

Eckhart Spalding

CONTACT INFORMATION	ETH Zürich Inst. f. Teilchen- und Astrophysik Wolfgang-Pauli-Str. 27 8093 Zürich Switzerland	<i>Email:</i> espalding@phys.ethz.ch <i>Git:</i> github.com/mwanakijiji <i>Web:</i> https://mwanakijiji.github.io <i>Amateur radio:</i> KJ7CQC (U.S.), HB9ITF (Switz.)
CITIZENSHIP	U.S.A. & Germany	
ACADEMIC APPOINTMENTS	Research Assistant (Wissenschaftlicher Mitarbeiter), ETH Zürich –Supervisors: Adrian Glauser, Sascha Quanz Postdoctoral Associate, University of Sydney –Supervisor: Peter Tuthill Postdoctoral Associate, University of Notre Dame –Supervisor: Jeff Chilcote	July 2025 to present Feb. 2023 to Jan. 2025 Oct. 2020 to Jan. 2023
EDUCATION	Ph.D., Astronomy & Astrophysics, University of Arizona Thesis: “Commissioning Fizeau Interferometry with the Large Binocular Telescope Interferometer” Advisors: Katie Morzinski, Phil Hinz M.S., Astronomy, University of Arizona M.S., Physics, University of Kentucky Advisor: Ron Wilhelm Non-degree physics student, University of Illinois at Urbana-Champaign B.S., Physics and History, Illinois College Year abroad at Université Marc Bloch and Université Robert Schumann (later merged into Université de Strasbourg) in Strasbourg, France, 2004 to 2005	2020 2017 2014 Spring 2008 2007
TEACHING EXPERIENCE	T.A., ASTR III: Galactic Astronomy, ETH Zürich T.A., ASTR 202: Life in the Universe, University of Arizona T.A., ASTR 250: Fundamentals of Astronomy, University of Arizona T.A., MacAdam Student Observatory, University of Kentucky Grader, AST 191: The Solar System, University of Kentucky T.A., PHY 213: General Physics, University of Kentucky T.A., PHY 211: General Physics, University of Kentucky T.A., PHY 211: General Physics, University of Kentucky T.A., PHY 231: General Physics, University of Kentucky T.A., PHY 232: General Physics, University of Kentucky	Spring 2026 Spring 2020 Fall 2019 Fall 2013 to Spring 2014 Fall 2013 Spring 2013 Fall 2012 Spring 2012 Fall 2011 Spring 2011
OTHER PROFESSIONAL EXPERIENCE	U.S. Peace Corps Volunteer, Kenya, East Africa Taught physics and math at a secondary school in a desert region west of the town of Magadi, served as Health Club patron, taught computer skills, and assisted students participating in regional Science Congress Intern, Southern Illinois School of Medicine Supervisor: Jeremy Turner Intern, Southern Illinois School of Medicine Supervisor: Kathleen Campbell	2008 to 2010 Summer 2008 Summer 2007

	Physics Tutor, Illinois College	2006 to 2007
	Math Tutor, Illinois College	2004 to 2007
OBSERVING EXPERIENCE	Subaru Telescope (8.2 m), Mauna Kea, Hawaii Krizmanich Telescope (0.8 m), Notre Dame, Indiana Large Binocular Telescope (2×8.4 m), Mt. Graham, Arizona Vatican Advanced Technology Telescope (1.8 m), Mt. Graham, Arizona McDonald Observatory Otto Struve telescope (2.1 m), Mt. Locke, Texas MacAdam Student Observatory (0.5 m), Lexington, Kentucky <i>(Note: some nights are full, others partial; some are in-person, others remote)</i>	4 nights 4 nights ≈160 nights 3 nights 15 nights 15-20 nights
TELESCOPE TIME AWARDED	• Subaru, 2025A (0.5 night) (VAMPIRES/SCEExAO) (with O. Guyon) • Subaru, 2024B (≈0.5 night) (SCEExAO engineering time) • LBT, 2024B (1 night) (with S. Ertel) • Subaru, 2024A (1 night) (VAMPIRES/CHARIS/SCEExAO) (with O. Guyon) • LBT, 2024A (1 night) (with S. Ertel) • LBT, 2023B (1 night) (with S. Ertel) • LBT, 2023A (1 night) (with S. Ertel) • LBT, 2020A (1 night) • LBT, 2019B (1 night) • LBT, 2019B (1/2 night) • LBT, 2019A (1/2 night) • LBT, 2019A (1 night) • LBT, 2018B (1 night) • LBT, 2018B (1/2 night) • LBT, 2018A (1 night) • LBT, 2016B (1/2 night) (with K. Wagner; Director's Time request) • LBT, 2015B (1 night) (with A. Skemer) <i>(Some of the above allocations were not executed due to weather.)</i>	
OTHER RESEARCH EXPERIENCE	Research Assistant, experimental particle research Supervisor: Michael Kovash Manned pulsed proton beams runs with 7-MV Van de Graaff Accelerator	Summer 2011
GRANTS AND AWARDS	NSF Access supercomputing allocation PHY250101: High-resolution mapping of volatiles in a protoplanetary disk NSF-MRI award #2407978: 'Upgrading the MKID Exoplanet Camera for Subaru SCEExAO' (PI B. Mazin; Co-Is include E. Spalding), 2024 Postdocs Lightning Talk Competition, U. Notre Dame (1st place), 2022 NASA ExoExplorer Science Series talk, 2022 Presentation of funding proposals for K7UAZ ham radio club, 2019-2020 Travel support to attend Sagan Exoplanet Summer Workshop 2019	\$882k \$500 \$1,000 \$1,588 (total) \$795
TALKS	• "The GLINT interferometer: Pathfinding the technology for next-generation high-contrast imaging," 2024 Astronomical Society of Australia (remote conference; recorded talk) (June 2024) • "The GLINT nulling interferometer: improving nulls for high-contrast imaging," SPIE Astronomical Telescopes + Instrumentation, Yokohama, Japan (17 June 2024) • "Tech development for exoplanet science," Future Science Talks (public talk), Sydney, Australia (7 June 2023) • "GPI: Pushing the frontier of exoplanet direct imaging," exoplanet group, Ohio State University, Columbus, OH (9 Dec. 2022)	

