Chong-Chong He

University of Maryland, Department of Astronomy
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Education

Ph.D., Astronomy; University of Maryland 2018-2022 (expected)
Thesis (proposed): *Simulating Compact Star Clusters and Growth of the Seed Black Holes in the First Galaxies*

M.S., Astronomy; University of Maryland 2016-2018
Thesis: *Simulating Star Clusters Across Cosmic Time*

Non-degree Visiting Honors Student Program; Georgia Institute of Technology 2015

B.S., Physics, With Highest Honor; Jilin University 2012-2016
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

Dean's Honored Graduates, Jilin University 2016
The highest honor awarded to graduating seniors in the college
China Youth Science and Technology Innovation Award, P.R. China 2016
Tang-Ao Qing Supreme Award for Excellence in Research & Practice, Jilin University 2016
National Scholarship, P.R. China 2015
Scholarship for Overseas Study, China Scholarship Council 2014

Teaching Experience

Graduate Teaching Assistant; University of Maryland 2016-2018, 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

Programming Languages & Softwares

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

High-Performance Computing

- Experienced in **MPI Parallel Programming**

Data Science

- Basic knowledge of **Machine Learning**, including **Deep Learning** and **Neural Networks** (**coursera certification**)

Operating Systems

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

Professional Services

Referee for MNRAS 2020-Present
Member of the American Astronomical Society 2018-Present

Presentations

"Life and Academics in college", invited presentation in the summer program for elite high school students at Jilin University 06/2016
"Topics on Quantum Mechanics and Quantum Teleportation", review presentation at the concluding ceremony of Physics Summer School in Peking University, Jul. 2014 07/2014

Outreach

Lecture Assistant, GRAD-MAP Python Bootcamp, University of Maryland 2018, 2020
Maryland Day volunteer 2017