EMMA DAHL

Postdoctoral Scholar ◇ Division of Geological and Planetary Sciences
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EDUCATION

New Mexico State University August 2015 - August 2021
Ph.D. & M.S., Astronomy *Las Cruces, NM*
Dissertation: *Color and Structure of Jupiter's Uppermost Cloud Deck During the Juno Era*

Whitman College August 2011 - May 2015
B.A., Physics-Astronomy *Walla Walla, WA*

RESEARCH EXPERIENCE

California Institute of Technology Oct. 2024 - Present
Postdoctoral Scholar — Advisor: Geoff Blake *Pasadena, CA*

- Utilized Keck/NIRSPEC, JWST/MIRI, and ALMA observations to constrain radial CO profiles in protoplanetary disks, employing state-of-the-art modeling methods to create a full picture of disks from the inner region nearby the parent star to the outer regions past 20 AU, in order to search for signs of planet formation
- Participated in Phase A science studies for the development of PRobe far-Infrared Mission for Astrophysics (PRIMA) space telescope
- Continued a variety of Solar System projects, primarily a project that utilizes deep learning methods to generate models of photometrically calibrated JunoCam data which could then be used to quantify, for the first time, the properties of Jovian meso-scale storms

Jet Propulsion Laboratory Sept. 2021 - Sept. 2024
NASA & JPL Postdoctoral Fellow — Advisor: Glenn Orton *Pasadena, CA*

- Analyzed Juno, NASA Infrared Telescope Facility, Gemini North, and Apache Point Observatory optical and near-infrared observations of Jupiter; conducted radiative transfer modeling to characterize the changing color and structure of Jupiter's clouds during unique weather events such as Equatorial Zone disturbances
- Participated in JPL's internal study focused on the prioritized Uranus Orbiter and Probe flagship mission; led and coordinated the atmosphere working group
- Led proposals and conducted observing campaigns using world-class observatories
- Coordinated international campaign of ground-based support of the Juno mission starting in 2023
- Mentored students on projects focused on analyzing Jupiter's atmosphere and archiving observations

New Mexico State University Aug. 2015 - Sept. 2021
Graduate Research Assistant — Advisor: Nancy Chanover *Las Cruces, NM*

- Worked extensively with electrical engineers to build, test, and characterize the NMSU Acousto-optic Imaging Camera (NAIC)
- Used NAIC to obtain hyperspectral image cubes of Jupiter at Apache Point Observatory in Sunspot, NM during Juno perijove passes. 14 observing runs completed from 2016-2020
- Developed Python-based data reduction pipeline; calibrated data and fixed optical etaloning effects
- Conducted modeling of Jupiter's atmosphere using the NEMESIS radiative transfer software package; derived structure and color of uppermost cloud deck to contextualize Juno's measurements of the deep atmosphere
- Awarded the 2018 NASA Minority University Research Education Project (MUREP) graduate fellowship; spent subsequent summers at JPL working with NASA advisor Glenn Orton, other JPL scientists, and Juno team members to further progress and improve atmospheric modeling

Whitman College Astronomy Department Fall 2013 - Spring 2015
Research Assistant — Advisor: Andrea Dobson *Walla Walla, WA*

- Contributed to star formation research by analyzing Herschel Space Observatory images
- Established Whitman's ongoing collaboration with the International Occultation Timing Association
- Worked as observing aide during the calibration of Whitman College's 30-inch telescope, during globular cluster data collection at Kitt Peak National Observatory, observations of asteroid occultations, etc.

Maria Mitchell Observatory (MMO) Summer 2014
NSF REU Student — Advisor: Peter Stetson *Nantucket, MA*

- Observed open star clusters, conducted crowded-field all-sky photometry to identify variable stars

PROGRAMMING SKILLS

- Strong knowledge of Python programming syntax, practices, and packages; proficient in IDL, Fortran 95, IRAF, HTML, LabVIEW, machine learning methodologies
- Wrote, tested, and consolidated complete data reduction and photometric calibration Python-based pipeline for NAIC hyperspectral image cubes
- Extensive experience using Non-Linear Optimal Estimator for Multivariate Spectral Analysis (NEMESIS) radiative transfer code (Fortran- and IDL-based); developed Python wrapper for implementing NEMESIS with NAIC, NIRI, and SpeX data
- Extensive experience using slab models for retrieving the properties of protoplanetary disks (slabspec, iris)
- Developed Fortran 95 dynamical n-body simulation of structure formation in Saturn's rings

