Arnab Sarkar

arnabsar@mit.edu | www.sarkararnab.com

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

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