

SANSKRITI DAS

NASA Hubble Fellow at Stanford University

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RESEARCH INTEREST

Broad science goal: gaseous view of the universe – Interstellar, circumgalactic, intragroup and intergalactic medium (ISM, CGM, IGrM, IGM), and galactic outflows

Instruments used

X-ray: *Chandra* (CCD & grating), *XMM-Newton* (CCD & grating), and *Suzaku*

mm: *Atacama Cosmology Telescope*, *South Pole Telescope*, *Planck*

Radio: *Green Bank Telescope*, *Westerbork Synthesis Radio Telescope*, *Very Large Array*

- **Stellar feedback in spiral galaxies:** Connecting X-ray binary population and hot ISM to multiphase ISM at sub-galactic scale - PHANGS-Chandra and PHANGS-XMM collaboration
- **In search of missing baryons and missing metals, a hot gas perspective:**
 - ☐ Demographic survey of hot CGM of individual galaxies in X-ray emission spectroscopy
 - ☐ Warm-hot ionized medium (CGM, IGrM, and IGM) in X-ray absorption spectroscopy
- **Self-similarity of halos, from groups to galaxies:** Sunyaev-Zel'dovich effect through cross correlation of galaxy/group catalogs with CMB foreground maps
- **Missing fuel for star formation in the neutral CGM:** Deep search for diffuse ($10^{16} - 10^{18} \text{ cm}^{-2}$) 21-cm line emission in the CGM of spiral galaxies
- **Tracing Galactic feedback in the hot Galactic halo:** Characterizing thermal, chemical, and turbulent/non-thermal properties of the hot ($\geq 10^{5.5} \text{ K}$) CGM of the Milky Way employing X-ray emission (CCD) spectroscopy and X-ray absorption (grating) spectroscopy

EDUCATION

- Ph.D. (Astronomy) Advisor: Smita Mathur, Co-advisor: Adam Leroy
“Feeding and feedback in galaxy halos: A gastronomical tale of galaxy evolution”
The Ohio State University, USA 2019–2022
- M.S. (Astronomy), The Ohio State University, USA 2017–2019
- M.Sc. (Physics), Indian Institute of Technology Bombay (IIT), Mumbai, India 2015–2017
- B.Sc. (Physics), Presidency University, Kolkata, India 2012–2015

FELLOWSHIPS AND AWARDS

6. [Hubble Fellowship](#) (hosted by Stanford University) 2024–2027
5. [KIPAC Postdoctoral Fellowship](#), Stanford University 2022–2025
4. [Presidential Graduate Fellowship](#), The Ohio State University 2021–2022
3. [Allan K. Markowitz Award in Observational Astronomy](#), The Ohio State University 2020
2. [University Fellowship](#), The Ohio State University, USA 2017–2018
1. [Scholarship for Higher Education](#), Department of Science & Technology, India 2012–2017

PUBLICATION

(Students I have mentored/co-mentored are highlighted with */[†])

Peer-reviewed (41 total)

(Published: 30 total: 13 first-authored, 8 second/third-authored, 9 other co-authored)

(In prep.: 12 total: 4 first-authored, 6 second/third-authored, 2 other co-authored)

First-authored:

