Weixuan Pan

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EDUCATION

Bachelor of Astronomy, Guangzhou University — September 2022 – June 2026

- **GPA:** 3.42/4.0
- **Relevant Courses:** Electrodynamics, Observational Astrophysics, Statistics in Astronomy, Artificial Intelligence and Big-data Processing in Astronomy

RESEARCH INTEREST

Cosmological large-scale structure, Numerical simulations, Galaxy formation and evolution, Galaxy morphology

RESEARCH EXPERIENCE

Cosmological Simulation of Large-Scale Structure — January 2025 – Present
Dr. Qiao Wang, National Astronomical Observatories — *Beijing, China*

- **Cosmological Parameter Analysis:** Examined the impact of the dependence on different cosmological parameters on the matter power spectrum, employing the CAMB program to illustrate the effects of variations in OmegaM and Sigma8 on the matter power spectrum centered around Planck 2018.
- **FOF Halo Analysis:** Processed and analyzed a dataset comprising over 30 million particle coordinate entries. Computed interparticle distances using KD tree algorithms, detected halos via the FoF algorithms module in Halotools, and generated halo mass function plots utilizing the Colossus package.

Spectroscopy of one H II region in the external galaxy NGC 0925 — May 2024 – November 2024
Dr. Yewei Mao, Guangzhou University — *Guangzhou, China*

- **Spectral raw data processing:** Used various task packages in PyRAF, performing background correction, flat-field correction, and other processing on the raw spectral data, to produce calibrated HII region spectrum.
- **Advanced processing of spectral data:** Based on the observed emission lines, making attenuation correction with "Balmer Decrement" method.
- **Calculating physical parameters of the HII region:** Derived star formation rate from H emission line luminosity and estimated oxygen abundance with the strong-line diagnostics, using the corresponding calibration relationship.

PROFESSIONAL EXPERIENCE

Xinglong Observatory of the National Astronomical Observatory — November 2024
Trainee Student — *Xinglong, China*

- **Observed the LAMOST Facilities and Operations:** Collaborated with telescope operators to master core spectroscopy concepts and learned to develop observation plans and optimize resource allocation.
- **Hands-on Operation of the 2.16m Telescope:** Gained expertise in the mechanical and automation systems of the telescope, mastered the use of terminal instruments and observation techniques, and enhanced team collaboration skills.

Shenzhen Xichong International Dark Sky Community — May 2024
Trainee Student — *Shenzhen, China*

- **Monitored night-sky brightness:** Analyzed the impacts of light pollution and mastered night-sky brightness monitoring techniques and methodologies.

Astronomy Dilettantes Association of Guangzhou University 2022 – 2024
Staff *Guangzhou, China*

- **Organized Campus "Sidewalk Astronomy" Events:** Popularized astronomical knowledge and promoted interdisciplinary learning.
- **Managed outreach for Project Astra:** Presented seasonal constellations, demonstrated public-outreach telescope usage, guided campus observatory tours, bridged the gap between astronomy and the public, and cultivated potential astronomy enthusiasts.
- **Served as a Judge for Astronomy Olympiad:** Acted as a judge for the telescope practical operation part of the Astronomy Olympiad, evaluated contestants' telescope operation procedures, solidified professional knowledge, and enhanced judging and feedback skills.

AWARDS & SCHOLARSHIP

China International Internet Plus College Students Innovation and Entrepreneurship Competition Guangzhou University School-level Third Prize 2023 – 2024

Outstanding Staff of the Astronomy Dilettantes Association of Guangzhou University 2022 – 2024

Guangzhou University Comprehensive Scholarship 2022 – 2023

SKILLS

- **Language:** English (IELTS: 6.5), Mandarin, Cantonese
- **Programming Skill:** Python (numpy, scipy, pandas, matplotlib)
- **Software and Tools:** PyRaf, Gildas, halotools, Colossus, yt