

# Caprice L. Phillips

## Curriculum Vitae

The Ohio State University  
Department of Astronomy  
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## EDUCATION

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- **The Ohio State University** Columbus, OH  
*PhD Student* Currently Enrolled
- **The University of Texas at Austin** Austin, TX  
*M.A. Astronomy* Spring 2019  
Thesis Title: *2M0443+3723 B: A Young Companion at the Substellar Boundary with Potential Membership in the  $\beta$  Pictoris Moving Group*
- **University of Arkansas at Little Rock** Little Rock, AR  
*B.S. Physics; Minor: Mathematics* December 2015

## RESEARCH EXPERIENCE

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- **Graduate Student Researcher, Advisor: Dr. Ji Wang** Columbus, OH  
*Department of Astronomy, The Ohio State University* 2019–Present
  - Investigating whether biosignatures on super-Earths/sub-Neptunes are detectable with the MIRI LRS and NIRSpec instruments on the upcoming *JWST* mission
- **Graduate Student Researcher, Advisor: Dr. Brendan Bowler** Austin, TX  
*Department of Astronomy, The University of Texas at Austin* 2017–2019
  - Characterized the physical and empirical properties of a candidate benchmark brown dwarf companion in the 23 Myr Beta Pictoris Moving Group
- **Undergraduate Student Researcher, Advisor: Dr. Tony Hall** Little Rock, AR  
*Department of Physics & Astronomy, The University of Arkansas at Little Rock* 2014–2015
  - Performed a comparative study of meteorites & unknown samples for composition determination using Raman spectroscopy, petrography, and a chemical test for nickel
- **Undergraduate Student Researcher, Advisor: Dr. Alois Adams** Little Rock, AR  
*Department of Physics & Astronomy, The University of Arkansas at Little Rock* 2014
  - Investigated the probability of intelligent observers on confirmed exoplanets identifying Earth as a confirmed exoplanet through the transit method of detection

## AWARDS AND HONORS

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- ExoExplorers Program (ExoPAG Executive Committee/NASA Exoplanet Exploration Program) 2021
- 3<sup>rd</sup> place BlackInPhysics 3MT competition 2020
- Inclusive Graduate Education Network Travel Award 2019
- LSSTC Data Science Fellowship (Large Synoptic Survey Telescope Corporation) 2018
- Dean's Strategic Fellowship (UT Austin) 2016
- Astronomy Graduate Excellence Fellowship (UT Austin) 2016
- Outstanding Senior Award (McNair Scholars Program) 2016

◦ Ronald E. McNair Scholars Program (UALR)	2014-2016
◦ College of Arts, Letters, and Sciences Ambassador (UALR)	2014-2015
◦ Friday Fellows Scholarship Program for Leadership and Service (UALR)	2012-2014
◦ Shepherd Poverty Studies Intern (UALR)	2013
◦ Just Communities of Arkansas Leadership for Social Justice Program (UALR)	2011

## OBSERVING EXPERIENCE

Keck II, NIRC2, LGS, Mauna Kea Observatory, (P.I. B. Bowler)	1 night
LBT, MODS/LBC, Mount Graham International Observatory, (Queue Observing)	7 nights

## REFERRED PUBLICATIONS

**Phillips, C.**, Wang, Ji., Kendrew, S. *Constraining Detection Limits for Potential Biosignatures in super-Earth Atmospheres with JWST*, In Preparation

**Phillips, C.**, Bowler, B., Mace, G., Liu, M., Sokal., K, 2020, The Astrophysical Journal, 896, 173, [2MASS J04435686+3723033 B: A Young Companion at the Substellar Boundary with Potential Membership in the  \$\beta\$  Pictoris Moving Group](#)

## INVITED TALKS

• <b>American Physical Society: “Quarks to Cosmos”</b>	Columbus, OH
<i>Invited Speaker: Detecting Potential Biosignatures in Super-earth Atmospheres with JWST</i>	<i>April 2021</i>
• <b>College of Charleston, Department of Physics and Astronomy</b>	Columbus, OH
<i>Virtual colloquium talk: Detecting Potential Biosignatures in Super-earth Atmospheres with JWST</i>	<i>October 2020</i>
• <b>Dear Grad Student Podcast</b>	Columbus, OH
<i>Invited guest on podcast discussing life as a graduate student and graduate school general experiences</i>	<i>September 2020</i>
• <b>Movement Consulting</b>	Columbus, OH
<i>Invited speaker for discussion of unspoken rules of academia</i>	<i>July 2020</i>

