

# Jessica Schonhut-Stasik, M.Sc.

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## SUMMARY

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### Career Goals:

- Accelerate discoveries in astronomy by researching novel approaches to Galactic Archaeology using multiple methods to enable precision measurements.
- Continue interdisciplinary research in inclusion, diversity, equity, and accessibility (IDEA) with a focus on the marginalized groups in astronomy, such as gender and disability; Focus on investigating the needs and experiences of neurodiverse students in astronomy and create evidence-based, qualitative research to support the needs of this under-served population.
- Support community understanding of astronomy through communication, outreach, education, and mentoring students at all levels.
- Support marginalized groups in astronomy through broader efforts in IDEA by sculpting innovations in science policy and pedagogy, broadening the horizon for the next generation.

### Astronomy Research Goals:

- Continue to observe and analyse large samples of red giant stars in the Milky Way and further afield to investigate Galactic formation and evolution.
- Investigate the statistical distribution of binary and multiple star systems in evolved star populations, to further our understanding of star and planet distributions in the Galaxy.
- Investigate the synergy of different observatories, combining space-based observations (i.e., *Kepler*, *K2*, *Gaia*, and *Roman*) with ground-based observations (i.e., APOGEE, Robo-AO, and targeted campaigns on telescopes like Keck).
- Continue to produce accessible and transparent data and analysis products for scientists, students and the public.

## EDUCATION

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2020 — Present	Doctoral Candidate of Astronomy at <b>Vanderbilt University</b>	(GPA: 3.9/4.0)
<i>Thesis Advisor:</i>	Keivan G. Stassun	
<i>Thesis Topic:</i>	Galactic Archaeology in a Large Sample of Evolved Stars, Exploring Multiple Parameter Spaces and a Multi-Method Approach.	
2019	M.Sc (Astronomy) at <b>University of Hawai‘i (at Manoa)</b>	(GPA: 3.8/4.0)
2017	B.Sc (Year 3) at <b>The Open University</b> <i>summa cum laude</i>	(1st Class)
2015	B.Sc (Years 1, 2) at <b>University of Hertfordshire</b> <i>summa cum laude</i>	(1st Class)

Jessica is a fellow of the Neurodiversity Inspired Science and Engineering Program hosted by the Frist Center for Autism and Innovation at Vanderbilt University. This program will provide a professional certificate upon Ph.D. graduation.

Prior to 2015 Jessica graduated with a Higher Diploma in Music Performance (specializing in vocals) from the Brighton Institute for Modern Music (UK), a Diploma in Music Performance and Business from the Academy of Contemporary Music (UK), and A Levels in Law, Critical Thinking, Further Mathematics, Physics, Textiles, English Literature and Photography (UK). She spent roughly 5 years as a professional photographer and musician.

## CURRENT EMPLOYMENT

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2022 **Project and Communications Coordinator**, Frist Center for Autism, Nashville, TN

*Communications Responsibilities:* All communications duties including conference facilitation and organization, webinar and talk organization and moderation, website and social media upkeep, board and committee meetings for the College Autism Network. Mentoring and engaging with neurodiverse individuals at all career stages.

*Project Responsibilities:* Overseeing the The Autism Self-advocacy Center for Equity and Neurodiversity in Engineering (A-SCENE) Project, an NSF Engineering Education and Centers funded engineering grant to create a comprehensive and fully interconnected system of programs and supports for neurodiverse students and create and disseminate a national neurodiversity in higher education playbook.

Organization and communication with neurodiversity consultants, collection of resources and research.

2022 **Web Designer and Grant Writer**, Aloha 'Ilio Dog Rescue, HI

2021 **Grant Writer**, Maunakea Scholars Program, HI

2019 **Telescope System Specialist**, UKIRT Observatory, Maunakea, HI

*Responsibilities:* Running queue-based observations for the United Kingdom Infrared Telescope on Maunakea Hawai'i. Troubleshooting, problem-solving, and basic engineering of facility, including the telescope and multiple instruments. Corresponding with PIs and reducing observed data.

