Jonas Zmuidzinas
CURRICULUM VITAE

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Biographical Data

Birthdate: 8 September 1960

Birthplace: Duarte, California

Citizenship: United States

Marital status: Married, Vilia E. Zmuidzinas, 1985. Two children, Regina Audra and Lina Vilia Zmuidzinas

Education

1981 B.S., physics, with honors, California Institute of Technology, Pasadena, California.

1987 Ph.D., physics, University of California, Berkeley. Thesis advisors: Drs. A. L. Betz and C. F. McKee.

Positions

1978-81 **Undergraduate Assistant**, California Institute of Technology, Pasadena, California. Analyzed calibration data and developed data analysis algorithms for a cosmic-ray electron spectrometer flown on the NASA Voyager missions.

1981-83 **Teaching Assistant**, University of California, Berkeley.

1982-87	**Research Assistant**, University of California, Berkeley. Thesis: Airborne far-infrared laser heterodyne spectroscopy of neutral and ionized carbon in the interstellar medium.
1988-89	**Postdoctoral Research Fellow**, University of Illinois at Urbana-Champaign. Research area: Development of superconducting tunnel junction mixers for submillimeter-wave astronomy. (Advisors: K. Y. Lo and D. van Harlingen.)
1989-95	**Assistant Professor of Physics**, California Institute of Technology, Pasadena, California.
1995–2000	**Associate Professor of Physics**
2000–present	**Professor of Physics**

Research Interests and Projects

Summary: Astronomy and astronomical instrumentation; airborne astronomy; coherent and incoherent detection; superconducting detectors; microwave techniques.

CASIMIR – a submm/far–IR heterodyne spectrometer for the SOFIA airborne observatory (PI)

HIFI Band 5 – 1.2 THz SIS mixers for the HIFI instrument on the ESA/NASA Herschel Space Observatory (PI)

SIS receivers – development of advanced mm/submm SIS mixers, receiver systems, and design software (PI)

Kinetic Inductance Detectors – invention and development of a new type of superconducting detector suitable for large arrays (PI)

Millimeter-wave focal planes – invention and development of new superconducting components (antennas, filters, detectors, etc.) for mm–wave integrated focal planes for CMB polarization measurements (co–I)

ZSPEC – invention and development of a novel direct–detection cryogenic spectrometer for mm–wave redshift measurements (co–I)

Submillimeter astronomical spectroscopy – light hydride molecules, abundance determinations, radiative transfer software and modeling

Photon noise and statistics for astronomical instruments

Honors and Awards

1990-1995	National Science Foundation Presidential Young Investigator

1995	ASCIT Teaching Award, California Institute of Technology (Ph 98/125, Quantum Mechanics)

Recent Invited Talks, Colloquia, etc.

6/2004	NASA conference, "From Spitzer to Herschel and Beyond", Pasadena, CA
3/2004	University of California at Santa Barbara (colloquium)
1/2004	Center for Cosmological Physics, U. Chicago (colloquium)
1/2004	URSI National Radio Science Meeting, Boulder CO (plenary & invited)
10/2003	NASA Goddard Space Flight Center, Greenbelt MD
6/2003	IEEE International Microwave Symposium, Philadelphia, PA
4/2003	NASA Next–Generation Hubble Space Telescope (NHST) Workshop, Baltimore MD (STScI)
12/2002	NIST, Boulder, CO
11/2002	Delft University of Technology, The Netherlands
8/2002	SPIE Conference AS'02
4/2002	NASA Long–Wavelength Detector Workshop, Monterey CA
2/2002	NASA New Concepts for Far–Infrared and Submillimeter Space Astronomy, College Park, MD

Service

1992-94	NASA Kuiper Airborne Observatory Users' Subgroup.
1995	NASA Submillimeter Science Working Group.
1995	Chairman, Sixth International Symposium on Space Terahertz Technology
1995–96	NASA SOFIA Science Working Group.
1997–present	SOFIA Science Steering Committee
1998–present	TAC, AST/RO (Antarctic Submillimeter Telescope and Remote Observatory)
2001	ALMA Front–End Preliminary Design Review (Tucson, AZ)
2002	NASA Origins Roadmap Committee

2002	Science Organizing Committee, NASA Far–IR, Submm, and MM Detector Workshop, Monterey, CA
2002	NASA ad–hoc committee on IR, Submillimeter, and Millimeter Detector Technology (Young report)
2002	NASA Senior Review committee
2002	Co–chair, SPIE conference "Millimeter and Submillimeter Detectors for Astronomy"
2002	SCUBA–II Detector Array Technology Review Panel (Edinburgh, Scotland)
2003–present	NASA Astronomy and Physics Working Group (APWG)
2004	Co–chair, SPIE conference "Millimeter and Submillimeter Detectors for Astronomy", Glasgow, Scotland
2004	Organizing Committee, NASA/JPL Far-IR Space Astrophysics conference, "From Spitzer to Herschel and Beyond"
2005	Session Organizer, "Detector Arrays", URSI National Radio Science Meeting, Boulder CO
	Referee, Applied Physics Letters, Astrophysical Journal Letters, IEEE Transactions on Microwave Theory and Techniques, IEEE Transactions on Applied Superconductivity

Professional Organizations

Member, AAS and IEEE

Committees (Caltech)

2000–present	Physics Graduate Admissions
1996–1998	Freshman Admissions Committee
1997–present	Committee on Sponsored Research
1997–2003	Caltech President's Fund Proposal Review Committee
1997–2000	Physics Prize Postdoctoral Fellowship Committee
1998–present	JPL Administrative Committee
1998–99	Committee on Student Government and Administrative Action (COSGAA)
1999–2002	Student Housing Committee

1999–2001	Astrophysics Building Committee (chairman)

Teaching Experience

1990	Ph 1c (Freshman Physics)
1990–1991	Ph 1bc (Freshman Physics)
1991–1992	Ph 98abc (Quantum Physics)
1992–1993	Ph 98c (Quantum Physics)
1993–1994	Ay 121 (Radiative Processes), Ay/Ph 145 (Signal Processing and Data Analysis), Ph 125c (Quantum Mechanics)
1994–1995	Ph 98/125abc (Quantum Mechanics)
1995–1996	Ph 12bc (Sophomore Physics)
1996–1997	Ph 106abc (Classical Physics)
1997–1998	Ph 106abc (Classical Physics)
1998–1999	Ph 136c (Applications of Classical Physics)
1999–2003	Ph 3,5,6,7 (Freshman and Sophomore Laboratory)
2003–2004	Ph 106bc (Classical Physics – Electromagnetism)
1998-2001	Faculty in Residence, Avery House

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