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Ansh Gupta

Steward Observatory
The University of Arizona
933 N. Cherry Ave.
Tucson, AZ 85721

EDUCATION

Bachelor of Science

University of Arizona

August 2020 - May 2024 (expected)

Major: Astronomy, Physics; GPA: 4.0/4.0

Relevant Coursework: Astronomy and Astrophysics, Theoretical Astrophysics, Introduction to Observational Astronomy, Quantum Theory II, Electricity and Magnetism, Computational Physics, Thermal Physics

RESEARCH EXPERIENCE

DESI High Redshift Quasar Survey

Advisors: Prof. Xiaohui Fan, Prof. Jinyi Yang

Steward Observatory, The University of Arizona

August 2021 - Present

- Used spectral analysis tools to characterize high-redshift quasar sample selected from Dark Energy Spectroscopic Instrument (DESI) data.
- Currently working on determination of quasar luminosity function and clustering.
- Coauthored publication: Yang, J., Fan, X., **Gupta, A.**, et al. [DESI \$z > \sim 5\$ Quasar Survey. I. A First Sample of 400 New Quasars at \$z \sim 4.7 - 6.6\$](#) . Submitted (2023).

Machine Learning Tools to Combat Fake Science

Advisor: Prof. Christopher Impey

Steward Observatory, The University of Arizona

August 2021 - May 2023

- Tagged real/fake science articles and select open source datasets for artificial intelligence tool analysis.
- Wrote questions for and edited astronomy-focused Massive Open Online Course (MOOC) - [Knowing the Universe: History and Philosophy of Astronomy](#).

University of Kansas Astronomy REU

Advisor: Prof. Allison Kirkpatrick

Department of Physics & Astronomy, The University of Kansas

May 2023 - August 2023

- Investigating ionization conditions in JWST CEERS galaxies at redshift $\sim 1 - 2$ by comparing emission line ratios from NIRSpect data.
- Finding correlations between ionization conditions and galaxy properties such as mass and star formation rate.

Astromatic 2023 (Accepted)

Astrophysics Machine Learning/AI Program

Montreal Institute for Astrophysics and Machine Learning, The University of Montreal

August 2023

- Machine learning and astrophysics program with hackathon, programming competition, workshops, and career seminars.

OUTREACH

Active Galactic Videos YouTube Channel

Part of astronomy educational research with Prof. Christopher Impey

August 2021 - May 2023

- Research, host, film, and edit educational videos on astronomy and physics for [Active Galactic YouTube Channel](#). Create graphics for and engage with public through social media.

Citizens' Climate Lobby
Northwest Missouri Chapter Leader

November 2020 - Present

- Lobbying for action on climate change, meet with representatives' and senators' legislative teams, direct grassroots climate change action, organize outreach and educational events about environmental justice.

Saint Joseph Astronomy Club
Founder and President

October 2016 - Present

- Gave in-person educational public lectures on popular astronomy topics and current events. Currently run online newsletter about developments in space and current astronomy research.

University of Arizona Wind Ensemble Concert Outreach

April 2023

Astronomy Day outreach event with University of Arizona Astronomy Club

- Operated a telescope and engaged with members of the public outside of a space-themed concert as part of a coordinated astronomy day outreach event.

University of Arizona Undergraduate Research Panel

April 2023

University of Arizona Undergraduate Research Initiative

- Discussed how to get involved with research experiences with CALS (environmental sciences) students on April 4.
- Shared research experiences with a diverse group of undergraduate students as part of a panel on April 18.

TIMESTEP Soldering Workshop

April 2023

Tucson Initiative for Minoritized student Engagement in Science (TIMESTEP) volunteering workshop

- Soldered circuits used in the construction of "Light Sound devices". These devices produce sound from light information, which will be used to help people who are blind or visually impaired experience solar eclipses.

Laser Fun Day

March 2023

Wyant College of Optical Sciences Outreach Event

- All-ages public outreach event with demonstrations of optical and physics phenomena. Presented demos about infrared/thermal cameras, optical birefringence, and the polarization of light via a polariscope.

Stars Over Sabino Canyon

March 2023

Mount Lemmon SkyCenter public stargazing night

- Ran two telescopes representing the University of Arizona Astronomy Club. Presented information about stars, planets, and constellations.

Harelson Elementary School Stem Night

February 2023

School science presentation and stargazing event

- Represented University of Arizona Astronomy Club giving a demonstration of crater formation on the Earth and Moon.
- Set up and ran a telescope, conveying information about planets and the Solar System.

Old Vail Middle School Stargazing Night

February 2022

School astronomy and physics night

- Tabled for University of Arizona Astronomy Club. Gave presentations about the OSIRIS-REx sample return mission, near-Earth asteroid 101955 Bennu, and the Artemis space program.
- Ran a telescope and spoke about star systems and constellations.

SKILLS

Programming

Python, Git, L^AT_EX, Jupyter, SQL

Other

Microsoft Office, Adobe Premiere, Adobe Photoshop, Fluent in Hindi