13. **Das S.**, Mathur S., Lehmer B., *et al.*, 2026, “Deep X-ray observation of NGC 3221: everything everywhere all at once”, *ApJ*, 997, 177
12. **Das S.**, Truong N., Chiang Y.K. & Mathur S., 2025, “Thermal Sunyaev-Zel’dovich Effect in the circumgalactic medium II: dependence on star formation”, *ApJ*, 991, 205
11. **Das S.**, 2024, “Detecting the effect of non-thermal sources on the warm-hot Galactic halo”, *ApJL*, 963, L48
10. **Das S.**, **Rickel M.***, Leroy A. *et al.*, 2024, “Detection of diffuse HI emission in the circumgalactic medium of NGC 891 and NGC 4565 - II”, *MNRAS*, 527, 10358
9. **Das S.**, Chiang Y.K. & Mathur S., 2023, “Thermal Sunyaev-Zel’dovich Effect in the circumgalactic medium I: Detection, and a surprising pattern in self-similarity and baryon sufficiency”, *ApJ*, 951, 125
8. **Das S.**, Mathur S., Gupta A. & Krongold Y., 2021, “The Hot Circumgalactic Medium of the Milky Way: Evidence for Supervirial, Virial, and Subvirial Temperatures; Nonsolar Chemical Composition; and Nonthermal Line Broadening”, *ApJ*, 918, 83
7. **Das S.**, Mathur S., Gupta A., Nicastro F. & Krongold Y., 2021, “Empirical estimates of the Galactic halo contribution to the dispersion measures of extragalactic fast radio bursts using X-ray absorption”, *MNRAS*, 500, 655
6. **Das S.**, Sardone A., Leroy A. *et al.*, 2020, “Detection of the Diffuse HI Emission in the Circumgalactic Medium of NGC 891 and NGC 4565”, *ApJ*, 898, 15
5. **Das S.**, Mathur S. & Gupta A., 2020, “The Warm-Hot, Extended, Massive Circumgalactic Medium of NGC 3221: An *XMM-Newton* Discovery”, *ApJ*, 897, 63
4. **Das S.**, Mathur S., Gupta A., Nicastro F. & Krongold Y., 2019, “Multiple Temperature Components of the Hot Circumgalactic Medium of the Milky Way”, *ApJ*, 887, 257
3. **Das S.**, Mathur S., Gupta A. *et al.*, 2019, “Evidence for a Massive Warm-Hot Circumgalactic Medium around NGC 3221”, *ApJ*, 885, 108
2. **Das S.**, Mathur S., Nicastro F. & Krongold Y., 2019, “Discovery of a Very Hot Phase of the Milky Way Circumgalactic Medium with Non-solar Abundance Ratios”, *ApJL*, 882, L23
1. **Das S.** & Ray A., 2017, “Modeling Type II-P/II-L Supernovae Interacting with Recent Episodic Mass Ejections from Their Pre-supernova Stars with MESA and SNEC”, *ApJ*, 851(2), 138

2nd/3rd-authored:

8. **Rickel M.***, **Das S.**, Pingel N. *et al.*, 2026, “Diffuse HI emission in the circumgalactic medium of NGC 891 and NGC 4565 - III: azimuthal distribution” (under review)
7. Gupta A., Mathur S., **Das S.** *et al.*, 2026, “Settling the debate: Thermal and Chemical Properties of the Polar Spurs and its Location” (under review)

6. **Bisht Singh M.***, **Das S.**, Mathur S., *et al.*, 2026, “Detection of ‘super-virial’ gas in the Circumgalactic medium of the Milky Way towards PKS 2155-304” (under review)
5. Roy M., Mathur S., **Das S.** *et al.*, 2025, “Where is the Super-virial Gas? II: Insight from the Survey of Galactic Sightlines”, *ApJ*, 982, 8
4. **McClain R.†**, Mathur S., **Das S.** *et al.*, 2024, “Super-virial Temperature of the Milky Way CGM toward NGC 3783”, *MNRAS*, 527, 5093
3. Mathur S., **Das S.**, Gupta A., & Krongold Y., 2023, “Probing the hot circumgalactic medium of external galaxies in X-ray absorption II: a luminous spiral galaxy at $z \sim 0.225$ ”, *MNRAS*, 525, L11
2. **Bhattacharyya S.***, **Das S.**, Gupta A., Mathur S. & Krongold Y., 2023, “The hot circumgalactic medium of the Milky-Way: new insights from XMM-Newton observations”, *ApJ*, 952, 41
1. Mathur S., Gupta A., **Das S.**, Krongold Y. & Nicastro F., 2021, “Probing the Hot Circumgalactic Medium with Broad O VI and X-Rays”, *ApJ*, 908, 69

Other co-authored:

