

Yifan Zhou

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Harlan J. Smith McDonald Observatory Postdoctoral Fellow

Employment

51 Pegasi b Fellow 2021-
McDonald Observatory/Department of Astronomy, The University of Texas at Austin

Harlan J. Smith McDonald Observatory Postdoctoral Fellow 2019-2021
McDonald Observatory/Department of Astronomy, The University of Texas at Austin

Education

Ph.D. in astronomy and astrophysics 2014-2019
Department of Astronomy/Steward Observatory, The University of Arizona

B.Sc in astronomy 2010-2014
Department of Astronomy, Peking University

Selected Accepted Proposals:

- **PI**, Keck 2021A, *The Angular Momentum Architecture of the VHS1256 Planetary System*
- **Co-I**, HST Cycle 28 (GO16302), *Accretion Rates as a Diagnostic Tool for the Origin of Planetary-mass Companions*
- **PI**, HST Cycle 27 (GO16036), *Mapping Clouds on a Variable Planetary-Mass Companion*
- **PI**, HST Cycle 27 (GO15830), *A Planet is Born: Investigating the Accretion Process of PDS70b with WFC3/UVIS Direct Imaging Observations*
- **PI**, Spitzer DDT program (14312), *Rotational modulations of a highly variable planetary-mass companion*
- **Co-I**, HST Cycle 27 (GO15947), *Dancing with the Dwarfs: Very High Quality Spatial and Spectral Maps of Hot Jupiters Proxies*
- **PI**, HST Cycle 25 (AR15060), *Unleashing the Charges: An Improved Reduction of Key Exoplanet Datasets and a Tool for Ramp Effect Correction*
- **Co-I** (PI: L. Carone), HST Cycle 25 (GO15301), *Now You See Me – the WASP-117b Version*
- **Co-I** (PI: D. Apai), HST Cycle 23 (GO14241), *Cloud Atlas: Vertical Cloud Structure and Gravity in Exoplanet and Brown Dwarf Atmospheres*

Awards

2021–: 51 Pegasi b Fellowship

2015–2018: NESSF Fellowship (NASA Earth and Space Science Fellowship)

2015–2016: TRIF Fellowship

09/2013: First Lin-Qiao Prize for Excellent Undergraduate Research Projects in Astronomy and Astrophysics, Peking University & KIAA

Service and Committees

- 2020 NASA FINESST Fellowship Reviewer
- HST Cycle 27 Mid-Cycle Proposal Reviewer
- Referee for AAS Journals, A&A
- 2018 Steward Observatory graduate admission committee member

Teaching Experience

- Teaching Assistant for Dr. Laird Close, course name: *Life in the Universe*
Gave three 50 min Lectures.
- Teaching Assistant for Dr. Serena Kim, course name: *Life in the Universe*
Organized in-class activities; Gave two 75 min Lectures; Built course website.
- Guest Lecture for Dr. Laird Close

Recent Conferences and Presentations

- 4/2021:** UC Berkeley Planetary Science Seminar, UC Berkeley (online)
- 2/2021:** Carnegie EPL Seminar, Carnegie Institute (online)
- 2/2021:** Origins Seminar, University of Arizona (online)
- 12/2020:** KIAA Lunch Talk, Peking University (online)
- 11/2020:** SPF Seminar, UT Austin (online)
- 10/2020:** MIT Exoplanet Tea, MIT (online)
- 10/2020:** AMNH Astrophysics Seminar, American Museum of Natural History (online)
- 02/2020:** Seminar talk, University of Texas, Austin, TX, USA
- 11/2018:** Seminar talk, Jet Propulsion Laboratory, Pasadena, CA, USA
- 11/2018:** Seminar talk, University of Texas, Austin, TX, USA
- 09/2018:** Seminar talk, IPAC lunch talk, Pasadena, CA, USA
- 07/2018:** Contributed talk, Exoplanet II, Cambridge, UK
- 04/2018:** Seminar talk, Origin Seminar, Tucson, AZ, USA
- 03/2018:** Contributed talk, Star and Planet Formation in the Southwest II, Oracle, AZ, USA
- 02/2018:** Seminar talk, CPSX Lunch Forum at Western University, London, ON, Canada
- 01/2018:** Seminar talk, KIAA Lunch Talk, Beijing, China

Publications



First-author papers:

