

# Dominick Rowan

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## EDUCATION

2020 – Present: Ohio State University, PhD in Astronomy

2016 – 2020: Haverford College, Bachelor of Science: Physics & Astronomy

Undergraduate Thesis: *A NICER View of the X-ray Background*

Departmental High Honors

Magna Cum Laude

## AWARDS & HONORS

- Ohio State University Presidential Fellowship (2024 – 2025)
- David Will Prize in Astronomy (2023): *Recognizes a student or postdoctoral researcher in astrophysics who is conducting an exceptional research program in computational astronomy, survey astronomy, data science, or other related topics.*
- AAS Chambliss Honorable Mention (2023)
- NSF GRFP Honorable Mention (2021)
- Ohio State University Fellowship (2020)
- Louis B. Green Prize in Astronomy (2020): *Awarded in honor of Louis B. Green (1911-1999), a Haverford Professor of Astronomy from 1941 to 1976, who inspired generations of students. These prizes are given to the students who go above and beyond in their contributions to the departments as well as showing excellence in research.*
- Inducted into Phi Beta Kappa Honors Society (2020)
- KINSC Summer Scholar (2017)

## PUBLICATIONS — 9 as first author, 1 as second author, 8 as contributing author

1. Rowan, D., et al. (2024). *High mass function ellipsoidal variables in the Gaia Focused Product Release: searching for black hole candidates in the binary zoo*. Submitted to The Open Journal of Astrophysics.

(<https://ui.adsabs.harvard.edu/abs/2024arXiv240109531R/abstract>)

2. Rowan, D., et al. (2023). *A hidden population of massive white dwarfs: two spotted K+WD binaries*. Submitted to MNRAS. (<https://ui.adsabs.harvard.edu/abs/2023arXiv230711146R/abstract>)

3. Rowan, D., et al. (2023). *The Value-Added Catalog of ASAS-SN Eclipsing Binaries III: Masses and Radii of Gaia Spectroscopic Binaries*. MNRAS. (<https://ui.adsabs.harvard.edu/abs/2023MNRAS.523.2641R/abstract>)

4. Rowan, D., et al. (2023). *The Value-Added Catalog of ASAS-SN Eclipsing Binaries II: Properties of Extra-Physics Systems*. MNRAS. (<https://ui.adsabs.harvard.edu/abs/2023MNRAS.520.2386R/abstract>)

5. Rowan, D., et al. (2022). *The Value-Added Catalog of ASAS-SN Eclipsing Binaries: Parameters of Thirty Thousand Detached Systems*. MNRAS (<https://ui.adsabs.harvard.edu/abs/2022MNRAS.517.2190R/abstract>)

6. Rowan, D., et al. (2021). *High Tide: A Systematic Search for Ellipsoidal Variables in ASAS-SN*. MNRAS (<https://ui.adsabs.harvard.edu/abs/2021MNRAS.507..104R/abstract>)
7. Rowan, D., et al. (2020). *A NICER View of Spectral and Profile Evolution for Three X-ray Emitting Millisecond Pulsars*. Astrophysical Journal (<https://ui.adsabs.harvard.edu/abs/2020ApJ...892..150R/abstract>)
8. Rowan, D., et al. (2019). *Detections and Constraints on White Dwarf Variability from Time-Series GALEX Observations*. MNRAS (<https://ui.adsabs.harvard.edu/abs/2019MNRAS.486.4574R/abstract>)
9. Rowan, D., et al. (2016). *The Lick-Carnegie Exoplanet Survey: HD32963b – A New Jupiter-Analog Orbiting a Sun-like Star*. Astrophysical Journal. (<https://ui.adsabs.harvard.edu/abs/2016ApJ...817..104R/abstract>)