OBSERVING CAMPAIGNS

Principal Investigator

- **Probing the Upper Atmosphere of Uranus via Stellar Occultation Measurements - NASA Infrared Telescope Facility (IRTF)/SpeX** 2025A Semester
  E. Dahl, W. Saunders, K. Sayanagi, R. French, L. Young, G. Blake, J. Garland, A. Verbiscer, D. Souami, S. Levine, N. Chanover, J. Guidry, M. Person
- **Analyzing Jupiter's Colorful and Dynamic Atmosphere During Juno's Extended Mission - NASA IRTF/SpeX** 2024B Semester. E. Dahl, G. S. Orton, T. Momary, K. H. Baines, K.J. White, J. A. Sinclair, S. R. Brueshaber, L. Fletcher, D. Grassi, A. Mura.
- **Analyzing Jupiter's Colorful and Dynamic Atmosphere During Juno's Extended Mission - NASA IRTF/SpeX** 2024A Semester. E. Dahl, G. S. Orton, T. Momary, K. H. Baines, J. A. Sinclair, S. R. Brueshaber, L. Fletcher, D. Grassi, A. Mura.
- **Analyzing Jupiter's Colorful and Dynamic Atmosphere During Juno's Extended Mission - NASA IRTF/SpeX** 2023B Semester. E. Dahl, G. S. Orton, T. Momary, K. H. Baines, J. A. Sinclair, S. R. Brueshaber, L. Fletcher, D. Grassi, A. Mura.
- **Understanding Jupiter's Dynamic Atmosphere During Juno's Extended Mission - NASA IRTF/SpeX** 2023A Semester. E. Dahl, G. S. Orton, T. Momary, K. H. Baines, S. R. Brueshaber, J. A. Sinclair.

  (Total IRTF hours awarded to date: 180)
- **Observations of Jupiter in support of the Juno mission - Apache Point Observatory 3.5-m telescope, Sunspot, NM** E. Dahl, N. Chanover, D. Voelz, R. Hull, H. Gallamore; 36 half-nights in total awarded from 2016-2020, 14 separate observing campaigns completed

Co-Investigator (select campaigns)

- **Breaking Degeneracies in Protoplanetary Disk CO2 Retrievals with NIRSpec - Cycle 5 Program JWST-GO-11054**. Anderson, A., Bergin, E. A., Blake, G. A., Cleeves, I., Colmenares Diaz, M. J., Dahl, E. K., Dickson-Vandervelde, A., Pontoppoidan, K., Salyk, C., Williams, J.
- **Callisto Stellar Occultation: Measure Neutral Atmospheric Density and Structure - NASA IRTF** 2025B semester. W. Saunders, E. Dahl, M. Camarca, et al.
- **Near-Infrared Characterization of Evolving Atmospheric Processes in Jupiter during Juno Perijoves 36-39 - NASA IRTF** G. Orton, T. Momary, E. Dahl, K. Baines, X. Zhang (Investigators); A. Antuñano, L. Fletcher, M. H. Wong, P. J. G. Irwin, T. Greathouse, R. Giles, D. Grassi (Additional Co-Investigators)
- **High-resolution 3-dimensional near-infrared mapping of Jupiter's evolving aerosol structure during the Juno mission PJ43 and PJ44 - Gemini Observatory/NIRI** G. Orton, A. Stephens, T. Momary, E. Dahl, K. Baines, J. Sinclair, P. J. G. Irwin, M. H. Wong, S. Brueshaber, L. Fletcher, T. Greathouse, R. Giles, D. Grassi
- **Jupiter MUSE Observations; Constraining Jupiter's Coloured Clouds: Linking tropospheric cloud properties with the deep seeing Juno Mission - Very Large Telescope/Multi Unit Spectroscopic Explorer (VLT/MUSE)** C. Alexander, P. J. G. Irwin, L. Fletcher, G. Orton, A. Braude, E. Dahl, J. Dobinson. 2021-2023, P108, P109, P111, etc.
- **Jupiter's Atmospheric Structure During the Juno Extended Mission - Apache Point Observatory 3.5-m telescope, Sunspot, NM** N. Chanover, H. Gallamore, D. Voelz, R. Hull; Collaborator: E. Dahl. 2022, Q4
- **Mapping Trace Gases in Jupiter's Atmosphere - Atacama Large Millimeter/submillimeter Array (ALMA)** A. Thelen, V. Allen, M. Cordiner, E. Dahl, C. Nixon. 2019, project code 2019.2.00178.S

