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Education

Massachusetts Institute of Technology [2014-2019]
Ph.D. in Physics; Advisor: Prof. Joshua N. Winn

University of Cambridge, UK [2010-2014]
B.A. of Natural Sciences; M.Sci of Physics, First Class Honors

Professional Appointment & Research Experience

Assistant Astronomer/Professor [2024-Present]
Institute for Astronomy, University of Hawai'i at Mānoa

NASA Sagan Postdoctoral Fellow [2022-2024]
Division of Physics, Math, and Astronomy, Caltech

GPS Chair's Postdoctoral Fellow [2019-2022]
Division of Geological and Planetary Sciences, Caltech

Visiting graduate student [2017-2019]
Department of Astrophysical Sciences, Princeton University

Publications

Total Refereed: 182; 1st-author: 16; Citations: 6155; h-index: 50; i10-index: 133

First-Author Publications

[1] F Dai, K Masuda, JN Winn, L Zeng 2019, The Astrophysical Journal, 883, 1, ADS
Homogeneous Analysis of Hot Earths: Masses, Sizes, and Compositions

[2] F Dai, JN Winn, 2017, The Astronomical Journal 153, 205, ADS
The Oblique Orbit of WASP-107b from K2 Photometry

[3] F Dai, JN Winn, D Gandolfi, et al., 2017, The Astronomical Journal 154, 226, ADS
The Discovery and Mass Measurement of a New Ultra-short-period Planet: K2-131b

[4] F Dai, K Masuda, JN Winn, 2018, The Astrophysical Journal Letter, 864, 2, L38, ADS
Larger Mutual Inclinations for the Shortest-period Planets

[5] F Dai, A Masuda, C Beard, et al., 2023, The Astronomical Journal, 165, 33, ADS
TOI-1136 is a Young, Coplanar, Aligned Planetary System in a Pristine Resonant Chain

[6] F Dai, S Facchini, CJ Clarke, TJ Haworth, 2015, MNRAS 449, 2, ADS
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[7] F Dai, JN Winn, S Albrecht, P Arriagada, et al., 2016, The Astrophysical Journal 825, 53, ADS
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[9] F Dai, JN Winn, P Arriagada, RP Butler, et al., 2015, The Astrophysical Journal Letters 813, L9, ADS
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[12] F Dai, JN Winn, K Schlaufman, et al., 2020, The Astronomical Journal, 159, 247, ADS
California-Kepler Survey. IX. Revisiting the Minimum-mass Extrasolar Nebula with Precise Stellar Parameters

[13] F. Dai, M. Goldberg, K. Batygin, et al., 2024, The Astronomical Journal, 166, 239, ADS
The Prevalence of Resonance Among Young, Close-in Planets

[14] F Dai, JN Winn, Z Berta-Thompson, R Sanchis-Ojeda, 2018, The Astronomical Journal 155, 177, ADS
Stellar Obliquity and Magnetic Activity of Planet-hosting Stars and Eclipsing Binaries Based on Transit Chord Correlation

[15] F. Dai, A. Howard, S. Halverson, et al., 2024, The Astronomical Journal, 168, 101, ADS

An Earth-sized Planet on the Verge of Tidal Disruption

[16] **F. Dai**, K. C. Schlaufman, H. Reggiani, et al., 2023, The Astronomical Journal, 166, 49, ADS
A Mini-Neptune Orbiting the Metal-poor K Dwarf BD+ 29 2654

Major-Contribution Publications

[17] Y. Xu & **F. Dai**, 2025, The Astrophysical Journal 981, 142 ADS
Amplifying Resonant Repulsion with Inflated Young Planets, Overlooked Inner Planets, and Nonzero Initial Δ

[18] R. Lee, **F. Dai**, et al., 2025, The Astrophysical Journal Letters 983 L36, ADS
TOI-6324 b: An Earth-mass Ultra-short-period Planet Transiting a Nearby M Dwarf

[19] F. Keller, **F. Dai** & W. Xu, 2025, The Astrophysical Journal, in press, ADS
Higher-Order Mean-Motion Resonances Can Form in Type-I Disk Migration

[20] E. Zhang, H. Teng, **F. Dai**, et al. 2025, The Astrophysical Journal, in press, ADS
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[22] Z. Hu, W. Zhu, **F. Dai**, 2024, The Astrophysical Journal Letters 977, L28 ADS
An Eccentric Binary with a Misaligned Circumbinary Disk

