

# Xian-Yu Wang

PhD in Astrophysics

Indiana University, Bloomington, IN 47405

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## CURRENT POSITION

Indiana University

Postdoctoral Research Associate

Advisor: Songhu Wang

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

2023 UCAS Outstanding Ph.D. Graduate Award

2023 Beijing Outstanding Ph.D. Graduate Award

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 a year-long visit to Indiana University

2021 **Pacemaker to Merit Student, NAOC** Top 1%

2019 **Excellent Student Leader, NAOC**

2019 **Merit Student, NAOC** Top 20%

2018 **National Astronomical Observatory Scholarship**

Scholarship for outstanding undergrads in astronomy research

2018 **Outstanding Undergraduate Thesis Award**

2015-18 **Academic Scholarship** Undergraduate scholarship program at the Shandong University

## OBSERVING PROGRAMS

TNG, HARPS-N, 2023B, 1 nights, Co-I: 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:

\* Jace Rusznak (third-year undergraduate student at Indiana University)

2023 - present

Graduate:

\* Jiamei Yang (now PhD Candidate at Beijing Normal University)

2021

\* Emma Dugan (first-year graduate student at Indiana University)  
co-supervised with Songhu Wang

2023 - present

## **PUBLICATIONS (5 First Author, 6 Second Author, 26 in total, H index=12, Citations=454)**

### **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**, accepted
- \* *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:**

- \* *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
- \* *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:**

- \* *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**, accepted
- \* *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:

- \* Warm Jupiters Tend to Be Aligned, Even Around Hot Stars,  
TESS Science Conference III (plenary talk), MIT Aug. 2024
- \* Warm Jupiters Tend to Be Aligned, Even Around Hot Stars,  
Emerging Researchers in Exoplanet Science Symposium IX, Cornell University Jul. 2024
- \* Tri-Angles: 0°, 90°, 180° — Hot Jupiters’ Signature Spin-Orbit Angles, Exoplanet V,  
Netherland Jun. 2024

- \* Violence or Quiescence Probing Hot Jupiters' Migration Theories Using Photometric and Spectroscopic Observations, AAS 243 (thesis talk), New Orleans Jan. 2024
- \* Asia Oceania Geosciences Society (AOGS) Annual Meeting, Observational and Theoretical Aspects of Exoplanets, Singapore Aug. 2023  
*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*
- \* Lunch 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 (Scheduled) 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

### OUTREACH

- \* **Donation Organizer** organized a successful donation drive, providing 200+ astronomy books to underprivileged students in rural areas. Jun. 2021
- \* **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

Indiana University Bloomington

- \* 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