PUBLICATIONS

- **Convective strength of Jupiter's mesoscale storm systems as imaged by JunoCam: An application of deep learning**
  Dahl, E. K., Sankar, R., Bucher, B., Singh, A., Shah, S., Eichstädt, G., Wong, M., Irwin, P. G. J, Simon, A., Hansen-Koharcheck, C., Georgakis G. In prep for submission to Nature Astronomy.
- **Characterizing the Extended Molecular Hydrogen Winds in Protoplanetary Disks from the JWST Disk Infrared Spectroscopic Chemistry Survey**
  Narang, M., Pontoppidan, K. M., Salyk, C., Arulanantham, N., Blake, G. A., Banzatti, A., Najita, J., Pascucci, I., Huang, J., Krijt, S., Oberg, K., Rosotti, G., Kaeufer, T. Dahl, E., Cleeves, L. I., Zhang, K., Green, J. Accepted at ApJ.
- **The DECO-NIRSPAO Survey I: CO Spectro-Astrometry and Hot Water Emission Trace Gas-Rich Inner Disks in Taurus**
  Anderson, A. R., Williams, J. P., Blake, G. A., Cleeves, I. L., Green, N., Colmenares, M. J., Curone, P, Dahl, E. K., Ross, C., Doppmann, G., Hinkle, J. T., Gupta, A., Law, C. J., Wilner, D., Zallio, L., et al. Submitted to ApJ. Submitted to ApJ.
- **Clouds and Aerosols in the Solar System I: State of Knowledge** and **Clouds and Aerosols in the Solar System II: Measurement and Analysis Methods**
  Dahl, E. K. et al. (43 co-authors). In prep
- **Structure-Preserving Unpaired Image Translation to Photometrically Calibrate JunoCam with Hubble Data**
  Singh, A. P., Shah, S., Sankar, R., Dahl, E., Eichstädt, G., Georgakis, G., Bucher, B. 2025. DOI: 10.48550/arXiv.2511.22668

