

# Cassidy Soloff

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## Education

### PhD in Atmospheric Science

Anticipated May 2026

*University of Arizona, Tucson, AZ*

Minor: Remote Sensing; GPA: 4.00

### MS in Atmospheric Science

May 2024

*University of Arizona, Tucson, AZ*

GPA: 4.00

### BA Physics and Astronomy

May 2022

*Wesleyan University, Middletown, CT*

Minor: Environmental Studies; GPA: 3.87

## Professional Experience

### Graduate Research Assistant

May 2022 – Present

Advisor: Dr. Armin Sorooshian

*University of Arizona, Tucson, AZ*

- NASA's Aerosol Cloud meTeorology Interactions oVer the western ATlantic Experiment (ACTIVATE)
  - Researched the spatial evolution of aerosol and gas properties of the U.S. East Coast using flights transiting from Virginia to Bermuda (Publication: <https://doi.org/10.5194/acp-24-10385-2024>)
  - Predicting Cloud Condensation Nuclei (CCN) concentration from aerosol chemistry using Köhler theory and machine learning techniques and compared with direct CCN measurements to assess understanding of aerosol microphysics and instrumentation
- NASA's Arctic Radiation-Cloud-Aerosol-Surface-Interaction Experiment (ARCSIX)
  - Conducted lab study using Differential Aerosol Sizing and Hygroscopicity Spectrometer Probe (DASH-SP) to measure deliquescence and refractive index of different particle species
  - Collected data with DASH-SP instrument during ARCSIX mission in Northern Greenland during summer 2024, flying 28 combined hours on the NASA P-3 Orion aircraft
    - Diagnosed and resolved DASH-SP issues in the field
    - Developed scripts to process raw data from DASH-SP

### NASA Student Airborne Research Program Intern

Jun 2021 – Aug 2021

Advisors: Dr. Roya Bahreini, Andreas Beyersdorf; Mentor: Eva-Lou Edwards

- Researched the local radiative forcing from the 2018 Kīlauea flank eruption
- Flew 10 combined hours on NASA DC-8 research aircraft to monitor the aerosol instruments

**Undergraduate Research Assistant**

Jan 2020 – May 2022

Advisor: Dr. Seth Redfield

*Wesleyan University, Middletown, CT*

- Modeled exoplanet atmosphere spectra and developed an exoplanet transit survey for hot, bright stars
- Worked as an Undergraduate Research Fellow in the Summer of 2020, assisting Dr. Seth Redfield as a co-investigator for his James Webb Space Telescope proposal to make spectral observations
- Conducted the first exoplanet transit observations with the Van Vleck Observatory's 24-inch PlaneWave telescope to derive the photometric sensitivity and precision of the new equipment
- Analyzed exoplanet transit curves to derive stellar and planetary properties

**Telescope Operator**

Feb 2019 – Jan 2020

*Wesleyan University, Middletown, CT*

- Operated the 24-inch Perkin telescope and software to produce science images of stars and galaxies in specified wavelength bands, providing data for Wesleyan researchers

**Teaching Experience****Astronomy Public Outreach**

Feb 2019 – May 2022

*Wesleyan University, Middletown, CT*

- Led presentations for the department's Space Nights and assisted in public outreach events for kids

**Course Assistant: Introduction to Astronomy**

Sep 2021 – Dec 2021

*Wesleyan University, Middletown, CT*

- Assisted students during office hours and graded homework/exams

**Volunteering****Treasurer**

Aug 2023 – May 2024

*University of Arizona, Tucson, AZ*

- Managed finances for outreach and social events for Hydrology and Atmospheric Science Student Association

**President of Astronomy Club**

Sep 2021 – May 2022

*Wesleyan University, Middletown, CT*

- Organized club activities and presented weekly on current topics in Astronomy

**Professional Development****Carbon Methods Workshop**

Apr 2023

*The Nature Conservancy in Arizona*

- Performed measurements of tree and soil carbon along the lower San Pedro River

## Peer-Reviewed Publications

1. Namdari, S., Ajayi, T., Choi, Y., Crosbie, E. C., DiGangi, J. P., Diskin, G. S., Kirschler, S., Liu, H., Nowak, J. B., Shook, M. A., **Soloff, C.**, Thornhill, K. L., Voigt, C., Winstead, E. L., Zhang, B., Ziemba, L. D., & Sorooshian, A. (2024). A comprehensive analysis of new particle formation across the northwest Atlantic: Analysis of ACTIVATE airborne data. *Atmospheric Environment*, 338, 120831. <https://doi.org/10.1016/j.atmosenv.2024.120831>
2. **Soloff, C.**, Ajayi, T., Choi, Y., Crosbie, E. C., DiGangi, J. P., Diskin, G. S., Fenn, M. A., Ferrare, R. A., Gallo, F., Hair, J. W., Hilario, M. R. A., Kirschler, S., Moore, R. H., Shingler, T. J., Shook, M. A., Thornhill, K. L., Voigt, C., Winstead, E. L., Ziemba, L. D., & Sorooshian, A. (2024). Bridging gas and aerosol properties between the northeastern US and Bermuda: analysis of eight transit flights. *Atmos. Chem. Phys.*, 24(18), 10385-10408. <https://doi.org/10.5194/acp-24-10385-2024>
3. Rizos, J. L., Fernández-Valenzuela, E., Ortiz, J. L., Rommel, F. L., Sicardy, B., Morales, N., Santos-Sanz, P., Leiva, R., Vara-Lubiano, M., Morales, R., Kretlow, M., Alvarez-Candal, A., Holler, B. J., Duffard, R., Gómez-Limón, J. M., Desmars, J., Souami, D., Assafin, M., Benedetti-Rossi, G., Braga-Ribas, F., Camargo, J. I. B., Colas, F., Lecacheux, J., Gomes-Júnior, A. R., Vieira-Martins, R., Pereira, C. L., Morgado, B., Kilic, Y., Redfield, S., **Soloff, C.**, McGregor, K., Green, K., Midavaine, T., Schreurs, O., Lecossois, M., Boninsegna, R., Ida, M., Le Cam, P., Isobe, K., Watanabe, Hayato, Yuasa, S., Watanabe, Hikaru, Kidd, S. (2024). A study of centaur (54598) Bienor from multiple stellar occultations and rotational light curves\*. *A&A*, 689, A82. <https://doi.org/10.1051/0004-6361/202450833>
4. Ajayi, T., Choi, Y., Crosbie, E. C., DiGangi, J. P., Diskin, G. S., Fenn, M. A., Ferrare, R. A., Hair, J. W., Hilario, M. R. A., Hostetler, C. A., Kirschler, S., Moore, R. H., Shingler, T. J., Shook, M. A., **Soloff, C.**, Thornhill, K. L., Voigt, C., Winstead, E. L., Ziemba, L. D., & Sorooshian, A. (2024). Vertical variability of aerosol properties and trace gases over a remote marine region: a case study over Bermuda. *Atmos. Chem. Phys.*, 24(16), 9197-9218. <https://doi.org/10.5194/acp-24-9197-2024>