[23] H. Teng, **F Dai**, et al., 2024, The Astronomical Journal 168, 194, ADS
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[24] S. Giacalone, **F Dai**, et al., 2024, The Astronomical Journal 168, 188, ADS
The OATMEAL Survey. I. Low Stellar Obliquity in the Transiting Brown Dwarf System GPX-1

[25] R. Rubenzahl, **F Dai**, et al., 2024, The Astronomical Journal 168, 189, ADS
KPF Confirms a Polar Orbit for KELT-18 b

[26] R. Rubenzahl, **F Dai**, et al., 2024, The Astrophysical Journal Letters 971, L40, ADS
Obliquity Constraints for the Extremely Eccentric Sub-Saturn Kepler-1656 b

[27] H. Yu & **F. Dai**, 2024, The Astrophysical Journal, in press, ADS
Are WASP-107-like Systems Consistent with High-eccentricity Migration?

[28] T. Gan, S. Wang, **F Dai**, et al., 2024, The Astrophysical Journal Letters, 969, 1, L24, ADS
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[32] C. Brinkman, L. Weiss, **F Dai**, et al., 2023, The Astronomical Journal, 165, 3, 88, ADS
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[33] A. Goyal, **F Dai**, S. Wang, 2023, The Astrophysical Journal, 955, 2, 118, ADS
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[34] T Hirano, **F Dai**, et al., 2023, The Astronomical Journal, 165, 3, 131, 14,ADS
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[35] M. Zhang, **F Dai**, et al., 2023, The Astrophysical Journal Letters, 953, 2, L25, ADS
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[36] A Behmard, **F Dai**, A Howard, 2022, The Astronomical Journal, 163, 4 ADS
Stellar Companions to TESS Objects of Interest: A Test of Planet-Companion Alignment

[37] W. Zhu, K. Bernhard, **F Dai**, et al., 2022, The Astrophysical Journal Letters 933 (1), L21,ADS
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[39] R Rubenzahl, **F Dai**, et al., 2021, The Astronomical Journal, 161, 3, ADS
TESS-Keck Survey. IV. A Retrograde, Polar Orbit for the Ultra-low-density, Hot Super-Neptune WASP-107b

[40] L Wang & **F Dai**, 2021, The Astrophysical Journal, 914, 2, 98, ADS
Metastable Helium Absorptions with 3D Hydrodynamics and Self-consistent Photochemistry. II. WASP-107b, Stellar Wind, Radiation Pressure, and Shear Instability

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X-Ray and UV Flux Level, Spectral Types, and Flares

[42] G Li, **F Dai** & J Becker, 2020, The Astrophysical Journal Letters, 890, 2 ADS
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Dusty Outflows in Planetary Atmospheres: Understanding "Super-puffs" and Transmission Spectra of Sub-Neptunes

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[51] T Hirano, **F Dai**, et al., 2018, The Astronomical Journal 155 , 127, ADS
Exoplanets around Low-mass Stars Unveiled by K2

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K2-155: A Bright Metal-poor M Dwarf with Three Transiting Super-Earths

[53] JH Livingston, **F Dai**, et al., 2018, The Astronomical Journal 155 , 115, ADS
Three Small Planets Transiting a Hyades Star

[54] P Niraula, S Redfield, **F Dai**, et al., 2017, The Astronomical Journal 154 , 266, ADS
Three Super-Earths Transiting the Nearby Star GJ 9827

[55] EW Guenther, O Barragan, **F Dai**, et al., 2017, Astronomy & Astrophysics 608, A93, ADS
K2-106, a System Containing a Metal-rich Planet and a Planet of Lower Density

[56] R Sanchis-Ojeda, JN Winn, **F Dai**, et al., 2015, The Astrophysical Journal Letters 812 , L11, ADS
A Low Stellar Obliquity for WASP-47, a Compact Multiplanet System with a Hot Jupiter and an Ultra-short Period Planet

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TOI-2458 b: A mini-Neptune consistent with in situ hot Jupiter formation

[58] Q. Liu, **including F Dai**, et al., 2025, The Astronomical Journal 169, 79 ADS
Detecting Planetary Oblateness in the Era of JWST: A Case Study of Kepler-167e

[59] X. Hua, **including F Dai**, et al., 2025, The Astrophysical Journal Letters 980, L46 ADS
Short-period Small Planets with High Mutual Inclinations are More Common around Metal-rich Stars