## SCIENCE PUBLICATIONS

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**H-Index = 3; Total Citations = 38**

### First-Author Publications

**Schonhut-Stasik, J. S.**, Stassun, K. G., et al. 2023, *The APO-K2 Catalog. III. The Companion Stars and Statistical Analysis of Multiplicity in Evolved Stars*, ApJ (In Prep.)

Arcand, K.\*, **Schonhut-Stasik, J. S.\***, Kane, S.\*, Sturdevant, G.\*, et al. 2023, *A Universe of Sound: Processing NASA Data into Sonifications to Explore Participant Response*. Journal of Scientific Communications (In Submission.) \* These authors contributed equally to this work.

**Schonhut-Stasik, J. S.**, Zinn, J, Stassun, K. G., et al. 2023, *The APO-K2 Catalog. I. 7,673 Red Giants with Fundamental Stellar Parameters from APOGEE Spectroscopy and K2 Asteroseismology*, AJ (In Submission.) <https://arxiv.org/pdf/2304.10654.pdf>

**Schonhut-Stasik, J. S.**, Stassun, K. G., 2023, *FluxCT: A Web Tool for Identifying Contaminating Flux in Kepler and TESS Target Pixel Files*, Research Notes of the American Astronomical Society, <https://iopscience.iop.org/article/10.3847/2515-5172/acb936>

**Schonhut-Stasik, J. S.**, Huber, D., Baranec, C., et al. 2020, *ROBO-AO Kepler Asteroseismic Survey. II. Do Stellar Companions Inhibit Stellar Oscillations?*, ApJ, 888, 34. <https://ui.adsabs.harvard.edu/abs/2020ApJ...888...34S>

**Schonhut-Stasik, J. S.**, Baranec, C., Huber, D., et al. 2017, *Robo-AO Kepler Asteroseismic Survey. I. Adaptive Optics Imaging of 99 Asteroseismic Kepler Dwarfs and Subgiants*, ApJ, 847, 97. <https://ui.adsabs.harvard.edu/abs/2017ApJ...847...97S>

### Nth-Author Publications

Warfield, J., Zinn, J., **Schonhut-Stasik, J. S.**, et al. 2023, *The APO-K2 Catalog. II. Accurate Stellar Ages for 7,672 Red Giant Branch Stars Across the Milky Way*. MNRAS, (In Prep.)

Ramos, A., **Schonhut-Stasik, J. S.**, Stassun, K., et al. 2022, *Determining the Habitability of Earth-like Exoplanets Through an Analysis of their Eventual Destruction by Supernova* Research Notes of the American Astronomical Society. <https://iopscience.iop.org/article/10.3847/2515-5172/acbaf9>

Miskovetz, K., Dupuy, T. J., **Schonhut-Stasik, J. S.**, et al. 2022, *Resolving the Multiplicity of Exoplanet Host Stars in Gemini/NIRI Data*, Research Notes of the American Astronomical Society, 6, 8. doi:10.3847/2515-5172/ac488e <https://ui.adsabs.harvard.edu/abs/2022RNAAS...6...8M>

Lamman, C., Baranec, C., Berta-Thompson, Z. K., et al. 2018, *Robo-AO M Dwarf Multiplicity Survey*, APJ <https://ui.adsabs.harvard.edu/abs/2018AAS...23230601L>

Baranec, C., Ziegler, C., Law, N. M., et al. 2016, *Robo-AO Kepler Planetary Candidate Survey. II. Adaptive Optics Imaging of 969 Kepler Exoplanet Candidate Host Stars*, 152, 18. doi:10.3847/0004-6256/152/1/18 <https://ui.adsabs.harvard.edu/abs/2016AJ...152...18B> (\*Under maiden name ‘Schonhut’. Citations = 54).

## PRESENTATIONS

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### Invited Talks

Dyer Observatory “Meet an Astronomer” Series, June 2023. *Galactic Archaeology: The Indiana Jones of Astronomy*. Nashville, US.

