

Education

Ph.D., Astronomy , University of Arizona, Tucson, AZ Dissertation: “Adaptive Optics for Imaging Planetary Systems”	2015
M.S., Astronomy , University of Arizona, Tucson, AZ	2012
B.S. Astrophysics & Physics , Univ. of Minnesota, Minneapolis, MN Summa cum laude with Honors in Astrophysics; Mathematics Minor	2009

Research Experience

Staff Scientist Jet Propulsion Laboratory, Pasadena, CA	2017+
• Nancy Grace Roman Space Telescope Coronagraph Instrument ○ Instrument Scientist ○ Community Participation Program Co-Chair ○ Instrument Technologist ○ Project Science Team Member • Habitable Worlds Observatory Mission Concept ○ Project Science Team member • Exoplanet Exploration Program Coronagraph Technology Roadmap • Arcsecond Space Telescope Enabling Research in Astrophysics ○ PI of JPL grant funding the JPL operations team and the MIT/JPL exoplanet science team	2025+ 2023+ 2019 – 2025 2017+ 2025+ 2023 2019 – 2021
Postdoctoral Researcher Stanford University Physics Department, Stanford, CA	2015 – 2017
• Gemini Planet Imager ○ Assessed performance of GPI adaptive optics system and identified areas for targeted improvement; supported GPI operations.	

- Adaptive Optics for Large Binocular Telescope & MMT
 - Assisted integration and test; implemented non-common path aberration mitigation; advised observers during program planning and execution.
- High-contrast imaging survey of debris disk-hosting stars for disk-sculpting planets; discovered planet-mass companion HD 106906 b
- Placed limits on accretion disks surrounding brown dwarf companions to nearby stars using near-IR photometry

Publications

Peer reviewed papers, first author

1. **Bailey, V. P.;** Meshkat, T.; Reiter, M.; Morzinski, K.; Males, J.; Su, K. Y. L.; Hinz, P. M.; Kenworthy, M.; Stark, D.; Mamajek, E.; Briguglio, R.; Close, L. M.; Follette, K. B.; Puglisi, A.; Rodigas, T.; Weinberger, A. J.; and Xompero, M. *HD 106906 b: A Planetary-mass Companion Outside a Massive Debris Disk*. *ApJ*, 780, L4 (2014). [ADS](#)
2. **Bailey, V. P.;** Hinz, P. M.; Currie, T.; Su, K. Y. L.; Esposito, S.; Hill, J. M.; Hoffmann, W. F.; Jones, T.; Kim, J.; Leisenring, J.; Meyer, M.; Murray-Clay, R.; Nelson, M. J.; Pinna, E.; Puglisi, A.; Rieke, G.; Rodigas, T.; Skemer, A.; Skrutskie, M. F.; Vaitheeswaran, V.; and Wilson, J. C. *A Thermal Infrared Imaging Study of Very Low Mass, Wide-separation Brown Dwarf Companions to Upper Scorpius Stars: Constraining Circumstellar Environments*. *ApJ*, 767, 31 (2013). [ADS](#)

SPIE Conference proceedings, first author

1. **Bailey, V. P.;** Bendek, E.; Monacelli, B.; Baker, C.; Bedrosian, G.; Cady, E.; Douglas, E. S.; Groff, T.; Hildebrandt, S. R.; Kasdin, N. J.; Krist, J.; Macintosh, B.; Mennesson, B.; Morrissey, P.; Poberezhskiy, I.; Subedi, H. B.; Rhodes, J.; Roberge, A.; Ygouf, M.; Zellem, R. T.; Zhao, F.; Zimmerman, N. T., *Nancy Grace Roman Space Telescope Coronagraph Instrument Overview and Status*. In *Techniques and Instrumentation for Detection of Exoplanets XI*, Proc. SPIE, vol. 12680, p. 126800T (2023) [ADS](#)
2. **Bailey, V. P.;** Bottom, M.; Cady, E.; Cantalloube, F.; de Boer, J.; Groff, T.; Krist, J.; Millar-Blanchaer, M. A.; Vigan, A.; Chilcote, J.; Choquet, E.; De Rosa, R. J.; Girard, J. H.; Guyon, O.; Kern, B.; Lagrange, A.-M.; Macintosh, B.; Males, J. R.; Marois, C.; Meshkat, T.; Milli, J.; N'Diaye, M.; Ngo, H.; Nielsen, E. L.; Rhodes, J.; Ruane, G.; van Holstein, R. G.; Wang, J. J.; Xuan, W. J., *Lessons for WFIRST CGI from ground-based high-contrast systems*. In *Space Telescopes and Instrumentation 2018: Optical, Infrared, and Millimeter Wave*, Proc. SPIE, vol. 10698, p. 10698P (2018). [ADS](#)