9. Monson E., Lehmer B., Amiri A. *et al.* (incl. **Das S.**), 2026, “Constraining the Subgalactic Relationship between Star Formation and the Hot Interstellar Medium in NGC 4254”, *ApJ*, 1001, 42
8. McClain R., Leroy A., Congiu E. *et al.* (incl. **Das S.**), 2025, “Resolved HII regions in NGC 253: Ionized gas structure and suggestions of a universal density-surface brightness relation”, *ApJ*, 998, 166
7. Gupta A., Mathur S., **Kingsbury J.†**, *et al.* (incl. **Das S.**), 2025, “Where is the Super-virial Gas? III. Insights from X-ray Shadow Observations and a Revised Model for the Soft Diffuse X-ray Background”, *ApJ*, 989, 194
6. Kale R., Muzahid S., Khaire V. *et al.* (incl. **Das S.**), 2025, “Galaxies, clusters, and intergalactic medium: A vision document for the Indian Astronomical Community”, *JoAA*, 46, 32
5. **Lara-DI A. J.†**, Krongold Y., Mathur S. *et al.* (incl. **Das S.**), 2024, “Where is the Supervirial hot gas? I: A pilot study with sightlines to Galactic X-ray binaries”, *MNRAS*, 533, 287
4. **Lara-DI A. J.†**, Krongold Y., Mathur S., *et al.* (incl. **Das S.**), 2024, “A Sub-solar Fe/O, $\log(T/K) \sim 7.5$ Gas Component Permeating the Milky Way’s CGM”, *MNRAS*, 531, 3034
3. Gupta A., Mathur S., **Kingsbury J.†**, **Das S.** & Krongold Y., 2023, “Thermal and chemical properties of the eROSITA bubbles from Suzaku observations”, *Nature Astron.*, 7, 799
2. **Lara-DI A. J.†**, Mathur S., Krongold Y., **Das S.** & Gupta A., 2023, “Detection of a Super-Viral Hot Component in the Milky Way Circumgalactic Medium Along Multiple Sight-Lines by Using the Stacking Technique”, *ApJ*, 946, 55–62
1. Gupta A., **Kingsbury J.†**, Mathur S., *et al.* (incl. **Das S.**), 2021, “Supervirial Temperature or Neon Overabundance? *Suzaku* Observations of the Milky Way Circumgalactic Medium”, *ApJ*, 909, 164

In preparation

12. Runger F., Yu L., Roy M. *et al.* (incl. **Das S.**) 2026, “Where is the Super-virial Gas IV: Insights from Cosmological Simulations” (to be submitted soon)
11. **Das S.**, Chiang Y.K. & Mathur S. 2026, “Thermal Sunyaev-Zel’dovich Effect in the circumgalactic medium - III: does richness matter?” (to be submitted soon)
10. Lehmer B., Lopez L., Mathur S. *et al.* (incl. **Das S.**) 2026, “PHANGS-Chandra: A Legacy Survey for Detailing the Coevolution of X-ray Emission and Stellar Populations in Nearby Galaxies” (advanced draft)
9. **Das S.**, & Mohapatra R. 2026, “Turbulence in the warm-hot circumgalactic medium of the Milky Way” (advanced draft)
8. **Bisht Singh M.***, **Das S.**, Mathur S., *et al.*, 2026, “Super-virial gas in the Circumgalactic medium of the Milky Way towards 3C 273” (advanced draft)
7. Amiri A., Lehmer B., Monson E. *et al.* (incl. **Das S.**) 2026, “Probing the Ionizing Sources in Extremely Metal Poor Galaxies: An X-ray to IR Study of IZw18”
6. **Pan A.***, **Das S.**, Mantz A., *et al.*, 2026, “Unraveling the large-scale impact of feedback on the circumgalactic medium of NGC 3221”
5. **Clarke, K. R.*** & **Das S.**, 2026, “Where is the super-virial gas? V:” Insights from revised *XMM-Newton* shadow observations”
4. **Das S.** & **Cheng A.***, **Rickel M.*** *et al.*, 2026, “Is the diffuse H I in the CGM ubiquitous? A deep search around local galaxies”
3. Roy M., **Das S.**, Bharadwaj, M. *et al.* 2027, “Metallicity of the hot CGM of the Milky Way from low redshift FRBs”
2. **Das S.**, Lehmer B., Mathur S. *et al.* (PHANGS-Chandra collaboration) 2027, “Statistically X-raying Phantom bubbles: a case study with NGC 628”
1. Ponnada S., **Das S.**, Mohapatra R. & Hummels C., 2027, “Warm-hot circumgalactic medium of the Milky Way: insights from Tempest simulations”

