

William C. Waalkes

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EDUCATION

Current (PhD)	University of Colorado , Boulder, CO PhD Track, Astrophysics & Planetary Sciences Department
2013-16 (B.S.)	University of Michigan , Ann Arbor, MI BS, <i>Magna Cum Laude</i> , Astronomy & Astrophysics, Physics
2009-13	Grand Valley State University , Allendale, MI Biomedical Science, Physics

RESEARCH PROFILE

2017-	Graduate Student Researcher <i>Advisor: Zachory Berta-Thompson, University of Colorado Boulder</i> <ul style="list-style-type: none">As a graduate student at CU, I am studying rocky exoplanet atmospheres. Currently, I am analyzing Hubble STIS data of the ultraviolet transit of super-Earth GJ1132b in order to understand the hydrogen content of its atmosphere.
2014-2016	Research Assistant, U of M Astronomy & Astrophysics Department <i>Advisor: Dr. Edwin Bergin, University of Michigan</i> <ul style="list-style-type: none">Characterizing abundance and physical conditions of hydrogen cyanide in hot nebular cores of Orion South, Orion KL and NGC 6334.
2015	REU Intern, Smithsonian Astrophysical Observatory <i>Advisors: Dr. Viviana Guzmán & Dr. Karin Öberg, Harvard Smithsonian Center for Astrophysics</i> <ul style="list-style-type: none">Characterized spatial distribution of methanol and formaldehyde in prestellar and protostellar cores of the Taurus molecular cloud. Concluded the relative importance of molecular formation pathways for formaldehyde and methanol.
2014	REU Intern, U of M Space Sciences Department <i>Advisor: Dr. Orenthal Tucker, University of Michigan</i> <ul style="list-style-type: none">Modeled the movement of molecular populations through the atmosphere of Saturn's moon, Titan in order to characterize their anomalous spatial and temporal thermal properties.
2011-2013	Research Assistant, GVSU Biomedical Sciences Department <i>Advisor: Dr. Daniel Bergman, Grand Valley State University</i> <ul style="list-style-type: none">Studied toxicological effects of exposure of crayfish to nonylphenol, an industrial pollutant.

TEACHING EXPERIENCE

2018	TA, Astronomy 3400: Research Methods <i>University of Colorado Boulder Astrophysics and Planetary Sciences Department</i>
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2016	Lab Instructor, Astronomy 102: Introductory Astronomy <i>University of Michigan Astronomy & Astrophysics Department</i>
2016	Lab Instructor, Astronomy 101: The Solar System <i>University of Michigan Astronomy & Astrophysics Department</i>
2012	TA, BMS 291: Human Physiology Lab <i>Grand Valley State University Biomedical Sciences Department</i>

AWARDS & HONORS

2018	NSF Graduate Research Fellow
2017	NSF GRFP Honorable Mention
2016	Chambliss Astronomy Achievement Student Award, Undergrad. Honorable Mention
2015	M-Pact Scholarship
2015	Michigan Competitive Scholarship
2015	University of Michigan LSA Alumni Scholarship

MEMBERSHIPS & COMMITTEES

2016	Sigma Pi Sigma Physics Honor Society
2016	Member, National Society of Black Physicists
2015-2016	President, University of Michigan Student Astronomical Society
2015-2016	Undergraduate Representative, U of M Committee on Equity & Inclusion
2015-Present	Affiliate, Harvard Banneker Institute
2015-Present	Member, American Astronomical Society

PUBLICATIONS

Waalkes, William et al., “*Constraining neutral hydrogen outflow and stellar host Lyman-alpha reconstruction for transiting super-Earth GJ1132b.*” (2019), *Astronomical Journal*.

Vanderspek, R., and 46 other authors including **William Waalkes**. “*TESS DISCOVERY OF AN ULTRA-SHORT-PERIOD PLANET AROUND THE NEARBY M DWARF LHS 3844.*” (2019), *ApJ*.

