Dany Waller

Curriculum Vitae

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EDUCATION

+ 05/2022 – M.S. Applied Physics (Honors), Johns Hopkins University
+ 05/2019 – B.S. Mathematics, University of Kentucky
+ 05/2019 – B.A. Physics, University of Kentucky

EMPLOYMENT

+ 09/2021 - Present – Scientific Visualization and Software Developer, Johns Hopkins University Applied Physics Laboratory, Space Exploration Sector (SES-SRN)

+ 09/2020 - 09/2021 – Graduate Student Research Assistant, Johns Hopkins University Applied Physics Laboratory, Space Exploration Sector (SES-SRE)

+ 08/2020 - 09/2021 – Scientific Analyst II, NASA Goddard Space Flight Center Geodesy and Geophysics Laboratory (61A), Science Systems & Applications, Inc.

+ 05/2019 - 08/2020 – Farish Planetarium Director and Earth & Space Science Program Coordinator, Living Arts & Science Center

+ 06/2018 - 05/2019 – Junior Software Engineer, University of Kentucky Center for Muscle Biology

+ 02/2017 - 05/2019 – Undergraduate Research Assistant, University of Kentucky Department of Geology and Department of Physics & Astronomy

RESEARCH PROJECTS

+ 05/2022 - Present – *Lunar Vertex Magnetometer Team.* PIs: Dr. Brian Anderson and Dr. Sarah Vines, Johns Hopkins University Applied Physics Laboratory.

+ 09/2021 - Present – *Instrument health monitoring and calibration software development for the Double Asteroid Redirection Test (DART) DRACO Imager.* PI: Ray Espiritu, Johns Hopkins University Applied Physics Laboratory.

+ 09/2020 - Present – *Modeling magnetic anomalies and mapping related photometric features on the Moon.* PI: Dr. Joshua Cahill, Johns Hopkins University Applied Physics Laboratory.

+ 08/2020 - 09/2021 – *Optimizing LIDAR simulations and algorithmic hazard detection for precision lunar landing.* PI: Bryan Blair, NASA Goddard Space Flight Center.

+ 08/2017 - 05/2019 – *Modeling magnetic anomalies associated with lunar swirls*. PI: Dr. Dhananjay Ravat, University of Kentucky.
+ 02/2017 - 08/2017 – *Processing and mapping MAVEN magnetometer data.* PI: Dr. Dhananjay Ravat, University of Kentucky.

PUBLICATIONS

+ **Waller, D.,** Cahill, J.T.S., Retherford, K.D., Hendrix, A.R., Allen, R.C., Vines, S.K., Meyer, H.M., Wirth-Singh, A.A. (2022). Ultraviolet and Magnetic Perspectives at Reiner Gamma and the Implications for Solar Wind Weathering. *Frontiers in Astronomy and Space Sciences*. doi:10.3389/fspas.2022.926018

+ **Waller, D.,** Strauss, B.E. (2022). Magnetometry. In B.M. Cudnik (Ed.), *Encyclopedia of Lunar Science* (1st ed.). Springer. doi:10.1007/978-3-319-05546-6

+ Blewett, D.T., Halekas, J., **Waller, D.,** Cahill, J.T., Deutsch, A., Glotch, T.D., Regoli, L., Tikoo, S., Vines, S., Wang, X. (2021). Science Case for a Lander or Rover Mission to a Lunar Magnetic Anomaly and Swirl. *Bulletin of the AAS, 53*(4). doi:10.3847/25c2cfeb.9295af86

+ Strauss, B.E., Borges, S.R., Faridani, T., Grier, J.A., Kiihne, A., Maier, E.R., Olsen, C., O'Neill, T., Rivera-Valentín, E.G., Sneed, E.L., **Waller, D.**, Zamloot, V. (2020). Nonbinary Systems: Looking Towards the Future of Gender Equity in Planetary Science. *Planetary Science and Astrobiology Decadal Survey 2023-2032*. arXiv:2009.08247

CONFERENCES

Oral Presentations

+ **Waller, D.**, Cahill, J.T.S., Retherford, K.D., Hendrix, A.R. (2022, March 7-11). *Solar Wind Compression of the Magnetic Anomaly at Reiner Gamma and Potential Weathering Patterns Observed in the Ultraviolet*. 53rd Lunar and Planetary Science Conference, The Woodlands, TX. Abstract #2670.

+ **Waller, D.** (2020, April 24-May 1). *Towards Modeling Magnetic Anomalies of Lunar Swirls*. LPSC Early Career Event, held virtually due to COVID-19. [abstract], [session recording]

Poster Presentations

+ **Waller, D.,** Cahill, J.T.S. (2022, July 19-21). *Variegated Space Weathering Expression Classification Across Reiner Gamma in Preparation for Lunar Vertex*. NASA Exploration Science Forum, Boulder, CO. Abstract #66.

