

PHILIP STEVEN MUIRHEAD, PHD

Department of Astronomy
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Education

Doctor of Philosophy, Cornell University, Ithaca, NY, USA, Aug. 2011
Major Field: Astronomy, Minor Field: Applied Engineering in Physics
Dissertation: *Externally Dispersed Interferometry for Terrestrial Exoplanet Detection*

Master of Science, Cornell University, Ithaca, NY, USA, Aug. 2008
Major Field: Astronomy, Minor Field: Applied Engineering in Physics

Bachelor of Science, University of Michigan, Ann Arbor, MI, USA, Apr. 2005
Concentrations: Astronomy & Astrophysics, General Physics
Programs: The LSA Honors Program, The Residential College

Primary Appointments

Associate Professor with Tenure, Department of Astronomy, Boston University, May 2021-present
Assistant Professor, Department of Astronomy, Boston University, Jul. 2014-May 2021
Hubble Fellow, Department of Astronomy, Boston University, prize postdoctoral fellowship awarded by NASA's Space Telescope Science Institute, Sep. 2013-Jun. 2014
Postdoctoral Scholar, Division of Physics, Math, and Astronomy, California Institute of Technology, Jul. 2011-Aug. 2013

Secondary Appointments

Visiting Scholar (sabbatical appointment), Center for Interdisciplinary Exploration and Research in Astrophysics (CIERA), Northwestern University, Aug. 2021 to Jul. 2022
Special Member of the Graduate Faculty, University of Toledo, Toledo, OH, Dec. 2018 to May 2021
CfA Collaborator, Solar, Stellar and Planetary Sciences Division, Smithsonian Astrophysical Observatory, Cambridge, MA, Jun. 2018 to Jun. 2021
Natural Sciences Faculty, The Core Curriculum, Boston University, Sep. 2016-present
Visiting Scientist, Kavli Institute for Theoretical Physics, Santa Barbara, CA, Apr.-Jun. 2019
Affiliated Astronomer, The Maria Mitchell Association, Nantucket, MA, Summer 2018, Summer 2019
Anacapa Scholar, The Thacher School, Ojai, CA, Oct. 2015, Apr. 2019

Awards and Distinctions

SciLog Fellow, Research Corporation for the Advancement of Science, Tucson, AZ, May 2019
Templeton Award for Excellence in Undergraduate Advising and Mentoring, College of Arts and Sciences, Boston University, May 2018

Hubble Postdoctoral Fellowship, Space Telescope Science Institute, Baltimore, MD, Sep. 2013
Z. Carter Patten '25 Graduate Fellowship, Cornell University, Sep. 2010
New York Space Grant Fellowship, Cornell University, September 2010
Cranson W. and Edna B. Shelley Award for Graduate Research in Astronomy, Cornell University, May 2009
NASA Earth and Space Science Fellowship, NASA Headquarters, Washington, DC, Sep. 2007
James B. Angell Scholar, University of Michigan, May 2005
University Honors, University of Michigan, All Semesters (2001-2005)

External Grants as Principal Investigator (reverse chronological order by start date)

“Collaborative Research: Accessing the dark Arizona skies for research and education, a NCAT-BU partnership”, NSF Partnerships in Astronomy & Astrophysics Research (PAARE) Award, Sep 2023 to Feb 2026, \$256,696 awarded to BU. Co-I from 9/1/23 to 1/31/25. PI from 2/1/25-present.

“Collaborative Research: A Fresh Look at M Dwarf Stars”, NSF Astronomy & Astrophysics Research Grants (AAG), Sep 2020 to Aug 2024, \$132,254

“Collaborative Research: Adding a Magnetic Dimension to M-dwarf Stars Observed by APOGEE”, NSF Astronomy & Astrophysics Research Grants (AAG), Sep 2020 to Aug 2024, \$81,207

“Python Pipeline for Exoplanet Transmission Spectra”, Massachusetts Space Grant Consortium, Jun 2020 to Aug 2020, \$5,500

“A Search for Transiting Exoplanets and Exomoons Orbiting L and T Dwarfs”, NASA Exoplanet Research Program (XRP), Jan 2020 to Dec 2023, \$473,342

“M dwarf Radius Inflation Across the Fully Convective Boundary”, NASA Award connected to time awarded on the W. M. Keck Observatory, Mar 2019 to Dec 2020, \$11,750

“M dwarf Ages: The Missing Link in the Age-Rotation-Activity Relation”, NASA Award connected to time awarded on the W. M. Keck Observatory, Mar 2019 to Dec 2020, \$15,150

“The Mass-Radius-Luminosity-Rotation Relation for M Dwarfs Determined from Tess Eclipsing Binaries”, NASA TESS Guest Observer Program (Cycle 1), Mar 2018 to Dec 2019, \$25,000

“M dwarf Ages: The Missing Link in the Age-Rotation-Activity Relation”, NASA Award connected to time awarded on the W. M. Keck Observatory, Feb 2018 to Jan 2020, \$11,750

“Accurate Alpha Abundances and Ages of M dwarfs”, NASA Award connected to time awarded on the W. M. Keck Observatory, Feb 2018 to Jan 2020, \$10,850

“Activity and Planets at the Bottom of the Main Sequence”, NASA K2 Guest Observer Program Cycle 5, Dec 2017 to Dec 2019, \$50,000

“Statistical Ages of M dwarfs from Abundances”, NSF Astronomy & Astrophysics Research Grants (AAG), Aug 2017 to Jul 2020, \$373,678

“Recovering the Transit of KIC 9413313b: A Potential Exomoon Host Lost to Transit Timing Variations”, NASA/NSF Award connected to time awarded on the WIYN Telescope, Mar 2017 to Jan 2019, \$7,202

“Activity and Planets at the Bottom of the Main Sequence”, NASA K2 Guest Observer Program Cycle 6, Mar 2017 to Sep 2018, \$38,681

“Graduate student support to work on MIT's Transiting Exoplanet Survey Satellite (TESS)”, Massachusetts Institute of Technology, Jan 2017 to Apr 2017, \$19,599

“A New Approach for Characterizing Exoplanets with Atmospheric Refraction”, Massachusetts Space Grant Consortium, Jun 2016 to Aug 2016, \$5,500

“Low-mass Field Stars with Infrared Excesses: Potential Signatures of Planetary Collisions”, NASA Astrophysics Data Analysis Program (ADAP). Assumed role as PI from June 2016 to May 2018, \$124,990.

“Accurate Alpha Abundance of Low-mass Stars”, NASA Award connected to time awarded on the W. M. Keck Observatory, Apr 2016 to Dec 2017, \$12,500

“Mass-Radius-Luminosity-Rotation Relationships for M Dwarf Planet-Hosting Stars in Preparation for the TESS, Gaia and JWST Era”, NASA Exoplanet Research Program (XRP), Feb 2015 to Dec 2018, \$371,932

“Using Cassini Data on Saturn to Correctly Interpret Exoplanet Atmosphere Measurements”, Massachusetts Space Grant Consortium, Jun 2014 to Aug 2014, \$5,500

External Grants as Co-Principal Investigator

“Brief But Spectacular: New Windows into the Physics of Common Envelope Evolution”, NSF Astronomy & Astrophysics Research Grants (AAG), Jul 2020 to Aug 2024, PI: J. Nordhaus (Rochester Inst. of Tech.), \$137,429 awarded to BU.

“Actively Disintegrating Asteroids around a White Dwarf”, NASA Award connected to time awarded on the Hubble Space Telescope, May 2018 to Jul 2019, PI: S. Xu (European Southern Obs.), \$7,555 awarded to BU.

