Aomawa L. Shields - Curriculum Vitae

CONTACT

University of California, Irvine
Department of Physics and Astronomy
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INTERESTS

Climate and habitability of extrasolar planets orbiting low-mass stars. Multi-dimensional climate models. Interdisciplinary science education and communication. Holistic health and wellness practices for academics and parents of young children.

EDUCATION

University of Washington (UW), Seattle, WA
Ph.D., Astronomy and Astrobiology, 2014
"The Effect of Star-Planet Interactions on Planetary Climate"
Advisors: Victoria Meadows, Cecilia Bitz
M.Sc., Astronomy, 2011

University of California, Los Angeles (UCLA), Los Angeles, CA
MFA, Acting, 2001

Massachusetts Institute of Technology, Cambridge, MA
Sc.B., Earth, Atmospheric, and Planetary Sciences, 1997

Phillips Exeter Academy, Exeter, NH
Graduated with High Honors, 1993

APPOINTMENTS

UC Irvine, Department of Physics and Astronomy, Irvine, CA
Clare Boothe Luce Associate Professor (2020-Present)

UC Irvine, Department of Physics and Astronomy, Irvine, CA
Clare Boothe Luce Assistant Professor (2016-2020)

UCLA, Los Angeles, CA

Harvard-Smithsonian Center for Astrophysics, Cambridge, MA
NSF Postdoctoral Fellow (2014–2017)
UC President's Postdoctoral Fellow (2014–2016)

University of Washington, Seattle, WA
NSF Graduate Research Fellow (2011–2014)
Academic Mentor, Pre-Major in Astronomy Program (2013–2014)
NSF IGERT Trainee (2009–2011)
Research & Teaching Assistant, Department of Astronomy (2009–2014)

California Institute of Technology, Pasadena, CA
Scientific Analysis Associate, Spitzer Space Telescope Observatory Planning and Scheduling Team (2008–2009)
Scientific Analysis Assistant, Spitzer Science User Support Team (2005–2008)

Skirball Cultural Center, Los Angeles, CA
External Affairs Assistant, Outreach and Communications (2003–2005)

Appointments (Cont'd)	**Griffith Observatory**, Los Angeles, CA Museum Guide (2001–2003)
	University of Wisconsin, Madison, Madison, WI Research Assistant (1997–1998)
	Arecibo Observatory, Arecibo, Puerto Rico Summer Research Assistant (1996)
	Lowell Observatory, Flagstaff, AZ Research Assistant (1994–1996)
	MIT Center for Space Research (now Kavli Institute), Cambridge, MA Research Assistant (1994–1995)
	Jet Propulsion Laboratory, Pasadena, CA Summer Research Assistant (1994)
Funding	Heising Simons Foundation grant, $373,996, PI Shields, 2023-2028 NASA Exoplanets Research program grant, $484,457, PI Shields, 2023-2026 NSF CAREER award, $687,418, PI Shields, 2018-2023 NASA Habitable Worlds program grant, $145,450, PI Shields, 2017-2020 Clare Boothe Luce Endowed Professorship, $250,000, 2016-2021 Over $420k in competitive fellowships from NSF, NASA, and the University of California, among others. 2.5 million CPU hours of computing time from the National Center for Atmospheric Research (NCAR).
Selected Fellowships, Awards, and Honors	NASA Exoplanets Research Program Grant (2023-2025) California Academy of Sciences Fellow (2023-Present) Kibbe Science Endowed Lectureship, (February 2022) Kavli Institute for Theoretical Physics Invited Key Participant "Better Stars, Better Planets: Exploiting the Stellar-Exoplanetary Synergy", 2019 NSF CAREER Award (2018-2023) NASA Habitable Worlds Program Grant (2017-2020) Clare Boothe Luce Professorship (2016-Present) The Origins Project Postdoctoral Award Lectureship (2016) Kavli Fellow (2015) TED Fellow (2015) Rodger Doxsey Travel Prize, American Astronomical Society 225th Meeting (2015) NSF Astronomy and Astrophysics Postdoctoral Fellowship (2014-2017) UC President's Postdoctoral Program Fellowship (2014-2016) First Place, Astrobiology Science Conference Student Poster Competition (2012) "Audience Choice", US FameLab Astrobiology communication competition (2012) NSF Graduate Research Fellowship (2011-2014) Member, Minorities Striving and Pursuing Higher Degrees of Success in Earth System Science Professional Development Program (MS PHD'S PDP) (2011-2013) NASA Group Achievement Award, Spitzer Science Operations Planning Team (2010) NSF Integrative Graduate Education and Research Traineeship (2009-2011) NASA Public Service Group Achievement Award, Spitzer Observatory Planning/Scheduling Team (2009)

Referred Publications

25. **Shields, A. L.**, Wolf, E. T., Agol, E., Tremblay, P.-E. (2025). *Increased surface temperatures of habitable white dwarf worlds relative to main-sequence exoplanets.* The Astrophysical Journal, 979(1), 45. https://doi.org/10.3847/1538-4357/ad9827

24. Venkatesan, V. **Shields, A.L.**, Deitrick, R., Wolf, E. T., & Rushby, A. (2025). *A One-Dimensional Energy Balance Model Parameterization for the Formation of CO Ice on the Surfaces of Eccentric Extrasolar Planets* Astrobiology, 25(1). https://doi.org/10.1089/ast.2023.0103.

