Sarah G. Kane

PhD Student | *Galactic archaeology, stellar spectroscopy, disability advocacy*

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Education

Oct 2023 – present	**PhD**, Astronomy, Institute of Astronomy, University of Cambridge Supervisors: Vasily Belokurov and Stephanie Monty
Aug 2019 – May 2023	**BA**, Physics with Distinction, University of Pennsylvania *summa cum laude* (GPA: 4.0) Thesis Supervisors: Robyn Sanderson & Keith Hawkins

Experience

May 2023 – Aug 2023 & May 2020 – May 2022	**Research Assistant**, Department of Physics and Astronomy, University of Pennsylvania (Supervisor: Bhuvnesh Jain)
May 2022 – Aug 2022	**NSF Research Experience for Undergraduates (REU)**, Department of Astronomy, University of Texas at Austin: "Machine Learning with *Gaia* DR3" (Supervisors: Keith Hawkins and Zachary Maas)

Honors and Awards

2026	Institute of Astronomy **Community Service Award for Public Outreach**
2023	**Marshall Scholarship** (~£150 000, 2023 – 2026) *Awarded to US citizens by the UK government; a PhD studentship supported by the Marshall Aid Commemoration Commission, Trinity College, and the Cambridge Trust.*
	Dean's Scholar, University of Pennsylvania *one of nine graduating students recognized by the College of Arts and Sciences*
	LGBT Alumni Association Student Leadership Award, Penn Spectrum, University of Pennsylvania
2022	**Roy and Diana Vagelos Science Challenge Award** ($63 452, 2022 – 2023) *a full tuition scholarship for the most advanced science undergraduates at the University of Pennsylvania*
	Michael J. McGowan Leadership Scholarship ($3 000), National Organization for Albinism and Hypopigmentation (NOAH)
2020	**Thomas H. Wood Award**, Department of Physics and Astronomy, University of Pennsylvania, *awarded annually to two undergraduates in introductory physics*

Successful Observing Proposals

- **PI:** 10 hours with VLT/UVES, europium-enhanced stars in the Galactic disk (2026)
- **CoI:** 19 hours with VLT/UVES, high precision spectroscopy of the globular cluster NGC 6397 (2026)
- **CoI:** 31 hours with VLT/UVES, follow-up of carbon-enhanced metal-poor stars from *Gaia* BP/RP spectra (2025)
- **CoI:** 17 hours total with VLT/UVES, follow-up of metal-poor, α-poor stars from *Gaia* BP/RP spectra (2025 – 2026)

Teaching Experience

Project Supervision

- Christine Han, Part III (Master's) Astrophysics, University of Cambridge (2024 – 2025)
- Research project for four high school students, University of Pennsylvania (2021 – 2023)

Courses

- **Guest lecturer**, ASTR401: Introduction to Astronomy, New Mexico State University (2026)
- **Co-instructor**, Nonvisual Data Science Workshop Series: introductory Python tutorials designed for blind and low vision learners, supported by a grant from Pandas and NumFOCUS (2024)
- **Co-instructor**, Undergraduate Summer Computing Training: informal computing lessons for summer research students, Department of Physics and Astronomy, University of Pennsylvania (2023)

Professional Activities

- **Referee** for the A&A (x2) and ApJS journals
- IoA, Cambridge: **Chair** of the EDI Committee Inclusion and Fairness Focus Group (2025 – present)
- IoA, Cambridge: **Co-chair** of the LGBTQ+ Focus Group (2025 – present)
- IoA, Cambridge: Member of the International Women's Day Committee (2024)
- Conference organization:
  - **SOC member**, 'Sonification for Research: Techniques, Efficacy, and Applications (SoniTEA)', Flatiron Institute Center for Computational Astrophysics (Oct 2025)
  - **SOC member**, NAM 2025 session 'Unseen Astronomy: Multi-sensory approaches for research, communication and education' (Jul 2025)
- Memberships:
  - Dark Energy Spectroscopic Instrument (DESI) (since 2025)
  - Phi Beta Kappa (liberal arts and sciences academic honor society) (since 2022)
  - Sonification World Chat (since 2021)

Talks

10 invited and 9 contributed conference talks and seminars; one poster presentation (* denotes invited)

