Aylin García Soto

Website ♦ ORCID ♦ LinkedIn ♦ E-mail ♦ West Lebanon, NH

EDUCATION

Dartmouth College Hanover, NH September 2019 - Present
Doctor of Philosophy in Astrophysics

Wesleyan University Middletown, CT September 2014 - May 2018
Bachelor of Arts (with Honors) in Astronomy and Physics GPA: 3.55/4.00

RESEARCH EXPERIENCE

Research Assistant Dartmouth College
with Professor Elisabeth Newton September 2019 - Present

- Analysis of optical photometry data from the Transiting Exoplanet Survey Satellite (TESS) of active M dwarfs and operation and reduction of optical spectra on the MDM Hiltner 2.4m spectrograph, OSMOS and on the MDM McGraw-Hill 1.3m spectrograph, MODSPEC.
- Publishing a first-author paper in 2023.

TESS Research Support Associate Massachusetts Institute of Technology
with Professor Sara Seager September 2018 - August 2019

- Vetting TESS data and creation of corresponding documentation to contribute to planet candidate identification and TESS objects of interests.
- Management of several public-facing MIT TESS websites and creation of the first TESS science conference website.
- Contributed to `TESS-ExoClass (TEC)` - a software that vets exoplanets from the TESS NASA/MIT mission.

Research Assistant Wesleyan University
with Professor William Herbst June 2018 - April 2020

- Reduction and analysis of *VRIJHK* photometry of the V 582 Mon/KH 15D system.
- Comparison of the new model for the system to the current photometric data, in order to constrain the properties of circumbinary disk.
- Creation of the first English wikipedia page for KH 15D and Publication a first-author paper in 2020

Honors Thesis Research Wesleyan University
with Professor Edward Moran May 2016 - May 2018

- Calibration of data from ROSAT using NASA's High Energy Astrophysics Science Archive Research Center's Ftools and operation of the MDM Hiltner 2.4m telescope.
- Implementation of numerical methods to perform aperture photometry and a compilation of light-curves, using python, to search for AGNs that have varied dramatically in the long-term.

Banneker and Aztlán Institutes Harvard-Smithsonian Center for Astrophysics
with Dr. Joseph E. Rodriguez June 2017 - August 2017

- Collection, reduction, and fitting of photometric observations of eclipsing binaries with the FLWO 1.2m telescope and the Harvard University 0.4m Clay telescope, MaxIm DL, and AstroImageJ, respectively.

- Participation in graduate-level courses in various Astronomical topics.

Keck Northeastern Astronomy Consortium Williams College
with Dr. Steven Souza June 2015 - October 2015

- Masking of data to account for the deteriorating CCD camera filter, and processing the accumulated data using AstroImageJ and the Aperture Photometry Tool 2.1.8.
- Operation of the Hopkins 24-inch Telescope to image young open star clusters.

PUBLICATIONS FIRST AUTHOR

García Soto, A., Newton, E. R., Douglas, S. T., Burrows, A., Kesseli, A. Y. 2023. *The Astronomical Journal* **165, 192** doi:10.3847/1538-3881/acc2ba

García Soto, A., Ali, A., Newmark, A., Herbst, W., Windemuth, D., Winn, J. N. 2020. *The Astronomical Journal*, **159, 135.** doi:10.3847/1538-3881/ab6efd

PUBLICATIONS CO-AUTHOR

Guerrero, N. M., Seager, S., Huang, C. X., Vanderburg, A., **Garcia Soto, A.**, and 100 collegues 2021, *The Astrophysical Journal Supplement Series*, **254, 39.**

Rowden, P., Borkovits, T., et al. 2020. *The Astronomical Journal*, **160, 76.**

Parviainen, H., Palle, E., Zapatero-Osorio, M. R., et al. 2020, *Astronomy & Astrophysics*, **633, A28.**

Huber, D., and 141 colleagues 2019. *The Astronomical Journal*, **157, 245.**

Rodriguez, J. E., and 73 colleagues 2019. *The Astronomical Journal*, **157, 191.**

