# PHYSICS & ASTRONOMY SEMINAR



Sponsored by the Department of Physics & Astronomy East Tennessee State University, Johnson City, TN 37614

## Don Luttermoser

Department of Physics and Astronomy, ETSU

will speak on ...

# Mira Variable Stars: A Shocking Study

## <u>Abstract</u>

The physical processes in the atmospheres of asymptotic giant branch (AGB) stars have many important attributes. Their large mass-loss rates impact their evolution and enriches the metal content in our galaxy. Virtually all AGB stars vary in brightness, which includes the Mira-type variables. The "mira" variability is understood to be caused by pulsations which produce a 'shocked' atmosphere. Low densities in the atmospheres of these stars cause the atomic excitation and ionization rates and the radiation field not to be in equilibrium. The cool atmospheric temperatures of these stars allow molecules and dust to form which further complicates the picture – the formation of these species may not be in equilibrium either. This talk will highlight what has been learned from the spectral analysis of these stars at ultraviolet, visible, and infrared wavelengths.

Note that this is a Sample Presentation designed to instruct students taking PHYS-4850 in the techniques in giving a scientific presentation. This talk will not be advertised.

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MONDAY, March 23, 2015, 4:00 p.m. Room 265 (D.M. Brown Hall)

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No refreshments will be served at this presentation.