



## Research Interests

Remote Sensing

Computational Physics



## Education

Applied Physics  
(M.S.)

Johns Hopkins  
University  
2022

Mathematics (B.S.)  
University of  
Kentucky  
2019

Physics (B.A.)  
University of  
Kentucky  
2019



## Publications

[ORCID](#)

[Google Scholar](#)



## Professional Societies

American  
Geophysical Union

American Physical  
Society

# Dany Waller

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**LinkedIn:** @danywaller

## Experience

September 2020 – Present

Graduate Research Assistant

**JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY (APL)**

Under the supervision of Dr. Joshua Cahill, I study lunar geomorphology and space weathering effects in the visible and ultraviolet spectrum. My responsibilities include:

- Exploring the relationship between local magnetic anomalies and spectral properties by analyzing spectral data as functions of at-surface magnetic field models using MATLAB and ArcGIS.
- Mapping global and regional spectral trends using Lunar Reconnaissance Orbiter LAMP and WAC data.
- Supporting proof-of-concept destriping/denoising efforts using spectral subtraction method.

August 2020 – Present

Scientific Analyst II

**SCIENCE SYSTEMS & APPLICATIONS, INC (SSAI)**

Under the supervision of Bryan Blair and Dr. Michael Barker, I provide programming support for the Hazard Detection Lidar (HDL) system team at NASA's Goddard Space Flight Center (GSFC). HDL is part of NASA's precision landing technology suite, Safe and Precise Landing – Integrated Capabilities Evolution (SPLICE). My responsibilities include:

- Optimizing lidar simulations and digital elevation map (DEM) analysis in Octave and MATLAB.
- Creating and verifying new algorithms for image and data analysis, including hazard identification and instrument performance.
- Understanding and advising customers on hazard classifications for future lunar landings.

May 2019 – August 2020

Planetarium Director + Earth & Space Science Program Coordinator

**THE LIVING ARTS & SCIENCE CENTER (LASC)**

I managed the Farish Planetarium and the LASC Earth & Space Science program, and I reported to the executive director Lori Halligan. My responsibilities included:

- Hosting weekly public planetarium shows.
- Coordinating daily field trips and visitor groups to the planetarium.
- Creating new planetarium content, workshops, and lesson plans while ensuring scientific accuracy in our products.

Sigma Pi Sigma  
(ΣΠΣ)



## Volunteer Work

AGU Science Policy  
Advocate

APS Science Policy  
Advocate

NASA Solar System  
Ambassador



## Awards

APS 5 Sigma  
Physicist  
2020

UK Physics  
Advocacy Award  
2019

Omicron Delta  
Kappa  
Student Impact  
Award  
2019

Outstanding Senior  
on "UK at the Half"  
2019

UK Oswald  
Research &  
Creativity  
Competition  
2018

UK High  
Scholarship in  
Physics  
2017, 2018

Junior Software Engineer  
**UNIVERSITY OF KENTUCKY CENTER FOR MUSCLE BIOLOGY (CMB)**

Under the supervision of Dr. Charlotte Peterson and Dr. Kenneth Campbell, I supported the CMB's MyoVision and FiberVision software. My responsibilities included:

- Designing and implementing software updates based on user feedback.
- Writing documentation and distributing literature for CMB partners.
- Maintaining servers and computers in the CMB.

February 2017 – May 2019

Planetary Science Research Assistant  
**UNIVERSITY OF KENTUCKY DEPARTMENT OF GEOLOGY**

Under the supervision of Dr. Dhananjay Ravat, I studied planetary magnetism and space weathering effects, with particular focus on the Moon and Mars. My responsibilities included:

- Performing analysis on and combining data from multiple spacecraft, creating high-resolution datasets and global maps using MATLAB and Python.
- Modeling global and regional crustal magnetic anomalies using Fortran and GMT.
- Mentoring two undergraduate students who joined the lab during my senior year.

## Skills

- Highly skilled with MATLAB, Python, Fortran, GMT, ArcGIS, C/C++.
- Experience in grant writing and administrative management.
- Good attention to detail with a high level of accuracy.
- Excellent teamwork skills and mentorship experience.

## Selected presentations

- Joint NASA Exploration Science Forum & European Lunar Symposium (July 2021, virtual due to COVID-19).
- LPSC Early Career Planetary Science Event (May 2020, virtual due to COVID-19) [\[abstract\]](#) [\[video\]](#)
- 18<sup>th</sup> annual Kentucky Posters at The Capitol (February 2019) [\[abstract\]](#)
- 85<sup>th</sup> annual SESAPS meeting (November 2018, UTK) [\[abstract\]](#)
- University of Kentucky Astronomy seminar (December 2017) [\[abstract\]](#)

## References

Dr. Joshua Cahill  
Deputy Director of the Lunar Surface  
Innovation Consortium  
JHU/APL  
[Joshua.Cahill@jhuapl.edu](mailto:Joshua.Cahill@jhuapl.edu)

Mrs. Lori Halligan  
Executive Director  
Living Arts & Science Center  
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