[60] M. Zhang, **including F Dai**, et al., 2025, The Astronomical Journal 169, 204 ADS
Constraining atmospheric composition from the outflow: helium observations reveal the fundamental properties of two planets straddling the radius gap

[61] L. Handley, **including F Dai**, et al., 2025, The Astronomical Journal 169, 212 ADS
An Obliquity Measurement of the Hot Neptune TOI-1694b

[62] Z. van Zandt, **including F Dai**, et al., 2025, The Astronomical Journal 169, 235 ADS
The TESS–Keck Survey. XXIV. Outer Giants May Be More Prevalent in the Presence of Inner Small Planets

[63] Y. Li, **including F Dai**, et al., 2025, The Astrophysical Journal 984, 125 ADS
K Dwarf Radius Inflation and a 10 Gyr Spin-down Clock Unveiled through Asteroseismology of HD 219134 from the Keck Planet Finder

[64] R. Li, **including F Dai**, et al., 2025, The Astronomical Journal 169, 323 ADS
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[65] Y. Chen, **including F Dai**, et al., 2025, MNRAS, 540, 1998-2007 ADS
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[66] A. Howard, **including F Dai**, et al., 2025, ApJS, 278, 52 ADS
Planet Masses, Radii, and Orbits from NASA's K2 Mission

[67] S. Giacalone, **including F Dai**, et al., 2025, PASP, 137,10 ADS
A Hot Jupiter with a Retrograde Orbit around a Sun-like Star and a Toy Model of Hot Jupiters in Wide Binary Star Systems

[68] V. Hugo, **including F Dai**, et al., 2025, A&A, in press ADS
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[69] C. Brinkman, **including F Dai**, et al., 2025, The Astronomical Journal 170, 109, ADS
The Compositions of Rocky Planets in Close-in Orbits Tend to be Earth-Like
[70] J. Zhang, **including F Dai**, et al., 2025, The Astronomical Journal 168, 295, ADS
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[71] J. Livingston, **including F Dai**, et al., 2025, Scientific Reports 14, 27219, ADS
An ultra-short-period super-Earth with an extremely high density and an outer companion
[72] M. Hon, **including F Dai**, et al., 2025, The Astrophysical Journal 975, 147, ADS
Asteroseismology of the Nearby K Dwarf Draconis Using the Keck Planet Finder and TESS
[73] X. Wang, **including F Dai**, et al., 2025, The Astrophysical Journal Letters 973, L21, ADS
Single-star Warm-Jupiter Systems Tend to Be Aligned, Even around Hot Stellar Hosts: No T eff– Dependency
[74] N. Saunders, **including F Dai**, et al., 2024, The Astronomical Journal 168, 2, 81, ADS
TESS Giants Transiting Giants. VI. Newly Discovered Hot Jupiters Provide Evidence for Efficient Obliquity Damping after the Main Sequence
[75] H. Isaacson, **including F Dai**, et al., 2024, submitted to ApJS, ADS
The California Legacy Survey V. Chromospheric Activity Cycles in Main Sequence Stars
[76] Q. Liu, **including F Dai**, et al., 2024, submitted to AJ, ADS
Detecting Planetary Oblateness in the Era of JWST: A Case Study of Kepler-167e
[77] S. Lange, **including F Dai**, et al., 2024, The Astronomical Journal, 167, 6, 21, ADS
The TESS-Keck Survey. VII. A Superdense Sub-Neptune Orbiting TOI-1824
[78] A. Polanski, **including F Dai**, et al., 2024, The Astrophysical Journal Supplement Series 272, 2, 32, ADS
The TESS-Keck Survey. XX. 15 New TESS Planets and a Uniform RV Analysis of All Survey Targets
[79] D. Pidhorodetska, **including F Dai**, et al., 2024, submitted to AJ, ADS
The TESS-Keck Survey. XXII. A sub-Neptune Orbiting TOI-1437
[80] M. Limbach, **including F Dai**, et al., 2024, The Astronomical Journal, 168, 2, 54, 11, ADS
Occurrence Rates of Exosatellites Orbiting 3–30 M Jup Hosts from 44 Spitzer Light Curves
[81] B. Hord, **including F Dai**, et al., 2024, The Astronomical Journal, 168, 2, 54, 11, ADS
Identification of the top TESS objects of interest for atmospheric characterization of transiting exoplanets with JWST
[82] A. Desai, **including F Dai**, et al., 2024, The Astronomical Journal, 167, 5, 194, ADS
The TESS-Keck Survey. XVIII. A sub-Neptune and spurious long-period signal in the TOI-1751 system
[83] F. Liu, **including F Dai**, et al., 2024, Nature 627 (8004), 501-504, ADS
At least one in a dozen stars shows evidence of planetary ingestion
[84] C. Thomas, **including F Dai**, et al., 2024, The Astronomical Journal 167, 4, 160, ADS
A Tale of Two Peas in a Pod: The Kepler-323 and Kepler-104 Systems
[85] M. Hill, **including F Dai**, et al., 2024, The Astronomical Journal 167, 4, 151, ADS
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[87] A. Householder, **including F Dai**, et al., 2024, The Astronomical Journal 167, 2, 84, ADS
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[88] M. Zhang, **including F Dai**, et al., 2024, The Astrophysical Journal Letters 961, L44, ADS
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[89] J. Lubin, **including F Dai**, et al., 2024, The Astronomical Journal 168, 196, ADS
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[90] J. Orell-Miquel, **including F Dai**, et al., 2024, Astronomy & Astrophysics 689, A179, ADS
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[91] S. Gibson, **including F Dai**, et al., 2024, Ground-based and Airborne Instrumentation for Astronomy 13096, 42-70, ADS
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[92] P. Dalba, **including F Dai**, et al., 2024, The Astrophysical Journal Supplement, 271, 1, 16, ADS
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[93] H. Deeg, **including F Dai**, et al., 2023, Astronomy & Astrophysics, 677, A12, ADS
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[94] R. Frazier, **including F Dai**, et al., 2023, The Astrophysical Journal Letters 944, 2, L41, ADS

