Developments in Ultraviolet, Optical, and Near-IR Microwave Kinetic Inductance Detectors

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In the last six years we have made remarkable progress in turning superconducting lumped element microwave resonators into the most powerful UV, optical, and near-IR (UVOIR) detectors in the world. Arrays of these UVOIR Microwave Kinetic Inductance Detectors (MKIDs) produced the first astronomical paper published with MKIDs at any wavelength, and have the potential to transform UVOIR astronomy. This talk will detail the current array design and on sky performance, as well as describe significant recent improvements in arrays. These arrays are currently being integrated into three separate 10-20 kpix instruments for Exoplanet detection and characterization.