Jiaming Pan

Curriculum Vitae

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Education

University of Michigan Ann Arbor, MI
PhD in Physics *Aug. 2022 -In Progress*
Advisor: Prof. Dragan Huterer, Prof. Camille Avestruz

University of Michigan Ann Arbor, MI
B.S. Physics and Astronomy & Astrophysics (Highest honors), Minor in Philosophy *Apr. 2022*

Research Experience

University of Michigan Trans-Neptunian Object (TNO) Group May 2021 – Sep. 2022
Advisor: Prof. David Gerdes, Dr. Hsing Wen Lin *Ann Arbor, MI*

- Identified more than 140 known Jupiter Trojans in the DECam Ecliptic Exploration Project (DEEP).
- Tested the sensitivity of DEEP data, which has a 4-hour period observation, to the periods of rotators.
- Obtained rotation periods of Jupiter Trojan in the DEEP data by performing Lomb-Scargle periodogram fits of their light curves.
- Extracted known Jupiter Trojans in the DES Y6A1 data, and further analysis led to a first author paper submitted for *The Planetary Science Journal* (PSJ).

University of Michigan Stellar Halo Research Group Jan. 2020 – Sep. 2022
Advisor: Prof. Eric Bell *Ann Arbor, MI*

- Developed a method to select candidate globular clusters in the halo of the M81 group using archival Subaru Hyper Suprime-Cam (HSC) data in concert with space-based IRAC, Gaia, and GALEX data.
- Analyzed globular cluster systems in nearby galaxies, including M83, M94, and M64, using Subaru HSC data associated with IRAC, GALEX, SDSS, and Gaia data.
- Searched for very distant star cluster candidates ($>$ 150 Kpc) in the M31 galaxy using space-based survey data, including WISE and GALEX, and ground-based survey data, including Pan-STARRS and SDSS.
- The research on the M81 group globular clusters led to a first-author paper published in *Monthly Notices of the Royal Astronomical Society* (MNRAS).

Teaching experience

Graduate Student Instructor - University of Michigan Fall 2022, Winter 2023

I am the instructor for physics laboratory on the topic of undergraduate electromagnetism (Physics 241) and mechanics (Physics 141) for the Fall 2022. My responsibilities include teaching, holding office hours, helping students in the labs, and grading homework for around forty students.

Undergraduate Students Advised - University of Michigan Winter 2022 - Present

Evan Rootness: I am mentoring a first-year student in a research project on searching distant M31 globular clusters. We tried to select a clean sample of globular cluster candidates in the distant halo of M31, aiming to use them to study the origin and growth of M31 globular cluster populations.

Grader for Astronomy 402: Stellar Astrophysics - University of Michigan Fall 2021

I graded assignments in a stellar astrophysics class taught by Prof. Nuria Calvet. My work included grading and giving feedback on students' assignments and helping students understand what they struggled to aid the teaching of Prof. Nuria Calvet.

Award and Honors

Excellence in Astronomy and Astrophysics Award ($250) - Department of Astronomy Apr. 2022
William L. Williams Thesis Award ($2500) - Department of Physics Apr. 2022
Wirt and Mary Cornwell Prize ($2500) - Department of Physics Apr. 2022

Publications And Work in Progress

- **J. Pan**, H. W. Lin, D. W. Gerdes, K. J. Napier, J. Wang, T. M. C. Abbott et al., *Photometric Properties of Jupiter Trojans Detected by the Dark Energy Survey*, PSJ **3** (2022) 269
- **J. Pan**, E. F. Bell, A. Smercina, P. Price, C. T. Slater, J. Bailin et al., *New globular cluster candidates in the M81 group*, MNRAS **515** (2022) 48 [2206.07251]

Selected Presentations

- Talk, "Photometric Properties of Jupiter Trojans detected by the Dark Energy Survey (DES)" Dark Energy Survey collaboration meeting, May 25, 2022
- Talk, "Photometric Properties of Jupiter Trojans detected by the Dark Energy Survey (DES)" Transients & Moving Objects Working Group Meeting, March 15, 2022
- Poster, "Globular Cluster Candidates in a Subaru Hyper SuprimeCam (HSC) survey of the M81 group" University of Michigan Undergraduate Poster Session, April 16, 2021
- Poster, "Globular Cluster Candidates in a Subaru Hyper SuprimeCam (HSC) survey of the M81 group" the 237th AAS Meeting, January 11, 2021

Poster with contributions

- Poster, "Globular cluster candidates in the M83 group, using the GHOSTS HST survey." University of Michigan Undergraduate Poster Session, April 15, 2022

Relevant Coursework

- Principles of Astrophysics (A)
- Stellar Astrophysics (A)
- Astronomical Techniques (A)
- Computational Astrophysics (A)
- Galaxies and the Universe (A)
- General Relativity (A-)
- Scientific Writing and Communication in Astronomy (A)
- Introduction to Research [1](A+)
- Mechanics (A)
- Advanced Laboratory (A)
- Statistical and Thermal Physics (A+)
- Intermediate Quantum Mechanics (A)
- Intermediate Electricity and Magnetism (A)
- Cosmology I - The Early Universe (A-)

Extracurricular Activities

Michigan Cosmology Summer School 2023, Local Organizing Committee member	2023
Physics Graduate Council, member - Physics Department, University of Michigan	Jan. 2023 – Present
Department Colloquium Committee, member - Physics Department, University of Michigan	Jun. 2022 – Present
Society of Physics Students, member - University of Michigan	Jan. 2020 – Sep. 2022
Astronomical society, Core member - Rutgers University	Aug. 2018 – Dec. 2019
Society of physics students, member - Rutgers University	Aug. 2018 – Dec. 2019
Philosophy Discussion Group, member - Rutgers University	Aug. 2018 – Dec. 2019
SAS Honors Program, member - Rutgers University	June 2019 – Dec. 2019

Membership

The Dark Energy Spectroscopic Instrument (DESI)	2023 – Present
American Astronomical Society	2020 – 2022
Dark Energy Survey	2021 – 2022
DECam Ecliptic Exploration Project	2021 – 2022

Technical Skills

Languages: Python, Java, C++, MATLAB, SQL
Libraries: Astropy, NumPy, Matplotlib, Pandas, scikit-learn, emcee, Seaborn
Others:: LaTeX, Microsoft Office, GitHub

Language Proficiency

Mandarin Chinese (Native)
English (Fluent)

[1] supervisor: Prof. Eric Bell