

YI-XIAN CHEN (陈逸贤)

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EDUCATION

Department of Astrophysical Sciences, [Princeton University](#)

Princeton

PhD in Astrophysical Sciences

Sep 2021 – Expected June 2026

- **Research Interests:**

Topics in planet formation: Core-accretion theory of super-Earths and gas giants; Planet migration; Observable signatures of planet-disk interactions; Dust evolution in protoplanetary disks

General application of accretion disk theory: Tidally distorted accretion disks; Gravitational instability and measurement of turbulence in accretion disks; Evolution of Stellar-mass Black Holes embedded in AGN disks

Department of Physics, [Tsinghua University](#)

Beijing

Bachelor in Physics

Sep 2017 - Jun 2021

- **GPA:** 3.90/4.00

- **Awards & Honors:**

Chi-sun Yeh Scholarship (Highest Honor for Physics Major), 2021

[Tsinghua University Prestigious \(特等\) Scholarship](#) (Highest Honor for Undergraduates, 10 per year), 2020

Lin-bridge Scholarship (Awarded for Excellent Astrophysical Research), 2020

Tsinghua University Jiang Nan-xiang Scholarship (Highest Honor for Juniors), 2019

Tsinghua University Dec. 9th Scholarship (Highest Honor for Sophomores), 2018

- **Programs:**

Member of Tsinghua University Spark project, research scholar cultivation program

Member of Chi-sun Yeh Physics class, part of Tsinghua University talent cultivation program

University of California, Berkeley

Berkeley

Semester Exchange Program (Fall 2019)

Aug 2019 - Dec 2019

- **GPA:** 4.00/4.00

PUBLICATIONS

1. **Chen Y.X.***, Li Y.P., Li H., Lin D.N.C., [The Preservation of Super Earths and the Emergence of Gas Giants after Their Progenitor Cores Have Entered the Pebble Isolation Phase](#), The Astrophysical Journal, 896, 135
2. **Chen Y.X.***, Zhang X., Li Y.P., Li H., Lin D.N.C., [Retention of Long-Period Gas Giant Planets: Type II Migration Revisited](#), The Astrophysical Journal, 900, 44
3. Li Y.P.*, **Chen Y.X.***, Lin D.N.C., Zhang X., [Accretion of Gas Giants Constrained by the Tidal Barrier](#), The Astrophysical Journal, 906, 52
4. **Chen Y.X.***, Wang Z., Li Y.P., Baruteau C., Lin D.N.C., [Wide Dust Gaps in Protoplanetary Disks Induced by Eccentric Planets: A Mass-Eccentricity Degeneracy](#), The Astrophysical Journal, 922, 184
5. Li R.*, **Chen Y.X.**, Lin D.N.C., [Dust-Accumulation near the Magnetosphere Truncation of Protoplanetary Discs around T Tauri Stars](#), MNRAS, 510, 4
6. Li Y.P.*, **Chen Y.X.***, Lin D.N.C., Wang Z., [Spin Evolution of Stellar-mass Black Holes Embedded in AGN disks: Orbital Eccentricity Produces Retrograde Circumstellar Flows](#), ApJL, 928, 1

7. **Chen Y.X.***, Jiang Y.F., Goodman J., Ostriker E., *3D Radiational Hydrodynamics Simulations of Gravitational Instability in AGN Disks: The Radiation-modified Fragmentation Boundary*, to be submitted
8. **Chen Y.X.***, Lin D.N.C., *Chaotic Gas Accretion by Black Holes Embedded in AGN Disks as Cause of Low-spin Signatures in Gravitational Wave Events*, submitted to Nature Astronomy

(* indicates corresponding author)

SELECTED SCIENTIFIC TALKS

- 3D Radiational Hydrodynamics Simulations of Gravitational Instability in AGN Disks **Pasadena, California**
Oral Presentation, AAS 240 Jun 2022
- [Understanding Migration of Gas Giants](#) **Las Vegas, Nevada**
Oral Presentation, Exoplanet IV Apr 2022
- [Accretion of Gas Giants Constrained by the Tidal Barrier](#) **Tucson, Arizona (Virtual)**
Online Talk, invited by UArizona Planet Group Dec 2020
- [The Lense-Thirring Precession and Warped Accretion Disks](#) **Beijing**
Final project for Advanced General Relativity Dec 2020
- [The Preservation of Hot Super Earths and Cold Gas Giants](#) **Tucson, Arizona (Virtual)**
Online Talk, invited by UArizona Planet Group Jun 2020
- **Introduction to Planetary Astrophysics** **Beijing**
Chi-sun Yeh Academic Lectures, Tsinghua University Jun 2020
- [Formation of Close-in Planets \(sub-Neptunes/super-Earths\)](#) **Beijing**
Department of Astronomy (DoA) seminar on theoretical astrophysics, Tsinghua University Apr 2020
- [Galactic Center Microlensing](#) **Berkeley, California**
Report of research project, Moving Universe Group Meeting Dec 2019
- [Dust Diffusion in Protoplanetary Disks and Formation of super Earths](#) **Urumqi, Xinjiang**
Report of research project, Formation and Evolution of Planetary System Conference Jul 2019
- [Linear Magneto-Rotational Instability](#) **Beijing**
DoA seminar on theoretical astrophysics, Tsinghua University Apr 2019

CONFERENCES & WORKSHOPS

- AAS 240 Meeting, Pasadena June 2022
- Exoplanet IV, Las Vegas May 2022
- IMPRS Summer School on “Planet Formation in Protoplanetary Disks”, Heidelberg (Virtual) August 2020
- Exoplanets III, Heidelberg (Virtual) July 2020
- Sagan Workshop on Extreme Precision Radial Velocity, Pasadena, California (Virtual) July 2020
- Formation and Evolution of Planetary System Seminar, Urumqi, Xinjiang July 2019
- Astrophysical Dynamics Conference, Shanghai July 2019

SKILLS AND INTERESTS

Language Abilities:

- Chinese: Mandarin (native), Cantonese
- English: fluent oral speaker, representing China in international speech contests
- **Awards & Honors:**
 - China Daily English Speaking Competition (College Group)* [National Championship](#), 2019
 - English Speaking Union International Public Speech Contest (IPSC)* [Finalist/Third Place](#), 2019
 - China Daily English Speaking Competition (High School Group)* *National Championship*, 2017
- Invited to star in and dub an official English Promotion Video for Tsinghua University: [Beyond the Pages](#)

Programming Languages: Mathematica, Matlab, python, C++, HTML, LaTeX

Professional Softwares: FARGO3D, RADMC-3D, Athena++

Music and Vocal performance:

- Member of Tsinghua University chorus and Berkeley Chinese Acappella, performed in various concerts and competitions, Award-winning campus singer, Guest performer on Student Gala
- Selected Vocal Performances: [My Way](#), [Wandering Earth Theme](#), [Keep me by your Side \(让我留在你身边\)](#), [When we were Young](#), [葡萄成熟時](#)

Film production:

- Wrote screenplays for and produced short play *Ode to Guitar (2018)* and sci-fi film [A Wicked Letter Through Time \(2019\)](#), well-received by audiences in department Student Gala