**Donald F. Figer**  
Rochester Institute of Technology

Center for Detectors

74 Lomb Memorial Drive, ENG-3111  
Rochester, NY 14623-5604

# EDUCATION

Ph.D., University of California, Los Angeles, Astronomy 1995

M.S., University of Chicago, Astronomy and Astrophysics 1991

B.A., Northwestern University, Triple Major: Physics (Hon.), Math, Astronomy (Hon.) 1989

# HONORS AND AWARDS

*RIT College of Science Outstanding Outreach Award* May, 2012

*NASA JWST Project Team Award* October, 2009

*RIT Million Dollar Club* 2009

*Wickliffe High School Achievement Hall of Fame Inductee* November, 2006

*NYSTAR Faculty Development Award* for Establishment of an Infrared Detector Test and Development Laboratory at Rochester Institute of Technology November, 2005

*NASA Space Act Award* for contributions to “4 Megapixel, High-Sensitivity Infrared Detector Array for Space Astronomy” June, 2004

*AURA STScI Technology and Innovation Award* May, 2004

*UCLA Distinction in Teaching Award* June, 1995

# EMPLOYMENT

*Professor*, Rochester Institute of Technology January, 2006 to current

*Director*, Future Photon Initiative February, 2016 to current

*Director*, Center for Detectors April, 2010 to current

*Professor,* Astrophysics and Technology PhD September, 2008 to current

*Professor,* Center for Imaging Science January, 2006 to current

*Director,* Rochester Imaging Detector Laboratory January, 2006 to current

*Professor*, MicroSystems Engineering April, 2010 to 2022

*Consultant*, Raytheon November, 2011 to 2016

*Consultant,* HST WFC3 January, 2006 to June, 2006

*Manager,* LSST Guider August, 2006 to August, 2007

*Associate Astronomer*, Space Telescope Science Institute January, 2004 to January, 2006

*Detector Scientist*, Mag 30+ 2005

*Director,* Independent Detector Testing Laboratory 2001 to January, 2006

*Instrument Scientist,* HST WFC3 December 2004 to January, 2006

*Detector Scientist,* SNAPJanuary, 2004 to October, 2006

*Detector Scientist,* JWSTNovember, 2001 to January, 2006

*Instrument Scientist,* JWST NIRCam August, 2003 to December, 2004

*Adjunct Assistant Professor*, Johns Hopkins University May, 2000 to May, 2002

*Assistant Astronomer*, Space Telescope Science Institute July, 1999 to January, 2004

*Instrument Scientist,* Next Generation Space Telescope

*Lead Instrument Scientist,* NEXUS

*Assistant Research Astronomer*, UCLA, Department of Physics & Astronomy

October, 1996 to July, 1999

*Principal Optical Designer and Local Project Scientist*, NIRSPEC/Keck

## October, 1995, to June, 1999

*Principal Investigator*, FLITECAM/SOFIA July, 1997 to October, 1998

*Postdoctoral Research Fellow*, UCLA, Division of Astronomy & Astrophysics, Department of Physics & Astronomy.June, 1995 to October, 1996

*Principal Opto-mechanical Designer*, MIST (Medical Imaging and Scanning Technologies)

November, 1994 to October, 1995

*Ph.D. candidate*, UCLA, Division of Astronomy & Astrophysics, Department of Physics & Astronomy. June, 1992 to June, 1995

*Research Assistant*, UCLA, Department of Astronomy. June, 1992 to May, 1994

*Research Technician*, University of Chicago, Department of Astronomy and Astrophysics.

November, 1991 to June, 1992

*Research Assistant*, University of Chicago, Department of Astronomy and Astrophysics.

June, 1989 to November, 1991

*Teaching Assistant*, University of Chicago, Department of Astronomy and Astrophysics.

September, 1989 to January, 1990

*Undergraduate Researcher*, Northwestern University, Department of Physics and Astronomy

September, 1987 to June, 1989

*Experiment Assistant*, Fermilab, Batavia, Illinois. June, 1987 to September, 1987

*Undergraduate Researcher*, Northwestern University, Department of Physics and Astronomy.

September, 1986 to June, 1987

# PROFESSIONAL SOCIETIES

American Astronomical Society (AAS)

SPIE, Fellow

# REFEREE EXPERIENCE

Nature

Science

Astrophysical Journal

Astronomical Journal

Astronomy & Astrophysics

Monthly Notices of the Royal Astronomical Society

Society of Photo-Optical Instrumentation Engineers

Journal of Quantum Electronics

# OUTREACH

Public talks at UCLA, STScI, JHU, NU, RIT, Park Road School, and astronomy clubs ongoing

Interviews for New York Times, USA Today, CNN, Discover, Astronomy, US News & World Report, BBC, Australian Broadcasting Network, NBC, local network affiliate stations in Los Angeles, Baltimore, Rochester, etc. ongoing

Featured in two episodes of “The Universe” on the History Channel 2009

Principal Investigator of “High School Student Explorations of Planetary Surfaces in Digital Immersive Worlds” 2008-2012

Principal Investigator of “The Journey of a Photon: High School Student Involvement in Developing their Community's Understanding of Detector Science for the International Year of Astronomy / Year of Science (2009) and beyond” 2008-2010

# UNIVERSITY SERVICE

Member, RIT Astronomy Graduate Student Admissions Committee 2020-current

Member, RIT Dean of Graduate School Search Committee 2022

Member, RIT Faculty Honorary Degree Committee 2015-2018

Member, RIT Astronomy PhD Qualifying Exam Committee 2010-2018

Chair, Irfan Punekar MS Committee 2021

Chair, Reid Kovacs MS Committee 2021

Member, Justin Gallagher MS Committee 2020

Member, RIT School of Physics and Astronomy Faculty Search Committee 2018-2020

Member, RIT School of Physics and Astronomy Faculty Search Committee 2014-2016

Member, Kim Kolb PhD Committee 2011-2015

Member, Christine Trombley PhD Committee 2010-2013

Member, Chris Bailey PhD Committee 2011

Member, Chris Shea MS Committee 2011

Member, Kim Kolb MS Committee 2011

Member, Rudolf Montez PhD Committee 2009-2011

Member, RIT Astronomy Graduate Student Admissions Committee 2008-2011

Member, RIT College of Science Faculty Evaluation and Development Committee 2006-2008

Chair, RIT NPRL Director Search Committee 2009-2010

Chair, RIT Faculty Search Steering Committee 2008

Member, RIT Imaging Science Graduate Qualifying Exam Committee 2007

Member, RIT Imaging Science Faculty Search Committee 2007

Member, RIT Imaging Science Pre-tenure Review Committee 2007

Member, RIT Imaging Science Graduate Student Admissions Committee 2006-2008

Member, Imaging Science Faculty Search Committee 2006

# PROFESSIONAL SERVICE

Founder and Chair, SPIE/RIT Photonics for Quantum Conference 2020-current

Member, LSST Stellar Populations Science Collaboration 2008-current

Member, NASA COR Program Technical Interest Group 2017-2020

Member, LUVOIR Optical/NIR Imager Instrument Team 2016-2020

Member, LUVOIR Detector Technology Working Group, Co-Chair 2016-2020

Founder and Organizer, Photonics for Quantum Workshop 2019

Member, Project Blue Team 2017-2019

Member, ASTRO-1 Team 2015-2019

Member, TMT ISDT for the Milky Way and Nearby Galaxies 2015-2018

Member, ANUBIS Team 2016-2017

Reviewer, Science Foundation Ireland 2015

Reviewer, NASA Postdoctoral Program Review Panel 2015

Reviewer, Natural Sciences and Engineering Research Council of Canada 2015

Reviewer, NSF MSIP                                                          2015

Reviewer, NASA Postdoctoral Program Review Panel 2014

Reviewer, NASA APRA Review Panel 2014

Reviewer, National Council for Science and Technology of Greece 2012

Member, Program Committee, SPIE Single-Photon Imaging III 2012

Reviewer, SOFIA Instrument Review Committee 2011-2012

Member, GMTNIRS Instrument Review Committee 2011

Session Chair, The central kiloparsec in galactic nuclei, Bad Honnef, Germany 2011

