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Finding Variable Stars in Planetary Nebulae Using the ISIS Image Subtraction Software

Jake Long

Kevin Nault

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Finding Variable Stars in Planetary Nebulae Using the ISIS Image Subtraction Software

Author: Jake Long and Kevin Nault

Affiliation: Physics and Astronomy

Planetary nebulae are a brief and often spectacular stage in the life of stars like the sun during which the star expels its outer layers into space. In order to explain the great variety of observed shapes among planetary nebulae, we are examining the theory that binary central stars of planetary nebulae are a significant factor in their shaping. We determine if the central star of planetary nebulae is binary by looking for photometric periodic variability, a common feature of close binary systems. Using existing data we evaluate the variability using a computer program called ISIS. We have seen the central star of Pe 1-9 show variability due to a close binary system. The remaining analyzed targets Mz 2, NGC 5844, NGC 2392 show no variability within our detection limits, and the results from NGC2899 were inconclusive.

Information about the Author:

Jake Long is a junior physics major from DeMotte, IN.

Kevin Nault is a senior physics major from Chesterton IN.

Faculty Sponsor: Todd Hillwig

Student Contact: jacob.long@valpo.edu