“A White Dwarf with an Actively Disintegrating Asteroid”, NASA Award connected to time awarded on the Hubble Space Telescope, Feb 2017 to Apr 2018, PI: S. Xu (European Southern Obs.), \$24,166 awarded to BU.

“Lock-In Amplified Externally Dispersed Interferometry (LAEDI) for Terrestrial Exoplanet Detection”, JPL Director’s Research and Development Fund, Mar 2012 to Feb 2013, \$194,700 jointly to JPL and Caltech.

Awarded External Grants as Collaborator (no funding received)

“Characterizing the Lowest-mass Planet Hosts and Investigating the Potential Link between Stellar Surface Gravity and Planet Occurrence”, NASA Exoplanet Research Program (XRP), Jan 2024-Dec 2026, PI: C. Theissen (Univ. of California, San Diego)

“A Magnitude Limited Sample of M dwarfs to Study the Super-Earth Rate across the Fully Convective Boundary”, NASA TESS Guest Observer Program, Oct 2022-Sep 2023, PI: C. Theissen (Univ. of California, San Diego)

“A Value-added, Science-enabling Catalog of Precise Stellar Properties for the TESS Mission”, NASA Exoplanet Research Program (XRP), Jan 2018-Dec 2020, PI: K. Stassun (Vanderbilt Univ.)

“The Exoplanet Migration Timescale from K2 Young Clusters”, NASA Astrophysics Data Analysis Program (ADAP), Jan 2018 to Dec 2019, PI: A. Rizzuto (Univ. of Texas Austin)

“Planet Evolution and Fundamental Stellar Parameters at 10-20 Myr After Formation”, NASA K2 Guest Observer Program Cycle 5, Sep 2017 to Aug 2018, PI: A. Rizzuto (Univ. of Texas Austin)

“Planet Formation and Fundamental Stellar Parameters at the Early Stages of Stellar Evolution”, NASA K2 Guest Observer Program Cycle 5, Mar 2017 to Mar 2018, PI: A. Rizzuto (Univ. of Texas Austin)

“Zodiacal Exoplanets in Time (ZEIT): The Hyades Cluster”, NASA K2 Guest Observer Program Cycle 4, Mar 2017 to Mar 2018, PI: A. Mann (Univ. of Texas Austin, now at Univ. of North Carolina)

“Characterizing the Cooler KOIs: Studying the Planet Population around Mid to M Dwarfs”, NASA K2 Guest Observer Program Cycle 1, Jul 2015 to Jun 2016, PI: J. Johnson (Harvard Univ.)

Awarded Internal Grants

“The Art of Astrophysics: A Competition for the BU Community”, The BU Arts Initiative awarded \$750 to support a campus and community gallery show and competition featuring work by artists and scientists inspired by space. I co-organized the event with a postdoc at the time, Dr. Bryce Croll.

“Core Field Trip to Arizona”, The BU Sapiro Academic Enhancement Fund provided \$600 in the Fall of 2017 and \$600 in the Fall of 2018 to support CC 111 student travel to Arizona. Remaining funds were provided by the Broader Impacts component of an NSF AAG (above). I led the field trips.

Professional Service

Referee for Nature, Nature Astronomy, The Astrophysical Journal, The Astrophysical Journal Letters, Publications of Astronomical Society of the Pacific, Monthly Notices of the Royal Astronomical Society, Astronomy & Astrophysics, Astrophysics and Space Sciences. Verified reviews are available on Web of Science (article titles and authors redacted): <https://www.webofscience.com/wos/author/record/76657>

Proposal reviewer for NASA ADAP, APRA, K2GO, NESSF/FINESST, NNEXPLORE, NPP and XRP grant programs. Served as Review Panel Chair twice.

Proposal reviewer for NSF CAREER and ATI grant programs.

Proposal reviewer for the Spitzer Space Telescope (multiple cycles, large and small programs).

Proposal reviewer for Research Corporation for Science Advancement Cottrell Scholars Program.

External international proposal reviewer for the National Science Foundation (Switzerland), Natural Sciences and Engineering Research Council (Canada), National Fund for Scientific and Technological Development (Chile), National Science Centre (Poland).

Leader of the TESS Cool Dwarf Team, a working group tasked with identifying M dwarfs for short-cadence observations with NASA’s Transiting Exoplanet Survey Satellite (TESS, 2015-2019). TESS is an Explorer-class NASA Mission that launched in 2018.

Member, PLATO Mission Consortium Working Group 122 “Fundamental stellar parameters”. PLATO is a European Space Agency (ESA) Mission with a planned launch in 2026.

Professional Meetings Organized

Member, Scientific Organizing Committee, “The 22nd Cambridge Workshop of Cool Stars, Stellar Systems and the Sun” (Cool Stars 22), San Diego, June 23-28, 2024 (>500 participants).

Member, Scientific Organizing Committee, “Extreme Solar Systems V”, Christchurch, New Zealand, March 16-21, 2024 (>500 participants).

Member, Scientific Organizing Committee, “Exoplanets IV”, Las Vegas, May 1-6, 2021 (>500 participants).

Member, Proposal Team and Scientific Organizing Committee, “The 20th Cambridge Workshop on Cool Stars, Stellar Systems and the Sun” (“Cool Stars 20”), held at Boston University in July 2018 (>500 participants): <http://coolstars20.cfa.harvard.edu>

Co-organizer for “Dwarf Stars and Clusters with K2”, held at Boston University, co-organized with NASA (Jan 16-18, 2018, 50 participants): <https://keplerscience.arc.nasa.gov/cluster-workshop/>

Professional Memberships

Full Member, The American Astronomical Society

Full Member, The International Astronomical Union

Full Member, SPIE – The International Society for Optics and Photonics

Full Member, Sigma Xi – The Scientific Research Honor Society

Outreach Activity

Participated in “Deaf Friendly Astronomy Interactive Night” an open house for Boston’s Deaf and Hard of Hearing Community (organized by PhD advisee A. McCarthy), November 2024.

Co-organized an event for the Deaf and Hard-of-Hearing community at the National Technical Institute for the Deaf as part of the 2024 total solar eclipse in Rochester, NY, April 2024.

Public Talk to BU Academy Students, October 2019.

Public Talk at the Thacher School in Ojai, CA, April 2019.

Public Talk at the Maria Mitchell Association in Nantucket, MA, July 2018.

Public Talk at BU Alumni Weekend, 2018 and 2019.

Main Speaker at “Science with a Pint”, The Burren Irish Pub and Restaurant, Somerville, MA, March 2018.

