Jerry Xuan

51 Pegasi b Fellow
University of California, Los Angeles
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Employment

51 Pegasi b Fellow, University of California, Los Angeles — Oct 2025-Present

Postdoctoral Scholar, California Institute of Technology — 2025 (7 months)

Keck Visiting Scholar, W. M. Keck Observatory — 2022 (4 months)

Education

Ph.D. in Astrophysics — 2020-2025

California Institute of Technology

"Probing the Origins of Directly Imaged Planets and Brown Dwarfs: From Atmospheric Compositions to Binarity"

M.Phil. in Astronomy — 2019-2020

University of Cambridge

"Constraining 3D orbital architectures in systems with giant planets"

B.A. in Physics — 2015-2019

Pomona College (Cum Laude, Downing Scholar)

Awards & Distinctions

Total External Funding as PI: $600k

Heising Simons Foundation 51 Pegasi b Fellow (**$450k**) — 2025-

NASA Hubble Fellowship Program Sagan Fellow — 2025 (declined)

Future Investigators in NASA Earth and Space Science and Technology (**$150k**) — 2023-2025

Phi Beta Kappa — 2019

Sigma Xi — 2019

Downing Scholarship (for M.Phil. at Cambridge) — 2019

The Brackett Prize in Astronomy, Pomona College — 2019

Tileston Physics Prize, Pomona College — 2018

Grants and Telescope Time

James Webb Space Telescope (Total JWST Grants: $430k)

PI GO 8714 (19.8 hours, **$159,288**) — JWST Cycle 4

Combining isotopic and elemental abundances to unveil the formation and accretion history of a cold Jupiter

PI GO 5342 (13.2 hours, **$150,900**) — JWST Cycle 3

Spectroscopic characterization of the lowest-mass imaged Jupiter analog

PI GO 3762 (3.8 hours, **$74,911**) JWST Cycle 2

Stringent tests of atmospheric and evolutionary models with a benchmark T dwarf companion

Co-I GO 8063 (59.0 hours, atmospheric analysis lead) JWST Cycle 4

Beyond C/O and metallicity: Can refractory abundances reveal the origin of the largest planets?

Co-I GO 4982 (19.3 hours, **$42,619**, atmospheric analysis lead) JWST Cycle 3

First image and spectrum of a true Jupiter-Saturn analog

GO 6362 (30.3 hours, atmosphere analysis co-lead) JWST Cycle 3

Breaking the degeneracy: substellar anchors for evolutionary models

Co-I GO 8877 (25.9 hours) JWST Cycle 4

The core of the matter: Constraining the formation history of a super-Jupiter

ESO Very Large Telescope

Total of 45 hours as PI on VLTI/GRAVITY & CRIRES+ P112, P114, P117

Over 150 hours as co-I on VLTI/GRAVITY P114, P116, P117

Gemini Observatory

Total of 20 hours as PI on IGRINS 2023

Keck Observatory

Total of 4 nights as PI on KPIC, NIRSPEC, NIRC2 2025-2026

Total of 10 nights as Science PI on KPIC, NIRC2 2021-2025

Over 40 nights as co-I on KPIC, NIRC2 2018-2025

Service & Outreach

Keck AO Working Group & NGS Performance Subgroup Member 2025-Present

ExSoCal 2025 SOC Member 2025-Present

Keck/HISPEC Science Team Member 2026-Present

Keck/SCALES Science Team Member 2024-Present

Keck/KPIC Instrument Team Member 2020-Present

Referee for MNRAS, A&A, AAS Journals, Scientific Reports 2021-Present

Habitable Worlds Observatory Working Group; Spectral Processing Focus Group 2024-Present

Astronomy Outreach at Partial Solar Eclipse 2023

Public Open Evenings at Institute of Astronomy, Cambridge 2020

Mentoring experience

Gavin Wang, undergraduate at JHU 2024-Present

Project: Chemical and isotopic abundances of brown dwarf companions with high-resolution spectroscopy

