

Teja Teppala

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EDUCATION

University of Missouri - Columbia

- Ph.D. - Astronomy 2019 - 2024 (Expected)
- Graduate Certificate - Public Engagement July 2023
- Master of Science - Physics July 2022

University of Hyderabad, Hyderabad, India

- Integrated Master of Science - Physics October 2018
Thesis: *First principles study of the electronic structure of Copper chalcopyrites $CuMTe_2$*
($M = Al, Ga, In$)

RESEARCH EXPERIENCE

Graduate Student, University of Missouri - Columbia

2019 - present

Department of Physics and Astronomy

Advisor: Prof. Yicheng Guo

Topic: *Bursty star formation in low-mass galaxies.*

- Visually classified optical Keck-DEIMOS spectra from the HALO7D survey.
- Modeling star formation histories to understand starbursts in low-mass galaxies to test the dark matter halo-galaxy connection.

This work resulted in 2 co-authored publications in prestigious astrophysics journals ApJ, and ApJS and was partially funded through NASA's Astrophysics Data Analysis Program (ADAP).

Project Assistant, University of Hyderabad, Hyderabad

2017 - 2019

School of Physics

Principal Investigator: Dr. Seema Pooranchand

Topic: *Investigation of SPITZER mid-infrared spectra on a sample of Ultra Large/ Large Infrared Galaxies to understand the role of Polycyclic Aromatic Hydrocarbons (PAHs).*

- Reduced SPITZER mid-infrared spectra of an Ultra Large/ Large Infrared Galaxies sample.
- Studied strengths of Polycyclic Aromatic Hydrocarbons (PAH) emission lines using PAHFIT.

This work was funded through the Women Scientists Scheme (WOS) of the Department of Science and Technology, Government of India.

RESEARCH GRANTS/ OBSERVING PROPOSALS

Contributions to submitted observing proposals

Securing Spectroscopic Redshifts in a Galaxy-Galaxy Lensing System at Redshift of 1.

Principal Investigator: Prof. Yicheng Guo

Gemini Observatory 2024A Fast Turnaround Proposal

Submitted February 2024; Accepted March 2024.

Role: *Designed the target field and set up for the observations. Reduced the data.*

Securing Spectroscopic Redshifts in a Galaxy-Galaxy Lensing System in CEERS.

Principal Investigator: Prof. Yicheng Guo

James Webb Space Telescope Cycle 3 GO Proposal

Submitted October 2023

Role: Designed the target field and set up for the observations. Worked on technical justification, and created the APT file for submitting the observing proposal.

PUBLICATIONS

Published in peer-reviewed journals

1. Pharo, J., Guo, Y.,..., **Teppala, T.**, et. al., **Dwarf Galaxies Show Little ISM Evolution from $z \sim 1$ to $z \sim 0$: A Spectroscopic Study of Metallicity, Star Formation, and Electron Density**, 2023, ApJ, 959, 48
2. Pharo, J., Guo, Y.,..., **Teppala, T.**, et. al., **The Dwarf Galaxy Population at $z \sim 0.7$: A Catalog of Emission Lines and Redshifts from Deep Keck Observations**, 2022, ApJS, 261, 12.

In preparation

1. **Teppala, T.**, Guo, Y., Pharo, J., ..., et. al., **Quantifying Timescales of Starbursts in Low-Mass Galaxies using Helium Recombination Lines**, 2024.

CONFERENCES ATTENDED

Annual Meeting of the American Association for the Advancement of Science Denver CO	February 2024
Mid-American Regional Astrophysics Conference (MARAC) - 2022 University of Arkansas, Fayetteville AR	October 2022
240th meeting of the American Astronomical Society Pasadena CA	June 2022
DAWN Winter School - 2022 Organized virtually by the Cosmic DAWN Center, Copenhagen, Denmark.	February 2022
Mid-American Regional Astrophysics Conference (MARAC) - 2021 Organized virtually by the University of Kansas.	April 2021

PRESENTATIONS

Oral presentations

1. Hydrodynamical simulations of the galaxy populations, *Astronomy seminar*, October 2023.
2. Investigating star formation in low-mass galaxies, *Astronomy seminar*, October 2022.
3. Investigating star formation in low-mass galaxies, *Mid-American Regional Astrophysics Conference (MARAC)*, October 2022.

Poster presentations

1. Investigating star formation burstiness in low-mass galaxies using Helium recombination lines, *240th meeting of the American Astronomical Society, Pasadena CA*, June 2022.