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[98] J. Korth, **including F Dai**, et al., 2023, Astronomy & Astrophysics 675, A115, ADS
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[99] E. Knudstrup, **including F Dai**, et al., 2023, Astronomy & Astrophysics 671, A164, ADS
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[100] E. Knudstrup, **including F Dai**, et al., 2023, Monthly Notices of the Royal Astronomical Society 519, 4, 5637, ADS
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[101] R. Luque, **including F Dai**, et al., 2023, Nature 623, 932–937, ADS
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[104] M. Rice, **including F Dai**, et al., 2023, The Astronomical Journal 165, 2, 65, ADS
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[109] M Zhang, R Hu, J Inglis, **F Dai**, et al. 2023, The Astrophysical Journal Letters, 961, 2, L44, ADS
GJ 367b is a dark, hot, airless sub-Earth

[110] M Rice, S Wang, **including F Dai**, et al., 2022, The Astronomical Journal, 164, 104, ADS
A Tendency Toward Alignment in Single-star Warm-Jupiter Systems

[111] L Rosenthal, H Knutson, **including F Dai**, et al., 2022, The Astrophysical Journal Supplement Series, 262, 1, ADS
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[112] M MacDougall, E Petigura, **including F Dai**, et al., 2022, The Astronomical Journal, 164, 3, ADS
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[120] S Vissapragada, H Knutson, **including F Dai**, et al., 2022, The Astrophysical Journal, 927, 1, ADS

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[123] K Lam, S Csizmadia, **including F Dai**, et al., 2022, Science, 374, 6572, ADS
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[125] V Zandt, E Petigura, **including F Dai**, et al., 2022, The Astronomical Journal, 161, 1, ADS
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A Planetary System with two Transiting Mini-Neptunes Near the Radius Valley around the Bright M dwarf TOI-776

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TESS-Keck Survey IX: Masses of Three Sub-Neptunes Orbiting HD 191939 and the Discovery of a Warm Jovian

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A Search for Planetary Metastable Helium Absorption in the V1298 Tau System

[138] V Van Eylen, N Astudillo-Defru, **including F Dai**, et al., 2021, MNRAS, 507, 2, ADS
Masses and Compositions of three Small Planets Orbiting the Nearby M dwarf L231-32 and the M dwarf Radius Valley

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The TESS-Keck Survey: Science Goals and Target Selection

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A Second Planet Transiting LTT 1445A and a Determination of the Masses of Both Worlds

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37 New Validated Planets in Overlapping K2 Campaigns

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On the Detection of Exomoons Transiting Isolated Planetary-Mass Objects

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Evidence for Spin-Orbit Alignment in the TRAPPIST-1 System

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A Featureless Infrared Transmission Spectrum for the Super-puff Planet Kepler-79d

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The Multiplanet System TOI-421