23. Silverman, M. **Shields, A.L.**, Howard, J. N., Venkatesan, V., Whitfield, K. *Rising Stargirls: Benefits of a Creative Arts-Based Approach to Astronomy Education for Middle-School Girls from Underrepresented Groups*, Astronomy Education Journal, 4(1). https://doi.org/10.32374/2024.4.1.089ra.

22. Lobo, A., **Shields, A.L.** (2024) *Climate Regimes Across the Habitable Zone: a* Publications *Comparison of Synchronous Rocky M- and K-dwarf Planets*, ApJ, 972, 71.
https://doi.org/10.3847/1538-4357/ad58bb

21. Venkatesan, V., **Shields, A.L.**, Deitrick, R. *The Radiative Effects of Carbon on the Climate Stability of Extrasolar Planets.* Astrobiology, in press.

20. Lobo, A., **Shields, A. L**., Palubski, I., Wolf, E.T. (2023) *Terminator Habitability: The Case for Limited Water Availability on M-dwarf Planets*, ApJ, 945, 161.
https://doi.org/10.3847/1538-4357/aca970

19. Kossakowski, D., K^{o}rster M., Trifonov, T., Henning, Th., Kemmer, J., Callabero, J.A., Burn, R., Sabotta, S. Crouse, J.S., Fauchez, T.J., Nagel, E., Kaminski, A., Herrero, E., Rodriguez, E., Gonz˚lez,-Alvarez E., Quirrenbach, A., Amado, P.J., Ribas, I., Reiners, A., Aceituno, J., Bejar, V.J.S., Baroch D., Bastelberger, S.T., Chaturvedi, P., Cifuentes, C., Dreizler, S., Jeffers, S.V., Kopparapu, R., Lafarga, M., Lopez-Gonzalez, M.J., Martn-Ruiz, S., Montes, D., Morales, J.C., Palle, E., Pavlov, A., Schlecker, M., Schfer, P., Schweitzer, A., Shan, Y., **Shields, A.**, Stock, S., Wolf, E., Zapatero Osorio, M.R., and Zechmeister, M.(2023) *The CARMENES search for exoplanets around M dwarfs Wolf 1069 b: Earth-mass planet in the habitable zone of a nearby, very low-mass star*, Astronomy & Astrophysics.
https://doi.org/10.1051/0004-6361/202245322

18. Haqq-Misra, J., Wolf, E.T., Fauchez, T.J., **Shields, A.L.**, and Kopparapu, R.K. (2022) *The Sparse Atmospheric Model Sampling Analysis (SAMOSA) Intercomparison: Motivations and Protocol Version 1.0: A CUISINES Model Intercomparison Project*, Planet. Sci. J., 3, 260.
https://doi.org/10.3847/PSJ/ac9479

17. Rushby, A., **Shields, A. L.**, Wolf, E. T., Lague, M., Burgasser, A. (2020) *The Effect of Land Albedo on the Climate of Land-dominated Planets in the TRAPPIST-1 System*, ApJ, 904, 124.
https://doi.org/10.3847/1538-4357/abbe04

16. Palubski, I., **Shields, A. L.**, and Deitrick, R. (2020) *Habitability and Water Loss Limits on Eccentric Planets Orbiting Main-sequence Stars*, ApJ, 890, 30.
https://doi.org/10.3847/1538-4357/ab66b2

Refereed Publications (Cont'd)

15. Rushby, A., **Shields, A. L.**, and Joshi, M. (2019) *The Effect of Land Fraction and Host Star Spectral Energy Distribution on the Planetary Albedo of Terrestrial Worlds*, ApJ, 887, 29. https://doi.org/10.3847/1538-4357/ab4da6

14. **Shields, A. L.**, Bitz, C.M., and Palubski, I. (2019) *Energy Budgets for Terrestrial Extrasolar Planets*, ApJL, 884, 2. https://doi.org/10.3847/2041-8213/ab44ce

13. **Shields, A. L.,** Carns, R.C. (2018) *Hydrohalite Salt-albedo Feedback Could Cool M-dwarf Planets*, ApJ, 867, 1. https://doi.org/10.3847/1538-4357/aadcaa

12. Wolf, E.T., **Shields, A. L.**, Kopparapu, R. K., Haqq-Misra, J., Toon, O. B.(2017) *Constraints on Climate and Habitability for Earth-like Exoplanets Determined from a General Circulation Model,* Astrophysical Journal, 837, 2. https://doi.org/10.3847/1538-4357/aa5ffc

11. **Shields, A. L.**, Barnes, R., Agol, E., Charnay, B., Bitz, C. M., Meadows, V. S. (2016) *The Effect of Orbital Configuration on the Possible Climates and Habitability of Kepler-62f,* Astrobiology, 16, 6. https://doi.org/10.1089/ast.2015.1353

10. **Shields, A. L.**, Bitz, C. M., Meadows, V. S., Joshi, M. M., Robinson, T. D. (2014) *Spectrum-driven Planetary Deglaciation Due to Increases in Stellar Luminosity,* Astrophysical Journal Letters, 785, 9. https://doi.org/10.1088/2041-8205/785/1/L9

