# CALIFORNIA STATE SCIENCE FAIR  
## 2008 PROJECT SUMMARY

<table>
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<th>Name(s)</th>
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<td>April R. Gadsby</td>
<td>J1606</td>
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## Project Title

**Light Curve of a Binary System**

## Objectives/Goals

To determine if you can tell from a light curve if a variable star is a binary system.

## Methods/Materials

I used the Muhlenberg Observatory 35m telescope to take images of the binary system UNSW-V-444. I then documented the intensity, magnitude, and correlated it to the time the image was taken. This data was used to develop the system's light curve. I then compared my light curve to light curves of known binary systems.

## Results

My lightcurve and the lightcurve of the known binary stars followed the similar part of large fluctuation, smaller fluctuations, and then large fluctuation.

## Conclusions/Discussion

Because the graphs followed a similar pattern, UNSW-V-444 was proven to be an eclipsing binary system. I concluded that by using this method an astronomer can figure out if a variable star is a binary system.

## Abstract

To determine if you can tell from a light curve if a variable star is a binary system.

## Summary Statement

How an astronomer can tell from a lightcurve whether or not a variable star is a binary system.

## Help Received

Kim Miller helped me make contact with astronomers; Dr. Marton Hidas helped me find a system to observe; Dr. Rachel Street, Dr. Jessica Barton, and Dr. Hidas gave me time on the telescope and helped me learn how to use the telescope.