Schonhut-Stasik, J. S., 2023, *Neurodiversity in and Educational Setting*, American Astronomical Society Meeting 241, Seattle, US <https://www.jessicastasik.com/neurodiversity-in-an-educational-setting>

### Contributed Talks

Schonhut-Stasik, J. S., Zinn, J, Stassun, K. G., et al. 2023, *The APO-K2 Catalog: Accessing Catalog Products and Ongoing Investigations*, TASC/KASC Meeting, Honolulu, HI, US *Session Talk*.

Schonhut-Stasik, J. S., Zinn, J, Stassun, K. G., et al. 2023, *The APO-K2 Catalog. I. 7,673 Red Giants with Fundamental Stellar Parameters from APOGEE Spectroscopy and K2 Asteroseismology*, American Astronomical Society Meeting 242, Albuquerque, New Mexico, US *Session Talk*.

Arcand, K., Schonhut-Stasik, J. S., Kane, S., Sturdevant, G., et al. 2023, *A Universe of Sound: Processing NASA Data into Sonifications to Explore Participant Response* American Astronomical Society Meeting 242, Albuquerque, New Mexico, US *Poster*.

Schonhut-Stasik, J. S., Stassun, K. G. 2023, *The Frist Center for Autism and Innovation* American Astronomical Society Meeting 241, Seattle, US. *Poster*.

Schonhut-Stasik, J. S., Stassun, K. G. 2023, *FluxCT: A Web Tool for Identifying Contaminating Flux in Kepler and TESS Target Pixel Files* American Astronomical Society Meeting 241, Seattle, US <https://www.jessicastasik.com/flux-contamination-tool> *Poster*.

Schonhut-Stasik, J. S., Stassun, K. G. 2023, *FluxCT: A Web Tool for Identifying Contaminating Flux in Kepler and TESS Target Pixel Files* KASC/TASC Workshop, Leuven, Belgium <https://www.jessicastasik.com/flux-contamination-tool> *Poster*.

Schonhut-Stasik, J. S., Stassun, K. G. 2023, *The APO-K2 Catalog: 8,000 Red Giants with Fundamental Stellar Parameters from APOGEE Spectroscopy and K2 Asteroseismology*, Cool Stars Conference, Toulouse, France. *Poster*.

Schonhut-Stasik, J. S., Zinn, J., Stassun, K., et al. 2022, *The APO-K2 Catalog: 8,000 Red Giants with Fundamental Stellar Parameters from APOGEE Spectroscopy and K2 Asteroseismology*, American Astronomical Society Meeting 240, Pasadena, US <https://ui.adsabs.harvard.edu/abs/2022AAS...24040402S> *Poster*.

Schonhut-Stasik, J. S., 2022, *AstronomerAND: A Podcast Discussing the Intersectionality of Astronomy*, American Astronomical Society Meeting 240, Pasadena, US <https://ui.adsabs.harvard.edu/abs/2022AAS...24034502S> *Poster*.

