

+1-(816)-752-4570
anshrg@arizona.edu
GitHub: anshrg
Website: anshrg.github.io

Ansh Gupta

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

EDUCATION

Bachelor of Science

The University of Arizona

August 2020 - May 2024 (expected)

Major: Astronomy, Physics; GPA: 4.0/4.0

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

RESEARCH EXPERIENCE

DESI High Redshift Quasar Survey

August 2021 - Present

*Advisors: Prof. Xiaohui Fan, Prof. Jinyi Yang
Steward Observatory, The University of Arizona*

- Used spectral analysis tools to characterize high-redshift quasar sample selected from Dark Energy Spectroscopic Instrument (DESI) data.
- Currently working on determination of quasar two point correlation 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).

University of Kansas Astronomy REU

May 2023 - August 2023

*Advisor: Prof. Allison Kirkpatrick
Department of Physics & Astronomy, The University of Kansas*

- Investigated ionization conditions in JWST CEERS galaxies at redshift $\sim 2 - 8$ by creating optical line ratio diagrams from NIRSpect data. Correlated positions on diagrams with galaxy properties (redshift, stellar mass, and star formation rate).
- Compared galaxy specific star formation rates to main sequence of star forming galaxies.
- Determined AGN properties including bolometric luminosity and accretion rate from optical line fluxes.
- Preparing research note for submission to RNAAS.

Machine Learning Tools to Combat Fake Science

August 2021 - May 2023

*Advisor: Prof. Christopher Impey
Steward Observatory, The University of Arizona*

- Tagged real/fake science articles and select open source datasets for artificial intelligence tool analysis.
- Created educational astronomy YouTube videos for [Active Galactic](#), > 40,000 total views.
- Wrote questions for and edited astronomy-focused Massive Open Online Course (MOOC) - [Knowing the Universe: History and Philosophy of Astronomy](#).

Astromatic 2023

August 2023

*Astrophysics Machine Learning/AI Program
Ciela Institute, Université de Montréal*

- Trained and utilized score-based generative model for denoising and deblurring of HST PROBES dataset images. Used score-based neural network to generate simulated HST-like noise. Successfully constructed posterior samples of galaxy images from images with added noise.
- Worked with a team to produce and analyze results. Prepared and delivered an oral presentation.

LEADERSHIP

Citizens' Climate Lobby

November 2020 - Present

Northwest Missouri Chapter Leader

- 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

October 2016 - Present

Founder and President

- 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 Astronomy Club

August 2021 - Present

Presenter

- Regularly prepare and give presentations on my individual research, astronomical news and developments, and broader topics in science.
- Participate in monthly outreach events, including operating telescopes at public showings, running demonstrations at nearby elementary and middle schools, and contributing to department public engagement videos/media.

AWARDS & HONORS

Lea Booher Memorial Scholarship

Awarded for proven scholastic ability and research excellence.

Angelos C. Langadas Fund in Astronomy Scholarship

Awarded for strong commitment to pursuing a career in Astronomy and academic achievement.

Weaver Award for Undergraduate Research

Awarded for promise as a future research scholar based on demonstrated achievement.

SKILLS

Programming

Python, Git, L^AT_EX, Jupyter, SQL, Linux

Other

Microsoft Office, Adobe Creative Suite, Hindi (Fluent)