

Sean K. Terry

PERSONAL	Department of Astronomy 4296 Stadium Drive College Park, MD 20742	Email: skterry@umd.edu Github: skterry http://skterry.github.io
APPOINTMENTS	Postdoctoral Associate , University of Maryland, College Park Postdoctoral Scholar , University of California, Berkeley	2023 – Present 2020 – 2023
EDUCATION	The Catholic University of America , Ph.D., Physics The Catholic University of America , M.S., Physics George Mason University , B.S., Astronomy/Physics Northern Virginia Community College , A.S., Gen. Science	2020 2018 2015 2012
RESEARCH AREAS	Gravitational microlensing by stars, exoplanets, free-floating planets, & black holes, adaptive optics, instrumentation, galactic bulge stellar populations	
SERVICE & PROFESSIONAL ACTIVITIES	Professional Activities Member – <i>Roman</i> Galactic Exoplanet Survey (RGES) Project Infrastructure Team (PIT) Group Lead – RGES Mass Measurement Requirement Verification Lead Organizer – KAPA Annual Science Meeting (KASM) Member – UC Berkeley Astronomy Climate Advisory Committee Collaborator – UCLA Galactic Center Group Project Science Team – Keck All-Sky Precision Adaptive Optics (KAPA) Representative – Annual NASA GSFC Administrator’s Congressional Visits LOC – 19th International Conference on Microlensing	2023– 2024 2021,2022 2022–2023 2020–2023 2020–2023 2016 2015
	Professional Memberships Member – American Astronomical Society (AAS) Member – Society for Personality and Social Psychology (SPSP) Member – Seers Exoplanet Environments Collaboration (SEEC)	2015– 2017–2020 2016–2020,2023–
	Panels & Reviews <i>HST, TESS, NSF, XRP</i> Referee for <i>ApJ, AJ, A&A</i>	
	Outreach Guest Speaker, <i>Physics Club</i> , Berkeley High School, Berkeley, CA Guest Scientist, STEM-Day, Garfield High School, Woodbridge, VA CUA Booth, Annual Astronomy Festival on the Mall, Washington, DC Proctor, GMU Public Observing Nights, Fairfax, VA	2023 2017 2015–2017 2013–2015
TEACHING	<i>ASTR 7AB: Introduction to Astrophysics</i> – UC Berkeley Instructor, <i>AstroTech</i> , – UC Berkeley <i>Exoplanets in Fact & Fiction</i> – American University <i>Astronomy for non-STEM Majors</i> – George Mason University (TA)	2023 2021–2022 2019 2014

Introduction to Astrophysics – George Mason University (TA) 2013

ADVISING

High School Students

Viveka Chaudry – Sidwell Friends School (current: Brown University) 2022

Undergraduates

Allen Chen – UC Berkeley 2022–2023

Theo Pedapolu – UC Berkeley 2021

Ishaan Gandhi – Harvey Mudd College (current: securities industry) 2016

Anshula Gandhi – MIT (current: University of British Columbia M.Sc.) 2016

Mackenzie Kynoch – Dartmouth (current: software industry) 2015

GRANTS

AWARDED

Lead or Co-lead

Hubble Space Telescope Cycle 32 #17834

“Confirming Serendipitous Microlens Host Detections with New and Archival HST Imaging”

Principal Investigator: S. K. Terry

October 01, 2024 –

Award: \$73,700

Hubble Space Telescope Cycle 32 #17776

“A Precursor Survey of the Roman Galactic Bulge Time Domain Fields”

Principal Investigator: S. K. Terry

October 01, 2024 –

Award: \$412,700

Hubble Space Telescope Multi-Cycle 30–32 #17081, #17404, #17838

“Mass Measurement of a Candidate Black Hole Microlens with Systematic Error Control”

Principal Investigator: D. P. Bennett/S. K. Terry (co-PI)

October 01, 2022 –

Award: \$24,400/yr

Hubble Space Telescope Cycle 28 #16509

“Detection of the Astrometric Microlensing Signal by the Binary Black Hole Candidate MOA-2019-BLG-284”

Principal Investigator: S. K. Terry

April 05, 2021 – September 30, 2021

Award: \$22,100

Notable Co-Investigator

James Webb Space Telescope Cycle 3 #6777

“Finding Black Holes through Gravitational Microlensing”

Principal Investigator: J. R. Lu

September 24, 2024 –

James Webb Space Telescope Cycle 3 #6078

“Confirmation of a Jovian Planet Analog Orbiting a White Dwarf, Rare Low-mass Neutron Star or Black Hole”

Principal Investigator: J. Blackman

March 1, 2024 – September 18, 2024

NASA/Roman Project Infrastructure Team (PIT)

“Roman Galactic Exoplanet Survey”