Session Chair, Single Photon Counting Detectors, Keck Institute for Space Studies, Pasadena, CA 2010

Reviewer, NASA Postdoctoral Program Review Panel 2010

Founder and Organizer, Quantum-Limited Detector Workshop 2009

Organizer, Detectors for Astronomy Conference, Munich, Germany 2009

Session Chair, Detectors for Astronomy Conference, Munich, Germany 2009

Session Chair, The First PANDA Symposium on Products of Astrophysical Outflows, Liajang, China 2009

Chair, NASA PIDDP Review Sub-Panel 2009

Member, NASA, Astrophysics Suborbital Rocket Roadmap Group 2008-2009

Reviewer, Science and Technology Centers in the Former Soviet Union various

Member, LSST Galaxies Science Definition Working Group 2008

Reviewer, NASA Spitzer Review Panel 2008

Organizer, Massive Stars: From Pop III and GRBs to the Milky Way, STScI May Symposium, Baltimore, MD, USA 2006

Reviewer, NSF Review Panels (AST, ATI, Polar Programs) various

Session Chair, SPIE Conference 2006

Member, AURA Red Team Review of GSMT Proposal 2003

Member, NOAO Review of SPARTAN IR Camera for SOAR 2003

# PROFESSIONAL TRAINING

Project Management September 27-28, 2000

Technical Presentations May 9-10, 2000

Principles of Optical Systems Layout January 25, 1994

# TOOLS

Circuit Design: HSpice, Pspice, Douglas Electronics Schematic, Mac CAD

Mechanical Design: CADKey, Ashlar Vellum

Optical Design: ZEMAX, Code V

Operating Systems: UNIX, VAX/VMS, Windows, MS DOS, Mac

Languages: IDL, FORTRAN, 80X86 Assembler, Forth, 68HC11 Assembler, BASIC, Pascal, C, IRAF

Observatories: HST, Chandra, Spitzer, KPNO, CTIO, Gemini, UKIRT, Kuiper Airborne Observatory, NASA Infrared Telescope Facility, Lick Observatory, Keck Observatory

# CONSULTING

Boldly Go, Project Blue 2017 to 2020

Boldly Go, ASTRO-1 2015 to 2020

Raytheon November, 2011 to December, 2011

LSST Guider Management November, 2007 to February, 2008

HST/WFC3 Detector Flight Validation January, 2006 to June, 2006

# STUDENTS ADVISED

|  |  |  |  |
| --- | --- | --- | --- |
| 1. Utkarsh Sharma | PhD (before dissertation) | JHU | 2003 |
| 1. Stella Jang | PhD (before dissertation) | JHU | 2003 |
| 1. Lance Simms | PhD (co-advisor) | Stanford University | 2005 |
| 1. Nicholas Cox | Co-op | RIT | 2006 |
| 1. Young Sam Yu | Independent Study | RIT | 2008 |
| 1. David Saroff | Independent Study | RIT | 2009 |
| 1. Jorge Rangel | MS | RIT | 2009 |
| 1. Daniel Pontillo | PhD (before dissertation) | RIT | 2009 |
| 1. Linpeng Cheng | MS (co-advisor) | RIT | 2008-2009 |
| 1. Kim Manser | Senior Project | RIT | 2008-2009 |
| 1. Tom Praderio | Co-op | RIT | 2009 |
| 1. Rudolfo Montez | PhD (on committee) | RIT | 2010 |
| 1. Maksim Bobrov | Student Researcher | RIT | 2009-2010 |
| 1. Gustavo Rahmer | Independent Study, MS (advisor) | RIT | 2009-2010 |
| 1. John Frye | Student Researcher | RIT | 2009-2011 |
| 1. Matt Simpson | Independent Study, Intern | RIT | 2009-2011 |
| 1. Chris Maloney | Co-op, Student Researcher, Senior Project | RIT | 2009-2011 |
| 1. Christine Trombley | PhD (advisor) | RIT | 2009-2011 |
| 1. John Breese | Co-op | RIT | 2010-2011 |
| 1. Brian Glod | Co-op, MS (advisor) | RIT | 2010-2011 |
| 1. Christopher Shea | MS (co-advisor) | RIT | 2009-2011 |
| 1. Kim Kolb | MS (advisor) | RIT | 2010-2011 |
| 1. Christopher G. Bailey | PhD (on committee) | RIT | 2011 |
| 1. Yuanhao Zhang | MS (advisor) | RIT | 2012 |
| 1. Kim Kolb | PhD (advisor) | RIT | 2011-2015 |
| 1. Jam Sadiq | PhD (before dissertation) | RIT | 2014-2015 |
| 1. Joseph DiPassio | Co-op | RIT | 2015 |
| 1. Neil Guerten | Co-op | RIT | 2015 |
| 1. Aravind Warrior | Student Researcher | RIT | 2015 |
| 1. Gilford Fernandes | Student Researcher | RIT | 2015 |
| 1. Kevin Moser | Student Researcher | RIT | 2016 |
| 1. Justin Beigel | Co-op | RIT | 2017 |
| 33. HanSoo Lee | Co-op | RIT | 2018 |
| 34. Sean Scannell | Co-op | RIT | 2018 |
| 35. Sean Rogerson | Co-op | RIT | 2018 |
| 36. Austin Ford | Co-op | RIT | 2018 |
| 37. Dominic Oddo | REU Student | RIT | 2018 |
| 38. Gabrielle Picher | Co-op | RIT | 2019 |
| 39. Justin Gallagher | MS (advisor) | RIT | 2019 |
| 40. Russell Cobb | Co-op | RIT | 2019 |
| 41. Sidney Davis | Co-op | RIT | 2019 |
| 42. Rhys D’Souza | Co-op | RIT | 2019 |
| 43. John McCormick | Co-op | RIT | 2019 |
| 44. Shreya Patel | Co-op | RIT | 2019 |
| 45. Matthew Segada | Co-op | RIT | 2019 |
| 46. Owen Shriver | Co-op | RIT | 2019 |
| 47. Mark Nash | Co-op | RIT | 2019 |
| 48. Bobo Gao | Co-op | RIT | 2019 |
| 49. Matt Licitra | Co-op | RIT | 2019 |
| 50. Garrett DeLang | Co-op | RIT | 2019 |
| 51. Rohan Patil | Co-op | RIT | 2019 |
| 52. Irfan Punekar | MS (advisor) | RIT | 2020 |
| 53. Jess Sides | Summer Research Program | RIT | 2020 |
| 54. Jake Butler | Co-op | RIT | 2020 |
| 55. Lazar Buntic | PhD | RIT | 2020 |
| 56. Reid Kovacs | MS | RIT | 2020 |
| 57. Max Lipitz | Senior Project | RIT | 2021 |
| 57. Will Wright | Student Researcher/Co-op | RIT | 2021-2022 |
| 58. Wei Deng | PhD (on committee) | Dartmouth | 2022 |
| 59. Michaela Cohen | Independent Study | RIT | 2022 |
| 60. Edwin Alexani | PhD (before dissertation), | RIT | 2022 |
| 57. Alexander Fairchild | Student Researcher/Co-op | RIT | 2022 |
| 61. Dustin Grant | Student Researcher | RIT | 2023 |
| 62. Patrick Emmons | Student Researcher/Co-op | RIT | 2023 |
| 63. Alec Paul | Student Researcher/Co-op | RIT | 2023 |
| 64. Nathan Hoon | Student Researcher | RIT | 2023 |