HONORS & AWARDS

Remington R. Williams Award Board of Curators, University of Missouri	Summer 2024
Mary Elizabeth Gutermuth Award for Community Engagement Graduate School, University of Missouri	Spring 2024
Sandra K. Abell Science Education Award Graduate School, University of Missouri	Spring 2024
O. M. Stewart Scholarship Department of Physics and Astronomy, University of Missouri	Summer 2023
James L. and Dora D. Ferguson Fund for Excellence in Physics Department of Physics and Astronomy, University of Missouri	Fall 2019

TEACHING EXPERIENCE

Graduate Teaching Assistant, University of Missouri, Columbia

- **Instructor:** ASTRON 1020 - Introduction to Laboratory Astronomy Spring & Fall 2023, Spring 2024
Responsibilities: Developed and delivered 15 two-hour lecture and laboratory sessions to a group of 20 undergraduate students each semester.
- **Discussion TA:** PHYSICS 1220 - College Physics II Fall 2023, Spring 2024
Responsibilities: Led discussion sessions for 70 undergraduate students each semester; explained physics concepts and their applications, and solved problems while engaging the students.
- **Grader:** ASTRON 1010 - Introduction to Astronomy Fall 2019, Spring 2023
 PHYSICS 3150 - Introduction to Modern Physics Fall 2019
Responsibilities: Graded lab reports of 200 undergraduate students for ASTRON 1010 each semester.
Graded homework for PHYSICS 3150.

SERVICE & OUTREACH

Vice President

April 2024 - present

Graduate Professional Council, University of Missouri, Columbia

- Chairing all assembly meetings; preparing agendas for Executive Officer, Executive Board, and Assembly meetings.
- Overseeing internal operations of GPC and its officers; assisting the President in day-to-day operations.

AVID Mentor

February 2024 - present

The Bridge - College of Education & Human Development, University of Missouri, Columbia

- Mentoring sophomore students at Battle High School to prepare them for college and future careers.

Organizer

January - April 2024

Great American Eclipse Viewing Party, University of Missouri, Columbia

- Planned and organized a viewing party on campus for the Great American Eclipse on April 8, 2024.
- Collaborated with MU Extension, with support from the Astronomical Society of the Pacific.
- Designed posters and other publicity materials; promoting the event on social media and print media.
- Delivered presentations and performing demonstrations on the science behind eclipses to 4-H clubs and community groups in Boone County, MO, and prisoners at Moberly Correctional Center; distributed eclipse glasses and informational material.
- Provided logistical and technical support to MU Extension programs along the path of totality.

Organizer

August - October 2023

Partial Eclipse Viewing Party, University of Missouri, Columbia

- Planned and organized a viewing party at the Lowry Mall on campus for the partial solar eclipse on October 14, 2023. Set up telescopes and provided eclipse glasses and informational material to attendees.
- Collaborated with MU Extension, and the Division of Inclusion, Diversity, and Equity, University of Missouri; supported by the Astronomical Society of the Pacific.
- Designed and published posters and other publicity materials; operated logistics.
- Number of attendees: ~ 250. External links to media coverage: Columbia Missourian, KOMU

Assistant Director of Programming

August 2023 - April 2024

Graduate Professional Council, University of Missouri, Columbia

- Co-lead the Programming Committee of the Graduate Professional Council.
- Assisted GPC events and the Research & Creative Activities Forum (RCAF).

Co-Director - Publicity Team

June 2023 - April 2024

Missouri International Student Council, University of Missouri, Columbia

- Co-lead the Publicity Team of the Missouri International Student Council.
- Responsible for the organization's image on campus: social media, graphic design, photography, and videography.

Instructor

Summer & Fall 2023

STEM Cubs, University of Missouri, Columbia

- Developed lesson plans for STEM Cubs, a free STEM education program hosted by the Office of Academic Access and Leadership Development, College of Education & Human Development, and College of Engineering at the University of Missouri.
- Instructed astronomy lessons to 2nd and 3rd graders through kinesthetic activities.
 - *Earth's Tilt and Seasons* October 28, 2023
 - *Motion of the Earth: Rotation vs Revolution* June 17, 2023

Student Volunteer

June 2021 - present

Laws Observatory, University of Missouri, Columbia

- Operating and maintaining the telescopes; performing demonstrations to the general public.
- Maintaining the observatory and keeping records.
- Designed the new logo for the observatory.

Outreach Coordinator

January 2021 - present

Physics & Astronomy Graduate Student Association, University of Missouri, Columbia

- Giving presentations in and around Columbia, MO.
 - Title: *The Reason Behind Seasons*
 - * DeafLEAD Monthly Meeting April 17, 2024
 - * South Boone Area YMCA April 17, 2024
 - Title: *How Astronomy Shaped The Modern Civilization & How To Find Direction Using The Stars*
 - * South Boone Area YMCA April 10, 2024
 - * West Middle School April 5, 2023
 - * Jefferson Middle School January 28 and May 17, 2022; October 8 and December 13, 2021
 - Title: *Why Don't We See Solar Eclipses Often?*
 - * South Boone Area YMCA April 03, 2024
 - * Saturday Morning Science, Ragtag Cinema March 30, 2024
 - * Moberly Correctional Center March 14, 2024
 - * BoCo Adventurers 4-H Club March 12, 2024
 - * Centralia 4-H Club March 10, 2024
 - * Back To Basics 4-H Club February 13, 2024
 - * Hickman High School February 5, 2024
 - Title: *How a Leap Year Works*
 - * Science on Tap at the International Tap House February 29, 2024
 - Title: *How Do Telescopes Work? & How Do They Unlock The Secrets Of The Universe?*
 - * The Children's School at Stephen's College December 7, 2023

- Coordinating and organizing public outreach events for the Department of Physics and Astronomy.
 - Columbia Young Scientists Expo March 11, 2023; March 9, 2024
 - Department Open House April 23, 2022; April 22, 2023; April 20, 2024.
 - Department outreach at Rock Bridge High School November 13, 2021

Vice President January - December 2023
Cultural Association of India, University of Missouri, Columbia

- Performed the duties of the President in their absence; assisted other members of the Executive Board in carrying out their specific tasks.

