



MITCHELL INSTITUTE ASTRONOMY SEMINAR SERIES

David Sand, Ph.D.

Texas Tech University

Monday, February 9, 2015 | 11:30 AM | MIST M102

Moving Near Field Cosmology Beyond the Local Group

Since the dynamical time within a typical galaxy halo is comparable to the age of the Universe, evidence of galaxy buildup in the form of streams and subhalos allow for quantitative studies that provide stringent tests of our picture of galaxy formation. This, in a nut shell, is 'Near Field Cosmology' -- studying the nearby Universe to understand galaxy formation. Indeed, over the last decade, wide-field surveys have revolutionized our view of the Local Group, with dozens of new streams and satellite galaxies now amenable to study. However, to verify that our understanding of galaxy formation in a Λ CDM context is correct, we must measure the faint satellite and stellar stream content of a variety of galaxies, across morphologies and environments. This has not been accomplished yet. Here Dr. Sand will talk about two programs to move Near Field Cosmology beyond the Local Group: a) a search for dwarf galaxy counterparts to the recently discovered ultra compact high velocity HI clouds in order to find isolated, star-forming dwarfs in the Local Volume and b) a panoramic survey around two of our nearest galaxy neighbors -- NGC 253 and Centaurus A -- to measure their faint end satellite luminosity function and to understand the buildup of their stellar halos.



MITCHELL INSTITUTE
TEXAS A & M UNIVERSITY