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The SkyHopper Space Telescope CubeSat

Tuesday, 22 October 2019 11:30 (30 minutes)

I will present an overview of the SkyHopper 12U CubeSat, a mission concept for an Australian-Italian space telescope - currently funded in Australia for detailed definition - which will demonstrate feasibility of cryogenic infrared imaging from a nano-satellite platform. SkyHopper will carry a four channel camera covering the spectral range from 0.8 to 1.7 micron simultaneously, and be capable of autonomously pointing to new targets within two minutes. The combination of timeliness on target and low-noise infrared image quality from space will offer a facility unique in the world for multiple areas of astronomy, including rapid follow-up of infrared transients such as Gamma Ray Burst afterglows at the edge of the observable universe, discovery of potentially habitable Earth-size planets around nearby cool stars, and measurement of the Cosmic Infrared Background, which encodes information of galaxy formation processes across time. The talk will focus in particular on the results from the spacecraft's preliminary concept design to illustrate how advances in CubeSat technology are allowing us to meet ambitious mission science requirements and a lean timescale for final design, construction and launch.

Primary authors: Prof. TRENTI, Michele (University of Melbourne); SKYHOPPER TEAM (-)

Presenter: Prof. TRENTI, Michele (University of Melbourne)