Sage Santomenna, undergraduate at Pomona College 2025-Present

Project: Characterizing substellar binarity with VLT/CRIRES+ high-resolution spectroscopy

Aniket Sanghi, PhD student at Caltech (partly funded by GO 8714: PI Xuan) 2021-Present

Project: Direct imaging with Keck/NIRC2 and JWST imaging of ϵ Indi Ab

Carrie He, PhD student at UCLA (funded by GO 5342: PI Xuan) 2025-Present

Project: Connecting JWST spectroscopy of directly imaged planets to planet formation

Co-mentoring **Samuel Whitebook**, PhD student at Caltech 2024-Present

Project: Searching for substellar binaries with Keck/NIRSPEC high-resolution spectroscopy

Co-mentoring **Yurou Liu**, undergrad at Yale, Caltech SURF 2024-2026

Project: Chemical abundances of brown dwarfs in young moving groups

Joshua Liberman, post-bacc at Caltech 2022-2023

Project: Keck/KPIC instrument development and data reduction pipelines

Aylin García Soto, PhD student at Dartmouth, advising for postdoc applications 2025-Present

Jacob Schimp, undergraduate at UIUC, advised for grad school applications 2024

Luke Handley, PhD student at Caltech, department peer mentoring 2023-2024

Teaching experience

Teaching and Residential Assistant for the Summer Science Program (seven weeks) 2019
University of Colorado Boulder

Teaching Assistant at Caltech 2021
Bayesian Statistics
High Energy Astrophysics

Teaching Assistant at Pomona College 2016-2018
Techniques in Observational Astronomy (×2)
Spacetime, Quanta, and Entropy
Intro to Stars and Galaxies
General Physics Lab

Selected Press

How big can a planet be? With very large gas giants, it can be hard to tell. Phys.org 2026

How Rotten Eggs Solved an Exoplanet Mystery. Universe Today 2026

The Smell of a Planet Being Born. Science Blog 2026

Hydrogen sulfide detected in distant gas giant exoplanets for the first time. UCLA 2026

Astronomers shocked by how these giant exoplanets formed. ScienceDaily 2026

A brown dwarf discovered 30 years ago is actually twins circling each other. AP News 2024

Three decades later, first brown dwarf ever found offers a surprise. Reuters 2024

The first known brown dwarf is actually twins. Astronomy Magazine 2024

Mysterious brown dwarf is two objects, not one Physics World 2024

After 29 years, first-known brown dwarf revealed as twins. EarthSky 2024

It's Twins! Mystery of Famed Brown Dwarf Solved. Caltech 2024

First Brown Dwarf Discovered is Actually Twins. AMNH 2024

Inventing Tools for Detecting Life Elsewhere. Caltech 2017

Selected Talks

Invited

UT Austin Astronomy Colloquium, Austin, TX 2026

"Detailed Characterization of Exoplanets in the Golden Age of JWST, Gaia, and ELTs"

Herzberg Astronomy and Astrophysics Colloquium, Victoria, Canada 2025

"Mapping formation pathways of giant exoplanets from chemical composition"

CIPS Seminar at UC Berkeley, Berkeley, CA 2025

"Mapping formation pathways of giant exoplanets from chemical composition"

Astronomy Seminar at Carnegie EPL, Washington DC 2025

"Atmospheric compositions and binarity of directly imaged exoplanets and brown dwarfs"

Astrocoffee at Institute for Astronomy, Honolulu, HI 2024

"A modern view of Gliese 229 B: binarity and atmospheric analysis with JWST/MIRI"

UCSD/SDSU Astronomy & Astrophysics Colloquium, San Diego, CA 2024

"Atmospheric compositions and binarity of directly imaged exoplanets and brown dwarfs"

UCLA Tuesday Seminar, Los Angeles, CA 2024

Ibid.

