

Beth Willman – Colloquium – 3/21/2019

Title: The Most Magnificent Map Ever Made

Abstract: In 2022, the Large Synoptic Survey Telescope (LSST) will embark on making a 10-year, 800-frame movie of half of the sky in six optical bandpasses. This survey was designed around four key science pillars: exploring the transient and variable optical sky, delving into the nature of dark matter and dark energy, mapping the Milky Way and its neighborhood, and taking an inventory of our Solar System. LSST will be a discovery machine for an enormous number and diversity of objects across these fields (including Near Earth Objects, distant supernovae, and ultra-faint galaxies).

Viewing a single, full-resolution LSST image will require 400 HDTVs (~half the size of a basketball court). To enable a diverse scientific community to conduct research with LSST's high volume and high velocity data set, LSST is being built to turn its 3 million constituent images into a set of time domain and annual data products. In this talk, I will give an update on progress towards first-light and on ways for community members to get involved now. I will also highlight LSST's potential roles in defining the infrastructure necessary to enable community science with petabytes of data, corresponding cross-disciplinary opportunities with data science and computer science, and increasing diverse participation in STEM.