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The Misaligned Orbit of the Earth-sized Planet Kepler-408b

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WASP-4b Arrived Early for the TESS Mission

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Complex Rotational Modulation of Rapidly Rotating M Stars Observed with TESS

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An Super-Earth in a 2.2 day orbit around the K5V star K2-216

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The Transiting Multi-planet System HD 3167: A Super-Earth and a Mini-Neptune

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K2-137 b: an Earth-sized Planet in a 4.3-h Orbit Around an M-dwarf

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The K2-Esprint Project. V. A Short-period Giant Planet Orbiting a Subgiant Star

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The K2-ESPRINT Project IV. A Hot Jupiter in a Prograde Orbit with a Possible Stellar Companion

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The K2-ESPRINT Project. II. Spectroscopic Follow-up of Three Exoplanet Systems from Campaign 1 of K2

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The K2-ESPRINT Project III: A Close-in Super-Earth around a Metal-rich Mid-M Dwarf

[181] R Sanchis-Ojeda, S Rappaport, **including F Dai**, et al., 2015, The Astrophysical Journal 812 , 112, ADS
The K2-ESPRINT Project. I. Discovery of the Disintegrating Rocky Planet K2-22b with a Cometary Head and Leading Tail

[182] L Yu, JN Winn, **including F Dai**, et al., 2015, The Astrophysical Journal 812 , 48, ADS
Tests of the Planetary Hypothesis for PTFO 8-8695b

Student Advised and Publications

Graduate Students:

Rena Lee, Graduate Student, NSF GRFP Fellow, University of Hawaii [2024-Present]
R. Lee, **F. Dai**, et al., 2025, The Astrophysical Journal Letters 983 L36, ADS
TOI-6324 b: An Earth-mass Ultra-short-period Planet Transiting a Nearby M Dwarf

Elina Zhang, Graduate Student, University of Hawaii [2024-Present]
E. Zhang, H. Teng, **F. Dai**, et al. 2025, The Astrophysical Journal, in press, ADS
TOI-880 is an Aligned, Coplanar, Multi-planet System

Chase Urasaki, Graduate Student, University of Hawaii [2025-Present]

Mu-Tian Wang, Visiting graduate student, Nanjing University [2024-Present]
M. Wang, **F. Dai**, et al., submitted
An Adolescent, Near-Resonant Planetary System Near the End of Photoevaporation
M. Wang, **F. Dai**, et al., submitted
TOI-4495: A Pair of Aligned, Near-Resonant Sub-Neptunes that Experienced Overstable Migration

Zhecheng Hu, Visiting graduate student, Tsinghua University [2024-Present]
Z. Hu, **F. Dai**, et al., submitted
Unexpected Near-Resonant and Metastable States of Young Multi-Planet Systems

Aaron Householder, Graduate Student, NSF GRFP Fellow, Massachusetts Institute of Technology [2024-Present]
A. Householder, **F. Dai**, et al., in prep
The KPF SURFS-UP Survey I: Transmission Spectroscopy of WASP-76 b

Undergraduate Students:

Finnegan Keller, Visiting undergraduate student, Brown University; Finnegan's thesis (same title as the paper) won Brown's Smiley Prize for Excellent Contribution to the Astronomy Program. He also served as a student speaker at Brown's 2025 Commencement. [2024 Summer]
F. Keller, **F. Dai** & W. Xu, The Astronomical Journal, in press ADS
Higher-Order Mean-Motion Resonances Can Form in Type-I Disk Migration

Diya Kumar, Visiting undergraduate student, SURF, Caltech [2025 Summer]
D. Kumar, **F. Dai**, et al., in prep
Dynamical Disruption of Resonant Chains

Quentin Charles, REU Undergraduate Student, University of Hawaii [2025 Summer]
Q. Charles, **F. Dai**, et al., in prep
Formation of Hot Jupiters During Type-I Migration

Barron Nguyen, Visiting undergraduate student, Standford University [2024 Summer]
B. Nguyen, L. Schaefer, **F. Dai**, et al., in prep
A Tidally-Enhanced Outgassed Secondary Atmosphere on 55 Cancri e

Yuancheng Xu, Visiting undergraduate student, Oxford University [2024 Summer]
Y. Xu & **F. Dai**, 2025, The Astrophysical Journal 981, 142 ADS
Amplifying Resonant Repulsion with Inflated Young Planets, Overlooked Inner Planets, and Nonzero Initial Δ

Former Students:

