

Isaiah Tristan
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EDUCATION

Rice University, Houston, TX
Bachelor of Science in Astrophysics

Graduated on May 12, 2018

RESEARCH EXPERIENCE

Student Researcher/Research Assistant

September 2017 - Present

Rice University

- Currently working with Dr. Andrea Isella understanding the implications of asymmetries in protoplanetary disks
- Developed a Python code that uses proper motions to visualize star motion in the past, determines if there is any 2D overlap between stars in a region, calculates distances, and checks for possible interactions using the Gaia DR2
- Presented work for a senior thesis defense at Rice U., and currently preparing a research paper with our findings

Laboratory Assistant

June 2017 - August 2017

Texas A&M University

- Worked under Dr. Don Collins on a multi-year project through the Atmospheric Science REU program
- Worked with a team to refine a cloud chamber used to study in-cloud production of aqueous secondary organic aerosols, analyzed aerosol data, and successfully created a cloud by the end of the program
- Gained hands-on experience with mechanical and electrical work

Research Assistant

June 2016 - August 2016

The University of Texas at Austin

- Worked under Dr. Brendan Bowler on a solo project through the TAURUS REU Program
- Developed a method and Python code for finding and validating widely-separated co-moving companions to target objects in order to find host stars of free-floating planetary mass objects. Project is ongoing.
- Took observational data at the McDonald Observatory in Fort Davis, Texas, when needed data was missing
- Gave public talks to the Departments of Astronomy at both UT Austin and Rice University

Independent Researcher

August 2016 - Present

- Kept track of free-floating planetary mass object discoveries and updated previous code to use the Gaia DR2 data to search for widely-separated co-moving companions to these objects using both proper motion and parallax analysis
- Found several potential candidates for widely-separated binary systems which will be followed up on shortly

WORK EXPERIENCE

Rice Splash, Teacher

March 2017- April 2018

- Aimed to inspire students from low-income middle schools in pursue college degrees
- Taught 3 astronomy-based classes of 20-25 students each year
- Published successful lesson plans to my personal website and Teachers Pay Teachers

Rice University, Teaching Assistant

August 2016 - January 2018

- 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 weekly office hours to help students with homework
- Tutored students one-on-one (subjects: algebra, calculus, physics, and astronomy)

PUBLICATIONS

“Asymmetries in Protoplanetary Disks and Neighboring Stars” (working title)

I. I. Tristan, A. Isella, *in preparation*

CO-AUTHORED PUBLICATIONS

"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, 2016, *accepted for publication in AJ*

CONFERENCE PRESENTATIONS

"A Search for Host Stars of Free-Floating Planetary Mass Objects"

I. I. Tristan, B. P. Bowler, 2017, AAS 229th Meeting at Grapevine, Texas

"Creating and Sustaining a Cloud in a Chamber"

I.I. Tristan, C. Milan, D. R. Collins, 2017, A&M Summer Geosciences Summer Poster Session

"Finding Host Stars for Free-Floating Exoplanets"

I. I. Tristan, B. P. Bowler, 2017, 7th Texas Astronomy Undergraduate Symposium at Houston, Texas

HONORS

Rice University - President's Honor Roll

August 2017- December 2017

SKILLS

Computer:

- *Python* - data analysis, database/catalog work, and simulations
- *Mathematica* - data analysis and physics modeling
- *HTML* - created & maintain a website, www.itristan.space
- *LaTeX* - comfortable with preparing research papers & reports
- *Unix* - comfortable with using a Mac and Terminal
- Proficient at using *MS Office* and *Apple iWork Suites*
- Familiar with *MATLAB*, *R*, *IDL*, *LabView*, and *IRAF*

Filming and Film Editing:

- Experienced with film and audio recording equipment
- Experienced with *Logic Pro X* and Apple Certified in *Final Cut Pro X* (Level 1)

English:

- Proficient at reading, writing, and speaking
- Able to prepare technical writing for public consumption (articles & presentations)

EXTRACURRICULAR ACTIVITIES

Astrobiology Journal Club, Vice President

July 2017- April 2018

- Assisted the president in planning and choosing discussion topics for meetings

Rice Anime Club, Secretary

June 2017 - April 2018

- Helped plan/manage events (dinners, recruitment, etc.)
- Managed club's email/listserv account

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 stories for residential college and university events
- Edited others' stories and helped critique graphic designs

Queer Resource Center at Rice, Fundraising Committee Member

February 2015 - May 2015

- Generated ideas and developed plans to later be used for fundraising