Soham Mandal
VITA Postdoctoral Fellow
Department of Astronomy, University of Virginia
530 McCormick Road
Charlottesville, VA 22904

Email: soham@virginia.edu
Phone: 765-775-8988

(a) Education

Purdue University	Physics and Astronomy	Ph.D.	January 2021 - April 2024
Purdue University	Physics and Astronomy	M.S.	August 2018 - August 2020
Jadavpur University	Electrical Engineering	B.E.	August 2014 - June 2018

(b) Skills

Programming Languages	C/C++, Python, MATLAB
Software & Tools	MPI, OpenMP, OpenACC, PyTorch, HTML, LaTeX

(c) Publications

1. Paul C. Duffell, Abigail Polin, and Soham Mandal, Sculpting the Morphology of Supernova Remnant Pa 30 via Efficient Ejecta Cooling, arXiv e-prints , arXiv:2403.13641 (2024), arXiv:2403.13641 [astro-ph.HE] .
2. Soham Mandal, Paul C. Duffell, Abigail Polin, and Dan Milisavljevic, Measurement of Anisotropies in Supernova Remnant Observations and Their Interpretation Using Numerical Models, The Astrophysical Journal **972**, 87 (2024), arXiv:2403.12264 [astro-ph.HE] .
3. Soham Mandal, Paul C. Duffell, Abigail Polin, and Dan Milisavljevic, A 3D Numerical Study of Anisotropies in Supernova Remnants, The Astrophysical Journal **956**, 130 (2023).
4. Soham Mandal and Paul C. Duffell, Sprout: A moving-mesh hydro code using a uniformly expanding cartesian grid, The Astrophysical Journal Supplement Series **269**, 30 (2023).
5. Soham Mandal, Paul C. Duffell, and Yuan Li, Numerical Investigation of Dynamical and Morphological Trends in Relativistic Jets, The Astrophysical Journal **935**, 42 (2022).
6. M. L. Lister, D. C. Homan, Y. Y. Kovalev, S. Mandal, A. B. Pushkarev, and A. Siemiginowska, TXS 0128+554: A Young Gamma-Ray-emitting Active Galactic Nucleus with Episodic Jet Activity, The Astrophysical Journal **899**, 141 (2020).
7. Soham Mandal and K. K. Mandal, Optimal energy management of microgrids under environmental constraints using chaos enhanced differential evolution, Renewable Energy Focus **34**, 129–141 (2020).
8. K.K. Mandal, S. Mandal, B. Bhattacharya, and N. Chakraborty, Non-convex emission constrained economic dispatch using a new self-adaptive particle swarm optimization technique, Applied Soft Computing **28**, 188–195 (2015).

(d) Invited talks

California Institute of Technology, TAPIR seminar	*January 2024*
CIERA, Northwestern University, special seminar	*October 2023*
New York University, special seminar	*October 2023*
Center for Computational Astrophysics, compact objects meeting	*October 2023*

Columbia University, THEA seminar	*October 2023*
Carnegie Observatories, lunch seminar	*September 2023*
UC Berkeley, TAC seminar	*September 2023*
Tata Institute for Fundamental Research, State Of The Universe seminar	*June 2023*
Carnegie Observatories, tea talk	*May 2022*

(e) Contributed talks/posters

Rise_Time, Purdue University, USA	*August 2024*
Supernova Remnants III, Crete, Greece	*June 2024*
Supernova Explosions (SNEX) Conference, Technion University, Israel	*September 2023*
Michael Faraday IET International Summit, Kolkata, India	*September 2015*

(f) Synergistic activities

1. **Teaching assistant, Purdue University**   *August 2018 - December 2021*
   - Taught modern mechanics and analog electronics labs, where I promoted independent troubleshooting and handling of experimental apparatus to enhance ability to apply concepts learnt in lectures.
   - Lectured for an electrodynamics using algebra course over a summer in the pandemic, where I developed interactive techniques to ensure active learning of the concepts and enhancement of problem solving abilities despite the sudden switch to an online mode of education.

2. **Vice President, Physics Graduate Students Association, Purdue University** *2021 - 2022*
   - Organized events to enhance interaction in the grad students community, following the halt of all such activities during the pandemic.

3. **Mentor, Inside Out program, Purdue University**   *Summer 2022*
   - Led a hands-on activity session for high school students where they built a scaled down model of the solar system. The students calculated scaling factors for sizes of the celestial bodies and distances between them and placed the models at appropriate distances over the campus.

4. **Event lead, Circuistic, Jadavpur University**   *Fall 2017*
   - Designed innovative problem statements for the analog electronic circuit building competition aimed at undergraduates at Convolution, the annual technological fest at the Department of Electrical Engineering of Jadavpur University.