## SELECT CONFERENCE CONTRIBUTIONS

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### Science Related

<i>Presenter</i> , <b>Kepler/TESS Asteroseismic Science Consortium Meeting</b> , Honolulu, US	2023
<i>Presenter</i> , <b>American Astronomical Society 242th Meeting</b> , Alberquerque, US	2023
<i>Presenter</i> , <b>American Astronomical Society 241st Meeting</b> , Seattle, US	2023
<i>Facilitator</i> , <b>College Autism Summit</b> , Vanderbilt University, TN	2022
<i>Presenter</i> , <b>Kepler/TESS Asteroseismic Science Consortium Meeting</b> , Leuven, Belgium	2022
<i>Presenter</i> , <b>Cool Stars</b> , Toulouse, France	2022
<i>Presenter</i> , <b>American Astronomical Society 240th Meeting</b> , Pasadena, US	2022
<i>Presenter</i> , <b>Sigma Xi Showcase</b> , Virtual	2022
<i>Breakout Room Moderator</i> , <b>Microsoft Autism at Work</b> , Virtual	2021
<i>Attendee</i> , <b>AAS239</b> , Virtual,	2021
<i>Attendee</i> , <b>Stellar Spectroscopy and Astrophysical Parameterization from Gaia to Large Spectroscopic Surveys</b> , Virtual,	2022
<i>Attendee</i> , <b>AAS238</b> , Honolulu, US,	2020
<i>Presenter</i> , <b>Low-Mass Meeting</b> , Hilo, US	2019
<i>Attendee</i> , <b>Extreme Solar Systems 3</b> , Kona, US,	2015
<i>Attendee</i> , <b>National Student Space Conference</b> , Surrey, UK,	2015
<i>Attendee</i> , <b>UKSEDS Asteroid Workshop</b> , Oxford University, UK,	2015
<i>Presenter</i> , <b>South East Physics Network Expo</b> , London, UK,	2014
<i>Panelist</i> , <b>Future Focus 2</b> , Honolulu, US	2017

### Diversity in Science Related

<i>Attendee</i> , <b>SciAcess</b> , Virtual,	2021
<i>Attendee</i> , <b>Women in Data Science</b> , Vanderbilt University, TN,	2021
<i>Attendee</i> , <b>APS-IDEAS Conference</b> , Virtual,	2021
<i>Attendee</i> , <b>ELSI Symposium - Science in Society</b> , Virtual,	2021

### Neurodiversity Related

<i>Attendee</i> , <b>Stanford Neurodiversity Summit</b> , Virtual,	2022
<i>Attendee</i> , <b>College Autism Summit</b> , Virtual,	2021
<i>Attendee</i> , <b>Imagining American National Gathering</b> , Virtual,	2021

## TEACHING & MENTORING

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### Teaching:

<b>Galactic Archaeology *</b>	HISTARS Summer Program (HS) 2023
<b>Python for Astronomy *</b>	HISTARS Summer Program (HS) 2022, 2023
<b>Computational Physics and Astronomy *</b>	University of Hawai'i (UG) 2021
<b>Python Basics *</b>	HISTARS Summer Program (HS) 2018
<b>Aspie Bootcamp: Python +</b>	Frist Center (UG)) Program 2023
<b>Astronomy Tutor for Student Athletes +</b>	Vanderbilt University (UG) 2021
<b>ASTRO101 +</b>	Honoka'a High School and Manoa Academy (HS) 2020

\* indicates courses taught from my own original curriculum, + indicates teaching assistant or tutor.

## Students Advised:

Zilin Dong	Undergraduate Student 2023 - Astronomy
Rebecca Minsley	Graduate Student 2023 - Astronomy
Alex Diefenbach	Undergraduate Student 2023 - Astronomy
Maya Nachega	Undergraduate Student 2023 - Pre-med and Bio-Engineering
Elizabeth Walther †	Undergraduate Student 2023 - Majoring in Economics
Angelu Ramos †	Undergraduate Student 2022 - Majored in Astronomy and Mathematics
Hannah Blue	Undergraduate Student 2021 - Majored in Astronomy
Kimberly Miskovetz †	Undergraduate Student 2020 - Majored in Astronomy
Julia Cordeiro	High School Student 2020
Sydney Kim	High School Student 2018
Faith Sullivan	High School Student 2018
Claire Lamman †	Undergraduate Student 2017
Xavier Tailbit	High School Student 2017

† indicates students who published papers, or presented conference proceedings based on this work.

