

Julia Sisk-Reynes

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Galaxy and black hole mergers – dual active galactic nuclei – black hole accretion – supermassive black hole growth – physics beyond the Standard Model – dark matter – multiwavelength astronomy – strong gravitational lensing – Bayesian modeling – machine learning – current and future instrumentation.

EMPLOYMENT AND RESEARCH

- Sep 2024 – **Postdoctoral Research Associate**
Department of Physics, University of Maryland, Baltimore County, Baltimore, MD
Supervisor: Prof. Adi Foord.
- Sep 2024 – Aug 2026 **Postdoctoral Research Fellow**
Center for Astrophysics | Harvard & Smithsonian (CfA), Cambridge, MA
“Using gravitational lenses as high-resolution X-ray telescopes” (NASA ADAP).
Supervisor: Dr. Daniel Schwartz.
- Jun 2025 – **Co-chair of the *NewAthena* Science Working Group 6 (SWG6) on Cosmology & Fundamental Physics**
Chairs: Dr. Esra Bulbul (MPE, Garching, Germany). Co-chair: Dr. Florian Pacaud (University of Bonn, Germany).

EDUCATION

- Oct 2020 – Jul 2024 **Ph.D. in Astronomy**
Institute of Astronomy (IoA), University of Cambridge, UK
Thesis: “Unveiling fundamental physics with high-resolution X-ray spectroscopy of active galactic nuclei”.
Supervisors: Prof. Christopher Reynolds (University of Maryland, College Park, MD) and Dr. James Matthews (University of Oxford, UK).
- Sep 2016 – Jun 2020 **MPhys (BSc + Master’s) in Physics** (First Class Honours)
The University of Manchester, UK
Master’s thesis: “Building models for the thermal Sunyaev-Zel’dovich effect from analytic and numerical cluster pressure profiles”.
Supervisor: Prof. Scott Kay (University of Manchester, UK).

AWARDED TELESCOPE TIME

- August 2026 **Science & cost PI**, *Chandra* General Observer Program, Cycle 28 – 160 ks.
Target: GraL J065904.1+16290 lensed quasar.
- August 2026 **Science & cost PI**, *Chandra* General Observer Program, Cycle 28 – 100 ks.
Target: DES J2321-463 lensed quasar.
- Jul 2024 **Co-I**, *Chandra* Legacy Program, Cycle 26 – 3 Ms.
Target: Perseus Cluster. PI: Prof. Andrew Fabian.
- Jul 2024 **Co-I**, *Chandra* Legacy Program, Cycle 26 – 120 ks.
Target: Zw2089 cluster. PI: Dr Helen Russell, University of Nottingham, UK.

HONORS

Summer 2023	Flatiron Institute Summer School on Fluid Dynamics Attended a two-week Fluid Dynamics Summer School at the <i>Center for Computational Astrophysics, Flatiron Institute, New York, NY</i> . Attendance sponsored by the Simons Foundation.
Jan 2022	Paul Murdin Prize for the best published paper by a current student From IoA, Cambridge, UK, for Sisk-Reynes et al., 2022, MNRAS, 510, 1
Oct 2020 – Mar 2024	Full Studentship from the UK Science and Technologies Facilities Council To pursue a doctorate in astronomy at the Institute of Astronomy at the University of Cambridge, UK.
Jun 2020	Stellify Award from The University of Manchester Honorary recognition for extracurricular contributions made whilst an undergraduate student from 2016 – 2020.

PRESENTATIONS

May 2022 –	Fourty-two presentations at international conferences, workshops, telescope collaborations, and group meetings. • Type: Invited (22), Contributed (20). • Format: Presential (33), Virtual (9). • Locations: US (13), UK (9), Europe (9), Americas (1), Asia (1). • Per year: 2026 (8), 2025 (11), 2024 (5), 2023 (9), 2022 (9). Selected recent invited presentations:
Aug 2026	Talk for <i>NewAthena</i> SWG6, E1.18, 46 th COSPAR Assembly, Florence, Italy
May 2026	Talk on lensed quasars, MIT Monday Afternoon Talks, MKI, Cambridge, MA
Apr 2026	Colloquium, UMBRELA Dialogues, CfA, Cambridge, MA
Dec 2025	Colloquium, Lin Group Meeting, Hong Kong University
Oct 2025	Talk on behalf of <i>NewAthena</i> SWG6, HEAD/AAS 22 Meeting, St Louis, MO
Oct 2025	Colloquium, Universidad Nacional Autónoma de México, Mexico
May 2025	Talk to the <i>AXIS</i> AGN SWG on an <i>AXIS</i> survey of massive black hole spins
Jan 2025	Colloquium, AGN group at NASA GSFC, Greenbelt, MD
Jun 2024	Talk to axion journal club, Oskar Klein Center, Stockholm University, Sweden
Apr 2024	Talk to the HEA Group, MPE, Garching, Germany