Co-organizer for “The Art of Astrophysics: A Competition for the BU Community”, funded by the BU Arts Initiative. The 2016 event involved a gallery show and competition featuring space-inspired art and music by local artists and scientists: <http://astroart.bu.edu>

Frequent Participant in BU Open Night at the Observatory (clear Wednesdays): <https://www.bu.edu/astronomy/events/public-open-night-at-the-observatory/>

Department, Center, College and University Service

Director, Perkins Telescope Observatory, 2024-present

Member, Boston University Hub Council, 2022-present

Member, Boston University Faculty Council and University Council, 2022-2024

Associate Director, Perkins Telescope Observatory, 2022-2023

Member, College of Arts and Sciences Natural Sciences Taskforce, 2020-2021

Member, Ad Hoc AS/CSP/IAR Lab Reopening Committee, 2020-2021

Member, BU Astronomical Observatories Advisory Committee, 2019-2021

Course Coordinator, Core Curriculum, Boston University, Fall 2020

Director, Graduate Admissions, Department of Astronomy, Boston University, 2019-2020

Member, Faculty Advisory Board, Scientific Instrument Facility, Boston University, 2018-present

Member, Discovery Channel Telescope Instrument Advisory Committee, 2017-2021 (Chair from 2017-2019)

Alternate Member Representative for Boston University, Association of Universities for Research in Astronomy (AURA), 2017-2021, 2024-present

Member, Anderson Mesa Observatory Board, Boston University Member, 2016-present

Member, Institute for Astrophysical Research, Boston University, 2013-present

Faculty Sponsor, BU Astronomical Society (student group), 2018-2021

Member, Faculty Advisory Committee, Undergraduate Research Opportunities Program (UROP), Boston University, 2016-2019

Member, Ad Hoc Committee to Canvass for a new Director of the Core Curriculum, College of Arts and Sciences, Boston University, 2018-2019

Member, Ad Hoc Committee to Revise the MA/PhD Program in Astronomy, Boston University, 2017-2018

Member, Lecturer Search Committees, The Core Curriculum, Boston University, 2015, 2018 and 2021

Member, Faculty Search Committee, Department of Astronomy, Boston University, 2015-2016

Organizer, Prospective Graduate Student On-Campus Visits, Department of Astronomy, Boston University, 2015, 2019 & 2020

Contributor, Department of Astronomy Academic Program Review Report, Boston University, 2015

Undergraduate Teaching as Primary Instructor

AS 101: *The Solar System* (Spring 2016: 94 students)

AS 105: *Alien Worlds* (Spring 2016: 108 students; Spring 2017: 140 students; Fall 2018: 131 students, Spring 2021: 48 students, Spring 2023: 148 students, Fall 2024: 128 students)

CC 111: *Core Natural Sciences I: Origins* (Fall 2016: 110 students; Fall 2017: 75 students; Fall 2018: 94 students, Fall 2020: 88 students)

AS 202: *Principles of Astronomy I* (Fall 2014: 36 students)

AS 401/402: *Honors Work in Astronomy* (Fall 2016, Spring 2017, 1 student)

AS 441: *Observational Astronomy* (Spring 2020: 15 students)

AS 491: *Directed Study in Astronomy* (Spring 2015: 1 student)

Graduate Teaching as Primary Instructor

AS 706: *Radiative Processes and Spectroscopy* (Fall 2023: 24 students, Spring 2025: 11 students)

AS 712: *Radiative Processes in Astrophysics* (Spring 2015: 15 students)

AS 791: *Special Topics in Astrophysics* (Bayesian Statistics Course, Spring 2018: 6 enrolled students, 5 auditing students)

Other Teaching

AS 699: *Teaching College Astronomy* (Fall 2014: 2 students; Spring 2016: 4 students; Spring 2017: 2 students; Fall 2018: 2 students)

AS 901/902: *Research in Astronomy* (every semester)

Supervised PhD Students at Boston University (as Primary Research Advisor and First Reader)

As advisor, I also served on each student's Oral Exam Committee, Dissertation Steering Committee and PhD Defense Committee

Allison McCarthy (Clare Boothe Luce Fellow, NSF GRFP Fellow, PhD 2025 *expected*)

Dr. Patrick Tamburo (PhD 2023), Dissertation: *An Infrared Search for Exosatellites around L and T Dwarfs*, currently a postdoctoral scholar at Harvard University.

Dr. Eunkyun Han (PhD 2020), Dissertation: *The Mass-Radius Relationship of Low-mass Stars from Kepler Eclipsing Binaries*, currently a Staff Scientist at the Space Telescope Science Institute, Baltimore, MD.

Dr. Aurora Kesseli (PhD 2019), Dissertation: *The Effects of Metallicity and Magnetism on the Radii of M Dwarf Stars*, currently a Staff Scientist at Caltech/IPAC and the NASA Exoplanet Science Institute.

Dr. Mark Veyette (PhD 2018), Dissertation: *Detailed Chemical Analysis of M Dwarf Stars*, currently a Senior Engineer in the Advanced Projects Division of the Lockheed Martin Corporation.

Dr. Paul Dalba (PhD 2018), Dissertation: *On the Atmospheres of Saturn and Cold Gas Giant Extrasolar Planets*, currently a Data Scientist at Apple Inc., Cupertino, CA.

Boston University Graduate Student Committee Memberships

Sam Evans, Dissertation Steering Committee Member.

Lou Baya Ould Ruis, Dissertation Steering Committee Member.

Save Koontaweepunya, Oral Qualifying Exam Committee Member.

Alex Green, Oral Qualifying Exam Committee Member, Dissertation Steering Committee Member.

Dr. Erick Powell (PhD 2025), Dissertation Steering Committee Member, PhD Defense Committee Member.

Dr. Bryanne McDonough (PhD 2024), PhD Defense Committee Member, Dissertation Steering Committee Member.

Dr. Tyler Heinz (PhD 2024), PhD Defense Committee Member, Second Reader of the Dissertation, Dissertation Steering Committee Member, Oral Qualifying Exam Committee Member

Dr. John Wendeborn, (PhD 2024), Dissertation Steering Committee Member, Oral Qualifying Exam Committee Member.

Dr. William Saunders (PhD 2022), Dissertation Steering Committee Member, Oral Qualifying Exam Committee Member.

Dr. Benjamin Roulston (PhD 2022), PhD Defense Committee Member, Third Reader of the Dissertation, Dissertation Steering Committee Member.

Dr. Anneliese Rilinger (PhD 2022), PhD Defense Committee Member, Second Reader of the Dissertation, Dissertation Steering Committee Member, Oral Qualifying Exam Committee Member.

Dr. Sierra Grant (PhD 2021), PhD Defense Committee Member, Second Reader of the Dissertation, Dissertation Steering Committee Member, Oral Qualifying Exam Committee Member.

Dr. Connor Robinson (PhD 2020), PhD Defense Committee Member, Second Reader of the Dissertation, Dissertation Steering Committee Member, Oral Qualifying Exam Committee Member.

Dr. Marc Kornbleuth (PhD 2020), PhD Defense Committee Chair, Dissertation Steering Committee Chair, Oral Qualifying Exam Committee Chair.

Dr. Dustin Hickey (PhD 2018), PhD Defense Committee Member, Dissertation Steering Committee Member, Oral Qualifying Exam Committee Member.

Dr. Christopher Theissen (PhD 2017), PhD Defense Committee Member, Dissertation Steering Committee Member, Oral Qualifying Exam Committee Member.

Dr. Dylan Morgan (PhD 2016), PhD Defense Committee Member, Second Reader of the Dissertation, Dissertation Steering Committee Member, Oral Qualifying Exam Committee Member.

External Graduate Student Committee Memberships

Dr. Kristo Ment (PhD 2023, Harvard University), External Member of the PhD Defense Committee.

Dr. Neda Hejazi (PhD 2021, Georgia State Univ.), External Member of the PhD Defense Committee, Dissertation Steering Committee and the Oral Qualifying Exam Committee Member.

Dr. Kevin Hardegree-Ullman (PhD 2018, University of Toledo), External Member of the PhD Defense Committee, Oral Qualifying Exam Committee Member.

Supervised Undergraduate Students at Boston University (as Primary Research Mentor)

Larianna Ramsey (BA 2028), paid position working on documentation for the Perkins Telescope.

Kenzie Elliot (BA 2027), informal position working on software for the Perkins Telescope.

Corinna Olson (BA 2023), currently a Master's Student at the University of Amsterdam.

Thomas Savatovsky (BA 2023), currently a Research Assistant at MIT.

David Gracia (BA 2022), MA Space Grant Fellow (Summer 2021), UROP Mentee (Fall 2021), currently a PhD student at the University of Oklahoma.

