

MATTHEW M MURPHY

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Dept. of Astronomy/Steward Observatory, University of Arizona
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Education

University of Arizona, Graduate Student

Tucson, AZ

Expected: Masters & Ph.D in Astronomy

Aug. 2020 – Current

- Advisor: Dr. Thomas Beatty
- Specialty: Exoplanets, Exoplanet Atmospheres, Transiting Exoplanet Observations

State University of New York at Stony Brook, Undergraduate

Stony Brook, NY

B.S Honors Physics & B.S. Honors Astronomy/Planetary Science

Aug. 2016 – May 2020

- Summa Cum Laude, 3.91/4.0 GPA
- Thesis: "Weak Resonant Effects in Secular Massive Planet Systems" with advisor Dr. Phil Armitage

Research & Academic Experience

Graduate Research

Aug 2020 – Present

University of Arizona, Advisor: Dr. Thomas Beatty

- Analyzing Spitzer/IRAC phase curves of the hot Jupiter WASP-43b
- Analyzing HST/WFC3 transmission spectra of warm Neptunes
- Conducting ground-based exoplanet observations

Research and Travel Grant Reviewer

Aug 2020 – Present

University of Arizona Graduate & Professional Student Council

- Review research and travel grant proposals
- Reviews are completed for 4 application rounds each academic semester

Undergraduate Research

Dec 2018 – May 2020

SUNY Stony Brook, Advisor: Dr. Phil Armitage

- Numerically investigated resonant and secular interactions in secular planetary systems
- Utilized computing time on the IACS Seawulf computing cluster

Outreach & Teaching

Mentorship Practices Task Force Member

June 2020 – Present

Steward Observatory Diversity, Equity, and Inclusion Organization

- Developed a website to share mentorship resources with the department and university community

Teaching Assistant

Jan – May 2018

SUNY Stony Brook

- Worked as a TA for Applied Calculus IV: Differential Equations
- Held weekly office hours to help students, graded assignments, and proctored exams

Accepted Proposals

PI: Searching for methane on the rocky super-Earth LHS 1478 b 2022

Large Binocular Telescope Observatory (LBTO)

Short-term proposal

- Observing a transmission spectrum of the super-Earth LHS 1478b
- Seeking to detect methane in LHS 1478b's atmosphere

PI: What is a Temperate Sub-Neptune? A Case Study of TOI-1266b 2022

Large Binocular Telescope Observatory (LBTO)

Short-term proposal

- Observing a transmission spectrum of the sub-Neptune TOI-1266b
- Seeking to detect water and methane in TOI-1266b's atmosphere

PI: Characterizing V1298 Tau: A System of Newborn Planets 2021

TESS Cycle 4 Guest Investigator Program

Mini Proposal

- Will conduct transit observations of 4 newborn planets in the V1298 Tau system
- Will refine transit ephemerides for each planet and search for transit timing variations

Publications

A Lack of Variability Between Repeated Spitzer Phase Curves of WASP-43b

First Author - Murphy et al., 2022

In Preparation

Instability from high-order resonant chains in wide-separation massive planet systems

First Author - Murphy & Armitage, 2022

Published in MNRAS

Research Presentations

Exoplanets IV Conference

May 2022

Poster: Where's the Weather on WASP-43b?

Las Vegas, NV, USA

Origins Seminar Series

November 2021

Talk: Where is the Weather on WASP-43b?

Tucson, AZ, USA

Emerging Researchers in Exoplanet Science Conference

May 2021

Talk: WASP43b - A Cloudy but Stable Giant

Virtual

Stony Brook Honors College Symposium

May 2020

Poster: Weak Resonant Effects in Secular Massive Planet Systems

Virtual

Stony Brook Physics Graduate Lab Poster Session

Dec 2019

Poster: Photometric Properties of the RR Lyrae Star SS Piscium

Stony Brook, NY, USA

Outreach Presentations

SpaceDrafts (Astronomy on Tap)

July 2020

#BlackInAstro People to Know

Virtual

Honors & Awards

Researcher of the Month <i>Undergraduate Research and Creative Activities Summer Research Program</i>	Aug 2019
Presidential Scholarship <i>Stony Brook University</i>	2016 - 2019
UFCW Local 1 Scholarship <i>Awarded as child of United Food & Commercial Workers Union member</i>	2016 - 2019
Honors College Member <i>Stony Brook University</i>	2016 - 2020