

SCHNECK CURRICULUM VITAE

UNA GAYLIN SCHNECK

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LAST UPDATED: AUGUST 2020

**CURRENT AFFILIATION**

*Department of Earth, Atmospheric, and Planetary Science; MIT*

**EDUCATION**

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**-Ph.D. Student in Planetary Science** [in progress]

Department of Earth, Atmospheric, and Planetary Science; MIT

**-B.S. Honors in Geophysics (with specialization in Space Physics)** [June 2018]

Cumulative GPA/Upper Division GPA: 3.65/3.87 [Valedictorian]

Department of Earth, Planetary, and Space Physics; UCLA

**-B.S. Honors Thesis: *Stopping a Charging Elephant: The Formation and Fate of Interplanetary Magnetic Field Enhancements*** [Advisor: C. T. Russell]

**ACADEMIC AWARDS**

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2020 National Science Foundation (NSF) Graduate Research Fellowship

2020 Dean of Science Fellow at MIT

2018 Earth, Planetary, and Space Sciences UCLA Valedictorian

2018 Eugene B. Waggoner Undergraduate Scholarship

**PROFESSIONAL APPOINTMENTS**

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**MIT, Department of Earth, Atmospheric, and Planetary Science, Cambridge, MA**

-PhD Student: *Sept. 2020-Present*

-Advisor: J. Taylor Perron

**UCLA, Department of Earth, Planetary, and Space Sciences, Los Angeles, CA**

-Research Associate I: *Sept. 2018-Present*

-Topic: Nanoscale dust interactions within the interplanetary magnetic field and Jovian magnetosphere

-Advisor: Christopher T. Russell

**NASA Johnson Space Center, Jacobs Technology, Houston, TX**

-Planetary Geochemistry Intern: June 2017-Sept. 2017

-Topic: Lunar magma ocean evolution through trace elements analysis in urKREEP

-Advisor: Jeremy W. Boyce

**UCLA, Department of Earth, Planetary, and Space Sciences, Los Angeles, CA**

-Student Researcher: Sept. 2016-Dec.2017

-Topic: Identifying chemical signatures in the classification of the Cape York (IIAB) iron meteorite

-Advisor: John Wasson

**UCLA, Department of Earth, Planetary, and Space Sciences, Los Angeles, CA**

-Undergraduate Researcher (Sept. 2015-May 2016)

## SCHNECK CURRICULUM VITAE

-Topic: Probing for evidence of large-scale magmatism in the lunar volatile evolution recorded in the anomalous chlorine isotope ratios of apatite crystals in HED meteorites

-Advisor: Jeremy W. Boyce

**Southwest Research Institute (Solar Physics), Boulder, CO**

-Student Researcher: June 2016-Sept. 2016

-Topic: Investigated the disappearance of filament cores in 3-part coronal mass ejection (CME) from a mathematical caustic created by a geometric projection of twisted magnetic flux rope

-Advisor: Timothy A. Howard

**Southwest Research Institute (Solar Physics), Boulder, CO**

-Undergraduate Researcher (REU): June 2015-Sept 2015

-Topic: Devised a standard method for measuring the mass evolution of eruptive prominences in coronagraphs and heliospheric imagers at large distances from the sun

-Advisor: Timothy A. Howard

**University of Colorado, Anschutz Medical, Department of Human Genetics, Denver, CO**

-Researcher Assistant (May 2012-Sept.2012)

-Topic: Deciphered a global X-linked mutation in the general population that interrupted the production of cobalamin during early human gestation

-Advisor: Tamim H. Shaikh

## OUTREACH

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**MinSight:** A pet model for the Heat Flow and Physical Properties Probe (HP3) instrument on the InSight mission to Mars for classroom demonstrations (Advisor: J. Aurnou)

-Taught in UCLA's EPSS (171) Advanced Computing in Geosciences 2019/2020

## PRESENTATIONS

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4. "New Insights on Flux Transfer at the Magnetopause", UCLA, Department of Earth, Planetary, and Space Sciences, Los Angeles, CA; *EPSS Space Physics Seminar*, 2020
3. "Something New Under the Sun (or at least in the solar wind): The Effect of Dust on the IMF and Earth", UCLA, Department of Earth, Planetary, and Space Sciences, Los Angeles, CA; *EPSS Space Physics Seminar*, 2019
2. "Testing the urKREEP Hypothesis with Eucrites", UCLA, Department of Earth, Planetary, and Space Sciences, Los Angeles, CA; *9<sup>th</sup> Annual Los Angeles Basin Earth and Planetary Sciences Student Research Symposium*, 2016
1. "Eruptive Prominences Evolution at Great Distances from the Sun", Laboratory for Atmospheric and Space Physics (LASP), Boulder, CO; *LASP REU*, 2015

## POSTERS

3. **Schneck, U. G.**, Joy, S., Russell, C. T., "Did Galileo See a Salty Plume at Europa?", American Geophysical Union Conference, 2019.
2. **Schneck, U. G.**, Boyce, J. W., Treiman, A., Eiler, J. M., Guan, Y., Ma, C., "Testing the urKREEP hypothesis with eucrites", 47<sup>th</sup> Lunar and Planetary Science Conferences, The Woodlands, Texas (also featured in the *The Big Bang Theory* Season 10, Episode 9 ('[The Geology Elevation](#)'), 2016.