- “The quest for exoplanet direct imaging with ELT apertures: A hunt for companions with the Large Binocular Telescope,” NASA ExoExplorer Science Series (remote; 18 Mar. 2022)
- “Instrumentation for the Direct Imaging of Exoplanets,” 2021 Colleges of Science and Engineering Joint Annual Meeting, University of Notre Dame, Notre Dame, IN (9 Dec. 2021)
- “Seeing the Light: Hunting for solar systems like our own,” public ‘Our Universe Revealed Lecture Series,’ University of Notre Dame, Notre Dame, IN (30 Nov. 2021)
- “Baselining the GPI 2.0 Upgrade at Notre Dame,” Great Lakes Exoplanet Area Meeting, University of Michigan, Ann Arbor, MI (Nov. 11-12, 2021)
- “Commissioning Fizeau Interferometry with the Large Binocular Telescope Interferometer,” ESO Ground-based thermal infrared astronomy — past, present and future (remote, Oct. 2020; 10.5281/zenodo.4249961; +1 poster)
- “High-contrast Interferometry with LBTI,” Jet Propulsion Laboratory lunch talk, Pasadena, CA (22 July 2019)
- “Status of Imaging Interferometry with LBTI,” NOAO ‘FLASH’ talk, Tucson, AZ (14 Dec. 2018)
- “Precision photometry redward of K- band with a ‘wall-eyed’ pointing mode,” 2nd LBTO User’s Meeting, Florence, Italy, June 2017 (+2 posters)
- “Constraints on the Structure of Exozodiacal Dust Belts (Kirchschlager+ 2017),” Steward Observatory Journal Club, Tucson, AZ (29 Mar. 2017)
- “The bimodal initial mass function in the Orion Nebula Cloud (Drass+ 2016),” Steward Observatory Journal Club, Tucson, AZ (16 Nov. 2016)
- “Around the Catch-22: Differential Photometry Redward of K-band with ‘Wall-eyed’ Pointing at the LBT,” NOAO ‘FLASH’ talk, Tucson, AZ (9 Sept. 2016)
- “The Exo-Starshade Exoplanet Imaging Concept,” Steward Observatory Journal Club, Tucson, AZ (18 Nov. 2015)
- “RR Lyrae Spectroscopy: Improved Metallicity Tracing,” University of Kentucky Physics and Astronomy Department colloquium, Lexington, KY (24 Oct. 2013)
- Short talks: “A USYD exoplanet CoE node,” Origins Center of Excellence bid (remote, 24 Aug. 2023); “Hunting for exoplanets with tomorrow’s technology,” College of Science Postdocs Lightning Talk Competition (1st place), University of Notre Dame (22 Sept. 2022) and College of Science Advisory Council (4 Nov. 2022); Internal symposia, Physics Department, University of Notre Dame (31 Aug. 2021, 13 Sept. 2022); “Fizeau with LBTI,” Center for Astronomical Adaptive Optics Retreat, Tucson, AZ (29 Aug. 2019); “Imaging Interferometry with the LBT,” Steward Observatory internal symposium, Tucson, AZ (21 Sept. 2018); “Wall-eyed’ Pointing with the LBT,” Steward Observatory internal symposium, Tucson, AZ (16 Sept. 2016)

