



EDUCATION & RESEARCH EXPERIENCE

2016 – 2022

Ph.D., PHYSICS

Louisiana State University, Baton Rouge, LA, USA

Department of Physics & Astronomy

- ★ Dissertation: “Are long-period exoplanets more common around cool stars than we thought?” supervised by Dr. Tabetha Boyajian (2017 – 2022)
 - ★ Technical skills involved in this project include interaction with astronomical data archives, creation and manipulation of large databases, logical and technical development of the SACHEL search pipeline, coding and parallel processing in Python, false positive characterization, visual data inspection, determination of exoplanetary physical and orbital properties, and statistical analysis, and error propagation.
- ★ Project: “Investigation of singularity behavior in loop quantum cosmologies of isotropic and Bianchi type-I spacetimes,” supervised by Dr. Parampreet Singh (2016 – 2017)
 - ★ Technical skills involved included analytical treatment of classical Bianchi type-I cosmologies, construction of a custom numerical integration framework in Python, numerical treatment of effective LQC cases.

2012 – 2014

BACHELOR OF SCIENCE, PHYSICS

The University of Toledo, Toledo, OH, USA

Department of Physics & Astronomy

- ★ Graduated *cum laude*
- ★ Honors thesis: “Constraining the rate of protostellar accretion outbursts in the Orion molecular cloud complex,” supervised by Dr. S. Thomas Megeath and Dr. William J. Fischer
 - ★ Technical skills involved include management and manipulation of large datasets, coding in IDL, false positive characterization, visual data inspection, and Bayesian statistical analysis.
 - ★ A significant discovery that received international press was made as part of this project: The outburst of protostar HOPS 383, which remains the youngest accretion burst yet observed.
- ★ Minor: Piano and vocal performance

Summer 2013

RESEARCH EXPERIENCES FOR UNDERGRADUATES (REU) PROGRAM

Louisiana State University, Baton Rouge, LA, USA

Department of Physics & Astronomy

- ★ Project: “Cosmological horizons in loop quantum cosmology,” supervised by Dr. Parampreet Singh
 - ★ Technical skills involved include analytical treatment of both classical and effective LQC horizons, numerical treatment of some LQC surfaces, numerical plotting.

2005 – 2010

ASSOCIATE OF SCIENCE

Lorain County Community College, Elyria, OH, USA

SELECTED PUBLICATIONS

- Mar. 2022 *The SATCHEL pipeline: A general tool for data classified through citizen science.* Safron, E. J., Boyajian, T. S., Eisner, N. L., MNRAS, stac787. DOI: 10.1093/mnras/stac787
- Feb. 2015 *HOPS 383: An Outbursting Class 0 Protostar in Orion.* Safron, E. J., Fischer, W. J., Megeath, S. T., et al., ApJ, 800, L5. DOI: 10.1088/2041-8205/800/1/L5
- Jan. 2022 *The Rate, Amplitude and Duration of Outbursts from Class 0 Protostars in Orion.* Zakri, W., Megeath, S. T., Fischer, W. J., et al., Safron, E. J., APJL, accepted. DOI: 10.3847/2041-8213/ac46ae
- Dec. 2020 *Planet Hunters TESS II: Findings from the first two years of TESS.* Eisner, N. L., Barragán, O., Lintott, C., et al., Safron, E. J., MNRAS, 501, 4669. DOI: 10.1093/mnras/staa3739
- Nov. 2020 *Constraining the Chemical Signatures and the Outburst Mechanism of the Class 0 Protostar HOPS 383.* Sharma, R., Tobin, J. J., Sheehan, P. D., et al., Safron, E. J., ApJ, 904, 78. DOI: 10.3847/1538-4357/abdbf4
- Jan. 2020 *Planet Hunters TESS I: TOI 813, a subgiant hosting a transiting Saturn-sized planet on an 84-day orbit.* Eisner, N. L., Barragán, O., Aigrain, S., et al., Safron, E. J., MNRAS, 494, 750. DOI: 10.1093/mnras/staa138
- Feb. 2019 *Constraining the Rate of Protostellar Accretion Outbursts in the Orion Molecular Clouds.* Fischer, W. J., Safron, E. J., Megeath, S. T., ApJ, 872, 183. DOI: 10.3847/1538-4357/ab01dc
- Jan. 2018 *The First Post-Kepler Brightness Dips of KIC 8462852.* Boyajian, T. S., Alonso, R., Ammerman, A., et al., Safron, E. J., ApJL, 853, L8. DOI: 10.3847/2041-8213/aaa405
-

