Savannah R. JACKLIN

CONTACT INFORMATION

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EDUCATION

Vanderbilt University, Astrophysics, Nashville, Tennessee, USA
Ph.D., Astrophysics, Aug 2017 – May 2020
Thesis Topic: "Using the UKIRT Microlensing Survey as a Pathfinder for WFIRST"
Thesis Advisor: Keivan G. Stassun

Fisk University, Physics, Nashville, Tennessee, USA
M.A., Physics, Aug 2015 – May 2017
Thesis Topic: "Detecting Transiting Exoplanets with the Large Synoptic Survey Telescope"
Thesis Advisor: Keivan G. Stassun

Villanova University, Villanova, Pennsylvania, USA
B.S., Major: Astronomy & Astrophysics, Minor: Physics Aug 2011 – May 2015

PAPERS

1. "Transiting Planets with LSST. III: Detection Rate per Year of Operation"
   Jacklin, Savannah R., Lund, M.B., Pepper, J., Stassun, K.G., 2017, AJ, 153, 186
2. "Transiting Planets with LSST. II. Period Detection of Planets Orbiting 1 $M_{\odot}$ Hosts"
   Jacklin, Savannah R., Lund, M.B., Pepper, J., Stassun, K.G., 2015, AJ, 150, 1
3. "Spitzer Parallax of OGLE-2018-BLG-0596: A Low-mass-ratio Planet around an M Dwarf"
   Jung, Y.K., 62 authors, **Jacklin, Savannah R.**, et al. 2019, AJ, 158, 28
4. "White Paper: The Scientific Context of WFIRST Microlensing in the 2020s"
   Yee, J. C., 14 authors, **Jacklin, Savannah R.**, et al. 2019, Science White Paper submitted to the Astro2020 Decadal
5. "White Paper: Masses and Distances of Planetary Microlens Systems with High Angular Resolution Imaging"
   Bhattacharya, A., 17 authors, **Jacklin, Savannah R.**, et al. 2019, Science White Paper submitted to the Astro2020 Decadal
6. "KMT-2016-BLG-2052L: Microlensing Binary Composed of M Dwarfs Revealed from a Very Long Timescale Event"
   Han, C., 27 authors, **Jacklin, Savannah R.**, 2018, ApJ, 865, 1
7. "UKIRT-2017-BLG-001Lb: A giant planet detected through the dust"
   Shvartzvald, Y., Calchi Novati, S., Gaudi, B. S., Bryden, G., Nataf, D. M., Penny, M. T., Beichman, C., Henderson, C. B., **Jacklin, Savannah R.** et al. 2018, ApJ Letters, 857, L8
8. " KMT-2016-BLG-2052L: Microlensing Binary Composed of M Dwarfs Revealed from a Very Long Time-scale Event"
   Han, C., 27 authors, **Jacklin, Savannah R.**. 2018, ApJ, 865, 14
9. "White Paper: Exoplanetary Microlensing from the Ground in the 2020s"
   Yee, Jennifer C., 13 authors,**Jacklin, Savannah R.** et al. 2018
10. "OGLE-2017-BLG-0173Lb: Low Mass-Ratio Planet in a "Hollywood" Microlensing Event"
    Hwang, K.-H., 33 authors, **Jacklin, Savannah R.**, et al. 2018, AJ, 155, 1
11. "OGLE-2016-BLG-0613LABb: A Microlensing Planet in a Binary System"
    Han, C., 35 authors, **Jacklin, Savannah R.**, et al. 2017, AJ 154, 6

12. "OGLE-2016-BLG-1190Lb: First Spitzer Bulge Planet Lies Near the Planet/Brown-Dwarf Boundary", Ryu, Y.-H., 72 authors, **Jacklin, Savannah R.**, et al. 2017, AJ, 155, 40

Research Interests

- Gravitational microlensing for exoplanet detection, including free-floating planets
- Utilizing large scale surveys, specifically LSST, to detect transiting exoplanets
- Python, Bash, C, C++, and cluster computing in Linux-based environments
- Large scale software pipeline planning, scripting, and development
- Experience in science policy and United States Congressional engagement
- Development and support of business contracts through strong communication skills

Key Collaborations

- MISHAPS Collaboration Co-I(NOAO)
- WFIRST Microlensing Science Investigation Team (MicroSIT)
- United Kingdom Infrared Telescope (UKIRT) Microlensing Team
- Large Synoptic Survey Telescope (LSST) Transients and Variable Stars Collaboration Microlensing Subgroup, Transiting Planets Subgroup

Positions Held

Visiting Graduate Research Fellow (Feb 2019 – Present)
IPAC, California Institute of Technology, Pasadena, CA

Graduate Research Assistant (Aug 2015 – Present)
Department of Physics & Astronomy, Vanderbilt University, Nashville, TN

Graduate Teaching Assistant (Aug 2017 – May 2018)
Department of Physics & Astronomy, Vanderbilt University, Nashville, TN

