

Ashley Marie Schoenfeld

JPL Postdoctoral Fellow

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RESEARCH INTERESTS

Surface processes, tectonics, and habitability of outer solar system ocean worlds, with emphasis on Titan and Enceladus.

EDUCATION

PhD	University of California Los Angeles (UCLA) Dept. of Earth, Planetary, and Space Sciences Geophysics, GPA: 3.9/4	Sept 2016 - June 2023
MS	University of California Los Angeles Dept. of Earth, Planetary, and Space Sciences Geophysics, GPA: 3.9/4	Sept 2016 - Mar 2020
BA	University of California Berkeley Dept. of Earth and Planetary Science Geophysics, GPA: 3.6/4	Aug 2011 - May 2015

RESEARCH EXPERIENCE

NASA Astrobiology Institute <i>Habitability of Hydrocarbon Worlds: Titan and Beyond</i> Collaborator	Jan 2019 - Present
National Science Foundation Graduate Research Fellow	Sept 2018 – May 2023
Cassini Radar Team Associate Scientist	Nov 2016 - Sept 2018
Jet Propulsion Laboratory (JPL) Student Researcher	Jun 2014 - Present

HONORS AND AWARDS

AGU Student Travel Grant	Oct 2022
Division of Physical Sciences Excellence in Outreach Award, UCLA	Sept 2021
EPSS Department Research Award, UCLA	Sept 2020
Titan Through Time Travel Grant, CU Boulder	Mar 2020
EPSS Department Outreach Award, UCLA	Sept 2019
EPSS Department Teaching Award, UCLA	Sept 2018

EPSS Department Extramural Funding Award, UCLA	Sept 2018
NASA Earth and Space Sciences Fellowship (NESSF) Awardee	April 2018
NSF Graduate Research Fellowship (GRFP) Awardee	April 2018
Titan Surface Meeting Travel Grant, Cornell University	May 2018
EPSS Department Teaching Award, UCLA	Sept 2017
EPSS Department Scholarship, UCLA	Sept 2016
Dean's List, University of California, Berkeley	2011-2015
Honors Standing, University of California, Berkeley	2011-2015

PROFESSIONAL ACTIVITIES

EPSS Outreach and DEI Coordinator University of California, Los Angeles	Sept 2022 – June 2023
Invited Speaker: “Particle Entrainment in Enceladus’s Ocean” Brown University	Oct 2020
Invited Speaker: “BRIDGE to the Stars” Small Bodies Assessment Group 22 nd Meeting	Jan 2020
Invited Panelist: “Navigating Graduate School” University of California, Los Angeles	Oct 2019
Invited Panelist: “EPSS NSF Grant Writing Panel” University of California, Los Angeles	Oct 2019
Planetary Science Summer Seminar Class of 2019 Jet Propulsion Laboratory, Pasadena	Aug 2019
Planetary Science Section Student Representative American Geophysical Union	Dec 2019 - Dec 2021
EPSS Department Outreach Coordinator University of California, Los Angeles	Sept 2018 - Sept 2021
Session Chair: “Tectonics Across the Solar System” 49 th Lunar and Planetary Science Conference, Texas	Mar 2018
Science Consultant on “Young Sheldon” ep 1.15 Warner Brothers	Jan 2018

TEACHING EXPERIENCE

Teaching Associate EPSS 15: “Oceanography”	Jan 2022 – Mar 2022
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Teaching Associate EPSS 3: “Astrobiology”	Sept 2021 – Dec 2021
Teaching Assistant EPSS 10: “Exploring Mars”	Jan 2018 – Mar 2018
Teaching Assistant EPSS 3: “Astrobiology”	Sept 2017 – Dec 2017
Teaching Assistant EPSS 15: “Introduction to Oceanography”	Apr 2017 – Jun 2017
Teaching Assistant EPSS 3: “Astrobiology”	Sept 2016 – Dec 2016

SELECTED OUTREACH ACTIVITIES

Explore Your Universe, Volunteer “Diffusion in Action” University of California, Los Angeles	Nov 2021
Explore Your Universe, Committee Member Virtual Platform Organizer University of California, Los Angeles	Sept 2020
Explore Your Universe, Booth Leader “Diving into Ocean Worlds”, “Celebrating Cassini’s Legacy” University of California, Los Angeles	Nov 2019, 2017
International Observe the Moon Night, Volunteer University of California, Los Angeles	Oct 2018
San Marino Elementary School Science Fair, Booth Leader San Marino Elementary School, Culver City	Apr 2018
DIYnamics, Volunteer University of California, Los Angeles	May 2017

MENTORSHIP

Mentored JPL Summer Interns

Julia Miller, Project: “Titan Fluvial Mapping”, 2019
Meghan Florence, Project: “NonSAR Mapping of Titan”, 2018
Tiffany Verlander, Project: “Mapping Titan’s Poles”, 2017

PROFESSIONAL SOCIETY MEMBERSHIPS

American Geophysical Union (AGU)	2014 – Present
Geological Society of America (GSA)	2017 – Present
American Astronomical Society (AAS)	2019 – Present

TECHNICAL SKILLS

MATLAB, ArcGIS, ENVI, Adobe Creative Suite (Photoshop, Illustrator, etc.)