## ADDITIONAL EMPLOYMENT EXPERIENCE

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2019 — 2022 **Website Designer**, UKIRT Observatory, Maunakea, HI  
2020 — 2021 **Student Researcher**, Vanderbilt University, Nashville, TN  
2019 — 2020 **Student Researcher**, Gemini Observatory, Hilo, HI  
Summer 2019 **Student Researcher**, Institute for Astronomy, Hilo, HI  
2015 — 2017 **Student Intern**, Institute for Astronomy, Hilo, HI  
Summer 2015 **Virtual Reality Engineer**, BAE, Bristol, UK  
Summer 2014 **Process Engineer**, Xerox, Hertfordshire, UK  
2013 — 2015 **Planetarium Operator**, Bayfordbury Observatory, Hertfordshire, UK

## GRANTS AND FUNDING

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**NISE Fellowship** (PhD Fellowship) Frist Center for Autism and Innovation 2021 - Present  
**FAMOUS Travel Grant** (\$1,000) American Astronomical Society 2023  
**Lacy-Fischer Interdisciplinary Research Grant (PI)** (\$7,500) Vanderbilt University 2023  
**Graduate School Travel Grant** (2 x \$500) Vanderbilt University 2021, 2023  
**HISTARS Award** (\$500, \$1,000) University of Hawai'i 2018, 2022  
**Curb Public Scholars Grant** (\$2,000) Curb Center 2021  
**Graduate Student Organization Award** (2 x \$600) University of Hawai'i 2017, 2018  
**Outreach Grant** (\$1,000) Institute of Physics 2015  
**Student Union Grant** (2 x \$500) University of Hertfordshire 2015

## SELECT PUBLIC ENGAGEMENT

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### Ongoing:

*Student Mentor*, **Maunakea Scholars Program**, Hilo, HI, 2016 Onward  
*Co-Facilitator*, **HISTARS Summer Program**, Maui, HI, 2022 Onward  
*Stage Manager and Coordinator*, **Astroday**, Hilo, HI, 2020 Onward

**Past:**

*Public Lecture, Dyer Observatory*, Nashville, TN, 2023  
*Podcast Guest, Square Pegs*, Virtual, 2023  
*Educator, Skype a Scientist*, Virtual, 2020, 2021  
*Podcast Guest, Starts with a Bang*, Virtual, 2020  
*Film Maker and Educator, Manoa Academy*, Virtual, 2020  
*Outreach Ambassador, MKO@Home*, Virtual, 2020  
*Activity Supervisor, He'e Fair*, Hilo, HI, 2019  
*Activity Supervisor, IfA Open House*, Manoa, HI, 2019  
*Activity Supervisor, IfA School Visits*, Hilo, HI, 2018, 2019  
*Student Mentor, HISTARS Summer Program*, Maui, HI, 2018  
*Activity Supervisor, Astrobash*, Waimea, HI, 2018  
*Activity Supervisor, Solar System Walk*, Waimea, HI, 2018, 2019, 2020  
*Judge, Science Fair*, Hilo, HI, 2015, 2016  
*Workshop Leader, Onizuka Day*, Hilo, HI, 2015  
*Activity Supervisor, Astroday*, Hilo and Kona, HI, 2015 — 2020  
*Educator, Journey Through the Universe*, Hilo, HI, 2015  
*Activity Supervisor, Kealakehe Elementary Science Night*, HI, 2015

**LEADERSHIP AND SERVICE**

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**Current:**

**Career Mentoring Fellow**, American Physical Society  
**Webinar Organizer & Moderator**, Frist Center for Autism and Innovation  
**Frist Center Liason Board Member**, College Autism Network Board of Directors  
**Podcast Host**, AstronomerAND  
**Graduate Student Honors Council**, Vanderbilt University  
**College Autism Summit Facilitator**, Vanderbilt University  
**Committee Member for APS-IDEAS Group**, Vanderbilt University  
**American Astronomical Society Astronomy Ambassador**, AAS

**Past:**

<b>Proposal Review Panel - Executive Secretary</b> , NASA ADAP	2023
<b>Conference Proposal Reviewer</b> , College Autism Summit	2023
<b>AAS Peer Review Workshop</b> , AAS Summer Meeting	2023
<b>Outreach Workshop</b> , University of Hawaii	2022
<b>REU and Akamai Group Mentor</b> , Institute for Astronomy	2018, 2019
<b>IfA Women's Lunch Leader</b> , Institute for Astronomy	2017 — 2019
<b>Physics Society Founder and Chairperson</b> University of Hertfordshire	2014
<b>STEM Ambassador</b> , Institute of Physics	2013 — 2015
<b>Astrophysics Ambassador</b> , University of Hertfordshire	2013 — 2015