## PRESENTATIONS

Constraining Detection Limits for Potential Biosignatures in super-Earth Atmospheres with JWST (contributed talk), *ExoPAG 23*, January 2021, virtual due to COVID-19

Constraining Detection Limits for Potential Biosignatures in super-Earth Atmospheres with JWST (contributed talk), *National Society of Black Physicists*, November 2020, virtual due to COVID-19

Can We Detect Ammonia in the Atmospheres of super-Earths with the James Webb Space Telescope?, *Black In Physics 3MT Competition*, October 2020

2M0443+3723 B: A Young Companion at the Substellar Boundary with Potential Membership in the  $\beta$  Pictoris Moving Group (contributed talk), *National Society of Black Physicists*, November 2019, Providence, RI

**Phillips, C.**, Bowler, B., Liu, Michael C., Mace, Gregory N., Sokal, Kimberly, American Astronomical Society Meeting Abstracts, 231, 349.04

Martinez, R, Bozek, B, Drew, P, Manning, S, **Phillips, C**, Equity & Inclusivity Efforts of the Department of Astronomy at The University of Texas at Austin, *Women in Astronomy IV Conference*, July 2017, Austin, TX

Dark Sky Project, *UT Austin Graduate Student Postdoc Seminar*, February 2017, Austin, TX

**Phillips, C**, Exploring Practical Methods for Identifying Potential Meteorites, *McNair Research Symposium*, September 2015, Little Rock, AR

**Phillips, C**, Earth as a Transiting Exoplanet, *American Association of Physics Teachers Arkansas–Oklahoma–Kansas Section Meeting*, September 2014, Arkadelphia, AR

**Phillips, C**, Earth as a Transiting Exoplanet, *McNair Heartland Research Conference*, September 2014, Kansas City, MO

**Phillips, C**, Earth as a Transiting Exoplanet, *McNair Research Symposium*, September 2014, Little Rock, AR

## TEACHING EXPERIENCE

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- **Teaching Assistant, ASTR 3350, “Astronomical Observation and Data Analysis”** Columbus, OH  
*Department of Astronomy, The Ohio State University* *Fall 2020*
  - Graduate TA for undergraduate course with focus on modern astronomy with contemporary data analysis methods implemented in the Python programming language
- **Teaching Assistant, ASTR 309N, “Lives and Deaths of Stars”** Austin, TX  
*Department of Astronomy, The University of Texas at Austin* *Spring 2019*
  - Graduate TA for undergraduate course on supernovas, white dwarfs, neutron stars, and black holes
- **Teaching Assistant, ASTR 321, “The Future of Humanity”** Austin, TX  
*Department of Astronomy, The University of Texas at Austin* *Spring & Fall 2018*
  - Graduate TA for upper-division undergraduate writing astronomy course based on technological advancement. Graded and provided constructive feedback on written assignments
- **Teaching Assistant, ASTR 309C, “Birth of Stars & Planets”** Austin, TX  
*Department of Astronomy, The University of Texas at Austin* *Fall 2017*
  - Graduate TA for undergraduate astronomy course focused on star & planet formation
- **Teaching Assistant, ASTR 1301, “Introduction to Astronomy”** Little Rock, AR  
*Department of Physics & Astronomy, The University of Arkansas at Little Rock* *Spring 2014 & Fall 2015*
  - Undergraduate TA for undergraduate introductory astronomy course
- **Teaching Assistant, PHYS 1122, “Elementary Physics II Laboratory”** Little Rock, AR  
*Department of Physics & Astronomy, The University of Arkansas at Little Rock* *Spring 2015*
  - Undergraduate TA for laboratory physics section. Provided guidance and assistance to students conducting laboratory exercises
- **Lab Tutor, Student Support Services** Little Rock, AR  
*TRiO Programs, The University of Arkansas at Little Rock* *2013-2014*
  - Tutored undergraduate students in calculus, college algebra, pre-core mathematics, and elementary physics