# POST-DOCTORAL SCHOLARS ADVISED

|  |  |
| --- | --- |
| 1. Sungsoo Kim | Associate Professor (Kyung-Hee University) |
| 1. Ben Davies | Postdoc (University of Leeds), Assistant Research Scientist (RIT), RAS Fellow (University of Cambridge) |
| 1. Qingfeng Zhu | Assistant Professor (University of Science and Technology of China) |
| 1. Jingjing Zhang | Thermo-CIDTEC |
| 1. Lucy Hadfield | Secondary School Teacher (Yorkshire, UK) |
| 1. Maria Messineo | Post-doc (ESA/ESTEC), Post-doc (Max Planck Institute for Radio Astronomy, Bonn) |

# STAFF SUPERVISED

|  |
| --- |
| 1. Robert Barkhauser (Engineer), JHU |
| 1. Sito Balleza (Engineer), STScI |
| 1. Gretchen Greene (Engineer), STScI |
| 1. Bernard Rauscher (Assistant Scientist), STScI |
| 1. Michael Regan (Assistant Astronomer), STScI |
| 1. Eddie Bergeron (Data Analyst), STScI |
| 1. Ernie Morse (Data Analyst), STScI |
| 1. Zoltan Makai (Data Analyst), RIDL |
| 1. Stephanie Sublett (Technician), RIDL |
| 1. Alisea Evans (Technician Assistant), RIDL |
| 1. Don Stauffer (Lab Engineer), RIDL |
| 1. Joong Lee (Lab Engineer), RIDL |
| 1. Valerie Fleischauer (Lab Engineer), RIDL |
| 1. Alan Johnson (Coordinator of Administrative Operations), RIDL |
| 1. Anthony Ethangatta (Student Group Assistant), RIDL |
| 1. Dan Kerr (Technician), RIDL |
| 1. Heather Andersen (Assistant), RIDL |
| 1. Katie Palermo (Graphic Designer), RIDL |
| 1. Susan Cook (RIDL Group Assistant), RIDL |
| 1. Tiffany Magri (Assistant), RIDL |
| 1. Brandon Hanold (Lab Engineer), RIDL |
| 1. Brian Ashe (Lab Engineer), RIDL |
| 1. Hitesh Gadi (Web Site Designer), RIDL |
| 1. John Coughlian (Software Administrator), RIDL |
| 1. Tom Montagliano (Lab Engineer), RIDL |
| 1. Adena Thomson (Executive Assistant), CfD |
| 1. Heather Baxter (Assistant), CfD |
| 1. Katelyn Pease (Assistant), CfD |
| 1. Morgan DeLuca (Assistant), CfD |
| 1. Trisha Basset (Assistant), CfD |
| 1. Caitlin Mucenski (Graphic Designer), CfD |
| 1. Allison Conte (Graphic Designer), CfD |
| 1. Elishia Ortiz (Assistant), CfD |
| 1. Evan Jorgensen (Lab Assistant), CfD |
| 1. Matt Davis (Lab Assistant), CfD |
| 1. Mike Every (Lab Assistant), CfD |
| 1. Anastasia Rzhevskaya (Assistant), CfD |
| 1. Aye Chan (Executive Assistant), CfD |
| 1. Grace Walker (Assistant), CfD |
| 1. John Hatakeyama (Lab Assistant), CfD |
| 1. John Leavitt (Industrial Designer), CfD |
| 1. Jonathan Zimmermann (Lab Assistant), CfD |
| 1. Kenneth Bean (Lab Assistant), CfD |
| 1. Kirk Winans (Executive Assistant), CfD |
| 1. Neil Guertin (Lab Assistant), CfD |
| 1. Nicole Lantonio (Assistant), CfD |
| 1. Dwayne Thompson (Executive Assistant), CfD |
| 1. Hyun Won (Executive Assistant), CfD |
| 1. Justin Beigel (Lab Programming Assistant), CfD |
| 1. Andrew Min (Software Engineer), CfD |
| 1. Anthony Palumbo (Software Engineer), CfD |
| 1. Arturo Kuang (Software Engineer), CfD |
| 1. Erin Reilly (Executive Assistant), CfD |
| 1. Stefani Shultz (Executive Assistant), CfD |
| 1. Austin Ford (Lab Programming Assistant), CfD |
| 1. HanSoo Lee (Software Engineer), CfD |
| 1. Sean Rogerson (Software Engineer), CfD |
| 1. Sean Scannell (Software Engineer), CfD |
| 1. Allison Crim (Software Engineer), CfD |
| 1. Anthony Copeland (Software Engineer), CfD |
| 1. Jarrett Pischera (Software Engineer), CfD |
| 1. Peter Miller (Software Engineer), CfD |
| 1. Reed Terdal (Software Engineer), CfD |
| 1. Scott Mann (Software Engineer), CfD |
| 1. Thomas Cauvel (Software Engineer), CfD |
| 1. Adam Taylor (Software Engineer), CfD |
| 1. Alex Kneipp (Software Engineer), CfD |
| 1. Justin Gallagher (Lab Assistant), CfD |
| 1. Will Savage (Software Engineer), CfD |
| 1. Gabrielle Picher (Lab Assistant), CfD |
| 1. Ashleigh Hunt (Executive Assistant), CfD |
| 1. Alyssa Phothisen (Software Engineer), CfD |
| 1. Matthew Peeks (Executive Assistant), CfD |
| 1. Michael Kha (Lab Assistant), CfD |
| 1. Breonna Cosgrove (Executive Assistant), CfD |
| 1. Margaret Cruz (Lab Assistant), CfD |
| 1. Irfan Punekar (Lab Assistant), CfD |
| 1. Mark Nash (Lab Assistant), CfD |
| 1. Long Nguyen (Undergraduate Researcher), CfD |
| 1. Elizabeth Kuhlman (Lab Assistant), CfD |
| 1. Long Nguyen (Lab Assistant), CfD |
| 1. Scott Mann (Lab Assistant), CfD |
| 1. Kayleigh Patterson (Executive Assistant), CfD |
| 1. Emily Temple (Executive Assistant), CfD |
| 1. Benjamin Dodds (Lab Assistant), CfD |
| 1. Nicholas Salazar (Executive Assistant), CfD |
| 1. Misty Zheng (Executive Assistant), CfD |
| 1. William Wright (Lab Programming Assistant), CfD |
| 1. Dustin Grant (Lab Assistant), CfD |
| 1. Kristen Cain (Executive Assistant), CfD |
| 1. Joseph Miron (Executive Assistant), CfD |
| 1. Patrick Emmons (Lab Assistant), CfD |
| 1. David Brodhead (Executive Assistant), CfD |
| 1. Kato Bouthsarath (Lab Assistant), CfD |
| 1. Nathan Hoon (Lab Assistant), CfD |
| 1. Riley Kranick (Executive Assistant), CfD |
| 1. Hitoto Takeuchi (Executive Assistant), CfD |
| 1. Martina Alvez (Executive Assistant), CfD |

