

PHYSICS
COLLEGE OF ARTS AND SCIENCES

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE WOMEN

APPLICATION DEADLINE: 03/01/2018

PROJECT TITLE: Cosmology with the Cosmic Microwave Background

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Project Description

The Cosmic Microwave Background (CMB) is the oldest light in the universe, providing a snapshot of conditions less than 400,000 years after the Big Bang. The Cincinnati CMB group is primarily involved with the Keck Array and BICEP3 telescopes, which observe from the South Pole. The goal of these experiments is to measure the signature of primordial gravitational waves via the polarization pattern of the CMB.

The WISE student will pursue one of several possible data analysis projects. Topics include instrumental calibration for Keck Array and BICEP3 or statistical analyses that use data from a variety of sources to constrain cosmology. This project will develop computing and data analysis skills. Prior programming experience is helpful, but not required.