9. **Shields, A. L.**, Meadows, V. S., Bitz, C. M., Pierrehumbert, R. T., Joshi, M. M., Robinson, T. D. (2013) *The Effect of Host Star Spectral Energy Distribution and Ice-Albedo Feedback on the Climate of Extrasolar Planets*, Astrobiology, 13, 8. https://doi.org/10.1089/ast.2012.0961

8. Cowan, N. B., Robinson, T., Livengood, T. A., Deming, D., Agol, E., A'Hearn, M. F., Charbonneau, D., Lisse, C. M., Meadows, V. S., Seager, S., **Shields, A. L.**, Wellnitz, D. D. (2011) *Rotational Variability of Earth's Polar Regions: Implications for Detecting Snowball Planets*, Astrophysical Journal, 731, 76. https://doi.org/10.1088/0004-637X/731/1/76

7. Hunter, D. A., Elmegreen, B. G., **Baker, A. L.** (1998) *The Relationship between Gas, Stars, and Star Formation in Irregular Galaxies: A Test of Simple Models*, Astrophysical Journal, 493, 595. https://doi.org/10.1086/305158

Published Invited Reviews

6. **Shields, A. L.** (2019) *The Climates of Other Worlds: A Review of the Emerging Field of Exoplanet Climatology*, ApJS, 243, 2. https://doi.org/10.3847/1538-4365/ab2fe7

5. **Shields, A. L.**, Ballard, S., Johnson, J. (2016) *The Habitability of Planets Orbiting M-dwarf Stars,* Invited Review, Physics Reports, 663:1-38. https://doi.org/10.1016/j.physrep.2016.10.003

Books

4. **Aomawa Shields, PhD** (2023) Life on Other Planets: *A Memoir of Finding My Place in the Universe.*Viking. https://www.penguinrandomhouse.com/books/673665/life-on-other-planets-by-aomawa-*shields-phd/*.

Other Publications

3. **Shields, A. L.** (2021) *A Professor Describes How She Found Her Voice to Speak Truth About Systemic Racism and Exclusion (Opinion),* Inside Higher Ed, March 5, 2021.

2. **Shields, A. L.** (2021) *Remaining Publicly Silent in the Face of Overtly Racist and Exclusionary Attitudes has a Cost,* Inside Higher Ed, February 19, 2021.

1. Palubski, I. and **Shields, A. L.**. (2019) Red-dwarf Habitability Recipe, August issue of Sky and Telescope, Vol. 138, Issue 2, pg. 34-40.

Teaching & Mentoring	Physics 14: "Energy and the Environment", Spring 2022, UC Irvine Physics 250: "Communication Skills in Physics and Astronomy", Winter 2021, Winter 2022, Winter 2023, Winter 2024, UC Irvine Physics 241A: "Solar System and Extrasolar Planets", Fall 2020, UC Irvine Physics 299: "Read Special Topics", Spring 2020, UC Irvine Physics 246: "Special Topics Communications Skills in the Physical Sciences", Spring 2020, UC Irvine Physics 2: "Introductory Math Methods for Physicists", Winter 2020, UC Irvine Physics 246: "Planetary Climate and Habitability", Winter 2019, UC Irvine Physics 20E: "Life in the Universe", Fall 2017, Fall 2018, Fall 2019, Fall 2021, Fall 2022, Spring 2023, Spring 2024 UC Irvine Benjamin Banneker Institute, Harvard-Smithsonian Center for Astrophysics, (2015–16) ESS 495 NASA Space Grant Seminar: "Rocks-n-Stars", UW (2014) Teaching Assistant, ASTR 101, 102, and 150 ("The Planets"), UW (2010–2011) Science communication workshop, Caltech, UW (2007)
Service & Memberships	Reviewer, Astrophysical Journal Letters Member, Division for Planetary Sciences, American Astronomical Society, American Geophysical Union
Invited Talks	Panel, **American Chemical Society Chief Technology Officer Summit**, September 26, 2024 Lecture, **Riverside County Office of Education Ethnic Studies Summit**, August 29, 2024 Lecture, **Capitol Science**, June 21, 2024 Plenary talk, **Livermore Valley Arts**, May 2, 2024 Virtual Talk, **Talks at Google**, October 27, 2023 Virtual Talk, **Closer To Truth Chats**, August 4, 2023 Virtual Talk, **StarTalk Radio**, July 13, 2023 Virtual Talk, **Clear+Vivid Podcast**, July 10, 2023 Book Talk, **Morning Joe**,July 10, 2023 Book Talk, **Good Morning America**, July 8, 2023 Virtual Talk, **PBS Nova**, May 18, 2023 Commencement Speaker, **Lewis and Clark College**, May 6, 2023 Plenary talk, **AbSciCon22**, May 19, 2022 Colloquium and reflective workshop, **Bowdoin College**, Kibbe Endowed Lectureship, February 24, 2022 Kibbe Science Lecture, **Bowdoin College**, February 23, 2022 Virtual Talk, **NCAR**, Annual CESM Workshop #26, Alternate Earths Sessions, June 17, 2021 Virtual Colloquium, **Arizona State University**, ASU School of Earth and Space Exploration (SESE), December 2, 2020 Virtual Colloquium, **University of Washington**, November 12, 2020 Virtual Talk and Discussion, **University of Chicago**, University of Chicago Exoplanet Group, September 28, 2020 Virtual Colloquium, **Georgia Tech**, September 21, 2020 Virtual Talk, **THAI Workshop 2020**, September 15, 2020 Virtual Talk, **Kavli Institute for Theoretical Physics (KITP)** Exostars Redux Conference: "The Star-Planet Climate Connection: Energy Budgets for Terrestrial Extrasolar Planets", August 26, 2020 Keynote address, Conference for Undergraduate Women in Physics (CUWiP), **UC Irvine**, January 19, 2020 Colloquium, **UC Irvine**, Irvine, CA, November 14, 2019

