

**Interests** I am interested in characterizing exoplanets and their host stars. I study how stellar activity affects planet characterization via observations from the ground and from space, with Professors Eric Agol and Suzanne Hawley (UW).

**Education**

University of Washington, Seattle, WA PhD Candidate in Astronomy and Astrobiology (dual-title PhD program)	2014 – present
University of Washington, Seattle, WA M.S. in Astronomy	2013 – 2014
University of Maryland, College Park, MD B.S. with High Honors in Astronomy B.S. in Physics (double degree)	2009 – 2012

- Publications** *First author works:*
11. [Are Starspots and Plages Co-Located on Active G and K Stars?](#)  
**Morris, B.M.**; Curtis, J.L.; Douglas, S.T.; Hawley, S.L.; Agüeros, M.A.; Bobra, M.G.; Agol, E. accepted in ApJL (2018)
  10. [Non-detection of Contamination by Stellar Activity in the Spitzer Transit Light Curves of TRAPPIST-1](#)  
**Morris, B.M.**, Agol E., Hebb L., Hawley S.L., Gillon M., Ducrot E., Delrez L., Ingalls J., Demory B-O. ApJL 863, L32 (2018)
  9. [Robust Transiting Exoplanet Radii in the Presence of Starspots from Ingress and Egress Durations](#)  
**Morris, B.M.**, Agol E., Hebb, L., Hawley, S.L., AJ 156, 91 (2018)
  8. [Possible Bright Starspots on TRAPPIST-1](#)  
**Morris, B.M.**, Agol, E., Davenport, J.R.A., Hawley, S.L. ApJ 857, 1 (2018)
  7. [Spotting stellar activity cycles in Gaia astrometry](#)  
**Morris, B.M.**, Agol, E; Davenport, J.R.A., Hawley, S.L. MNRAS 476 4 (2018)
  6. [Large Starspot Groups on HAT-P-11 in Activity Cycle 1](#)  
**Morris, B.M.**, Hawley, S.L., Hebb, L. RNAAS 2 1 (2018)
  5. [Photometric Analysis and Transit Times of TRAPPIST-1 b and c](#)  
**Morris, B.M.**, Agol, E., Hawley S.L. RNAAS, 2, 1 (2018)
  4. [astroplan: An Open Source Observation Planning Package in Python](#)  
**Morris, B.M.**, Tollerud E., Sipocz B., Deil C., Douglas S.T., Medina J.B., Vyhmeister K., Smith T.R., Littlefair S., Price-Whelan A.M., Gee W.T., Jeschke E. AJ 155, 128 (2018)
  3. [Chromospheric Activity of HAT-P-11: an Unusually Active Planet-Hosting K Star](#)  
**Morris, B.M.**, Hawley S.L., Hebb L., Saraki C., Davenport J.R.A., Isaacson H., Howard A.W., Montet B.T., Agol E., ApJ, 846, 99 (2017)
  2. [The Starspots of HAT-P-11: Evidence for a Solar-like Dynamo](#)  
**Morris, B.M.**, Hebb L., Davenport J.R.A., Rohn G., Hawley S.L., ApJ, 846, 2 (2017)
  1. [Kepler's Optical Secondary Eclipse of HAT-P-7b and Probable Detection of Planet-induced Stellar Gravity Darkening.](#)  
**Morris, B.M.**, Mandell, A.M., & Deming, D. ApJL, 764, L22 (2013)
- n<sup>th</sup> author works:*
21. [Diffuser-assisted Photometric Follow-up Observations of the Neptune-sized Planets K2-28b and K2-100b](#)  
Stefansson G., Li Y., Mahadevan S., Wisniewski J., Hebb L. **Morris, B.M.** et al. (2018, submitted)
  20. [The 0.6-4.55 \$\mu\$ m broadband transmission spectra of TRAPPIST-1 planets](#)  
Ducrot, E., Sestovic, M., **Morris, B.M.**, et al. AJ (2018)

