William Waalkes | Curriculum Vitae
William.Waalkes@Colorado.edu

— Education —

| University of Colorado, Boulder, CO
| PhD in Astrophysics and Planetary Sciences (expected Fall 2023)
| Thesis: *Toward the detection and characterization of atmospheres on temperate sub-Neptune exoplanets orbiting M dwarf stars*
| Thesis Advisor: Zachory Berta-Thompson

| University of Michigan, Ann Arbor, MI
| B.S. *Magna Cum Laude* in Astronomy & Astrophysics and Interdisciplinary Physics
| Thesis Advisor: Edwin Bergin

— Research Experience —

University of Colorado Boulder Astrophysics and Planetary Sciences Department | 2017-present
Detection and characterization of M dwarf exoplanet systems and the impact of starspots

University of Michigan Astronomy & Astrophysics Department | 2014-17 | with E. Bergin
Examining the chemistry of stellar nurseries with Herschel

Smithsonian Astrophysical Observatory | Summer 2015 | with K. Öberg & V. Guzmán
Studying formation pathways of organic molecules in pre- and proto-stellar nebular cores

University of Michigan Space Sciences Department | Summer 2014 | with O.J. Tucker
Study of the density and composition of Titan's Exosphere using Cassini data

— Awards & Honors —

NSF Graduate Research Fellow | 2018-2023
NSF GRFP Honorable Mention | 2017
Chambliss Astronomy Achievement Student Award, Undergrad. Honorable Mention | 2016

— Teaching Experience —

Teaching Assistant - University of Colorado (Fall 2018, Fall 2020, Spring & Fall 2021)
| *Astronomy 3710: Solar System Formation and Evolution*
Taught a recitation section with focus on innovating the discussion format
| with Professor Meredith MacGregor
| *Astronomy 1040: Accelerated Intro Astronomy 2*
Taught a recitation section which focused on review of the lecture material
| with Professor Erica Nelson
| *Astronomy 3510: Astronomical Observations and Instrumentation*
Observing assistant for an astronomy major's observing course
| with Professor John Bally
| *Astronomy 3400: Research Methods*
Mentored astronomy students learning exoplanet research techniques
| with Professor Zach Berta-Thompson

Lab Instructor - University of Michigan (Summer 2016)
| Astronomy 102: Introductory Astronomy
| Astronomy 101: The Solar System
Ran astronomy labs involving introductory spectroscopy and observation

— Talks & Posters —

Contributed Talk | American Astronomical Society 242nd (June 2023)
Invited Talk | Center for Exoplanets and Habitable Worlds, State College, PA (Sept 2022)
Contributed Talk | Emerging Researchers in Exoplanet Science (ERES) IV (Aug 2022)
Poster | Cool Stars 21, Toulouse, France (July 2022)
Invited Talk | Twin Peaks Rotary, Longmont, CO (Feb 2022)
Poster | Cool Stars 20.5, virtual (May 2021)
Invited Talk | Fairview High School National Honors Society Meeting (Feb 2020)
Poster | TESS Science Conference 1, Cambridge, MA (July 2019)
Contributed Talk | American Astronomical Society 233rd Meeting (Jan 2019)
Poster | Cool Stars 20, Boston, MA (July 2018)
Poster | American Astronomical Society 232nd Meeting, Denver, CO (June 2018)
Poster | American Astronomical Society 231st Meeting, Washington, DC (Jan 2018)
Invited Talk | Boulder Astronomy and Space Society, Boulder, CO (June 2017)
Poster | American Astronomical Society 227th Meeting, Kissimmee, FL (Jan 2016)
Talk | SAO REU Symposium, Cambridge, MA. (Aug 2015)
Poster | Astronomy Undergrad. Poster Session, U of M, Ann Arbor, MI (April 2015)
Talk | REU Symposium, University of Michigan, Ann Arbor, MI (Aug 2014)

— Service & Outreach —

| Interviewed for a CU Today article about the press-release around LP 791-18d
My data contributions to this discovery paper were highlighted.
| CU Boulder APS Graduate Admissions Committee (2 cycles) (2020-22)
Led the implementation of the TEAM-UP report in the APS graduate admissions process.
| Guest Scientist, Exolore with Dr. Moiya McTier (Podcast)
Season 2 Episode 8, M Dwarf Exoplanet Environments
| Sommers-Bausch Observatory (2017-22)
Facilitated public observing nights and private events with the SBO telescopes.
| Research advisor for a Boulder high school student (2017-20)
Advised on acquiring data, analyzing exoplanet transits, and presenting their work.
| Skype a Scientist (2017-2019)
Remote discussions with elementary and middle school classrooms about astronomy.

