

Adam M. Battle

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Education

Graduate Student (PhD in-progress); Planetary Science

The University of Arizona, Tucson, Arizona; Lunar and Planetary Laboratory

Summer 2024 (Expected)

B.S., Physics and Astronomy/Astrophysics (dual major); Minor: German

The Ohio State University, Columbus, Ohio

May 2015 (Magna Cum Laude, GPA: 3.716 on 4.0 scale)

Employment

Graduate Research Assistant

August 2019 – Present

Lunar and Planetary Laboratory, Tucson, AZ

- Physical characterization of small bodies in the solar system
- Space Situational Awareness
- Laboratory spectral characterization of planetary materials
- Telescope maintenance and operation

Deep Space Telescope Observations Engineer

August 2015 – August 2019

Applied Optimization, Inc., Fairborn, OH

- Primary electro-optical observations engineer for company
- Strategic mission planning, data collection and calibration, data reduction, processing, and analysis
- Performed multi-spectral photometry data for space object identification and characterization for space situational awareness
- Responsible for hardware maintenance and modifications to improve telescope systems, including addition of a Rayleigh beacon laser guide star and a Shack Hartmann wavefront sensor for atmospheric research
- Developed Python code for manipulating astronomical data and improving the data reduction and analysis pipeline
- Lead the development, construction, and testing of a custom optical system
- Supervised and mentored new employees and short term interns

Experience Programs Teacher

Summer 2015

Center of Science and Industry, Columbus, OH

- Public outreach work using multiple techniques for communicating scientific concepts
- Team work in an ever-changing environment including mentoring high school volunteers

Resident Advisor

August 2013 – May 2015

The Ohio State University, Columbus, OH

- Built community in the Max Kade German House, a living, learning community for German speaking and German culture
- Served as a primary resource for the academic, institutional, and personal concerns of student-residents

Research Intern

Summer 2013

NASA Goddard Space Flight Center, Greenbelt, MD

- Tested near infrared detectors at cryogenic temperatures for thermally-excited dark current
- Operated a Dewar, vacuum pump, and temperature controller; constructed custom connectors
- Generated clocking waveforms for an EMCCD and probed the circuitry for evidence of data transfer, adjusting C++ programming and FIFO configurations as needed

Research Associate

Summer 2012

Experimental Nuclear Physics Research Group

The Catholic University of America, Washington, D.C.

- Assisted Dr. Tanja Horn in researching properties of aerogel for use in a Kaon Aerogel Detector in the Jefferson Laboratory Hall C 12 GeV accelerator
- Measured refractive index properties of aerogel using photomultiplier tubes and an oscilloscope to take transparency data

Research Associate

Summer 2011

Vitreous State Laboratory

The Catholic University of America, Washington, D.C.

- Conducted resistivity measurements of the semiconductor material Lead Cadmium Telluride to determine if its eutectic composition would make a good material for thermal electrics and provide a high figure of merit

Honors/Accomplishments

Ohio State University Provost Scholarship Recipient (4 years)

Ohio State University Buckeye Scholarship Recipient (4 years)

Mount Leadership Society Scholars Program

Dean's List (recurring)

Phi Sigma Theta Honors Society

Certificate in Intercultural Awareness and Community Engagement (OSU)

Volunteer, Community Service, and Science Outreach

The Art of Planetary Science

2019 - Present

Lunar and Planetary Laboratory Graduate Student Webmaster

2019 - Present

UArizona Astronomy Club Star Party

March 2021

Tucson Magnet H.S. Science Mentor

Spring 2021

Lunar and Planetary Laboratory Conference Organizer

2019 - 2021

Kiva Microfinance Team Captain

2009 - Present

Astronomy event for scouts group at Camp Kern (YMCA)

April 2018

Astronomy night presentations at children's summer camps

Summer 2014

Ohio State Science Day Volunteer Judge

May 2013

Mount Leadership Society Service Committee Co-Chair

2012 - 2013

St. Stephen's Community House (Food Pantry)

2012 - 2013

Press and Public Lectures

Astronomy on Tap, State College, Virtual Lecture. "A Rock Comet? The Mystery of the Geminid Meteor Shower." (Nov. 23, 2020)

Kornei, K. Dec. 2020. "NASA Launched a Rocket 54 Years Ago. Has It Finally Come Home?" New York Times. Web. <https://www.nytimes.com/2020/12/01/science/nasa-rocket-orbit.html>

Publications and Conference Proceedings

Sanchez, J.; Reddy, V.; Bottke, W.; **Battle, A.**; Sharkey, B.; Kareta, T.; Pearson, N.; Cantillo, D.; "Physical Characterization of Metal-rich Near-Earth Asteroids 6178 (1986 DA) and 2016 ED85. 2021 *Planet. Sci. J.* 2 205

Battle, A.; Reddy, V.; Furfaro, R.; Campbell, T.; Frith, J.; Monet, D.; "A Visible Spectroscopic Atlas of Geostationary Satellites," in 2021 AMOS Conference Proceedings, Wailea, 2021.

Reddy, V.; **Battle, A.**; Campbell, T.; Chodas, P.; Conrad, A.; Engelhart, D.; Frith, J.; Furfaro, R.; Farnocchia, D.; Hoffmann, R.; Kuhn, O.; Monet, D.; Pearson, N.; Plis, E.; Reyes, J.; Rothberg, B.; Sharkey, B.; Sanchez, J.; Veillet, C.; Wainscoat, R.; “Spectral Characterization of 2020 SO,” in 2021 AMOS Conference Proceedings, Wailea, 2021.

Campbell, T.; Reddy, V.; Furfaro, R.; **Battle, A.**; Birtwhistle, P.; Linder, T.; Tucker, S.; Pearson, N.; “Bayesian Approach to Light-Curve Inversion of 2020 SO,” in 2021 AMOS Conference Proceedings, Wailea, 2021.

Halferty, G.; Reddy, V.; Furfaro, R.; **Battle, A.**; Campbell, T.; “Photometric Characterization and Trajectory Accuracy of Starlink Satellites,” in 2021 AMOS Conference Proceedings, Wailea, 2021.

Zuraski, S.; Beecher, E.; Carr, C.; Payne, T.; **Battle, A.**; Guliano, L.; and Fiorino, S.; “Turbulence and Aerosol Research Dynamic Interrogation System Testing,” in 2018 AMOS Conference Proceedings, Wailea, 2018.

Castro, P.; Payne, T.; **Battle, A.**; Cole, Z.; Moody, J.; Gregory, S; and Dao, P.; “Standardized Photometric Calibrations for Panchromatic SSA Sensors,” in 2016 AMOS Conference Proceedings, Wailea, 2016.