Workshop talk at Cloud Zwei Con, Ringberg Castle, Bavaria, Germany 2023

"Retrieving Atmospheric Compositions of Directly Imaged Companions with High-Resolution Spectroscopy"

Other Worlds Laboratory Summer Program, Santa Cruz, CA 2023, 2024, 2025

"Atmospheric abundances of directly imaged companions from KPIC and JWST"

Exocoffee at Max Planck Institute for Astronomy, virtual 2022

"A Clear View of a Cloudy Brown Dwarf Companion from High-Resolution Spectroscopy"

Public Talk at Keck Observatory for the Visiting Scholars Program, Waimea, HI 2022

"Unlocking the Science Potential of Keck Planet Imager and Characterizer (KPIC) Phase II"

Exoplanet Seminar at Ohio State University, virtual 2022

"A Clear View of a Cloudy Brown Dwarf Companion from High-Resolution Spectroscopy"

Astrophysics Seminar at American Museum of Natural History, New York, NY 2022

Ibid.

Plenary and Contributed

Plenary talk at Exoplanet Atmospheres 2026, Denver, CO 2026

"The compositions of the HR 8799 planets reflect accretion of both solids and metal-enriched gas"

Plenary talk at Spirit of Lyot 6, Pasadena, CA 2026

"Metal enrichment in both volatile (C, O, N) and refractory (S) elements for giant planets in HR 8799 and AF Lep"

Plenary talk at Aspen Center for Physics, Aspen, CO 2025

"Mapping volatile-to-refractory abundance ratios for the four giant planets in HR 8799"

Plenary talk at Cool Stars 22, San Diego, CA 2024

"The first methane brown dwarf Gliese 229 B is a close binary"

Plenary talk at Exoplanets 5, Leiden, Netherlands 2024

"High-resolution spectroscopy of imaged planets and brown dwarfs with KPIC: abundances, spins, and RVs"

Plenary talk at Spirit of Lyot 5, Leiden, Netherlands 2022

"High resolution spectroscopy of directly imaged exoplanets with KPIC"

Contributed talk at ExSoCal 2023, Pasadena, CA 2023

"Are These Planets or Brown Dwarfs? Elemental Abundances in the Atmosphere of Substellar Companions"

Contributed talk at Keck Science Meeting, Berkeley, CA 2023

Ibid.

Contributed talk at Keck Science Meeting, Pasadena, CA 2022

"Early Science Results from Phase II of the Keck Planet Imager and Characterization"

Contributed talk at Keck Science Meeting, San Diego, CA 2021

"Atmospheric composition of a cloudy brown dwarf companion from high and low resolution spectroscopy"

Contributed talk at Exoplanets Orbit and Dynamics workshop, virtual 2021

"Mutual inclinations between giant planets and their debris discs with Hipparcos, Gaia, and radial velocity"

Refereed Journal Articles (Jerry W. Xuan)

Total: **63** First-author: **11** Second-author: **9** Third-author: **10**

Total citations: 1,174 First-author citations: 354 (according to ADS)