Seminars

- *ARI Colloquium, University of Heidelberg (Oct 2026)
- Galaxy Formation Lunch Talk, University of California, Berkeley (Oct 2026)
- *Lunch Seminar, Carnegie Observatories (Oct 2026)
- *After Sloan-V, Atomic Genesis Explorer Meeting (Sep 2026)
- *Stellar Populations Journal Club, Liverpool John Moores University (Mar 2026)
- *Astrophysics Seminar, University of Surrey (Jan 2026)
- *Astronomy Journal Club, Rutgers University (virtual) (Dec 2025)
- *Astronomy Lunch Talk, University of Pennsylvania (Oct 2025)
- Tea Time Talk, Geneva Observatory (Mar 2025)
- Wednesday Seminar, Institute of Astronomy, University of Cambridge (Nov 2024)
- *Astronomy Lunch Seminar, Newcastle University (May 2024)

Conferences

- *'APOGEE's Galactic Odyssey: Reflecting on the APOGEE Survey and Steve Majewski's Contributions', Teruel, Spain (Aug 2026)
- '*Ordo ab chao*: Star formation and chemistry from $z > 10$ to local relics', Kavli Science Focus Meeting, Cambridge, UK (Feb 2026)
- 'Bridging scales: star clusters and their host galaxies from the Local to the high-z Universe', Matera, Italy (Sep 2025)
- 'The Role of Star Clusters in Star Formation from Local to Galaxy Scales', National Astronomy Meeting, Durham, UK (Jul 2025)
- 'Unseen Astronomy: Multi-sensory approaches for research, communication and education', National Astronomy Meeting, Durham, UK (Jul 2025)
- *'A Universe of Sound: Astrophysical Data Sonification Workshop', Harvard & Smithsonian CfA (Oct 2024)
- 'Connecting the Milky Way with its parent populations at the dawn of time', National Astronomy Meeting, Hull, UK (Jul 2024)
- 'Designing for diversity in astronomy and geophysics', National Astronomy Meeting, Hull, UK (Jul 2024)
- 241st Meeting of the American Astronomical Society (poster), Seattle, WA, USA (Jan 2023)

Advocacy

Policy and Human Rights

- Statement to the UN Human Rights Council on behalf of the Hermansky-Pudlak Syndrome (HPS) Network, in collaboration with the International Centre for Trade and Development (Mar 2026)
- UN Human Rights Engagement Training, UN Office of the High Commissioner for Human Rights and UN Independent Expert on the enjoyment of human rights by persons with albinism (2026)
- Statement to the UN Human Rights Council on behalf of the US and Canadian National Organization for Albinism and Hypopigmentation (NOAH) and the HPS Network, in collaboration with the World Organization Against Torture (Mar 2025)

Accessibility in Science

- Invited talk, Equity and Inclusion Journal Club, Rutgers University (Oct 2025)
- EDI Seminar, Institute of Astronomy, University of Cambridge (Mar 2025)
- Invited panelist, 'Listen to the Universe with the Chandra X-Ray Observatory', US Library of Congress & National Library Service for the Blind and Print Disabled (Feb 2025)
- Subject Matter Expert, NASA Universe of Learning; note that this position was terminated shortly after I took the role due to budget cuts (2024 – 2025)
- Invited panelist, 'Sonification: Why Multi-modal Science is the Future', arXiv Accessibility Forum 2024 (Sep 2024)
- Invited panelist, 'Whose responsibility is it to make content accessible?', arXiv Accessibility Forum 2023 (Apr 2023)
- Co-founder, STEM Connections, National Organization for Albinism and Hypopigmentation (2021 – 2023)

Academic Disability Studies

- 'In Case of Utopia: Curing Disability from Kafka to *Star Trek*', article accepted for publication in *The Minnesota Review* (2026, upcoming)
- Invited panelist, 'CRISPR, Gene Editing, and Metamorphosis', Kafka & Disability Series, Bodleian Library, University of Oxford (Jun 2024)

Selected Outreach and Press

Outreach and Community Engagement

- Invited talk on data sonification, Peterborough Astronomical Society (Jun 2026)
- 'Made of stardust: how stars populate the periodic table', Pint of Science, Cambridge (May 2026)
- 'Europium: the coolest element you've never heard of', public talk, Institute of Astronomy, Cambridge (Dec 2025)
- 'Are white dwarfs stars?: A debate', public talk with Katherine Kauma, Institute of Astronomy, Cambridge (Mar 2025)
- 'Hearing the Unseen Universe', public talk, Institute of Astronomy, Cambridge (Feb 2024)
- Invited panelist, 'Sonification and the Future of Generative Music', SXSW (Mar 2023)
- Invited panelist, Women in STEM Symposium, University of Pennsylvania (Mar 2023)
- Science Olympiad Urban Initiative, University of Pennsylvania: extracurricular science programming in Philadelphia public schools; co-chair (2022 – 2023) and volunteer (2019 – 2023)
- Organizer, field trip for students from the Overbrook School for the Blind to the Department of Physics and Astronomy, University of Pennsylvania (Dec 2021)