SELECTED PRESENTATIONS & INVITED TALKS

- Mar. 2022 *Are there more long-period exoplanets around cool stars than we thought?* Dissertation; Louisiana State University, Department of Physics & Astronomy, Baton Rouge, LA, USA.
- Oct. 2019 *The search for long-period exoplanets with Planet Hunters.* Invited talk; The Ohio State University, Department of Astronomy, Columbus, OH, USA.
- Aug. 2019 *Searching for long-period, transiting exoplanets with Planet Hunters.* Poster, presented at Extreme Solar Systems IV conference, Reykjavik, Iceland.
- July 2019 *Weird Exoplanets.* "Spinning in Space" Summer Camp, Louisiana State University, Baton Rouge, LA, USA.
- July 2018 *Searching for long-period, transiting exoplanets with Planet Hunters.* Poster, presented at the Sagan Summer Exoplanet Workshop, Caltech, Pasadena, CA, USA.
- Apr. 2018 *The Science of Interstellar.* Invited talk; Astronomy on Tap, Baton Rouge, LA, USA.
- Mar. 2016 *Protostellar accretion outbursts in the Orion Molecular Cloud Complex.* Invited talk; NASA Goddard Flight Research Center, Greenbelt, MD, USA.
- Apr. 2014 *Babysitting stellar nurseries: Infant stars throw fewer tantrums than expected.* Undergraduate Research Symposium, University of Toledo, Department of Physics & Astronomy, Toledo, OH, USA.
- Oct. 2013 *Horizons in Loop Quantum Cosmology.* Colloquium on Undergraduate Research, University of Toledo, Department of Physics & Astronomy, Toledo, OH, USA.

SELECTED AWARDS & HONORS

- | | |
|-------------|---|
| 2021 | JOSEPH CALLAWAY MEMORIAL FELLOWSHIP
Louisiana State University
Department of Physics & Astronomy |
| 2016 – 2020 | LOUISIANA BOARD OF REGENTS FELLOWSHIP
Louisiana State University
Department of Physics & Astronomy |
| 2014 | OUTSTANDING GRADUATING UNDERGRADUATE STUDENT
The University of Toledo, Toledo, OH, USA
Department of Physics & Astronomy |
| 2013 – 2014 | ELGIN C. BROOKS MEMORIAL ASTRONOMY SCHOLARSHIP
The University of Toledo, Toledo, OH, USA |
| 2012 – 2014 | UT ACHIEVEMENT AWARD
The University of Toledo, Toledo, OH, USA |
| 2005 – 2007 | TRUSTEE SCHOLARSHIP
Lorain County Community College, Elyria, OH, USA |

TEACHING EXPERIENCE

- | | |
|----------------|--|
| 2014 – 2016 | ADJUNCT PROFESSOR OF PHYSICS
Lorain County Community College , Elyria, OH, USA
Science & Mathematics Division <ul style="list-style-type: none">★ Supervisor: Dr. Rosa Rivera-Hainaj★ Courses taught:<ul style="list-style-type: none">★ Physics for Allied Health, lecture & lab★ Solar System Astronomy, online lecture★ General Physics for Science Majors II, lab |
| 2021 – present | TEACHING ASSISTANT
Louisiana State University , Baton Rouge, LA, USA
Department of Physics & Astronomy <ul style="list-style-type: none">★ Supervisors: Dr. Tabettha Boyajian, Dr. Geoffrey Clayton |
| 2013 – 2014 | LECTURE ASSISTANT
The University of Toledo , Toledo, OH, USA
Department of Physics & Astronomy <ul style="list-style-type: none">★ Supervisors: Dr. Kathy Shan, Dr. Jillian Bornak |
| 2012, 2014 | PROFESSIONAL TUTOR
Lorain County Community College , Elyria, OH, USA
Academic Support Division <ul style="list-style-type: none">★ Supervisors: M. Kate Miller, Kathryn McNary |

ACADEMIC & PUBLIC SERVICE

- 2020 – 2021 **STUDY ANALYSIS GROUP (SAG) 22:
INVESTIGATING AN EXOPLANET TARGET STAR ARCHIVE**
NASA Exoplanet Program
Active Member
- 2018 – 2021 **ASTRONOMY ON TAP – BATON ROUGE**
Co-President (2018–2019), Organizer (2019–present)
★ Founded the first Gulf Coast chapter of AoT, with Co-President Tyler Ellis
★ Duties included curating and scheduling speakers, treasury, graphic design (chapter logo, posters, and most original merchandise), merchandise acquisition, meeting administration, email and mailing list maintenance, venue coordination, event setup, and occasionally MC performance.
- 2016 – 2020 **SATURDAY SCIENCE LECTURE SERIES**
Louisiana State University, Baton Rouge, LA, USA
Senior Organizer
★ To mitigate a dwindling audience, I spearheaded a new partnership with the East Baton Rouge Public Library and facilitated a venue change and new promotional strategies that increased attendance by a factor of ten.
- 2018 – present **PHYSICS & ASTRONOMY GRADUATE STUDENT ORGANIZATION**
Louisiana State University, Baton Rouge, LA, USA
Active Member
- 2012 – 2014 **SOCIETY OF PHYSICS STUDENTS**
University of Toledo, Toledo, OH, USA
President (2013–2014)
★ Organized and hosted outreach events for elementary, middle, and high school students; coordinated workshop panels for GRE Q&A's and graduate school application; coordinated a career presentation for undergraduates; organized fundraisers and social events.
-

CODING EXPERIENCE

Proficient in Python; limited experience in Fortran and IDL.

📄 **GitHub:** <https://github.com/ejsafron/PH-pipeline>

REFERENCES



Available upon request. Please see my personal website for additional information.
