

Samson A. Johnson

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Education

PhD Candidate in Astronomy

2016-2021 (expected)

The Ohio State University

Columbus, Ohio

Thesis: Predictions for Exoplanet Demographics from the *Roman* Galactic Exoplanet Survey

- Dean's Distinguished University Fellowship - Jet Propulsion Lab Summer Internship Program

- *Roman* Galactic Exoplanet Survey Science Investigation Team - NSF GRFP Honorable Mention 2016

Physics BA, Mathematics BA, High Honors

2011-2015

University of Montana, Davidson Honors College

Missoula, Montana

Thesis: Dispatch Scheduling to Maximize Exoplanet Yield

- MT University System Honors Scholarship - Horatio Alger MT Scholarship - Jack and Isabel Haynes Scholarship

- Cail Physical/Bio-Sciences Scholarship - Shallenberger/Alumni Association Scholarship in Physics

Employment

Research Assistant, Harvard-Smithsonian Center for Astrophysics

Aug. 2015-July 2016

Refined site operation software for MINERVA robotic exoplanet detection telescope array. Developed software for automation of precision RV spectrograph, monitored daily operations, contributed to proposals.

Research Assistant, University of Montana

June 2014-June 2015

Designed and tested dispatch scheduling software/simulation for use with MINERVA. Integrated simulations into forward modeling code to optimize exoplanet survey strategy.

Laboratory Assistant, University of Montana

Winter 2011, Summer 2013

Assisted with developing space science instrument to measure ISM passing through the heliopause. Assembled vacuum chambers, handled vacuum specific hardware. Designed, constructed framework for vacuum pumps and chambers

Deli Staff, Good Food Store, Missoula, MT

April 2012-Oct. 2014

Customer service, teamwork, task management. Received multiple commendations on helpfulness and safety.

Warehouse Picker, The Huckleberry People, Missoula, MT

Sept. 2011-April 2012

Production based job working in warehouse environment. Time management, order assembly, manual dexterity.

Supervisor, Papa Murphy's Pizza, Missoula, MT

July 2009-Sept. 2011

Delegated tasks to crews of 5-10 members. Customer service, problem solving, conflict resolution.

Advising

Abigail Aronica (undergraduate), *The Ohio State University*, 2019-present Developing an in-house Galactic population synthesis model for use in microlensing survey simulations. Modular and open source.

Kit Fieldhouse (high school), *University of Montana*, 2014-2015: Developed software to automate follow-up observation scheduling of KELT transiting planet candidates. Presented at national science fairs.

Outreach (Sample)

- **Polaris** Mentor 2019-2021 (group enhancing retention of underrepresented undergrads in physics/astronomy)
- Academic Facilitator for URSA 2021 (undergraduate early arrival program associated with Polaris)
- Mentor for new astronomy graduate students at Ohio State University (2019-2020)
- Breakfast of Science Champions, coordinator and volunteer, 2017-2020 - Columbus, Ohio
- Ohio Supercomputer Center Summer Institute 07/2017, mentor - Columbus, Ohio
- Astronomy on Tap lecture, 2017 - Columbus, Ohio
- Blue Mountain Observatory public viewing nights, assistant for 8 nights, 2014 - Missoula, Montana

Teaching/Mentoring

- Ohio State, Polaris Mentor of undergraduates S. Petz, C. Roper (2019-2020), A. Cooper (2020-2021)
- Ohio State, Methods of Astronomical Observation & Data Analysis (Astron 3350, GTA 2018)
- Ohio State, Life in the Universe (Astron 1141, GTA 2019)
- Ohio State, From Planets to the Cosmos: Lab Section (Astron 1150, GTA 2019)

Talks (Sample)

The Roman Galactic Exoplanet Survey: Predictions for the Free-Floating Planet Detection Rate

NExScl Exoplanet Demographics, 11/2020, 15 min talk

The Roman Galactic Exoplanet Survey: Prospects for Constraining the Frequency of Earth-Analogs

Harvard-Smithsonian Center for Astrophysics GCSP Seminar, 09/2020, 20 min talk, [link to recording](#)

The WFIRST Microlensing Survey: Constraints on the frequency of Earth-analogs

Exoplanets III, 08/2020, 15 min talk

The WFIRST microlensing survey: mission updates and predictions of the free-floating planet yield

23rd International Microlensing Conference, 01/2019, 15 min talk

Dispatch Scheduling to Maximize Exoplanet Detection,

SPIE Astronomical Telescopes + Instrumentation, 07/2016, 15 minute talk

Publications (ADS Library)

First Author

1. *Predictions of the Nancy Grace Roman Space Telescope Galactic Exoplanet Survey II: Free-Floating Planet Detection Rates*
Johnson, S. A., Penny, M. T., Gaudi, B. S., et al. 2020, AJ, 160, 123
Media: [nasa.gov](#) feature, [CNN](#), [EurekAlert](#), [Forbes](#)
2. *The Quiescent Progenitors of Type II Supernovae*
Johnson, S. A., Kochanek, C. S., Adams, S. M., 2018, MNRAS, 480, 1696
3. *On the Progenitor of the Type Ibc Supernova 2012fh*
Johnson, S. A., Kochanek, C. S., Adams, S. M., 2017, MNRAS, 472, 3115
4. *The Radial Velocity of OGLE-2015-BLG-0966S*
Johnson, S. A., Yee, J. C., 2017, PASP, 129, 074401

Coauthor

1. *The HD 217107 Planetary System: Twenty Years of Radial Velocity Measurements*
Giovinazzi, M. R., Blake, C. H., Eastman, J. D., et al. 2020, arXiv:2009.12356
2. *A Full Implementation of Spectro-Perfectionism for Precise Radial Velocity Exoplanet Detection: A Test Case With the MINERVA Reduction Pipeline*
Cornachione, M. A., Bolton, A. S.; Eastman, J. D., et al, 2019, PASP, 131, 124503
3. *Minerva-Australis. I. Design, Commissioning, and First Photometric Results*
Addison, B., Wright, D. J., Wittenmyer, R. A., et al. 2019, PASP, 131, 115003
4. *First Radial Velocity Results From the MINiature Exoplanet Radial Velocity Array (MINERVA)*
Wilson, M. L., Eastman, J. D., Cornachione, M. A., et al. 2019, PASP, 131, 115001
5. *KELT-22Ab: A Massive, Short-Period Hot Jupiter Transiting a Near-solar Twin*
Labadie-Bartz, J., Rodriguez, J. E., Stassun, K. G., et al. 2019, ApJS, 240, 13
6. *KELT-19Ab: A...Hot Jupiter Transiting a Likely Am Star with a Distant Stellar Companion*
Siverd, R. J., Collins, K. A., Zhou, G., et al. 2018, AJ, 155, 35
7. *KELT-20b: A giant planet with a period of $P \sim 3.5$ days transiting the...early A star HD 185603*
Lund, M. B., Rodriguez, J. E., Zhou, G., et al. 2017, AJ, 154, 194
8. *The Mysterious Dimmings of the T Tauri Star V1334 Tau*
Rodriguez, J. E., Zhou, G., Cargile, P. A., et al. 2017, ApJ, 836, 209

Non-Refereed

1. *Measurement of the Free-Floating Planet Mass Function with Simultaneous Euclid and WFIRST Microlensing Parallax Observations*
Penny, M. T., Bachelet, E., Johnson, S. A., et al., Astro2020 Decadal Survey White Paper
2. *The Scientific Context of WFIRST, Microlensing in the 2020s*
Yee, J. et al, Astro2020 Decadal Survey White Paper