

Jonas Zmuidzinas



A native of Southern California, Jonas Zmuidzinas received his B.S. in physics from Caltech in 1981 and his Ph.D. in physics from UC Berkeley in 1987. He was a postdoctoral fellow at the University of Illinois in 1988-89 and then joined the Caltech faculty as an Assistant Professor of physics in 1990. He became Associate Professor in 1995, Professor in 2000, and Merle Kingsley Professor in 2010. Zmuidzinas has collaborated closely with JPL scientists and technologists since joining the Caltech faculty. He has held a joint appointment as JPL Senior Research Scientist since 2006 and served as Director for the JPL Microdevices Laboratory in 2007-2011 before moving into his current role as JPL Chief Technologist.

His research interests center on astrophysics at submillimeter and far-infrared wavelengths, including the development of the technology needed to fully exploit this portion of the spectrum. As a graduate student, he helped build a far-infrared laser heterodyne spectrometer that was used for astronomical observations on the NASA Kuiper Airborne Observatory (KAO). At Illinois, and later at Caltech, he focused on pushing superconducting tunnel junction (SIS) mixer technology into the THz range. This work provided the basis for instruments developed for NASA's Kuiper Airborne Observatory and its successor, SOFIA, with Zmuidzinas serving as Principal Investigator, as well as Caltech/JPL hardware contributions to the HIFI instrument now flying on the European Space Agency's Herschel Space Observatory. Starting in the late 1990s, his efforts shifted towards developing the detector and instrument technologies needed for observing distant, high-redshift submillimeter-bright galaxies. This goal motivated the invention of a simple, highly multiplexable superconducting detector array concept (MKIDs), the initiation of a project to construct the first broadband grating spectrometer for mm-wave redshift measurement (Z-Spec), and involvement in a multi-institutional effort to construct a 25-meter submillimeter-wave telescope (CCAT) at a 5500 m altitude site in the Chilean Andes.