- **Jupiter's Zonal Winds as Derived from Thermal Infrared Imaging using the NASA IRTF**
  A. Hyder, G. Orton, J. Sinclair, E. Dahl, A. Simon, R. Morales-Jubeŕıas, T. Momary, S. Brueshaber, K. Baines. In prep.
- **New determination of the vertical structure of cloud and haze in Jupiter's atmosphere from VLT/MUSE dual viewing angle observations in the visible/near-IR**
  Alexander, C. L. B., Irwin, P. G. J., Braude, A. S., Dahl, E. K. In prep.
- **JWST/MIRI Hydrocarbon and Water Absorption in the Wind of a Young Disk: Signatures of Pebble Drift and Carbon Grain Sublimation**
  Colmenares, M. J., Bergin, E. A., Zhang, K., Blake, G. A., Pontoppidan, K. M., Anderson, A. R., Carr, J., Dahl, E. K., Najita, J., Williams, J. P., et al. 2026. ApJ 1002 176. DOI: 10.3847/1538-4357/ae5e6a
- **The bolometric Bond albedo and energy balance of Uranus**
  Irwin, P. G. J., Wenkert, D., Simon, A. A., Dahl, E. K., Hammel, H. B. 2025. Monthly Notices of the Royal Astronomical Society, 540, 2. DOI: 10.1093/mnras/staf800
- **The JDISC Survey: Linking the Physics and Chemistry of Inner and Outer Protoplanetary Disk Zones**
  Arulanantham, N., Salyk, C., Pontoppidan, K., Banzatti, A., Zhang, K., Öberg, K., Long, F., Carr, J., Najita, J., Pascucci, I., Colmenares, M. J., Xie, C., Huang, J., Green, J., Andrews, S. M., Blake, G. A., Bergin, E. A., Pinilla, P., Vioque, M., Dahl, E. K.,, Raul, E., Krijt, S., the JDISCS Collaboration. 2025. AJ 170 67. DOI: 10.3847/1538-3881/addd01
- **Atmospheric Science Questions for a Uranian Probe**
  Dahl, E. K., Rowe-Gurney, N., Orton, G. S., Brueshaber, S. R., Cosentino, R., Palotai, C., Sankar, R., Sayanagi, K. M. 2024, Space Science Reviews 220, 10. Part of In Situ Exploration of the Giant Planets Collection. DOI: 10.1007/s11214-024-01046-5
- **Long-Term Monitoring of the Outer Planets with JWST**
  Simon, A., Dahl, E. K., Li, L., et al. 2023. White paper submitted to the STScI working group on long-term variability monitoring strategies for HST and JWST
- **A High Spatial and Spectral Resolution Study of Jupiter's Mid-infrared Auroral Emissions and Their Response to a Solar Wind Compression**
  Sinclair, J. A., Greathouse, T. K., Giles, R. S., Lacy, J., Moses, J., Hue, V., Grodent, D., Bonfond, B., Tao, C., Vogt, M. F., Dahl, E. K., Orton, G. S., Fletcher, L. N., Irwin, P. J. G. 2023, Planet. Sci. J., 4, 4. DOI: 10.3847/PSJ/accb95
- **Convective storms in closed cyclones in Jupiter's South Temperate Belt: (I) Observations**
  Hueso, R., Iñurrigarro, P., Sànchez-Lavega, A., Foster, C. R., Rogers, J. H., Orton, G. S., Hansen, C., Eichstädt, G., Ordonez-Etxeberria, I., Rojas, J. F., Brueshaber, S. R., Sanz-Requena, J. F., Pérez-Hoyos, S., Wong, M. H., Momary, T. W., Jònsson, B., Antuñano, A., Baines, K. H., Dahl, E. K., Mizumoto, S., Go, C., Anguiano-Arteaga, A. 2022, Icarus, Volume 380. DOI: 10.1016/j.icarus.2022.114994
- **Vertical Structure and Color of Jovian Latitudinal Cloud Bands during the Juno Era**
  Dahl, E. K., Chanover, N. J., Orton, G. S., Baines, K. H., Sinclair, J. A., Voelz, D. G., Wijerathna, E. A., Strycker, P. D., & Irwin, P. J. G. 2021, Planet. Sci. J. 2 16. DOI: 10.3847/PSJ/abd400
- **Ice Giant Atmospheric Science**
  Dahl, E. K., Brueshaber, S. R., Cosentino, R., Palotai, C., Rowe-Gurney, N., Sankar, R., Sayanagi, K., et al. 2021, Planetary Science and Astrobiology Decadal Survey 2023-2032 white paper e-id. 264; Bulletin of the American Astronomical Society, Vol. 53, Issue 4, e-id. 264. DOI: 10.3847/25c2cfeb.97316a54
- **QUEST: A New Frontiers Uranus Orbiter Mission Concept Study**
  Jarmak, S., Leonard, E., Akins, A., Dahl, E., Cremons, D. R., et al. 2020, Acta Astronautica, Volume 170, p. 6-26. DOI: 10.1016/j.actaastro.2020.01.030
- **Correction of etaloning effects in ground-based hyperspectral image cubes of Jupiter**
  Wijerathna, E., Dahl, E., Voelz, D., Chanover, N. J. 2020: Journal of Astronomical Telescopes, Instruments, and Systems, Volume 6, id. 028002. DOI: 10.1117/1.JATIS.6.2.028002

