

# Kathryn V. Lester

Mount Holyoke College  
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<https://kvlester.github.io>

## Education

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Ph.D. in Astronomy, Georgia State University	2020
M.S. in Physics, Georgia State University	2017
B.S. in Astrophysics, Lehigh University	2014

## Appointments

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**Visiting Assistant Professor** 2023 – present  
Mount Holyoke College

- Teaching introductory astronomy courses for non-science majors and upper level courses for astronomy majors

**NASA Postdoctoral Fellow** 2020 – 2023  
Ames Research Center, with Dr. Steve Howell

- Searched for companions around TESS exoplanet hosts using high resolution imaging
- Determined visual orbits and astrophysical parameters of close binaries hosting planets

**Graduate Research Assistant** 2014 – 2020  
Georgia State University, with Dr. Douglas Gies

- Determined visual and spectroscopic orbits of A- and F-type binary stars using the CHARA Array.
- Completed photometric, spectroscopic, and apsidal motion analyses of the K2 eclipsing binary, BW Aquarii.

## Teaching Experience

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**Mount Holyoke College, Instructor** 2023 – present

- ASTR 100: Stars & Galaxies – introductory astronomy course for non-science majors.
- ASTR 226: Cosmology – intermediate level course for science majors.
- ASTR 335: Astrophysics II – upper level stellar structure course for astronomy majors.
- ASTR 352: Astrophysics III – upper level extragalactic course for astronomy majors.

**Georgia State University, Teaching Assistant** 2014 – 2017

- ASTR 1010 – weekly labs for introductory stellar astronomy course.
- ASTR 1020 – weekly labs for introductory extragalactic astronomy course.

## First Author Publications

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My full publication record is listed on ADS [here](#) and on the last page. (9 first-author, 34 total, h-index = 14)

9. “Visual Orbits and Alignments of Planet Hosting Binary Systems”  
**K. V. Lester**, S. B. Howell, R. A. Matson, et al. 2023, AJ, 166, 166
8. “Visual Orbits of Spectroscopic Binaries with the CHARA Array. IV. HD 61859, 89822, 109510, and 191692”  
**K. V. Lester**, G. Schaefer, F. Fekel, et al. 2022, AJ, 164, 228
7. “Determining Which Binary Component Hosts the TESS Transiting Planet”.  
**K. V. Lester**, S. B. Howell, D. R. Ciardi, & R. A. Matson. 2022, AJ, 164, 56
6. “Speckle Observations of TESS Exoplanet Host Stars. II. Stellar Companions at 1-1000 au and Implications for Small Planet Detection”.  
**K. V. Lester**, R. A. Matson, S. B. Howell, et al. 2021, AJ, 162, 75

5. “Visual Orbits of Spectroscopic Binaries with the CHARA Array. III. HD 8374 and HD 24546”.  
**K. V. Lester**, F. Fekel, M. Muterspaugh, et al. 2020, AJ, 160, 58
4. “Visual Orbits of Spectroscopic Binaries with the CHARA Array. II. the eclipsing binary HD 185912”.  
**K. V. Lester**, D. R. Gies, G. Schaefer, C. Farrington, et al. 2019, AJ, 158, 6
3. “Visual Orbits of Spectroscopic Binaries with the CHARA Array. I. HD 224355”.  
**K. V. Lester**, D. R. Gies, G. Schaefer, C. Farrington, et al. 2019, AJ, 157, 140L
2. “A Photometric, Spectroscopic, and Apsidal Motion Analysis of Eclipsing Binary BW Aquarii”.  
**K. V. Lester** & D. R. Gies. 2018, AJ, 156, 8.
1. “A Young Eclipsing Binary and its Luminous Neighbors in Sh 2-252E”.  
**K. V. Lester**, D. R. Gies, & Z. Guo. 2016, AJ, 152, 194.