Bhargavi Thakar (BA 2022), UROP Mentee (Fall 2020, Spring 2020, Summer 2021), MA Space Grant Fellow (Fall 2021), currently a PhD student at Georgia Tech.

Sheila Sagar (BA 2020), Research Assistant (Fall 2019, Spring 2020), UROP Mentee (Summer 2017, Fall 2017, Spring 2018, Fall 2018), currently a PhD student at the University of Florida.

Dr. Brian Healy (BA with Honors 2017), UROP (Fall 2015), Directed Study, Honors Work in Astronomy, currently a Data Scientist at RVO Health, Minneapolis, MN.

Madeleine O'Keefe (BA 2018), Work Study Student (Spring 2016), currently a Communications Specialist at Fermilab.

Zachary Hall (BA 2017), UROP (Spring 2014, Summer 2014), Research Assistant (Fall 2015, Spring 2016), currently a PhD student at Stanford University in Philosophy.

Prof. Howard Chen (BA 2016), UROP (Summer 2014, Fall 2014), currently an Assistant Professor at the Florida Institute of Technology.

Supervised Undergraduate Students from Other Institutions (as Primary Research Mentor)

Zhavia Lovell (AD National Technical Institute for the Deaf), summer internship at BU funded by an NSF award in 2022.

Georgia Stolle-McAllister (BA 2020 Kenyon College), summer NSF REU Student (Maria Mitchell Association 2019), also advising for her senior thesis research, currently a graduate student at Univ. of Washington.

Jay Chittidi (BA Vassar College 2019), summer NSF REU Student (Maria Mitchell Association 2018), currently a graduate student at CU Boulder.

Jack Lichtman (BA UConn 2018), summer NSF REU Student (BU 2016), currently a PhD student at the Rochester Institute of Technology.

Hannah Gibson (BA Univ. of Kansas 2018), summer NSF REU Student (BU 2015), currently a PhD student at Purdue University.

Jia “Jimmy” Ye (BA/MEng Holy Cross/Columbia ’19), summer NSF REU Student (BU 2014).

Supervised Postdoctoral Associates

Dr. Julie Skinner (2016-2018), currently a Systems Analyst at MIT Lincoln Laboratories.

Dr. Bryce Croll (2015-2017), currently a Machine Learning Researcher at Paravision (Toronto, Ontario).

Hosted Visiting Scientists

Dr. Julie Skinner (2019-2020)

Dr. Andrew Mann (2014-2015)

Invited Conference Presentations

2021:

“M Dwarf Science with IGNIS”, Invited Research Talk, IGNIS Science Workshop (online), Sep. 8, 2021

2020:

“Intensification and Saturation of M-dwarf Absorption Lines with Rossby Number”, Invited Research Talk, Exostar Redux - Online Reunion Conference, Kavli Institute for Theoretical Physics, University of California, Santa Barbara, (online), August 26, 2020. <https://www.kitp.ucsb.edu/activities/exostar-oc20>

2019:

“Chemical Ages of M Dwarf Stars and Recent Work on Magnetic Inflation”, Invited Research Talk, Planet-Star Connections in the Era of TESS and Gaia, Kavli Institute for Theoretical Physics, University of California, Santa Barbara, CA, May 23, 2019. Available online here: http://online.kitp.ucsb.edu/online/exostar_c19/muirhead/

2017:

“Determining Stellar Parameters from Spectroscopic Observations”, Invited Review Talk, Know Thy Star - Know Thy Planet: Assessing the Impact of Stellar Characterization on Our Understanding of Exoplanets, NASA Exoplanet Science Institute, Pasadena, CA, Oct. 11, 2017.

<https://nexsci.caltech.edu/conferences/2017/knowthystar/agenda.shtml>

2016:

“M Dwarf Characterization with Spectroscopy”, Invited Review Talk, Opportunity M, Harvard-Smithsonian Center for Astrophysics, Aug. 30, 2016.

2015:

“So You Found an Exoplanet...A Flow Chart and Priorities for Determining Stellar Parameters”, Invited Review Talk, NASA Exoplanet Program and Analysis Group 11, Seattle, WA, Jan. 4, 2015.

<https://exoplanets.nasa.gov/exep/exopag/exopag11/>

2014:

“Short-period Sub Earths, ‘Discovering’ the Smallest Extrasolar Planets with Accurate Stellar Classification” Invited Research Talk, Hubble Fellows Symposium, Space Telescope Science Institute, Baltimore, MD, March 10, 2014. <https://www.stsci.edu/contents/events/stsci/2014/march/2014-hubble-fellows-symposium>

2013:

“Planets Orbiting M Dwarf Stars: The Most Characterizable Terrestrial Exoplanets are also the Most Abundant”, Invited Plenary Talk, 45th Meeting of the AAS Division for Planetary Sciences, Denver, CO, Oct. 9, 2013. <https://aas.org/meetings/dps45>

2012:

“Determining Physical Parameters of M Dwarf Planet Hosts”, Invited Research Talk, 2012 Sagan Summer Workshop: Working with Exoplanet Light Curves, NASA Exoplanet Science Institute, Pasadena, CA, July 24, 2012. <https://nexsci.caltech.edu/workshop/2012/>

2009:

“Searching for Planets orbiting M Dwarfs with the TripleSpec Exoplanet Discovery Instrument (TEDI)”, Invited Research Talk, 2009 Palomar Science Meeting, California Institute of Technology, Pasadena, CA, Apr. 30, 2009.

Invited Department Colloquia & Seminars

2025:

“The Race to the Bottom: The Search for Planets around Ever Smaller Hosts”, North Carolina Agricultural & Technical State University, Mar 26, 2025

2023:

“The Race to the Bottom: The Search for Planets around Ever Smaller Hosts”, Institute for Astronomy Colloquium, University of Hawaii, Sep 7, 2023

2022:

“Planet Occurrence Around Low-mass Stars”, Invited Review Talk, NASA Cosmic Origins Program Stars Science Interest Group, Mar 1, 2022

2021:

“The Race to the Bottom: The Search for Planets around Ever Smaller Hosts”, Northwestern University, Astronomy Seminar, Oct. 5, 2021

“The Race to the Bottom: The Search for Planets around Ever Smaller Hosts”, Illinois Institute of Technology, Physics Colloquium, Sep. 31, 2021

“The Race to the Bottom: Stellar and planetary astrophysics at the bottom of the main-sequence”, Keele University (UK), Astrophysics Colloquium, Mar. 24, 2021

2019:

“Small Stars with Small Planets and Big Consequences”, Rochester Institute of Technology, Astronomy Colloquium, Nov. 11, 2019

“New Results on the M Dwarf Radius Problem”, Universidad Andrés Bello (Santiago, Chile), Astrophysics Seminar, Jul. 23, 2019

2018:

“Magnetic Inflation and Stellar Mass”, University of Toledo, Astronomy Colloquium, June 26, 2018

“Small Stars with Small Planets and Big Consequences”, Florida Institute of Technology, Department of Aerospace, Physics and Space Sciences, Apr. 17, 2018

“Small Stars with Small Planets and Big Consequences”, University of Michigan, Department of Astronomy Colloquium, Feb. 8, 2018

“Small Stars with Small Planets and Big Consequences”, Texas A&M University, Department of Astronomy & Astrophysics Colloquium, Feb. 5, 2018

2017:

“M Dwarf Atmospheres: The Key to Studying Star and Planet Evolution”, The Pennsylvania State University, Department of Astronomy & Astrophysics Colloquium, Feb. 15, 2017

2016:

“The Evolution of Exoplanets Orbiting Low-mass Stars”, Massachusetts Institute of Technology, Astrophysics Colloquium, Dec. 13, 2016