PEER REVIEWED PUBLICATIONS

First Author **Schoenfeld, A.M.**, et al., 2021. Geomorphological Map of the South Belet Region of Titan. *Icarus*, 366, p. 114516.

Schoenfeld, A. M., Solomonidou, A., Malaska, M. J., Lopes, R. M. C., Birch, S. P. D., Le Mouélic, S., et al., 2023. Geomorphological map of the Soi crater region on Titan. *Journal of Geophysical Research: Planets*, 128, e2022JE007499. <https://doi.org/10.1029/2022JE007499>

Schoenfeld, A.M., Hawkins, E.K., Soderlund, K.M., Vance, S., Leonard, E.J. and Yin, A. Particle Entrainment and Rotating Convection in Enceladus's Ocean. *Communications Earth and Environment*, 4(1), p.28.

Schoenfeld, A.M. and Yin. Quantifying tidal versus non-tidal stresses in driving time-varying fluxes of Enceladus' plume eruptions. *Icarus*. Submitted.

Co-Author Solomonidou, A., **Schoenfeld, A.M.**, et al. Detailed chemical composition of Titan's surface: unveiling the Soi crater region. *Icarus*. In review.

Malaska, M.J., **Schoenfeld, A.M.**, et al., 2022. Potential caves: inventory of subsurface access points on the surface of Titan. *Journal of Geophysical Research: Planets*, 127(11).

Miller, J.W. et al. (including **Schoenfeld, A.M.**), 2021. Fluvial Features on Titan and Earth: Lessons from Planform Images in Low-Resolution SAR. *The Planetary Science Journal*, 2, 142.

Moore, K. et al. (including **Schoenfeld, A.M.**), 2021. Bridge to the stars: A mission concept to an interstellar object. *Planetary and Space Science*.

Malaska, M.J., et al. (including **Schoenfeld, A.M.**), 2020. Labyrinth Terrain on Titan. *Icarus*. p.113764.

Solomonidou, A. et al., (including **Schoenfeld, A.M.**), 2020. The chemical composition of impact craters on Titan: Implications for exogenic processing. *Astronomy and Astrophysics*, 641, A16.

Lopes, R.M., Malaska, M.J., **Schoenfeld, A.M.**, et al., 2020. A global geomorphologic map of Saturn's moon Titan. *Nature Astronomy*, pp.1-6.

Solomonidou, A., et al. (including **Schoenfeld, A.M.**), 2019. Spectral and emissivity analysis of the raised ramparts around Titan's northern lakes. *Icarus*.

Griffith, C.A., Penteadó, P.F., Turner, J.D., Neish, C.D., Mitri, G., Montiel, N.J., **Schoenfeld, A.M.**, and Lopes, R.M., 2019. A corridor of exposed ice-rich bedrock across Titan's tropical region. *Nature Astronomy*, 3(7), pp. 642-648.

Lopes, R.M.C., et al. (including **Schoenfeld, A.M.**), 2019. Titan as revealed by the Cassini radar. *Space Science Reviews*, 215(4), pp. 33.

Solomonidou, A., et al. (including **Schoenfeld, A.M.**), 2018. The spectral nature of Titan's major geomorphological units: constraints on surface composition. *Journal of Geophysical Research: Planets*, 123(2), pp. 489-507.

Lopes, R.M.C., et al. (including **Schoenfeld, A.M.**), 2016. Nature, Distribution, and Origin of Titan's Undifferentiated Plains. *Icarus*, v. 270, pp. 162-182.

Malaska, M.J., Lopes, R.M.C., Williams, D.A., Neish, C.D., Solomonidou, A., Soderblom, J.M., **Schoenfeld, A.M.**, et al., 2016. Geomorphological map of the Afekan Crater Region, Titan: Terrain relationships in the equatorial and mid-latitude regions. *Icarus*, 270, pp.130-161.

SELECTED CONFERENCE PAPERS

Oral

Schoenfeld, A.M., Solomonidou, A., Malaska, M.J., Lopes, R.M.C., Birch, S.P.D., Le Gall, A., Schmitt, B., Le Mouélic, Florence, M., Verlander, T., Matsoukas, C., Dhingra, R., Wall, S.D., Elachi, C. (2022). Mapping the Soi Region of Titan, presented at the NAI Team meeting at the University of Hawaii, Manoa, Honolulu, Hawaii, 2-4 May.