#### Co-Authored Publications:

1. Phillips, A., et al. (2024). *Seven Classes of Rotational Variables From a Study of 50,000 Spotted Stars with ASAS-SN, Gaia, and APOGEE*. MNRAS. (<https://ui.adsabs.harvard.edu/abs/2024MNRAS.527.5588P/abstract>)
2. Beck, P. G., et al. (2023). *Red-giant and main-sequence solar-like oscillators in binary systems revealed by ESA Gaia Data Release 3 -- Reconstructing stellar and orbital evolution from binary-star ensemble seismology*. A&A. (<https://ui.adsabs.harvard.edu/abs/2023arXiv230710812B/abstract>)
3. Lam, C. Y., et al. (2023). *Roman CCS White Paper: Characterizing the Galactic population of isolated black holes*. arXiv:2306.12514. (<https://ui.adsabs.harvard.edu/abs/2023arXiv230612514L/abstract>)
4. Terry, S. K., et al. (2023). *The Galactic Center with Roman*. arXiv:2306.12485. (<https://ui.adsabs.harvard.edu/abs/2023arXiv230612485T/abstract>)
5. Jayasinghe, T., Rowan, D., et al. (2023). *A search for compact object companions to high mass function single-lined spectroscopic binaries in Gaia DR3*. MNRAS. (<https://ui.adsabs.harvard.edu/abs/2023MNRAS.521.5927J/abstract>)
6. Olivier, G., et al. (2022). *A Multiwavelength Study of the Massive Colliding Wind Binary WR20a: A possible Progenitor for Fast-Spinning LIGO Binary Black Hole Mergers*. Submitted to ApJ. (<https://ui.adsabs.harvard.edu/abs/2022arXiv221202514O/abstract>)
7. Jayasinghe, T., et al. (2022). *The ‘Giraffe’: Discovery of a stripped red giant in an interacting binary with a  $2 M_{\odot}$  lower giant*. MNRAS. (<https://ui.adsabs.harvard.edu/abs/2022MNRAS.516.5945J/abstract>)
8. Jayasinghe, T., et al. (2021) *A unicorn in monoceros: the  $3 M_{\odot}$  dark companion to the bright, nearby red giant V723 Mon is a non-interacting, mass-gap black hole candidate*. MNRAS. (<https://ui.adsabs.harvard.edu/abs/2021MNRAS.504.2577J/abstract>)
9. Tucker, M.A., et al. (2018). *ASASSN-18ey: The Rise of a New Black Hole X-ray Binary*. The Astrophysical Journal Letters. (<https://ui.adsabs.harvard.edu/abs/2018ApJ...867L...9T/abstract>)

## Classification Reports, Research Notes, and Telegrams:

Miller, A. M. et al. (2023). ASASSN-23ht: A Deep Eclipse Event.

(<https://ui.adsabs.harvard.edu/abs/2023ATel16328....1M/abstract>)

Rizzo Smith, M. et al. (2022). An Update on ASASSN-21qj: A Rapidly Fading, Sun-Like Star; Back With a Vengeance.

(<https://ui.adsabs.harvard.edu/abs/2022ATel15531....1R/abstract>)

Rizzo Smith, M. et al. (2022). ASASSN-22el: A Deep Eclipse Event.

(<https://ui.adsabs.harvard.edu/abs/2022ATel15308....1R/abstract>)

Rizzo Smith, M. et al. (2021). ASASSN-21sa: A Deep Dimming Event.

(<https://ui.adsabs.harvard.edu/abs/2021ATel14937....1R/abstract>)

Rizzo Smith, M. et al. (2021). ASASSN-21qj: A Rapidly Fading, Sun-Like Star.

(<https://ui.adsabs.harvard.edu/abs/2021ATel14879....1R/abstract>)

Rizzo Smith, M. et al. (2021). ASASSN-21nn: An Unusual Dimming Event in a Red Giant Star.

(<https://ui.adsabs.harvard.edu/abs/2021ATel14803....1R/abstract>)

Rowan, D., et al. (2021). ASASSN-21co: A Detached Eclipsing Binary with an 11.9 yr Period. RNAAS

(<https://iopscience.iop.org/article/10.3847/2515-5172/ac0c83>)

Tucker, M.A., Rowan, D.M., & Shappee, B.J. (2018). SCAT Transient Classification Report for 2018-07-22. Transient

Name Server Classification Report. (<https://ui.adsabs.harvard.edu/abs/2018TNSCR1016....1T/abstract>)

Tucker, M.A., Rowan, D.M., & Shappee, B.J. (2018). SCAT Transient Classification Report for 2018-06-13. Transient

Name Server Classification Report. (<https://ui.adsabs.harvard.edu/abs/2018TNSCR.814....1T/abstract>)

Tucker, M.A., Rowan, D.M., & Shappee, B.J. (2018). SCAT Transient Classification Report for 2018-06-12. Transient

Name Server Classification Report. (<https://ui.adsabs.harvard.edu/abs/2018TNSCR.805....1T/abstract>)

Tucker, M.A., et al. (2018). SCAT Classification of 4 Optical Transients. The Astronomer's Telegram.

(<https://ui.adsabs.harvard.edu/abs/2018ATel11711....1T/abstract>)

## WORK EXPERIENCE

### **Thomas Lucas Productions – 2016**

Worked as an assistant writer and editor for SpaceRip, a streaming-based production company during an eight-week internship. Wrote and edited a documentary on Solar System formation theory, *The Improbable Rise of Planet Earth*. Wrote several astronomy features for the SpaceRip blog on current events.

### **Haverford College Public Observing –2019 – 2020**

Worked as a leader of the Haverford public observing program. Organized and ran 3-4 observatory open-house events each semester for students and the local community as well as private events for small groups. Lead observations with the 12" and 16" telescopes, ran science demonstrations, and gave astronomy presentations.

