DIVYA MISHRA

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EDUCATION

Texas A&M University,   College Station, TX, USA
3rd year Graduate Student, Department of Physics and Astronomy   2022 – Present
Concentration : Astrostatistics
Advisor : Prof. Lifan Wang, Dr. Peter Brown

Madan Mohan Malaviya University of Technology,   Gorakhpur, UP, India
Bachelor of Technology in Electronics and Communication Engineering   2017 - 2021
Advisor : Dr. Dharmendra Kumar
Thesis : *Photonic Crystal Fibre based refractive index sensor for early detection of blood cancer.*

RESEARCH INTERESTS

Stars : Type Ia supernovae (SNe Ia), SNe Ia progenitor systems, Core-collapse supernovae (CCSNe);
ISM : dust polarization; Galaxy : Magnetic fields, Star-formation.

PROFESSIONAL SKILLS

Programming : Python, R, C++, C, MySQL, Bash, Git, Wolfram Mathematica, LaTeX
Scientific Packages : Astropy, SNCosmo, SNooPy, yt, Pynbody, SFFT, PyRAF, photutils, imageio
Softwares : DS9, COMSOL, IRAF, ATMEL-AVR, Arduino – IDE, PartSim simulator, Adobe Photoshop, Adobe Illustrator, Microsoft Word, Microsoft Excel, Microsoft PowerPoint
Operating Systems : Linux, MacOS, Windows

RESEARCH EXPERIENCE

Graduate:

- **Texas A&M University**, College Station, Texas   2024 - present
  Advisor: Dr. Peter Brown and Prof. Lifan Wang
  Project: Photometric and spectroscopic analysis of high velocity Type Ia supernova SN2022hrs

- **Texas A&M University**, College Station, Texas   2022 - present
  Advisor: Prof. Lifan Wang
  Project: Studying optical polarization in M83 galaxy

Undergraduate:

- **European Southern Observatory**, Garching, Germany   Jul. 2021 - Nov. 2021
  Advisor: Dr. Ferdinando Patat
  Project: Optical imaging polarimetry of nearby galaxy.

- **Stockholm University**, Stockholm, Sweden   Jun. 2020 - Oct. 2020
  Advisor: Prof. Ariel Goobar
  Project: Validating Type Ia and core-collapse supernovae photometric models for the SNCosmo package.

- **Astroparticle & Cosmology Laboratory**, Paris, France   May 2020 - Oct. 2020
  Advisor: Dr. Gabriel Chardin
  Project: Studying Dirac-Milne cosmological model

- **Aryabhatta Research Institute of Observational Sciences**, India   June 2019 - July 2019
  <u>Advisor:</u> Dr. Shashi Bhushan Pandey
  <u>Project:</u> Photometric analysis of different types of supernovae.

PUBLICATIONS

1. Oelkers,R,J., et al., including **Mishra, D**, 2025, *Ground-based Reconnaissance Observations of 21 Exoplanet Atmospheres with the Exoplanet Transmission Spectroscopy Imager*, The Astronomical Journal, Volume 169, Issue 3

2. Hoeflich, P., et al., including **Mishra, D**, 2023, *The Core Normal Type Ia Supernova 2019np - An Overall Spherical Explosion with an Aspherical Surface Layer and an Aspherical ^{56}Ni Core*, MNRAS, Volume 520, Issue 1

3. Yang, Yi, et al., including **Mishra, D**, 2022, *Spectropolarimetry of the Thermonuclear Supernova SN 2021rhu: High Calcium Polarization 79 Days after Peak Luminosity*, The Astrophysical Journal, Volume 939, Issue 1

4. Yang, Y., et al., including **Mishra, D.**, 2024, *Polarized Light of the Core-Collapse Supernova 2024ggi Indicates a Bipolar Shock Breakout*, submitted

5. **Mishra, D.**, et al., *VLT Imaging Polarimetry: 1. Studying Magnetic Fields In Nearby Galaxies*, in prep.

6. **Mishra, D.**, et al., *High Resolution Spectroscopic and Photometric Analysis of SN2022hrs*, in prep.