SELECTED ACADEMIC SERVICE

Telescope Allocation Time

2025 – 2026	<i>Chandra</i> Guest Observer program reviewer, Cycles 27 & 28 (4 days, virtual)
Aug 2025	<i>XRISM</i> Guest Observer program reviewer, Cycle 2 (3 days, presential)
Nov 2024	<i>NICER</i> Guest Observer program reviewer, Cycle 7 (5 days, virtual)

Journal paper reviewer

Sept 2025 –	Physical Review D, Physical Review Letters, MNRAS
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Invited speaker at discussion panels in conferences and meetings

Jun 2024	Dark matter in Astrophysical Laboratories workshop Kavli Institute for Cosmology (KICC), Cambridge, UK
Mar 2024	International Women's Day Discussion Panel for undergraduate students Women in Science Society, University of Cambridge, UK

Conference organization

Jul 2024	Local Organizing Committee, IoA 50-year anniversary, IoA, Cambridge, UK
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SKILLS

Programming	Bash, Python, tcl, Unix/Linux
Astronomy software	(Py)XSPEC, Sherpa, CIAO, ds9, SAOTrace
Numerical tools	ALPRO (axion code, advanced level), AREPO (basic level)
Languages	English, Catalan, Spanish

PRESS COVERAGE

May 2023	Athena Press Release on Sisk-Reynes et al., 2023, ApJ, 930, 1
Jun 2022	Chandra Press Release on Sisk-Reynes et al., 2022, MNRAS, 514, 2

STUDENT SUPERVISION

Sep 2025 –	Henry Hiscocks*. Exchange master's student at CfA. Main supervisor.
Sep 2025 –	Charlotte Eades*. Exchange master's student at CfA. Co-supervisor.
Nov 2024 –	Alex Ostridge*. Exchange master's student at CfA. Advisor.
Jun – Aug 2022	Esin Gulhabar. Summer research student at IoA, Cambridge. Advisor.

Research areas: axions, black hole spins, machine learning, X-ray astrometry of lensed quasars.

*denotes student-led or student-contributed publication.

TEACHING AND STUDENT SUPPORT

Oct 2022 – Jun 2023	Mathematics I Supervisor. Emmanuel College, University of Cambridge.
Jan – May 2021	Astrophysical Fluid Dynamics. Trinity College, University of Cambridge.
Sep 2017 – May 2019	Peer Assisted Study Sessions (PASS) Leader, University of Manchester.

SELECTED OUTREACH ACTIVITIES

Jul 2025	Speaker, Spanish Public Observatory (100 attendees), CfA, Cambridge, MA
Feb 2025	Speaker on visit to a bilingual school (100 attendees), Chelsea, MA
Mar 2024	Speaker, Lindemann Trust Science Day (120 attendees), Cambridge, UK
Mar 2023	Speaker, Lindemann Trust Science Day (100 attendees), Cambridge, UK

OTHER RELEVANT TRAINING

Sep 2025	Spins Workshop, Wake Forest University (2 days), Winston-Salem, NC
Feb 2025	3 rd <i>XRISM</i> Community Workshop (3 days), College Park, MD
Jul – Aug 2019	Summer research on direct dark matter searches, Manchester, UK

SELECTED INSTITUTIONAL SERVICE

At the Center for Astrophysics | Harvard & Smithsonian, Cambridge, MA

Apr 2025 – Lead organizer, monthly collaborative discussions, cosmology journal club
Nov 2024 – Organizer, weekly High Energy Astrophysics Division seminar series

At the Institute of Astronomy (IoA), University of Cambridge, UK

Oct 2021 – Apr 2024 Lead organizer, IoA International Women's Day celebration
Responsibilities: keynote speakers, discussion panel (attendees: 100/year).
Oct 2021 – Apr 2024 Lead organizer, Newnham College MCR Seminar Speaker Series
Organized a 4-lecture series on the legacies of slavery (attendees: 70).
Jan 2021 – Oct 2023 Representative at events for the general public and prospective applicants
Oct 2022 – Jun 2023 Representative, Computer Users Committee
Dec 2020 – Mar 2024 Representative for 2020 entry Ph.D. students

At the University of Manchester, UK

Oct 2019 – Jun 2020 Class representative for final-year Physics students
Mar 2017 – Feb 2020 Regular volunteer at events organized by the Physics Outreach Society
Mar 2017 – Jun 2020 Lead committee member, undergraduate Nuclear & Particle Physics Society
Organized monthly seminars and a 4-day trip to CERN (50 attendees).

COLLABORATIONS AND SCIENTIFIC MEMBERSHIP

May 2025 – Co-chair, *NewAthena* SWG6 - Cosmology and Fundamental Physics
May 2025 – Member, *NewAthena* SWG2 - Galaxies and Supermassive Black Holes
Dec 2024 – Member, *AXIS Working Group* on Active Galactic Nuclei
May 2023 – Oct 2024 Member, *STROBE-X Working Group* on Cosmology
Jun 2025 – International Astronomical Union (IAU)
Sep 2024 – American Astronomical Society (AAS)
Sep 2024 – AAS High Energy Astrophysics Division (HEAD)
Sep 2021 – European Astronomical Society (EAS)
Dec 2021 – Jun 2024 Royal Astronomical Society (RAS)