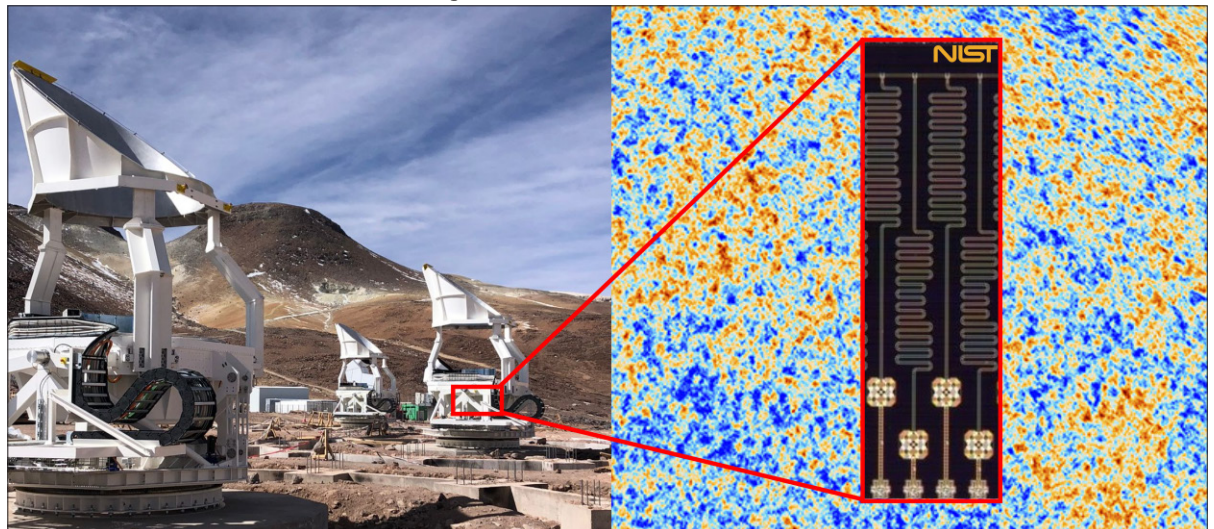


Maximiliano Silva-Feaver
UCSD & The Flatiron Institute

September 8, 2022 at 1:00 p.m. in WL-216 & Zoom
**Microwave SQUID Multiplexer Development for the
Simons Observatory**



The Simons Observatory is a next generation cosmic microwave background (CMB) observatory sited at Cerro Toco in the Atacama Desert in Chile, scheduled to begin site commissioning in early 2023. It consists of three low angular resolution telescopes dedicated to measuring the degree scale B-mode signal generated from gravitational waves during inflation and one high angular resolution telescope focused on measuring secondary arcminute scale effects. The arc-minute resolution telescope will allow us to better constrain primordial non-gaussianity, the neutrino mass hierarchy, the number of effective relativistic species, and the growth of large scale structure. We are fielding 70,000 background limited 100 mK transition edge sensor polarimetric bolometers which enables a new frontier in sensitivity and is a key technological enabler for the observatory's science goals. In order to scale to this large detector count a new superconducting cryogenic readout scheme, the microwave squid multiplexer, was developed. I will present on the development of the multiplexer, and the requisite room temperature electronics developed to read it out, its packaging, and integration into a scalable and deployable system for the observatory. I will conclude with an outlook for the future of the observatory and applications for the microwave squid multiplexer technology.

Lunch with the speaker will be provided from 12-1 p.m. for those who RSVP by Tuesday, September 6th at <https://tinyurl.com/npa-signup>.

Host: Fernando Flor

Connection info: <https://yale.zoom.us/j/98300235819>

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