COLLOQUIA & INVITED TALKS

- **"Uranus's observed weather-layer circulation from troposphere to stratosphere"**
  Unsolved mysteries of the Uranian system, ISSI workshop in Bern, Switzerland, joint talk w/ Ricardo Hueso, October 2025
- **"Characterizing the Color and Structure of Jupiter's Clouds with Deep Learning"**
  Center for Integrative Planetary Science Seminar, University of California, Berkeley, October 2025
- **"Science and Mission Drivers for Understanding Uranus's Atmospheric Circulation"**
  Uranus Flagship Workshop at Goddard Spaceflight Center, joint talk w/ Kunio Sayanagi, May 2024
- **"Observing and Modeling Jupiter's Cloud Structure and Color in Support of the Juno Mission"**
  Whitman College, Lecture for Upper-Division Planetary Class, November 2023
- **"Parameterizing Jupiter's Clouds and Hazes: An Exoplanetary Perspective"**
  JPL Virtual Exoplanet Lecture Series, October 2023
- **"Jupiter's Clouds and Hazes"**
  Blue Sky 2023 Workshop: Building Bridges between Earth and Planetary Clouds and Aerosols, California Institute of Technology, August 2023
- **"Jupiter's Colorful and Dynamic Atmosphere: Searching for a New Cloud Model Paradigm"**
  Japan Geoscience Union Meeting, May 2022
- **"What Makes the Great Red Spot Red: Analyses of Jupiter's Colorful Clouds During the Juno Era"**
  Dix Planetary Science Seminar, California Institute of Technology, March 2022
- **"The Color and Structure of Jupiter's Clouds During the Juno Era"**
  Hampton University, November 2020

CONFERENCE PROCEEDINGS

Select first-author proceedings

- **The radial variation of volatile carbon and oxygen in the terrestrial regions of protoplanetary disks with Keck/NIRSPEC and JWST/MIRI**
  Dahl, E., Blake, G. A., Pontoppidan, K., Salyk, C., Anderson, A., Nisperos, A., Romero-Mirza, C., Williams, J., Narang, M., Arabhavi, A. AAS 248 302.02
- **Characterizing the Color and Structure of Jupiter's Clouds and Aerosols with Deep Learning**
  Dahl, E., Sankar, R., Bucher, B., Singh, A., Shah, S., Eichstädt, G., Wong, M. H., Georgakis, G. AGU 2025. P31C-07
- **Clouds and Aerosols in the Solar System: Updates on an In-Progress Review Paper and Community Organization Efforts**
  Dahl, E., et al. (38 co-authors) AGU 2025. P43C-01
- **Using Machine Learning to Study Jupiter's Colorful and Dynamic Atmosphere**
  Dahl, E., Sankar, R., Bucher, B., Singh, A., Shah, S., Eichstädt, G., Wong, M. H., Georgakis, G. 2025, Earth and Planetary Cloud Workshop 2025
- **Analysis of Jupiter's Disturbed Equatorial Zone from APO/NAIC and IRTF/SpeX**
  Dahl, E. K., Orton, G. S., Chanover, N. J., Baines, K. H., Carlson, R. W., Braude, A., Sinclair, J. A., Momary, T., Voelz, D., Alexander, C., & Irwin, P. J. G. 2023, AAS-DPS
- **An Investigation of the Structure, Color, and Potential Formation Mechanisms of Jupiter's 2018-2022 Equatorial Zone Disturbance**
  Dahl, E. K., Orton, G. S., Chanover, N. J., Baines, K. H., Carlson, R. W., Braude, A. S., Sinclair, J. A., Voelz, D. G., Wijerathna, E. A., & Irwin, P. J. G. 2022, AAS/Division for Planetary Sciences Meeting Abstracts, 54, 205.01

