
Professional Experience

Texas Tech University (volunteer)

(July 2025–present)

◆ Volunteer Telescope Operator

- Operating Texas Tech's 20" telescopes during public outreach events.
- Leading sky tours & engaging with visitors to Texas Tech's 3 Rivers Ranch Astronomy Campus.

Pisgah Astronomical Research Institute

(2023, 2024, 2026)

◆ Summer Education Manager (Jun. 2026–Aug. 2026)

- Served as one of PARI's two primary educators, leading guided tours for private groups and hosting activities for visiting field trips.
- Represented PARI at off-campus educational events and science nights.
- Resumed the duties of an Instructor and Summer Camp Counselor, detailed below.

◆ Instructor and Summer Camp Counselor (Jun. 2024–Aug. 2024)

- Served as a primary instructor for PARI's most academically advanced camp, *Above and Beyond*.
- Advised groups of high school students through variable star astronomy research projects.
- Presented "Exploring the Night Sky with your Students" during an event for local educators.
- Resumed the activities listed under "Summer Camp Counselor (Jun. 2023–Aug. 2023)."

◆ Summer Camp Counselor (Jun. 2023–Aug. 2023)

- Helped educate and excite students aged 13–18 about astronomy.
- Designed planetarium shows and operated PARI's planetarium for large groups.
- Operated PARI's 25" telescope during public outreach events.
- Assisted with research in the Astronomical Photographic Data Archive.
- Answered phones, aided during tours, and fulfilled other tasks to support the observatory.

American Association of Variable Star Observers

(2020–2025, 2026)

◆ Web Content Manager (Feb. 2026–May 2026)

- Wrote educational materials on how to observe variable stars and participate in citizen science.
- Reviewed and revised AAVSO's existing online educational content.

- ◆ **AVSpec Validator** (Dec. 2021–Jan. 2025)
 - Reviewed scientific data submitted to the AVSpec spectroscopy database.
 - Mentored observers to help them improve the scientific quality of their spectra.
 - Authored an instructional manual on the topic of spectroscopic data review.
 - Hosted a series of 23 educational AVSpec Open House events to support volunteers.
- ◆ **Webinar Coordinator** (Sept. 2020–Jan. 2025)
 - Organized and promoted the AAVSO's educational webinar series, reaching 10,000+ viewers annually.
 - Scouted for, invited, and maintained correspondence with guest speakers.
 - Hosted 1–3 webinars per month (for a total of 78+ events).
 - Helped create marketing materials, including the 2024 series rebranding.
- ◆ **Co-Leader, Spectroscopy Section** (early 2023–Jan. 2024)
 - Increased engagement in the group by organizing monthly meetings and mentoring volunteers.
- ◆ **AAVSO Ambassador** (Sept. 2020–Feb. 2023)
 - Helped run the 111th AAVSO Annual Meeting in Tucson, AZ.
 - Completely overhauled the public-facing webpages for the AAVSONet program.
 - Authored the AAVSO Introduction to Python.
 - Created advertising materials for the AAVSO.
- ◆ **Co-host, 2021 AAVSO Spectroscopy Workshop** (Nov. 3rd–4th, 2021, Somerville, MA)
 - Emceed part of the conference.
 - Assisted with pre-conference setup.
- ◆ **Additional responsibilities**
 - Coordinated speakers for, & ran A/V throughout two of the AAVSO's hybrid conferences:
 - 113th AAVSO Annual Meeting (Nov. 8th–10th, 2024, Huntsville, AL)
 - 112th AAVSO Annual Meeting (Nov. 3rd–5th, 2023, Somerville, MA)
 - Improved the design of webpages using HTML/CSS within constrained frameworks.
 - Revised and updated the AAVSO Guide for Presenters.
 - Assisted with other tasks essential to the success of the nonprofit as they arose.

Massachusetts Institute of Technology

(Dec. 2021–Dec. 2025)

- ◆ **Research Project Assistant for Prof. Sara Seager**
 - Collaborated with Prof. Seager and her group in order to conduct scientific research in the fields of astrobiology and stellar astrophysics.
 - Using nuclear magnetic resonance spectroscopy, we discovered that many nucleic acids and amino acids are stable in acidic environments similar to those inside Venus' clouds.
 - Using the TESS satellite, we studied the nearest Sun-like stars, searching for potential Earth-like planet hosts. In the process, we discovered hundreds of new variable stars.

