

Yanbo Pan

+1-608-960-5479 | war8sk@virginia.edu | <https://yanbopanpi.github.io>

 LinkedIn |  ORCID

530 McCormick Road | Charlottesville, VA, 22904

RESEARCH INTERESTS

Observational Near-Field Cosmology; Dwarf Galaxies; Stellar Dynamics; Stellar Populations; Large Sky Surveys; Statistical and Computational Applications on Astrophysics

EDUCATION

• University of Virginia	2025 – 2030 (Expected)
<i>PhD in Astronomy</i>	Charlottesville, VA
• University of Michigan	2022-2025
<i>Bachelor of Science: Astronomy & Astrophysics (with High Honors), Statistics, Interdisciplinary Physics</i>	Ann Arbor, MI
◦ GPA: 3.99/4.00 (High Distinction)	
• University of Wisconsin	2021-2022
<i>Physics & Astronomy</i>	Madison, WI
◦ GPA: 4.00/4.00	

HONORS & AWARDS

1. Provost's Fellowship, University of Virginia (\$32,500)	2025–2030
2. University Graduate Fellowship, Penn State University (Declined)	2025
3. Homer F. Braddock/Nellie H. and Oscar L. Roberts Fellowship, Penn State University (Declined)	2025
4. Jerome and Isabella Karle Physical Sciences Award, University of Michigan (\$2,000)	2025
5. Outstanding Undergraduate Major Award, Department of Statistics, University of Michigan	2025
6. Graduation Speaker, Department of Statistics, University of Michigan	2025
7. Dorrit Hofflein Undergraduate Research Scholarship, Yale University (\$4,600)	2024
8. ERES IX Conference Travel Award, Cornell University (\$500)	2024
9. James B. Angell Scholar, University of Michigan	2023–2025
10. University Honors, University of Michigan	2022–2025
11. Dean's List, University of Wisconsin	2021–2022

PUBLICATIONS

C=CONFERENCE, J=JOURNAL, P=IN PREP, T=THESIS

- [J.1] Fournier-Tondreau, M., Pan, Y., et al. (2025). **Transmission spectroscopy of WASP-52 b with JWST NIRISS: water and helium atmospheric absorption, alongside prominent star-spot crossings.** *MNRAS*.
- [P.1] Pan, Y., et al. (2025). JWST MEP - A World Under Spotty Starlight: Detection of CO₂ and H₂O in the Hot Saturn WASP-52b with JWST NIRSpec G395H. (In Prep).
- [C.1] Pan, Y., MacDonald, R., JWST GTO 1201 Team, & JWST GO 3969 Team. (2025). **Atmospheric Forecast for the Hot Jupiter WASP-52b: Exploring the Chemical Recipes of a Hot Jupiter Behind the Shade of Spotty Starlight.** In *American Astronomical Society Meeting Abstracts* (Vol. 245, p. 316.02).
- [C.2] Pan, Y., Linck, E., & Mathieu, R. (2024). **Modeling Binary Orbits in the WIYN Open Cluster Survey.** In *American Astronomical Society Meeting Abstracts* (Vol. 244, p. 101.02).
- [C.3] Anguiano, B., Mazzola, C., Dixon, D., Linck, E., Nine, A., Motherway, E., Pan, Y., et al. (2024). **A Systematic Search for and Characterization of White Dwarf Binaries Across the H-R Diagram.** In *American Astronomical Society Meeting Abstracts* (Vol. 244, p. 108.07).

SCIENCE TALKS

UVa Astronomy Journal Club, Charlottesville, VA	December 2025
JWST MEP - A World Under Spotty Starlight: Atmospheric Forecast for the Hot Jupiter WASP-52b	
AAS 245, National Harbor, MD	January 2025
Exploring the Chemical Recipes of a Hot Jupiter Behind the Shade of Spotty Starlight	
Summer Research Symposium, Yale University, CT	July 2024
Riding Two Dark Horses: A Spectroscopic Study of Ultra-faint Milky Way Satellites	
ERES IX, Cornell University, NY	July 2024
The Effect of Stellar Features on Atmospheric Retrievals of WASP-52b's Transmission Spectrum	
Student Astronomical Society Research Talk, University of Michigan, MI	September 2023
Modelling Binary Orbits in the WIYN Open Cluster Survey - The alternative evolutionary tracks for binary stars	

POSTERS

AAS 244, Madison, WI Modelling Binary Orbits in the WIYN Open Cluster Survey	June 2024
Undergraduate Research Fair , University of Michigan, MI Mining Ultra-Faint Galaxies in the Local Group: Are Missing Satellites All Found?	April 2024
Undergraduate Research Fair , University of Michigan, MI Uncovering Ultra-Faint Galaxies in the Local Group	April 2023

