

Arnab Sarkar

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RESEARCH INTERESTS

Physics of Galaxy clusters and groups, Early Universe and Galaxy evolution

EDUCATION

- **MIT Kavli Institute for Astrophysics and Space Research**
Current Position: Post-doctoral Associate 2022–present
- **University of Kentucky & Center for Astrophysics | Harvard & Smithsonian**
Ph.D. in Physics and Astronomy 2018–2022
Thesis Title: “*The physics of galaxy clusters out to their virial radii and beyond*”

OBSERVING GRANTS

- **Principle Investigator** – *XRISM Cycle 1, 85 ksec* – MKW4 Galaxy Cluster 2024
- **Principle Investigator** – *Chandra Cycle 25, 60 ksec* – Abell 3112 Galaxy Cluster 2023
- **Principle Investigator** – *Chandra Cycle 25, 740 ksec* – 1E2215/2216 Galaxy Cluster 2023
- **Principle Investigator** – *Chandra Cycle 23, 60 ksec* – Abell 262 Galaxy Cluster 2021
- **Co-Investigator** – *XRISM Cycle 1, 80 ksec* – Abell 2052 Galaxy Cluster 2024
- **Co-Investigator** – *XRISM Cycle 1, 220 ksec* – Abell 2199 Galaxy Cluster 2024
- **Co-Investigator** – *XRISM Cycle 1, 300 ksec* – Abell 1795 Galaxy Cluster 2024
- **Co-Investigator** – *XRISM Cycle 1, 100 ksec* – 30 Doradus Tarantula Nebula 2024
- **Co-Investigator** – *Chandra Cycle 26, 50 ksec* – Multi-targets 2024
- **Co-Investigator** – *Chandra Cycle 25, 55 ksec* – Multi-targets 2023
- **Co-Investigator** – *Chandra Cycle 24, 100 ksec* – SWIFT J2037.2+4151 X-ray Binary 2022
- **Co-Investigator** – *Chandra Cycle 24, 45 ksec* – Multi-targets 2022

STUDENT MENTORSHIP

Undergraduate Students

- **Sydney Matthews**, Massachusetts Institute of Technology, Cambridge, USA
Project: “Deep Chandra observations of Abell 2345 merging galaxy cluster”.
- **Janie du Preez**, North-West University, Potchefstroom, South Africa
Project: “X-ray emission from a massive cool-core galaxy cluster Abell 2667”.
- **Dalia Halder**, Jadavpur University, Kolkata, India
Project: “Mars Orbiter Mission (MOM) – an Indian Mars probe mission.”

Graduate Students

- **Mona Molham**, The National Research Institute of Astronomy and Geophysics, Egypt
Project: “X-ray background modelling for sample of galaxy clusters using XMM-Newton.”

TEACHING

- **Primary Instructor**, General University Physics (PHY 241), Mechanics Fall 2020
- **Teaching Assistant**, The Solar System (AST 191), Astronomy Fall 2020
- **Primary Instructor**, General University Physics (PHY 241), Mechanics Spring 2020
- **Primary Instructor**, General University Physics (PHY 241), Mechanics Fall 2019
- **Primary Instructor**, General University Physics (PHY 242), Electromagnetism Spring 2019
- **Primary Instructor**, General University Physics (PHY 241), Mechanics Fall 2018

PRESS RELEASES

- [NASA Press Release](#), "NASA's Chandra Finds Galaxy Cluster Collision on a "WHIM" 2023
- [AAS and Center for Astrophysics | Harvard & Smithsonian press release](#), "Discovery of a Pre-merger Shock Wave in Abell 98" 2022
- [University of Kentucky press release](#), "Grad Student Discovers Shock Wave in Merging Galaxy Clusters, Confirms a Missing Link" 2022

PROFESSIONAL SERVICES

- **Invited Referee**– Astronomy & Astrophysics, MNRAS, ApJ, and JOAA 2022–present
- **Observing proposal panel**– GMRT & Chandra 2022–2024
- **XRISM In-Flight Calibration Team Member** 2023 – present
- **Next-gen planned X-ray mission team**–NewAthena X-ray Observatory 2022–present
- **Lecturer and Mentor** – COSPAR Capacity Building Workshop for developing countries, Potchefstroom, South Africa Feb 2023
- Chambliss Judge, AAS #236

INVITED TALKS (DELIVERED 20+ TALKS, SOME OF SELECTED TALKS)

- **Invited talk**, Center for Astrophysics | Harvard & Smithsonian April 2023
- **Invited lecture-I**, IAU I-HOW and COSPAR Workshop, South Africa February 2023
- **Invited lecture-II**, IAU I-HOW and COSPAR Workshop, South Africa February 2023
- **Invited talk**, Bertinoro, Italy July 2022
- **Invited talk**, Center for Astrophysics | Harvard & Smithsonian Jun 2022
- **Invited talk**, Center for Astrophysics | Harvard & Smithsonian April 2021
- **Invited talk**, University of Kentucky July 2020