Benjamin M. Rose

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Space Telescope Science Institute
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Employment

Post-doctoral Fellow — **2018–present**
Space Telescope Science Institute, Baltimore, Maryland
Supervisors: Drs. Susana Deustua and Andrew Fruchter

Education

Doctor of Philosophy in Physics — **2018**
Master of Science in Physics — **2016**
University of Notre Dame, Notre Dame, Indiana
Advisor: Professor Peter Garnavich

Bachelor of Science in Physics, *cum laude* — **2012**
Whitworth University, Spokane, Washington
Minor: Mathematics

Professional Societies

American Astronomical Society (AAS)
- Full Member — **2019 - present**
- Junior Member — **2014 - 2018**

American Physical Society (APS), Student Member — **2011–2014**

Activities & Outreach

LSST DESC, Member — **2018 - present**

Graduate Physics Society (GPS)
- Public Relations Chair — **2017–2018**
- Member — **2012–2018**
- Executive Board Member — **2015–2017**
- Annual Conference co-chair, for a conference of over 60 attendees — **2016**

Graduate Student Union (GSU) — **2013–2014**
I was the Physics Department representative and worked on issues regarding parking, health insurance, building remodels, and more

Whitworth Near Space — **Spring 2012**
Assisted middle school students on two high altitude balloon experiments by assisting in building radiation, ozone and temperature sensors

Awards

Lennox Graduate Fellowship, Notre Dame — **2017**
Recognizes achievements and promise as a graduate student in physics.

GSU Conference Presentation Grant, Notre Dame — **2015 & 2016**
Notebaert Professional Development Award, Notre Dame — **2015 & 2016**
Poster Grant, GSU 6th Annual Research Symposium — **2014**
Presidential Scholarship, Whitworth University — **2008–2012**
Delbert E. Friesen Memorial Scholarship, Whitworth University — **2011–2012**
Talent Scholarship in Physics, Whitworth University — **2008–2011**

Computer Skills

Daily Use: Python, `git`, GitHub, Astropy, LaTeX, Markdown, macOS, `numpy`, `scipy`
Proficient: Jupyter Notebook, Jekyll, HTML, CSS, Wordpress, TravisCI, `pytest`, `codcov`, `emcee`, `pandas`
Competent: Linux, Windows, `click`, `stan`, `bash`

Open Source Contributions

`scipy`	documentation update of limitation in `integrate.quad` accepted
`corner.py`	[WIP] Update to title API
`sep`	documentation update accepted
`emcee`	documentation update accepted
`seaborn`	documentation update accepted
`astropy`	reported an issue in World Coordinate System utility

Referee

Journal of Open Source Software

Teaching Experience

Introduction to Scientific Computing with Python **Summer 2017 & 2018**
Lead instructor covering an introduction to python and computational methods for the Notre Dame REU program

Physics GRE Preparation Course **Summer 2017 & 2018**
Solo instructor for a review course of the material on the Physics GRE exam for the Notre Dame REU program

Introduction to Scientific Computing with Python **Spring 2016**
Taught basic programming help session and graded assignments

Engineering Introduction Physics Labs **Spring & Fall 2013**

Pre-Medical Introduction Physics Labs **Fall 2012 & Summer 2013**

Supplemental Instruction Leader **Fall 2011 & Spring 2012**
Led a group study session of introductory physics material with a focus on active learning techniques

Observational Experience

Ancillary Program PI, SDSS-IV MaNGA **2017**
Exploring a Possible Correlation Between Hubble Residuals and SN Ia Local Environments
Awarded 40 ancillary targets

Vatican Advanced Technology Telescope (VATT) **June 2014**
Mount Graham International Observatory, Safford, Arizona
4 nights

Oral Presentations

4 Dissertation Talk. *Think Local, Act Global: The Influence of Host Galaxy Properties on Type Ia Light Curves*, January 9th, 2019, AAS 233rd Meeting, Seattle, Washington

3 *Searching For a Cosmic-scale Dark Flow*, November 20, 2015, 2015 APS Prairie Section Meeting, Notre Dame, Indiana

2 *Finding A Cosmic Bulk Flow*, April 28, 2014, 2014 GPS Spring Conference, Notre Dame, Indiana

1 *Determining the Location of a Radioactive Source in* MAJORANA DEMONSTRATOR, August 2, 2011, REU Culminating Talks, Duke University, Durham, North Carolina

Poster Presentations

6 *Correlations Between Hubble Residuals and MCMC Estimated Local Stellar Ages of Type Ia Supernovae*, January 10, 2018, AAS 231th Meeting, Washington, DC

5 *Correlations Between Hubble Residuals and Local Stellar Populations of Type Ia Supernovae*, January 7, 2017, AAS 229th Meeting, Grapevine, Texas

4 *Correlating Type Ia Supernova Properties With Their Local Environment Using HST Snapshots of Host Galaxies*, January 6, 2016, AAS 227th Meeting, Kissimmee, Florida

3 *Prospects for Detecting a Cosmic Bulk Flow*, January 6, 2015, AAS 225th Meeting, Seattle, Washington

2 *Finding A Cosmic Bulk Flow*, February 27, 2014, GSU 6th Annual Research Symposium, Notre Dame, Indiana

1 *Determining the Location of a Radioactive Source in* MAJORANA DEMONSTRATOR, October 27, 2011, APS, Division of Nuclear Physics, Michigan State University

Refereed Publications

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6 **Rose, B. M.**, Garnavich, P. M., Berg, M. A. 2019, *Think Global, Act Local: The Effect of Environment on Hubble Residuals of Type Ia Supernovae*, in review with ApJ.

5 The SDSS Collaboration 2018, *The Fifteenth Data Release Of The Sloan Digital Sky Surveys*, ApJSS, 240, 23

4 Mathews, G. J., **Rose, B. M.**, Garnavich, P. M., et al. 2016, *Detectability of Cosmic Dark Flow in the Type Ia Supernova Redshift-Distance Relation*, ApJ, 827, 60

3 Kennedy, M. R., Callanan, P., Garnavich, P. M., **et al.** 2016, *The New Eclipsing CV MASTER OTJ192328.22+612413.5: A Possible SW Sextantis Star*, AJ, 152, 27

2 Mathews, G. J., Gangopadhyay, M. R., Garnavich, P., **Rose, B. M.**, et al. 2015, *Constraints on the Birth of the Universe and Origin of Cosmic Dark Flow*, International Journal of Modern Physics A, 30, 1545022

1 Littlefield, C., Garnavich, P., Magno, K., **et al.** 2015, *High-Amplitude, Rapid Photometric Variation of the New Polar MASTER OT J1321*, Information Bulletin on Variable Stars, 6129, 1