

University of Notre Dame
College of Science
Department of Physics

ASTROPHYSICS SEMINAR

Globular Clusters, Galaxy Formation, Dark Matter, and Black Holes

Professor Katherine Rhode
Indiana University-Bloomington

Tuesday, November 9, 2010 12:30 p.m. NSH 184

Globular clusters (GCs) serve as valuable tracers of the origins and star formation histories of galaxies. I will present selected results from a wide-field optical imaging survey of the GC systems of elliptical and spiral galaxies beyond the Local Group. Quantifying the global properties of the galaxies' GC systems provides an important test of models for the formation of giant galaxies. The survey results are generally consistent with a hierarchical galaxy formation scenario in which metal-poor GCs form at high redshift in protogalactic building blocks and metal-rich GC populations are built up over time in gas-rich mergers. I will also summarize our ongoing efforts to measure the radial velocities of the GCs found in the survey, and show how this allows us to trace the structure of the host galaxies' outer halos. Finally, I will briefly describe the discovery of a black hole X-ray source in one of the globular clusters we identified in the Virgo elliptical galaxy NGC 4472.