7. Palamese, A., et al., including **Mishra, Divya**, *DESIRT: DECam Survey of Intermediate Redshift Transients*, in prep.

TELESCOPE PROPOSALS

1. **Very Large Telescope**, European Southern Observatory   P115
   Co-I : *First identification of the explosion mechanism of a Type Ia supernova from spectropolarimetry of a nearby event*
   FORS2, 11.3 hours

2. **Very Large Telescope**, European Southern Observatory   P109
   Co-I : *Imaging Polarimetry of Thermonuclear Supernovae as a Probe of their Circumstellar Matter*
   FORS2, 11.1 hours

3. **Víctor M. Blanco 4-meter Telescope**, Cerro Tololo Inter-American Observatory   2023A, 2023B
   Co-I : *DESIRT: DECam Survey for Intermediate-redshift Transients*
   DECam, 12 nights

OBSERVING EXPERIENCE

1. *DECam : Blanco 4-meter Telescope*   2022A, 2022B, 2023A, 2023B
   8 nights

2. *ETSI : McDonald Observatory,*   2022A
   7 nights

TALKS & POSTERS

- All about the High-velocity Type Ia Supernova 2022hrs   Transients from Space, STScI, 2025
- Optical Polarization in the M83 Galaxy: Understanding Dust and Magnetism   CraigFest, UT Austin, 2024
- Optical Polarization in Nearby Galaxies   Astrosymposium : Texas A&M University, 2023
- Stargazing to Progress: Unveiling the Societal Impact of Astronomy   Astronomy on Tap, 2024

WORKSHOPS

- iid2022: Statistical Methods for Event Data   University of Alabama, Nov. 15-18, 2022
- LSSTC Data Science Fellowship Program   Texas A&M University, Feb. 27-Mar 3, 2023
- ZTF Summer School 2023   University of Minnesota, July. 24-28, 2023

AWARDS & HONORS

- Dr. Chia Lai Wang Memorial Scholarship   Summer 2023

TEACHING EXPERIENCE

- Teaching Assistant - ASTR 101: Basic Astronomy   Fall 2022, Spring 2023, Spring 2024
- Teaching Assistant - ASTR 103: Intro To Stars & Exoplanets   Fall 2022
- Teaching Assistant - ASTR 104: Intro To Galaxies & Cosmology   Spring 2023, Spring 2024
- Teaching Assistant - ASTR 314: Survey Of Astronomy   Fall 2022, Spring 2023, Fall 2023
- Teaching Assistant - ASTR 401: Stars & Extrasolar Planets   Fall 2022

OUTREACH & MENTORING

- Astronomy on Tap, Trivia Master   Texas A&M, 2024-present
- Organized Solar Eclipse Observing Event at Texas A&M University   October, 2023
- Graduate Student Mentor for Mentoring and Advising Graduates   2023 - present
  in an Inclusive Community (MAGIC)
- Organized Solar Observing Event at Texas A&M Physics and Engineering Festival   April, 2023

EXTRACURRICULAR ACTIVITIES

- Treasurer, Graduate Student Assembly,   2022 - 2024
  Dept. of Physics & Astronomy, Texas A&M University
- Officer, The Society for the Under-represented in Physics & Astronomy,   2024 - Present
  Dept. of Physics & Astronomy, Texas A&M University
- Member of Women in Science and Engineering (WISE)   2024 - present
  Texas A&M University
- Vice President, Robotics Club,   2020-2021
  Madan Mohan Malaviya University of Technology
- Designing Lead, Robotics Club,   2019-2020
  Madan Mohan Malaviya University of Technology
- Member of National Service Scheme   2017 - 2021
  Madan Mohan Malaviya University of Technology
- Member of Robin Hood Army   2018-2020
  Madan Mohan Malaviya University of Technology
- Member of University Basketball Team   2018-2019
  Madan Mohan Malaviya University of Technology
- Member of University Badminton Team   2019-2020
  Madan Mohan Malaviya University of Technology