Houston Astronomical Society (volunteer)

(2017–2020)

- ◆ **Volunteer Telescope Operator** (Feb. 2017–Mar. 2020)
 - Taught at dozens of public outreach and education events for schools and communities.
- ◆ **Mentor** (2020)
 - Tutored an assigned mentee in introductory observational astronomy and the use of a telescope.
- ◆ **Youth Director** (2018–2019)
 - Served for two terms following election to the Board of Directors.

Publications and Awards

Seager, S., Petkowski, J.J., Seager, M.D., Grimes, J.H., Zinsli, Z., Vollmer-Snarr, H.R., Abd El-Rahman, M.K., Wishart, D.S., Lee, B.L., Gautam, V., **Herrington, L.**, Bains, W., & Darrow, C. (2024). **Year-Long Stability of Nucleic Acid Bases in Concentrated Sulfuric Acid: Implications for the Persistence of Organic Chemistry in Venus' Clouds.** *Life*, 14(5), 538. <https://doi.org/10.3390/life14050538>

Seager, S., Petkowski, J.J., Seager, M.D., Grimes Jr., J.H., Zinsli, Z., Vollmer-Snarr, H.R., Abd El-Rahman, M.K., Wishart, D.S., Lee, B.L., Gautam, V., **Herrington, L.**, Bains, W., & Darrow, C. (2023). **Stability of Nucleic Acid Bases in Concentrated Sulfuric Acid: Implications for the Habitability of Venus' Clouds.** *PNAS*. <https://doi.org/10.1073/pnas.2220007120>

Seager, S., Glidden, A., **Herrington, L. E.**, Kostogryz, N., Rackham, B., Ribas, I., Shapiro, A. I., Unruh, Y., Valenti, J. A., Witzke, V., & de Wit, J. (2023). **Towards Solving the Stellar Inhomogeneity Contamination of Exoplanet Transmission Spectra Problem with Star Spot and Faculae Spectra.** *JWST Proposal. Cycle 2*, p. 3593
<https://ui.adsabs.harvard.edu/abs/2023jwst.prop.3593S>

William Tyler Olcott Distinguished Service Award

(2022)

- Presented to a member of the AAVSO organization for outstanding contributions in mentoring/promoting variable star astronomy.
- Award citation: aavso.org/william-tyler-olcott-distinguished-service-award

Presentations

Poster presentations

Herrington, L., & Seager, S. (2024, November 8–10). **Improved Variability Data for the Brightest Solar-type Stars with TESS** [Poster presentation]. 113th AAVSO Annual Meeting, U.S. Space & Rocket Center, Huntsville, AL, USA.
https://www.aavso.org/sites/default/files/2025-02/AAVSO_AM113_Proceedings.pdf

Herrington, L., & Seager, S. (2024, July 29–August 2). **Rotation Rates of Bright Solar-type Stars with TESS** [Poster presentation]. TESS Science Conference 3 (TSC3), Massachusetts Institute of Technology, Cambridge, MA, USA.
<https://doi.org/10.5281/zenodo.13121253>

Invited talks

2026 - Bartlesville Astronomical Society — *Where Did We Come From? A Jaunt Through Deep Time*

2026 - Brevard Astronomy Club — *The Origin of Galaxies: Journey Through Deep Time*

2026 - Fort Bend Astronomy Club — [Study the Stars: How to Get Involved in Stellar Spectroscopy](#)

2025 - Pisgah Astronomical Research Institute — *A Spectroscopic Tour of the H–R Diagram*

2025, 2024, & 2023 - Pisgah Astronomical Research Institute — *Variable Stars*

2024 - AstroBrevard — *Rotation Rates, Copernicus, and the Search for Another Earth*

2023 - Astronomy Club of Tulsa — *The Pisgah Astronomical Research Institute*

2023 - Astronomy Club of Tulsa — *A Spectroscopic Tour of the H–R Diagram*

2021 - The Bush School Astronomy Cascade — *From Point A to the B Band: One Young Astronomer's Journey into Spectroscopy*

2021 - Houston Astronomical Society — [DIY Spectroscopy on a Budget](#)