Conference proceedings

- **Das S.**, 2025, “Thermal SZ effect in the circumgalactic medium”, mm Universe 2025
- **Das S.**, 2024, “Detection of diffuse H I emission in the circumgalactic medium of local galaxies”, *Proc. of the IAU Symposium*, 392
- **Das S.** & Ray A., 2017, “Evolution & Explosion of Massive Stars Leading to IIP-III SNe with MESA & SNEC”, *Proc. of the IAU Symposium*, 331, 11–16

TELESCOPE TIME/GRANTS AWARDED

As a Principal Investigator

11. *Chandra*, “Compact and intense: A comprehensive survey of Blueberry galaxies”, Exposure time: 1.63 Ms (pending) 2026
10. *Chandra*, “Resolving the causality of ionization, metallicity, and X-ray in normal metal-poor dwarf galaxies”, Exposure time: 130 ks (pending) 2026
9. NASA ADAP (Science-PI), “A new approach to characterize the X-ray-hot gas toward a newly discovered molecular cloud” (pending) 2026

8. *Very Large Array*, “Do satellite galaxies affect the CGM observations of their host?”, Exposure time: 26 hrs Fall 2025
7. *Green Bank Telescope*, “Dark galaxy or circumgalactic cloud(s)? A deep investigation”, Exposure time: 37 hrs Spring 2025
6. Simon’s foundation - support to attend a 3-week workshop (**\$4,140**) 2024
5. *XMM-Newton*, “Unraveling the large-scale impact of feedback on the CGM of NGC 3221 in emission”, Exposure time: 430 ks (**\$94,919**) 2022
4. *Green Bank Telescope*, “Deep integration to probe 21-cm emission around galaxies: a step forward to mapping”, Exposure time: 86 hours Fall 2021
3. *Green Bank Telescope*, “Is circumgalactic HI ubiquitous? A deep search around nearby galaxies”, Exposure time: 172 hours Spring 2021
2. *Green Bank Telescope*, “A deep search for HI in the CGM of NGC 891 and NGC 4565-III”, Exposure time: 58 hours Fall 2020
1. *Green Bank Telescope*, “A deep search for HI in the CGM of NGC 891 and NGC 4565-II”, Exposure time: 20 hours Spring 2020

As a Co-PI

3. NASA ADAP, “Understanding the chemical enrichment and heating of the circumgalactic medium of the Milky Way” 2021
2. *Chandra* archival program, ‘Where is the super-virial hot gas? Disentangling the location of the hot circumgalactic medium of the Milky Way’ 2021
1. *Chandra* archival program, “Understanding the chemical enrichment and heating of the circumgalactic medium with observations of the Milky Way” 2019

As a Co-investigator

11. Roman Treasury Survey, “Anchoring the Transient Sky: A High-Resolution Baseline of Massive Stars and Galaxy Assembly with Roman” (pending) 2026
10. NASA ADAP, “Understanding stellar evolution, feedback, and cosmic ecosystems in galaxies in the *Chandra* Legacy Program” (pending) 2026
9. NASA ADAP, “Supersolar Nitrogen in the Milky Way circumgalactic medium– New insights on the metal enrichment of the Universe” (pending) 2026
8. *XMM-Newton*, “PHANGS-XMM: Detailing Hot Gas and X-ray Binary Emission In Nearby Galaxies”, Exposure time: 841 ks 2025
7. **Chandra Legacy Program**, “A treasury survey probing the baryon and energy cycle and X-ray binary evolution in galaxies at high angular resolution”, Exposure time: 2.9 Ms 2024
6. *XMM-Newton*, “The enigmatic North Polar Spur”, Exposure time: 152 ks 2024
5. PHANGS-MeerKAT: Unlocking the Matter Cycle in Nearby Galaxies with MeerKAT+ALMA+ JWST+ HST, Exposure time: 294 hrs 2024
4. NASA ADAP, “Light behind the shadow: Revealing the properties of the Milky Way circumgalactic medium” 2023
3. *Chandra* observing program, “Characterizing X-ray emission of the North Polar Spur”, Exposure time: 30 ks 2023