# TEACHING

|  |  |  |
| --- | --- | --- |
| 2228 | Continuation of Thesis | ASTP-791 |
| Continuation of Thesis | ASTP-891 |
| 2225 | University Astronomy | PHYS-220 |
| Research and Thesis | ASTP-890 |
| Independent Study | PHYS-799 |
| 2221 | Continuation of Thesis | ASTP-890 |
| Research and Thesis | ASTP-790 |
| 2218 | Continuation of Thesis | ASTP-891 |
| 2215 | University Astronomy | PHYS-220 |
| Research and Thesis | ASTP-890 |
| Independent Study | PHYS-799 |
| 2211 | Research and Thesis | CMPE-790 |
| Research and Thesis | ASTP-890 |
| 2201 | Research and Thesis | ASTP 890 |
| Introduction to Astrophysics | PHYS-374 |
| 2195 | Research and Thesis | CMPE-790 |
| University Astronomy | PHYS-220 |
| Research and Thesis | ASTP-790 |
| 2191 | Research and Thesis | ASTP-790 |
| 2185 | University Astronomy | PHYS-220 |
| 2161 | Multiwavelength Astronomical Imaging | 1051-446 |
| Astronomical Observational Techniques and Instrumentation | 1060-711 |
| 2151 | Astronomical Observational Techniques and Instrumentation | 1060-613 |
| 2142 | Research and Thesis | 1051-890 |
| Research and Thesis | 1060-890 |
| 2141 | Research and Thesis | 1051-890 |
| Research and Thesis | 1060-890 |
| Research and Thesis | 1060-790 |
| Multiwavelength Astrophysics | 1051-461 |
| Astronomical Observational Techniques and Instrumentation | 1060-613 |
| 2138 | Research and Thesis | 1051-890 |
| Research and Thesis | 1060-890 |
| Research and Thesis | 1060-790 |
| 2135 | Research and Thesis | 1051-890 |
| 2131 | Research and Thesis | 1060-790 |
| Research and Thesis | 1051-790 |
| Research and Thesis | 1051-890 |
| Multiwavelength Astrophysics | 1051-461 |
| Astronomical Observational Techniques and Instrumentation | 1060-613 |
| 20123 | Research and Thesis | 1051-890 |
| Multiwavelength Astrophysics | 1051-446 |
| Astronomical Observational Techniques and Instrumentation | 1060-711 |
| 20122 | Research and Thesis | 1060-890 |
| Research and Thesis | 1051-890 |
| 20121 | Research and Thesis | 1060-890 |
| Research and Thesis | 1051-890 |
| 20113 | Research and Thesis | 1051-890 |
| Multiwavelength Astrophysics | 1051-446 |
| Astronomical Observational Techniques and Instrumentation | 1060-711 |
| 20103 | Research and Thesis | 1060-890 |
| Research and Thesis | 1051-890 |
| Senior Design Project II (advisor) | 0305-691 |
| 20102 | Research and Thesis | 1060-890 |
| Research and Thesis | 1051-890 |
| Senior Design Project II (advisor) | 0305-691 |
| 20101 | Astronomical Observational Techniques and Instrumentation | 1060-711  1051-446 |
| Research and Thesis | 1051-890 |
| Research and Thesis | 1060-890 |
| 20093 | Astronomical Observational Techniques and Instrumentation | 1060-711  1051-446 |
| Research and Thesis | 1060-890 |
| 20092 | Independent Study | 1051-799 |
| Independent Study | 1060-799 |
| Master’s Project | 1051-840 |
| 20083 | Detectors | 1051-465 |
| Senior Design Project II (advisor) | 0305-691 |
| 20073 | University Physics | 1017-313 |
| Independent Study | 1051-799 |
| 20071 | Multiwavelength Astrophysics | 1051-446  1051-753 |

# RESEARCH, OUTREACH, AND EDUCATION FUNDING HISTORY ­

| **Year** | **Description** | **Sponsor** | **Amount** |
| --- | --- | --- | --- |
| Total Funding | | | 21,149,509 |
| 2023-2025 | Characterizing Single-photon Counting CMOS Image Sensors for NASA Missions | NASA | 717,721 |
| 2022-2025 | Developing the largest IR detectors for future NASA focal planes: NASA FINESST Fellowship (Future Investigators in NASA Earth and Space Science and Technology) | NASA | 150,000 |
| 2022-2023 | Supplement to Phase II: New Infrared Detectors for Astrophysics | NSF | 315,509 |
| 2020-2021 | Supplement to Phase II: New Infrared Detectors for Astrophysics | NSF | 393,727 |
| 2019-2021 | A Single Photon Sensing and Photon Number Resolving Detector for NASA Missions | NASA | 1,094,549 |
| 2019-2020 | QLCI - CG: Quantum Photonic Institute | NSF | 149,215 |
| 2019-2020 | TAP Process Development 2019 (Rochester Hub) | DOD. Dept of the Air Force, Materiel Command / Research Foundation of SUNY | 123,125 |
| 2018-2019 | TAP Process Development 2018 (Rochester Hub) | DOD. Dept of the Air Force, Materiel Command / Research Foundation of SUNY | 233,456 |
| 2015-2020 | The Future Photon Initiative | RIT | 1,000,000 |
| 2015-2018 | A Photon Counting Imaging Detector for NASA Exoplanet Missions | NASA/APRA | 133,000 |
| 2015-2018 | Phase II: New Infrared Detectors for Astrophysics | NSF/ATI | 1,983,212 |
| 2013-2014 | Acquisition of Metal Organic Vapor Phase Epitaxy (MOVPE) Reactor for Nanostructured Materials Development (Senior Personnel) | NSF/MRI | 760,671 |
| 2013-2015 | A Zero Noise Detector for the TMT: Next Generation Imaging Detectors for Near- and Mid-IR Wavelength Telescopes (Output 2) | Moore Foundation | 282,988 |
| 2012-2015 | A New VIS/IR Detector for NASA Missions | NASA/APRA | 1,115,106 |
| 2012-2013 | The Mass Loss of Red Supergiants | NASA/SOFIA | 8,000 |
| 2012-2015 | New Infrared Detectors for Astrophysics | NSF/ATI | 1,490,897 |
| 2012 | Clumping in OB-star winds | NASA/Herschel | $11,453 |
| 2011-2013 | Detector Virtual Workshop | NSF | 20,000 |
| 2011-2012 | High Mass Stellar IMF | NASA/GRSP | 30,000 |
| 2010-2012 | High School Student Explorations of Planetary Surfaces in Digital Immersive Worlds | NASA/EPO | 44,522 |
| 2010-2012 | A Photon-Counting Detector for Exoplanet Missions | NASA/TDEM | 783,981 |
| 2010-2011 | X-Ray Observations of Mercer 81 | CXC/Chandra | 35,768 |
| 2010 | RIT Seed Grant for NSF STC Proposal Development | RIT | 15,000 |
| 2009-2011 | A NICMOS survey of newly-discovered young massive clusters (PI Davies) | STScI/HST | 180,448 |
| 2009-2010 | LSST Guider Testing | SLAC | 23,187 |
| 2008-2012 | A Zero Noise Detector for the TMT: Next Generation Imaging Detectors for Near- and Mid-IR Wavelength Telescopes | Moore Foundation | 2,839,191 |
| 2008-2011 | A LIDAR Imaging Detector for NASA Planetary Missions | NASA/PIDDP | 546,712 |
| 2010 | Sandia National Laboratory projects | Sandia National Laboratory | 49,833 |
| 2009 | 23,000 |
| 2008 | 22,282 |
| 2008 | RIT Seed Grant for NSF STC Proposal Development | RIT | 150,000 |
| 2008-2009 | MRI: Acquisition of two special-purpose computers for simulation of the galactic center environment (PI Merritt) | NSF/MRI | 108,232 |
| 2008 | The Journey of a Photon: High School Student Involvement in Developing their Community's Understanding of Detector Science for the International Year of Astronomy / Year of Science (2009) and beyond | NASA | 44,987 |
| 2007-2011 | A Radiation Tolerant Detector for NASA Planetary Missions | NASA/PIDDP | 807,681 |
| 2007-2010 | A Low Noise CMOS Detector for NASA Space Missions | NASA/APRA | 847,000 |
| 2007 | The pre-supernova mass-loss behavior of Red Supergiants (PI Davies) | SSC/JPL | 80,801 |
| 2007 | Management of LSST Guider project | SLAC | 31,240 |
| 2006 | Massive Star Clusters | SSC/JPL | 30,445 |
| 2007 | Si PIN Demonstration at a Telescope | Stanford | 53,880 |
| 2006 | SLAC | 28,770 |
| 2006 | Mid-Infrared Spectroscopy of the Most Massive Stars | SSC/JPL | 21,812 |
| 2006 | JDEM Detector Testing Project | NASA | 27,000 |
| 2006 | Startup funding | RIT/FIC | 243,000 |
| 2006 | HST/WFC3 Detector Flight Validation | STScI | 21,060 |
| 2005-2010 | The Most Massive Stars | NASA/LTSA | 795,378 |
| 2005 | The First Astronomical Use of Silicon PIN Detectors | STScI/DDRF | 28,769 |
| 2005-2008 | Faculty Development Award for Establishment of an Infrared Detector Test and Development Laboratory at Rochester Institute of Technology | NYSTAR | 727,900 |
| 2006 | SNAP Detector Testing Project | LBNL | 15,000 |
| 2006 | 21,000 |
| 2005 | 27,000 |
| 2004 | 22,000 |
| 2005 | LSST CMOS Detector Testing Project | SLAC | 25,000 |
| 2004-2006 | UC Davis/NSF | 125,879 |
| 2004 | LSST CMOS Detector Testing Project | SLAC | 78,000 |
| 2003 | JWST NIRSpec detector testing project | NASA | 73,000 |
| 2003 | Comparative Characterization of NIR Detectors for NGST | NASA | 273,000 |
| 2001-2003 | 992,122 |
| 2000-2003 | Establishment of the Independent Detector Testing Laboratory | STScI/DDRF #82254 | 300,000 |
| 2000-2002 | JHU (in kind) | 300,000 |
| 2001 | High resolution near-infrared spectroscopy of the Galactic Center | STScI/DDRF #82247 | 67,000 |
| 2000 | Data Analysis | STScI/DDRF #82230 | 60,000 |
| 1997-1998 | Compact Young Clusters and the r-2 Cusp near the Galactic Center | STScI/HST | 146,000 |