19. [Pre-MAP Search for Transiting Objects Orbiting White Dwarfs](#)  
Wallach, A, **Morris, B.M.**, et al. RNAAS 2 1 (2018)
18. [The Astropy Project: Building an inclusive, open-science project and status of the v2.0 software](#)  
Astropy Collaboration... **Morris, B.M.**, et al. ApJ (2018)
17. [Toward Space-like Photometric Precision from the Ground with Beam-shaping Diffusers](#)  
Stefansson G., Mahadevan S., Hebb L., Wisniewski J, Huehnerhoff J., **Morris, B.M.** et al. ApJ (2017)
16. [Kepler Object of Interest Network II. Photodynamical modelling of Kepler-9 over 8 years of transit observations](#)  
Freudenthal J., von Essen C., Dreizler S., Wedemeyer S., Agol E., **Morris B.M.** et al. A&A 2018
15. [Kepler Object of Interest Network. I. First results combining ground- and space-based observations of Kepler systems with transit timing variations](#)  
von Essen, C, Ofir A., Dreizler S., Agol E., Freudenthal J., Hernández J., Wedemeyer S., Parkash V., Deeg H.J., Hoyer S., **Morris, B. M.** et al. A&A (2018)
14. [The First Post-Kepler Brightness Dips of KIC 8462852](#)  
Boyajian T.S... **Morris B.M.** et al. ApJL (2018)
13. [A seven-planet resonant chain in TRAPPIST-1.](#)  
Luger, R...**Morris B.M.**, et al. Nature Astronomy, 1, id. 0129 (2017).
12. [SDSS J1152+0248: an eclipsing double white dwarf from the Kepler K2 campaign](#)  
Hallakoun N... **Morris B.M.**, et al. MNRAS (2016)

## Observing Experience

- **Principle investigator** on more than 70 half-nights on the Astrophysical Research Consortium (ARC) 3.5 m Telescope at Apache Point Observatory (APO), with experience using many instruments including: ARCES, ARCTIC, Agile, NIFPS
- **Principle investigator** on Keck Observatory/MOSFIRE proposal: “[Probing Giant Planet Formation with MOSFIRE Exoplanet Transmission Spectroscopy](#)”, awarded 2 nights (2014)

## Employment

**Professional Assistantship in Holographic Microscopy** November 2016 – present  
Software consultant position in the UW Department of Oceanography under Prof. Jody Deming and Dr. J. Kent Wallace.

- Developed and maintained the **shampoo** digital holographic microscopy numerical reconstruction toolkit in Python, which was created during my Astrobiology Rotation project.
- This software enables efficient reconstruction of holograms for bacterial motility studies, with applications in life-detection for astrobiology.
- **shampoo** has become the lab-standard reconstruction software for our collaborators in the [SHAMU](#) lab (PI Jay Nadeau, Caltech)

**Consultant: Center for Inquiry Science at the Institute for Systems Biology** 2014-2015  
STEM curriculum consulting for middle school science teachers

- Worked with school science teachers in Renton School District to adapt their curriculum to comply with new state standards as part of the Partnership in Science and Engineering Practices project.
- Collaborated with science teachers at Meeker Middle School (Tacoma, WA) to update a Sun-Moon-Earth system lab as part of the Observing for Evidence of Learning professional development model.

**NASA Goddard Space Flight Center Research Assistantship** Jan 2013 – Aug 2013  
Post-baccalaureate research assistantship with advisor Dr. Avi Mandell at the Goddard Center for Astrobiology.

- Prepared a Python data reduction pipeline for near-infrared differential spectrophotometric observations with Keck/MOSFIRE and Keck/NIRSPEC of transiting exoplanet atmospheres.

