

# Joseph Alexander GUIDRY

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 [website](#)

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## SUMMARY

I am a Ph.D. candidate and NSF Graduate Research Fellow at the Institute for Astrophysical Research in the Department of Astronomy at Boston University (Aug. 2021 – present). I work in the BU White Dwarf Group under the supervision of Prof. JJ Hermes.

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## RESEARCH INTERESTS

**WHITE DWARF STARS** remnant planetary systems | pulsating white dwarfs | magnetic white dwarfs

**VARIABLE STARS** time-domain surveys | time-series astronomy | transiting systems

**SOFTWARE DEVELOPMENT** open source software | data reduction and processing | time-series analysis

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## EDUCATION

### BOSTON UNIVERSITY

PhD Student, Department of Astronomy

PhD Candidacy, M.A. Astronomy earned April 2024

August 2021 – present

### UNIVERSITY OF TEXAS AT AUSTIN

B.S. Astronomy (with Honors)

B.S. Physics

Cumulative GPA: 3.76/4.00

August 2017 – May 2021

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## PUBLICATIONS

An ADS query of my publications can be accessed [here](#).

### FIRST-AUTHORED REFEREED PUBLICATIONS

1. **Guidry, J. A.**, Hermes, J. J., De, K., et al. 2024, *ApJ*, [972](#), [126](#).  
*Using 3.4- $\mu$ m Variability towards White Dwarfs as a Signpost of Remnant Planetary Systems.*
2. **Guidry, J. A.**, Vanderbosch, Z. P., Hermes, J. J., et al. 2021, *ApJ*, [912](#), [125](#).  
*I Spy Transits and Pulsations: Empirical Variability in White Dwarfs Using Gaia and the Zwicky Transient Facility.*

### REFEREED PUBLICATIONS AS CONTRIBUTING AUTHOR

1. Bhattacharjee, S., Vanderbosch, Z., ..., **Guidry, J. A.** (author 6/16), et al. 2025, *arXiv:2502.05502*, submitted to PASP.  
*A ZTF Search for Circumstellar Debris Transits in White Dwarfs: Six New Candidates, one with Gas Disk Emission, identified in a Novel Metric Space.*
2. Hermes, J. J., **Guidry, J. A.**, et al. 2025, *ApJ*, [980](#), [56](#).  
*Sporadic Dips from Extended Debris Transiting the Metal-rich White Dwarf SBSS 1232+563.*
3. Steen, M., Hermes, J. J., **Guidry, J. A.**, et al. 2024, *ApJ*, [967](#), [166](#).  
*Measuring White Dwarf Variability from Sparsely Sampled Gaia DR3 Multi-epoch Photometry.*
4. Farihi, J., Hermes, J. J., Marsh, T. R., ..., **Guidry, J. A.** (author 6/14), et al. 2022, *MNRAS*, [511](#), [1647](#).  
*Relentless and complex transits from a planetesimal debris disc.*
5. Vanderbosch, Z. P., Rappaport, S., **Guidry, J. A.**, et al. 2021, *ApJ*, [917](#), [41](#).  
*Recurring Planetary Debris Transits and Circumstellar Gas around White Dwarf ZTF J0328-1219.*
6. Kupfer, T., Prince, T. A., van Roestel, J., ..., **Guidry, J. A.** (author 18/21), et al. 2021, *MNRAS*, [505](#), [1254](#).  
*Year 1 of the ZTF high-cadence Galactic plane survey: strategy, goals, and early results on new single-mode hot subdwarf B-star pulsators.*

## CONFERENCE ABSTRACTS

1. Extreme Solar Systems V: **Guidry, J.**, Hermes, J. J., Vanderbosch, Z. P. 2024, [Poster 612.01](#). *Transiting Planetary Debris around White Dwarfs: New Discoveries and Emerging Dichotomies*
2. 237th American Astronomical Society Meeting: **Guidry, J. A.**, Vanderbosch, Z. P., Hermes, J. J., et al. 2021, [AAS](#). *I Spy Variability and Transits: Detecting Variable White Dwarfs Using Gaia and Zwicky Transient Facility Photometry Variability Metrics*

## OUTREACH PUBLICATIONS

1. Astrobites [Guest Submission](#): *UR: I Spy Transits and Pulsations – Empirical Variability in White Dwarfs Using Gaia and the Zwicky Transient Facility*.

## WORK EXPERIENCE

### RESEARCH FELLOW

May 2022 – present | Boston University

- Began tenure of NSF Graduate Research Fellowship August 202.

### TEACHING FELLOW

August 2021 – May 2022 | Boston University

- Taught lab portions AS 102, The Astronomical Universe for non-majors, spring 2022 course at Boston University (instructor Prof. Jane Luu).
- Taught lab portions AS 202, Principles of Astronomy I for majors, fall 2021 course at Boston University (instructor Prof. Paul Withers).

### FRESHMAN RESEARCH INITIATIVE PEER MENTOR

January 2019 – August 2021 | UT Austin

Peer Mentor in the FRI White Dwarf Stars stream (PIs: Dr. Mike Montgomery, Prof. Don Winget)

- Served as a mentor to the students of the white dwarf FRI stream by assisting them with their weekly labs and advising them on their research projects. I was trained to employed Socratic methods so that the students led their inquiries.

### UNDERGRADUATE RESEARCH FELLOW

May 2018 - August 2018; May 2020 – August 2020 | UT Austin

- Summer 2020: worked full-time on Summer Undergraduate Research Fellowship awarded by the Department of Astronomy, UT Austin. Advised by Dr. Zach Vanderbosch (then graduate student) and Dr. Mike Montgomery.
- Summer 2018: worked part-time on TIDES/FRI Summer Fellowship awarded by the TIDES office at UT Austin. Advised by Dr. Mike Montgomery of the FRI White Dwarf Stars stream.

