BENJAMIN RICHARD ROULSTON

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EDUCATION

Boston University *September 2016 – Present*
Ph.D., Astronomy — in progress
Masters, Astronomy — May 2018

Clarkson University *September 2013 – May 2016*
B.S., Physics with University Honors, Minor in Mathematics

RESEARCH INTERESTS

time domain spectroscopy, variable stars, dwarf carbon stars, machine classification,

RESEARCH APPOINTMENTS

SAO Predoctoral Fellowship — Smithsonian Astrophysical Observatory *January 2019 – present*
SAO Visting Student — Smithsonian Astrophysical Observatory *July 2018 – December 2018*
Research Assistant — Boston University Center for Space Physics *May 2017 – September 2017*
Undergraduate Researcher — Clarkson University *May 2014 – June 2016*

TEACHING EXPERIENCE

Boston University Fall 2016, Spring 2017, Fall 2017, Spring 2018
Teaching Fellow

- Courses Taught: AS101, AS202, AS203
- Conducted lab sections of undergraduate non-major and major students.
- Taught students basics of error analysis and propagation, mechanics, and basic observing techniques including: imaging, spectroscopy.
- Introduced students to basic computer programming in Python using Astropy and SDSS spectra

Clarkson University Spring 2015, Fall 2015, Spring 2016
Teaching Assistant

- Courses Taught: PH131, PH132
- Conducted both discussion and lab sections for undergraduate non-major and major students.
- Taught students concepts in mechanics and E&M including: statics, dynamics, rotation, charges, currents, induction, Gauss's Law, etc.

PROGRAMMING SKILLS

Programming Languages	Python, IDL, MATLAB, C++, SQL, Bash
Python Packages	Astropy, Pandas, Matplotlib, Numpy, Scipy
Software & Tools	IRAF, LaTeX, Excel, Mathematica, HTML

OBSERVING EXPERIENCE

1.2m & KeplerCam – Fred Lawrence Whipple Observatory 03/13/2020 – 03/14/2020

· 1.0 nights — Photometric monitoring of dwarf carbon stars

Magellan Telescopes – Las Campanas Observatory 07/25/2019 – 01/02/2020

· 4.0 nights — RV monitoring of dwarf carbon stars

MMT – Fred Lawrence Whipple Observatory 03/26/2019 –

· 3.0 nights — RV monitoring of dwarf carbon stars

Perkin's Telescope - Lowell Observatory 11/10/2017 – 11/12/2017

· Two nights in observer mode — Infrared Spectroscopy

Mont Mégantic Observatory 07/08/2015 – 07/10/2015

· Two nights in observer mode — Optical Spectroscopy

Clarkson University Reynolds Observatory May 2014 – June 2016

· Observed multiple objects over the course of approximately two years as part of research project and as assistant to astronomy course.

ACHIEVEMENTS

Clarkson University Physics Department Outstanding Senior Award *May 2016*

OUTREACH

Python Hour with SAO Latino Initiative Program *Summer 2019*
Boston University Center for Space Physics Science for Kids Day *June 15, 2018*
Boston University Observatory Public Nights *Fall 2016 - Present*
Clarkson University Roller Coaster Camp — Counselor *Summer 2014, Summer 2015*

CONFERENCES

AAS235 — Poster *January 4 – January 8, 2020*
SDSS 2019 Collaboration Meeting — Plenary Talk, Talk *June 24 – June 28, 2019*
AAS233 — Poster *January 6 – January 10, 2019*
Cool Stars 20 — Poster *July 29 – August 3, 2018*
Clarkson University SURE Conference — Talk *July 2015*
Syracuse University Undergraduate Research Day — Talk *November 2014*
Clarkson University SURE Conference — Talk *July 2014*
Clarkson University SURE Conference — Poster *July 2013*

PUBLICATIONS

First Author

- **Roulston, Benjamin R.**, Green, Paul J.; Ruan, John J.; MacLeod, Chelsea L.; Anderson, Scott F.; Badenes, Carles; Brownstein, Joel R.; Schneider, Donald P.; Stassun, Keivan G.. 2019, ApJ, 877, 44, *The Time-Domain Spectroscopic Survey: Radial Velocity Variability in Dwarf Carbon Stars*

Other Author

- Green, Paul J.; Montez, Rodolfo; Mazzoni, Fernando; Filippazzo, Joseph; Anderson, Scott F.; De Marco, Orsola; Drake, Jeremy J.; Farihi, Jay; Frank, Adam; Kastner, Joel H.; Miszalski, Brent; **Roulston, Benjamin R.** 2019, ApJ, 881, 49, *A Chandra Study: Are Dwarf Carbon Stars Spun Up and Rejuvenated by Mass Transfer?.*