— Software —

| Contributor to `chromatic` | zkbt.github.io/chromatic/

— Publications (3 First-author, 18 Total) —

| Waalkes, W., Berta-Thompson, Z., et al, "Constraining starspots on AU Mic to complement transmission spectrum observations of AU Mic b: A TLSE Case Study" *(in prep)*

| Peterson, M., and 73 other authors incl. **W. Waalkes,** "A temperate Earth-sized planet with tidal heating transiting an M6 star" 2022 *(Nature, accepted)*

| Pozuelos, F., and 74 other authors incl. **W. Waalkes,** "A super-Earth and a mini-Neptune near the 2:1 MMR straddling the radius valley around the nearby mid-M dwarf TOI-2096" 2022 *(A&A, accepted)*

| Feinstein, A., and 88 other authors incl. **W. Waalkes,** "Early Release Science of the exoplanet WASP-39b with JWST NIRISS" 2022 *(Nature, accepted)*

| Rustamkulov, Z., and 93 other authors incl. **W. Waalkes,** "Early Release Science of the exoplanet WASP-39b with JWST NIRSpec PRISM" 2022 (*Nature, accepted)*

| Tofflemire, B., and 14 other authors incl. **W. Waalkes,** "A Low-Mass, Pre-Main Sequence Eclipsing Binary in the 40 Myr Columba Association -- Fundamental Stellar Parameters and Modeling the Effect of Star Spots" 2022 (*AJ, accepted)*

| Ahrer, E.-M., The JWST Transiting Exoplanet Community ERS Program, and 130 more authors incl. **W. Waalkes** "Identification of carbon dioxide in an exoplanet atmosphere" 2022 (*Nature, accepted)*

| Christian, S., and 113 other authors incl. **W. Waalkes,** "A Possible Alignment between the orbits of planetary systems and their visual binary companions" 2022, *AJ*, 163, 207

| Jordán, A. and 37 more authors incl. **W. Waalkes**, "HATS-74Ab, HATS-75b, HATS-76b, and HATS-77b: Four Transiting Giant Planets Around K and M Dwarfs" 2022, *AJ*, 163, 125

| Grieves, N., and 55 more authors incl. **W. Waalkes**, "Populating the brown dwarf and stellar boundary: Five stars with transiting companions near the hydrogen-burning mass limit" 2021, *A&A*, 652, A127

| Cointepas, M., and 61 more authors incl. **W. Waalkes**, "TOI-269 b: an eccentric sub-Neptune transiting a M2 dwarf revisited with ExTrA" 2021, *A&A*, 650, A145

| Giacalone, S., and 36 other authors incl. **W. Waalkes.** "Vetting of 384 TESS Objects of Interest with TRICERATOPS and Statistical Validation of 12 Planet Candidates" 2021*, AJ*, 161, 24

| Waalkes, W., Berta-Thompson, Z., Collins, K., Feinstein, A. et al., "TOI 122b and TOI 237b, "Two Small Warm Exoplanets Orbiting Inactive M Dwarfs Found by TESS" 2021, *AJ*, 161, 13

| Crossfield, I., **Waalkes, W.**, Newton, E., Narita, N., Muirhead, P., Ment, K. et al., "A Super-Earth and Sub-Neptune Transiting the Late-type M Dwarf LP 791-18" 2019, *ApJ,* 883, 16

| Waalkes, W. Berta-Thompson, Z., Bourrier, V., Newton, E., Ehrenreich, D. et al., "Lyα in the GJ 1132 System: Stellar Emission and Planetary Atmospheric Evolution" 2019, *AJ*, 158, 50

| Vanderspek, R., and 46 other authors including **W. Waalkes**. "TESS Discovery of an Ultra-Short-Period Planet around the Nearby M Dwarf LHS 3844." 2019*, ApJ*, 158, 50

| Bean, J., and 101 other authors including **W. Waalkes**. "The Transiting Exoplanet Community Early Release Science Program for JWST" 2019, *PASP,* 130, 993

| Tucker, O., **Waalkes, W.**, Tenishev, V. M., Johnson, R., Bieler, A. et al.,"Examining the Exobase Approximation: DSMC Models of Titan's Upper Atmosphere." 2016, *Icarus*, 272, 290