Invited Talks (Cont'd)

Presentation, **Sagan Exoplanet Summer Workshop**, "Astrobiology for Astronomers", Caltech, July 18, 2019
Presentation, **Kavli Institute for Theoretical Physics (KITP)** Conference: "Planet-Star Connections in the Ear of TESS and Gaia", Santa Barbara, CA May 24, 2019
Chalk Talk, **Friends of the KITP**, Kavli Institute for Theoretical Physics, Santa Barbara, CA, May 15, 2019
Plenary talk, **American Astronomical Society**, 233rd AAS Meeting, Seattle, WA January 2019
Lecture, **UC Irvine**, School of Physical Sciences, Breakfast Lecture Series, May 8, 2018
Presentation, **California Institute of Technology**, ExSoCal2017, Pasadena, CA September 18-19, 2017
Innovator lecture, Millersville University, Lancaster, PA. May 3, 2017
Presentation, **Breakthrough Discuss Conference**, Stanford University, Palo Alto, CA, April 20–21, 2017
Colloquium, **UCLA**, April 12, 2017
Colloquium, **Cal Poly Pomona**, Pomona, CA, November 10, 2016
Keynote address, Benjamin Banneker Institute, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, Aug. 11, 2016
Colloquium, **Carnegie Observatories**, Pasadena, CA, May 24, 2016
Seminar, Center for Astrophysics and Space Sciences, **UC San Diego**, May 18, 2016
Public Lecture and Colloquia, **Arizona State University**, April 4–8, 2016
ITC Colloquium, **Harvard-Smithsonian Center for Astrophysics**, February 25, 2016
Seminar, Center for Astronomy and Astrophysics, **Yale University**, February 23, 2016
Seminar, Institute of Geophysics and Planetary Physics, **UC Santa Cruz**, November 20, 2015
Presentation, **Kavli Frontiers of Science Symposium**, Beckman Center of the National Academies, Irvine, CA, November 5, 2015
Colloquium, **University of Rochester**, October 14, 2015
AST Colloquium, **Rochester Institute of Technology**, October 12, 2015
Astrophysics Colloquium, **UC Irvine**, September 8, 2015
Diversity Speaker Series Seminar, **NRAO** (Socorro), July 6, 2015
Colloquium, **NRAO** (Socorro), July 7, 2015
Planetary Sciences Seminar, **Caltech**, May 19, 2015
Keynote presentation, **President's Postdoctoral Fellowship Program Spring Retreat**, April 25, 2015
TED talk, **TED Conference**, March 16, 2015
Astrophysics Colloquium, **UC Irvine**, February 24, 2015
Seminar, Institute for Planets and Exoplanets, **UCLA**, February 20, 2015
Bromery Lecture, **Johns Hopkins University**, November 6, 2014
Colloquium, **University of East Anglia (United Kingdom)**, February 7, 2014
Engage: The Science Speaker Seminar, **University of Washington**, (2013–2014)
Solar, Stellar, and Planetary Sciences seminar, **Harvard-Smithsonian Center for Astrophysics**, November 20, 2013
Planetary Science seminar, **Jet Propulsion Laboratory**, November 11, 2013
American Association of Physics Teachers Summer Meeting, Portland, OR, July 15, 2013

Contributed Talks

Hydrohalite Salt-albedo Feedback Could Cool M-dwarf Planets, American Astronomical Society, AAS Meeting, January 7, 2019

Reaching Middle School Girls From Groups Underrepresented in the Sciences With an Innovative Approach to Astronomy and Astrobiology Teaching
Astrobiology Science Conference, Chicago, IL, June 16, 2015

The Effect of Orbital Configuration on the Possible Climates and Habitability of Kepler-62f
Astrobiology Science Conference, Chicago, IL, June 15, 2015

The Effect of Star-Planet Interactions on Planetary Climate

American Astronomical Society Meeting #225, #306.02D, Seattle, WA, January, 2015

Climate Hysteresis for Planets Orbiting Stars of Different Spectral Type
Division for Planetary Sciences Meeting #45, #103.04, Denver, CO, October 2013

The Effect of Host Star Spectral Energy Distribution and Ice-Albedo Feedback on the Climate of Extrasolar Planets
American Astronomical Society Meeting #221, #333.07, Long Beach, CA, January 2013

Contributed Poster Presentations

Fauchez, T., Crouse, J., Wolf, E., Bastelberger S., **Shields, A.**, Kossakowski, D., Kopparapu, R., Domagal-Goldman, S., and Caballero, J. *Climate Analysis on a Newly Discovered Non-transiting Nearby Terrestrial Exoplanet*, AAS Meeting #241, id.204.10, January 2023.

Lobo, A.,**Shields, A. L.**, Palubski, I., and Wolf, E.T. *Terminator Habitability: the Case for Limited Water Availability on M-dwarf Planets*, American Geophysical Union, #P45C-2502, Chicago, IL, December 2022.