CONFERENCES AND
WORKSHOPS
(WITHOUT TALKS)

- LIFE Conference 2025, Nov. 10-14, 2025, Barcelona, Spain (‘pop’ talk and poster)
- 10th Australian Exoplanet Workshop, Brisbane, Australia, Nov. 6-8, 2024 (participant only)
- 9th Australian Exoplanet Workshop, Sydney, Australia, Sept. 27-28, 2023 (SOC)
- 2023 Astronomical Society of Australia, Sydney, Australia, July 3-7 2023 (1 poster)
- SPIE Astronomical Telescopes + Instrumentation, Montréal, Québec, July 17-22 2022 (1 poster + conf. proc.)
- Spirit of Lyot, Leiden University, Leiden, The Netherlands, June 27 – July 1, 2022 (1 poster)
- Exoplanets III (July 2020; remote participant only)
- SPIE Optical Engineering + Applications, San Diego, CA, Aug. 11-15, 2019 (1 poster + conf. proc.)
- Sagan Exoplanet Summer Workshop, Pasadena, CA, July 15-19, 2019 (‘pop’ talk and poster)
- Adaptive Optics Summer School, Center for Adaptive Optics, University of California, Santa Cruz, July-Aug. 2018 (lab facilitator)
- SPIE Astronomical Telescopes + Instrumentation, Austin, TX, USA, June 2018 (1 poster + conf. proc.)
- CyVerse Container Camp, Tucson, AZ, Mar. 2018 (participant)
- Xinglong Optical Observational Astrophysics Workshop (National Astronomical Observatories, Chinese Academy of Sciences), Beijing and Xinglong, China, July-Aug. 2017 (participant + mini-talk at Dept. of Physics, Tsinghua University)

- SPIE Astronomical Telescopes + Instrumentation, Edinburgh, UK, June-July 2016 (1 poster + conf. proc.)
- Dunlap Institute Instrumentation Summer School (University of Toronto), Toronto, Canada, July 2015 (participant)
- SPF 1: Star and Planet Formation in the Southwest, Tucson, AZ, Mar. 2015 (1 mini-talk)
- American Astronomical Society, Washington, D.C., Jan. 2014 (1 poster)
- 40 Years of Variable Stars, East Lansing, MI, May 2013 (1 poster + 1 pop talk)

OUTREACH & RECOGNITIONS

AAT Open Day volunteer	Oct. 4, 2024
Science Extension Outreach (local high schools), Sydney, Australia	Oct. 2023
Member of 2022 Exoplanet Explorers cohort (NASA ExoPAG)	2022
Ed and Jill Bessey Scholarship in Astrobiology	2020
NASA Honor Award (to LBTI group for HOSTS Survey)	2020
NASA Group Achievement Award (to LBTI group for project turnaround)	2019
<i>Astrobytes.org</i> writer (monthly)	2017 to 2019
Annual College of Science ‘Service’ award, Dept. of Astronomy, U Arizona	2018
Annual College of Science ‘Service’ award, Dept. of Astronomy, U Arizona	2017

PROFESSIONAL SERVICE

Australian Astronomy Decadal Plan (2026-2035)	
• Working Group 2.4: Instrumentation	
Co-organizer of Astralis consortium instrumentation seminar series	2023-2025
Organizer of Sydney Astrophotonic Instrumentation Laboratory / Astralis group meetings, USYD	2023-2024
Early and Mid-Career Researchers Committee, School of Physics, USYD	2023-2024
Co-Chair, SOC, 9th Australian Exoplanet Workshop	2023
Observing proposal evaluations, European Southern Observatory, Cycle P112	2023
Diversity Committee, Notre Dame Dept. of Physics & Astronomy	2022 to 2023
Co-host of 3× per week astro-ph , Dept. of Astronomy, U Arizona	2016 to 2019
Graduate Student Council, Dept. of Astronomy, U Arizona	2016 to 2018
U Arizona Graduate and Professional Student Council travel grant judge	2016
Graduate Student Council, Dept. of Physics and Astronomy, U Kentucky	2013

WHITE PAPERS

2. McDermid, R., K. Bannister, J. Cooke, C. D’Orgeville (with **E. Spalding**). “2026-2035 Decadal Plan White Paper: Working Group 2.4: Instrumentation”, 2024, for Australian Decadal.
1. **E. Spalding**. “A USYD exoplanet CoE [Center of Excellence] node,” 2023, Australian Research Council Center of Excellence call.

