

# Joseph Alexander Guidry

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## EDUCATION

### THE UNIVERSITY OF TEXAS AT AUSTIN

B.S. IN ASTRONOMY (SEEKING HONORS)

B.S. IN PHYSICS

Austin, TX

Expected graduation date: May 2021

Cumulative GPA: 3.74/4.00

## LINKS

Website:// [astrojoeg.github.io](https://astrojoeg.github.io/)

Github:// [astrojoeg](https://github.com/astrojoeg)

LinkedIn:// [astrojoeg](https://www.linkedin.com/company/astrojoeg)

ORCID:// 0000-0001-9632-7347

Twitter:// [@astrojoeg](https://twitter.com/astrojoeg)

## WORK EXPERIENCE

### FRI WHITE DWARF STARS STREAM | PEER MENTOR

January 2019 – present | UT Austin

- Served as an upperclassman mentor to the students of the white dwarf FRI stream by assisting them with their weekly labs and advising them on their research projects. Student-lead inquiry is driven by employing Socratic methods.

### DEPARTMENT OF ASTRONOMY | UNDERGRADUATE RESEARCHER

June 2018 – August 2018, May 2020 – August 2020 | UT Austin

- During the summers of 2018 and 2020, I worked part time as a researcher in the White Dwarf group at UT Austin under the advising of Dr. Mike Montgomery with paid support from awarded fellowships. During the fall 2020 semester I worked unfunded in the same research group.

## PUBLICATIONS

### REFEREED FIRST-AUTHORED PUBLICATIONS:

- Joseph A. Guidry, Zachary P. Vanderbosch, J. J. Hermes, et al. (submitted to ApJ, [arXiv:2012.00035](https://arxiv.org/abs/2012.00035)).  
*I Spy Transits and Pulsations: Empirical Variability in White Dwarfs Using Gaia and the Zwicky Transient Facility.*

## PRESENTATIONS

### CONTRIBUTED TALKS

- American Astronomical Society 237th Meeting, *I Spy Transits and Pulsations: Empirical Variability in White Dwarfs Using Gaia and the Zwicky Transient Facility*, accepted for oral presentation in January 2021
- Gulf Coast Undergraduate Research Symposium (GCURS), *Trick or Transits! Detecting Variable White Dwarfs Using Gaia and Zwicky Transient Facility Photometry Variability Metrics*, Rice University, October 2020
- Undergraduate Research Symposium, *I Spy Variability: A New System of Variability Metrics from Gaia and Zwicky Transient Facility Photometry to Discover Variable White Dwarfs*, Department of Astronomy, UT Austin, August 2020

### RESEARCH POSTERS

- Undergraduate Research Forum, *Searching for Color Changes During Outburst*, April 2020, Austin, TX
- Frank N. Bash Symposium, *Searching for Color Changes During Outburst*, October 2019, Austin, TX
- TASC5/KASC12, *Searching for Color Changes During Outburst*, July 2019, Cambridge, MA

### OUTREACH TALKS

- Astronomy Students Association, *Trick or Transits! - Detecting Variable White Dwarfs Using Gaia and Zwicky Transient Facility Photometry Variability Metrics*, October 2020, Austin, TX
- Rapid-Fire Talk at Astronomy on Tap ATX #62, *What is the life cycle of a star?*, November 2019, Austin, TX
- Astronomy Students Association, *Searching for Color Changes During Outburst*, October 2019, Austin, TX

## ADDITIONAL RESEARCH EXPERIENCE

### FRESHMAN RESEARCH INITIATIVE

- As a student in the FRI White Dwarf Stars stream at UT Austin I searched for outbursting ZZ Ceti in publicly archived sky surveys during the spring 2018 semester and summer of 2018, though these data (ASAS-SN, Catalina Sky Survey, Palomar Transient Factory) proved to be insufficient for this purpose. During the fall 2019 semester, I embarked on a project analyzing simultaneous K2 and Pan-STARRS observations of two outbursting ZZ Ceti, which I presented as a poster at multiple conferences (see "Color Changes" poster above).

