# Isaiah Tristan

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## EDUCATION

**Rice University**, Houston, TX **Graduated May 12, 2018**
Bachelor of Science in Astrophysics

## RESEARCH EXPERIENCE

**Senior Thesis and Continuing Research at Rice University** **September 2017 - Present**
*Advisor: Dr. Andrea Isella*

- Developed a method and Python code that visualizes past star motion using Gaia DR2 data to analyze potential interactions between neighbors to study a new theory on asymmetries in protoplanetary disks
- Project was self-managed, involved Python programming, data analysis, professional presentation, project management, and technical writing
- Research results and finding compiled into an extensive senior thesis
- Currently in preparation for professional publication

**NSF REU at Texas A&M University** **June 2017 - August 2017**
*Advisor: Dr. Don Collins through the Atmospheric Science REU Program*

- Project to refine a cloud chamber used to study the in-cloud production of aqueous secondary organic aerosols
- Successfully created a cloud by the end of the program using the completed chamber
- Involved hands-on mechanical/electrical work, data analysis, professional presentations, and teamwork

**TAURUS at The University of Texas at Austin** **June 2016 - August 2016, April 2018 - Present**
*Advisor: Dr. Brendan Bowler through the TAURUS Summer Program*

- Developed a Python algorithm to find/validate widely-separated host stars of free-floating planetary mass objects
- Operated the 2.7m Cassegrain telescope (IGRINS) at the McDonald Observatory in Fort Davis, Texas
- Involved Python scripting, data/statistical analysis, presentations (professional and public)
- Independently updated algorithm to use Gaia DR2 data and found several promising candidate systems

## TEACHING AND WORK EXPERIENCE

**Student Teacher** **March 2017- April 2018**
*Rice Splash*

- Taught 3 astronomy-based classes of 20-25 students from low-income middle schools each year
- Aimed to inspire students from minority and under-represented groups to pursue college degrees

**Astronomy Teaching Assistant** **August 2016 - December 2017**
*Rice University*

- Graded homework and essays for "Stars, Galaxies, and the Universe" (ASTR 201)
- Average class sizes of 100-150 students (always with 1 other TA)
- Held regular office hours and tutored 1-on-1 when requested (topics: algebra, calculus, physics, and astronomy)

## PUBLICATIONS

*"Quantifying the Probability of Stellar Encounters with Circumstellar Disks in Low Mass Star Forming Regions"*
**I. I. Tristan**, A. Isella, *in prep.*

*"Planets Around Low-Mass Stars (PALMS). VI. Discovery of a Remarkably Red Planetary-Mass Companion to the AB Dor Moving Group Candidate 2MASS J22362452+4751425"*
B. P. Bowler, M. C. Liu, D. Mawet, H. Ngo, L. Malo, G. N. Mace, J. N. McLane, J. R. Lu, **I. I. Tristan**, S. Hinkley, L. A. Hillenbrand, E. L. Shkolnik, B. Benneke, W. M. J. Best, 2017, AJ, 153, 18

## CONFERENCES AND PRESENTATIONS

**AAS 233rd Meeting** | Seattle, Washington
*"Bent out of Shape: A Theory on Stellar Interactions with Protoplanetary Disks"*, **I. I. Tristan**, A. Isella, 2019
**SACNAS 2018 Conference** (Attended) | San Antonio, Texas
**Rice University Physics & Astronomy Undergraduate Thesis Defense** | Houston, Texas
*"Bent out of Shape: Possible Origins of Asymmetries in Protoplanetary Disks"*, **I. I. Tristan**, A. Isella, 2018
**AAS 229th Meeting** | Grapevine, Texas
*"A Search for Host Stars of Free-Floating Planetary Mass Objects"*, **I. I. Tristan**, B. P. Bowler, 2017
**A&M Geosciences Summer Poster Session** | College Station, Texas
*"Creating and Sustaining a Cloud in a Chamber"*, **I. I. Tristan**, C. Milan, D. R. Collins, 2017
**7th Texas Astronomy Undergraduate Symposium** | Houston, Texas
*"Finding Host Stars for Free-Floating Exoplanets"*, **I. I. Tristan**, B. P. Bowler, 2017

## AWARDS AND HONORS

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|---|---|
| Chambliss Astronomy Achievement Student Award - Graduate Division Honorable Mention | **January 2019** |
| 2019 AAS FAMOUS Grant | **November 2018** |
| President's Honor Roll at Rice University | **December 2017** |
| QuestBridge Scholar | **December 2013** |
| National Hispanic Recognition Program (NHRP) Scholar | **September 2013** |

## CERTIFICATIONS

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|---|---|---|
| freeCodeCamp | Javascript Algorithms and Data Structures Certification (300 hours) | **In Progress** |
| freeCodeCamp | Reactive Web Design Certification (300 hours) | **October 2018** |
| AARL | General Class Amateur Radio License | **March 2017** |
| Apple | Apple Certification in Final Cut Pro X (Level 1) | **May 2013** |

## SKILLS

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| **Programming** | Python, Mathematica, Java, SQL, Unix, Vagrant, LaTeX, MS Office & Apple iWork |
| **Technical** | Data analysis, machine learning, problem-solving, statistical interpretation, simulations |
| **Web Design/Dev.** | HTML, CSS, Github, *www.itristan.space* |
| **Film Production** | Film/audio recording equipment, Final Cut Pro X, Logic Pro X |
| **English** | Fluent, technical writing, professional & public presentations |

## ACTIVITIES AND PROJECTS

**Planet News Bot, Creator and Moderator** **July 2018 - Present**
- Created an automated Python bot that keeps track of planet-related articles (of all education levels) at *www.reddit.com/r/PlanetExoplanet* using a Vagrant-VirtualBox Linux environment

**Leadership Coaching Program with the Doerr Institute, Participant** **August 2016 - December 2016**
- Attended meetings with a leadership coach who taught about scheduling, balancing workloads, and group dynamics
- Implemented learned leadership skills within study groups (organization, facilitating discussions, etc.)

**Campanile [Rice's College Yearbook], Writer and Editor** **August 2015 - May 2016**
- Wrote/edited stories for university events and critiqued graphic designs in a professional setting

## PROFESSIONAL SOCIETIES

SACNAS, **Member** **September 2018 - Present**
AAS, **Member** **September 2016 - Present**