



SACRAMENTO STATE

Department of Physics & Astronomy Fall 2006

Physics Colloquium Series
~ Summer Student Research Talks ~

My research project was the photometric analysis of the globular cluster M2. I conducted standard IRAF image reduction using the DAOPHOT photometry package. The data was used to construct color-magnitude diagrams to identify stars in different stages of their evolution. The morphology of the horizontal branch (HB) was compared to synthetic data sets to predict the evolution of asymptotic giant branch (AGB) stars and the behavior of the $^{12}\text{C} + \alpha \rightarrow ^{16}\text{O} + \gamma$ nuclear reaction. For models of $0.64M_{\odot}$ initial mass and metallicity of $Z [\text{Fe}/\text{H}] = 0.0006$, a theoretical value for $R_2 [N_{\text{AGB}}/N_{\text{HB}}] = 0.130 \pm 0.001$ was obtained. In comparison, our observational data yielded an $R_2 = 0.127 \pm 0.003$.

Rob Custodio

Dwarf galaxies are the most common type of galaxy known to inhabit the universe. Because these galaxies are believed to comprise the “building blocks” of larger galaxies, including spiral galaxies like the Milky Way, understanding their evolution is crucial to understanding galactic evolution as a whole. Galactic surface photometry forms an important part of the methodology used to study these faint, embryonic stellar congregations. In my talk, I will be presenting ongoing research performed this summer on 24 dwarf galaxies in the Virgo Cluster using this technique.

Kristoffer Karas

Thursday, September 7, 2006

4:00-5:20 PM MND 1015

OPEN & FREE TO ALL STUDENTS, FACULTY & PUBLIC