RISHABH SINGH TEJA

PhD Student

Indian Institute of Astrophysics
Bengaluru, Karnataka, India-560034

Namaste! Hello! Greetings!

I am a Ph.D. student working on the photometric and spectroscopic observations, analysis, and modeling of Core-Collapse Supernovae. I love to do Science as well as Data Science. Presently, I am trying to understand the demises of massive stars in our Universe.

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EDUCATION

High School (10th) 2011 — 2012
Hilton Convent Senior Secondary School, Amroha, UP-244221
Hindi, English, Maths, Science, and Social Studies
1st Division

Intermediate (12th) 2012 — 2014
Hilton Convent Senior Secondary School, Amroha, UP-244221
Maths, Physics, Chemistry, English, and Physical Education
1st Division

Graduation (B.Sc. (H) Physics) 2014 — 2017
Ramjas College, University of Delhi, Delhi-110009
Physics and related subjects + Mathematics and Chemistry (2 sem)
1st Division

Post-Graduation (M.Sc. Physics) 2017 — 2019
Department of Physics & Astrophysics, University of Delhi, Delhi-110009
[Affiliation: Hansraj College, University of Delhi]
Classical, Quantum, Stastitical, Nuclear (Lab+Theory), Electrodynamics, GR & Cosmology, and Astronomy
1st Division [Gold Medal]

Ph. D. (Astronomy & Astrophysics) 2019 — ongoing
Indian Institute of Astrophysics, Bengaluru, Karnataka-560034
[Affiliation: Pondicherry University]
Topic: Observational and theoretical studies of low-redshift core-collapse supernovae

PUBLICATIONS [First Author]

- **SN 2020jfo: A Short-plateau Type II Supernova from a Low-mass Progenitor** *Rishabh Singh Teja et al 2022 ApJ 930 34*
  DOI:- https://doi.org/10.3847/1538-4357/ac610b
- **Far-ultraviolet to Near-infrared Observations of SN 2023ixf: A High-energy Explosion Engulfed in Complex Circumstellar Material** *Rishabh Singh Teja et al 2023 ApJL 954 L12*
  DOI:- *https://doi.org/10.3847/2041-8213/acef20*
- **SN 2018gj: A Short Plateau Type II Supernova with Persistent Blueshifted Ha Emission** *Rishabh Singh Teja et al 2023 ApJ 954 155*
  DOI:- *https://doi.org/10.3847/1538-4357/acdf5e*

PUBLICATIONS [As a Co-author]

- **Optical studies of a bright Type Iax supernova SN 2020rea** *Mridweeka Singh et al 2022 MNRAS, Volume 517, Issue 4, December 2022,* DOI:- https://doi.org/10.1093/mnras/stac3059
- **Observational Properties of a Bright Type Iax SN 2018cni and a Faint Type Iax SN 2020kyg** *Mridweeka Singh et al 2023 ApJ 953 93*
  DOI:- https://doi.org/10.3847/1538-4357/acd559

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Interests/Hobbies/Others

- Love playing both indoor and outdoor games such as Table Tennis, Badminton, Volleyball, Cricket, and Chess
- Love reading fiction books
- Ardent Cinema lover
- Tech enthusiast
- Worked on different committes at school and college level
- Presently involved in editorial & design roles for IIA's science e-Magazine 'DOOT' (Chief Editor - 2023)
- Part of institute's computer committe as student representative

Philosophy

I have always believed in working hard with honesty. I am always eager to learn new things, whether new tools, concepts, or even sports. I have always been a very keen listener and love to hear about different things from everyone. I believe in self-learning and followed it most of my life. I have experienced that, howsoever challenging things may seem, if we keep working hard, it eventually bears fruit and presents us with wonderful outcomes. I like to do everything with utmost dedication and passion.

Societies

- **Life member**, *Astronomical Society of India (ASI)* **[L2454]**

- **Bridging between type IIb and Ib supernovae: SN IIb 2022crv with a very thin Hydrogen envelope** *Anjasha Gangopadhyay et al 2023 (Accepted ApJ) DOI:- https://doi.org/10.48550/arXiv.2309.07463*

PRESENTATIONS (Talk/ Poster)

- Poster presented on **"Observational studies of a short plateau Type IIP supernova 2020jfo"** at *ASI 2022 Meet, Roorkee, India* (March 2022)
- Poster presented on **"Observations and modelling of two Type IIP supernovae in M61"** in *"IAU Symposium 361: Massive Stars Near and Far", Ballyconnell, Ireland* (May 2022)
- Contributory talk given on **"Panchromatic observations and modeling of two Type II supernovae in M61: Similar origins yet different fates"** in *"Young Astronomers' Meet 2022", ARIES, Nainital, India* (Nov 2022)
- E-poster preseted on **"Origins of a short plateau type II supernova SN 2020jfo: low mass RSG or binary?"** in *SuperVirtual 2022 [online]* (Nov 2022)
- Talk on **" Understanding Type IIP progenitors with empashis on short plateau Type II Supernovae"** in *Indo/Japan Supernova workshop at Hiroshima University, Japan* (March 2023)

SKILLS

Tools / Softwares

MESA Star, STELLA, IRAF, PyRAF, Git, LINUX, SYNAPPS, TARDIS, vim

Programming Languages

Python , C and C++

Languages

Hindi (Mother Tongue), English, Punjabi(Speak)

- **Data Reduced & Used**

Himalayan Chandra Telescope (HCT), India; Swift/UVOT; Astrosat, India GROWTH India Telescope, Devasthal Optical Telescope, India Kanata, Japan

Others

MS-Office, matplotlib, scipy, jupyter-notebooks, Tkinter, HTML, CSS Javascript, Adobe InDesign, LaTeX, Machine Learning Basics

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Non-Refereed Publications

- **GRB 230812B: GIT Confirmation of SN rise [GCN]**
- **GIT and HCT observations of the nova AT2023prq / ZTF23aaxzvrr near M31 [ATEL}**
- **ZTF23aaoohpy/AT2023lcr : HCT follow-up observations [GCN]**
- **Transient Classification Report for 2023-05-25 [TNS}**
- **Search for the progenitor of SN 2023ixf in archival AstroSat UVIT images [ATEL]**
- **AT2022wgv is a galactic CV [ATEL}**
- **GRB 210204A: Optical Observations from HCT [GCN]**