h-index: 23

ORCID profile

ADS profile

First-author

- **Xuan**, **J. W.**, Mérand, A., Thompson, W., Zhang, Y., et al. 2024, "The cool brown dwarf Gliese 229 B is a close binary", *Nature* 634, 1070–1074.
- Ruffio, J.-B., **Xuan**, **J. W.**, Chachan, Y., Kesseli, A., et al. 2026, "Jupiter-like uniform metal enrichment in a system of multiple giant exoplanets", *Nature Astronomy* (https://doi.org/10.1038/s41550-026-02783-z).
- **Xuan**, **J. W.**, Ruffio, J.-B., Chachan, Y., Ohno, K., et al. 2026, "The compositions of the HR 8799 planets reflect accretion of both solids and metal-enriched gas", *ApJ* (accepted, arXiv:2602.09422).
- **Xuan**, **J. W.**, Perrin, M. D., Mawet, D., Knutson, H. A., et al. 2024, "Atmospheric Abundances and Bulk Properties of the Binary Brown Dwarf Gliese 229Bab from JWST/MIRI Spectroscopy", *ApJL* 977, L32.
- **Xuan**, **J. W.**, Hsu, C.-C., Finnerty, L., Wang, J., et al. 2024, "Are These Planets or Brown Dwarfs? Broadly Solar Compositions from High-resolution Atmospheric Retrievals of 10-30 MJup Companions", *ApJ* 970, 71.
- **Xuan**, **J. W.**, Wang, J., Finnerty, L., Horstman, K., et al. 2024, "Validation of Elemental and Isotopic Abundances in Late-M Spectral Types with the Benchmark HIP 55507 AB System", *ApJ* 962, 10.
- **Xuan**, **J. W.**, Wang, J., Ruffio, J.-B., Knutson, H., et al. 2022, "A Clear View of a Cloudy Brown Dwarf Companion from High-resolution Spectroscopy", *ApJ* 937, 54.
- **Xuan**, **J. W.**, Kennedy, G. M., Wyatt, M. C., Yelverton, B., 2020, "Mutual inclinations between giant planets and their debris discs in HD 113337 and HD 38529", *MNRAS* 499, 5059–5074.
- **Xuan**, **J. W.**, Wyatt, M. C., 2020, "Evidence for a high mutual inclination between the cold Jupiter and transiting super Earth orbiting π Men", *MNRAS* 497, 2096–2118.
- **Xuan**, **J. W.**, Bryan, M. L., Knutson, H. A., Bowler, B. P., et al. 2020, "A Rotation Rate for the Planetary-mass Companion DH Tau b", *AJ* 159, 97.
- **Xuan**, **W. J.**, Mawet, D., Ngo, H., Ruane, G., et al. 2018, "Characterizing the Performance of the NIRC2 Vortex Coronagraph at W. M. Keck Observatory", *AJ* 156, 156.

Student-led

- Wang, G., **Xuan**, **J. W.**, González Picos, D., Zhang, Z., et al. 2026, "Chemical and Isotopic Homogeneity between the L Dwarf CD-35 2722 B and Its Early M Host Star", *ApJ* 997, 195.
- Sanghi, A., Thompson, W., Mang, J., **Xuan**, **J. W.**, et al. 2026, "Worlds Next Door. IV. Mapping the Late Stages of Giant Planet Evolution with a Precise Dynamical Mass and Luminosity for eps Ind Ab", *ApJ* (submitted).
- Liu, Y., Zhang, Y., **Xuan**, **J. W.**, Mawet, D., 2025, "Chemistry and Isotope Ratios of Substellar Atmospheres in the β Pictoris Young Moving Group", *ApJ* (submitted).
- Sanghi, A., **Xuan**, **J. W.**, Wang, J. J., Mawet, D., et al. 2024, "Efficiently Searching for Close-in Companions Around Young M Dwarfs Using a Multiyear PSF Library", *AJ* 168, 215.

Second or Third-author

- Finnerty, L., Fitzgerald, M. P., **Xuan**, **J. W.**, Echeverri, D., et al. 2026, "Possible stratospheric emission in the warm Neptune GJ 436 b from high-resolution spectroscopy", *AJ* (accepted). arXiv:2602.17777.
- Hsu, C.-C., Wang, J. J., **Xuan**, **J. W.**, Zhang, Y., et al. 2026, "Distinct Rotational Evolution of Giant Planets and Brown Dwarf Companions", *AJ* (accepted). arXiv:2601.05976.
- Thompson, W., Blakely, D., **Xuan**, **J. W.**, Blouin, S., et al. 2026, "Detecting and Characterizing Companions with a Calibrated Gaia DR2, DR3, and Hipparcos Catalog (G23H)", submitted to AJ, arXiv:2602.00235.
- Uyama, T., Currie, T., **Xuan**, **J. W.**, De Rosa, R. J., et al. 2026, "Discovery of a Low-Mass Companion to the Accelerating Star HIP 53005 with Strongly Conflicting Mass Estimates", *AJ* (submitted).
- Finnerty, L., Xin, Y., **Xuan**, **J. W.**, Inglis, J., et al. 2025, "Water Dissociation and Rotational Broadening in the Atmosphere of KELT-20 b from High-resolution Spectroscopy", *AJ* 169, 333.
- Thompson, W., Blakely, D., **Xuan**, **J. W.**, Bouchard-Côté, A., et al. 2025, "On the Orbit of the Binary Brown Dwarf Companion GL229 Ba and Bb", *AJ* 169, 193.
- Finnerty, L., Xin, Y., **Xuan**, **J. W.**, Inglis, J., et al. 2025, "True Mass and Atmospheric Composition of the Nontransiting Hot Jupiter HD 143105 b", *AJ* 169, 94.
- Hejazi, N., **Xuan**, **J. W.**, Coria, D. R., Sawczynec, E., et al. 2025, "Chemical Links between a Young M-type T Tauri Star and Its Substellar Companion: Spectral Analysis and C/O Measurement of DH Tau A", *ApJ* 978, 42.
- Zhang, Y., **Xuan**, **J. W.**, Mawet, D., Wang, J. J., et al. 2024, "Atmospheric Characterization of the Super-Jupiter HIP 99770 b with KPIC", *AJ* 168, 131.

