Gigantic Star KY Cygni

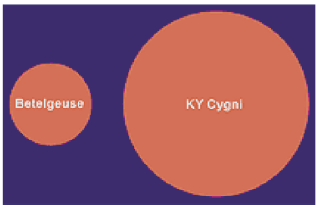
By Clark M. Thomas

When the Sun reaches the next phase of its life about five billion years into the future it will enter a **red giant** stage. It will swell up to at least the diameter of Earth's current orbit (1 astronomical unit), probably go nova, and then collapse into a remnant white dwarf much smaller than today's Sun.

We don't have to wait to see some giant stars from a safe distance. Betelgeuse is the best example of an even larger **supergiant**. Its diameter is about 2.8 a.u. (between Mars at 1.5 a.u., and Jupiter at 5.2 a.u.) That would bring the gassy surface of Betelgeuse into the asteroid zone. Of course, being so far away, even the largest star is just a point of light to us.

Amazingly, there is an even larger, rare star category of **hypergiants**, which I like to call superduper giants. Three of the largest hypergiant stars have been located in the Milky Way. One of them is fairly easy to locate visually in the summer skies. The other two are hidden visually by dust clouds near the center of our galaxy. The third one in Cygnus can be seen by a moderately large scope, or imaged with a small scope using a CCD.

The third hypergiant, KY Cygni, at about 5,200 light years away, is almost incomprehensibly huge. **This one star is larger than the orbit of Jupiter, approaching the orbit of Saturn (9.5 a.u.) in size!** Here is a size comparison:



KY Cyg is a spectral class M4 supergiant, and a pulsating variable. It ranges in visual magnitude from 13.3 to 14.6, so you may or may not get lucky when looking for it. The 2000 coordinates, 20:25.57 +38:21.11, are not far from M29. If you are hunting for this object, I recommend you download a star field from the Aladin previewer site: http://aladin.u-strasbg.fr/AladinPreview

Below is an image showing this star's visual relationship to open cluster, M29 (upper left). This b&w image is a DSS image favoring red and infrared, which makes KY Cyg appear much brighter than it does visually. In this view our object star is the bright one near lower center.