# TALKS

1. Invited Talk, Cleveland, Ohio, (3/24), Ecophilia Ohio: “Revealing the Hidden Universe: Insights from the James Webb Space Telescope”
2. Invited Talk, Pittsford, NY, (3/24), Pittsford Sutherland High School: “Seeing the Universe in a New Light”
3. Invited Talk, Toronto, Canada, (8/23), Dunlap Institute Summer School: Introduction to Astronomical Instrumentation, “Properties & Detection of Light – UV/Optical/Infrared”
4. Invited Talk, Atlanta, GA, (10/22), 6th Grade Class, D.T. Howard Middle School, “The James Webb Space Telescope”
5. Invited Talk, Rochester, NY, (10/22), Pfaudler Lecture Series of the Osher Lifelong Learning Institute, “The James Webb Space Telescope: A Triumph of Technology Development”
6. Invited Talk, Goleta, CA, (9/22), Raytheon Astronomy and Space Domain awareness Technology Interest Group, “The HELLSTAR Detector Program”
7. Invited Talk, Nice, France, (9/22), IR Astronomy in Antarctica Workshop, “Infrared Detectors for Cryoscope”
8. Contributed Talk, Montreal, Canada, (7/22), SPIE, “The SATIN Infrared Detector Development Program and the Road to HELLSTAR”
9. Invited Public Talk, Rochester, NY, Astronomy Section Rochester Academy of Science, (3/22), “JWST and Infrared Detectors”
10. Invited Public Talk, Pittsford, NY, Park Road Elementary School, (02/21), “The Black Hole in the Center of Our Galaxy!”
11. Invited Talk, Washington, D.C., Astrophysics Division at NASA HQ meeting, (1/21), “Technology Development and the 2020 Nobel Prize in Physics”
12. Invited Public Talk, Rochester, NY, 2020-2021 OSA Rochester Speaker Series, (11/20), “Astrophysics Nobel Prizes and Instrumentation”
13. Invited Public Talk, Mentor, OH, Cardinal Autism and Resource Education School, (10/20), "Black Holes"
14. Invited Public Talk, Pittsford, NY, Park Road Elementary School, (10/20), “Aliens!”
15. Contributed Talk, Honolulu, HI, American Astronomical Society 235th Meeting, (01/20), “Characterization of a Single Photon Sensing Detector for Astrophysics”
16. Invited Public Talk, Pittsford, NY, Park Road Elementary School, (06/19), “What is an Astronomer?”
17. Invited Talk, San Francisco, CA, RIT West Networking Event, (01/17), “Are we alone in the universe?”
18. Invited Public Talk, Pittsford, NY, Barker Road Middle School, (03/17), “Big Stars”
19. Invited Talk, Rochester, NY, RIT, (11/15), IEEE Rochester Photonics Society talk at RIT
20. Invited Talk, Hartford, CT, The Hartford Club, (04/15), “Transformative technology for exploring Inner Space and Outer Space”
21. Invited Colloquium, Evanston, IL, Northwestern University, CIERA Interdisciplinary Colloquium, (05/12), “Single-photon Array Detectors”
22. Invited Review, Bad Honnef, Germany, The central kiloparsec in galactic nuclei (08/11), “Massive star formation in nuclei of galaxies”
23. Invited Talk, San Diego, CA, (08/11), “A photon-counting detector for exoplanet missions,” Techniques and Instrumentation for Detection of Exoplanets V
24. Invited Talk, San Diego, CA, (08/11), Single-Photon Imaging II
25. Invited Talk, Braunschweig, Germany, Single Photon Workshop 2011 (06/11)
26. Invited Colloquium, Pasadena, CA, JPL Astrophysics Colloquium (12/10), “Next Generation Imaging Detectors for Inner, Middle, and Outer Space”
27. Invited Talk, Rochester, NY, Frontiers in Optics 2010 (10/10), “Future Detectors for Astrophotonics”
28. Invited Talk, Arlington, VA, Technology Seminar Series at the NRO (4/10), “Single Photon Counting Array Imaging Detectors for Defense Applications”
29. Invited Colloquium, Boston University, Boston, MA (03/10), “Massive Stars”
30. Invited Talk, Pasadena, CA, Single Photon Counting Detectors, (01/10), “Single Photon Imaging Array Detectors”
31. Invited Review, Sydney, Australia, The Inaugural Sydney International Workshop on Synergies in Astronomy and Medicine, (12/09), “Probing Inner Space and Outer Space with Quantum-Limited Detectors”
32. Invited Talk, Rochester, NY, Society for Imaging Science and Technology meeting (11/09)
33. Invited Colloquium, Leeds, UK, (11/09), “Massive Star Clusters”
34. Invited Briefing, Washington, DC, (11/09), “Low Light Level, High Dynamic Range, 3D Imaging Technologies”
35. Invited Briefing, El Segundo, CA, (10/09), “Detector Technologies in the   
    Rochester Imaging Detector Laboratory”
36. Invited Review, Munich, Germany, Detectors for Astronomy, (10/09), “Summary of Quantum-Limited Imaging Detectors Workshop”
37. Invited Talk, Munich, Germany, Detectors for Astronomy, (10/09), “A Zero Read Noise Detector for the TMT”
38. Invited Talk, RIT, Quantum-Limited Imaging Detectors Workshop, (4/09), “Why Detectors are Important”
39. Invited Review, Kauia, Hawaii, IAU250: Massive Stars as Cosmic Engines (12/07), “Massive Young Clusters”
40. Invited Review, Ringberg Castle, Germany, GC2007: Celebrating 15 years of precision astronomy in the Galactic Center - Hot topics and observational challenges (06/07), “The Initial Mass Function in the Galactic Center”
41. Invited Symposium, University of Rochester, Colloquium, (09/06), “Seeing into the Dark Side”.
42. Invited Review, STScI May Symposium (05/06), “Massive Star Formation in the Galactic Center”
43. Invited Talk, Optical Society of America, Rochester: Center for Optoelectronics and Imaging (12/05), “Focal Plane Array Testing and Applications for Astronomy”
44. Invited Colloquium, RIT (04/05), “An Upper Limit to the Masses of Stars”
45. Invited Colloquium, University of Michigan, Colloquium (04/05), “An Upper Limit to the Masses of Stars”
46. Invited Colloquium, STScI (01/05), “An Upper Limit to the Masses of Stars”
47. Invited Talk, Montreal: Massive Stars in Interacting Binaries (08/04), “Stripping and Merging of Hot young Stars in the Galactic Center”