- Hsu, C.-C., Wang, J. J., **Xuan**, **J. W.**, Ruffio, J.-B., et al. 2024, "Rotation and Abundances of the Benchmark Brown Dwarf HD 33632 Ab from Keck/KPIC High-resolution Spectroscopy", *ApJ* 971, 9.
- Costes, J. C., **Xuan**, **J. W.**, Vigan, A., Wang, J., et al. 2024, "Fresh view of the hot brown dwarf HD 984 B through high-resolution spectroscopy", *A&A* 686, A294.
- Inglis, J., Wallack, N. L., **Xuan**, **J. W.**, Knutson, H. A., et al. 2024, "Atmospheric Retrievals of the Young Giant Planet ROXs 42B b from Low- and High-resolution Spectroscopy", *AJ* 167, 218.
- Echeverri, D., **Xuan**, **J. W.**, Monnier, J. D., Delorme, J.-R., et al. 2024, "Vortex Fiber Nulling for Exoplanet Observations: First Direct Detection of M Dwarf Companions around HIP 21543, HIP 94666, and HIP 50319", *ApJL* 965, L15.
- Finnerty, L., **Xuan**, **J. W.**, Xin, Y., Liberman, J., et al. 2024, "Atmospheric Metallicity and C/O of HD 189733 b from High-resolution Spectroscopy", *AJ* 167, 43.
- Echeverri, D., **Xuan**, **J. W.**, Jovanovic, N., Ruane, G., et al. 2023, "Vortex fiber nulling for exoplanet observations: implementation and first light", Journal of Astronomical Telescopes, Instruments, and Systems 9, 035002.
- Xin, Y., **Xuan**, **J. W.**, Mawet, D., Wang, J., et al. 2023, "On-sky speckle nulling through a single-mode fiber with the Keck Planet Imager and Characterizer", Journal of Astronomical Telescopes, Instruments, and Systems 9, 035001.
- Mawet, D., Ruane, G., **Xuan**, **J. W.**, Echeverri, D., et al. 2017, "Observing Exoplanets with High-dispersion Coronagraphy. II. Demonstration of an Active Single-mode Fiber Injection Unit", *ApJ* 838, 92.

Other Refereed Publications

- Blakely, D., Thompson, W., Johnstone, D., Speedie, J., et al. 2026, "Dynamical Mass Constraints on Transition Disk Perturbers with the G23H Catalog", AJ (submitted). arXiv:2602.07731.
- Zhang, Y., Wardenier, J. P., Householder, A., Komacek, T. D., et al. 2026, "Extreme Winds on the Emerging Dayside of an Ultrahot Jupiter", *ApJL* 997, L40.
- Inglis, J., Millar-Blanchaer, M. A., Konopacky, Q. M., **Xuan**, **J. W.**, et al. 2026, "The Orbital Architecture and Origins of the Young, Planetary Mass Companion Host System, ROXs 42 B", *AJ* (accepted).
- Whitebook, S. E., Rodriguez, A. C., Burdge, K. B., Prince, T. A., et al. 2026, "A Mass Transferring Brown Dwarf Binary on a 57 Minute Orbit", *ApJL* (accepted).
- Jones, N. K., Wang, J. J., Nielsen, E. L., De Rosa, R. J., et al. 2025, "HD 143811 AB b: A Directly Imaged Planet Orbiting a Spectroscopic Binary in Sco-Cen", *ApJL* 995, L41.

