

# Xian-Yu Wang

PhD in Astrophysics

Indiana University, Bloomington, IN 47405

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## CURRENT POSITION

Indiana University  
Postdoctoral Research Associate

Bloomington, IN  
Feb. 2023 - present

## EDUCATION

University of Chinese Academy of Sciences (UCAS) Beijing, China  
National Astronomical Observatories, Chinese Academy of Sciences (NAOC)  
Ph.D in Astrophysics Jan. 2023  
Thesis: *Study of exoplanets based on high-precision photometric and spectroscopic observations*  
Advisor: Zhen-Yu Wu  
Shandong University Weihai, Shandong, China  
B.S in Space Science and Technology Jun. 2018

## AWARDS

2025	Sullivan Prize Postdoctoral Fellowship
2023	UCAS Outstanding Ph.D. Graduate Award Awarded to the top 5% of Ph.D. graduates from the same graduating year at UCAS
2023	Beijing Outstanding Ph.D. Graduate Award Awarded to the top 5% of Ph.D. graduates from the same graduating year in Beijing
2023	National Scholarship Highest scholarship given by Ministry of Education of the People's Republic of China
2022	Joint PhD Training Program Scholarship, UCAS Scholarship provided by UCAS to fund one year-long visit to Indiana University
2021	Pacemaker to Merit Student, NAOC Awarded to the top 1% of students
2019	Excellent Student Leader, NAOC
2019	Merit Student, NAOC Awarded to the top 20% of students
2018	National Astronomical Observatory Scholarship Scholarship for outstanding undergrads in astronomy research
2018	Outstanding Undergraduate Thesis Award, Shandong University Awarded to 1 student per major
2015-18	Academic scholarship, Shandong University Awarded to the top 30% of students

## OBSERVING PROGRAMS

JWST Cycle 4, 59.6 Primary Spacecraft Hours, CoI:

The Warm Jupiter Opportunity for Understanding Giant Exoplanet Evolution

WIYN, NEID, 2024B, 12 nights, PI: 3D Architecture of Warm Jupiters

TNG, HARPS-N, 2023B, 1 nights, Scientific PI: HD 80606 b's Spin-Orbit Misalignment Revisited

WIYN, NEID, 2022B, 5 nights, Co-I: Probing Stellar Obliquities with NEID

LCOGT-1m, 2020A, 30 hours, PI, Photometric Follow-Up of Apparent Decaying Orbital WASP-12 b

LCOGT-1m, 2021A, 30 hours, PI, Understanding the shortening period of WASP-12 system

## STUDENTS MENTORING

### Undergraduate:






- Colton Romines (second-year undergraduate student at Indiana University) 2024 - present  
co-supervised with Songhu Wang  
Jace Rusznak (now post-baccalaureate fellowship researcher at Indiana University) 2023 - present  
co-supervised with Songhu Wang

### Graduate






- Emma Dugan (second-year graduate student at Indiana University) 2023 - present  
co-supervised with Songhu Wang  
Jiamei Yang (now PhD Candidate at Beijing Normal University) 2021