3. **Bailey, V. P.;** Poyneer, L. A.; Macintosh, B. A.; Savransky, D.; Wang, J. J.; De Rosa, R. J.; Follette, K. B.; Ammons, S. M.; Hayward, T.; Ingraham, P.; Maire, J.; Palmer, D. W.; Perrin, M. D.; Rajan, A.; Rantakyro, F. T.; Thomas, S.; and Veran, J.-P. *Status and performance of the Gemini Planet Imager adaptive optics system*. In Adaptive Optics Systems V, Proc. SPIE, vol. 9909, p. 99090V (2016). [ADS](#)
4. **Bailey, V. P.;** Hinz, P. M.; Puglisi, A. T.; Esposito, S.; Vaitheeswaran, V.; Skemer, A. J.; Defrere, D.; Vaz, A.; and Leisenring, J. M. *Large binocular telescope interferometer adaptive optics: on-sky performance and lessons learned*. In Adaptive Optics Systems IV, Proc. SPIE, vol. 9148, p. 914803 (2014). [ADS](#)
5. **Bailey, V. P.;** Vaitheeswaran, V.; Codona, J.; Hinz, P.; Durney, O.; Esposito, S.; Pinna, E.; and Puglisi, A. *Characterization of synthetic reconstructors for the pyramid wavefront sensor unit of LBTI*. In Adaptive Optics Systems II, Proc. SPIE, vol. 7736, p. 77365G (2010). [ADS](#)

Peer reviewed papers, second author

1. Llop-Sayson; **Bailey, V.P.;** Hom, J.; Krist, J.; Mennesson, B.; Hasler, S.; Greenbaum, A.; Riggs, A. J. E.; Bryden, G.; *Roman coronagraph simulations of exozodi observations in the presence of wavefront errors*, JATIS, 11, 045009 (2025). [ADS](#)
2. Riggs, A. J. E.; **Bailey, V. P.;** Moody, D.; Balasubramanian, K.; Basinger, S. A.; Belikov, R.; Bendek, E.; Debes, J.; Dube, B. D.; Gersh-Range, J.; Groff, T. D.; Kasdin, N. J.; Mennesson, B.; Monacelli, B.; Moore, D. M.; Ruane, G.; Sandhu, J.; Shi, F.; Sidick, E.; Siegler, N.; Sirbu, D.; Trauger, J.; Weisberg, C. L.; White, V. E.; Wilson, D. W.; Wilson, R. C.; Yee, K. Y.; Zimmerman, N. T.; *Flight masks of the Roman Space Telescope Coronagraph Instrument*; JATIS, 11, 021403 (2025). [ADS](#)
3. Tallis, M.; **Bailey, V. P.;** Macintosh, B.; Poyneer, L. A.; Ruffio, J.-B.; Hayward, T.; Rantakyro, F. T.; Chilcote, J. K.; Savransky, D.; *Effects of mirror seeing on high-contrast adaptive optics instruments*, JATIS, 6, 015002 (2020). [ADS](#)
4. Meshkat, T.; **Bailey, V. P.;** Su, K. Y. L.; Kenworthy, M. A.; Mamajek, E. E.; Hinz, P. M.; and Smith, P. S. *Searching for Planets in Holey Debris Disks with the Apodizing Phase Plate*. ApJ, 800, 5 (2015). [ADS](#)
5. Meshkat, T.; **Bailey, V. P.;** Rameau, J.; Bonnefoy, M.; Boccaletti, A.; Mamajek, E. E.; Kenworthy, M.; Chauvin, G.; Lagrange, A.-M.; Su, K. Y. L.; and Currie, T. *Further Evidence of the Planetary Nature of HD 95086 b from Gemini/NICI H-band Data*. ApJ, 775, L40 (2013). [ADS](#)
6. Currie, T.; **Bailey, V. P.;** Fabrycky, D.; Murray-Clay, R.; Rodigas, T.; and Hinz, P. *High-contrast 3.8 μm Imaging of the Brown Dwarf/Planet-mass Companion to GJ 758*. ApJ, 721, L177 (2010) [ADS](#)

Full list of refereed papers and SPIE proceedings: [ORCID 0000-0002-5407-2806](#)