



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Matthew D. Sandoval	Project Number S1715
Project Title The Effect of the Magnitude of RR Lyr on Its Temperature	
Abstract Objectives/Goals The objective of this study was to determine if there is a relationship between the magnitude of RR Lyra and its Temperature Methods/Materials Telescope, CCD Camera, Alpy Spectrometer, ISIS Spectroscopy Software, CCDSoft. Took a series of RR Lyra spectra along one pulsation cycle along with calibration images. Also took a series of photometry images and calibration images to use differential photometry and compare the temperature to the magnitude. Results There was a direct relationship between the temperature and the magnitude of RR Lyra. Conclusions/Discussion The results of this study support the research done by Sir Arthur Eddington and his theory of why variable stars pulsate. The direct relationship may provide a method for determining the temperature of RR Lyra based on its magnitude.	
Summary Statement I found that there was a direct relationship between the magnitude and temperature of RR Lyra.	
Help Received My mentor, Robert Buchheim, provided the telescope as well as other materials and software for my project. He also taught me how to do the data reduction on the images.	