48. Invited Talk, Sienna, Italy: IMF at 50 (05/04), The Stellar Initial Mass Function in the Galactic Center”
49. Invited Colloquium, University of Delaware, Colloquium (04/04), “Massive Stars and the Stellar Initial Mass Function in the Galactic Center”
50. Invited Colloquium, University of Wisconsin, Colloquium (03/04), “Massive Stars and the Stellar Initial Mass Function in the Galactic Center”
51. Invited Talk, Greenbank, WV: GC at 30 (03/04), “Massive Stars and the Stellar Initial Mass Function in the Galactic Center”
52. Invited Colloquium, Cornell University, Colloquium (02/04), “Massive Stars and the Stellar Initial Mass Function in the Galactic Center”
53. Invited Colloquium, Brookhaven National Laboratory: LSST Camera Meeting (02/04), “The Status of CMOS Detectors for LSST”
54. Invited Colloquium, University of Pennsylvania, Colloquium (01/04), “Massive Stars and the Stellar Initial Mass Function in the Galactic Center”
55. Invited Review, Cancun, Mexico, The Formation and Evolution of Massive Star Clusters (00/03), “Young Massive Clusters in the Galactic Center”
56. Invited Colloquium, Brookhaven National Laboratory (11/03), “Focal Plane Array Testing and Applications for Astronomy”
57. Contributed Talk, San Diego: SPIE (08/03), “Independent Testing of JWST Detector Prototypes”.
58. Contributed Talk, Seattle: AAS201 (01/03), “The Independent Detector Testing Laboratory and the JWST Detector Program”
59. Invited Review, Ringberg: Nuclei of Galaxies (11/02), “The IMF in the Galactic Center”.
60. Contributed Talk, Kona: Galactic Center Workshop (11/02), “Massive Stars and the Creation of our Galactic Center”
61. Contributed Talk, Kona: SPIE (08/02), “The Independent Detector Testing Laboratory and the NGST Detector Program”
62. Invited Talk, Lanzarote: IAU212 (07/02), “Massive Stars and The Creation of our Galactic Center”
63. Invited Colloquium, University of Massachusetts (00/01), “Massive Stars in the Galactic Center”
64. Invited Colloquium, MIT (00/01), “Massive Stars in the Galactic Center”.
65. Invited Colloquium, JHU Physics and Astronomy CAS Seminar, Colloquium (02/01), “The NGST Detector Program at JHU/STScI”
66. Invited Colloquium, Baltimore-Washington Starburst Series, Colloquium (00/01), “Star Formation in the Galactic Center”
67. Invited Talk, JHU Continuing Education Program (00/00), “Journey to the Center of the Galaxy”
68. Invited Review, Heidelberg: Modes of Star Formation and the Origin of Field Star Populations (12/00), “Starburst Clusters in Galactic Nuclei”.
69. Invited Colloquium, LASP, GSFC, Colluquium (00/00), “The IMF in the Galactic Center”
70. Invited Talk, Munich: Starburst Galaxies Near and Far (11/00), “The IMF in the Galactic Center”
71. Invited talk, American Museum of Natural History (00/00), “Stellar-Collisions in the Galactic Center”.
72. Invited talk, University of Maryland, Baltimore County, Colloquium (00/00), “Journey to the Center of the Galaxy”.
73. Review, Munich: SPIE (03/00), “NIRSPEC Observations of the Galactic Center”.
74. Invited talk, Northwestern University (00/00), “Journey to the Center of the Galaxy”.
75. Review, Atlanta: AAS195 (01/00), “Keck/NIRSPEC Spectroscopy of Stars Near Sgr A\*”.
76. Invited Colloquium, Harvard University, Colloquium (00/99), “Massive Stars Near the Galactic Center”
77. Invited Colloquium, Johns Hopkins University, Colloquium (00/99), “Massive Stars Near the Galactic Center”
78. Invited Colloquium, STScI (00/98), “Massive Stars Near the Galactic Center”.
79. Invited Colloquium, University of Florida (00/98), “Massive Stars Near the Galactic Center”
80. Invited Talk, The Central Parsecs: Galactic Center Workshop ’98 (09/98), “HST/NICMOS Imaging of the Quintuplet and Arches Clusters”
81. Invited Talk, Santa Monica Planetarium (00/98), “Massive Stars Near the Galactic Center”
82. Invited Talk, UCLA Extension Lecture Series (00/98), “Massive Stars Near the Galactic Center”
83. Contributed Talk, STScI May Symposium (05/98), “The Pistol Star”
84. Invited Colloquium, University of Minnesota, Colloquium (00/98), “Massive Stars Near the Galactic Center”
85. Invited Colloquium, UCLA, Colloquium (00/98), “Massive Stars Near the Galactic Center”
86. Invited Colloquium, Ohio State University, Colloquium (00/98), “Massive Stars Near the Galactic Center”
87. Contributed Talk, Kyoto: IAU184 (08/97), “Super-star clusters in the Galactic Center as revealed by HST-NICMOS.”

# NEWS ARTICLES (SELECTED ITEMS)

1. Astronomy Magazine, July, 2018, “Ask Astro: Big Stars”
2. Newscientist.com, January, 4, 2018, “The Universe could be full of more huge stars than we thought”
3. Space Daily, July 23, 2010, “Detector Technology Could Help NASA Find Earth-Like Exoplanets”
4. New Scientist, August 9, 2007, “Largest swarm of giant stars is a 'supernova factory'”
5. Astromart, February 28, 2006, “Spitzer Finds a Massive Cluster of Red Supergiant Stars”
6. New Scientist, January 10, 2006, “Supergiant supernova”
7. Science News for Kids, March 16, 2005, “No Fat Stars”
8. Science News, March 12, 2005, “Weighing In on a Star: A stellar size limit”
9. New York Times, March 10, 2005, “Stars on Diet: Weight Is Limited to 150 Suns, Researchers Find”
10. USA Today, March 10, 2005, “Hubble shows stars have weight limit”
11. Astronomy Magazine, March 10, 2005, “How hefty can a star get?”
12. Sky & Telescope, March 10, 2005, “The Most Massive Stars”
13. BBC News, March 9, 2005, “Upper limit placed on star growth”
14. CNN, September 16, 1999, “Two supermassive star clouds found in Milky Way center”
15. US News and World Report, October 12, 1997, “A Really, Really Big Star - An astronomer makes a humongous discovery. Will it hold up?”
16. New York Times, October 8, 1997, “At the Core of the Milky Way, The Brightest Star Ever Seen,” Front Page

