Dany Waller

Curriculum Vitae

+1 (859) 533-7517

dany.waller@jhuapl.edu

danywaller.github.io

EDUCATION

+ 05/2026 (expected) – D.Eng. Materials Science & Engineering, Johns Hopkins University
+ 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 – Associate Professional Staff, JHU/APL, Space Exploration Sector Science Analysis & Applications Group (SES-SRN)

+ 09/2020 - 09/2021 – Graduate Research Assistant, JHU/APL, Space Exploration Sector Planetary Exploration Group (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 - 05/2018 – Undergraduate Research Assistant, University of Kentucky Department of Geology and Department of Physics & Astronomy

RESEARCH PROJECTS

+ 09/2022 - Present – *Lunar Vertex Co-Investigator.* PI: Dr. David Blewett, JHU/APL.

+ 05/2022 - Present – *Lunar Vertex Magnetometer Instrument Scientist.* Co-Is: Dr. Brian Anderson and Dr. Sarah Vines, JHU/APL.

+ 09/2021 - Present – *Instrument health monitoring software and calibration pipeline development for the Double Asteroid Redirection Test (DART) DRACO Imager.* Science Operations Center Lead: Dr. Olivier Barnouin, JHU/APL.

+ 09/2020 - 05/2022 – *Modeling magnetic anomalies and mapping related photometric and spectroscopic features on the Moon.* PI: Dr. Joshua Cahill, JHU/APL.

+ 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 - 05/2018 – *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.

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.

AWARDS AND HONORS

+ 2022 – Special Achievement Award, JHU/APL Science Analysis & Applications Group
+ 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 – High Scholarship in Physics, University of Kentucky Dept. of Physics & Astronomy

SERVICE

+ 2022 - Present – Intern Mentor, JHU/APL CIRCUIT program.
+ 2022 - Present – Intern Program Coordinator, JHU/APL ASPIRE and CIRCUIT programs.
+ 2020 - 2021 – Intern Mentor, NASA Goddard Association of Postdoctoral and Early Career Scholars (NGAPS+).
+ 2020 - 2021 – SMD Bridge Program Committee Member, NASA GSFC.
+ 2018 - 2020 – Physics Policy Advocate, American Physical Society (APS).
+ 2018 - Present – Solar System Ambassador, NASA JPL.
+ 2018 - 2019 – UKy Chapter President, Association for Women in Mathematics (AWM).
+ 2017 - 2018 – UKy Chapter President, Sigma Pi Sigma (ΣΠΣ).
+ 2016 - 2017 – UKy Chapter Treasurer, Sigma Pi Sigma (ΣΠΣ).

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.

Poster Presentations

+ **Waller, C.D.,** Espiritu, R.C., Nair, H., Ernst, C.M., Daly, R.T., Barnouin, O.S. (2023, April 3-7). *Automated Data Processing and Image Quality Analysis for the DART DRACO Instrument*. 8th IAA Planetary Defense Conference, Vienna, Austria.

+ **Waller, C.D.,** Vines, S.K., Anderson, B.J., Blewett, D.T., Ocasio, A.M., Cahill, J.T.S., Tikoo, S.M., Jahn, J.-M. (2023, March 13-17). *Magnetic Gradiometry and Ongoing Modeling Efforts for the Lunar Vertex Mission*. 54th Lunar and Planetary Science Conference, The Woodlands, TX. Abstract #1820.

+ **Waller, C.D.,** Espiritu, R.C., Nair, H., Ernst, C.M., Daly, R.T., Barnouin, O.S. (2023, March 13-17). *Automated Data Processing and Image Quality Analysis for the DART DRACO Instrument*. 54th Lunar and Planetary Science Conference, The Woodlands, TX. Abstract #1823.

+ **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. (2018, November 8-10). *The Undeniable Attraction of Lunar Swirls*. 85th annual SESAPS meeting, University of Tennessee, Knoxville, TN, United States. Abstract D05.00072

PUBLICATIONS

+ Daly, R.T., Ernst, C.M., Barnouin, O.S., ..., **Waller, C.D**., et al. (2023). DART: An Autonomous Kinetic Impact into a Near-Earth Asteroid for Planetary Defense. *Nature.* doi:10.1038/s41586-023-05810-5

+ **Waller, C.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

+ Daly, R.T., Ernst, C.M., Barnouin, O.S., ..., **Waller, C.D**., et al. (2022). Shape Modeling of Dimorphos for the Double Asteroid Redirection Test (DART). *Planetary Science Journal,* 3(207). doi:10.3847/PSJ/ac7523

+ **Waller, C.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