## Fellowships & Awards

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Massachusetts Space Grant Consortium student fellowship (\$6,500)	Summer 2024
NASA Award for time on the Keck Observatory (\$12,000)	2023 – 2025
NASA Award for time on the WIYN Observatory (\$5,000)	2023 – 2024
NASA Postdoctoral Fellowship (\$285,000)	2020 – 2023
Outstanding Advanced Graduate Student Award, Georgia State University	2020
Outstanding Second Year Graduate Student, Georgia State University	2016
Departmental Honors, Lehigh University	2014

## Invited Talks

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<b>Mount Holyoke College Astronomy Club</b> Talk: “Journey to Becoming an Astronomy Professor and Researcher”.	2024
<b>Planetary Science Institute</b> Seminar: “Characterizing Planet Host Binary Systems”.	2023
<b>CHARA &amp; VLTI Science Meeting</b> Review Talk: “Binary Star Science Using Interferometry”.	2022
<b>AAS Splinter Session: Stars and the ISM with Gemini’s Fast Turnaround Observations</b> Talk: “Speckle & Long Baseline Interferometry of Binary Stars”. [cancelled due to COVID]	2022
<b>NSF virtual site visit at the CHARA Array</b> Talk: “Visual Orbits of Spectroscopic Binaries”.	2020
<b>CHARA Summer School</b> Talk: “Observing and Data Reduction with CLIMB”.	2020
<b>Agnes Scott College</b> Colloquium: “Visual & Spectroscopic Orbits of Binary Stars”.	2019

## Competitive Observing Time Awarded

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<b>Gemini Observatory</b> Speckle imaging of binary stars and planet host stars using ‘Alopeke & Zorro (76 hours total)	2021B – 2024B
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**WIYN Observatory**

Spectroscopic orbits of exoplanet host binary stars using NEID (52 hours total) 2022A – 2024B

**The CHARA Array**

Visual orbits of binary stars using MIRC-X/MYSTIC (30 hours) 2024B

**Las Cumbres Observatory**

Spectroscopic orbits of binary stars using NRES (37 hours total) 2023A, 2024B

**Keck Observatory**

Spectroscopic orbits of exoplanet host binary stars using HIRES (5 hours) 2023A

**Cerro Tololo Inter-American Observatory**

Spectroscopic orbits of exoplanet host binary stars using CHIRON (10 hours) 2023A

**Professional Service**

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**Grant Proposal Reviewer**

Provided science review and grading for NASA FINNESST and XRP proposals. 2021 – 2024

**Telescope Allocation Committee Member**

Provided external science review for a Canadian Gemini TAC. 2024

Provided science review, grading, and discussion of NOIRLab telescope proposals. 2022 – 2023

**Journal Referee**

Reviewed submitted manuscripts for JAAVSO and ApJS. 2019, 2021

**Department Service**

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**Career Panel Member**

Participated in several panel discussions about graduate school and career paths for undergraduate students. 2019 – present

**Research Bootcamp Volunteer**

Contributed to a week-long introduction to research for Five Colleges summer interns. 2024

**Thesis Prize Committee**

Helped chose Mary Irvine Prize for a distinguished senior thesis by a Five Colleges astronomy student. 2024

**Astronomy Peer Advising Leaders**

President & Mentor 2016 – 2020

- Proposed for university funding and maintained the club's budget.
- Lead monthly mentor meetings and delegated tasks for upcoming events.
- Organized and lead new student orientation, professional development workshops, and mock qualifying exams for graduate students.
- Provided advice and support during monthly one-on-one meetings with junior graduate student mentees.

**Outreach**

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**STEMPOC Mixer Volunteer**

Represented the astronomy faculty at a mixer for STEM students of color, talked about influential astronomers of color and the astronomy program at Mount Holyoke. 2023 – present

**Williston Observatory Volunteer**

Operated historic reflector & lawn telescopes and answered questions from the public during open houses. 2023 – present

<b>Podcast Guest</b>	2021
Spoke about my search for companions to TESS exoplanet hosts on the “365 Days of Astronomy” podcast.	
<b>Hard Labor Creek Observatory Volunteer</b>	2014 – 2020
Operated telescopes and answered questions from the public during monthly open houses.	
<b>Solar Eclipse Event</b>	2017
Operated solar telescopes and engaged with the public during a solar eclipse viewing party.	
<b>Girl Scout Workshop Volunteer</b>	2014 – 2017
Assisted with workshop activities, including building pinhole cameras and filter wheels.	