**HONORS AND AWARDS**

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<b>Chambliss Award Honorable Mention</b> , AAS Summer Meeting	2023
<b>FAMOUS Award</b> , AAS Summer Meeting	2023
<b>Top Prize in Physics and Astronomy Poster Presentation</b> , Sigma Xi Showcase	2022
<b>Dai Ho Chun Award</b> , University of Hawaii Foundation	2018
<b>IfA Outreach Award</b> , University of Hawai'i	2019
<b>Top 10 Undergraduate Women of the Year Award</b> , Rolls Royce	2015
<b>University of Hertfordshire Volunteer Award</b> , University of Hertfordshire	2015

# MEMBERSHIPS AND COLLABORATIONS

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## Professional Society Memberships: († Indicates current memberships)

American Astronomical Society †	Graduate Student Member
American Physical Society †	Graduate Student Member
International Society for Autism Research †	Graduate Student Member
Sigma Xi †	Full Member
Royal Astronomical Society	Fellow
Institute of Physics	Student Member

## Scientific Collaborations:

APOKASC, APOGEE-Kepler Asteroseismic Science Consortium †  
Neurodiversity in Space (PI) †  
Planet Patrol †  
Robo-AO, Robotic Laser Adaptive Optics Instrument  
Neurodiversity in STEM Interdisciplinary Research Group (PI) †  
Sonification World Chat †  
Maunakea Scholars Working Group †  
WriteNOW! Vanderbilt Writing Group †

# SKILLS

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## Packages Created:

*Webtool*, **FluxCT**, 2023.

**FluxCT**: Enabling users to determine potentially contaminating stars in *Kepler* and *TESS* target pixel files.

Web Tool Access: <https://www.jessicastasik.com/flux-contamination-tool>

GitHub repository: <https://github.com/Jesstella/FluxCT>

## Telescope Observation and Reduction:

- Gemini, Maunakea, HI
- Keck (NIRC2), Maunakea, HI
- Subaru, Maunakea, HI
- UKIRT, Maunakea, HI
- UH88 (Robo-AO), Maunakea, HI
- SDSS (APOGEE), Apache Point Obs, NM
- *Kepler* and K2, Space-based
- TESS, Space-based
- Gaia, Space-based

## Programming Languages and Software:

- Python (vim, emacs, git, GitHub)
- SQL
- Blender, Unreal Engine
- Audacity
- LaTeX
- Wordpress, GoDaddy, and Wix
- Adobe Suite including Photoshop
- Intermediate French

### **Skill-Enhancement Workshops:**

- Participant, **Ground and Space Telescopes in the Big Surveys Era**, Albuquerque, NM, US, 2023*
- Vanderbilt Representative, **AAAS Catalyzing Advocacy in Science & Engineering**, DC, US, 2023*
- Participant, **Sigma Xience**, Virtual, US, 2023*
- Blender Course, **Vanderbilt**, Virtual, US, 2023*
- Participant, **Supporting Your Introductory Astronomy Courses**, Seattle, US, 2023*
- Participant, **American Physical Society Science Trust Workshop**, Virtual, 2022*
- Participant, **How to Give Effective Presentations**, Pasadena, US, 2022*
- Participant, **Effective Astronomy Visualizations**, Pasadena, US, 2022*
- Participant, **ComSciCon ATL**, Virtual, 2022*
- Participant, **AAS Astronomy Ambassadors Workshop**, Virtual, 2022*
- Participant, **INSAR Institute Series: Autism and Intersectionality**, Virtual, 2021*
- Participant, **NISE Seminar: Affective Computing**, Virtual, 2021*
- Participant, **MkPy Python Workshop**, Hilo, HI, 2017*