## PRESENTATIONS

Talk, University of Michigan SPF Meeting, Nov 2023. Ann Arbor, Michigan. *The Value-Added Catalogs of ASAS-SN Eclipsing Binaries.*

Talk, Harvard-Smithsonian Center for Astrophysics ITC Luncheon, March 2023. Cambridge, Massachusetts. *The Value-Added Catalog of ASAS-SN Eclipsing Binaries*

Virtual Talk, University of California Santa Barbara, March 2023. *The Value-Added Catalog of ASAS-SN Eclipsing Binaries*

Poster presentation, American Astronomical Society, 241, Jan 2023. Seattle, Washington. *The Value-Added Catalog of ASAS-SN Eclipsing Binaries*

Poster presentation, TESS Science Conference II, Aug 2021. Virtual Meeting. *A Systematic Search for Ellipsoidal Variables with ASAS-SN and TESS*

Poster presentation, American Astronomical Society, 237, Jan 2021. Virtual Meeting. *A Systematic Search for Ellipsoidal Variables in ASAS-SN*

Poster presentation, American Astronomical Society, 235, Jan 2020. Honolulu, Hawaii. *A NICER View of Spectral and Profile Evolution for Three X-ray Emitting Millisecond Pulsars*

Talk, Haverford College Physics & Astronomy Symposium, Dec 2019. *A NICER View of the X-Ray Background*

Poster presentation, Haverford KINSC Summer Research Symposium, September 2019. *Phase-Resolved Spectra of Millisecond Pulsars with NICER X-ray Observations*

Poster presentation, International Pulsar Timing Array, June 2019. Pune, India. *Phase-Resolved Spectra of Millisecond Pulsars with NICER X-ray Observations*

Poster presentation, American Astronomical Society, 234, Jan 2019. *Pulsating and Eclipsing White Dwarfs Discovered from Time-Series GALEX Observations*

Talk, University of Hawaii Institute for Astronomy Summer Research Symposium, August 2018. *White Dwarf Variability in GALEX Observations.*

Talk, Keck Northeast Astronomy Consortium, October 2017. *Mapping Faraday Rotation Measures onto High Velocity Cloud H288*

## OUTREACH AND MENTORSHIP

Ohio State Summer Undergraduate Research Program 2023:

Student: Jowen Callahan

Project Title: Determining the Masses and Radii of Heartbeat Stars

“Polaris” undergraduate physics and astronomy mentorship program, 2021, 2022, 2023

“Zenith” SciAccess Blind & Visually Impaired Astronomy Mentorship Program, 2020.

Haverford College Public Observing Co-Head, 2019-2020.

Organized observatory open-house events for the local community and private events for small groups/high schools. Led observations with the 12” and 16” telescopes, ran science demonstrations and gave talks

## TEACHING EXPERIENCE

- Teaching Assistant, Introduction to Astronomy 101. Haverford College, Spring 2020
- Developed ‘Startup Guide’ for NICER Timing Group summer students, 2020

## OBSERVING EXPERIENCE

Large Binocular Telescope: PEPSI and MODS (6 nights)

Public Observing facilities: Schmidt-Cassegrain 8”, 12”, and 16” telescopes at Haverford

Observational Astronomy (ASTR341): Green Bank 20m radio telescope, 40ft radio telescope

University of Hawaii IfA REU: UH 88inch telescope (4 nights)

Accepted Proposals: 5 as principal investigator, 5 as co-investigator

Co-I: “Observations of Binary Systems with Non-Interacting Compact Object Companions”

Large Binocular Telescope/PEPSI, 13.5 hours in 2022A

PI: “Observing Non-Interacting Compact Object Candidates”

Large Binocular Telescope/PEPSI, 12.4 hours in 2022B

Co-I: “Searching for Non-Interacting Compact Object Companions in Spectroscopic Binaries”

Automated Planet Finder Levy Spectrograph, 60 hours in 2022B

PI: “Observing Non-Interacting Compact Object Candidates”

Large Binocular Telescope/PEPSI, 11.4 hours in 2023A

PI: “Mass Measurements of Eclipsing Red Giants”

Large Binocular Telescope/PEPSI, 10.8 hours in 2023A

Co-I: “Searching for Non-Interacting Compact Object Companions in Spectroscopic Binaries”

Automated Planet Finder Levy Spectrograph, 60 hours in 2023A

PI: “Observing Non-Interacting Compact Object Candidates”

Large Binocular Telescope/PEPSI, 12 hours in 2023B

PI: “Mass Measurements of Eclipsing Red Giants”

Large Binocular Telescope/PEPSI, 9.9 hours in 2023B

Co-I: "Searching for Non-Interacting Compact Object Binaries in Gaia DR3"

Automated Planet Finder Levy Spectrograph, 90 hours in 2023B

Co-I: "Determining the masses and radii of evolved stars in detached eclipsing binaries"

Automated Planet Finder Levy Spectrograph, 40 hours in 2023B