Lobo, A.,**Shields, A. L.**, Palubski, I., and Wolf, E.T. *Terminator Habitability: the*Case *for Limited Water Availability on M-dwarf Planets*, Exoclimes, Exeter, UK, July 2023.
Fauchez, T., Crouse, J., Wolf, E., Bastelberger S., **Shields, A.**, Kossakowski, D., Kopparapu, R., Domagal-Goldman, S., and Caballero, J. *Climate Analysis on a Newly Discovered Non-transiting Nearby Terrestrial Exoplanet*, AAS Meeting #241, id.204.10, January 2023.

Lobo, A.,**Shields, A. L.**, Palubski, I., and Wolf, E.T. *Terminator Habitability: the Case for Limited Water Availability on M-dwarf Planets*, American Geophysical Union, #P45C-2502, Chicago, IL, December 2022.

Lobo, A.,**Shields, A. L.**, Palubski, I., and Wolf, E.T. *Terminator Habitability on M-dwarf Planets*, American Astronomical Society, AAS Meeting, #240, id. 402.06, Pasadena, CA, June 2022.

Duong, N. and **Shields, A.L.** *The Effect of Cryoconite on the Deglaciation Thresholds of Snowball Planets*, Habitable Worlds workshop, February 2021.

Venkatesan, V. and **Shields, A. L.** *The Radiative Effects of Carbon dioxide Ice on the Climate Stability of Extrasolar Planets*, American Astronomical Society, AAS Meeting, #235, id.375.01, January 2020.

Contributed Poster Presentations (Cont'd)

Palubski, I., **Shields, A. L.**, and Deitrick, R. *Eccentricity Thresholds for Planetary Deglaciation at Varying Obliquity*, KITP Conference: "Planet-Star Connections in the Era of TESS and Gaia", May 2019.

Rushby, A., **Shields, A. L.**, and Joshi, M. *The Effect of Land Coverage and Host Star Spectral Energy Distribution on the Planetary Albedo of Terrestrial Worlds*, KITP Conference: "Planet-Star Connections in the Era of TESS and Gaia", May 2019.

Palubski, I. and **Shields, A. L.** *Eccentricity Thresholds for Planetary Deglaciation at Varying Obliquity*, American Astronomical Society, AAS Meeting #233, id.247.24, January 2019

Shields, A. L., Barnes, R., Agol, E., Charnay, B., Bitz, C. M., Meadows, V. S. *The Effect of Orbital Configuration on the Possible Climates and Habitability of Kepler-62f,* Exoclimes, Squamish, BC, August 2016

Shields, A. L., Bitz, C. M., Meadows, V. S., Joshi, M. M., Robinson, T. D. *Spectrum-driven Planetary Deglaciation Due to Increases in Stellar Luminosity,* Exoclimes III, Davos, Switzerland, February 2014

Shields, A. L., Meadows, V., Bitz, C., Pierrehumbert, R., Joshi, M., Robinson, T. *The Effect of Host Star Spectral Energy Distribution and Ice-Albedo Feedback on the Climate of Extrasolar Planets*, American Astronomical Society Meeting #221, #103.04, January 2013

Shields, A. L., Meadows, V. S., Bitz, C. M., Pierrehumbert, R. T., Joshi, M. M., Robinson, T. D. *The Effect of Host Star Spectral Energy Distribution on Ice Line Latitude in Terrestrial Exoplanetary Systems*, Astrobiology Science Conference, Atlanta, GA, April 2012

Shields, A. L., Abbey, W., Vance, S. *The Effect of Temperature on Fatty Acid Vesicle Formation in Simulated Deep-ocean Conditions*, American Geophysical Union, #P21B-1662, San Francisco, CA, December 2011

Shields, A. L.., Meadows, V. S., Robinson, T., Crisp, D., Deming, D., A'Hearn, M. F., Charbonneau, D., Livengood, T. A., Seager, S., Barry, R. K., Hearty, T., Hewagama, T., Lisse, C. M., McFadden, L., Wellnitz, D. D., EPOXI Earthling Team. *Earth as an Extrasolar Planet: Comparing Polar and Equatorial Views of Modern Day and Snowball Earth* American Astronomical Society Meeting #217, #349.04, January 2011

Scire, E., Chan, B. H. P., Silbermann, N., **Shields, A. L.** *The Spitzer Bibliography Database: bibliographic statistics*, Proceedings of the SPIE, 7737, July 2010

Shields, A. L.., Meadows, V. S., Robinson, T. D., Deming, L. D., A'Hearn, M. F., Charbonneau, D., Hewagama, T., Lisse, C., Livengood, T., McFadden, L., Seager, S., Welnitz, D. D., EPOXI Earthling Team. *Earth as an Extrasolar Planet: Comparing Polar and Equatorial Views* Astrobiology Science Conference, LPI Contribution No. 1538, April 2010

Shields, A. L.., Nolan, M. C. *Impact Simulations into Ice on Europa* American Astronomical Society Meeting #189, #19.01, January 1996

