but the time frame I used was sometime between tomorrow and a thousand years from now. Why the difference and how can astronomers make predictions about stars that are five or six hundred light years away? Allow me to offer some basic facts. We can describe the fusion process as burning hydrogen to produce helium and a little bit of energy and a little bit of light. Fuel burn rate, the temperature of the star and its size are all features that describe a star and determine its life span. A comparison can be made between the absolute brightness of a star against its color or temperature that places a star at a predictable lifespan.

The predicted nova in Corona Borealis is a special case. Not a middle of the road safe main sequence star like our sun but a small high mass star being orbited by a second star. One star is pulling fuel mass from a fairly normal star to the other and over filling its tank. This excessive mass overcomes the nuclear reactions at the core and the star collapses. About every eighty years it has sucked enough fuel from its neighbor and blows it's top once again. One of the uncountable wonders of Our Night Sky.