# Chong-Chong He

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## Education

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|---|---|
| 2018-2022 (expected) | **Ph.D., Astronomy**; University of Maryland<br>Thesis (proposed): *Simulating Compact Star Clusters and Growth of the Seed Black Holes in the First Galaxies* |
| 2016-2018 | **M.S., Astronomy**; University of Maryland<br>Thesis: *Simulating Star Clusters Across Cosmic Time* |
| Spring 2015 | Georgia Institute of Technology<br>Non-degree visiting honors student program; Physics and Language |
| 2012-2016 | **B.S., Physics, With Highest Honor**; Jilin University<br>Upper Division GPA: 3.92/4 Cumulative GPA 3.91/4 |

## Research Experience

**Department of Astronomy, University of Maryland**

2017 - Present Advisor: Massimo Ricotti & Cole Miller (co-advisor)

- Running simulations of the formation and dynamic evolution of star clusters in the early Universe.

**Center for Theoretical Physics, Jilin University**

12/2015 - 03/2016 Advisor: Ping He

- Ran simulations of CMB anisotropies using *CAMB*.

**Center for Relativistic Astrophysics, Georgia Institute of Technology**

01/2015 - 08/2015 Advisor: Laurens Keek

- Created a set of numerical programs to simulate the angular distributions of X-ray radiation from Low-Mass X-ray Binaries.

## Refereed Publications

- **He, C.-C.**, Ricotti, M., & Geen, S., 2020, "**Simulating Star Clusters Across Cosmic Time - II. Fraction of Ionizing Photons Escaping from Molecular Clouds**", *Monthly Notices of the Royal Astronomical Society*, 492, 4858.
- **He, C.-C.**, Ricotti, M., & Geen, S., 2019, "**Simulating Star Clusters Across Cosmic Time - I. Initial Mass Function, Star Formation Rates, and Efficiencies**", *Monthly Notices of the Royal Astronomical Society*, 489, 1880-1898.
- **He, C.-C.** & Keek, L., 2016, "**Anisotropy of X-Ray Bursts from Neutron Stars with Concave Accretion Disks**", *The Astrophysical Journal*, 819, 47.

## Honors & Awards

2016 **Dean's Honored Graduates**, Jilin University

The highest honor awarded to graduating seniors in the college

2016 **China Youth Science and Technology Innovation Award**, China Youth League

2016 **Tang-Ao Qing Supreme Award for Excellence in Research & Practice**, Jilin University

2015 **National Scholarship**

2014 **Scholarship for Overseas Study**, China Scholarship Council

## Teaching Experience

**Graduate Teaching Assistant**; University of Maryland

09/2016 - 05/2018, 01/2020 - Present

- Responsibilities include leading classroom discussions, writing homework and exam solutions, grading homework and exams, and holding office hours to provide additional guidance to students.
- Courses include Introduction to Astronomy, Stars and Stellar Systems, Solar System Astronomy, Origin of the Universe, Life in the Universe, Galaxies, Cosmology.

## Skills and Professional Services

Programming Languages & Softwares

- **Python**, **LaTeX**; advanced
- **C/C++**, **Fortran**, **Mathematica**, **MATLAB**; proficient
- **HTML/CSS**; basic

Operating Systems

- **MacOS**, **Unix/Linux**; proficient
- **Windows**; basic

High-Performance Computing

- Experienced in **MPI Parallel Programming**

Data Science

- Basic knowledge of **Machine Learning**, including **Deep Learning** and **Neural Networks**

**Member**, American Astronomical Society

## Presentations

06/2016 "Life and Academics in college", invited presentation in the summer program for elite high school students at Jilin University

07/2014 "Topics on Quantum Mechanics and Quantum Teleportation", review presentation at the concluding ceremony of Physics Summer School in Peking University, Jul. 2014

## Outreach

2018, 2020 Lecture Assistant, GRAD-MAP Python Bootcamp, University of Maryland

2017 Maryland Day volunteer