# PRESS RELEASES

|  | **Date** | **Title** | **Source** |
| --- | --- | --- | --- |
| 1 | Dec 14, 2022 | RIT researchers receive NSF funding to further develop infrared detectors for astrophysics | RIT News Release |
| 2 | Nov 22, 2022 | RIT astrophysicists leverage cancer center to damage single-photon CMOS detectors for future space missions | RIT News Release |
| 3 | May 9, 2022 | RIT and SPIE to host Photonics for Quantum event June 6-9 | RIT News Release |
| 4 | Aug 7, 2019 | RIT awarded NSF funding to conceptualize Quantum Photonic Institute | RIT News Release |
| 5 | Aug 14, 2018 | NSF Awards $1.2M to Rochester Institute of Technology, University of California-San Diego, University of Delaware to Leverage AIM Photonics’ World-Class R&D and Foundry Capabilities | RIT News Release |
| 6 | Aug 9, 2017 | Sensing technology takes a quantum leap with RIT photonics research | RIT News Release |
| 7 | Apr 11, 2017 | RIT scientist measures brightness of the universe with NASA’s New Horizons spacecraft | RIT News Release |
| 8 | Nov 20, 2015 | Next Generation infrared detectors win NSF Funding RIT Raytheon Vision Systems collaboration could advance astronomy | RIT News  Release |
| 9 | Nov 18, 2013 | Shedding light on Earth-like planets  RIT advances imaging detector technologies | RIT News Release |
| 10 | Apr 22, 2013 | NASA awards RIT $1.1 million to develop infrared detectors for space missions | RIT News Release |
| 11 | July 26, 2012 | RIT Leads Development of Next-generation Infrared Detectors | RIT News Release |
| 12 | Nov 2, 2011 | Mysterious Absorption Lines Could Illuminate 90-year Puzzle | RIT News Release |
| 13 | Feb 16, 2011 | RIT Center for Detectors Advances Detector Technology | RIT News Release |
| 14 | Jul 22, 2010 | Detector Technology Could Help NASA Find Earth-like Exoplanets | RIT News Release |
| 15 | Feb. 27, 2009 | RIT Presents: The Next Generation of Imaging Detectors | RIT News Release |
| 16 | Oct 21, 2008 | Moore Foundation Awards RIT $2.8 Million to Develop ‘Noiseless’ Detector” | RIT News Release |
| 17 | May 28, 2008 | Ghostly Ring | NASA HQ |
| 18 | May 22, 2008 | Light research used to plot celestial bodies ‘Super roadmaps’ will give planetary details | RIT News & Events |
| 19 | Aug 17, 2007 | New Imaging Detectors Could Take Snapshots from Deep Space | RIT News Release |
| 20 | Nov 16, 2006 | RIT-led initiative to enhance view of space | RIT News & Events |
| 21 | Aug 18, 2006 | Stellar Pinwheels at Our Galaxy's Core | NSF |
| 22 | Jan 27, 2006 | Exploding stars discovered | RIT News & Events |
| 23 | Jan 9, 2006 | Mystery Solved: High-Energy Fireworks Linked to Massive Star Cluster | STScI |
| 24 | Mar 9, 2005 | Hubble Weighs in on the Heaviest Stars in the Galaxy | STScI |
| 25 | Sep 16, 1999 | Hubble Spies Giant Star Clusters Near Galactic Center | STScI |
| 26 | Oct 8, 1997 | Hubble Identifies What May Be the Most Luminous Star Known | STScI |

# RADIO & TELEVISION

1. Greater ROC commercials, ABC, Rochester, NY, November, 2022

<https://www.youtube.com/watch?v=7oJBCcWvMmc>

1. WROC News Channel 8, Rochester, NY, January 21, 2022. Rochester and Corning in space: How New York connections are powering James Webb Space Telescope <https://www.rochesterfirst.com/science/rochester-and-corning-in-space-how-new-york-connections-are-powering-james-webb-space-telescope/>
2. WROC News Channel 8, Rochester, NY, November 11, 2020

<https://www.rochesterfirst.com/news/digital-exclusives/black-holes-might-be-a-little-less-scary-new-paper-says-that-something-that-goes-into-one-wont-be-gone-for-good/?fbclid=IwAR1EHyWXKYWcXjVGf8IK-En6p8YGHeaK3GNT89I7hR5ZDnqcM7o7Li1Mx-0>

1. WROC News Channel 8, Rochester, NY, October 13, 2020  
   <https://www.rochesterfirst.com/weather-blog/super-massive-black-hole-discovery-brings-home-the-nobel-prize-in-physics/>
2. WXXI AM News, Rochester, NY, August 12, 2019

<https://www.wxxinews.org/post/business-report-rit-coming-plan-would-help-make-faster-computers>

1. WROC News Channel 8, Rochester, NY, March 28, 2018

<http://www.rochesterfirst.com/news/local-news/chinese-space-station-headed-toward-earth/1086073839>

1. WROC News Channel 8, Rochester, NY, April 13, 2016 <http://www.rochesterfirst.com/news/local-news/technology-for-starshot-program-could-be-developed-in-rochester>
2. WXXI AM 1370 News, Rochester, NY, August 4, 2014

<http://wxxinews.org/post/connections-science-roundtable-2>

<http://cpa.ds.npr.org/wxxi/audio/2014/08/Connections-8-4-14Hr1.mp3>

1. History Channel, The Universe, “The Search for Cosmic Clusters,” September 29, 2009

<http://www.youtube.com/watch?v=5i2wqiTNkHc>

1. History Channel, The Universe, “Pulsars and Quasars,” October 20, 2009
2. Channel 8/31 News (CBS/Fox), Rochester, NY, September 4, 2009