+ **Waller, D.,** Cahill, J.T.S., Meyer, H. (2022, February 17). *Modeling Temporal Variations in Solar Wind Conditions at Reiner Gamma: Preparations for Lunar Vertex*. 14th Lunar Surface Science Workshop: Heliophysics Applications Enabling and Enabled by Human Exploration of the Lunar Surface, held virtually. Abstract #1022.

+ **Waller, D.**, Cahill, J.T.S., & Wirth-Singh, A. (2021, July 20-23). *Investigation of Magnetic Fields Associated with Various Lunar Swirls Observed in The Far-Ultraviolet*. Joint NASA Exploration Science Forum & European Lunar Symposium, held virtually due to COVID-19. [abstract]

+ **Waller, D.** & Ravat, D. (2019, April 24). *The Undeniable Attraction of Lunar Swirls*. University of Kentucky Undergraduate Research Showcase, Lexington, KY, United States. [abstract]

+ **Waller, D.** & Ravat, D. (2019, February 21). *The Undeniable Attraction of Lunar Swirls*. 18th annual Kentucky Posters at The Capitol, Frankfort, KY, United States. [abstract]

+ **Waller, D.** & Ravat, D. (2018, November 8-10). *The Undeniable Attraction of Lunar Swirls*. 85th annual SESAPS meeting, University of Tennessee, Knoxville, TN, United States. [abstract]

GRANTS AND FELLOWSHIPS

2021 – NESF Student Poster Award, NASA SSERVI ($1000)
2020 – If/Then Grant, ASTC ($500)
2020 – NASA Universe of Learning Grant, ASTC ($2500)
2019 – Sigma Pi Sigma Chapter Research Award, AIP ($1200)
2018 – Sigma Pi Sigma Chapter Reporter Award, AIP ($200)

INVITED TALKS

+ "Solar Wind Compression of the Magnetic Anomaly at Reiner Gamma and Potential Weathering Patterns Observed in the Ultraviolet" (2022). NASA GSFC Geospace Physics Laboratory colloquium, Greenbelt, MD.
+ "Solar Wind Compression of the Magnetic Anomaly at Reiner Gamma and Potential Weathering Patterns Observed in the Ultraviolet" (2022). Friends of Lunar Volatiles seminar, virtual due to COVID-19.
+ “The Moon and Mars” (2019). Noyce Scholars Program, Morehead State University.
+ “The Moon and Mars” (2019). SpaceTrek, Morehead State University.
+ “The Moon and Mars” (2019). Rogers Scholars Program, Asbury University.
+ “Towards Deciphering the Science and Mysteries of Lunar Swirls” (2017). Astronomy department seminar, University of Kentucky. [abstract]

AWARDS AND HONORS

2021 – 2nd place in NESF/ELS 2021 Student Poster Competition, NASA SSERVI
2020 – 5 Sigma Physicist, American Physical Society
2019 – Physics Advocacy Award, University of Kentucky Dept. of Physics & Astronomy
2019 – Student Impact Award, Omicron Delta Kappa Nu Circle
2019 – Outstanding Senior on *UK at the Half,* University of Kentucky
2018 – Oswald Research & Creativity Competition, University of Kentucky

2018 – Dean's List, University of Kentucky
2018 – High Scholarship in Physics, University of Kentucky Dept. of Physics & Astronomy
2017 – High Scholarship in Physics, University of Kentucky Dept. of Physics & Astronomy

SERVICE

+ 2022 - Present – Intern Experience Coordinator, Johns Hopkins University Applied Physics Laboratory ASPIRE and CIRCUIT programs.
+ 2020 - 2021 – Intern Mentor, NASA Goddard Association of Postdoctoral and Early Career Scholars (NGAPS+).
+ 2020 - 2021 – Bridge Program Committee Member, NASA GSFC.
+ 2019 - 2020 – Honors thesis reviewer for Lillie Cole, University of Kentucky.
+ 2018 - Present – Physics Policy Advocate, American Physical Society (APS).
+ 2018 - Present – Solar System Ambassador, NASA JPL.
+ 2018 - 2019 – Undergraduate Chapter Representative, Association for Women in Mathematics (AWM).
+ 2017 - 2018 – Chapter President, Sigma Pi Sigma ($\Sigma\Pi\Sigma$).
+ 2016 - 2017 – Chapter Treasurer, Sigma Pi Sigma ($\Sigma\Pi\Sigma$).