NASA Jet Propulsion Laboratory Graduate Summer Intern
(June 2017 – Aug 2017; May 2018 – September 2018)
Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA

National Science Foundation REU Intern (May 2014 – Jan 2015)
Department of Physics & Astronomy, Vanderbilt University, Nashville, TN

Undergraduate Teaching Assistant (Aug 2012 – May 2015)
Department of Astronomy & Astrophysics, Villanova University, Villanova, Pennsylvania

Observatory Assistant (Aug 2011 – May 2015)
Department of Astronomy & Astrophysics, Villanova University, Villanova, Pennsylvania

Observation Experience

Cerro Tololo Inter-American Observatory (CTIO) – "Galactic bulge microlensing observations during K2's Campaign 9" (PI: Calen B. Henderson) 1.3m SMARTS telescope – 170 hours

Villanova University Student Research Observatory – "Observational Laboratory I & II – Undergraduate Research" Celestron C14 14-inch telescopes – 80 hours

Presented Talks

May 2019 "Determining the NIR Microlensing Event Rate at $|b| < 2$ with the United Kingdom Infrared Telescope"
Las Cumbres Observatory, Goleta, CA

April 2019 " Using the UKIRT Microlensing Survey as a Pathfinder for WFIRST"
NASA Goddard, Greenbelt, MD

January 2019 "Mu and You: Public Microlensing Analysis Tools and Survey Data"
233rd AAS Meeting, Seattle, WA

August 2018 "Using the UKIRT Microlensing Survey as a Pathfinder for WFIRST"
WFIRST Tag-up, NASA Jet Propulsion Laboratory, Pasadena, CA

August 2018 "Using the UKIRT Microlensing Survey as a Pathfinder for WFIRST"
IPAC/California Institute of Technology, Pasadena, CA

August 2018 "The UKIRT Microlensing Survey"
NASA Jet Propulsion Laboratory, Pasadena, CA

March 2018 "How Einstein Helps us Find Invisible Planets"
Vanderbilt University Three Minute Thesis Competition, Nashville, TN

Aug 2017 "Mapping the Near-Infrared Microlensing Event Rate with UKIRT"
NASA Jet Propulsion Laboratory , Pasadena, CA

Jun 2016 "How Quickly will LSST Deliver Transiting Exoplanets?"
Emerging Researchers in Exoplanet Science II, Cornell University, Ithaca, NY

Mar 2016 "Finding Exoplanets with LSST"
California Institute of Technology, Pasadena, California

Jan 2016 "Period Recoverability of Exoplanets Using LSST: A Yearly Yield Analysis"
225^{th} AAS Meeting, Kissimmee, FL

Apr 2015 "Exoplanets with LSST II. Period detection of Planets Orbiting 1 Solar Mass Hosts"
Colloquium at Villanova University, Villanova, Pennsylvania

Aug 2014 "Using LSST as an Exoplanet Probe"
NSF REU Colloquium Vanderbilt University, Nashville, Tennessee

Conference Posters & N^{th} Author Talks

1. "Mu and You: Public Microlensing Analysis Tools and Survey Data"
Jacklin, Savannah R.
2019, Sagan Summer Workshop

2. "Determining the NIR Microlensing Event Rate at $|b| < 2$ with the United Kingdom Infrared Telescope"
Jacklin, Savannah R., Shvartzvald, Y., Bryden, G., Calchi Novati, S., Stassun, K. G.
2019, Science in Our Own Backyard: Exploring the Galaxy and Local Group with WFIRST

3. "Determining the NIR Microlensing Event Rate at $|b| < 2$ with the United Kingdom Infrared Telescope"
Jacklin, Savannah R., Shvartzvald, Y., Bryden, G., Calchi Novati, S., Stassun, K. G.
2019, 23rd International Microlensing Meeting

4. "Using the UKIRT Microlensing Survey as a Pathfinder for WFIRST"
   Jacklin, Savannah R., Shvartzvald, Y., Bryden, G., Calchi Novati, S., Stassun, K. G.
   2018, Sagan Summer Workshop

5. "WFIRST - UKIRT Microlensing Survey as a Pathfinder"
   Jacklin, Savannah R., Shvartzvald, Y., Bryden, G., Calchi Novati, S.
   2018, AAS Meeting (Abstract 158.05)

6. "Mapping the Near-Infrared Microlensing Event Rate Towards the Galactic Bulge with UKIRT"
   Jacklin, Savannah R., Bryden, G., Shvartzvald, Y., Calchi Novati, S.
   2017, Sagan Summer Workshop

7. "Transiting Planets with LSST: Unique Opportunities and Challenges"
   Lund, M. B., **Jacklin, Savannah R.** Pepper, J., Stassun, K. G.
   2015, 227^{th} AAS Meeting (Abstract 305.04)

8. "A Year-by-Year Analysis of Transiting Exoplanet Detectability Using LSST"
   Jacklin, Savannah R., Lund, M. B., Pepper, J., Stassun, K. G.
   2015, Extreme Solar Systems III