<http://www.youtube.com/watch?v=k1CXEDaRow4>

1. Channel 10 News, Rochester, NY, May, 2009

<http://ridl.cis.rit.edu/products/talks/mapquest%20mars%20WMV.wmv>

1. WJZ TV News, Baltimore, MD, March, 2005
2. NPR, March 10, 2005, “Limits on Star Size”

<http://www.npr.org/templates/story/story.php?storyId=4529313>

# REFEREED PAPERS

1. Jovanovic, N., Gatkine, P., Anugu, N., **Figer, D. F.,** et al. 2023, *2023 Astrophotonics Roadmap: pathways to realizing multi-functional integrated astrophotonic instruments*, Journal of Physics: Photonics
2. Travouillon, T., Smith, R. M., Fucik, J., **Figer, D. F.**, Kasliwal, M., Moore, A. M., Guillot, T. 2023, *Ultra Wide-Field Infrared Astronomy in Antarctica*, Scientific Detector Workshop, Potsdam, Astron.Nachr./AN, e20230063.
3. Rubio-Díez, M., M., Sundqvist, J., O., Najarro, F., Traficante, A., Puls, J., Calzoletti, L., **Figer, D. F.** 2022, *Upper Mass-Loss Limits and Clumping in the Intermediate and Outer Wind Regions of OB stars,* Astronomy & Astrophysics, Volume 658, id.A61, 34 pp.
4. Messineo, M., **Figer, D. F.**, Kudritzki, R.-P., Zhu, Q., Menten, K. M., Ivanov, V. D., and Chen, C. -H. R. 2021, *New infrared spectral indices of luminous cold stars: from early K to M-types*, The Astronomical Journal, Volume 162, Issue 5, id.187, 46 pp.
5. Beasor, E. R., Davies, B., Smith, N., Gehrz, R. D., and **Figer, D. F.** 2021, *The Age of Westerland 1 Revisited*, The Astrophysical Journal, 912, 16
6. **Figer, D.**, Najarro, F., Messineo, M., Clark, J. S., Menten, K. M., 2020, *A New Candidate Luminous Blue Variable,* The Astrophysical Journal Letters, 901, 1
7. Messineo, M., Menten, K. M., **Figer, D. F.**, and Clark, J. S. 2020, *Massive Stars in Molecular Clouds Rich in High-energy Sources: The Bridge of G332.809–0.132 and CS 78 in NGC 6334,* The Astronomical Journal, 160, 2
8. **Figer, D.**, Lee, J., Corrales, E., Getty, J., and Mears, L. 2018, *HgCdTe detectors grown on silicon substrates for observational astronomy,* High Energy, Optical, and Infrared Detectors for Astronomy VIII, 10709, 1070926
9. Clark, S., Lohr, M., Najarro, F., Patrick, L., Evans, C., Dong, H., **Figer, D.,** Lennon, D., and Crowther, P. 2018, *Life at the Extremes — Massive Star Formation and Evolution in the Galactic Centre, The Messenger, 173*
10. Messineo, M., Menten, K. M., **Figer, D. F.**, Rosie Chen, C.-H., and Rich, R. M. 2018, *Detections of Massive Stars in the Cluster MCM2005b77, in the Star-forming Regions GRS G331.34-00.36 (S62) and GRS G337.92-00.48 (S36),* The Astrophysics Journal, 862, 10
11. Nikzad, S., Hennessy, J., Hoenk, M. E., Kiessling, A., Bolcar, M. R., **Figer, D. F.**, Martin, S., Morgan, R. 2018, *Solid state detectors for the Habitable Exoplanet imaging mission (HabEx) and the large UV/optical/infrared (LUVOIR) surveyor mission concepts,* SPIE Proceedings, 10699-6
12. Clark, J. S., Lohr, M. E., Patrick, L. R., Najarro, F., Evans, C., Dong, H., **Figer, D. F.** 2018, *An updated stellar census of the Quintuplet cluster,* Astronomy & Astrophysics*,* 618, A2
13. Najarro, F., Geballe, T., **Figer, D**., de la Fuente, D. 2017, *Emission Lines in the Near-infrared Spectra of the Infrared Quintuplet Stars in the Galactic Center,* The Astrophysical Journal, 845, 127
14. Messino, M., Zhu, Q., Menten, K., Ivanov, V. D., **Figer, D. F**., Kudritzki, R. P., and Rosie, Chen C. –H. 2018, *VizieR Online Data Catalog Observed red supergiants in the inner Galazy (Messineo+)* VizieR Online Data Catalog, 182
15. Kolb, K., **Figer, D.**, Hanold, B., Lee, J. 2016, *Radiation tolerance of a Geiger-mode avalanche photodiode imaging array*, Journal of Astronomical Telescopes, Instruments, and Systems
16. de la Fuente, D., Najarro, F., Borissova, J., Ramírez Alegría, S., Hanson, M. M., Trombley, C., **Figer, D. F.**, Davies, B., Garcia, M., Kurtev, R., Urbaneja, M. A., Smith, L. C., Lucas, P. W., Herrero, A. 2016, *Probing the Dragonfish star-forming complex: the ionizing population of the young massive cluster Mercer 30*, Astronomy & Astrophysics, 589, A69
17. Messineo, M., Zhu, Q., Menten, K. M., Ivanov, V. D., **Figer, D. F.**, Kudritzki, R. P., Chen, R. 2016, *Red supergiants in the inner galaxy: Stellar properties*, Astrophysical Journal, 836, 65
18. Messineo, M., Zhu, Q., Menten, K. M., Ivanov, V. D., **Figer, D. F.**, Kudritzki, P. R., Chen, R. 2016, *Discovery of an extraordinary number of red supergiants in the inner galaxy*, The Astrophysical Journal, 822, L5
19. Hanold, B., **Figer, D.**, Lee, J., Kolb, K., Marcuson, I., Corrales, E., Getty, J., Mears, L. 2015, *Large format MBE HgCdTe on silicon detector development for astronomy*, SPIE Proceedings
20. Messineo, M., Clark, J., **Figer, D.,** Kudritzki, R. P., Najarro, F., Rich, R., Menten, K., Ivanov, V., Valenti, E., Trompley, C., Chen, C.-H., & Davies, B. 2015*, Massive stars in the W33 giant molecular complex*, The Astrophysical Journal, 805, 110
21. de la Fuente, D., Najarro, F., Trombley, C., Davies, B., & **Figer, D. F**. 2015*, First detections of FS CMa stars in clusters. Evolutionary state as constrained by coeval massive stars*, Astronomy & Astrophysics, 575, A10
22. **Figer, D. F**. 2014, *Astrophysics: Monster star found hiding in plain sight*, Nature, 515, 42
23. Messineo, M., Qingfeng, Z., Ivanov, V. D., **Figer, D. F.**, Davies, B., Menten, K. M., Kudritzki, R. P., & Chen, R. C.-H. 2014*, Near-infrared spectroscopy of candidate red supergiant stars in clusters*, Astronomy & Astrophysics, 571, A43
24. Messineo, M., Menten, K. M., **Figer, D. F.**, Davies, B., Clark, J. S., Ivanov, V. D., Kudritzki, R. P., Rich, R. M., MacKenty, J. W., & Trombley, C. 2014, *Massive stars in the giant molecular cloud G23.3−0.3 and W41, Astronomy & Astrophysics*, 569, A20
25. Richards, E., Lang, C., Trombley, C., & **Figer, D.** 2012, *Multiwavelength Observations of Massive Stellar Cluster Candidates in the Galaxy*, The Astronomical Journal, 144, 3
26. Davies, B., de La Fuente, D., Najarro, F., Hinton, J. A., Trombley, C., **Figer, D. F.**, & Puga, E. 2012, *A newly discovered young massive star cluster at the far end of the Galactic Bar*, Monthly Notices of the Royal Astronomical Society, 419, 1860
27. Davies, B., et al. 2012, *The G305 star-forming complex: the central star clusters Danks 1 and Danks 2*, Monthly Notices of the Royal Astronomical Society, 419, 1871
28. Geballe, T. R., Najarro, F., **Figer, D. F**., Schlegelmilch, B. W., & de la Fuente, D. 2011, Infrared Diffuse Interstellar Bands in the Galactic Centre, Nature, 479, 200
29. Evans, C. J., Davies, B., Kudritzki, R. P., Puech, M., Yang, Y., Cuby, J.-G., **Figer, D. F.**, Lehnert, M. D., Morris, S. L., & Rousset, G. 2011*, Stellar metallicities beyond the Local Group: the potential of J-band spectroscopy with extremely large telescopes*, Astronomy & Astrophysics, 527, A50
30. Kim, S. S., Saitoh, T. R., Jeon, M., **Figer, D. F.**, Merritt, D., & Wada, K. 2011, *Nuclear Star-Forming Ring of the Milky Way: Simulations,* Astrophysical Journal Letters, 735, 11
31. Messineo, M., Davies, B., **Figer, D. F.**, Kudritzki, R. P., Valenti, E., Trombley, C., Najarro, F., & Rich, R. M. 2011, *Massive Stars in the Cl 1813-178 Cluster. An Episode of Massive Star Formation in the W33 Complex,* Astrophysical Journal, 733, 41
32. Davies, B., Kudritzki, R. P., & **Figer, D. F.** 2010, *The potential of red supergiants as extragalactic abundance probes at low spectral resolution*, Monthly Notices of the Royal Astronomical Society, 407, 1203
33. Puga, E., Marın-Franch, A., Najarro, F., Lenorzer, A., Herrero, A., Acosta, J., Chavarrıa, L., **Figer, D.**, & Ramırez, S. 2010, *Near-infrared spectroscopy in NGC 7538*, Astronomy & Astrophysics, 517, 2
34. Davies, B., **Figer, D. F.**, Kudritzki, R. P., & Trombley, C. 2009, *The progenitor mass for the magnetar SGR1900+14*, Astrophysical Journal, 707, 844
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