Aida Behmard, Caltech graduate student co-advised with Andrew Howard, now Kalbfleisch Fellow at American Museum of Natural History [2019-2023]

A. Behmard, **F Dai**, et al., 2023, Monthly Notices of the Royal Astronomical Society, 521, 2, ADS
Planet engulfment detections are rare according to observations and stellar modelling
A. Behmard, **F Dai**, A. Howard, 2022, The Astronomical Journal, 163, 4 ADS
Stellar Companions to TESS Objects of Interest: A Test of Planet-Companion Alignment

Ryan Rubenzahl, Caltech graduate student co-advised with Andrew Howard, now Flatiron Fellow [2019-2024]
R. Rubenzahl, **F Dai**, et al., 2024, The Astronomical Journal, 167, 4, 16, ADS
The TESS-Keck Survey. XII. A Dense 1.8 R Ultra-short-period Planet Possibly Clinging to a High-mean-molecular-weight Atmosphere after the First Gigayear
R. Rubenzahl, **F Dai**, et al., 2024, The Astronomical Journal 168, 189, ADS
KPF Confirms a Polar Orbit for KELT-18 b
R. Rubenzahl, **F Dai**, et al., 2024, The Astrophysical Journal Letters 971, L40, ADS
Obliquity Constraints for the Extremely Eccentric Sub-Saturn Kepler-1656 b
R Rubenzahl, **F Dai**, et al., 2021, The Astronomical Journal, 161, 3, ADS
TESS-Keck Survey. IV. A Retrograde, Polar Orbit for the Ultra-low-density, Hot Super-Neptune WASP-107b

Michael Zhang, Caltech graduate student co-advised with Heather Knutson, now 51 Peg b Fellow at the University of Chicago [2019-2022]
M. Zhang, **F Dai**, et al., 2023, The Astronomical Journal 165, 62, ADS
Detection of atmospheric escape from four young mini-Neptunes
M. Zhang, **F Dai**, et al., 2023, The Astrophysical Journal Letters 953, L25 ADS
Outflowing helium from a mature mini-Neptune

Awards & Honors

NSF Faculty Early Career Development Program (CAREER), $691,228 [2025-2029]
NASA Sagan Fellowship, ~$375,000 [2022-2024]
51 Peg b Fellowship, Heising-Simons Foundation, Awarded but declined, ~$375,000 [2022]
GPS Chair's Fellowship, Caltech, ~$300,000 [2019-2022]
Carnegie Origins Fellowship, Carnegie Observatory, Awarded but declined, ~$350,000 [2019]
David Thompson Award, Homerton College, University of Cambridge, UK [2010-2014]
DAAD (Deutscher Akademischer Austauschdienst, German Academic Exchange) RISE Fellowship, Germany [2013]
SM1 Scholarship, Ministry of Education, Singapore [2006-2009]

Grants & Telescope Time

PI, "The Formation and Disruption of Resonant Chains", NSF Faculty Early Career Development Program (CAREER), $691,228 [2025-2029]
PI, "Unveiling the Composition of Earth-sized Planets with the Keck Planet Finder", NSF/AAG Program, $461,453 [2025-2027]
Co-I, "Homogeneous High-Resolution Spectroscopy of Ariel Exoplanet Host Stars", NASA Contributions to Ariel Preparatory Science, $267,603 [2025-2027]
PI, "Composition, Origin, and Fate of the Four Newborn Planets in the V1298 Tau System", NASA James Webb Space Telescope, Awarded 18.7 hours, $187,000 [2023-2024]
PI, "Pinning Down Masses of JWST Ultra-short-period Planets with Keck Planet Finder", NASA Keck Key Strategic Mission Support, Awarded 10 nights, $75,000 [2023-2024]
Co-I, "Keck Planet Finder Stellar Obliquity Survey", NASA/XRP, $663,394 [2024-2027]
PI, "Catching a Proto-Hot Jupiters in High-eccentricity Migration", ESO/EPRESSO, 1 night [2023]
PI, "Detecting Mass Loss from Two Ultra-Short-Period Planets", Keck, 2 nights [2022]
PI, "Stellar obliquities of Warm Jupiters and Hot Neptunes", Keck, 8 nights [2020-2022]
Co-I, "The First and Only Multi-wavelength Map of an Ultra-short-period sub-Earth" (PI: Michael Zhang), James Webb Space Telescope, 15.7 hours [2021]
Co-I, "Mass Loss from Small Planets in metastable Helium" (PI: Heather Knutson), Keck/NIRSPEC, 8 nights [2020-2022]
Co-I, "Lyman alpha absorption from the only mini Neptune with measured helium outflow?" (PI: Michael Zhang), Hubble Space Telescope Cycle 29, 15 orbits [2021]
Collaborator, "The TESS-Keck Survey: Completing the Sample" (PI: Courtney Dressing), Keck, 22 nights [2021]