“The Mysterious Atmospheres of Low-mass Stars, Brown Dwarfs and Cold Jovian (Exo)Planets”, Boston University, Institute for Astrophysical Research Seminar, Nov. 28, 2016

“Small Stars with Small Planets and Big Consequences”, Colby College, Physics Colloquium, Sep. 30, 2016

“Fundamental Properties of M Dwarf Stars and Their Many Exoplanets”, University of Exeter (UK), Astrophysics Seminar, Mar. 6, 2016

“Fundamental Properties of M Dwarf Stars and Their Many Exoplanets”, Universidade do Porto (Portugal), Centre for Astrophysics (CAUP) Seminar, Mar. 8, 2016

2015:

“From TripleSpec to NEWS: Exoplanet Discovery Science with Bread and Butter Infrared Spectroscopy”, University of Texas at Austin, Department of Astronomy Colloquium, Nov. 10, 2015

“From TripleSpec to NEWS: Exoplanet Discovery Science with Bread and Butter Infrared Spectroscopy”, Carnegie Observatories, Oct. 13, 2015

“Small Stars with Small Planets and Big Consequences”, Northwestern University, Astrophysics Seminar, May 7, 2015

2014:

“The Path to Extrasolar Biosignatures”, Cornell University, Department of Astronomy Colloquium, Aug. 28, 2014

“Small Stars with Small Planets and Big Consequences”, Wesleyan University, Department of Astronomy, Colloquium, Feb. 5, 2014

2013:

“Small Stars with Small Planets and Big Consequences”, McGill University/Université de Montréal (Canada), Joint Astrophysics Colloquium, Oct. 1, 2013

“Small Stars with Small Planets and Big Consequences”, Lowell Observatory, Colloquium, Sept. 23, 2013

“Small Stars with Small Planets and Big Consequences”, Harvard-Smithsonian Center for Astrophysics, Colloquium, Sept. 19, 2013. Available online here: <https://www.youtube.com/watch?v=Hj03S0SUfa4>

2012:

“A Mutually-Eclipsing Post-Common Envelope Binary with Precise *Kepler* Photometry”, Cornell University, Astrophysics Lunch Seminar, Dec. 19, 2012

“Small Stars with Small Planets and Big Consequences”, California State University, Northridge, Astronomy Colloquium, Nov. 28, 2012

“Small Stars with Small Planets and Big Consequences”, University of Hawaii at Manoa, Institute for Astronomy Colloquium, Oct. 10, 2012

“Small Stars with Small Planets and Big Consequences”, Harvey Mudd College, Physics Colloquium, Sept. 25, 2012

“Small Stars with Small Planets and Big Consequences”, University of Toronto, Department of Astronomy & Astrophysics Colloquium, Jan. 25, 2012

“Characterizing Exoplanet Hosts at 120 THz”, University of Virginia/National Radio Astronomical Observatory, Joint Colloquium, Apr 19, 2012

“The Cool KOI Program: Small Stars with Small Planets”, Harvard-Smithsonian Center for Astrophysics, OIR Seminar, Feb. 29, 2012

“The Cool KOI Program: Small Stars with Small Planets”, Cornell University, Planetary Lunch Seminar, Feb. 27, 2012

“The Cool KOI Program: Small Stars with Small Planets”, University of California, Los Angeles, iPLEX Seminar, Feb. 10, 2012

“The Cool KOI Program: Small Stars with Small Planets”, Las Cumbres Observatory Global Telescope, Seminar, Jan. 7, 2012

2010:

“Precise Near-Infrared Radial Velocities with the TripleSpec Exoplanet Discovery Instrument (TEDi)”, California Institute of Technology, Tea Talk Seminar, Dec. 6 2010

“Precise Near-Infrared Radial Velocities with the TripleSpec Exoplanet Discovery Instrument (TEDi)”, Carnegie Observatories, Lunch Seminar, Nov. 22, 2010

“Precise Near-Infrared Radial Velocities with the TripleSpec Exoplanet Discovery Instrument (TEDI)”, The Pennsylvania State University, CEHW Seminar, Nov. 18, 2010

“Precise Near-Infrared Radial Velocities with the TripleSpec Exoplanet Discovery Instrument (TEDI)”, University of California, Berkeley, Space Sciences Laboratory Colloquium, Nov. 5, 2010

Contributed Conference Talks (as Presenter and First Author)

2020:

“Intensification and Saturation of M Dwarf Absorption Lines with Rossby Number”, 235rd Meeting of the American Astronomical Society, Honolulu, HI, Jan. 2020

2019:

“Are M Dwarf Exoplanets Extreme?”, Extreme Solar Systems IV, Reykjavik, Iceland, 2019

“Detailed Chemical Analysis of M Dwarf Stars”, 233rd Meeting of the American Astronomical Society, Seattle, WA, Jan. 2019

2018:

“Ages of M Dwarf Stars from their Alpha Enhancement”, 231st Meeting of the American Astronomical Society, National Harbor, MD, Jan. 2018

2017:

“The Puzzling Atmospheres of Low-mass Stars, Brown Dwarfs and Exoplanets Revealed by the Discovery Channel Telescope”, 229th Meeting of the American Astronomical Society, Grapevine, TX, Jan. 2017

2015:

“The Occurrence of Compact Multiples Orbiting Mid-M Dwarf Stars”, Extreme Solar Systems III, Waikaloa, HI, Dec. 2015

“Kepler-445, Kepler-446 and the Occurrence of Compact Multiples Orbiting Mid-M Dwarf Stars”, 225th Meeting of the American Astronomical Society, Seattle, WA, Jan. 2015

2013:

“Characterizing the Cool KOIs”, 221st Meeting of the American Astronomical Society, Long Beach, CA, Jan. 2013

2012:

“Discovering’ Sub-Earth-Sized Exoplanets with TripleSpec”, 2012 Palomar Science Meeting, Pasadena, CA, Nov. 2012

“Distilling Nearby M Dwarfs for Terrestrial Planet Hosts”, Keck Science Meeting, San Diego, CA Sept. 2012. Available online here: <https://youtu.be/RgXr8By0KEw?t=2755>

“The Cool KOI Program: Accurate Physical Parameters of *Kepler* M-Type Planet Hosts”, Transiting Planets in the House of the Sun, Maui, HI, June 2012

“KOI 961: Characterization and Validation of a *Kepler* M-Dwarf Multi-Planet Host”, 219th Meeting of the American Astronomical Society, Austin, TX, Jan. 2012

2011:

“Precise Near-Infrared Radial Velocities with the TripleSpec Exoplanet Discovery Instrument (TEDI)”, 217th Meeting of the American Astronomical Society, Seattle, Jan. 2011

“Characterizing the Cool KOIs I”, Kepler Science Conference, Moffett Field, CA, Dec. 2011

2009:

“A Brief TripleSpec Talk”, 2009 Keck Science Meeting, California Institute of Technology, Sept. 2009

“Searching for Planets orbiting M Dwarfs with the TripleSpec Exoplanet Discovery Instrument (TEDI)”, New Technologies for Probing the Diversity of Brown Dwarfs and Exoplanets, Shanghai, China, July 2009

Contributed Conference Posters (as Presenter and First Author)

2024:

“Reconstructing the Evolution of HZ 9: a Post-common Envelope Binary in the Hyades Open Cluster”, The 22nd Cambridge Workshops on Cool Stars, Stellar Systems and the Sun (Cool Stars 22), San Diego, CA, June 2024.