## Observing Experience

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<b>Gemini Observatory</b>	2020 – 2023
8.1m telescope – 110 nights – speckle interferometry	
<b>WIYN Observatory</b>	2022
3.5m telescope – 5 nights – multi-object spectroscopy	
<b>The CHARA Array</b>	2017 – 2020
Six 1.0m telescopes – 73 nights – long baseline interferometry	
<b>Apache Point Observatory</b>	2016 – 2020
3.5m telescope – 49 nights – echelle spectroscopy	
<b>Hard Labor Creek Observatory</b>	2015
0.6m telescope – 7 nights – relative photometry	
<b>Wyoming Infrared Observatory</b>	2013
2.3m telescope – 15 nights – longslit spectroscopy	

## Skills & Tools

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<b>Observations</b>	Longslit & echelle spectroscopy, long-baseline & speckle interferometry, relative photometry
<b>Data Analysis</b>	Radial velocities, interferometric visibilities, binary orbit fitting, light curve modeling
<b>Programming</b>	Python, IDL, IRAF, HTML/CSS (basic)
<b>Software</b>	L <sup>A</sup> T <sub>E</sub> X, Microsoft Office, MESA, DS9, ELC, Period04, PyKE, Photoshop (basic)
<b>Operating Systems</b>	Mac, Linux, Windows
<b>Foreign Languages</b>	French (intermediate)

## Memberships

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Planetary Science Institute, associate research scientist	2023 – present
American Astronomical Society, full member	2014 – present

## Contributed Talks & Posters

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<b>243rd AAS Meeting</b> , “Visual Orbits & Alignments of Planet Hosting Binary Systems”	2024
<b>EPRV5 Meeting</b> , “Orbits & Inclinations of Planet Host Binaries” (poster)	2023
<b>241st AAS Meeting</b> , “Detection Sensitivity of Transiting Planets in Single vs Binary Stars”	2023

<b>NASA Postdoc Program Symposium</b> , “How Does Host Star Multiplicity Affect Planet Formation?”	2022
<b>Bay Area Exoplanet Meeting</b> , “Which Binary Component Hosts the TESS Transiting Planet?”	2022
<b>240th AAS Meeting</b> , “Which Binary Component Hosts the TESS Transiting Planet?” (poster)	2022
<b>Bay Area Exoplanet Meeting</b> , “Close Companions of TESS Exoplanet Host Stars”	2021
<b>237th AAS Meeting</b> , “Close Companions of TESS Exoplanet Host Stars” (poster)	2021
<b>235th AAS Meeting</b> , “Visual Orbits of Spectroscopic Binaries with the CHARA Array” (dissertation talk)	2020
<b>CHARA Science Meeting</b> , “Visual Orbits of Spectroscopic Binaries”	2019
<b>233rd AAS Meeting</b> , “Visual Orbit and Physical Parameters of the Spectroscopic Binary HD 224355”	2019
<b>Georgia Regional Astronomers Conference</b> , “Visual Orbit of the Spectroscopic Binary HD 224355”	2018
<b>GSU Women In STEM Conference</b> , “Visual & Spectroscopic Orbits of Binary Stars”	2018
<b>231st AAS Meeting</b> , “A Photometric, Spectroscopic & Apsidal Motion Analysis of BW Aqr” (poster)	2018

## Contributed Publications

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My full publication record is listed on ADS [here](#).