Principal Investigator: S. Gaudi
 October 01, 2023 – November 2028 (expected)

Keck Semesters 2021B | 2023B | 2024B
“Finding Black Holes with Astrometric Microlensing”
 Principal Investigator: J. R. Lu
 August – September 2021 | May – July 2023 | August – September 2024

Keck Semester 2021A
“Testing Core Accretion with Microlens Planet Host Star Masses”
 Principal Investigator: D. P. Bennett
 May 17, 2021 – July 13, 2021

Hubble Space Telescope Cycle 27 #16067
“Mass Measurement of Isolated Black Hole Candidate MOA-2019-BLG-284L via Lensed Image Separation”
 Principal Investigator: D. P. Bennett
 March 13, 2020 – September 14, 2020

OBSERVING	<i>JWST</i> (NIRCam), 17.18 hours	2024–
	<i>HST</i> (WFC3/ACS), 246 orbits	2021–
	Keck (NIRC2/OSIRIS), 21 nights	2019–
	GMU 0.8m, 16 nights	2013–2015

TALKS

Selected invited talks

7. Talk Series: “A Precursor Survey of the Roman Galactic Bulge Time Domain Fields”, Harvard, MIT, Brown, UMass Lowell, December 2024 (pending)
6. “Measuring the Masses of Exoplanets and Compact Objects with the Roman Galactic Bulge Time Domain Survey”, *Roman* Virtual Lecture Series, Caltech/IPAC, April 2023
5. “Directly Measuring the Mass of Microlensing Exoplanets with the Roman Space Telescope”, University of California San Diego, January 2022
4. “Discovering and Characterizing Exoplanets”, Universidad Nacional Autónoma de Honduras, December 2021
3. “PSF-Reconstruction, AIROPA, and the KAPA Project”, University of California Los Angeles, June 2021
2. “Comparing HST Observations of Bulge Stars to Galactic Population Synthesis Models in Preparation for the WFIRST Microlensing Survey”, NASA GSFC, November 2019
1. “Probing the Galactic Bulge Stellar Population as Precursor Science for WFIRST”, University of Maryland, May 2018

PUBLICATIONS

28 total (10 first/second author)

† = unrefereed publications

28. **Terry, S. K.**, Lu, J. R., Bennett, D. P., et al. “An Isolated Black Hole Confirmed with Astrometric Microlensing”, *in prep*
27. **Terry, S. K.**, Bennett, D. P., Bhattacharya, A., et al. “First Direct Identification of a Multi-Star Microlens System Hosting a Planet”, *in prep*
26. **Terry, S. K.**, Beaulieu, J.P., Bennett, D. P., Bhattacharya, A., et al. “A Candidate High-Velocity Exoplanet System in the Galactic Bulge”, 2024, *submitted to AJ*