2. *Chandra* observing program, “Constraining the Nature of the Super-virial Temperature Phase of the Milky-Way CGM”, Exposure time: 40 ks 2022
1. NASA ADAP, “Holistic View of the Milky Way Diffuse X-ray Emission: The eROSITA/Fermi Bubbles and the Extended Halo” 2021

TALKS AND POSTERS

Invited talks

35. Tea talk, Cahill Center for Astronomy and Astrophysics, CalTech 2026
34. Seminar, Beus Center for cosmic foundations, Arizona State University 2026
33. Physics & Astronomy Astro Seminar, University of Kentucky 2025
32. Colloquium, Department of Physics & Astronomy, University of South Carolina 2025
31. Kavli Institute of Cosmological Physics seminar, University of Chicago 2025
30. Astrophysics and Cosmology seminar, University of California Davis 2025
29. Seminar, Department of Astronomy & Astrophysics, Columbia University 2025
28. Seminar, Department of Physics & Astronomy, Johns Hopkins University 2025
27. Galread seminar, Institute of Advanced Study, Princeton University 2025
26. Institute for Theory & Computation Luncheon, Harvard-Smithsonian Center for Astrophysics 2025
25. FRB group meeting, Harvard-Smithsonian Center for Astrophysics 2025
24. High Energy Seminar, Harvard-Smithsonian Center for Astrophysics 2025
23. Radio Millimeter Submillimeter Seminar, Harvard-Smithsonian Center for Astrophysics 2025
22. Conference, Hungry HIppos: HI as a Tracer of Galactic Accretion, Interactions and Feedback, South Africa 2025
21. Conference, Cosmic Ecosystems, Perimeter Institute, Canada 2025
20. Conference, FRB 2025, McGill University, Canada 2025
19. Conference, mm Universe, Kavli Institute for Cosmological Physics, U. Chicago 2025
18. XMM-Newton 25th Anniversary Conference, U. Maryland Baltimore (postponed) 2025
 - *Overview talk: “The role of XMM CCD and grating in unveiling the hot CGM of the Milky Way and nearby galaxies”*
 - *Research talk: “Variable ULX, new ULX, and extraplanar gas from new XMM data”*
17. Astrophysical & Planetary Sciences Lunch Seminar, U. Colorado Boulder 2025
16. Astro lunch seminar, University of California, Santa Barbara 2025
15. Physics seminar, Indian Institute of Technology Bombay, Mumbai, India 2024
14. Seminar, Tata Institute of Fundamental Research, Mumbai, India 2024
13. Conference, Baryons Beyond Galactic Boundaries, Pune, India 2024
12. Annual meeting of European Astronomical Society, Italy 2024
11. Green Bank Observatory community webinar 2024

10. Science lunch seminar, University of Wisconsin-Madison, USA 2024
9. Astrophysics seminar, Indian Institute of Science, Bengaluru, India 2022
8. Colloquium, School of Astrophysics, Presidency University, Kolkata, India 2022
7. Colloquium, National Center for Radio Astrophysics, Pune, India 2022
6. Seminar, Inter-University Center for Astronomy & Astrophysics, Pune, India 2022
5. Seminar, Tata Institute of Fundamental Research, Mumbai, India 2022
4. Physics seminar, Indian Institute of Technology Bombay, Mumbai, India 2022
3. KIPAC Tea, Stanford University, USA 2022
2. Science Happy Hour, CIERA, Northwestern University, USA 2021
1. Presidency Alumni Lecture Series, Presidency University, Kolkata, India 2021

Contributed talks

15. GalScale26: The many scales of galaxy environments 2026
14. Galactic Frontiers: Advancing X-Ray Astronomy in a Multiwavelength Universe 2026
13. The X-ray Universe, Spain 2026
12. Physics of the Cosmos Early Career Workshop 2024
11. [Multiphase Madness: Resolving the CGM in Theory and Observations](#) 2024
10. [The physical processes shaping the stellar and gaseous histories of galaxies](#) 2024
9. [High Energy Astrophysics Division \(HEAD\) Frontier Seminar Series](#) 2023
8. [KIPAC@20 conference](#) 2023
7. [High-resolution X-ray spectroscopy: A *Chandra* workshop](#) 2023
6. [The X-ray Universe](#) 2023
5. [Athena: Exploring the Hot and Energetic Universe](#) 2022
4. [HEAD Frontier Seminar Series](#) 2021
3. [American Astronomical Society \(AAS\) 237th meeting \(virtual\)](#) 2021
2. [AAS 236th meeting \(virtual\)](#) 2020
1. [WHIM and cluster outskirts: lost and found baryons of the universe](#) 2018