Dragomir, D., and 50 colleagues 2019. *The Astrophysical Journal*, **875, L7.**

SELECTED PROFESSIONAL PRESENTATIONS

"Contemporaneous Observations of Hα Luminosities and Photometric Amplitudes for M dwarfs." **García Soto, A.**, Newton, E. R., Burrows, A. D., Sweeney, T., Douglas, S. T., Kesseli, A. Y. 2022. Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun. doi:10.5281/zenodo.7523687

"Different Observational Properties of the Leading and Trailing Edges of the KH 15D Circumbinary Ring", **García Soto, A**, Ali, A, Newmark, A, Herbst, W, Windemuth, D, and Winn, J., **233rd Meeting of the American Astronomical Society**, Seattle, WA, January 2019. 2019AAS...23315412G

"Photometric Follow-up of Eclipsing Binary Candidates from KELT and Kepler", **García Soto, A**, Rodriguez, J. E., and Bieryla, A., **231st Meeting of the American Astronomical Society**, National Harbor, MD, January 2018. 2018AAS...23124412G

"Uncovering extreme AGN variability in serendipitous X-ray source surveys", E. C. Moran, **Garcia Soto, A.**, LaMassa, S., Urry, M., **231st Meeting of the American Astronomical Society**, National Harbor, MD, January 2018. 2018AAS...23123814M

"Hour-Scale Variability in NGC 663 and NGC 1960", Souza, S. P., **Garcia Soto, A.**, and Wong H. , **228th Meeting of the American Astronomical Society**, San Diego, CA, June 2016. 2016AAS...22831903S

HONORS/AWARDS

The Selamawit Tsehaye Teaching Award: June 2021
awarded to teaching assistants who show dedication to teaching.
Honorable Mention for the NSF GRFP: March 2021
awarded by the NSF to students with strong applications for the graduate fellowship.
Littell Prize: May 2018
awarded by the Wesleyan astronomy department for excellence in advanced astronomy classes.
McNair Scholar: January 2015-May 2018
awarded to undergraduate students with the aspiration of pursuing a PhD.
NASA CT Space Grant Scholarship: September 2015
awarded to undergraduates in science for assistance with financial aid.
Janey Scholar: September 2014-June 2022
awarded high-achieving, low-income students pursuing higher education.

EDUCATIONAL OUTREACH EXPERIENCE

Dartmouth Public Observing Dartmouth College
Organizer/Volunteer/Telescope Operator September 2019 - Present

- Operation of the 14-inch Meade telescope for several nights while teaching the public about space and my research.
- NEW PO TBD.

The Montshire Museum of Science Norwich, Vermont
Volunteer September 2019 - Present

- Co-leading and creating activities for children in the Vermont and New Hampshire area on the yearly Astronomy Science Day.

Dartmouth Many Mentors Dartmouth College
Volunteer September 2019 - 2021

- Volunteering to visit and help with science projects at high schools picked by Many Mentors.

Astronomical Pedagogy (Kids' Night and Space Night) Wesleyan University
Presenter/Volunteer September 2015 - May 2018

- Organization of Astronomical presentations–16 Kids' Nights and 4 Space Nights–operation of the 16-inch Meade Telescope and the 24-inch Perkin Telescope.
- Creation of hands-on activities for children and/or for the Middletown community and their families to help improve Scientific literacy.

Wesleyan Science Outreach Wesleyan University
Co-Coordinator/Teaching Assistant/Volunteer September 2014 - January 2018

- Co-instruction of the pedagogical course CHEM242, including the organization of the class schedule and preparation of lesson plans and demos.
- Preparation of the students or club leaders responsible for creating lesson plans, and the recruitment of volunteers for school visits and Science Saturday.

OTHER EXPERIENCE

Graduate Student Council Dartmouth College
Representative of the Physics and Astronomy Department October 2020 - July 2022

- Co-organization of events for the student life committee, including re-instituting Mental Health Monday.
- Co-organization of events for the Committee of Addressing Racism and Equity. This is a very new committee and the first meeting has not happened as of this application deadline.

SOFTWARE

- https://github.com/agarciasoto18/starrotate
- https://github.com/christopherburke/TESS-ExoClass

SKILLS/LANGUAGES

Advanced: Python programming, Collaboration, Numerical Methods, LaTeX& Photoshop
Proficient: HTML, revealJS, UNIX, GitHub, IRAF, PypeIt
Fluent: English, Spanish
Beginner: French, Italian, Portuguese