

# Feiyu Quan (全飞宇)

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## Education

### **The Chinese University of Hong Kong**

*Doctor of Philosophy, Astrophysics*

2024 – Present

Supervisor: [Hua-bai Li](#) (李華白)

### **University of Cambridge**

*Master of Advanced Study, Part III of the Mathematical Tripos*

2023 – 2024

Essay: Structure Formation in Saturn's Rings, with [Henrik Latter](#)

### **University of Toronto**

*Honours Bachelor of Science (with High Distinction), Physics and Astrophysics*

2019 – 2023

## Publications

- J. E. Pineda et al. (including **F. Quan**), The Green Bank Ammonia Survey: Data Release 2, in prep.
- A. Pandhi et al. (including **F. Quan**), Alignment of dense molecular core morphology and velocity gradients with ambient magnetic fields, *Monthly Notices of the Royal Astronomical Society*, 2023, <https://doi.org/10.1093/mnras/stad2283>

## Research Experience

### **Research Project: New algorithm to detect resonances in planetary systems**

Fall 2022

- We aim to improve an existing method for detecting mean motion resonances in planetary system. The method may be applied to secular resonances as well.  
Supervisor: [Hanno Rein](#)

### **CITA Research Fellowship: How do disk galaxies warp?**

Summer 2022

- This project at Canadian Institute for Theoretical Astrophysics explores the processes that drive disk deformations, by analyzing outputs from Illustris TNG50, a state-of-the-art magneto-hydrodynamical cosmological simulation that computes the formation and evolution of hundreds of thousands of galaxies.  
Supervisor: [Neige Frankel](#) and [Joshua Speagle](#)

### **Research Assistant: Investigate the statistical properties of star-forming clouds**

Fall 2021, Winter 2022

- The project investigates the statistical properties of star-forming clouds in our Galaxy, including gas densities, temperatures, and velocity structures, to compare these observed values with predictions from numerical simulations of how stars form. Financially supported by the University of Toronto Work Study program.  
Supervisor: [Rachel Friesen](#)

### **Research Project: Dynamical analysis of a recently discovered extra-solar planetary system using numerical tools**

Summer 2021

- Analysis of planetary system TOI-1260. We applied numerical simulation to the system to study its dynamical stability, and used MCMC to constrain the rate of precession of planet orbit to predict their transits.  
Supervisor: [Hanno Rein](#)

## Teaching Experience

**Teaching Assistant: UGEB2401, Astronomy** 2024

- Conducted a 2 hour consultation session each week for students including working through problems and demonstrating key problem solving methods. Managing detailed record of students performance.

**Teaching Assistant: PHYA10, Physics I for the Physical Sciences** 2021

- Facilitating a 2 hour practical session each week for approximately 20 students including working through problems in small groups and demonstrating key problem solving methods. Managing detailed record of students performance.

**Physics Tutor at Environmental and Physical Sciences Students Association** 2020 ~ 2021

- Physics tutor at Environmental and Physical Sciences Students Association (EPSA). Helping students understand concepts and solve problems in first-year physics (PHYA10/A11, PHYA21/A22).

## Skills and Interests

Familiar with Python, Jupyter,  $\text{\LaTeX}$  and C. Basic knowledge of Linux, Git, and Fortran. Interested in applying numerical simulations and techniques to solve various problems in astrophysics.

## Awards

**Hong Kong PhD Fellowship Scheme** 2024

**CUHK Vice-Chancellor's Scholarship** 2024

**University of Toronto Dean's List** 2020 – 2023

**Canadian Institute for Theoretical Astrophysics Research Fellowship** 2022

**Department Excellence and Leadership Award** 2022