## PUBLICATIONS (5 First Author, 7 Second Author, 28 in total, H index=12, Citations=426, )

### First Author:

- \* *Single-Star Warm-Jupiter Systems Tend to Be Aligned, Even Around Hot Stellar Hosts: No  $T_{\text{eff}}-\lambda$  Dependency*   
**Xian-Yu Wang**, Malena Rice, Songhu Wang, et al. 2024, **The Astrophysical Journal Letters**, 973, L21, as featured by **AAS Nova**.
- \* *The Aligned Orbit of WASP-148b, the Only Known Hot Jupiter with a Nearby Warm Jupiter Companion, from NEID and HIRES*   
**Xian-Yu Wang**, Malena Rice, Songhu Wang, et al. 2022, **The Astrophysical Journal Letters**, 926, L8
- \* *Transiting Exoplanet Monitoring Project (TEMP). VI. The Homogeneous Refinement of System Parameters for 39 Transiting Hot Jupiters with 127 New Light Curves*   
**Xian-Yu Wang**, Yong-Hao Wang, Songhu Wang, et al. 2021, **The Astrophysical Journal Supplement Series**, 255, 15
- \* *Transiting Exoplanet Monitoring Project (TEMP). IV. Refined System Parameters, Transit Timing Variations and Orbital Stability of the Transiting Planetary System HAT-P-25*   
**Xian-Yu Wang**, Songhu Wang, Tobias Hinse, et al. 2018, **The Publications of the Astronomical Society of the Pacific**, 130, 064401
- \* *New analysis of the fraction of observable nights at astronomical sites based on FengYun-2 satellite data*   
**Xian-Yu Wang**, Zhen-Yu Wu, Jing Liu, et al. 2022, **Monthly Notices of the Royal Astronomical Society**, 511, 4




### Second Author:

- \* *From Misaligned Sub-Saturns to Aligned Brown Dwarfs: The Highest  $M_p/M_*$  Systems Exhibit Low Obliquities, Even around Hot Stars*   
Jace Rusznak, **Xian-Yu Wang**, Malena Rice, Songhu Wang, **The Astrophysical Journal Letters**, 983, L42, as featured by **AAS Nova**.
- \* *The SNR of idealised radial velocity signals*   
David Kipping & **Xian-Yu Wang**. 2024, **Monthly Notices of the Royal Astronomical Society**, 532, 604
- \* *TOI-1670 c, a 40 day Orbital Period Warm Jupiter in a Compact System, Is Well Aligned*   
Jack Lubin, **Xian-Yu Wang**, Malena Rice, et al. 2023, **The Astrophysical Journal Letters**, 295, 5
- \* *Evidence for Low-Level Dynamical Excitation in Near-Resonant Exoplanet Systems*   
Malena Rice, **Xian-Yu Wang**, Songhu Wang, et al. 2023, **The Astronomical Journal**, 166, 266
- \* *The Spin-Orbit Misalignment of TOI-1842b: The First Measurement of the Rossiter-McLaughlin Effect for a Warm Sub-Saturn around a Massive Star*   
Kyle Hixenbaugh, **Xian-Yu Wang**, Malena Rice, Songhu Wang, 2023, **The Astrophysical Journal Letters**, 949, 35, as featured by **AAS Nova**.

- \* *Photometric follow-up observations and transit timing analysis of HAT-P-37b*   
Jia-Mei Yang, **Xian-Yu Wang**, Kai Li, et al. 2021, **Publications of the Astronomical Society of Japan**, 73, 1010
- \* *Transiting Exoplanet Monitoring Project (TEMP). I. Refined System Parameters and Transit variations of HAT-P-29*   
Songhu Wang, **Xian-Yu Wang**, Yong-Hao Wang, et al. 2018, **The Astronomical Journal**, 156, 181

