



Ranadeep Ghosh Dastidar

Graduate Student, Purdue University



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 ranadeep-Astro

About me

As a PhD candidate in the latter half of my journey, I aspire to be an astrophysicist specializing in high-energy transients—particularly jets and GRBs—through a theoretically modeled approach. Driven by curiosity and a passion for tackling complex scientific problems from first principles, I thrive on understanding the mysteries of the universe. Equally, I find purpose in sharing this knowledge through classroom teaching or public outreach.

Personal

Ranadeep Ghosh dastidar
Nationality: Indian
DOB: May, 02 1996

Areas of specialization

- High-Energy Astrophysical Transients
- GRB Jets & Afterglow
- Theoretical Modeling
- Codes with HPC
- Teaching & Outreach





Particular Skills

• Learning & Implementing Existing Codes • Academic Presentations • Teamwork & Leadership

Coding Experience

Languages : Python; C; C++
Hydrodynamics : The Jet Code
Pluto Code
Afterglow Codes : Firefly*;
BoxFit; JetSimpy*; afterglow.py

EDUCATIONAL HISTORY

2021-present	PhD., Purdue University DEPT. OF PHYSICS AND ASTRONOMY · West Lafayette, IN, USA  Thesis Advisor: Prof. Paul Duffell
2015-2020	BS-MS, IISER-Kolkata PHYSICS MAJOR · Nadia, WB, India  MS Thesis Advisor: Prof. Dibyendu Nandi
2014-2015	BSc. Physics, Delhi University ST. STEPHEN'S COLLEGE · Delhi, Delhi, India 
2012-2014	High School, K V Ballygunge SENIOR SECONDARY SCHOOL · Kolkata, WB, India 

RESEARCH HIGHLIGHTS

2024 - present PhD Project	Kilonova Associated long-GRB Advisor: Prof. Paul Duffell · Purdue University, USA
2023 - 2024 PhD Project	long-GRB Duration Correlation Advisor: Prof. Paul Duffell · Purdue University, USA
2022 - 2023 PhD Project	Off-Axis GRB Afterglow Code: Firefly Advisor: Prof. Paul Duffell · Purdue University, USA
2021 Semester Research Project	Astrophysical Jet Dynamics and GRB Afterglow Advisor: Prof. Dimitrios Giannios · Purdue University, USA
2018 - 2020 MS Thesis Project	Solar Wind Mediated Sun-Earth-Moon Interactions Advisor: Prof. Dibyendu Nandi · IISER-Kolkata, India
2018 Summer Research Project	Velocity Map Imaging Spectrometer Construction & Camera Interface Software Development Advisor: Prof. Dr. Matthias F. Kling · Max Planck Quantum optics, Germany

PUBLICATIONS

2025	<i>A Novel Relationship Between Gamma Ray Burst Duration And Photospheric Radius</i> Dastidar and Duffell, 2025 · In Preperation paper description
2024	<i>Could the Recent Rebrightening of the GW170817A Afterglow Be Caused by a Counterjet?</i> Dastidar and Duffell, 2024 · The ApJ paper description
2024	<i>jetsimpy: A Highly Efficient Hydrodynamic Code for Gamma-Ray Burst Afterglow</i> Wang, Dastidar Et AL, 2024 · The ApJ Supp. Series paper description

TALKS & POSTERS

2024 Invited Talk	An Insight Into The GRB Universe CESSI Seminar Series Center of Excellence In Space Sciences India, IISER-Kolkata, India
2024 Conference Talk	A Novel Relationship Between GRB Duration & Photospheric Radius Rise_Time 2024 Purdue University, USA
2023 Poster	Could The Recent Rebrightening of The GW170817A Afterglow be Caused by a Counter Jet? GRB50 Washington D.C., USA
2020 Poster	Solar Wind Mediated Sun-Earth-Moon Interactions 5th Asia Pacific Solar Physics Meeting IUCAA, Pune, India
2020 Poster	Solar Wind Mediated Sun-Earth-Moon Interactions Conference on Plasma Simulation Institute of Plasma Research, Gandhinagar, India

TEACHING EXPERIENCE

Fall 2022	Optics Laboratory (Undergraduate Course, Lab Instructor)
Summer 2022	Modern Mechanics (Undergraduate Course, Help Center)
Spring 2022	Optics Laboratory (Undergraduate Course, Lab Instructor)
Fall 2021	Cosmology (Undergraduate Course, Grader)
Summer 2021	Electric & Magnetic Interactions (Undergraduate Course, Help Center)
Spring 2021	Optics Laboratory (Undergraduate Course, Lab Instructor)
Spring 2021	General Physics (Undergraduate Course, Lab Instructor)

AWARDS & RECOGNITION

2024	Edward S. Akeley Award Purdue Dept. of Physics & Astronomy Recognizes outstanding physics graduate students in theoretical physics.
2023	Formica Sandy Award Purdue Dept. of Physics & Astronomy Award for most contribution to the graduate community
2015-2020	KVPY Scholarship , Govt. of India Competitive scholarship to pursue Bachelor and Master of basic science in India.

LEADERSHIP EXPERIENCE

2023-2024	Vice-President Physics Graduate Student Association
2023-2024	President Purdue University Tagore Society
2022-2023	International Student Representative Physics Graduate Student Association
2022-2023	Treasurer Purdue University Tagore Society
2021-2022	International Student Representative Physics Graduate Student Association
2021-2022	Vice-President Purdue University Tagore Society
2017-2019	General Secretary of Academics Students Affairs Council, IISER-Kolkata

REFERENCES

→ Prof. Paul Duffell, Purdue University (**PhD Advisor**)
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