- **Focus Atmospheric Science Questions for Probing Uranus**
  Dahl, E. K., Rowe-Gurney N., Orton G. S., Brueshaber S. R., Cosentino R. G., Palotai C., Sankar R., Sayanagi K. M. 2022, Workshop on In Situ Exploration of the Giant Planets II, #4030
- **Modifying the Crème Brûlée model: Implications for the recent Equatorial Zone disturbance**
  Dahl, E. K., Chanover, N. J., Orton, G. S., Baines, K. H., Sinclair, J. A., Voelz, D. G., & Irwin, P. J. G. 2021, American Geophysical Union Meeting, P25D-2183
- **Color and Structure of Jupiter's Uppermost Cloud Deck During the Juno Era (Dissertation talk)**
  Dahl, E. K., Chanover, N. J., Orton, G. S., Baines, K. H., Sinclair, J. A., Voelz, D. G., Wijerathna, E., Irwin, P. J. G., & Strycker, P. 2021, AAS-DPS
- **Vertical Structure and Color of Jovian Latitudinal Cloud Bands during the Juno Era: Implications for a Universal Chromophore**
  Dahl, E. K., Chanover, N. J., Orton, G. S., Baines, K. H., Sinclair, J. A., Voelz, D. G., Wijerathna, E., Strycker, P., & Irwin, P. J. G., 2020, AAS/Division for Planetary Sciences Meeting Abstracts, 52, 100.07
- **Early Juno Era Optical Analysis of Jupiter's Atmosphere with the NMSU Acousto-optic Imaging Camera**
  Dahl, E., Chanover, N. J., Voelz, D., Kuehn, D. M., & Strycker, P. D. 2016, American Geophysical Union Meeting, P33C-2174
- **Discovering Variable Stars in the Open Clusters of Cygnus and Ophiuchus**
  Dahl, E., Stetson, P. B., & Nava, C. 2015, American Astronomical Society Meeting Abstracts, 225, 343.25

Select co-authored proceedings

- **Uranus Stellar Occultation 2025: Report and Preliminary Results from the Largest Uranus Stellar Occultation Campaign**
  Saunders, W., Sayanagi, K., and the 2025 Uranus Stellar Occultation Campaign Team. 2025 DPS-EPSC. id. EPSC-DPS2025-942
- **Optical constants of laboratory-generated analogs of the red chromophores in Jupiter's atmosphere**
  Jovanovic, L., Sciamma-O'Brien, E., Drant, T. Dahl, E. K., Braude, A., Ricketts, C., Wooden, D., Baines, K., Salama, F. 2025 DPS-EPSC. id. EPSC-DPS2025-1347
- **The Juno-Supporting Earth-Based Observing Campaign**
  Orton, G., Momary, T., Dahl, E., Brueshaber, S., Rogers, J., Bolton, S., Levin, S. EGU 2025. id. EGU25-7854
- **Extended Analysis of a Potential Jovian Chromophore**
  Carlson, R. W., Dahl, E. K.[1], Baines, K. H., Anderson, M. S., Jovanovic, L. 2023, AAS/Division for Planetary Sciences Meeting Abstracts, 55.
- **Imaging Science Requirements for Uranus Flagship Mission**
  K. M. Sayanagi, C.B. Beddingfield, S. M. Brooks, S. R. Brueshaber, J. C. Castillo, E. K. Dahl, C. M. Elder, Y. Hasegawa, M. Hedman, J. Jiang, E. J. Leonard, R. Lopes, M. Melwani Daswani, A. Masters, T. W. Momary, T. A. Nordheim, G. S. Orton, M. Parisi, J. E. Scully, D. D. Wenkert, M. H. Wong. 2023, Uranus Flagship: Investigations and Instruments for Cross-Discipline Science Workshop
- **Uranus's Internal Energy Balance: Status and Implications for Uranus Orbiter and Probe**
  Wenkert, D. D., Kenyon, M. E., Kleinbohl, A., Dahl, E., Orton, G. S. 2023, Uranus Flagship: Investigations and Instruments for Cross-Discipline Science Workshop
- **Measuring the Depth of Planetary-scale Changes in Jupiter from Juno Microwave Radiometer Observations**
  Orton, G. S., Brueshaber, S., Wong, M. H., Momary, T., Levin, S., Bolton, S., Baines, K. H., Dahl, E. K., Sinclair, J. A. 2023, Asia Oceana Geosciences Society, PS02-A002.