Schoenfeld, A.M., Hawkins, E.K., Soderlund, K.M., Vance, S., Leonard, E.J. and Yin, A. (2021). Particle Entrainment and Rotating Convection in Enceladus' Ocean, presented at AGU Fall Meeting, New Orleans, Louisiana, 13-17 Dec.

Schoenfeld, A.M., Hawkins, E.K., Soderlund, K.M., Vance, S., Leonard, E.J. and Yin, A. (2020). Particle Entrainment and Rotating Convection in Enceladus' Ocean, presented at GSA Fall Meeting, online, 26-30 Oct.

Schoenfeld A.M. and Yin A. (2019), Tectonic-Stress Map Across Enceladus and Possible Mechanical Causes, presented at AGU Fall Meeting, San Francisco, California, 9-13 Dec.

Schoenfeld A.M., Lopes R.M.C, Malaska M.J., and the Cassini RADAR Team (2018), Geomorphological Map of Titan's Mid-Latitude and

Equatorial Regions, presented at Titan Surface Workshop, Ithaca, New York, 9-11 May.

Schoenfeld A.M. and Yin A. (2017), Stressing Out: A Look at the Stress Regime of Enceladus' South Pole, presented at GSA, Seattle, Washington, 22- 25 Oct.

Schoenfeld A.M., Lopes R.M.C, Malaska M.J., and the Cassini RADAR Team (2016), Geomorphological Map of Titan's South Belet Region: An exploration of Transition Zones, presented at DPS, Pasadena, California, 17-21 Oct.

Schoenfeld A.M., Lopes R.M.C, Malaska M.J., and the Cassini RADAR Team (2015), Geomorphological Map of Titan's Mid-Latitude and Equatorial Regions, presented at Titan Surface Workshop, Moscow, Idaho, 13-15 Sept.

Poster

Schoenfeld A.M., et al., BRIDGE to the Stars, presented at the 2020 Small Bodies Assessment Group 22nd Meeting, Pasadena, CA, 14-16 Jan.

Schoenfeld A.M., Lopes R.M.C., Malaska M.J., Solomonidou A., and the Cassini RADAR Team, Geomorphological Map of Titan's South Belet Region, presented at the 2017 Annual Geological Society of America Conference, Seattle, Washington, 22-25 Oct.

Schoenfeld A.M., Lopes R.M.C., Malaska M.J., Solomonidou A., and the Cassini RADAR Team, Geomorphological Map of Titan's South Belet Region, presented at the 14th Annual Asia Oceania Geosciences Meeting, Singapore, 6-11 August.

Schoenfeld A.M. and Yin A. (2017), A First Order Mechanical Analysis of the Stress Regime of Enceladus' South Pole, Abstract 1789, presented at the 2017 Lunar and Planetary Science Conference, Woodlands, Texas, 20-24 March.

Malaska M.J., Lopes R.M.C., Mitchell K.L., Radebaugh J., Verlander T., **Schoenfeld A.M.** (2017), Classification of Labyrinth Terrains on Titan, presented at the 2017 Lunar and Planetary Conference, Woodlands, Texas, 20-24 March.

Lopes R.M.C., Malaska M.J., **Schoenfeld A.M.**, Solomonidou A., Birch S., Hayes A., Williams D.A., Janssen M., LeGall A., Turtle E.P., and the Cassini RADAR Team, A Mid-Latitude Geomorphologic Mapping of Titan, presented at the 2016 Meeting of the Division for Planetary Science, Pasadena, California, 17-21 Oct.

Lopes R.M.C., Malaska M.J., Solomonidou A., Le Gall A., Janssen M.A., Neish C.D., Turtle E.P., Birch S.P.D., Hayes A.G., Radenbaugh J., Coustenis A., **Schoenfeld A.M.**, Stilles B.W., Kirk R.L., Mitchell K.L., Stofan E.R., Lawrence K.J., and the Cassini RADAR Team (2015),

Nature, Distribution, and Origin of Titan's Undifferentiated Plains ("Blandlands"), Abstract 2125, presented at the 2015 American Geophysical Union Fall Meeting, San Francisco, California, 14-18 Dec.

Schoenfeld A.M., Lopes R.M.C, Malaska M.J., and the Cassini RADAR Team (2014), A Detailed Geomorphological Sketch Map of Titan's Afekan Crater Region, Abstract 20483, presented at the 2014 American Geophysical Union Fall Meeting, San Francisco, California, 14-18 Dec.

REFERENCES

More available upon request.

Dr. An Yin, Graduate Advisor

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University of California, Los Angeles
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Dr. Rosaly Lopes, JPL Advisor

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