Co-I, "The X-ray Spectra of Young, Active Stars Hosting Small Planets" (PI: Michael Zhang), XMM-Newton, 10 hours [2021]

Co-I, "The Atmospheric and Dynamical Evolution of a Sub-Neptune Progenitor" (PI: Shreyas Vissapragada), WIYN/NEID, 1 night [2021]

Co-I, "Lyman alpha absorption from the only mini Neptune with measured helium outflow?" (PI: Michael Zhang), Hubble Space Telescope Cycle 29, 15 orbits [2021]

Co-I, "Refining the Ephemeris of Young, Active Stars Hosting Small Planets" (PI: Michael Zhang), Las Cumbres Observatory, 3 nights [2021]

Co-I, "How Common is Planet Engulfment?" (PI: Andrew Howard), Keck, 2 nights [2020]

Co-I, "A Survey of Atmospheric Escape with WIRC" (PI: Shreyas Vissapragada), Palomar Observatory, 6 nights [2020]

Co-I, "Probing mass loss from two mini- Neptunes orbiting a young solar analogue" (PI: Heather Knutson), Hubble Space Telescope Cycle 28, 36 orbits [2020]

Collaborator, "Probing the Atmosphere of a Temperate Transiting Jovian Planet with an Orbital Period of 1.5 Years" (PI: Courtney Dressing), Hubble Space Telescope Cycle 28, 18 orbits [2020]

Co-I, "Using the Metallicity Effect for Small Planets to Explore Planet Formation" (PI: Kevin Schlaufman), TESS Guest Investigator Program, $50,000 [2019]

Collaborator, "A Southern Hemisphere RV Follow-up Program for TESS" (PI: Stephen Shectman), NASA/XRP, $416,000 [2018]

Co-I, "A Search for Earth-like Planets in the Habitable Zone around Bright Low-mass Stars" (PI: Teruyuki Hirano), Astrobiology Center Research Project, $22,000 [2018]

Co-I, "Finding the Shortest Period Planets with TESS" (PI: Joshua N. Winn), Heising-Simons Foundation, $380,000 [2018]

Co-I, " The KESPRINT radial velocity follow-up of TESS transiting planets: unveiling the nature of small worlds" (PI: Davide Gandolfi), ESO/HARPS, 78 nights [2018 - 2020]

Co-I, "Radial velocity follow-up observations of K2 transiting small planets" (PI: Davide Gandolfi), Nordic Optical Telescope, 8 nights [2018]

Co-I, "Validation of Exoplanets from K2 Campaigns 14–16" (PI Joshua N. Winn), WIYN/NESSI, 4 nights [2018]

Co-I, "Spectroscopic follow-up observations of small transiting planets from the K2 mission" (PI: Artie Hatzes), Nordic Optical Telescope, 6 nights [2018]

Co-I, "Short-Cadence Observations of Identified K2 Planet Candidates" (PI: Joshua Winn), K2 Guest Observer [2016]

Co-I, "Spectroscopic Follow-up of Planets from the K2 Survey"(PI: Joshua N. Winn) Magellan/Clay, 11 nights [2015-2016]

Teaching and Outreach

Instructor, Astrophysical Techniques (AST 633, Graduate Level), University of Hawaii [2024-2025]

Organizer/Mentor for Intro2Astro Workshop, 400+ participants [2021-2025]

Introduction to Astronomy Research Youtube Channel

Institute for Astronomy Open House [2024-2025]

Guest Lecturer, Astronomical Measurements and Instrumentation (ay122, Graduate Level), Caltech [2021-2023]

Mentor for Caltech WAVE Undergraduate Summer Program [2021]

Public Webinar "Exoplanet Detection Methods" [2021]

Speaker for AstroSprint Online Workshop, 100+ participants [2021]

Public Talk "Aperture Photometry and the Transiting Exoplanet Survey Satellite" [2021]

Public Webinar "Discovering Exoplanets with TESS Light Curves in Python" [2021]

Astronomy on Tap,"The Least Habitable Planets", Caltech [2021]