Contributed posters

9. [IAU General Assembly XXXII](#) 2024
8. [Recipes to Regulate Star Formation at All Scales: From the Nearby Universe to the First Galaxies](#) 2024
7. [Surveying the Milky Way: The Universe in Our Own Backyard](#) 2023
6. [AAS HEAD 20th divisional meeting](#) 2023
5. [POSTER \(POster Symposium Targeting Early-career Researchers\)– presented 2 posters on Cold CGM and Hot CGM](#) 2022
4. [AAS HEAD 19th divisional meeting](#) 2022

3. 20 years of *Chandra* symposium 2019
2. AAS HEAD 17th divisional meeting 2019
1. AAS HEAD special meeting 2018

MENTORING/ADVISING POSITIONS

16. Tahila Floor June 2026 – August 2026
Summer undergraduate research program, Stanford University
15. Sipra Sahoo 2026 – present
Undergraduate research, Indian Institute of Science Education & Research, Pune, India
14. Bidisha Dey 2026 – present
Master's thesis research, Indian Institute of Science Education & Research, Tirupati, India
(co-mentored by Kartick Sarkar, Raman Research Institute, Bengaluru, India)
13. Kathleen Clarke 2025 – present
Undergraduate research, Stanford University
Summer undergraduate research program, Stanford University June 2024 – August 2024
12. Mukesh Singh Bisht 2024 – present
PhD project, Raman Research Institute, Bengaluru, India
11. Abby Pan 2024 – present
PhD project, Stanford University
10. Mary Rickel 2024 – present
PhD project, University of Notre Dame
Undergraduate thesis research, The Ohio State University 2023 – 2024
Undergraduate non-thesis research, The Ohio State University 2022 – 2023
9. Amber Horse 2024
Summer undergraduate research program, Stanford University
8. Ankita Mondal 2024–2025
CARINAS GalPal mentoring
7. Prachi Prajapati 2024–2025
International Female Scholars Mentoring Program, University of Cologne, Germany
6. Annie Cheng 2024
Rotation project for PhD students, KIPAC, Stanford University
5. Natalio Parker (co-advised by Amy Sardone) 2021
Summer undergraduate research program, The Ohio State University
4. Joy Bhattacharyya 2020–2023
PhD project, The Ohio State University
3. Cassidy Hampton 2020
Polaris mentorship program (Ph.D. student-run credited course for Astronomy, Mathematics, and Physics undergraduates to reduce drop-out), The Ohio State University
2. Andrew Michel, Co-advised with Smita Mathur 2020
Summer undergraduate research program, The Ohio State University
1. Miquaela Weller, Joy Bhattacharyya, and Alison Duck 2019–2022
Astronomy first-year graduate student mentoring, The Ohio State University

TEACHING POSITIONS

- Examination arranger and grader, [Cosmology](#), The Ohio State University Fall 2019
- Lab teaching associate, [From Planets to the Cosmos](#), The Ohio State University Fall 2019

WORKSHOPS ATTENDED

- [NASA Cosmic Origins Program AI/ML Science and Technology Interest Group](#) 2025–2026
- Mentoring: Understanding Different Communication Styles
Office of Postdoctoral Affairs, Stanford University 2025
- Interstellar Institute VII, Institut Pascal, France 6–25th 2025
- XRISM community workshop 2025
- Toward a Holistic Understanding of the Multi-scale, Multiphase Circumgalactic Medium
Aspen Center for Physics 25th August–15th September 2024
- Culturally Inclusive Mentoring: Optimizing Cultural Awareness and Responsiveness in Research Mentoring Relationships
Office of Postdoctoral Affairs, Stanford University 2023
- Fundamentals of Gaseous Halos
Kavli Institute for Theoretical Physics January–2021