## Articles

- Soloff, C.**, (2022, April 15). Unseen Worlds: A Search for Exoplanet Transits of Bright Early-Type Stars. Wesleyan Digital Collections. <https://digitalcollections.wesleyan.edu/object/ir-3254>
- Soloff, C.**, Ouanemalay, E. (2022, January 5). Learning from Cognitive Deficiencies to Prevent the Next Pandemic. Medium. <https://medium.com/resilience/learning-from-cognitive-deficiencies-to-prevent-the-next-pandemic-7f11cf9b6c8b>

## Presentations

- (Oral)** Soloff, Cassidy, et al. "CCN Closure for the ACTIVATE campaign." American Geophysical Union, Fall Meeting, Washington D.C., December 2024.
- (Oral)** Soloff, Cassidy, et al. "Bridging Gas and Aerosol Properties between Northeast U.S. and Bermuda: Analysis of Eight Transit Flights." El Dia del Agua y la Atmosfera, Tucson, AZ, March 2024.

**(Poster)** Soloff, Cassidy, et al. "Characterization of Trace Gases and Particles Across the Northwest Atlantic: Analysis of Transit Flights during the NASA ACTIVATE Mission." American Geophysical Union, Fall Meeting, San Francisco, CA, December 2023.

**(Poster)** Soloff, Cassidy, et al. "Characterization of Trace Gases and Particles Across the Northwest Atlantic: Analysis of Transit Flights during the NASA ACTIVATE Mission." El Dia del Agua y la Atmosfera, Tucson, AZ, March 2023.

**(Poster)** Soloff, Cassidy, et al. "Radiative Forcing Analysis of the 2018 Kilauea Flank Eruption." American Geophysical Union, Fall Meeting, Chicago, IL, December 2022.

**(Poster)** Soloff, Cassidy, and Seth Redfield. "Unseen Worlds: A Search for Exoplanet Transits of Bright Early-Type Stars." American Astronomical Society, Pasadena, CA, June 2022.

**(Panel Discussion)** Redfield, S., Bennett, K., Soloff, C., McGregor, K., STEAMfest, Bridgeport, CT, Nov 2021

## Scholarships, Fellowships & Honors

**Sol Resnick Scholarship** Aug 2024

Scholarship established in memory of Dr. Sol D. Resnick awarded to deserving graduate students in the Department of Hydrology and Atmospheric Sciences

**Roots for Resilience Fellowship** Aug 2024

*"The Roots for Resilience Program provides training and support to select graduate students on open, reproducible science and computational infrastructure tools to enhance research focused on resiliency in the environment."*

**Galileo Circle Student Scholarship** Apr 2024

*"The Galileo Circle awards scholarships to undergraduate and graduate students who demonstrate exceptional potential in the physical, mathematical, environmental, cognitive, or life sciences."*

**NASA Group Achievement Award** Mar 2023

*"2022 Agency Honor Awards for an outstanding group accomplishment that has contributed substantially to NASA's mission"*

**El Día del Agua y La Atmosfera Best Poster** Mar 2023

Awarded by Pima County Environmental Quality

**Graduate College Fellowship** Mar 2023

The Graduate College allocates Graduate College Fellowship funding to the academic college deans as block grants to recruit and retain top international or domestic graduate students.

**Littell Prize** May 2022

*"The gift of Franklin Bowers Littell, Class of 1891, for excellence in one or more advanced courses in astronomy."*

**NASA Undergraduate Travel Grant** Dec 2021

Awarded by NASA Connecticut Space Grant Consortium (CTSGC) for travel to the American Astronomical Society

**NASA Undergraduate Research Grant** May 2021

Awarded by NASA CTSGC to support research for the exoplanet transit survey

## **Wesleyan Undergraduate Research Fellowship**

May 2020

Funding to research at Wesleyan University with Dr. Seth Redfield in the summer of 2020

## **Qualifications & Skills**

*Skills:* Proficient in Python, ArcGIS Pro; Basic in R, C

*Instrumentation:* DASH-SP, PlaneWave 24-inch telescope

*Strengths:* Data analysis, machine learning, leadership, communication, teamwork, organization