

SAN DIEGO STATE UNIVERSITY DEPARTMENT OF ASTRONOMY MASTER'S THESIS TALK

Speaker: Stephanie Lauber

Topic: The Spatial Distribution of Novae in M31 from the Research-Based Science Education Program

Time: 4:00 PM, Tuesday, September 22

Place: Room 215, Physics-Astronomy Building (PA-215)

Abstract:

Since 1995 the Kitt Peak National Observatory WIYN 0.9-m telescope has been used to monitor M31 for novae as part of the Research-based Science Education Program (RBSE). The resulting images, which cover the inner 20 square arc minutes of M31, are taken through a broad-band H-alpha filter to isolate strong Balmer emission lines characteristic of novae shortly after eruption. We present a reanalysis of the RBSE data set within the inner 20 square arc minutes of the galaxy to determine updated spatial and cumulative distributions. The novae population fall off more slowly than bulge and R band light in the galaxy, which is not seen in previous H-alpha surveys. A Monte Carlo simulation based on maximum magnitude and rate of decline of novae in H is used to determine a survey nova rate of  $13 \pm 1$  per year representing a global novae rate of  $\sim 39$  per year.