OUTREACH AND COMMUNITY SERVICE

Committees

20. NASA FINESST graduate fellowship selection panel 2026
19. Organizing committee, [AMP-UP](#) postdoc mentorship program 2026–present
18. Scientific organizing committee, NASA Hubble Fellowship Program Symposium 2026, 2025
17. Observing Time Allocation Committee, *Chandra* 2026, 2025
16. Lynx 2030 Science Analysis Group 2026–present
15. Recruiting & outreach committee, Physics department, Stanford University 2026–present
14. Editorial board member, Scientific Reports, Springer Nature 2026–present
13. NSF Astronomy & Astrophysics Postdoctoral Fellowship selection panel 2026
12. NewAthena Science working group (galaxies and large scale structure) 2025–present
11. KIPAC colloquium committee, Stanford University 2025–present
10. (Observation, archival, theory) Proposal review panel, HST 2025
9. NRAO/AUI Science Review Panel 2024–2026
8. Application review committee, [KIPAC Post-bac Fellowship](#), Stanford University 2023–2025
7. Selection committee, [Cal-Bridge Summer](#) and Leadership Alliance, KIPAC & Department of Physics, Stanford University 2024, 2023
6. Organizing committee, [SPINWIP](#)–Stanford Program for Inspiring the Next generation of Women In Physics, Stanford University 2023–2024
5. Graduate admission committee, Physics Department, Stanford University 2023–2024

4. Observing Time Allocation Committee, *XMM-Newton* 2023
3. (Observation, archival, theory) proposal review panel, *Chandra* 2023
2. Application review committee, SPINWIP, Stanford University 2023
1. Graduate admission committee, Astronomy Department, The Ohio State University 2019

Targeted service

10. Referee, mm Universe 2025 Proceedings 2025
9. [Stanford Science Pen Pals](#) 2025–present
8. Volunteer, NHFP Application Feedback Program 2024–present
7. Coordinator, Hands-on workshop on statistics for [KIPAC Post-baccalaureate students](#), Stanford University 2024
6. Booth leader, Galaxy Zoo, Stanford STEM fest 2024
5. Coordinator, Hands-on workshop on observational Astronomy and data analysis for KIPAC Post-baccalaureate students, Stanford University 2024
4. Speaker, “Multi-wavelength observations in Astronomy”, [Summer undergraduate research program](#), Stanford University 2023
3. Core team member: website building and newsletter editing of [Cosmology and Astronomy Researchers of Indian Nationality And Sisters](#) 2023–present
2. Referee, Astrophysical Journal 2021–present
1. Co-instructor, Coding in Astronomy and Physics to high school students, [Summer Institute](#), Ohio Supercomputer Center 2018

Other activities

13. Speaker, “Black Holes” (to selected high school girls from six continents), [SPINWIP](#), Stanford University 2023–2025
12. Lead, Hands-on activities: “Make Your Own Pulsar”, College of San Mateo Family Science Day and Astronomy Festival 2023–2024
11. Gave [interview](#) in the Role Model Series of [VoyagetoSpace](#) YouTube channel 2024
10. Editorial Board Member, [KIPAC research blog](#) 2023 – present
9. Volunteer, Solar eclipse viewing, KIPAC, Stanford University 2023
8. Volunteer, “Cooking a Comet” and “Ask an Astrophysicist”, [KIPAC Community Day](#) (had ~3000 attendees), Stanford University 2023
7. Judge, Student poster competition, AAS HEAD 20th divisional meeting 2023
6. Judge, [Chambliss undergraduate iposter competition](#), AAS 237th meeting 2021
5. Speaker, “Combing the Cosmos for the Universe’s Missing Mass”, “[Making space for all](#)” webinar, The Ohio State University 2020
4. Volunteer, Hands-on activities with scaled models of the sun and solar system planets, [Breakfast of Science Champions](#), The Ohio State University 2019