### Contributing Author:

- \* *Evidence for Primordial Alignment II: Insights from Stellar Obliquity Measurements For Hot Jupiters in Compact Multi-planet Systems*   
Brandon T. Radzom, Jiayin Dong, Malena Rice, **Xian-Yu Wang**, et al 2025, **The Astronomical Journal**, 169, 189
- \* *SOLES XII. The Aligned Orbit of TOI-2533 b, a Transiting Brown Dwarf Orbiting an F8-type Star*   
Thiago Ferreira, Malena Rice, **Xian-Yu Wang**, Songhu Wang, 2024, **The Astronomical Journal**, 168, 145
- \* *Evidence for Primordial Alignment: Insights from Stellar Obliquity Measurements for Compact Sub-Saturn Systems*   
Brandon T. Radzom, Jiayin Dong, Malena Rice, **Xian-Yu Wang**, et al 2024, **The Astronomical Journal**, 168, 116
- \* *The PFS view of TOI-677 b: A spin-orbit aligned warm Jupiter in a dynamically hot system*   
Qingru Hu, Malena Rice, **Xian-Yu Wang**, et al 2024, **The Astronomical Journal**, 167, 175
- \* *The GAPS Programme at TNG L – TOI-4515 b: An eccentric warm Jupiter orbiting a 1.2 Gyr-old G-star*   
I. Carleo, L. Malavolta, S. Desidera, and 68 coauthors including **Xian-Yu Wang**, 2023, **Astronomy & Astrophysics**, 682, 138
- \* *SOLES VII: The Spin-Orbit Alignment of WASP-106 b, a Warm Jupiter Along the Kraft Break*   
Josette Wright, Malena Rice, **Xian-Yu Wang**, et al 2023, **The Astronomical Journal**, 166, 217
- \* *The Orbital Architecture of Qatar-6: A Fully Aligned Three-body System?*   
Malena Rice, Songhu Wang, Konstantin Gerbig, and 5 coauthors including **Xian-Yu Wang**, 2023, **The Astronomical Journal**, 165, 65
- \* *TOI-1136 is a Young, Coplanar, Aligned Planetary System in a Pristine Resonant Chain*   
Fei Dai, Kento Masuda, Corey Beard and 60 coauthors including **Xian-Yu Wang**, 2023, **The Astronomical Journal**, 165, 33
- \* *A Tendency Toward Alignment in Single-star Warm-Jupiter Systems*   
Malena Rice, Songhu Wang, **Xian-Yu Wang** et al. 2022, **The Astronomical Journal**, 164, 104
- \* *Revisiting the Full Sets of Orbital Parameters for the XO-3 System: No evidence for Temporal Variation of the Spin-Orbit Angle*   
Keduse Worku, Songhu Wang, Jennifer Burt, and 14 coauthors including **Xian-Yu Wang**, 2022, **The Astronomical Journal**, 163, 158
- \* *SOLES I: The Spin–Orbit Alignment of K2-140 b*   
Malena Rice, Songhu Wang, Andrew W. Howard, and 8 coauthors including **Xian-Yu Wang**, 2021, **The Astronomical Journal**, 162, 182
- \* *The Aligned Orbit of the Eccentric Warm Jupiter K2-232b*   
Songhu Wang, Joshua N. Winn, Brett C. Addison, and 8 coauthors including **Xian-Yu Wang**, 2021, **The Astronomical Journal**, 162, 50
- \* *The Youngest Planet to Have a Spin-Orbit Alignment Measurement AU Mic b*   
Brett C. Addison, Jonathan Horner, Brett C. Addison, and 8 coauthors including **Xian-Yu Wang**, 2021, **The Astronomical Journal**, 162, 50

- \* *TOI 564 b and TOI 905 b: Grazing and Fully Transiting Hot Jupiters Discovered by TESS*   
Allen B. Davis, Songhu Wang, Matias Jones, and 54 coauthors including **Xian-Yu Wang**, 2020, **The Astronomical Journal**, 160, 229
- \* *HD 202772A b: A Transiting Hot Jupiter Around a Bright, Mildly Evolved Star in Discovered by TESS*   
Songhu Wang, Matias Jones, Avi Shporer, and 57 coauthors including **Xian-Yu Wang**, 2018, **The Astronomical Journal**, 157, 51
- \* *A possible giant planet orbiting the cataclysmic variable LX Ser*   
Li Kai, Hu Shaoming, Zhou Jilin and 6 coauthors including **Xian-Yu Wang**, 2017, **Publications of the Astronomical Society of Japan**, 69, 28