External Affairs Officer January - December 2022
Cultural Association of India, University of Missouri, Columbia

- Communicated with the newly admitted students from India, and built a bridge between them and the local Indian community.
- Coordinated with the pickup, provided temporary housing and addressed the concerns of the newly admitted students.

Judge February 26, 2022
Columbia Young Scientist Fair, Columbia Co-op of Home School Educators (CHE)

- Judged the demonstrations and experiments by home-schooled children from grades K-12.
- Scored the projects based on creative ability, scientific thought, thoroughness, skill, and clarity.

PROFESSIONAL MEMBERSHIPS

Member, Rollins Society April 2024 - present
Honors society of graduate and professional students at the University of Missouri.

Member, American Association for the Advancement of Science January 2024 - present

Member, National Science Policy Network January 2024 - present

Member, Sigma Pi Sigma April 2022 - present
University of Missouri chapter of the Physics & Astronomy honor society.

Member, American Astronomical Society September 2021 - present

SKILLS

- **Programming Languages:** Python, C, C++, FORTRAN, Bash
- **Astronomy software packages:** TOPCAT, DS9, IRAF
- **Operating systems:** Microsoft Windows, Linux - Ubuntu
- **Typesetting software and applications:** L^AT_EX, Microsoft Office, GitHub Pages, WordPress, Drupal
- **Multimedia software:** Inkscape, Darktable, DaVinci Resolve
- **Filmmaking and photography:** Cinematography, editing, lighting, and set design (IMDb profile)
- **Communication, outreach & social media:** Graphic design, content creation

LANGUAGES

- **Telugu** (Native)
- **English** (Fluent)
- **Hindi** (Intermediate)
- **German** (Beginner)

PAST WORKSHOPS/SCHOOLS ATTENDED

- 36th Annual Meeting of the Astronomical Society of India** February 2018
Osmania University, Hyderabad, India.
- IIST Astronomy and Astrophysics School – 2015** December 2015
Indian Institute of Space Science and Technology (IIST), Thiruvananthapuram, India.
- Pulsar Observatory for Students (POS) – 2015** October 2015
Radio Astronomy Centre, Ooty, India.
- Radio Astronomy Winter School (RAWS) - 2014** October 2014
Inter-University Centre for Astronomy and Astrophysics (IUCAA) and National Centre for Radio Astronomy (NCRA), Pune, India.
- QIP School on Optics of Gravitational Wave Detectors** September 2014
Indian Institute of Technology, Kanpur, India.
- 1st Introductory Workshop in Computational Numerical Methods** September – October 2013
Homi Bhabha Centre for Science Education (NIUS-HBCSE), Tata Institute of Fundamental Research (TIFR), Mumbai, India.

PAST RESEARCH EXPERIENCE

- Summer Research Fellow, Physical Research Laboratory, Ahmedabad** May - July 2016
Astronomy & Astrophysics Division
Research Supervisor: Prof. Shashikiran Ganesh
Topic: *Photometric variability of Narrow Line Seyfert 1 galaxy 1H0323+342 and blazar 3C273.*

- Carried out observations using the 1.2-meter telescope at the Mount Abu Observatory.
- Reduced CCD data and performed photometry with IRAF.
- Measured the variability of the active galaxies and determined the black-hole masses.

This work was funded through the Science Academies' Summer Research Fellowship Program, Department of Science and Technology, Government of India.

- Research Intern, Radio Astronomy Center, Ooty** December 2016
Pulsar Observatory for Students

- Carried out live observation of pulsar B1946+35 using the Ooty Radio Telescope (ORT).
- Analyzed the observed data to obtain characteristic properties of the pulsar.

This work was funded by the National Centre for Radio Astrophysics, Department of Atomic Energy, Government of India.

PAST SERVICE & OUTREACH

- Coordinator** July 2016 - April 2018
Astronomy Club, University of Hyderabad, Hyderabad

- Coordinated and organized talks on astronomy and astrophysics.
- Conducted several night sky observation sessions.
- Demonstrated some basic radio astronomy experiments.

- Coordinator** July 2013 - April 2017
Junior Science Club, University of Hyderabad, Hyderabad

- Coordinated and organized talks on interdisciplinary sciences and research.
- Organized public outreach programs for school students.
- Designed and demonstrated science experiments using day-to-day objects.