KAZN AM1300 Radio Station, "Life Outside Earth", Los Angeles [2021]

Talks

Physics & Astronomy Colloquium, University of California Los Angeles [2025]

Resonant State Workshop, University of Geneva [2025]

Planets on the Edge Conference, University of Santa Barbara [2025]

Solar System in Context, NOIRLab Science Conference [2025]

PSAS Seminar, Georgia Tech [2025]

Asia Oceania Geosciences Society Conference, Korea [2024]

Astronomy Colloquium, University of Hawaii at Manoa	[2023]
PLUNCH talk, University of California Santa Cruz	[2023]
Planetary Science Seminar, University of California Los Angeles	[2023]
Physics Colloquium, University of Rochester	[2023]
Astronomy Colloquium, University of Toronto	[2023]
Astronomy Colloquium, University of Virginia	[2023]
Physics Colloquium, Tufts University	[2023]
Stars and Planets Lunch and Talks, University of Hawaii at Manoa	[2022]
TESS Science Meeting, MIT	[2022]
Astronomy Colloquium, Yale	[2022]
Exoplanet Journal Club, Jet Propulsion Lab	[2022]
Astro Seminar Series, Kansas University	[2022]
Physics Colloquium, Washington University in St Louis	[2022]
Keck Science Meeting, Caltech	[2022]
Hubble Symposium, Space Telescope Science Institute	[2022]
Exoplanet Meeting, Princeton University	[2022]
Exoplanet Group Meeting, University of Chicago	[2021]
KIAA Seminar, KIAA/Peking University	[2021]
Emerging Researchers in Exoplanet Science Symposium	[2021]
Planet Group Meeting, Ohio State University	[2021]
Exoplanet Demographics Conference, NExSci	[2020]
Exoplanet Meeting, Princeton University	[2020]
DIX Planetary Science Seminar, Caltech	[2020]
Boston Area Exoplanet Science Meeting, Harvard-Smithsonian Center for Astrophysics	[2019]
Exoplanet Group Meeting, University of Chicago	[2018]
IPAC Seminar, NExSci	[2018]
ExoCoffee, University of California, Berkeley	[2018]
Exoplanet Tea, Massachusetts Institute of Technology	[2018]
Stars & Planets Seminar, Harvard-Smithsonian Center for Astrophysics	[2018]
Exoplanet Pizza Lunch, Harvard-Smithsonian Center for Astrophysics	[2018]
Exoplanet Seminar, Yale University	[2018]
Center for Exoplanets and Habitable Worlds Seminar, Penn State University	[2018]
Emerging Researchers in Exoplanet Science Symposium IV	[2018]
Bahcall Lunch, Institute of Advanced Studies	[2018]
Kepler & K2 Science Conference IV, NASA Ames Research Center	[2017]

Community Service

Referee for AAS journals, Nature Astronomy, MNRAS, and Astronomy & Astrophysics	[2016-Present]
Panelist for National Science Foundation Astronomy & Astrophysics Program	[2024]
Reviewer for Hubble Space Telescope	[2021]
Reviewer for ESO Facilities	[2021]
Reviewer for National Science Foundation Astronomy & Astrophysics Program	[2020]
Reviewer for NASA FINESST Program	[2020]

Press Coverage

"Rare Six-Planet Star System Discovered in Milky Way", Wall Street Journal	[2023]
"TOI-1136 is a Young, Coplanar, Aligned Planetary System in a Pristine Resonant Chain", AAS Journal Channel on Youtube	[2023]
"Rogue Exomoons: On the Detection of Exomoons Transiting Isolated Planetary-Mass Objects", Astrobite	[2021]
"Inflating a Super-Puff Planet", AAS Nova	[2019]
"Binary stars with unexplainable dimming pattern", Phys.org	[2019]
"The Curious Case of the Mysterious Over-Luminous Brown Dwarf", Astrobite	[2018]

"Are you rocky or are you gassy?", Carnegie Observatory [2017]
"K2-106 Astronomers characterize two 'super-Earths' in a distant planetary system", Phys.org [2017]
"WASP-12b and Its Possible Fiery Demise", AAS Nova [2017]
"K2-131 Discovery alert! A sizzling super Earth", NASA [2017]
"Wreaking Havoc with a Stellar Fly-By", Astrobite [2015]

References

Prof. Joshua Winn, Princeton University	jnwinn@princeton.edu	+1609-258-3804
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