9. "Exploring LSST's Transiting Exoplanet Yield for the Large Magellanic Cloud"
   Lund, M. B., **Jacklin, Savannah R.**, Pepper, J., Stassun, K. G.
   2015, Extreme Solar Systems III

10. "Exoplanets with LSST: Period Recoverability of Transiting Hot Jupiters"
    Jacklin, Savannah R., Lund, M. B., Pepper, J., Stassun, K. G.
    2015, 225^{th} AAS Meeting (Abstract 258.02)

11. "Transiting Planets with LSST: Assessing the Potential for LSST Exoplanet Detection"
    Lund, M. B., Pepper, J., Stassun, K. G., **Jacklin, Savannah R.**
    2015, 225^{th} AAS Meeting (Abstract 423.07)

12. "Into the Darkness: Interstellar Extinction Near the Cepheus OB3 Molecular Cloud"
    Fitzpatrick, E. L., **Jacklin, Savannah R.**
    2014, 223^{rd} AAS Meeting (Abstract 454.34)

Mentoring Experience

- **Informal Microlensing Mentor** to Naylynn Tañón, an undergraduate student who overlapped with my time at IPAC/JPL (summer 2018). I helped Naylynn with navigating a professional science work-space and advised her on applications to graduate school.
- **"Bridge Buddy" Mentor** to Samuel Dunham, a Physics Master's student in the Fisk-Vanderbilt Masters-to-PhD Bridge Program (Aug 2016 – Dec 2017). I helped Sam navigate his first year of graduate school as a peer-to-peer mentor, suggest class scheduling, and help guide hierarchical research questions.
- **High School Student Mentor** to a young woman attending Waldwick High School in Waldwick, NJ who is interested in attending college for astrophysics.

Professional Workshops

July 2019 Sagan Summer Workshop
California Institute of Technology

Oct 2018 Federal STEM Policy and Advocacy: An Inside the Beltway Look
Washington, D.C.

Aug 2018 Sagan Summer Workshop
California Institute of Technology

Aug 2017 Sagan Summer Workshop
California Institute of Technology

Feb 2017 21st International Microlensing Conference & Workshop
California Institute of Technology

Jun 2016 Communicating Science National Workshop for Graduate Students
Harvard University

Professional and Academic Affiliations

- American Astronomical Society (AAS): 2012–Present
- Sigma Xi Scientific Research Society: 2013–2015

Scholarships, Fellowships, & Competitive Awards

Graduate

- IPAC Visiting Graduate Research Fellowship (February 2019-August 2019)
- Vanderbilt Three Minute Thesis Competition Finalist (March 2018)
- Graduate Assistance in Areas of National Need Fellowship (2016–2017)
- Communicating Science National Workshop Sponsorship (2016)
- Sagan Workshop Travel Grant (2016, 2017)
- Emerging Researchers in Exoplanet Science Travel Grant (2016)

Undergraduate

- Jason A. Cardelli Memorial Award for Undergraduate Research (2015)
- Sigma Xi Poster Award

In the Media

- **Starts with a Bang Podcast: Featured Guest** (2019)
`https://soundcloud.com/ethan-siegel-172073460/starts-with-a-bang-43-gravitational-microlensing`
- **Pheatured Scientist: Phuture Doctors** (2018)
`https://phuturedoctors.com/featured-scientist/009`
- **Astrobites** undergraduate author (2015)
`https://astrobites.org/2015/09/11/ur-17-finding-transiting-planets-with-lsst/`
- **Villanova: Dean's Desk Student Spotlight** (2014)
`http://www1.villanova.edu/content/villanova/artsci/newsevents/publications/PublicationsArchive/_jcr_content/pagecontent/download_1/file.res/Dean's%20Des%20Fall%202014.pdf`

Public Outreach & Scientific Service

- **Participant in WFIRST Day on the Hill 2019** on behalf of Vanderbilt University: Spoke with the offices of various Congressional representatives in Washington, D.C. about the importance of funding WFIRST, and its role within the science policy goals of the University.
- **Head of Astrophysics Colloquium Series** at Vanderbilt University: Leader of astronomy colloquium series where we investigate and study the most recent published papers in the field.

- **Astronomy on Tap: Los Angeles** Volunteer with California Institute of Technology: Engaged in various public outreach events associated with the University and helped answer attendee astronomy questions.
- **Astronomy Library Exhibit Curator** at Vanderbilt University: In charge of curating a Vanderbilt University Library exhibit on Edward Emerson Barnard, a Vanderbilt-trained astronomer known in part for his astrophotography of solar eclipses.
- **Dyer Observatory** Volunteer with Vanderbilt University: Directly engaged with the general public during open house events describing basic astronomical objects and concepts and fielding questions.
- **Blue Key Society Tour Guide** at Villanova University: Official volunteer tour guide for the University and ambassador to the Astronomy Department.
- **President of the Villanova Astronomical Society**: Leader of the University's oldest club and organizer of the yearly group observing and tour trip to Green Bank, West Virginia and the Green Bank Telescope.