2019:

“Design Considerations for a Ground-based Search for Transiting Planets around L and T Dwarfs And PINES: The Perkins Infrared Exosatellite Survey”, The Brown Dwarf Exoplanet Connection III, Newark, DE, Oct. 2019

2016:

“A Catalog of Cool Dwarf Targets for the Transiting Exoplanet Survey Satellite (TESS)”, The 19th Workshop on Cool Stars, Stellar Systems and the Sun, Uppsala, Sweden, June 2016

2014:

“HiJaK: The High-resolution J, H and K Spectrometer”, SPIE Astronomical Telescopes + Instrumentation, Montreal, Canada, June 2014

2013:

“Characterizing the Cool KOIs: An Infrared Spectroscopic Survey of Kepler M Dwarf Planet-Candidate Hosts”, Second Kepler Science Conference, Moffett Field, CA, Oct. 2013

2010:

“Precise Infrared Radial Velocimetry with the TripleSpec Exoplanet Discovery Instrument (TEDI): Current Performance and Results”, Astronomy of Exoplanets with Precise Radial Velocities, University Park, PA, Aug. 2010

“Precise Infrared Radial Velocities with the TripleSpec Exoplanet Discovery Instrument (TEDI): Current Performance and Results”, 215th Meeting of the American Astronomical Society, National Harbor, MD, Jan. 2010

“Precise Infrared Radial Velocimetry with the TripleSpec Exoplanet Discovery Instrument (TEDI): Current Performance and Results”, SPIE Astronomical Instrumentation, San Diego, CA, June 2010

2009:

“Searching for Planets Orbiting M Dwarfs with the TripleSpec Exoplanet Discovery Instrument”, XXVIIth IAU General Assembly, Rio de Janeiro, Brazil, Aug. 2009

2008:

Precise Radial Velocimetry in the Near-Infrared with T-EDI", 15th Cambridge Workshop on Cool Stars, Stellar Systems and the Sun, St Andrews, Scotland, July 2008

2006:

"Precise Radial Velocimetry in the Near-Infrared with T-EDI", Precision Spectroscopy in Astrophysics, Aviero, Portugal, September 2006

Precise Radial Velocimetry in the Near-Infrared with T-EDI", 14th Cambridge Workshop on Cool Stars, Stellar Systems and the Sun, Pasadena, CA, July 2006

Conferences and Meetings Attended (no formal presentation)

NASA Exoplanet Program and Analysis Group (Multiple Meetings)

Scialog: Time Domain Astrophysics, May 2019

221st Meeting of the American Astronomical Society, National Harbor, MD, Jan. 2014

2013 MESA Summer School, Santa Barbara, CA, August 2013

Kepler Science Working Group Meeting, Mountain View, CA, May 2013

Media Appearances

"Webb uncovers atmospheric complexity of free-floating planetary-mass object SIMP 0136" A. Maleware, techexplorist.com, March 10, 2025. <https://www.techexplorist.com/webb-uncovers-atmospheric-complexity-of-free-floating-planetary-mass-object-simp-0136/97723/>

"NASA Webb Unveils Atmospheric Complexity of Isolated Super-Jupiter" C. Oxford, spacedaily.com, March 4, 2025. https://www.spacedaily.com/reports/NASA_Webb_Unveils_Atmospheric_Complexity_of_Isolated_Super_Jupiter_999.html

"Webb telescope zooms in on object free-flying through the galaxy" M. Kaufman, mashable.com, March 4, 2025. <https://mashable.com/article/james-webb-space-telescope-rogue-planetary-mass-object>

"NOVA Universe Revealed: Alien Worlds" PBS Nova, aired November 10, 2021. <https://www.pbs.org/wgbh/nova/video/nova-universe-revealed-alien-worlds/>

"NOVA Universe Revealed: Age of Stars" PBS Nova, aired October 27, 2021. <https://www.pbs.org/wgbh/nova/video/nova-universe-revealed-age-of-stars/>

"Can We Ever Understand the Size of Red Dwarf Stars?" P. Suttor, Space.com, August 9, 2019. (features research by PhD advisee Eunkyue Han). <https://www.space.com/red-dwarf-stars-size-mystery.html>

"His Holy Grail would be detecting life on another planet", Cindy Atoji Keene, The Boston Globe, June 7, 2018, https://www.bostonglobe.com/business/2018/06/07/his-holy-grail-would-detecting-life-another-planet/Z7IPSIYb4P8SRFaKxrlyUL/story.html?_campaign=8315

"BU team joins NASA in the search for earth-like planets", Lillian Ilsley-Greene, The Daily Free Press, April 18, 2018, <https://dailyfreepress.com/2018/04/18/bu-team-joins-nasa-in-the-search-for-earth-like-planets/>

"TRAPPIST-1 discovery holds promise for BU astronomers" Lauren Frias, The Daily Free Press, March 2, 2017, <https://dailyfreepress.com/2017/03/02/trappist-1-discovery-holds-promise-bu-astronomers/>

“BU’s Shared Computing Cluster: Results Hundreds of Times Faster: Helping astronomers study cold atmosphere exoplanets”, BU Today Staff, BU Today, February 23, 2016, <http://www.bu.edu/today/2016/paul-dalba-nasa-cassini-spacecraft/>

“Pluto who? Caltech researchers discover possible ninth planet” Allegra Peelor, The Daily Free Press, January 26, 2016, <https://dailyfreepress.com/2016/01/26/pluto-who-caltech-researches-discover-plant-nine/>

“Observing Saturn as an Extrasolar Planet, One Ray of Light at a Time”, Paul A. Dalba, Massachusetts Green High Performance Computer Center Website, November 10, 2015, <http://www.mghpcc.org/looking-like-an-alien/>

“The Best Bet for Alien Life May Be in Planetary Systems Very Different From Ours”, Marcus Woo, WIRED, January 16, 2015, <http://www.wired.com/2015/01/alien-life-m-dwarf-planets/>

“Recent solar storm signals mass increase in sun’s activity”, Becca DeGregorio, The Daily Free Press, September 25, 2014, <http://dailyfreepress.com/2014/09/25/recent-solar-storm-signals-increase-in-suns-activity/>

“Kepler telescope shows Einstein was right, again”, Los Angeles Times, April 4, 2013, <https://www.latimes.com/science/la-xpm-2013-apr-04-la-sci-sn-kepler-einstein-20130404-story.html>

“Gravity-Bending Find Leads to Kepler Meeting Einstein”, Whitney Clavin, NASA Press Release, April 4, 2013, <https://www.jpl.nasa.gov/news/news.php?release=2013-124>

“NASA’s Kepler Mission Finds Three Smallest Exoplanets”, Whitney Clavin, NASA Press Release, January 11, 2012, <https://www.jpl.nasa.gov/news/news.php?release=2012-009>

Publication Links

Link to all publications on the NASA Astrophysical Data System (identified by my unique ORCID number):
https://ui.adsabs.harvard.edu/search/p_00&q=orcid%3A0000-0002-0638-8822

Link to profile on ORCID:
<https://orcid.org/0000-0002-0638-8822>

Link to profile on Google Scholar
<https://scholar.google.com/citations?user=axhi02YAAAAJ&hl=en>

Link to profile on Publons:
<https://publons.com/researcher/2517951/philip-steven-muirhead/>

Link to profile on ResearchGate:
https://www.researchgate.net/profile/Philip_Muirhead

Peer-reviewed Publications as First Author or with a Directly Supervised Student as First Author (29)

(Bold indicates authorship, underline indicates a student under my supervision during the effort)