36. Hori, Y., Fukui, A., Hirano, T., et al. 2024, AJ, 167, 289.
35. Littlefield, C., Howell, S. B., Ciardi, D. R., et al. 2024, AJ, 167, 74.
34. **Lester, K. V.**, Howell, S. B., Matson, R. A., et al. 2023, AJ, 166, 166.
33. Mistry, P., Pathak, K., Prasad, A., et al. 2023, AJ, 166, 9.
32. Vowell, N., Rodriguez, J. E., Quinn, S. N., et al. 2023, AJ, 165, 268.
31. Tey, E., Huang, C. X., Kunimoto, M., et al. 2023, AJ, 165, 93.
30. Knudstrup, E., Gandolfi, D., Nowak, G., et al. 2023, MNRAS, 519, 5637.
29. **Lester, K. V.**, Schaefer, G. H., Fekel, F. C., et al. 2022, AJ, 164, 228.
28. **Lester, K. V.**, Howell, S. B., Ciardi, D. R., et al. 2022, AJ, 164, 56.
27. E. V., Weiss, L. M., Dressing, C. D., et al. 2022, AJ, 163, 293.
26. Mann, A. W., Wood, M. L., Schmidt, S. P., et al. 2022, AJ, 163, 156.
25. Wysocki, P., Gies, D., Shepard, K., et al. 2022, AJ, 163, 177.
24. Bouma, L. G., Curtis, J. L., Masuda, K., et al. 2022, AJ, 163, 121.
23. Wilson, T. G., Goffo, E., Alibert, Y., et al. 2022, MNRAS, 511, 1043.
22. Wittenmyer, R. A., Clark, J. T., Trifonov, T., et al. 2022, AJ, 163, 82.
21. Schanche, N., Pozuelos, F. J., Gunther, M. N., et al. 2022, A&A, 657, A45.
20. Wong, I., Shporer, A., Zhou, G., et al. 2021, AJ, 162, 256.
19. Wells, R. D., Rackham, B. V., Schanche, N., et al. 2021, A&A, 653, A97.
18. Hedges, C., Hughes, A., Zhou, G., et al. 2021, AJ, 162, 54.
17. **Lester, K. V.**, Matson, R. A., Howell, S. B., et al. 2021, AJ, 162, 75.
16. Wang, L., Gies, D. R., Peters, G. J., et al. 2021, AJ, 161, 248.
15. Howell, S. B., Scott, N. J., Matson, R. A., et al. 2021, Frontiers in Astronomy, 8, 10.
14. Whelan, D. G., Chojnowski, S. D., Labadie-Bartz, J., et al. 2021, AJ, 161, 67.
13. Gies, D. R., **Lester, K. V.**, Wang, L., et al. 2020, ApJ, 902, 25.

12. **Lester, K. V.**, Fekel, F. C., Muterspaugh, M., et al. 2020, AJ, 160, 58.
11. Wang, L., Gies, D. R., **Lester, K. V.**, et al. 2020, AJ, 159, 4.
10. Shepard, K., Gies, D. R., **Lester, K. V.**, et al. 2020, ApJ, 888, 82.
9. **Lester, K. V.**, Gies, D. R., Schaefer, G. H., et al. 2019, AJ, 158, 218.
8. **Lester, K. V.**, Gies, D. R., Schaefer, G. H., et al. 2019, AJ, 157, 140.
7. Morris, B., Dorn-Wallenstein, T., Levesque, E., et al. 2019, JOSS, 4, 1130.
6. Chojnowski, S. D., Labadie-Bartz, J., Rivinius, T., et al. 2018, ApJ, 865, 76.
5. **Lester, K. V.** & Gies, D. R. 2018, AJ, 156, 8.
4. **Lester, K. V.**, Gies, D. R., & Guo, Z. 2016, AJ, 152, 194.
3. Bentz, M. C., Batiste, M., Seals, J., et al. 2016, ApJ, 831, 2.
2. Gies, D. R., Matson, R. A., Guo, Z., et al. 2015, AJ, 150, 178.
1. Kobulnicky, H. A., Kiminki, D. C., Lundquist, M. J., et al. 2014, ApJs, 213, 34.