RESEARCH EXPERIENCE

Graduate Research, Astronomy Department University of Virginia, VA <i>Research Assistant (Advisors: Steve Majewski & Nitya Kallivayalil)</i> Chemo-dynamical analysis of resolved stellar populations in Sagittarius Dwarf Galaxy using Gaia EDR3	2025 – Present
Undergraduate Research, Astronomy Department University of Michigan, MI <i>Research Assistant (Advisor: Ryan J. MacDonald)</i> Multidimensional atmosphere analysis of WASP-52b using JWST Cycle 2 NIRISS & NIRSpec transmission spectra	2024 – Present
Undergraduate Research, Astronomy Department Yale University, CT <i>Dorrit Hoffleit Scholar (Advisor: Marla Geha)</i> A spectroscopic study of two ultra-faint Milky Way satellites' dynamics using Keck DEIMOS spectroscopy	2024 Summer
Undergraduate Research, Astronomy Department UW-Madison, WI <i>Research Assistant (Advisor: Robert D. Mathieu)</i> Evaluate the potential of the Joker in binary orbit modeling for the WIYN Open Cluster Survey	2023 – 2024
Undergraduate Research, Astronomy Department University of Michigan, MI <i>Research Assistant (Advisor: Eric F. Bell)</i> Mining M31 ultra-faint dwarf satellites in the DECam Local Volume Exploration Survey DR2 footprint	2023 – 2024

OBSERVING EXPERIENCES

APO 3.5m/DSSI	1 night
---------------	---------

STUDENT MENTORSHIP

James McDowell (Binary orbits modeling; UW-Madison)	2025
---	------

OUTREACH TALKS

Graduation Remarks, Department of Statistics , University of Michigan, MI From Statistical Toolbox to the Expanding Universe	May 2025
Student Astronomical Society Outreach Talk , University of Michigan, MI Dwarf Galaxies: Hidden Gems in Our Cosmic Neighborhood	April 2025
Physics 391 Talk , University of Michigan, MI The Missing Satellite Problem	October 2023

SCIENCE COMMUNICATION & PUBLIC OUTREACH

Doghouse telescope operator @ UVa McCormick Observatory	
Graduate reviewer for ASPIRE program @ UVa	
Undergraduate mentor of the U-M Student Astronomical Society (SAS) UFD group	
Undergraduate co-representative of the U-M Astronomy DEI committee	
Guest writer of the Astrobites Undergraduate Research Series	
Volunteer tutor @ the Greater University Tutoring Service (GUTS)	
Community speaker of the Chinese New Year Show @ the U-M Planetarium and Dome Theater	
Scientific blogger @ zhihu.com	
Active member of Badger Acts of Kindness	
Travel agent summer intern @ China CYTS Tours Holding Co., Ltd	

ASTRONOMY DATA SCIENCE SKILLS

- **Proficient:** Python, R, Markdown, Jupyter, L^AT_EX
- **Intermediate:** SQL, MESA-web, Cloud Computing, Unix Shell, WSL
- **Familiar:** C++, HTML, Docker, MATLAB, DS9
- **Datasets:** DECam Local Volume Exploration Survey (DELVE), ESA - Gaia, WIYN Open Cluster Survey (WOCS), JWST Transmission Spectra (NIRISS & NIRSpec), Keck DEIMOS Spectra
- **Packages:** pandas, numpy, matplotlib, seaborn, scikit-learn, PyTorch, TensorFlow, scipy, sqlite3, emcee, pymultinest, pymc3, theJoker, POSEIDON, eZpadova, gala, fitsio, astropy, astroquery

PROFESSIONAL EXPERIENCE

- **Member of the Astrobiology Team** 2022 - 2023
Mrover | University of Michigan, MI [🌐]
 - Developed chemical tests for life detection and collaborated on implementation for the University Rover Challenge
- **Museum Docent** 2021 - 2022
The L.R. Ingersoll Physics Museum | UW-Madison, WI [🌐]
 - Facilitated physics demonstrations and conducted educational events during the Wisconsin Science Festival
- **Part-time Tutor** 2021 - 2022
The Jingrui Academy of Science | Ningbo, China
 - Provided academic tutoring in math, physics, and economics to IB students through customized instruction

MISCELLANEOUS

Languages: Chinese, English

Hobby: Running, Swimming, Hiking, Table Tennis, Snow Watching, Elephant Chess