1. McCarthy, A. M., Vos, J. M., **Muirhead, P. S.**, Biller, B. A., Morley, C. V., Faherty, J., Burningham, B., Calamari, E., Cowan, N. B., Cruz, K. L., Gonzales, E., Limbach, M. A., Liu, P., Nasedkin, E., Suarez, G., Tan, X., O’Toole, C., Visscher, C., Whiteford, N., & Zhou, Y. "The JWST Weather Report from the Isolated Exoplanet Analog SIMP 0136+0933: Pressure-Dependent Variability Driven by Multiple Mechanisms", 2025, The Astrophysical Journal Letters, 981, L22.
<https://iopscience.iop.org/article/10.3847/2041-8213/ad9eaf>

2. McCarthy, A. M., **Muirhead, P. S.**, Tamburo, P., Vos, J. M., Morley, C. V., Faherty, J., Bardalez Gagliuffi, D. C., Agol, E., & Theissen, C. "Multiple Patchy Cloud Layers in the Planetary-mass Object SIMP 0136+0933", 2024, The Astrophysical Journal, 965, 83.
<https://ui.adsabs.harvard.edu/abs/2024ApJ...965...83M>
3. Tamburo, P., **Muirhead, P. S.**, Dressing, C. "Predicting the Yield of Small Transiting Exoplanets around Mid-M and Ultracool Dwarfs in the Nancy Grace Roman Space Telescope Galactic Bulge Time Domain Survey", 2024, The Astronomical Journal, 165, 251.
<https://ui.adsabs.harvard.edu/abs/2023AJ....165..251T>
4. Tamburo, P., **Muirhead, P. S.**, McCarthy, A. M., Hart, M., Vos, J. M., Agol, E., Theissen, C., Gracia, D., Bardalez Gagliuffi, D. C., Faherty, "The Perkins INfrared Exosatellite Survey (PINES) II. Transit Candidates and Implications for Planet Occurrence around L and T Dwarfs", 2022, The Astronomical Journal, 164, 252. <https://ui.adsabs.harvard.edu/abs/2022AJ....164..252T>
5. Tamburo, P., **Muirhead, P. S.**, McCarthy, A. M., Hart, M., Gracia, D., Vos, J. M., Bardalez Gagliuffi, D. C., Faherty, J., Theissen, C., Agol, E., Skinner, J. N., & Sagar, S. "The Perkins INfrared Exosatellite Survey (PINES) I. Survey Overview, Reduction Pipeline, and Early Results", 2022, The Astronomical Journal, 163, 253. <https://ui.adsabs.harvard.edu/abs/2022AJ....163..253T>
6. **Muirhead, P. S.**, Nordhaus, J., Drout, M. "Revised Stellar Parameters for V471 Tau, A Post-common Envelope Binary in the Hyades", 2022, The Astronomical Journal, 163, 34.
<https://ui.adsabs.harvard.edu/abs/2022AJ....163...34M>
7. Tamburo, P., **Muirhead, P. S.**, Agol, E., Hart, M., & Thakar, B. "Confirmation of a Dynamical Model for the TRAPPIST-1 Exoplanetary System", 2021, Research Notes of the American Astronomical Society, 5, 219. <https://ui.adsabs.harvard.edu/abs/2021RNAAS...5..219T>
8. Sagar, S. A., Skinner, J. N., & **Muirhead, P. S.** "Upper Limits on Planet Occurrence around Ultracool Dwarfs with K2", 2020, The Astronomical Journal, 160, 19.
<https://ui.adsabs.harvard.edu/abs/2020AJ....160...19S>
9. **Muirhead, P. S.**, Veyette, M. J., Newton, E. R., Theissen, C. A., & Mann, A. W. "Magnetic Inflation and Stellar Mass. V. Intensification and Saturation of M-dwarf Absorption Lines with Rossby Number", 2020, The Astronomical Journal, 159, 52. <https://ui.adsabs.harvard.edu/abs/2020AJ....159...52M>
10. Tamburo, P., & **Muirhead, P. S.** "Design Considerations for a Ground-based Search for Transiting Planets around L and T Dwarfs", 2019, Publications of the Astronomical Society of the Pacific, 131, 114401. <https://ui.adsabs.harvard.edu/abs/2019PASP...131k4401T>
11. Han, E., **Muirhead, P. S.**, & Swift, J. J. "Magnetic Inflation and Stellar Mass. IV. Four Low-mass Kepler Eclipsing Binaries Consistent with Non-magnetic Stellar Evolutionary Models", 2019, The Astronomical Journal, 158, 111. <https://ui.adsabs.harvard.edu/abs/2019AJ....158..111H>
12. Healy, B. F., Han, E., **Muirhead, P. S.**, Skiff, B., Polakis, T., Rillinger, A., & Swift, J. J. "Magnetic Inflation and Stellar Mass. III. Revised Parameters for the Component Stars of NSVS 07394765", 2019, The Astronomical Journal, 158, 89. <https://ui.adsabs.harvard.edu/abs/2019AJ....158...89H>
13. Veyette, M. J., & **Muirhead, P. S.** "Chemo-kinematic Ages of Eccentric-planet-hosting M Dwarf Stars", 2018, The Astrophysical Journal, 863, 166. <https://ui.adsabs.harvard.edu/abs/2018ApJ...863..166V>

14. Kesseli, A. Y., **Muirhead, P. S.**, Mann, A. W., & Mace, G. "Magnetic Inflation and Stellar Mass. II. On the Radii of Single, Rapidly Rotating, Fully Convective M-Dwarf Stars", 2018, The Astronomical Journal,155, 225. <https://ui.adsabs.harvard.edu/abs/2018AJ....155..225K>
15. **Muirhead, P. S.**, Dressing, C. D., Mann, A. W., Rojas-Ayala, B., Lépine, S., Paegert, M., De Lee, N., & Oelkers, R. "A Catalog of Cool Dwarf Targets for the Transiting Exoplanet Survey Satellite", 2018, The Astronomical Journal,155, 180. <https://ui.adsabs.harvard.edu/abs/2018AJ....155..180M>
16. Veyette, M. J., **Muirhead, P. S.**, Mann, A. W., Brewer, J. M., Allard, F., & Homeier, D. "A Physically Motivated and Empirically Calibrated Method to Measure the Effective Temperature, Metallicity, and Ti Abundance of M Dwarfs", 2017, The Astrophysical Journal,851, 26. <https://ui.adsabs.harvard.edu/abs/2017ApJ...851...26V>
17. Han, E., **Muirhead, P. S.**, Swift, J. J., Baranec, C., Law, N. M., Riddle, R., Atkinson, D., Mace, G. N., & DeFelippis, D. "Magnetic Inflation and Stellar Mass. I. Revised Parameters for the Component Stars of the Kepler Low-mass Eclipsing Binary T-Cyg1-12664", 2017, The Astronomical Journal,154, 100. <https://ui.adsabs.harvard.edu/abs/2017AJ....154..100H>
18. Dalba, P. A., **Muirhead, P. S.**, Croll, B., & Kempton, E. M.-R. "Kepler Transit Depths Contaminated By a Phantom Star", 2017, The Astronomical Journal,153, 59. <https://ui.adsabs.harvard.edu/abs/2017AJ....153...59D>
19. Veyette, M. J., **Muirhead, P. S.**, Mann, A. W., & Allard, F. "The Physical Mechanism Behind M Dwarf Metallicity Indicators and the Role of C and O Abundances", 2016, The Astrophysical Journal,828, 95. <https://ui.adsabs.harvard.edu/abs/2016ApJ...828...95V>
20. Dalba, P. A., & **Muirhead, P. S.** "No Timing Variations Observed in Third Transit of Snow-line Exoplanet Kepler-421b", 2016, The Astrophysical Journal,826, L7. <https://ui.adsabs.harvard.edu/abs/2016ApJ...826L...7D>
21. Dalba, P. A., **Muirhead, P. S.**, Fortney, J. J., Hedman, M. M., Nicholson, P. D., & Veyette, M. J. "The Transit Transmission Spectrum of a Cold Gas Giant Planet", 2015, The Astrophysical Journal,814, 154. <https://ui.adsabs.harvard.edu/abs/2015ApJ...814..154D>
22. Jensen-Clem, R., **Muirhead, P. S.**, Bottom, M., Wallace, J. K., Vasisht, G., & Johnson, J. A. "Attaining Doppler Precision of 10 cm s⁻¹ with a Lock-in Amplified Spectrometer", 2015, Publications of the Astronomical Society of the Pacific,127, 1105. <https://ui.adsabs.harvard.edu/abs/2015PASP..127.1105J>
23. **Muirhead, P. S.**, Mann, A. W., Vanderburg, A., Morton, T. D., Kraus, A., Ireland, M., Swift, J. J., Feiden, G. A., Gaidos, E., & Gazak, J. Z. "Kepler-445, Kepler-446 and the Occurrence of Compact Multiples Orbiting Mid-M Dwarf Stars", 2015, The Astrophysical Journal,801, 18. <https://ui.adsabs.harvard.edu/abs/2015ApJ...801...18M>
24. **Muirhead, P. S.**, Becker, J., Feiden, G. A., Rojas-Ayala, B., Vanderburg, A., Price, E. M., Thorp, R., Law, N. M., Riddle, R., Baranec, C., Hamren, K., Schlawin, E., Covey, K. R., Johnson, J. A., & Lloyd, J. P. "Characterizing the Cool KOIs. VI. H- and K-band Spectra of Kepler M Dwarf Planet-candidate Hosts", 2014, The Astrophysical Journal Supplement Series,213, 5. <https://ui.adsabs.harvard.edu/abs/2014ApJS..213....5M>
25. **Muirhead, P. S.**, Vanderburg, A., Shporer, A., Becker, J., Swift, J. J., Lloyd, J. P., Fuller, J., Zhao, M., Hinkley, S., Pineda, J. S., Bottom, M., Howard, A. W., von Braun, K., Boyajian, T. S., Law, N., Baranec, C., Riddle, R., Ramaprakash, A. N., Tendulkar, S. P., Bui, K., Burse, M., Chordia, P., Das, H., Dekany, R.,

