Amanda M. **Alexander**

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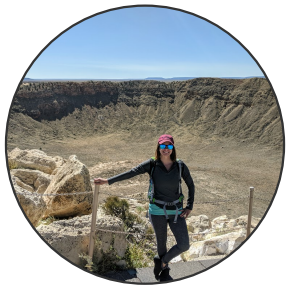

Education

University of Colorado at Boulder — *Boulder, Colorado*

Ph.D. in Geological Science — *Expected May 2024*

- Adviser: Dr. Stephen Mojzsis
- Focus: planetary geology, impact cratering physics, geomorphology, geochemistry, planetary formation

University of Colorado at Boulder — *Boulder, Colorado*

B.A. in Astrophysical and Planetary Science — *Received Dec. 2018*

- magna cum laude
- geology minor

Research Projects

Southwest Research Institute — *Boulder, Colorado*

Graduate Research Assistant — *May 2019-Present*

- Use of iSALE numerical hydrocode in planetary collisions
- Adviser: Dr. Simone Marchi

Southwest Research Institute — *Boulder, Colorado*

Student Scientist — *Jan. 2019-Aug. 2019*

- Rb-Sr Investigation of Sudbury Impact Structure via Thunderbay and Gunflit Lapilli
- Advisers: Drs. Scott Anderson, Tom Whitaker

University of Colorado Boulder — *Boulder, Colorado*

Undergraduate Honors — *June 2017-Dec. 2018*

- The nature and origin of ancient oxygen heterogeneities in Mars Crust
- Adviser: Dr. Stephen Mojzsis

University of Alabama Huntsville + NASA MSFC — *Huntsville, Alabama*

Undergraduate REU — *May 2016-Dec. 2016*

- Applications of non-force free solar coronal magnetic field extrapolation
- Advisers: Drs. Qiang Hu, Jacob Heerekhuisen

Mission Involvement

NASA Earth Venture-class Mission CYGNSS — *SwRI, Boulder, Colorado*

Student Engineer — *Apr. 2017-Present*

- Flight controller for (8) satellite constellation CYGNSS.
- I develop scripts and programs for data processing and checklists in Python and use ITOS, STOL to communicate with spacecraft. As a mission planner, I determine pass windows and schedules for communication with spacecraft and coordinate such schedules with the ground stations via the Swedish Space Corporation (SSC).
- Project manager: Jillian Redfern

NASA Discovery Mission Lucy, SwRI — *SwRI, Boulder, Colorado*

Student Scientist — *Jan. 2018-Sep. 2019*

- I developed a pipeline using Python and MySQL to conduct astrometric and photometric data analysis of the Lucy mission target objects. The pipeline has been automated, implemented and pre-processed >18 months of data.
- Project manager: Dr. Marc Buie

Skills

- •••• **Python**, astropy, numpy, pandas, pymysql, scipy
- •• **Matlab**, visualization and plotting
- ••• **MySQL**, database developement, query caching via python, database workbench
- ••••• **Linux, Windows OS**, Ubuntu, Debian, Fedora, Windows 7-10
- •••• **Microsoft Office**, excel, word, publisher, powerpoint
- •• **Adobe Creative Cloud**, photoshop, illustrator
- •• **ArcGIS**, 2d

Honors & Awards

2019	**$2,500**, Diversity Fellowship	*CU Boulder*
2019	**$3,000**, Colorado Graduate Grant	*CU Boulder*
2018	**Outstanding Graduate Award**, Astrophysical and Planetary Sciences Department	*CU Boulder*
2017	**$1,150**, CU Boulder Gold Grant	*CU Boulder*
2016	**$3,800**, CU Boulder Grant	*CU Boulder*
2015	**$2,500**, Patty Feist Scholarship	*CU Boulder*

Presentations

2019	**49th Annual Astronomy Summer Camp at Beli Brezi**, Talk	*Ardino, Bulgaria*
2018	**Earth System and Space Science Conference (ESSS)**, Poster presentation	*CU Boulder*
2018	**SwRI Colloquium**, Talk	*Boulder, CO*
2018	**Astrophysical & Planetary Sciences Department**, Thesis Defense	*CU Boulder*
2016	**American Geophysical Union (AGU)**, Poster presentation	*San Fransisco, CA*

Teaching Experience

2019	**Guest Lecture**, Introduction to Geo-Astronomy	*Beli Brezi, Bulgaria*
2017	**Undergraduate Teaching Assistant**, ASTR 1020: Introduction to Astronomy II (for non-majors)	*CU Boulder*
2017	**Undergraduate Teaching Assistant**, ASTR 1020: Introduction to Astronomy II (for non-majors)	*CU Boulder*
2016	**Tutor**, SAT Math & Science	*Tutor Doctor*
2015	**Tutor**, SAT Math & Science	*Tutor Doctor*

Select Publications

- 2. **Alexander**, A.M., "The nature and origin of ancient oxygen isotopic heterogeneities in Mars' crust." Undergraduate Honors Theses. 1773., 2018 `https://scholar.colorado.edu/honr_theses/1773`
- 1. Medina, R, Redfern J, Wells, W, Birath E, Lamb, D, **Alexander, A.M.**, Ewing, T., "When You Have More Satellites than People: The Evolution of CYGNSS Flight Operations," 2019 IEEE Aerospace Conference, Big Sky, MT, USA, 2019, pp. 1-11. `https://ieeexplore.ieee.org/abstract/document/8741926`