Jay Verma Trivedi

Research Scholar (Astrophysics and Cosmology)

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Date of Birth: April 10th, 1999.

INTRODUCTION

I am an aspiring Astrophysicist, joined as a Research Scholar at the **International Centre for Space and Cosmology**-Ahmedabad University, under the guidance of Prof. Pankaj Joshi on the 1st of August 2022.

Research Interest

My research interests involve different topics of theoretical astrophysics. I have particular interests in Cosmic censorship conjecture, singularities in the General Theory of Relativity, gravitational collapse, and observational aspects of singularity like gravitational waves, shadows, the precession of orbits, and other large-scale effects like quenching of the star formation in galaxies, etc.

Currently, I am working on a few projects involving:
I) How naked singularity models can explain the quenching of the star formation in a galaxy(in collaboration with Professors Pankaj Joshi, Peter L. Biermann, and Gopal Krishna).
II) Determining how collapse rates decide the final fate of the collapse.
III) Gravitational waves from naked singularities.
IV) Models for an inhomogeneous Universe.

Research Papers

1) Astrophysical Black Holes: An Explanation for the Galaxy Quenching
2) Gravitational collapse of scalar and vector fields
3) Lense–Thirring effect and precession of timelike geodesics in slowly rotating black hole and naked singularity spacetimes

EDUCATION

Master of Science (Specialized in Astrophysics and Cosmology) - (2019-2021)

CHARUSAT - Nadiad-388 421

Year-I semester-I: 9.62/10, semester-II: 9.08/10.

Year-II semester-III: 8.92/10, semester-IV: 10/10.

Final aggregate: 9.38/10.

Bachelor of Science (Honors) - (2016-2019)
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA - Vadodara-390 002

First-year: 7.44/10.

Second-year: 7.69/10.

Third-year: 7.48/10.

Final aggregate: 7.53/10

12th - (2014-2016)
THE SCHOOL OF SCIENCE (SOS) - Rajkot-360 005.

Board: GSHSEB.

Marks: 425/500 (85%), Percentile rank: 98.33.

10th - (March-2014)
SADHU VASWANI SCHOOL - Rajkot-360 001.

Board: GSHSEB.

Marks: 538/600 (89.6%), Percentile rank: 99.39.

Achievements & Awards

- ➔ I have cleared the **JEST-2021** examination.
- ➔ I was an **INSPIRE Scholar** (2016 - 2021) (id: DST/INSPIRE/02/2016/013731) (got a scholarship from DST-India for five years of my B.Sc. & M.Sc.)
- ➔ Attended the **Advanced B.Sc. summer program.** (may-2018 batch) (got selected among the top 30 students in Gujarat state in the second year of B.Sc.)
- ➔ Attended **The International Workshop on Astrophysics & Cosmology 2019** organized by ICC-CHARUSAT.
- ➔ I was the **cultural secretary** at The Physical Society (MSU-Baroda, physics department) in the first year of my B.Sc. (2016-2017)
- ➔ I was the **treasure secretary** at The Physical Society (MSU-Baroda, physics department) in the second and the third year of my B.Sc. (2017-2019)
- ➔ I have cleared the **JEE (Main)-2016** examination.
- ➔ I have cleared the **JAM-2019** examination.
- ➔ Attended **Astronomy summer camp-2016** organized by Bhavnagar Astronomy Club.
- ➔ I have a **Deep Sky Observer's certificate.** (got in 2017)
- ➔ Participated in **Open House and Science fair 2019** organized by the faculty of science-MSU-Baroda.
- ➔ Got certificate and prize for securing the second rank in the first, second & third semesters of M.Sc.
- ➔ Participated in **The Science Manthan 2020** (sponsored by GUJCOST) and got the second rank in a poster presentation.
- ➔ Attended the discussion meeting on **Lunar Gravitational-Wave Detection** at ICTS Bengaluru in April 2023.
- ➔ Attended the program **Remembering Amal Kumar Raychaudhuri (AKR): the celebration**

of the centenary year in October 2023.

- ➔ Visited the **Tata Institute of Fundamental Research (TIFR)** for a week(15th-21st) in September 2024 and presented my work.

SKILLS

- ➔ Basic Physics.
- ➔ Advanced General Theory of Relativity.
- ➔ Mathematica and MATLAB.
- ➔ Basic Astronomy.
- ➔ Basic computer skills (office software) and basics of programming languages like C, C++, Python, and JAVA.
- ➔ Tabla.

Hobbies

- ➔ Deep sky observation (Astronomy).
- ➔ Problem-solving in physics and mathematics.
- ➔ Reading & writing.
- ➔ Painting & sketching.
- ➔ Chess.
- ➔ Cooking.