Education & Public Outreach

Founder & Director, Rising Stargirls, 2014–Present (www.risingstargirls.org)
PBS NOVA Video on my non-traditional career path, September 8, 2018
PBS NOVA episode *Treasures of the Earth: Metals*, November 9, 2016
Volunteer, UC Irvine Solar Eclipse Viewing Party, August 21, 2017
Informal talk,"STEM Sisters" program, School District of Lancaster, Lancaster, PA, May 3, 2017.
"How we'll find life on other planets", TED (2015), over 1.7 million views on TED.com
"Should we be looking for life elsewhere in the universe?", TED-Ed (2016)
"The Universe and Me" workshop for middle-school girls at YWCA Pasadena-Foothill Valley, Pasadena, CA, Sept. 20-Oct 27, 2016
Astronomy/Astrobiology week-long workshop in Science Club for Girls program
"Young Leaders in STEM", Cambridge, MA, July 21-24 2015
"The Climates of Other Worlds: Search for the Next Habitable Planet", UCI Physical Sciences Breakfast Lecture, May 8, 2018
"Universe: More Than Meets the Eye" workshop for middle-school girls at Irving STEAM Magnet Middle School, Eagle Rock, CA, Feb. 25-Mar 9, 2015
E/PO event for middle-/high-school students, Winter Meeting, American Astronomical Society, Seattle, WA (2015)
"UCLA Astronomy Live! *Exploring Your Universe* (2014)
Panorama Retirement Center, Lacey, WA, June 6, 2014
Pacific Science Center/KCTS 9 Science Café, "Searching for Life Around Red Dwarf Stars" (2014)
Women Fly!, Museum of Flight (2014)
Boston Children's Museum traveling exhibit "My Sky" (2014)
Astronomy Panel, *GeekGirlCon*, Seattle, WA (2014)
Astronomy and Astrobiology daylong workshop for girls in YWCA program "Girls Without Limits" in Olympia, WA (2013)
Lakewood High School, "Ice and Climate on Extrasolar Planets", Seattle, WA (2013)
Burlington-Edison High school job shadow program (2013)
Registered role model, Fab Fems (www.fabfems.org) (2013-Present)
Making Connections Program, University of Washington, April 6, 2013
American Astronomical Society Astronomy Ambassadors Program (2012-Present)
Planetarium Lecturer, UW (2011-2014)

Selected Interviews and Press Coverage

"Exoplanet Explorer", UCI News, July 1, 2024

"I am one of only 26 Black women astrophysicists in America. Acting helped me overcome the stereotypes I felt as a woman of color in STEM.", Insider, August 11, 2023

"Actress who found true stardom in the Stars", Mail on Sunday, August 6, 2023

"The Best Memoirs By Women Still to Come in 2023", Glamour Magazine, July 28, 2023

"Only 26 Black Women Have Ever Become Astrophysicists in the U.S. HereÄôs OneÄôs Story", Scientific American, July 24, 2023

"St. Louis area Bestseller List", Publishers Weekly, July 23, 2023

"Life on Other Planets: A Memoir of Finding My Place in the Universe", Houston Style Magazine, July 17, 2023

"Be your own role model: What one Black UC Irvine astrophysicist had to overcome", LA Times, July 13, 2023

Selected Interviews and Other Press Coverage (Cont'd)

"An Astrobiologist Search for Life in Space and Meaning on Earth", WIRED, July 11, 2023

"July 2023 Reads for the Rest of Us", Ms.Magazine, July 7, 2023

"19 July books to dive into this summer", Good Morning America, June 27, 2023

"July 2023 Books by Black Authors We CanÄôt Wait to Read", St. Louis Post-Dispatch, June 21, 2023

"Summer books: 40 new titles to make vacations more fun", St. Louis Post-Dispatch, June 5, 2023

"Summer reading 2023", Science, June 1, 2023

"Summer reading 2023, Science", June 1, 2023

"StarsÄîTheyÄôre Just Like Us: New Books About Space", Publishers Weekly, April 21, 2023

"Astrobiologist of the Month, Lunatics", April 2023

"ÄòTerminator zonesÄô on distant planets could harbor life, UC Irvine astronomers say", UCI News, March 16, 2023

"ÄòTerminator zonesÄô on distant planets could harbor life, UC Irvine astronomers say", UCI News, March 16, 2023

"Featured Astronomer in *Astrophysics Variety Hour* Video produced by NASA's Universe of Learning", March 29, 2022

"Aomawa Shields Visits Bowdoin as 2022 Kibbe Science Lecturer", The Bowdoin Orient, February 25, 2022

"UCI's Rising Stargirls Program Dawns Again this Summer", UCI Physical Sciences Communications, January 19, 2022
StarTalk with Neil deGrasse Tyson Season 12, Episode 22: "Cosmic Queries – Exoplanetary Exploration with Dr. Aomawa Shields", August 31, 2021

"Black Futures Campaign", University of California, Office of the President, January 29, 2021

'The Limit Does Not Exist" Podcast episode 111: "Star Power", October 30, 2020

Adler Planetarium Online Exhibit "Life on Other Worlds", October 16, 2020

"Science Channel show *How the Universe Works* Episodes "Aliens of the Microcosmos", "Curse of the White Dwarf", and "Mystery of Alien Worlds", August 5, 2020

Tonya Bolden's book "Changing the Equation: 50+ US Black Women in STEM", March 16, 2020

Selected Interviews and Other Press Coverage (Cont'd)

"How the coolest, smallest stars could help us discover new exoplanets" New Scientist, August 7, 2019

"Oceans, Beaches, Cosmic Shorelines: Our changing views of habitable planets" NASA Exoplanet Exploration Program feature, June 18, 2019