## ADVISING & MENTORING

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- **The SciAccess Zenith Mentorship Program** Columbus, OH  
*Informal graduate student mentor for high school student in Space Science Mentoring Program* *September 2020-Present*
- **TAURUS Summer Research Program** Austin, TX  
*Informal graduate student mentor and developed imposter syndrome graduate student panel seminar* *2017-2018*

# OUTREACH AND SERVICE

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• <b>BlackInAstro</b> <i>Co-organizer of BlackInAstro week</i>	Columbus, OH September 2020-Present
• <b>The Women+ of Color Project</b> <i>Volunteer statement of purpose reading/feedback for program attendees</i>	Columbus, OH October 2020
• <b>BlackInPhysics Panel</b> <i>Virtual panelist for undergraduate discussion: "How to be a Successful Student"</i>	Columbus, OH October 2020
• <b>American Astronomical Society Journal Author Series</b> <i>Discussion of paper published by the American Astronomical Society Journals</i>	Columbus, OH September 2020
• <b>Women in Space Panel</b> <i>Live Q&amp;A about astronomy careers for elementary, middle and high school students, virtual panel</i>	Columbus, OH September 2020
• <b>OSU Students for the Exploration and Development of Space</b> <i>Invited guest speaker: "Searching for biosignatures on super-Earths with JWST"</i>	Columbus, OH September 2020
• <b>Space Draft: Tucson's Flavor of Astronomy on Tap</b> <i>Invited speaker: Virtual public talk: "Super-Earths to Brown Dwarfs: Mysterious In-between Objects"</i>	Columbus, OH July 2020
• <b>Making Space for All Webinar Series</b> <i>Invited for talk on exoplanets and habitability for inclusive and accessible astronomy webinar series</i>	Columbus, OH May 2020
• <b>The Columbus Astronomical Society</b> <i>Presented a virtual talk with graduate students on the history of women in astronomy</i>	Columbus, OH March 2020
• <b>The Ohio State University Department of Astronomy Diversity Committee</b> <i>Graduate student representative</i>	Columbus, OH 2019-Present
• <b>Sequoia and Kings Canyon National Park</b> <i>Designed evening program on natural skies &amp; pop-up activities on natural skies &amp; natural sounds</i>	Mineral King, CA Summer 2019
• <b>UT Austin College of Natural Sciences</b> <i>Presented a poster on Black Women in Astronomy for the Black Excellence in STEM Festival</i>	Austin, TX 2019
• <b>Astronomy Students Association</b> <i>Invited speaker: A Young Companion at the Substellar Boundary with Potential Membership in the BPMG</i>	Austin, TX April 2019
• <b>Capital of Texas Undergraduate Research Conference</b> <i>Graduate student judge</i>	Austin, TX 2018
• <b>UT Austin Girls Days Festival</b> <i>STEM festival for over 8,600 K-8th grade girls with activities and demos</i>	Austin, TX 2017, 2019
• <b>Sleeping Bear Dunes National Lakeshore</b> <i>Developed astronomy demonstrations for inaugural Astronomy Day &amp; star parties</i>	Empire, MI Summer 2016
• <b>Aviators Academy</b> <i>Led an after-school outreach program for 6-11 students focused on STEM activities</i>	Little Rock, AR 2016
• <b>Maria Mitchell Association</b> <i>Hosted weekly solar telescope viewing and directed astronomy summer camps for preK-8<sup>th</sup> grader</i>	Nantucket, MA Summer 2015
• <b>Arkansas Children's Hospital</b> <i>Led science outreach programs for inpatients</i>	Little Rock, AR 2015
• <b>Maker-faire</b> <i>Maintained STEM focused makers booth</i>	North Little Rock, AR 2015
• <b>Amazeum Tinkerfest</b> <i>One day STEAM oriented festival</i>	Bentonville, AR 2014

- **Girls of Promise** Little Rock, AR  
*Led physics demos for 8th grade girls* 2014-2015
- **Discover UALR Day** Little Rock, AR  
*Led physics demonstrations for prospective students* 2014-2015
- **Code/Interactive** Bronx, NY  
*Guided inner-city students through interactive astronomy lesson on two week outdoor excursion* Summer 2013

## PROGRAMMING LANGUAGES & SOFTWARE

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Python,  $\text{\LaTeX}$

## PROFESSIONAL MEMBERSHIPS

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American Astronomical Society	Junior Member
National Society of Black Physicists	Full Member