

YIXIAN CHEN

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EDUCATIONAL BACKGROUND

Department of Physics, [Tsinghua University](#)

Beijing

Bachelor in Physics

Sep 2017 - Expected Jun 2021

- **GPA:** 3.9/4.0 (Rank 7/47)
- **Awards & Honors:**
 - Jiang Nan-xiang (蒋南翔) Scholarship (Highest Honor for Juniors), 2019*
 - Dec. 9th (一二九) Scholarship (Highest Honor for Sophomores), 2018*
 - Scholarship for Outstanding Overall Performance, 2018&2019*
 - Scholarship for Outstanding Scientific Research, 2018&2019*
 - Mathematical Contest in Modeling Honorable Mention, 2019*
 - Chinese Undergraduate Physics Tournament First Prize, 2018*

- **Programs:**

Admitted into Tsinghua University Spark (星火) project, top researcher cultivation program

Member of Chi-sun Yeh (叶企孙) Physics class, part of Tsinghua University Xuetao talent cultivation program

UCLA CSST 2020 research program admitted (90 students in mainland China, canceled due to COVID-19)

Department of Foreign Languages, Tsinghua University

Beijing

Minor in English Literature

Sep 2018 - Expected Jun 2021

- **GPA:** 4.0/4.0
- Fluent in English, renowned oral speaker and debater, representing China in international speech contests
- **Awards & Honors:**
 - China Daily "21st Century" Cup English Speaking Competition (College) [National Championship](#), 2019*
 - English Speaking Union International Public Speech Contest (IPSC) [Finalist/Third Place](#), 2019*
 - China Daily "21st Century" Cup English Speaking Competition (High School) National Championship, 2017*

University of California, Berkeley

Berkeley

Semester Exchange Program (Fall 2019)

Aug 2019 - Dec 2019

- **GPA:** 4.0/4.0
- Department partially sponsored program for taking relevant courses and research

RESEARCH EXPERIENCES

Retention of Long-Period Gas Giant Planets: A Revisit of Type II Migration

Beijing

Supervisor: Douglas. N. C. Lin, Professor, Department of Astronomy, UC Santa Cruz

Feb 2020 - Present

- Carried out hydrodynamic simulations combined with an analytic torque study to examine the transition between different paradigms of type II migration for gap-opening planets
- Analyzed the mechanism of gas flow across depleted gap so that the surface density distribution is maintained in a quasi-steady state, and how migration rate lies delicately on the balance of low-order Lindblad torques

Preservation of Super-Earths After Pebble-Isolation Phase

Beijing & Berkeley

Supervisor: Douglas. N. C. Lin, Professor, Department of Astronomy, UC Santa Cruz

Dec 2018 - Mar 2020

- Implemented numerical models for planet-disk interactions and planetary atmosphere evolution, traced the atmospheric evolution of terrestrial planets and gas giants, identified important mechanisms in super-Earth formation
- Oral presentation of the topic in *Formation and Evolution of Planetary System Conference (Urumqi, July 2019)*

Microlensing of the Galactic Center Supermassive Black Hole

Berkeley

Supervisor: Jessica R. Lu, Assistant Professor, Department of Astronomy, UC Berkeley

Sep 2019 - May 2020

- Developed new and more efficient approaches to model stellar distribution and numerically calculate Microlensing rate based on the methodologies put forward 20 years ago and implemented them with original codes in Python
- Analyzed with updated data from last 20 years' observations, obtaining newer and more accurate results

High-energy Radiation Analysis of Active Galactic Nuclei

Beijing

Department Student Research Program (SRT)

Jul 2018 - Mar 2019

Supervisor: Youhong Zhang, Associate Professor, Dep of Physics, Tsinghua University

- Analyzed data from Fermi Telescope to calculate variance of AGN light-curves with C++ and python on Ubuntu system, finished a [report](#) useful for future research and instructing predecessors into the program
- Received A+ in evaluation of contribution to the program

Mathematical Contest in Modeling (MCM)

Beijing

Honorable Mention Reward

Jan 2019

- Optimized the allocation and packing of drones to deliver medical aid to hospitals in the hurricane-struck island of Puerto Rico, as well as a surveillance plan of road conditions
- Composed report *Frugal Housekeeping or Risk Investment: Two Plans for the DroneGo Response System*

Chinese Undergraduate Physics Tournament (CUPT)

Beijing

First Prize, College Competition

Oct 2017 - Mar 2018

- Conducted simulations and experiments on physical phenomenon such as *Acoustic Levitation*, *Heron Fountain*, learned to use field simulation software *Comsol*
- Give oral presentation and defense, performance being evaluated by adjudicators

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](#), Accepted by *ApJ*
2. **Chen Y.X.***, Lu J. R., [Microlensing by Galactic Center Supermassive Black Hole](#), Submitted to *ApJ*
3. **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, in preparation

SCIENTIFIC TALKS

- **Introduction to Planetary Astrophysics** **Beijing**
Chi-sun Yeh Academic Lectures, Tsinghua University May 2020
- [Formation of Close-in Planets \(sub-Neptunes/super-Earths\)](#) **Beijing**
Department of Astronomy seminar on theoretical astrophysics, Tsinghua University Apr 2020

- [Galactic Center Microlensing](#) Beijing
Research project talk, UC Berkeley Dec 2019
- [Dust Diffusion in Protoplanetary Disks and Formation of super Earths](#) Urumqi
Research project talk, Formation and Evolution of Planetary System Conference Jul 2019
- [Linear Magneto-Rotational Instability](#) Beijing
Department of Astronomy seminar on theoretical astrophysics, Tsinghua University Apr 2019

SKILLS AND INTERESTS

Programming: Mathematica, LaTeX, MATLAB, python, C++

Music and Vocal performance:

- Member of Tsinghua University chorus and Berkeley Chinese Acappella, performed in various concerts and competition), Award-winning campus singer, Guest performer at student gala
- Live recordings: [My Way](#), [Wandering Earth Theme](#)

Film production:

- Wrote screenplays for and produced short film/play *Ode to Guitar (2018)* and [A Wicked Letter Through Time \(2019\)](#), well-received by audiences in Department Student Gala
- Taking screenwriting courses at Berkeley Extension

Secretary of Student Union, Department of Entertainment:

- Helped organize student gala and festivals; Composed propaganda articles and designed posters