

# Cosmic Origins UV STIG's

## Quorum for Ultraviolet Exploration of Science and Technology

presents a Double Header on Photothermal UV Detectors  
on Friday 20 October 2023 – 14:00 -15:00 ET

<https://zoom.us/j/2824137831>

Ben Mazin (UCSB) will present on

### Microwave Kinetic Induction Detectors (MKIDs)

Optical and near-IR Microwave Kinetic Inductance Detectors, or MKIDs, are superconducting detectors that can tell you the energy and arrival time of each individual photon without false counts. In this talk I will discuss the recent progress my group has made on improving MKID spectral resolution to  $R > 30$  and fielding them at some of the largest telescopes in the world.

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Boris Korzh (JPL) and Adam McCaughan (NIST) will present on

### Superconducting Nanowire Single Photon Detectors (SNSPDs)

Superconducting nanowire single-photon detectors (SNSPDs) are the highest performing sensors available for time-resolved single-photon counting, having demonstrated system efficiencies as high as 98% in the near-infrared, dark count rates below  $1 \times 10^{-5}$  cps per pixel, array formats as large as 400,000 pixels and sensitivity from the ultraviolet (250 nm) to the mid-infrared (29  $\mu\text{m}$ ), while possessing zero read noise. With typical operating temperatures between 1-4 K, a growing number of applications are adopting SNSPDs. These detectors are currently deployed at the Palomar Observatory as the ground receiver for NASA's Deep Space Optical Communication (DSOC) project, scheduled to receive data from the Psyche spacecraft, as well as other facilities such as Table Mountain, White Sands and Goldstone. Current development efforts are focused on demonstrating SNSPD arrays with broadband efficiency from the far-UV to the near-infrared, as well as raising the technology readiness level through radiation, vibration and lifetime testing.