<b>Honors And Awards</b>	<ul style="list-style-type: none"> <li>– UW Astronomy Department Graduate Student Research Prize (2018)</li> <li>– Poster competition winner at the NASA Kepler Science Conference IV (earned <a href="#">prize talk presentation</a>)</li> <li>– Pacific Science Center <a href="#">Science Communication Fellow</a> (2016-present)</li> <li>– Chambliss Astronomy Achievement Graduate Student Award Honorable Mention. 225<sup>th</sup> AAS, Seattle, WA (2015), and 222<sup>nd</sup> AAS, Indianapolis, IN (2013).</li> <li>– Astrobiology Fellow, University of Washington, 2013-2014.</li> </ul>
<b>Workshops</b>	<ul style="list-style-type: none"> <li>– Sagan Summer Workshop: “Is There a Planet in My Data? Statistical Approaches to Finding and Characterizing Planets in Astronomical Data.” Caltech, 2016.</li> </ul>
<b>Professional Presentations</b>	<ul style="list-style-type: none"> <li>– <b>Plenary talk:</b> “<a href="#">The Activity Cycle of HAT-P-11.</a>” Cool Stars 20. Boston, MA. July 31, 2018.</li> <li>– Poster: “<a href="#">The Active Latitudes of HAT-P-11</a>” Kepler &amp; K2 Science Conference IV, Mountain View, CA. June 19, 2017 (poster competition prize winner!)</li> <li>– Contributed talk: “The Active Latitudes of HAT-P-11.” Northwest Astronomy Meeting 2016. Bellingham, WA. October 29, 2016.</li> <li>– Contributed talk: “<a href="#">astroplan: Observation Planning for Astronomers.</a>” Python in Astronomy Conference 2016. Seattle, WA. March 25, 2016.</li> <li>– Poster: “<a href="#">Exoplanet Transmission Spectroscopy in the Near-Infrared with Keck/MOSFIRE.</a>” 225<sup>th</sup> American Astronomical Society Meeting. Seattle, WA. January 6, 2015.</li> <li>– Poster: “<a href="#">Kepler’s Optical Secondary Eclipse of HAT-P-7b and Probable Detection of Planet-Induced Stellar Gravity Darkening.</a>” Second Kepler Science Conference, NASA Ames Research Center, Mountain View, CA. November 6, 2013.</li> </ul>
<b>Teaching Experience</b>	<ul style="list-style-type: none"> <li>– Course instructor (full teaching responsibilities): ASTR192 Pre-Major in Astronomy Program (Pre-MAP) in Fall 2016, developed <a href="#">open-source Python curriculum</a></li> <li>– Academic mentor ASTR192 Pre-Major in Astronomy Program (Pre-MAP) in Fall 2015</li> <li>– Instructor of UW Astro/Phys Python Bootcamp, 2016 (and co-instructor in 2015)</li> <li>– Teaching assistant for ASTR150 The Planets (three quarters) and ASTR101 Intro Astronomy (one quarter).</li> </ul>
<b>Mentorship</b>	<ul style="list-style-type: none"> <li>– 2014-present: Formed the Search for Planets Around post-Main Sequence stars (SPAMS) research group with five undergraduates in the University of Washington’s Pre-Major in Astronomy Program (<a href="#">Pre-MAP</a>), which searches for transiting planetary material orbiting white dwarfs</li> <li>– 2015-2016: Academic mentor (paid position) for Pre-MAP Cohort 11</li> </ul>
<b>Public Outreach</b>	<ul style="list-style-type: none"> <li>– Co-founder and co-host of over forty events of the Seattle satellite branch of Astronomy on Tap (2015-present).</li> <li>– Active <a href="#">Science Communication Fellow</a> at the Pacific Science Center</li> <li>– Given several Seattle-area public science talks at the Seattle Astronomical Society, Boeing Astronomical Society</li> </ul>
<b>Press</b>	<ul style="list-style-type: none"> <li>– Feature article: “<a href="#">Counting Starspots</a>”, Astronomy Magazine. January 17, 2018.</li> <li>– Science outreach TwitterBots that I created and maintain have been featured by <a href="#">Popular Mechanics</a> and <a href="#">Vocativ</a></li> <li>– <i>Press release:</i> “<a href="#">NASA-funded Program Helps Amateur Astronomers Detect Alien Worlds</a>”. NASA Goddard Space Flight Center, Greenbelt, Md. September 4, 2013.</li> </ul>