1. Yifan Zhou, Brendan Bowler, et al.
Hubble Space Telescope UV and H α Measurements of the Accretion Excess Emission from the Young Giant Planet PDS 70 b,
AJ, in press.
2. Yifan Zhou, Brendan Bowler, et al.
Spectral Variability of VHS J1256–1257b from 1 to 5 μ m,
AJ, 160:77, jul 2020.
3. Yifan Zhou, Dániel Apai, et al.
Cloud Atlas: High-precision HST/WFC3/IR Time-resolved Observations of Directly Imaged Exoplanet HD 106906b,
AJ, 159:140, mar 2020.
4. Yifan Zhou, Dániel Apai, et al.
Cloud Atlas: High-Contrast Time-Resolved Observations of Planetary-Mass Companions,
AJ, 157:128, jan 2019
5. Yifan Zhou, Dániel Apai, Stanimir Metchev, Ben W. P. Lew, et al.
Cloud Atlas: Rotational Modulations in the L/T Transition Brown Dwarf Companion HN Peg B,
AJ, 155(3):132, jan 2018.
6. Yifan Zhou, Dániel Apai, Ben W. P. Lew, and Glenn H Schneider.
A Physical Model-based Correction for Charge Traps in the Hubble Space Telescope's Wide Field Camera 3 Near-IR Detector and Applications to Transiting Exoplanets and Brown Dwarfs,
AJ, 153(6):243, mar 2017.
7. Yifan Zhou, Dániel Apai, Glenn H Schneider, Mark S Marley, and Adam P. Showman.
Discovery Of Rotational Modulations in the Planetary-Mass Companion 2M1207b: Intermediate Rotation Period and Heterogeneous Clouds in a Low Gravity Atmosphere,
ApJ, 818(2):176, feb 2016.
8. Yifan Zhou, Gregory J Herczeg, Adam L Kraus, Stanimir Metchev, and Kelle L Cruz. *Accretion onto Planetary Mass Companions of Low-Mass Young Stars*,
ApJ, 783(1):L17, feb 2014.

Co-author papers:

9. Ludmila Carone, Paul Mollière, Yifan Zhou, et al.
Indications for very high metallicity and absence of methane in the eccentric exo-Saturn WASP-117b
A&A, 646:43, feb 2021
10. Bew W. P. Lew, et al. (incl. Yifan Zhou)
Cloud Atlas: Unraveling the Vertical Cloud Structure with the Time-series Spectrophotometry of an Unusually Red Brown Dwarf
ApJ, 903:1, oct 2020
11. Brendan P. Bowler, Yifan Zhou et al.
Strong Near-infrared Spectral Variability of the Young Cloudy L Dwarf Companion VHS J1256-1257 b
ApJL, 893L:30, apr 2020
12. Ben W.P. Lew, Dániel Apai, Yifan Zhou et al.
Cloud Atlas: Weak Color Modulations Due to Rotation in the Planetary-mass Companion GU Psc b and 11 Other Brown Dwarfs
AJ, 159:125, feb 2020

13. Paulo A. Miles-Páez, Dániel Apai, Stanimir Metchev, Yifan Zhou et al.
Cloud Atlas: Variability in and out of the Water Band in the Planetary-mass HD 203030B Points to Cloud Sedimentation in Low-gravity L Dwarfs
ApJ, 883:181, oct 2019
14. Elena Manjavacas, Dániel Apai, Ben W.P. Lew, Yifan Zhou et al.
Cloud Atlas: Rotational Spectral Modulations and Potential Sulfide Clouds in the Planetary-mass, Late T-type Companion Ross 458C
ApJL, 875:L15, apr 2019
15. Elena Manjavacas, Dániel Apai, Yifan Zhou, et al.
Cloud Atlas: Hubble Space Telescope Near-Infrared Spectral Library of Brown Dwarfs, Planetary-Mass Companions, And Hot Jupiters
AJ, 157:101, feb 2019
16. Zhanbo Zhang, Yifan Zhou, Ben Rackham, and Dániel Apai.
The near-infrared transmission spectra of trappist-1 planets b, c, d, e, f, and g and stellar contamination in multi-epoch transit spectra.
AJ, 156, 178, oct 2018.
17. J. Spake et al. (incl. Y. Zhou).
Helium in the eroding atmosphere of an exoplanet.
Nature, 557:68–70, May 2018.
18. Elena Manjavacas, Dániel Apai, Yifan Zhou, Theodora Karalidi, Ben W. P. Lew, et al.
Cloud Atlas: Discovery of Rotational Spectral Modulations in a Low-mass, L-type Brown Dwarf Companion to a Star.
AJ, 155(1):11, dec 2017.
19. Ben W P Lew, Dániel Apai, Yifan Zhou, Glenn H Schneider, et al.
Cloud Atlas: Discovery of Patchy Clouds and High-Amplitude Rotational Modulations in a Young, Extremely Red L-Type Brown Dwarf.
ApJ, 829(2):L32, sep 2016.