"The Apollo 11 Moon Landing Anniversary is a Reminder of the Importance of Women in STEM", Teen Vogue Magazine, June 5, 2019

"Modeling the Climates of Worlds Beyond Earth", Earth and Space Science News, January 14, 2019

PBS NOVA Video on my non-traditional career path, September 8, 2018

"Three UCI School of Physical Sciences Faculty Earn Prestigious NSF Early Career Awards" UCI School of Physical Sciences Communications, June 18, 2018

"UCI Astronomer Wins NASA Habitable Worlds Grant to Study Surface Reflectivity of Exoplanets?", UCI News, October 23, 2017

"What Do You Have to Do to Get a Water Covered Planet Around Here?" Astrobites, June 1, 2017

"Astrobiology's Rising Star", UC News, February 7, 2017

Guest Scientist, PBS NOVA episode *Treasures of the Earth: Metals*, November 9, 2016

"Faculty Highlight: Aomawa Shields", Astronomy in Color, September 29, 2016

"A Planet 1,200 Light-Years Away is a Good Prospect for a Habitable World" UCLA Newsroom, May 26, 2016

"Why I Changed My Life: Acting, Astronomy, and a One-of-a-Kind Career" Glamour, May 10, 2016

"The Origins Project Announces Recipient of $10,000 Postdoctoral Lectureship Award" The Origins Project, February 24, 2016

"Aomawa Shields: Life in Unlikely Places", Ozy.com, February 11, 2016

"Astronomer, actor, role model: TED Fellow Aomawa Shields looks for life on other planets", TED Blog, July 10, 2015

"NSF Fellow Pairs Art, Astronomy to Hook Girls on Science" Education Week, March 18, 2015

"Rising Stargirls: Girls of All Colors Learning, Discovering, and Exploring" Women in Astronomy blog/The Planetary Society blog, February 4, 2015

"The Best Bet for Alien Life May Be in Planetary Systems Very Different From Ours" Wired Magazine, January 16, 2015

Selected Interviews and Other Press Coverage (Cont'd)	"Meet the 2015 class of TED Fellows and Senior Fellows" TED.com, December 17, 2014
	"A Warmer Planetary Haven Around Cool Stars, as Ice Warms Rather Than Cools" University of Washington News Release, July 18, 2013
	Guest Scientist, *Sci-Trek: Volcanoes*, The Discovery Channel (2009)
	Guest Scientist, *Universe*, The History Channel (2007)
	TV Host and Field Reporter, *Wired Science*, PBS (2007)

Aomawa L. Shields: Publications

Refereed Publications

25. **Shields, A. L.**, Wolf, E. T., Agol, E., Tremblay, P.-E. (2025). *Increased surface temperatures of habitable white dwarf worlds relative to main-sequence exoplanets.* The Astrophysical Journal, 979(1), 45. https://doi.org/10.3847/1538-4357/ad9827

24. Venkatesan, V. **Shields, A.L.**, Deitrick, R., Wolf, E. T., & Rushby, A. (2025). *A One-Dimensional Energy Balance Model Parameterization for the Formation of CO Ice on the Surfaces of Eccentric Extrasolar Planets* Astrobiology, 25(1).

23. Silverman, M. **Shields, A.L.**, Howard, J. N., Venkatesan, V., Whitfield, K. *Rising Stargirls: Benefits of a Creative Arts-Based Approach to Astronomy Education for Middle-School Girls from Underrepresented Groups*, in review.

22. Lobo, A., **Shields, A.L.** (2024) *Climate Regimes Across the Habitable Zone: a* Publications *Comparison of Synchronous Rocky M- and K-dwarf Planets*, ApJ, 972, 71.
https://doi.org/10.3847/1538-4357/ad58bb

21. Venkatesan, V., **Shields, A.L.**, Deitrick, R. *The Radiative Effects of Carbon on the Climate Stability of Extrasolar Planets.* Astrobiology, in press.

20. Lobo, A., **Shields, A. L.**, Palubski, I., Wolf, E.T. *(2023) Terminator Habitability:the Case for Limited Water Availability on M-dwarf Planets*, ApJ, 945, 161.
https://doi.org/10.3847/1538-4357/aca970

19. Kossakowski, D., Korster M., Trifonov, T., Henning, Th., Kemmer, J., Callabero, J.A., Burn, R., Sabotta, S. Crouse, J.S., Fauchez, T.J., Nagel, E., Kaminski, A., Herrero, E., Rodriguez, E., Gonzolez,-Alvarez E., Quirrenbach, A., Amado, P.J., Ribas, I., Reiners, A., Aceituno, J., Bejar, V.J.S., Baroch D., Bastelberger, S.T., Chaturvedi, P., Cifuentes, C., Dreizler, S., Jeffers, S.V., Kopparapu, R., Lafarga, M., Lopez-Gonzalez, M.J., Martn-Ruiz, S., Montes, D., Morales, J.C., Palle, E., Pavlov, A., Schlecker, M., Schfer, P., Schweitzer, A.L., Shan, Y., **Shields, A.**, Stock, S., Wolf, E., Zapatero Osorio, M.R., and Zechmeister, M.(2023) *The CARMENES search for exoplanets around M dwarfs Wolf 1069 b: Earth-mass planet in the habitable zone of a nearby, very low-mass star*, Astronomy & Astrophysics.
https://doi.org/10.1051/0004-6361/202245322