- Punnadi, S., & Johnson, J. A. "Characterizing the Cool KOIs. V. KOI-256: A Mutually Eclipsing Post-common Envelope Binary", 2013, The Astrophysical Journal, 767, 111.
<https://ui.adsabs.harvard.edu/abs/2013ApJ...767..111M>
26. **Bottom, M., Muirhead, P. S.**, Johnson, J. A., & Blake, C. H. "Optimizing Doppler Surveys for Planet Yield", 2013, Publications of the Astronomical Society of the Pacific, 125, 240.
<https://ui.adsabs.harvard.edu/abs/2013PASP..125..240B>
 27. **Muirhead, P. S., Hamren, K.**, Schlawin, E., Rojas-Ayala, B., Covey, K. R., & Lloyd, J. P. "Characterizing the Cool Kepler Objects of Interests. New Effective Temperatures, Metallicities, Masses, and Radii of Low-mass Kepler Planet-candidate Host Stars", 2012, The Astrophysical Journal, 750, L37.
<https://ui.adsabs.harvard.edu/abs/2012ApJ...750L..37M>
 28. **Muirhead, P. S.**, Johnson, J. A., Apps, K., Carter, J. A., Morton, T. D., Fabrycky, D. C., Pineda, J. S., **Bottom, M.**, Rojas-Ayala, B., Schlawin, E., **Hamren, K.**, Covey, K. R., Crepp, J. R., Stassun, K. G., Pepper, J., Hebb, L., Kirby, E. N., Howard, A. W., Isaacson, H. T., Marcy, G. W., Levitan, D., Diaz-Santos, T., Armus, L., & Lloyd, J. P. "Characterizing the Cool KOIs. III. KOI 961: A Small Star with Large Proper Motion and Three Small Planets", 2012, The Astrophysical Journal, 747, 144.
<https://ui.adsabs.harvard.edu/abs/2012ApJ...747..144M>
 29. **Muirhead, P. S.**, Edelstein, J., Erskine, D. J., Wright, J. T., Muterspaugh, M. W., Covey, K. R., Wishnow, E. H., **Hamren, K.**, Andelson, P., Kimber, D., Mercer, T., Halverson, S. P., Vanderburg, A., Mondo, D., Czeszumski, A., & Lloyd, J. P. "Precise Stellar Radial Velocities of an M Dwarf with a Michelson Interferometer and a Medium-Resolution Near-Infrared Spectrograph", 2011, Publications of the Astronomical Society of the Pacific, 123, 709. <https://ui.adsabs.harvard.edu/abs/2011PASP..123..709M>

Peer-reviewed Publications as Co-Author (54)

1. Grondin, S. M., Drout, M. R., Nordhaus, J., **Muirhead, P. S.**, Speagle, J. S., & Chornock, R. "The first catalogue of candidate white dwarf-main sequence binaries in open star clusters: A new window into common envelope evolution", 2024, The Astrophysical Journal (in press).
<https://ui.adsabs.harvard.edu/abs/2024arXiv240704775G>
2. Wanderley, F., Cunha, K., Smith, V. V., Kochukhov, O., Souto, D., Prieto, C. A., Mahadevan, S., Majewski, S. R., **Muirhead, P. S.**, Pinsonneault, M. and Terrien, R. "Magnetic Fields In A Sample Of Planet-Hosting M Dwarf Stars From Kepler, K2, And Tess Observed By Apogee", 2024, The Astrophysical Journal (in press).
3. Biller, B. A., Vos, J. M., Zhou, Y., **McCarthy, A. M.**, Tan, X., Crossfield, I. J. M., Whiteford, N., Suarez, G., Faherty, J., Manjavacas, E., Chen, X., Liu, P., Sutcliffe, B. J., Limbach, M. A., Molliere, P., Dupuy, T. J., Oliveros-Gomez, N., **Muirhead, P. S.**, Henning, T., Mace, G., Crouzet, N., Karalidi, T., Morley, C. V., Tremblin, P., & Kataria, T. "The JWST weather report from the nearest brown dwarfs I: multiperiod JWST NIRSpec + MIRI monitoring of the benchmark binary brown dwarf WISE 1049AB", 2024, Monthly Notices of the Royal Astronomical Society, 532, 2207.
<https://ui.adsabs.harvard.edu/abs/2024MNRAS.532.2207B>
4. Wanderley, F., Cunha, K., Kochukhov, O., Smith, V. V., Souto, D., Cao, L., Covey, K., Majewski, S. R., Martinez, C., **Muirhead, P. S.**, Pinsonneault, M., Allende Prieto, C., & Stassun, K. G. "Magnetic Fields in M-dwarf Members of the Pleiades Open Cluster Using APOGEE Spectra", 2024, The Astrophysical Journal, 971, 112. <https://ui.adsabs.harvard.edu/abs/2024ApJ...971..112W>

5. Iyer, A. R., Line, M. R., **Muirhead, P. S.**, Fortney, J. J., & Gharib-Nezhad, E. "The SPHINX M-dwarf Spectral Grid. I. Benchmarking New Model Atmospheres to Derive Fundamental M-dwarf Properties", 2023, The Astrophysical Journal, 944, 41. <https://ui.adsabs.harvard.edu/abs/2023ApJ...944...41I>
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