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Results from Near-IR Microwave Kinetic Inductance Detectors for Exoplanet Direct Imaging

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Microwave Kinetic Inductance Detectors, or MKIDs, are superconducting detectors that can serve as noise-free integral field spectrographs on a chip in the optical and near-IR. Our lab has built and been operating two instruments based on MKIDs: the 10 kpix DARKNESS instrument at the Palomar Hale Telescope which works with P3K and SDC, and the 20 kpix MEC at the Subaru Telescope permanently mounted to SCExAO. I will review the latest progress in near-IR MKID arrays, the performance of MEC and DARKNESS, and show new work on using individual photon arrival times for speckle discrimination. I will also present the first scientific results of MEC.

Less than 5 years of experience since completion of Ph.D

N

Student (Ph.D., M.Sc. or B.Sc.)

N

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