18. Haqq-Misra, J., Wolf, E.T., Fauchez, T.J., **Shields, A.L.**, and Kopparapu, R.K. (2022) *The Sparse Atmospheric Model Sampling Analysis (SAMOSA) Intercomparison: Motivations and Protocol Version 1.0: A CUISINES Model Intercomparison Project*, Planet. Sci. J., 3, 260.
https://doi.org/10.3847/PSJ/ac9479

17. Rushby, A., **Shields, A. L.**, Wolf, E. T., Lague, M., Burgasser, A. (2020) *The Effect of Land Albedo on the Climate of Land-dominated Planets in the TRAPPIST-1 System*, ApJ, 904, 124.
https://doi.org/10.3847/1538-4357/abbe04

16. Palubski, I., **Shields, A. L.**, and Deitrick, R. (2020) *Habitability and Water Loss Limits on Eccentric Planets Orbiting Main-sequence Stars*, ApJ, 890, 30.
https://doi.org/10.3847/1538-4357/ab66b2

Refereed Publications (Cont'd)

15. Rushby, A., **Shields, A. L.**, and Joshi, M. (2019) *The Effect of Land Fraction and Host Star Spectral Energy Distribution on the Planetary Albedo of Terrestrial Worlds*, ApJ, 887, 29. https://doi.org/10.3847/1538-4357/ab4da6

14. **Shields, A. L.**, Bitz, C.M. and Palubski, I. (2019) *Energy Budgets for Terrestrial Extrasolar Planets*, ApJL, 884, 2. https://doi.org/10.3847/2041-8213/ab44ce

13. **Shields, A.L.,** Carns, R.C. (2018) *Hydrohalite Salt-albedo Feedback Could Cool M-dwarf Planets*, ApJ, 867, 1. https://doi.org/10.3847/1538-4357/aadcaa

12. Wolf, E.T., **Shields, A. L.**, Kopparapu, R. K., Haqq-Misra, J., Toon, O. B.(2017) *Constraints on Climate and Habitability for Earth-like Exoplanets Determined from a General Circulation Model,* Astrophysical Journal, 837, 2. https://doi.org/10.3847/1538-4357/aa5ffc

11. **Shields, A. L.**, Barnes, R., Agol, E., Charnay, B., Bitz, C. M., Meadows, V. S. (2016) *The Effect of Orbital Configuration on the Possible Climates and Habitability of Kepler-62f,* Astrobiology, 16, 6. https://doi.org/10.1089/ast.2015.1353

10. **Shields, A. L.**, Bitz, C. M., Meadows, V. S., Joshi, M. M., Robinson, T. D. (2014) *Spectrum-driven Planetary Deglaciation Due to Increases in Stellar Luminosity,* Astrophysical Journal Letters, 785, 9. https://doi.org/10.1088/2041-8205/785/1/L9

9. **Shields, A. L.**, Meadows, V. S., Bitz, C. M., Pierrehumbert, R. T., Joshi, M. M., Robinson, T. D. (2013) *The Effect of Host Star Spectral Energy Distribution and Ice-Albedo Feedback on the Climate of Extrasolar Planets*, Astrobiology, 13, 8. https://doi.org/10.1089/ast.2012.0961

8. Cowan, N. B., Robinson, T., Livengood, T. A., Deming, D., Agol, E., A'Hearn, M. F., Charbonneau, D., Lisse, C. M., Meadows, V. S., Seager, S., **Shields, A. L.**, Wellnitz, D. D. (2011) *Rotational Variability of Earth's Polar Regions: Implications for Detecting Snowball Planets*, Astrophysical Journal, 731, 76. https://doi.org/10.1088/0004-637X/731/1/76

7. Hunter, D. A., Elmegreen, B. G., **Baker, A. L.** (1998) *The Relationship between Gas, Stars, and Star Formation in Irregular Galaxies: A Test of Simple Models*, Astrophysical Journal, 493, 595. https://doi.org/10.1086/305158

Published Invited Reviews

6. **Shields, A. L.** (2019) *The Climates of Other Worlds: A Review of the Emerging Field of Exoplanet Climatology*, ApJS, 243, 2. https://doi.org/10.3847/1538-4365/ab2fe7

5. **Shields, A. L.**, Ballard, S., Johnson, J. (2016) *The Habitability of Planets Orbiting M-dwarf Stars,* Invited Review, Physics Reports, 663:1-38. https://doi.org/10.1016/j.physrep.2016.10.003

Books

4. **Aomawa Shields, PhD** (2023) Life on Other Planets: *A Memoir of Finding My Place in the Universe.*Viking. https://www.penguinrandomhouse.com/books/673665/life-on-other-planets-by-aomawa-*shields-phd/.*

Other Publications

3. **Shields, A. L.** (2021) *A Professor Describes How She Found Her Voice to Speak Truth About Systemic Racism and Exclusion (Opinion),*
Inside Higher Ed, March 5, 2021.

2. **Shields, A. L.** (2021) *Remaining Publicly Silent in the Face of Overtly Racist and Exclusionary Attitudes has a Cost,*
Inside Higher Ed, February 19, 2021.

1. Palubski, I. and **Shields, A. L.**. (2019) Red-dwarf Habitability Recipe, August issue of *Sky and Telescope*, Vol. 138, Issue 2, pg. 34-40.