- Peck, A. E., Roberson, W., Nielsen, E. L., De Rosa, R. J., et al. 2025, "Characterization of the Host Binary of the Directly Imaged Exoplanet HD 143811 AB b", *ApJL* 995, L40.
- Finnerty, L., Inglis, J., Fitzgerald, M. P., Echeverri, D., et al. 2025, "The Watery Atmosphere of HD 209458 b Revealed by Joint K- and L-band High-resolution Spectroscopy", *AJ* 170, 223.
- Uyama, T., Kuzuhara, M., Beichman, C., Hirano, T., et al. 2025, "Direct Imaging Explorations for Companions from the Subaru/IRD Strategic Program II; Discovery of a Brown-dwarf Companion around a Nearby Mid-M-dwarf LSPM J1446+4633", *AJ* 170, 272.
- Zhang, J., Huber, D., Bottom, M., Weiss, L. M., et al. 2025, "Dynamical Architectures of S-type Transiting Planets in Binaries II: A Dichotomy in Orbital Alignment of Small Planets in Close Binary Systems", *AJ* (accepted). arXiv:2509.25332.
- Zhang, J., Weiss, L. M., Huber, D., **Xuan**, **J. W.**, et al. 2025, "Discovery of a Jupiter Analog Misaligned to the Inner Planetary System in HD 73344", *AJ* 169, 200.
- Sappey, B., Konopacky, Q., Ó, C. R. D., Barman, T., et al. 2025, "HD 206893 B at High Spectral Resolution with the Keck Planet Imager and Characterizer", *AJ* 169, 175.
- Jovanovic, N., Echeverri, D., Delorme, J.-R., Finnerty, L., et al. 2025, "Technical description and performance of the phase II version of the Keck Planet Imager and Characterizer", Journal of Astronomical Telescopes, Instruments, and Systems 11, 015005.
- Hsu, C.-C., Wang, J. J., Blake, G. A., **Xuan**, **J. W.**, et al. 2024, "PDS 70b Shows Stellar-like Carbon-to-oxygen Ratio", *ApJL* 977, L47.
- Zhang, J., Huber, D., Weiss, L. M., **Xuan**, **J. W.**, et al. 2024, "A Testbed for Tidal Migration: The 3D Architecture of an Eccentric Hot Jupiter HD 118203 b Accompanied by a Possibly Aligned Outer Giant Planet", *AJ* 168, 295.
- Zhang, Y., González Picos, D., de Regt, S., Snellen, I. A. G., et al. 2024, "The ESO SupJup Survey. III. Confirmation of ^{13}CO in YSES 1 b and Atmospheric Detection of YSES 1 c with CRIRES^{+}", *AJ* 168, 246.
- Horstman, K., Ruffio, J.-B., Batygin, K., Mawet, D., et al. 2024, "RV Measurements of Directly Imaged Brown Dwarf GQ Lup B to Search for Exosatellites", *AJ* 168, 175.
- Morris, E. C., Wang, J. J., Hsu, C.-C., Ruffio, J.-B., et al. 2024, "κ Andromedae b Is a Fast Rotator from KPIC High-resolution Spectroscopy", *AJ* 168, 144.
- Wallack, N. L., Ruffio, J.-B., Ruane, G., Ren, B. B., et al. 2024, "A Survey of Protoplanetary Disks Using the Keck/NIRC2 Vortex Coronagraph", *AJ* 168, 78.
- Do Ó, C. R., Sappey, B., Konopacky, Q. M., Ruffio, J.-B., et al. 2024, "Orbital and Atmospheric Characterization of the 1RXS J034231.8+121622 System using High-resolution Spectroscopy Confirms that the Companion is a Low-mass Star", *AJ* 167, 278.