## SCHNECK CURRICULUM VITAE

1. **Schneck, U. G.**, Howard, T. A., “Eruptive Prominence at Large Distances from the Sun”, *LASP REU*, 2015

### PUBLICATIONS

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***h-index: 3 / i10-index: 2 | CITATIONS: 113 (GOOGLE SCHOLAR)***

#### **Refereed Publications:**

3. Pinchuk, P., Margot, J., Greenberg, A. H., Ayalde, T., Bloxham, C., Boddu, A., Gerardo, L., Cliffe, M., Gallagher, S., Hart, K., Hesford, B., Mizrahi, I., Pike, R., Rodger, D., Sayki, B., **Schneck, U. G.**, Tan, A., Xiao, Y., and Lynch, R. S., **2019**. “A Search for Technosignatures from TRAPPIST-1, LHS 1140, and 10 Planetary Systems in the Kepler Field with the Green Bank Telescope at 1.15–1.73 GHz” *The Astronomical Journal*. 157 (122).

2. Howard, T. A., DeForest, C. E., **Schneck, U. G.**, and Alden, C. R., **2017**. “Challenging Some Contemporary Views of Coronal Mass Ejections. II: The Case for Absent Filaments” *The Astrophysical Journal*. 834 (86)

1. Yu, H. C., Sloan, J.L., Scharer, G., Brebner, A., Quintana, A.M., Achilly, N.P., Manoli, I., Coughlin, C.R., Geiger, E.A., **Schneck, U. G.**, Watkins, D., Suormala, T., Van Hove, J.L., Fowler, B., Baumgartnerk, M.R., Rosenblatt, D.S., Venditti, C.P., and Shaikh, T.H., **2013**. An X-Linked Cobalamin Disorder Caused by Mutations in Transcriptional Coregulator HCFC1. *The American Journal of Human Genetics*. 93 (3): 506-514

#### **Conference Abstracts:**

9. **Schneck, U. G.**, Joy, S., Russell, C. T. (2019) “Did Galileo See a Salty Plume at Europa?” (American Geophysical Union 2019)

8. Lai, H., Russell, C. T., **Schneck, U.**, Jia, Y. D. (2019) “Neutral Matter Collisions in Interstellar Space: Dust Production and Pick-up on the Smallest Scale” (EPSC-DPS Joint Meeting 2019)

7. Lai, H., Zhao, C., Jia, Y., **Schneck, U.**, Russell, C. T. (2018) “The Coherent Interaction of the Solar Wind and Collisionally Produced Nano-scale Dust” (European Geosciences Union General Assembly 2018)

6. Russell, C.T., Zhao, C., Strangeway, R.J., Lai, H.R., **Schneck, U.G.**, Paterson, W.R., Giles, B.L., Burch, J.L. (2018) “Magnetosheath Field Enhancements: Decelerating Charged Dust Clouds in the Magnetosheath” (European Geosciences Union General Assembly 2018)

5. Russell, C. T., Qi, Y. Zhao, C., **Schneck, U.**, Lai, H. (2018) “Faux Magnetopause Crossings and How to Recognize Them” (2018) (Triennial Earth-Sun Summit)

4. Russell, C. T., Lai, H., **Schneck, U. G.** (2018) “Collisions in Space: Nanoscale Dust Production and its Detection in Space” (The 50<sup>th</sup> Lunar and Planetary Science Conference)

3. Kanee, S. A., **Schneck, U. G.**, Ross, D. K., Boyce, J. W. (2018) “Non-Destructive Analysis of Potassium in Apollo 11 High-Titanium Basalts” (Women in Planetary Science and Exploration Conference 2018)

2. **Schneck, U. G.**, Boyce, J. W., Treiman, A., Eiler, J. M., Guan, Y., Ma, C., (2016) “Testing the urKREEP-  $\delta^{37}\text{Cl}$  Hypothesis with eucrites.” (The 47<sup>th</sup> Lunar and Planetary Science Conference)

1. **Schneck, U. G.**, Howard, T. A. (2015) “The Evolution of Eruptive Filaments at Great Distances.” (Laboratory of Atmospheric and Space Physics, REU)

## SCHNECK CURRICULUM VITAE

### COMPUTER SKILLS AND SYSTEMS EXPERIENCE

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#### *Tools and Software*

Git, Vim, Photoshop, After Effects, Illustrator, LaTeX, Linux

#### *Languages*

Proficient: Python, MATLAB, C++, Perl/PDL, R

Exposure: Mathematica, C#, Bash

### PROFESSIONAL MEMBERSHIP

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-American Geophysical Union (AGU)

-American Association for the Advancement of Science (AAAS)

LETTERS OF RECCOMENDATION AVAILABLE UPON REQUEST