[1] Presenting author

- **Extreme Space Weather on Jupiter: Auroral-driven Stratospheric Heating, Chemistry and Dynamics**
  Sinclair, J. A., Greathouse, T., Giles, R., Lacy, J., Moses, J., Hue, V., Cavalie, T., West, R., Barbara, J., Grodent, D., Bonford, B., Tao, C., Dahl, E. K., Orton, G. S., Fletcher, L., Irwin, P. J. G. 2023, Asia Oceana Geosciences Society, PS01-A018.
- **Temporal evolution of the color of Jupiter's storm Oval BA**
  Gallamore, H., Chanover, N. J., Dahl, E. K., Voelz, D., & Hull, R., 2020, AAS/Division for Planetary Sciences Meeting Abstracts, 52, 100.05
- **QUEST: A New Frontiers Uranus Orbiter Concept Study**
  Jarmak, S., Leonard, E., Schurmeier, L., Akins, A., Cofield, S., Cremons, D. R., Curtis, A., Dahl, E. K., et al. 2019, 50th Lunar and Planetary Science Conference. LPI Contribution No. 2132, id.1621
- **Correction of etaloning effects in ground-based hyperspectral image cubes of Jupiter**
  Wijerathna, E., Dahl, E. K., Voelz, D., & Chanover, N. 2019 IEEE Aerospace Conference, Big Sky, MT, USA, 2019, pp. 1-7, doi: 10.1109/AERO.2019.8742115

FELLOWSHIPS, AWARDS, & PI-LED SELECTED RESEARCH GRANTS

- 2024: HST AR 17870 - Characterizing Uranus's Heat Balance Through Measurements of Bond Albedo w/ HST, Cycle 32
- 2023 Juno JPL Postdoctoral Fellow
- 2021 NASA Postdoctoral Program Fellow
- 2021 NMSU College of Arts & Sciences Outstanding Graduate Award
- 2018 NASA Minority University Research Experience Program (MUREP) Fellow

SCIENCE COMMUNICATION & PRESS

- Interviewed as part of coverage on observations of a Uranian stellar occultation
- Article on co-authored paper on the amount of heat released by Uranus
- Science advisor for December 2023 JWST press release on NIRCam Uranus images
- Invited to be inaugural guest on upcoming podcast "Two Baffled Doctors"
- Las Cruces Astronomy on Tap host and speaker, 2019-2020

LEADERSHIP & TEAMWORK

- Currently leading internatinal interdisciplinary review paper on aerosols in the Solar System w/ 40+ co-authors (∼40% early career)
- JWST Disk Infrared Spectral Chemistry Survey (JDISCS) team member, 2025-present
- PRobe far-Infrared Mission for Astrophysics (PRIMA) Phase A team member, 2025
- Juno Science Team member (Atmosphere Working Group) and ground-based observing support coordinator, 2023-2024
- JPL Uranus Flagship Study - Atmosphere Working Group Lead, 2022-2024
- JPL Planetary Cloud/Aerosol Research Facility (PCARF) team member
- Led "Ice Giant Atmospheric Science", a white paper in support of the 2023-2032 Decadal Survey; co-signed/authored multiple other planetary science white papers
- TeamX Science Lead for 2018 JPL Planetary Science Summer Seminar
- Vice President and Outreach Coordinator of the NMSU Astronomy Graduate Student Organization (AGSO), 2017-2018 and AGSO Student Journalist, 2017-2019

SERVICE & OUTREACH

- 2024-2025 Caltech Postdoctoral Association, Diversity Committee Co-Chair
- 2022-2024 AGU Planetary Sciences Early Career Representative
- 2023 NASA Space Apps Challenge global hackathon mentor and judge for "Planetary Tourism Office" challenge with other scientists from Caltech and NASA GSFC. One of our teams won the Best Mission Concept Global Award
- Served on NASA ROSES review panels, NOIRLab and IRTF Solar System Time Allocation Committees
- Served as peer reviewer for *Icarus*, *Journal of Geophysical Research*, *Planetary Science Journal*
- Initiated and co-coordinated the Las Cruces, NM chapter of Astronomy on Tap (AoT) in 2019
- As outreach assistant at NMSU, Whitman College, and Maria Mitchell Association, gave planetarium shows, led stargazing events, gave talks to students and the public on various topics, wrote informative posters, gave observatory tours, etc.
- As NMSU Astro outreach coordinator, organized outreach visits with community members and local schools, organized volunteers, coordinated events and activities on and off campus
- 120+ hours of outreach and community service on behalf of NMSU Astronomy Department in 2015-early 2020, including events in Las Cruces, El Paso, and surrounding rural communities (not including AoT or coordination efforts)