3. Volunteer, [Friends of Ohio State Astronomy & Astrophysics](#) (public lecture series and planetarium shows followed by an informal lunchtime discussion with attendees on science and lives of scientists) 2027–2019
2. Volunteer, Star watching party, [SciAccess: The Science Accessibility conference](#) (promoting disability inclusion in STEM) 2019
1. Volunteer, Illustration with the fragment of a real comet (collection of Arne Slettebak OSU Planetarium), [WestFest: Sustainability and Outreach Festival](#), The Ohio State University 2019

LEADERSHIP/ORGANIZATIONAL POSITIONS

- Co-founder and coordinator, [Cosmology and Astronomy Researchers of Indian Nationality And Sisters \(CARINAS\)](#) 2022 – present
- Election coordinator, Graduate student representative, Astronomy Department, OSU 2021
- Departmental Coordinator, Institute Students' Companion Program, Indian Institute of Technology, Bombay, India 2016–2017
- Departmental Coordinator, Placement Cell, Presidency University, Kolkata, India 2014–2015
- Coordinator, Physics League, Presidency University, Kolkata, India 2012–2015

OTHER RESEARCH EXPERIENCES

5. [Visiting Students' Research Program](#) (extended) May 2016–June 2017
Tata Institute of Fundamental Research (TIFR), Mumbai, India
Simulating light curves of core-collapse supernovae using MESA & SNEC Advisor: A. K. Ray
4. Course project January–April, 2016
Tata Institute of Fundamental Research (TIFR), Mumbai, India
Detection & localization of short γ -ray bursts using Astrosat/CZTI Advisor: A. K. Rao
3. [Visiting Students' Program](#) (extended) May–December, 2015
Inter-University Center for Astronomy & Astrophysics (IUCAA), Pune, India
HI-H₂ transition in the interstellar medium (with CLOUDY simulations and quasar absorption spectra from HST/COS & Keck/HIRES) Advisor: Raghunathan Srianand
2. [Student Technical Training Program](#) May–July, 2014
Giant Meterwave Radio Telescope (National Center for Radio Astrophysics), Khodad, India
Testing receiver systems of the upgraded Giant Meterwave Radio Telescope (uGMRT) in interferometric mode Advisor: Yashwant Gupta
1. Reading project and Citizen science project June–December 2013
Presidency University, Kolkata, India
Detection of exoplanets from Kepler light curves Advisor: Somak Raychaudhury

PRESS COVERAGE

- [Phys.org Science News](#), “Veil of fiery gas revealed around the disk of Milky Way”, 2024
- [Science & Astronomy in Space.com News](#), “Titanic cosmic bubbles blown by the Milky Way are surprisingly complex” 2023
- [Ohio State News](#), “Galactic bubbles are more complex than imagined, researchers say” 2023

- [Astronomy news in Sky & Telescope](#), “New observations show ultra-hot gas around the Milky Way. Stellar explosions may have driven this gas out of our galaxy” 2020
- [Astronomy news in Sky & Telescope](#), “Galaxies swim in the hot gas that extends much farther out than their stars — and plays an important role in the galaxy’s evolution” 2020
- [Ohio State News](#), “The Milky Way Has One Very Hot Halo” 2020
- Press conference, AAS 236th meeting, “Evidence for a massive hot circumgalactic medium enveloping a large, luminous galaxy” ([video](#) and [presentation](#)) 2020
- [Ohio State News](#), “What’s a halo made of? Scientists have new insights on the Galactic kind: Study finds new elements, hotter temperatures in the Milky Way” 2020
- [Science & Technology News](#), XMM-Newton, European Space Agency, “XMM-Newton discovers scorching gas in Milky Way’s halo” 2020

MEMBERSHIP

- Full Member, American Astronomical Society
- [Life member](#), Astronomical Society of India
- Founding member, [Cosmology and Astronomy Researchers of Indian Nationality And Sisters](#)

TECHNICAL SKILLS

- Software and public code: Proficient in DS9, CIAO, XMM-SAS, HEASoft, and GBTIDL. Working knowledge in MIRIAD, MESA, SNEC, CLOUDY, VPFIT, and IRAS
- Coding: Proficient in `python` (including `astroML`, `spectral_cube`), `pandas`, `FORTRAN`, and `bash` scripting. Working knowledge in `C`, `C++`, `html`, `php`
- OS: Linux, Mac

REFERENCES

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