2020 - AAVSO Spectroscopy Observing Section webinar — [The Drift Scanning Method: Spectroscopy with a dob](#)

Contributed talks

2023 - Bartlesville Astronomical Society — *A Look Inside the Pisgah Astronomical Research Institute*

2023 - Bartlesville Astronomical Society — *A Spectroscopic Tour of the H–R Diagram*

2022 - AAVSO How-To: Python! — [Introduction to Python for Astronomy: The Basics](#)

2021 - 110th AAVSO Annual Meeting — *RSGs are just plain cool: An observing program and online tool*

2021 - AAVSO How-To Hour — [Spectrography on a Budget](#)

2020 - ASW2020 — [Let the Earth do the work! High Quality Spectra at Low Cost with the Drift Scanning Method](#)

Press

Hensley, K. (2024, November). Portrait of a Supernova. ***Sky & Telescope***.

→ *Visual telescopic observations of SN2023ixf, including detection of color, are quoted.*

O'Meara, S. J. (2023, February). Test your visual acuity with the Theta Orionis challenge. ***Astronomy***.
<https://www.astronomy.com/observing/test-your-visual-acuity-with-the-theta-orionis-challenge/>

→ *Naked-eye observations of Theta Orionis are quoted.*

Buxner, S. R., Fitzgerald, M. T., & Freed, R. M. (2021). Amateur Astronomy: Engaging the Public in Astronomy Through Exploration, Outreach, and Research. In A. P. Kaminski (Ed.), ***Space Science and Public Engagement*** (pp. 143–168). Elsevier.

→ *Profile constructed from interview is given as an example of a young astronomer.*

O'Meara, S. J. (2020). ***Mars***. London: Reaktion Books.

→ *Daytime naked-eye observation of Mars is mentioned on p. 179.*

O'Meara, S. J. (2019, January). Mars in daylight, no telescope needed. ***Astronomy***.
<https://www.astronomy.com/observing/mars-in-daylight-no-telescope-needed/>

→ *Daytime naked-eye observation of Mars is described in detail.*

Education

Texas Tech University

(August 2026–)

→ Admitted for Fall 2026. Majoring in Physics (Astrophysics Concentration).

Tulsa Community College

(June 2022–May 2026)

→ Incomplete: Mathematics, A.S. (6 credits remaining before graduation at time of transfer.)
GPA: 3.44.

Other Experience

Observational Astronomy

- ◆ Stellar spectroscopist with field experience using both slitless systems and slit spectrographs.
- ◆ Pioneered the ‘drift scanning spectroscopy’ technique in order to perform slitless spectroscopy of stars without access to a motorized, tracking, or equatorial mount.
- ◆ Constructed an R=40,000 Sol’Ex-design spectrograph using 3D printed parts.
- ◆ Visual observer with 7 years of field experience using a wide variety of telescopes.
- ◆ Additionally trained in photometry, with some astrophotography experience.

Programming

- ▶ Python developer with 6 years of experience developing for scientific contexts.
- ▶ Familiar with best practices for object-oriented design and code cleanliness.
- ▶ Experience using PHOEBE for forward modeling of binary star systems.
- ▶ Created redsupergiants.com. (Sep.–Oct. 2021)

Proficient in:

Python (*incl. Astropy and Astroquery*)
HTML/CSS

Additionally experienced with:

Flask/Jinja2 SCSS
Javascript SQLite

Graphic Design

Portfolio: tiedyeastronomer.com/portfolio

Proficient in:

Matplotlib
Adobe Photoshop/Illustrator

Additionally experienced with:

Photopea
Adobe InDesign

Natural Sciences

- ▶ Currently leading an independent research project in the field of plant phenology.
Project site: inaturalist.org/projects/tulsa-community-college-plant-phenology-independent-research-project-spring-2026
- ▶ Volunteer for the citizen science project iNaturalist.
 - 1,000+ observations contributed, distributed across sites in the Blue Ridge, Ozark Highlands, and Central Irregular Plains.
 - More than 2,400 annotations made and organisms identified for other users.
 - Member of the iNaturalist Ambassador program since Feb. 2026.

Profile: inaturalist.org/people/peeppeepnuthatch

- ▶ Macro photographer specializing in spiders and chironomids (lake flies).

Portfolio: flickr.com/photos/lauren-herrington/albums