## OBSERVING EXPERIENCE

17 nights of observing experience on-site at McDonald 2.1-m, 0.9-m, 0.8-m. Eight nights spent remote observing on McDonald 0.8-m.

### TIME AWARDED

- **As Co-I:** 2.53 hrs of Gemini North FT (GMOS-N), PI: Zachary Vanderbosch, October 2020
- **As PI:** 5.5 hrs on McDonald 0.8-m as student in AST 376, May 2020

## AWARDS AND FELLOWSHIPS

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
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

## LEADERSHIP AND SERVICE

### APPOINTED AND ELECTED POSITIONS

- Appointed to the 2019 - 2020 College of Natural Sciences College Tuition and Budget Advisory Committee (CTBAC), November 2019
- Elected Co-President for the Astronomy Students Association, May 2019 - present
- Appointed Undergraduate Representative for the Department of Astronomy, May 2018 - present
  - In this role, I act as an official liaison to the Department Administration along with my two fellow Reps on behalf of our undergraduate student body. I have organized annual informational welcome ceremonies for our new students, participated in faculty job search interviews, and co-authored an anti-racist Call to Action to our department in June 2020.
- Elected Webmaster for the Astronomy Students Association, May 2018 – May 2019

### VOLUNTEER BASIS

- Space Cadet for Astronomy on Tap ATX, August 2019 - February 2020 (due to COVID-19)
- Physics Math & Astronomy Board for Student Advocacy Co-founder and Officer for Undergraduate Peer Advising, May 2019 – present
- Co-founder of People for PMA, **the grassroots movement responsible for the renaming of Robert Lee Moore Hall to the Physics, Mathematics, and Astronomy Building in July 2020**, November 2017 – July 2020

### STUDENT ORGANIZATION INVOLVEMENT

Prior to the COVID-19 crisis, I committed over 10 hours each semester to community outreach through the following student organizations:

- Gender Minorities in Physics, August 2018 – present
- Society of Physics Students, August 2017 – present
- Astronomy Students Association, August 2017 – present

## GRANT WRITING

Co-investigator for NSF Fall 2020 Astronomy and Astrophysics Research Grant proposal: ***Discovery and Characterization of Evolving Exo-planetary Debris around White Dwarf Stars*** (PI: Mike Montgomery).

## MENTORING EXPERIENCE

Fall 2020 – present	Mentoring an undergraduate through a Department of Physics program (PI: Prof. Vernita Gordon)
Fall 2019 – present	Mentoring an undergraduate through Graduate-Undergraduate Mentoring in AstronOmy (GUMMY)
Summer 2019	Informal Mentor for a scholar in the UT Austin NSF REU in Astronomy
Spring 2019 – present	Advised the research projects of numerous students as their Peer Mentor in the FRI White Dwarf Stars stream, resulting in two research posters

## ADDITIONAL SKILLS

- Programming: proficient in Python, learning Julia, intermediate computational skills in Mathematica
- Proficient in using IRAF for astronomical data reduction, aperture photometry, and automated observing routines
- Document preparation in  $\text{\LaTeX}$
- 5 hours of teaching field experience at Brentwood Elementary (AISD) while a student in UTS 101 (UTeach, UT Austin)

## SOCIETY MEMBERSHIP

2019 – present | American Astronomical Society, Undergraduate Student Member  
2019 – present | Sigma Pi Sigma Physics Honor Society, UT Austin

## REFERENCES

Dr. Mike Montgomery	The University of Texas at Austin (mikemon@astro.as.utexas.edu)
Prof. Volker Bromm	The University of Texas at Austin (chair@astro.as.utexas.edu)
Prof. JJ Hermes	Boston University (jjhermes@bu.edu)
Prof. Steven Finkelstein	The University of Texas at Austin (stevenf@astro.as.utexas.edu)
Prof. Elena Caceres	The University of Texas at Austin (elenac@utexas.edu)