## AWARDS AND FELLOWSHIPS

2022	NSF Graduate Research Fellowship Program	National Science Foundation
2021	George H. Mitchell Award (STEM Category)	College of Natural Sciences, UT Austin
2021	Graduate with Distinction in Research	College of Natural Sciences, UT Austin
2021	Graduate with Distinction in Diversity, Equity, & Inclusion	College of Natural Sciences, UT Austin
2020	Outstanding Senior Award	Department of Astronomy, UT Austin
2020	Abel Family Scholarship in Physics	Department of Physics, UT Austin
2020	NSC Endowed Service Scholarship	Natural Sciences Council, UT Austin
2020	Summer Undergraduate Research Fellowship	J. W. Cox Endowment for the Advanced Studies in Astronomy, UT Austin
2019	Melvin J. Rieger Scholarship Fund in Physics	Department of Physics, UT Austin
2019	C. M. & J. C. Thompson Scholarship in Physics	Department of Physics, UT Austin
2019	CNS Second Year Excellence Award	College of Natural Sciences, UT Austin
2018	Dr. H. Franklyn Alexander Endowed Scholarship	College of Natural Sciences, UT Austin
2018	TIDES FRI Summer Research Fellowship	Texas Institute for Discovery Education in Science, UT Austin

## CONFERENCE AND WORKSHOP PARTICIPATION

### CONTRIBUTED TALKS

1. **EUROWD24: 23rd European Workshop on White Dwarfs**, Using Mid-Infrared Variability towards White Dwarfs as a Signpost of Remnant Planetary Systems, Barcelona, July 2024

2. **ZTF 5<sup>th</sup> Science Meeting**, [The Nascent Class of White Dwarfs Showing Transits from Exoplanetary Debris](#), Caltech, October 2023
3. **KITP Conference: White Dwarfs from Physics to Astrophysics**, [Characterizing the Orbital Periods of Transiting Planetary Debris around White Dwarfs](#), KITP-University of California, Santa Barbara, November 2022
4. **EUROWD22: 22nd European Workshop on White Dwarfs**, Characterizing the Orbital Periods of Transiting Planetary Debris around White Dwarfs, University of Tübingen, August 2022

## RESEARCH POSTERS PRESENTED

1. **Frank N. Bash Symposium**, Searching for Color Changes During Outburst, October 2019, Austin, TX
2. **TASC5/KASC12**, Searching for Color Changes During Outburst, July 2019, Cambridge, MA

## WORKSHOPS ATTENDED

- ZTF Summer School, August 2021
- Code/Astro 2021, June 2021

## OTHER PRESENTATIONS

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### INVITED TALKS

- Institute for Theory and Computation Luncheon, [Ancient Planetesimals Colliding around White Dwarfs](#), Center for Astrophysics, Harvard University, April 2023
- Exoplanet Pizza Lunch, *Characterizing the Orbital Periods of Transiting Planetary Debris around White Dwarfs*, Center for Astrophysics, Harvard University, September 2022

### OUTREACH TALKS

1. **North Shore Amateur Astronomy Club**, *Can the oldest stars in the Galaxy reveal the fate of the Solar System?*, September 2023, Boxford, MA
2. **BU Astronomical Society**, *Probing the Orbital Dynamics of Remnant Planetary Systems Using Autocorrelation*, February 2022, Boston University

## OBSERVING EXPERIENCE

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### HUBBLE SPACE TELESCOPE

- Awarded 5 orbits as Principal Investigator of HST Cycle 32 Program [GO #17789](#).

### SOUTHERN ASTROPHYSICAL RESEARCH TELESCOPE (SOAR)

- Awarded 20 hours of AEON time as Principal Investigator via NOIRLab at SOAR during the 2024B semester.

### PERKINS TELESCOPE OBSERVATORY

- Observed 36 nights as PI at Boston University's Perkins Telescope Observatory, Flagstaff, AZ over November 2021–present.

### LOWELL DISCOVERY TELESCOPE

- Observed 4 nights as PI on the Lowell Discovery Telescope, Happy Jack, AZ over January 2024–present.

### MCDONALD OBSERVATORY

- Observed 23 nights as PI at McDonald Observatory's Otto Struve Telescope, Fort Davis, TX over June 2023–present.

## OTHER SERVICE

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### BOSTON UNIVERSITY GRADUATE WORKERS UNION ([BUGWU](#))

1. **Steward**, January 2025–present
2. **Bargaining Team Member**, June 2023–October 2024

Panelist at the [Boston Labor Conference 2025](#).

## SKILLS

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**PROGRAMMING LANGUAGES** ***Experienced:*** Python | ***Familiar:*** IRAF | ***Learning:*** Julia

**SOFTWARE DEVELOPMENT** Git | PyPI

**FRAMEWORKS & LIBRARIES** Jupyter | Matplotlib | Numpy | Pandas | Astropy | Photutils | PyCUDA

**LANGUAGES** ***Native:*** English ***Beginner:*** French, Spanish

## REFERENCES

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Prof. JJ Hermes	Boston University ( <a href="mailto:jjhermes@bu.edu">jjhermes@bu.edu</a> )
Dr. Zachary Vanderbosch	California Institute of Technology ( <a href="mailto:zvanderb@caltech.edu">zvanderb@caltech.edu</a> )
Dr. Mike Montgomery	The University of Texas at Austin ( <a href="mailto:mikemon@astro.as.utexas.edu">mikemon@astro.as.utexas.edu</a> )