**Carbon Star Basics**

* As sun-like stars age, their core compresses and heats up and basically cooks helium nuclei into carbon. The convective currents in the star’s atmosphere move the carbon from the core to the outer layers where they form a fine soot. The soot scatters away blue and green light, so only the red and orange wavelengths penetrate the carbon dust to reach our eyes.
* Sunsets are red for a similar reason. At the horizon, sunlight travels through more atmosphere, scattering away the blues and greens, leaving the red for our eyes.
* All carbon stars are variable and vary in brightness over the course of months or even more than a year.
* Carbon-dominated stars are classified as Class C stars.
* B-V Index
  + Astronomers don’t use “red” or “blue” to describe star tints because color perception is subjective. Instead, they use a B-V color index by measuring a star’s magnitude or brightness through a B (blue) filter and V (visual) filter. The difference between these two numbers is called the B-V index. Extremely hot stars give off more blue light and have B-V values generally less than zero. Cooler red stars have positive indices. Examples:
    - Blue-white Spica has a B-V of -0.3
    - The Sun has a B-V of +0.65
    - R Leporis (a carbon star) is +5.7 and is very red
  + Generally, the larger the number, the redder the star.
* Carbon stars were discovered in the middle of the 1800s by Father Angelo Secchi.
* They are the source of much, if not most of the carbon in the universe.