Bean, J., and 101 other authors including **William Waalkes**. “*The Transiting Exoplanet Community Early Release Science Program for JWST.*” (2019), *PASP*.

Tucker, O., **Waalkes, W.C.**, Tenishev, V., Johnson, R., Bieler, A., Combi, M., Nagy, A. “*Examining the Exobase Approximation: DSMC Models of Titan’s Upper Atmosphere.*” (2016), *Icarus*.

PRESENTATIONS

2018	Cool Stars Conference, Boston, MA. “ <i>Lyman-alpha transit observations of the warm rocky exoplanet GJ1132b.</i> ” Poster.
2018	American Astronomical Society 232 nd Meeting, Denver, CO. “ <i>Lyman-alpha transit observations of the warm rocky exoplanet GJ1132b.</i> ” Poster.
2018	American Astronomical Society 231 st Meeting, Washington, DC. “ <i>Investigating Neutral Hydrogen Outflow from Rocky Exoplanet GJ1132b using Lyman-α Transit Observations.</i> ” Poster.

- 2017 Boulder Astronomy & Space Society, Boulder, CO. “*Tenuous Habitability.*” Talk.
- 2016 Astronomy Undergraduate Poster Session, University of Michigan, Ann Arbor, MI. “*Spatial Distribution of Small Organics in Prestellar and Protostellar Cores.*” Poster.
- 2016 American Astronomical Society 227th Meeting, Kissimmee, FL. “*Spatial Distribution of Small Organics in Prestellar and Protostellar Cores.*” Poster. (Chambliss Honorable Mention Recipient)
- 2015 SAO Summer Intern Symposium at the Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. “*Spatial Distribution of Small Organics in Prestellar and Protostellar Cores.*” Talk.
- 2015 Astronomy 461 Student Symposium, Kitt Peak National Observatory, Tucson, AZ. “*Infrared and Spectral Analysis of Saturn’s Atmosphere.*” Talk & Poster.
- 2015 Astronomy Undergraduate Poster Session, University of Michigan, Ann Arbor, MI. “*A Survey of HCN Abundance in Hot Cores.*” Poster.
- 2014 REU Summer Symposium, University of Michigan, Ann Arbor, MI. “*Modeling Titan’s Exosphere Using the Direct Simulation Monte Carlo Method.*” Talk.
- 2013 Society for Integrative and Comparative Biology Conference, San Francisco, CA. “*Pollutant Effects on Neurophysiological Recordings from Sensory and Motor Neurons of the Crayfish.*” Poster.

OBSERVING EXPERIENCE

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| 2018-20 | Las Cumbres Observatory (LCOGT) |
| 2018 | Astronomy Research Consortium Small Aperture Telescope (ARCSAT)
<i>Apache Point Observatory, Sunspot, NM</i> |
| 2018 | Astronomy Research Consortium 3.5m Telescope
<i>Apache Point Observatory, Sunspot, NM</i> |
| 2018 | Las Cumbres Observatory (LCO) 1-m Sinistro Telescopes
<i>Las Cumbres Observatories, Worldwide</i> |
| 2015 | Miniature Exoplanet Radial Velocity Array (MINERVA)
<i>Fred Lawrence Whipple Observatory, Amado, AZ</i> |
| 2015 | MDM Observatory
<i>Kitt Peak National Observatory, Tucson, AZ</i> |

PUBLIC OUTREACH & COMMUNITY SERVICE

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| 2017-2019 | Mentor for a local high school student on a science fair project |
| 2018 | Astronomy Day public outreach contributor at the Somers-Bausch Observatory |
| 2014-2016 | Student Astronomical Society Public Observing Nights & Planetarium Shows |
| 2015 | Invited Speaker for Forest Hills Northern High School’s <i>Diversity Days</i> |
| 2013-2014 | Cesar Chavez Academy pen pal program with the Society for Physics Students |