

# XIN XIANG (CINDY)

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## EDUCATION

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**Georgia Institute of Technology**  
B.S. Physics - Astrophysics Concentration  
Minor: Computer Science - Intelligence

*Expected Graduation: May 2022*  
Overall GPA: 4.0/4.0

**Undergraduate Thesis Option:** “Including a Warm Corona in Active Galactic Nucleus Accretion Discs.” *Supervised by Prof. David Ballantyne*

**Core Courses:** Quantum Mechanics I & II, Classical Mechanics, Thermodynamics, ElectroMagnetostatics, Electrodynamics, General Relativity, Fundamental Astrophysics, Stellar Astrophysics, Statistical Mechanics, Data Science for Physicists, Advanced Lab, Object-Oriented Programming, Data Structures and Algorithms, Artificial Intelligence, Machine Learning, etc.

**The Ohio State University**  
Physics and Astrophysics

*2018 - 2019 (Freshman year)*  
Overall GPA: 4.0/4.0

## RESEARCH EXPERIENCE

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**Undergraduate Research**  
*Supervised by Prof. David R. Ballantyne*

*January 2020 - present*  
*Georgia Institute of Technology*

- Design models for the accretion disks with warm coronae on the surface around active galactic nucleus
- Calculate models' X-ray spectrum using FORTRAN and Python script
- Examine the physical conditions for the warm corona to produce soft X-ray excess
- Fit the model by the observational data from XMM and NuSTAR using Xspec's minimum  $\chi^2$  method

**Cathay Institute of Science Summer Research Program**  
*Supervised by Prof. Jolyon Bloomfield*

*July 2017 - August 2017*  
*Tsinghua University, Beijing, China*

- Built real time simulation in Python for the trajectory of a rocket to Mars with limited fuel
- Worked in a team of 4 people and completed a set of Python programs

## PUBLICATIONS

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1. Ballantyne, D R, and **X Xiang**. “Sustaining a Warm Corona in Active Galactic Nucleus Accretion Discs.” *Monthly Notices of the Royal Astronomical Society*, vol. 496, no. 4, 2020, pp. 4255–4265., doi:10.1093/mnras/staa1866.
2. **X Xiang**. “Undergraduate Thesis: Including a Warm Corona in Active Galactic Nucleus Accretion Discs.” In progress. Expected publication date: April. 2022.

## PRESENTATIONS

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1. **X Xiang**. “Including a Warm Corona within the Inner Accretion Disk of Active Galactic Nuclei.” Poster Presentation at the 239th AAS Meeting, Salt Palace Convention Center, Salt Lake City, UT., 9–13 January 2022. (Event got Canceled due to COVID)
2. **X Xiang**. “Including a Warm Corona in Active Galactic Nuclei accretion discs.” Oral Presentation at the Center for Relativistic Astrophysics's Cosmic Coffee, Georgia Institute of Technology., April 14 2021.

3. **X Xiang**. “Including a Warm Corona in Active Galactic Nuclei accretion discs.” Oral Presentation at the 15th Annual Undergraduate Research Spring Symposium, Georgia Institute of Technology., April 22 2021.

## HONORS AND AWARDS

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**Travel Funding Awards (\$1500)** *December 2022*  
*Center for Relativistic Astrophysics, School of Physics, Georgia Institute of Technology*

**President’s Undergraduate Research Travel Awards (\$1000)** *December 2022*  
*Undergraduate Research Opportunities Program, Georgia Institute of Technology*

**Letson Summer Internship Awards (\$7,200)** *April 2021*  
*The School of Physics, Georgia Institute of Technology*

**President’s Undergraduate Research Salary Awards (\$1,500)** *April 2020*  
*Undergraduate Research Opportunities Program, Georgia Institute of Technology*

**Faculty Honors** *Fall 2019, Spring 2020, Fall 2020, Spring 2021 (All semesters)*  
*Georgia Institute of Technology*

**Helen Cowan Book Awards** *April 2019*  
*Department of Physics, The Ohio State University*

**Dean’s List** *Fall 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020, Spring 2021 (All semesters)*

## TEACHING EXPERIENCE

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**Mentor / Group Leader / 1-to-1 Tutor** *December 2020 - May 2021*  
*Tutoring and Academic Support, office of undergraduate education* *Georgia Institute of Technology*

- Hold small group meetings and provide training for current 1-to-1 tutors
- Conduct evaluations for tutors as general supervision of group members
- Organize and conduct orientation at the beginning of the semester
- Hold 1-to-1 academic tutor sessions for current students at Georgia Tech

**Science Specialist Camp Counselor** *May 2019 - July 2019*  
*Camp Newaygo* *Newaygo, MI*

- Designed and Led 2 science classes per day for campers
- Head counselor for science cabins with a group of 10 – 12 campers – Girls from 7-17 years old
- Assured physical and emotional needs are fully supported for each camper

## MEMBERSHIP/EXTRACURRICULAR

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**Member** *October 2021 - present*  
*The American Astronomical Society*  
*AAS High Energy Astrophysics Division*

## SKILLS

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<b>Computer Languages</b>	Python, C/C++, Java, Assembly, Fortran
<b>Software &amp; Tools</b>	Matplotlib, NumPy, SciPy, PyTorch, Scikit-learn HEAsoft, Xspec, Mathematica, LaTeX
<b>Music</b>	Music Sheet Transcript, Piano Performance, Guitar Piano level 10 certificate (Central Conservatory of Music)
<b>Language</b>	Chinese: Native, English: Proficient, German: Amateur