टाटा मूलभूत अनुसंधान संस्थान
TATA INSTITUTE OF FUNDAMENTAL RESEARCH
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भारत सरकार के परमाणु ऊर्जा विभाग की स्वायत्त संस्था एवं समविश्वविद्यालय
An Autonomous Institution of the Department of Atomic Energy of Government of India and a Deemed to be University

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Advertisement No.2025/28

Applications are invited **for the position of Visiting Research Scholars (All Levels: Junior, Senior, Postdoctoral)** [PI: Prof. Shravan M Hanasoge] in the Department of Astronomy and Astrophysics (DAA)

Location: Tata Institute of Fundamental Research (TIFR), Mumbai

Lightcurve.ai, an AI for Astrophysics initiative at the Tata Institute of Fundamental Research (TIFR), is pioneering the use of artificial intelligence to accelerate discovery in astrophysics. Our research spans a wide range of themes — from exoplanets to the Sun and stars, including stellar rotation and magnetism, solar and space weather prediction, and ensemble-scale studies of large datasets. At its heart, Lightcurve.ai is about exploring the Sky at Scale - harnessing AI to unlock new insights from the vast streams of data collected by today's and tomorrow's observatories. We collaborate closely with leading international Institutions such as Caltech, the Max Planck Institute, and New York University, and are supported by Microsoft Research and Intel Labs India, with generous donations from Premji Invest and the Murty Trust.

We invite applications for Visiting Research Scholars at all levels (junior, senior, and postdoctoral) to join our dynamic group. Appointments may range from a few months to three years, depending on interest and fit.

Key Responsibilities:

- Carry out independent and collaborative research in astrophysics and AI-driven data analysis.
- Engage with large-scale datasets from satellite and ground-based observatories.
- Contribute to ongoing projects on stellar physics, solar/space weather prediction, exoplanets, and related themes.
- Present results at internal meetings, seminars, and international conferences.
- Collaborate with group members, including students, staff, and international partners.

Qualifications & Skills:

- Junior Scholars: Bachelor's or Master's degree in physics, astronomy, data science, or related field.
- Senior Scholars / Postdocs: PhD in astrophysics, physics, applied mathematics, computer science, or related discipline.
- Strong analytical and problem-solving abilities.
- Comfort with Python and scientific data analysis (e.g., NumPy, SciPy, pandas, matplotlib).
- Familiarity with machine learning methods is a plus but not required.
- Ability to work independently and in a team-oriented environment.
- The candidate must apply within 3 years of their most recent degree, as of 1 November 2025.

What we offer:

- Flexible visiting terms (short- or medium-term stays).
- The position can be extended for up to 3 years subject to successful and positive annual reviews.
- A stimulating and collaborative research environment.
- Junior Research Scholars will be awarded a per month stipend of Rs. 37,000, Senior Research Scholars Rs. 42,000 + HRA and depending on their experience, postdoctoral fellows will be paid over the range Rs. 58,000 - Rs. 67,000 + HRA. The Housing and Rent Allowance (HRA) is set by TIFR rules.
- Opportunities to engage with world-class international collaborators.
- Access to cutting-edge projects at the interface of astrophysics and AI.
- Compensation will be in line with standard TIFR rates for Junior / Senior Research Fellows and for Postdoctoral fellows.

If you are excited about combining astrophysics with data-driven methods and want to contribute to high-impact science, we welcome your application. Review of applications will begin starting 1 November and the positions will be open till filled.

Junior Research Scholars (JRF / equivalent)

Applications should be addressed to hanasoge@tifr.res.in with the subject line "Application for Junior Research Scholarship"

Required Materials

1. **Cover Letter** – short, describing motivation, research interests, and relevant coursework or projects.
2. **Curriculum Vitae (CV)** – with details of education, skills (coding, data analysis, etc.), internships, and any prior research exposure.
3. **Academic Transcripts** – undergraduate (and postgraduate, if applicable).
4. **References** – contact details for 1–2 academic referees (professors, supervisors).

Senior Research Scholars (SRF / equivalent)

Applications should be addressed to hanasoge@tifr.res.in with the subject line "Application for Senior Research Scholarship"

Required Materials

1. **Cover Letter** – describing research experience, interests, and fit with the project.
2. **Curriculum Vitae (CV)** – detailed academic and research history, skills, and publications (if any).
3. **Academic Transcripts** – including Master's coursework.
4. **References** – 2–3 referees who can comment on research ability.

Postdoctoral Fellows

Applications should be addressed to hanasoge@tifr.res.in with the subject line "Application for Postdoctoral Research Fellowship"

Required Materials

1. **Cover Letter** – detailing motivation, past research contributions, and why this position is a good fit.
2. **Curriculum Vitae (CV)** – full list of education, research appointments, skills, publications, invited talks, and collaborations.
3. **Research Statement** (2–3 pages) – summary of past work and clear outline of proposed future directions.
4. **References** – 3 letters of recommendation, ideally from PhD advisor and collaborators.
5. **Sample Publications** – 1–3 key papers or preprints authored by the candidate.

LAST DATE FOR RECEIPT OF APPLICATIONS IS NOVEMBER 1ST, 2025