TRANSLATIONS

2. Fischer, G.A. “Report of the Journey into Massai-Land, taken under commission for the Geographical Society in Hamburg,” *Mittheilungen der Geographischen Gesellschaft in Hamburg, 1882-83*, pp. 36-99, 275-279. Transl. from the German by **E. Spalding** and A. Spalding. [Link]
 - Published in *Old Africa* magazine, issues 117 (Feb.-Mar. 2025), p. 18-21; 118 (Apr.-May 2025), p. ; 119 (June-July 2025), p. 26-28; 120 (Aug.-Sept. 2025), p. 26-29; 121 (Oct.-Nov. 2025), p. 34-38; 122 (Dec. 2025-Jan. 2026), p. 28-32; 123 (Feb.-Mar. 2026), p. 30-33; 124 (Apr.-May 2026), p. 30-35; 125 (June-July 2026), p. 34-41.
1. Krapf, J.L. “A Short Description of the Masai and Wakwafi tribes in southeast Africa,” *Das Ausland* (30), 1857, pp. 437-442, 461-466. Transl. from the German by **E. Spalding** and A. Spalding. [Link]

- Published in *Old Africa* magazine, issues 112 (Apr.-May 2024), p. 26-30; 113 (June-Jul 2024), p. 26-29; 114 (Aug-Sept 2024), p. 26-29; 115 (Oct.-Nov. 2024), p. 26-28.

EXPOSITORY & OTHER WRITING

8. Li, Sarah, **E. Spalding**, H. Paige et al. “Student Club Members Update Their University Station,” *QST*, April 2023, pp. 74-5.
7. **Spalding, E.**, D. Defrère, and S. Ertel. “Unveiling exozodiacal light,” *Physics Today*, April 2022, pp. 46-52.
6. Reprints and ‘emeritus’ contributions, *Astrobites.org*:
 - “Rise of the First-Gens,” *Astrobites.org*, May 2023.
 - “It’s a Bird, it’s a Planet, it’s a ... Speckle?” *AAS Nova*, Oct. 2018.
 - “Optics to Outrace them All” *AAS Nova*, May 2018.
 - “The African Connection,” South African amateur astronomy journal *Nightfall*, Oct. 2017.
5. **Spalding, E.** 2015. “In Pursuit of RR Lyraes,” *Griffith Observer*, Nov. 2015. (Honorable mention in Joan and Arnold Seidel *Griffith Observer* Science Writing Contest.)
4. **Spalding, E.** and J. Turner. 2011. *Grandeur in this View of Life: A Brief Introduction to Evolution*. Ronkonkoma, NY: Linus Publications.
3. **Spalding, E.** 2011. “Wanderlust,” *Illinois College Quarterly* (Apr.), p. 40.
2. **Spalding, E.** 2008. “Eudos Gene oder: Die trügerische väterliche Linie” [Eudo’s genes and the deceptive paternal branch.] In German. *Computergenealogie*, 23 (1), pp. 23-24.
1. **Spalding, E.** 2005. “IC Students Go on a Whirlwind Tour,” *Illinois College Quarterly* (Jan.).

SOFTWARE

Spalding, E., R. Wilhelm, N. De Lee et al. 2024. *RRLFE: Metallicity calibrations for RR Lyrae variable stars*. Astrophysics Source Code Library, `ascl:2312.029`.

Spalding, E. and J. Stone. 2019. *Dewarp: Distortion removal and on-sky orientation solution for LBTI detectors*. Astrophysics Source Code Library, `ascl:1907.008`.

COMPUTER SKILLS

- Languages (in decreasing order of versatility): Python, IDL, Matlab, R, C++, SQL
- $\text{\LaTeX}$, Zemax, SolidWorks, Autodesk Fusion, reStructuredText, Git, PBS, Slurm, Hugo, Jupyter, Binder, Docker, Singularity, Matlab, Mathematica, Adobe Photoshop, Adobe Acrobat, Aquamacs, Atom, Inkscape, ArcMap, Anaconda, IRAF, Windows, Linux, MS (Word, Excel, PowerPoint), IDEs (VS Code, Cursor), Keynote, Google (Drive, Docs, Sheets), VNC, Linux Vi editor, Markdown, bulk file transfer (with rsync, scp, Globus, rclone), 3d printing, virtual machines, continuous integration (Travis CI and Git Actions), auto-generating documentation, cloud computing, high performance computing

OTHER CERTIFICATIONS

- Amateur radio license, FCC General class (U.S.); HB9 class (Switzerland)
- Work Safely at Heights, RIIWHS204E (national standard, Australia, 2024)
- Elevated Work Platform (“Yellow Card”) for boom lift, scissor lift, and vertical lift operation (national standard, Australia, 2024)

SPOKEN LANGUAGES

- English (fluent)
- German (maternal language)
- French (conversational)
- Kiswahili/Swahili (conversational)