MENTORSHIP

- High level of dedication to encouraging, promoting, and helping students, especially those from underrepresented backgrounds, in Astronomy and STEM fields
- Invited panelist to 2026 Caltech Mentoring Conference keynote event "In Conversation About Mentorship."
- Mentored numerous undergraduate students, primarily Richard McKee (2021-2022), Kennedi White (2023-2025), and Alana Nisperos (Summer 2025) through JPL and Caltech internship initiatives as well as Allyson Burgess (Summer 2026) through an external grant awarded by Whitman College; helped guide them through analyzing images and running models of Jupiter's atmosphere, helped troubleshoot errors in students' programs, provided advice on applying to graduate school/feedback on applications, etc.
- Frequent volunteer with Científico Latino, an initiative to promote an environment of inclusivity in STEM and increase the number of scientists from underrepresented backgrounds in higher education in the sciences. Roles have included Graduate School Mentorship Initiative (GSMI) mentor for students applying to graduate programs in 2022 and 2025, as well as running mock interviews, etc.
- During and after graduate work at NMSU, mentored graduate students (primarily Hannah Gallamore and Ali Hyder) on the use of calibration pipelines, NAIC data/observations, and radiative transfer modeling.

TEACHING EXPERIENCE

New Mexico State University August 2015 - October 2018
Astro Class, Head Campus Observatory Teaching Assistant *Las Cruces, NM*

- Taught weekly introductory level astronomy labs. Lectured on various topics, worked with students during lab sections, graded labs, and held office hours
- Organized and managed Campus Observatory Lab. Coordinated volunteer staff, set up telescopes, discussed night sky objects and constellations with undergraduate students

Whitman College August 2012 - May 2015
Astronomy/Physics Lab Teaching Assistant and Private Tutor *Walla Walla, WA*

- Worked with students to answer questions during lab sections. Met with individual students on a weekly basis to discuss concepts or problems and to give general academic advice

MEETINGS AND WORKSHOPS ATTENDED

- Unsolved mysteries of the Uranian system; sponsored by ISSI - 2025
- Infrared Spectroscopy from Space: New Frontiers from Exoplanets to the Early Universe - 2025
- PRIMA and the Future of Far-Infrared Science - 2025
- Uranus Flagship Workshop: Investigating new paradigms for outer planet exploration - 2024
- Earth and Planetary Cloud Workshop 2023-2025
- AAS DPS (and EPSC joint) Fall Meetings - 2016-2023
- AGU Fall Meeting - 2016, 2018, 2020-2023, 2025
- Outer Planet Assessment Group Meetings - 2019-2026
- Uranus Flagship: Investigations and Instruments for Cross-Discipline Science Workshop - 2023
- Maria Mitchell Women of Science Symposium - 2022
- Workshop on In Situ Exploration of the Giant Planets II - 2022
- Japan Geoscience Union Meeting - 2022
- Advanced Python Programming Workshop, Caltech Library - 2022
- NEMESIS@Oxford - 2018, 2020, 2022
- Apache Point Observatory Science Symposium - 2021
- NASA Planetary Science Summer Seminar (TeamX Science Lead) - 2018
- NRAO New Mexico Symposium - 2016
- Dunlap Institute for Astronomy and Astrophysics Summer School on Introduction to Astronomical Instrumentation - 2016
- AAS Winter Meeting - 2015
- Whitman Undergraduate Conference - 2014, 2015
- Conference for Undergraduate Women in Physics - 2014

PROFESSIONAL MEMBERSHIPS (CURRENT & PAST)

- American Astronomical Society
- American Geophysical Union
- Outer Planets Assessment Group (OPAG)
- Cross-AG IDEA Working Group
- National Postdoctoral Association
- Sigma Xi Scientific Research Society

Personal Interests

- Quilting and embroidery
- Aquatic husbandry
- Plant keeping, propagation, gardening
- Horror cinema
- Cooking and baking
- Playing the flute and oboe (badly)
- Action/adventure RPG video games

Pre-Academia Work/Volunteer/School Experience

- Outreach Volunteer in Life Sciences and Physics Halls at Oregon Museum of Science and Industry, 2010-2011
- Worker & Sales at Ableke Farms in Oregon City OR, summers 2008-2012, 2015
- 3 years of high school-level Spanish classes

Reference contact information available upon request