



# **A Comprehensive Study of Double-Lined Binary White Dwarfs**

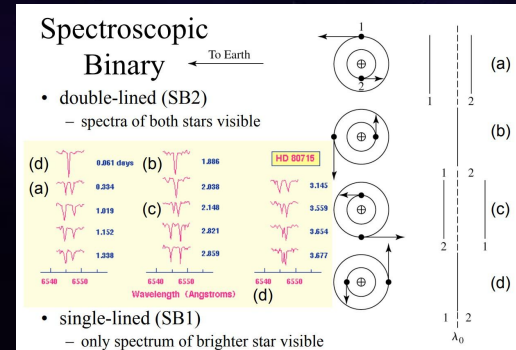
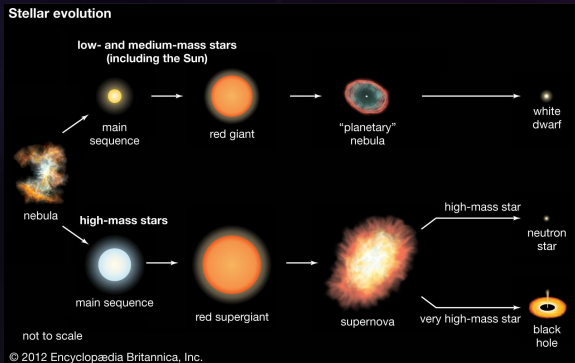
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# Project Overview

- Twelve potential double-lined binary white dwarf systems
- Not much is known about these systems
  - Only a small sample is known
- Analyzing the spectrum of each of these systems
  - Specifically the hydrogen-alpha line
- Our goal is to constrain these systems' parameters
  - Mass, period, and merger outcomes

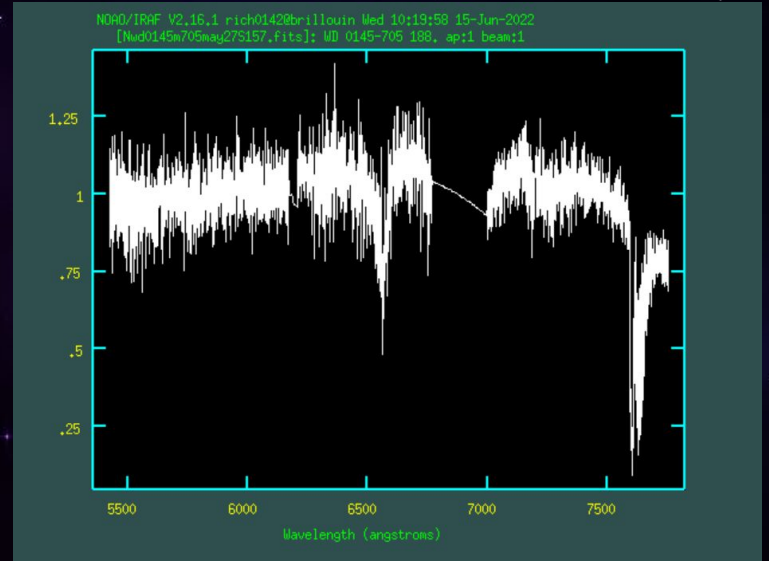
# Double-Lined Binary White Dwarfs

- What is a white dwarf?
  - Stellar core remnant
- What does double-lined binary mean?
  - A system with two stars orbiting each other that has their orbital motion along our line of sight, giving us shifts in spectral lines as they orbit each other



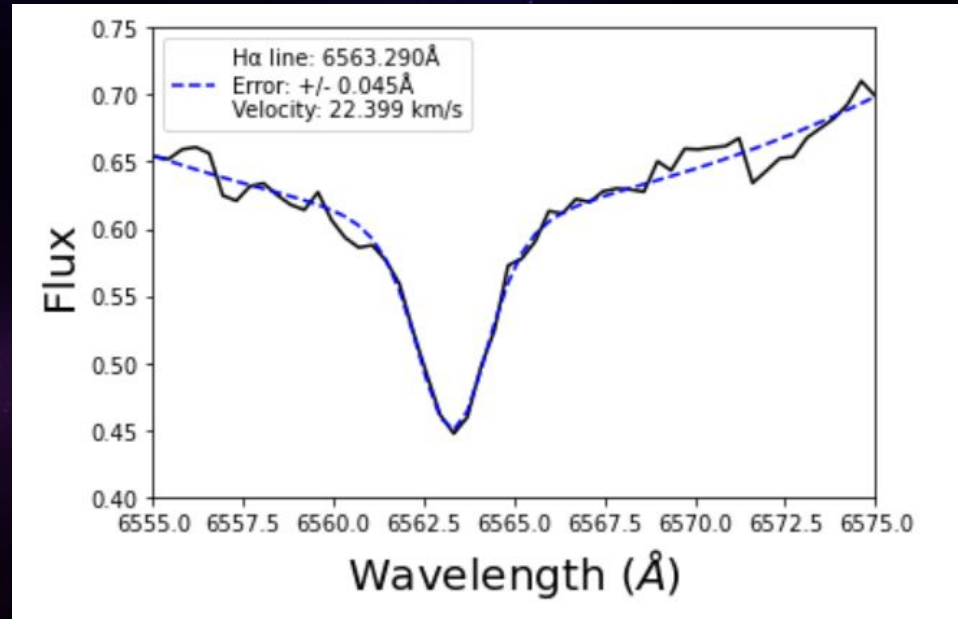
# Data Analysis

- Converting raw data into a readable graph using IRAF (Image Reduction and Analysis Facility)



# Data Analysis Cont.

- Closer look at the Hydrogen-Alpha absorption feature for a sample target
- Does not show double-lined feature



# Moving Forward

- Gemini is still observing our targets
- Further error analysis on each target is needed
  - Bootstrapping the data
- Hopeful to find double-lined features in these systems

**Questions?**