Press

- Interviewed in episode 3 of 'Expedition sound' (podcast), *Space wonders – an ESA podcast collection* (Aug 2026)
- Featured in 'How sounds can turn us on to the wonders of the universe', *MIT Technology Review* (Jun 2023)
- Invited guest, 'Episode 153 – Let's Meet Sarah Kane' (podcast), *Limitless: The Blind Beginnings Podcast* (2023)
- 'Who, What, Why: Sarah Kane finds ways to represent data as sound', *Penn Today* (Mar 2023)
- Featured in 'Audio Astronomy Unlocks a Universe of Sound', *Scientific American* (Jan 2023)
- Invited guest, 'Episode 60: An Ear for Education (Sonification 2)' (podcast), *Astro[sound]bites* (Aug 2022)
- 'Disability Advocacy and the Sciences', *Penn OMNIA* (Jan 2022)

Publications

A full list of my publications is available in this ADS library. Total citation count = 362.

5 first and co-first author publications (2024 – 2026)

5. **S. G. Kane**, S. Monty, M. McKenzie et al. – *Snapshots of r-process production in the Milky Way disk*, 2026, submitted to MNRAS (arXiv:2609.36013)
4. **S. G. Kane**†, Z. Kaczmarek†, A. Garner, S. Buder & S. Monty – *A value-added catalogue of neural network-based europium abundances for GALAH DR4*, 2026, MNRAS, 547, 2
3. **S. G. Kane**, V. Belokurov, S. Monty et al. – *On the connection between nitrogen-enhanced field stars and the Galactic globular clusters*, 2026, MNRAS, 546, 1
2. **S. G. Kane**, V. Belokurov, M. Cranmer et al. – *The ones that got away: chemical tagging of globular cluster-origin stars with Gaia BP/RP spectra*, 2025, MNRAS, 536, 3
1. K. K. Arcand†, J. S. Schonhut-Stasik†, **S. G. Kane**†, G. Sturdevant† et al. – *A Universe of Sound: processing NASA data into sonifications to explore participant response*, 2024, Frontiers in Communication

† these authors contributed equally to this work

9 co-authored publications (2024 – 2026)

9. S. Monty, Z. Yuan, T. Matsuno et al. (including **S. G. Kane**) – *HR-GO III: Homogeneous abundances in the LMS-1 stream, NGC 5053, and NGC 5024 – chemical signatures of an ultra-faint dwarf galaxy*, 2026, submitted to MNRAS
8. H. Y. Zhang, V. Belokurov, J. L. Sanders et al. (including **S. G. Kane**) – *Orbital migration and heating history of the Galactic disc: a transition between the bimodal discs*, 2026, MNRAS, 551
7. J. Schonhut-Stasik, T. Sgouros, K. Arcand et al. (including **S. G. Kane**) – *Accessing the Universe via Algorithm: Automating alt-text Generation with NASA data and AI*, 2026, in press at Frontiers in Artificial Intelligence
6. R. D. Shepherd, C. M. Harrison, G. Caselton et al. (including **S. G. Kane**) – *Evaluating sonification for effective learning and enjoyable experiences in astronomy*, 2026, submitted to The International Journal of Science Education, Part B
5. R. P. Naidu, P. A. Oesch, G. Brammer et al. (including **S. G. Kane**) – *A Cosmic Miracle: A Remarkably Luminous Galaxy at $z_{\rm spec}$ = 14.44 Confirmed with JWST*, 2026, OJAp, 9
4. E. Y. Davies, V. Belokurov, A. Kravtsov et al. (including **S. G. Kane**) – *Blind source separation of the stellar halo*, 2025, MNRAS, 539, 2
3. A. Ardern-Arentsen, **S. G. Kane**, V. Belokurov et al. – *Predicting metallicities and carbon abundances from Gaia XP spectra for (carbon-enhanced) metal-poor stars*, 2025, MNRAS, 537, 2
2. H. Zhang, V. Belokurov, N. W. Evans et al. (including **S. G. Kane**) – *Observational constraints of radial migration in the Galactic disk driven by the slowing bar*, 2025, ApJL, 983, L10
1. H. Zhang, V. Belokurov, N. W. Evans, **S. G. Kane** & J. L. Sanders – *Kinematics and dynamics of the Galactic bar revealed by Gaia long-period variables*, 2024, MNRAS, 533, 3