Physics Colloquium

Wednesday

January 24

4:00 P.M.

Rm 118 NSH

Seeing Galaxies as Collections of Stars

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STScI

Since the pioneering work of Henry Norris Russell 100 years ago, the study of nearby stellar populations in the Milky Way has served as a foundation for our quest to understand the nature of galaxies in the Universe. Today, studies of resolved stellar populations constrain fundamental relations that define how stars form, how they evolve over time, and how they dramatically transform themselves in the final stages of stellar death. Understanding these processes give us a prescription to interpret all light from the Universe and to measure the physical state of galaxies. In this talk, I'll present new highest-precision observations that we've taken of nearby stellar populations, using the biggest ground and space based telescopes such as the Keck 10-meter telescope on Mauna Kea and the Hubble Space Telescope in orbit. These data are providing unprecedented constraints on our understanding of how stars evolve, and act as a bridge between studies of the nearby and distant Universe. I'll also discuss new opportunities for stellar population studies with an impressive suite of astronomical tools that are now on our horizon - GAIA, JWST, LSST, WFIRST, 30-meter telescopes.

PHYSICS