25. Zhang, K., Zang, W., El-Badry K., & 6 coauthors including **Terry, S. K.**, “An Earth-Mass Planet and a Brown Dwarf Orbiting a White Dwarf”, 2024, *Nature Astronomy*, 1–8
24. **Terry, S. K.**, Beaulieu, J.P., Bennett, D. P., Hamdorf, E., et al. “Unveiling MOA-2007-BLG-192: An M Dwarf Hosting a Likely Super-Earth”, 2024, *AJ*, 168, 72
23. Nunota, K., Koshimoto, N., Suzuki, D., & 6 coauthors including **Terry, S. K.**, “Measurement of Dependence of Microlensing Planet Frequency on The Host Star Mass and Galactocentric Distance by Using a Galactic Model”, 2024, *ApJ*, 967, 77
22. Bennett, D. P., Bhattacharya, A., Beaulieu, J.P., & 13 coauthors including **Terry, S. K.**, “Keck and Hubble Observations Show That MOA-2008-BLG-379Lb Is a Super-Jupiter Orbiting an M Dwarf”, 2024, *AJ*, 168, 15
21. Reksini, N., Batista, V., Ranc, C., Bennett, D. P., & 9 coauthors including **Terry, S. K.**, “Precise Mass Measurement of OGLE-2013-BLG-0132Lb: A Saturn Mass Planet Orbiting an M Dwarf”, 2023, *AJ*, 167, 145
20. Vandenrou, A., Dang, L., Bennett, D. P., Koshimoto, N., & 11 coauthors including **Terry, S. K.**, “OGLE-2016-BLG-1195Lb: A Sub-Neptune Beyond the Snow Line of an M-dwarf Confirmed by Keck AO”, 2023, *submitted 05/23*
19. [†]**Terry, S. K.**, Hosek Jr, M., Lu, J. R., Lam, C., et al. “The Galactic Center with *Roman*”, 2023, *NASA/Roman White Paper*
18. [†]Lam, C. Y., Abrams, N., Andrews, J., & 34 coauthors including **Terry, S. K.**, “Characterizing the Galactic Population of Isolated Black Holes”, 2023, *NASA/Roman White Paper*
17. [†]Street, R. A., Gough-Kelly, S., Lam, C., & 12 coauthors including **Terry, S. K.**, “Maximizing Science Return by Coordinating the Survey Strategies of Roman with Rubin, and Other Major Facilities”, 2023, *NASA/Roman White Paper*
16. Bhattacharya, A., Bennett, D. P., Beaulieu, J., & 11 coauthors including **Terry, S. K.**, “Confirmation of Color-dependent Centroid Shift Measured After 1.8 Years with HST”, 2023, *AJ*, 165, 206
15. **Terry, S. K.**, Lu, J. R., Turri, P., Ciurlo, A., et al. “AIROPA IV: Validating Point Spread Function Reconstruction on Various Science Cases”, 2023, *JATIS*, 9(1), 019007
14. **Terry, S. K.**, Bhattacharya, A., Bennett, D. P., Bond, I.A., et al. “Adaptive Optics Imaging Can Break the Central Caustic Cusp Approach Degeneracy in High-magnification Microlensing Events”, 2022, *AJ*, 164, 217
13. Ciurlo, A., Turri, P., Witzel, G., & 12 coauthors including **Terry, S. K.**, “AIROPA II: Modeling Instrumental Aberrations for Off-Axis Point Spread Functions in Adaptive Optics”, 2022, *JATIS*, 8(3), 038007
12. Lu, J. R., **Terry, S. K.**, Turri, P., et al. “AIROPA: Off-axis adaptive optics PSF reconstruction in simulation, on-bench, and on-sky”, 2022, *SPIE Proc.*, 12185, 3Y
11. Wizinowich, P., Lu, J. R., Cetre, S., & 31 coauthors including **Terry, S. K.**, “Keck All sky Precision Adaptive optics program overview”, 2022, *SPIE Proc.*, 12185, 193-207
10. Chu, D., Ning, W., Do, T., & 8 coauthors including **Terry, S. K.**, “Evaluating the performance of the Keck Observatory adaptive optics systems on crowded field data using different adaptive optics configurations”, 2022, *SPIE Proc.*, 12185, 45
9. Turri, P., Lu, J. R., Witzel, G., & 7 coauthors including **Terry, S. K.**, “AIROPA III: Testing Simulated and On-Sky Data”, 2022, *JATIS*, 8(3), 039002
8. Lam, C., Lu, J. R., Udalski, A., & 44 coauthors including **Terry, S. K.**, “An Isolated Mass Gap Black Hole or Neutron Star Detected with Astrometric Microlensing”, 2022, *ApJL*, 933, L23

7. Lam, C., Lu, J. R., Udalski, A., & 44 coauthors including **Terry, S. K.**, “Supplement: An Isolated Mass Gap Black Hole or Neutron Star Detected with Astrometric Microlensing”, 2022, *ApJS*, 260, 55
6. Blackman, J., Beaulieu, J., Bennett, D. P., & 11 coauthors including **Terry, S. K.**, “A Jovian Analog Orbiting a White Dwarf Star”, 2021, *Nature*, 598, 272
5. Bhattacharya, A., Bennett, D. P., Beaulieu, J., & 11 coauthors including **Terry, S. K.**, “MOA-2007-BLG-400Lb: A Super-Jupiter Mass Planet Orbiting a Galactic Bulge K-dwarf Revealed by Keck Adaptive Optics Imaging”, 2021, *AJ*, 162, 60
4. **Terry, S. K.**, Bhattacharya, A., Bennett, D. P., Bond, I.A., et al. “MOA-2009-BLG-319Lb: A Sub-Saturn Planet Inside the Predicted Mass Desert”, 2021, *AJ*, 161, 54
3. **Terry, S. K.**, Barry, R. K., Bennett, D. P., Bhattacharya, A., Anderson, J., Penny, M. T., “Comparing Observed Stellar Kinematics and Surface Densities in a Low Latitude Bulge Field to Galactic Population Synthesis Models”, 2020, *ApJ*, 889, 126
2. Bennett, D. P., Bhattacharya, A., Beaulieu, J., & 9 coauthors including **Terry, S. K.**, “Keck Observations Confirm a Super-Jupiter Planet Orbiting M-dwarf OGLE-2005-BLG-071L”, 2020, *AJ*, 159, 68
1. Bennett, D. P., Bhattacharya, A., Anderson, J., & 15 coauthors including **Terry, S. K.**, “Confirmation of the Planetary Microlensing Signal and Star and Planet Mass Determinations for Event OGLE-2005-BLG-169”, 2015, *ApJ*, 808, 169