## SELECTED TALKS AND CONFERENCES

### Conference Talks:

- \* Know Thy Star, Know Thy Planet 2, Caltech, Pasadena (scheduled) Feb. 2025  
Single-Star Warm-Jupiter Systems Tend to Be Aligned, Even Around Hot Stellar Hosts:  
No  $T_{\text{eff}} - \lambda$  Dependency
- \* 245th AAS Annual Winter Meeting, National Harbor, Maryland (scheduled) Jan. 2025  
Single-Star Warm-Jupiter Systems Tend to Be Aligned, Even Around Hot Stellar Hosts:  
No  $T_{\text{eff}} - \lambda$  Dependency
- \* TESS Science Conference III (plenary session), MIT Aug. 2024  
Warm Jupiters Tend to Be Aligned, Even Around Hot Stars,
- \* Emerging Researchers in Exoplanet Science Symposium IX, Cornell University Jul. 2024  
Warm Jupiters Tend to Be Aligned, Even Around Hot Stars,
- \* Exoplanet V, Netherland Jun. 2024  
Tri-Angles:  $0^\circ$ ,  $90^\circ$ ,  $180^\circ$  — Hot Jupiters' Signature Spin-Orbit Angles
- \* 243th AAS Annual Winter Meeting (thesis talk), New Orleans Jan. 2024  
Violence or Quiescence Probing Hot Jupiters' Migration Theories Using Photometric  
and Spectroscopic Observations
- \* Asia Oceania Geosciences Society (AOGS) Annual Meeting, Aug. 2023  
Observational and Theoretical Aspects of Exoplanets, Singapore  
*3D Configuration of a Compact Multi-giant System Lying at the Stability Boundary*
- \* Emerging Researchers in Exoplanet Science VII, The Pennsylvania State University Aug. 2022  
*The Aligned Orbit of WASP-148b and the statistic implications from the distribution  
of stellar sky-projected obliquities*
- \* Annual Conference of the Chinese Astronomical Society, Nanchong, China Dec. 2021  
*Transiting Exoplanet Monitoring Project (TEMP)*
- \* Annual Conference of the Chinese Astronomical Society, Nanchong, China Dec. 2021  
*The Aligned Orbit of WASP-148b*

### Seminar and Lunch Talks:

- \* CIERA - Northwestern University, Evanston, IL Mar. 2025  
*On the Origin and Evolution of Stellar Obliquity*
- \* Harvard CfA Exoplanet Pizza Lunch, Cambridge, MA Nov. 2024  
*Evidence for Tidal Realignment: Cool-Star Hot-Jupiter systems with binaries tend to be aligned*
- \* David Charbonneau Group Meeting, Cambridge, MA Nov. 2024  
*On the origin and evolution of stellar obliquity*

- \* Tea Talk, Indiana University Bloomington Apr. 2024  
*Observational Insights into the Dynamical Histories of Exoplanets*
- \* Tea Talk, Indiana University Bloomington Sep. 2022  
*Exoplanet characterization by photometric and spectroscopic observations*
- \* Lunch talk, South-Western Institute For Astronomy Research, Kunming, China Mar. 2022  
*Exoplanet characterization by photometry and spectroscopy*

### Conference Posters:

- \* Poster, Emerging Researchers in Exoplanet Science Symposium VIII, New Heaven Jun. 2023  
Homogeneous Studies on the Stellar Obliquities
- \* Poster, 54<sup>th</sup> Division on Dynamical Astronomy, Michigan May. 2023  
3D configuration of a compact multi-giant system lying at the stability boundary

### SERVICE AND OUTREACH

- \* AAS 243, Session Chair for *Exoplanet Searches and Surveys II* Jan. 2024
- \* AAS 243, judge for *Chambliss Astronomy Achievement Student Award* poster competition Jan. 2024
- \* GLEAM 2023 Conference, Member of SOC & LOC, and Session Chair Jul. 2023
- \* Donation Organizer Jun. 2021  
organized a successful donation drive, providing 200+ astronomy books to underprivileged students in rural areas.
- \* Member of the Graduate Student Council 2021  
organized communication activities between graduate students of National Astronomical Observatory of China and Beijing Institute of Genomics

### TEACHING

Indiana University Bloomington

- \* AST-A 100 The Solar System 2024
- \* AST-A 100 The Solar System 2023

University of Chinese Academy of Sciences

- \* Stellar Structure and Evolution, Teaching assistance 2019

Shandong University

- \* Optics, Teaching assistance 2015