James Michael De Buizer

Astronomer

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www.jim-debuizer.net Santa Clara, CA, USA

Principal scientist and senior manager with over 25 years of research and technical experience working with astronomical instrumentation as well as observatory and instrumentation engineering teams. An established leader in the scientific community and recognized expert in infrared astronomical studies, especially in the field of high mass star formation. A highly regarded researcher and science communicator with over 65 peer-reviewed publications, over two dozen press or public engagement articles, and numerous invited scientific and public talks. Principal Investigator of a research team that has secured over $370K in funding, and co-Investigator for two large international research collaborations. Led and oversaw the development, delivery, integration, calibration, and optimization of numerous instruments at multiple premier astronomical facilities.

PROFESSIONAL EXPERIENCE

Stratospheric Observatory for Infrared Astronomy & Universities Space Research Association — Moffett Field, CA, USA

2023-present **SOFIA Assistant Director for Science & USRA Principal Scientist**

Leading the close-out activities of the SOFIA science mission, including the final user documentation for the SOFIA legacy data archive. Supervising the science staff and outreach personnel and activities.

2019-2022 **SOFIA Science Mission Operations Senior Manager & USRA Senior Scientist**

Led strategic long-term observatory planning and managed science program planning and completion. Worked closely with customer, the NASA Project Office, reporting progress and contract metrics. Core member of the SOFIA Senior Review Proposal team chosen for depth of knowledge of observatory functionality and science.

2013-2019 **SOFIA Manager for Science Operations & USRA Senior Scientist**

Directly managed a team of ten to twelve Instrument Scientists and supervised the scientific use of the facility instrumentation. Coordinated observation planning and user support tasks. Guided the interfacial coordination of the above duties with the Maintenance and Engineering Team, Software Development Team, Mission Operations Team, navigators, and pilots. Mentored multiple research postdocs.

2008-2013 **SOFIA Lead Instrument Scientist & USRA Scientist**

Supervised the lab testing of the mid-infrared imager/spectrometer FORCAST, SOFIA's first light instrument, and its and delivery and acceptance from the instrument provider. Led the integration, testing, calibration, and optimization of the instrument and control software. Assisted in the commissioning, verification and validation of the telescope and observatory. Wrote data processing tools for FORCAST and collaborated in the creation of the data processing pipeline.

Gemini Observatory — La Serena, Chile

2003-2007 **Gemini Observatory Science Fellow & Instrument Scientist**

Led the commissioning and characterization of the mid-infrared imager/spectrometer T-ReCS on the Gemini South telescope. Assisted in the characterization and optimization of the telescope chopping secondary mechanism and infrared image quality. Performed routine instrument maintenance and upgrading. Performed user support and outreach duties.

Cerro Tololo Inter-American Observatory — La Serena, Chile

2000-2004 **Postdoctoral Research Fellow**

100% research fellowship position. Produced 15 publications during tenure, 10 as first author.

University of Florida — Gainesville, FL, USA

1997-2000 **Research Assistant & Florida Space Grant Graduate Fellow**

Duties included instrument maintenance and operation, and user support for the mid-infrared camera, OSCIR. Assisted in the commissioning of the instrument on NASA's Infrared Telescope Facility, Keck Observatory, Gemini North and South Observatories, and the CTIO Blanco 4-m telescope. Served as instrument operator and user support scientist when the instrument was visiting those facilities.

EDUCATION

Doctor of Philosophy in Astronomy 2000
University of Florida Gainesville, FL, USA
Bachelor of Science in Astronomy 1995
Magna Cum Laude
University of Florida Gainesville, FL, USA

SERVICE

- Referee for major journals, including Astrophysical Journal, Astronomical Journal, and MNRAS
- Participated on Time Allocation Committees or proposal reviews for NOAO, Gemini-CONICYT, and PATT (UK)

MAIN RESEARCH AREAS

- Massive star formation environments
- Protostellar jets and outflows
- Accretion, protoplanetary, and debris disks
- Supernova remnants
- Maser emission in star-forming regions
- Infrared Instrumentation

PUBLICATION SUMMARY

- 99 total research articles (33 first author)
- 66 refereed research articles (21 first author)
- Over 2100 total citations
- Over 21,000 publication downloads from ADS
- H-index of 29
- Coauthor and coeditor of two books

FACILITY AND OBSERVATION EXPERIENCE

More than 100 hours of hands-on experience using:

- Stratospheric Observatory for Infrared Astronomy with mid-infrared imager/spectrometer FORCAST
- Gemini North and South 8-meter telescopes with mid-infrared imager/spectrometers T-ReCS and OSCIR, near-infrared instruments GNIRS and NIRI, adaptive optics imager Altair, and optical imager/spectrometer GMOS
- W.M. Keck II 10-meter telescope with mid-infrared imager OSCIR
- Australian Telescope Compact Array of six 22-meter antennas and their 3-millimeter wavelength interferometric system
- Anglo-Australian 4-meter Telescope and IRIS2 (facility near infrared imager/spectrometer)
- Cerro-Tololo Inter-American Observatory 4-meter telescope with OSCIR and OSIRIS (near-infrared imager/spectrometer)
- NASA's InfraRed Telescope Facility 3-meter telescope with OSCIR, NSFCam (near infrared imager), and MIRLIN (mid-infrared imager)
- Dixie County Radio Observatory (650- dipole decametric-wavelength array)
- Rosemary Hill Observatory 0.8-meter telescope with the facility optical imager

Published research articles using data from Hubble Space Telescope, Spitzer Infrared Space Telescope, Chandra X-Ray Observatory, Herschel Far-Infrared Space Observatory, Very Large Array, ALMA, and others.

AWARDS & PRINCIPAL INVESTIGATOR GRANTS (since 2010)

USRA 2022 Manager Award 2022
Revealing the Embedded Structures and Sources within Giant HII Regions - $371,200 2013-2018
SOFIA Grant Cycles 1, 2, 3, 5, and 6
NASA Group Achievement Award for SOFIA Initial Science Flight Team 2011
NASA Group Achievement Award for SOFIA First Light Flight Team 2010

Co-Investigator on almost $1m in awards for Hubble, Spitzer, and James Webb projects

CONFERENCE CONTRIBUTIONS

- Plenary Talk at the 235th AAS Meeting in 2020
- Invited Speaker at nine international conferences
- Session Chair at seven conferences
- Science Organizing Committee member at four conferences
- Workshop Organizer and Science Organizing Committee Chair for the “Workshop on Star Formation Across the Stellar Mass Spectrum” in La Serena, Chile in 2002

INSTITUTIONAL TALKS AND COLLOQUIA

- 24 talks given at universities, institutes, laboratories, and observatories in last two decades