- Salama, M., Guthery, C., Chambouleyron, V., Jensen-Clem, R., et al. 2024, "Keck Primary Mirror Closed-loop Segment Control Using a Vector-Zernike Wavefront Sensor", *ApJ* 967, 171.
- Maire, A.-L., Delrez, L., Pozuelos, F. J., Becker, J., et al. 2023, "Workshop Summary: Exoplanet Orbits and Dynamics", *PASP* 135, 106001.
- Finnerty, L., Schofield, T., Sappey, B., **Xuan**, **J. W.**, et al. 2023, "Keck Planet Imager and Characterizer Emission Spectroscopy of WASP-33b", *AJ* 166, 31.
- Long, F., Ren, B. B., Wallack, N. L., Harsono, D., et al. 2023, "A Large Double-ring Disk Around the Taurus M Dwarf J04124068+2438157", *ApJ* 949, 27.
- Ruffio, J.-B., Horstman, K., Mawet, D., Rosenthal, L. J., et al. 2023, "Detecting Exomoons from Radial Velocity Measurements of Self-luminous Planets: Application to Observations of HR 7672 B and Future Prospects", *AJ* 165, 113.
- Wang, J., Wang, J. J., Ruffio, J.-B., Blake, G. A., et al. 2023, "Retrieving C and O Abundance of HR 8799 c by Combining High- and Low-resolution Data", *AJ* 165, 4.
- Wang, J., Kolecki, J. R., Ruffio, J.-B., Wang, J. J., et al. 2022, "Retrieving the C and O Abundances of HR 7672 AB: A Solar-type Primary Star with a Benchmark Brown Dwarf", *AJ* 163, 189.
- Quiroz, J., Wallack, N. L., Ren, B., Dong, R., et al. 2022, "Improving Planet Detection with Disk Modeling: Keck/NIRC2 Imaging of the HD 34282 Single-armed Protoplanetary Disk", *ApJL* 924, L4.
- Llop-Sayson, J., Wang, J. J., Ruffio, J.-B., Mawet, D., et al. 2021, "Constraining the Orbit and Mass of epsilon Eridani b with Radial Velocities, Hipparcos IAD-Gaia DR2 Astrometry, and Multiepoch Vortex Coronagraphy Upper Limits", *AJ* 162, 181.
- Wang, J. J., Ruffio, J.-B., Morris, E., Delorme, J.-R., et al. 2021, "Detection and Bulk Properties of the HR 8799 Planets with High-resolution Spectroscopy", *AJ* 162, 148.
- Bryan, M. L., Ginzburg, S., Chiang, E., Morley, C., et al. 2020, "As the Worlds Turn: Constraining Spin Evolution in the Planetary-mass Regime", *ApJ* 905, 37.
- Ruane, G., Ngo, H., Mawet, D., Absil, O., et al. 2019, "Reference Star Differential Imaging of Close-in Companions and Circumstellar Disks with the NIRC2 Vortex Coronagraph at the W. M. Keck Observatory", *AJ* 157, 118.

Non-refereed Publications (11 total)

- Horstman, K. A., Ruffio, J.-B., Wang, J. J., Hsu, C.-C., et al. 2025, "Fringing analysis and forward modeling of Keck Planet Imager and Characterizer (KPIC) spectra", Journal of Astronomical Telescopes, Instruments, and Systems 11, 035004.
- Echeverri, D., Jovanovic, N., Delorme, J.-R., Guthery, C., et al. (2024a). "Recent upgrades to the Keck Planet Imager and Characterizer". In: *Ground-based and Airborne Instrumentation for Astronomy X*. Vol. 13096. SPIE Conference Series, 130962D, 130962D.

- Wang, J. J., Mawet, D., **Xuan**, **J. W.**, Hsu, C.-C., et al. (2024). "The high-contrast performance of the Keck Planet Imager and Characterizer". In: *Ground-based and Airborne Instrumentation for Astronomy X*. Vol. 13096. SPIE Conference Series, 130961X, 130961X.
- Echeverri, D., **Xuan**, **J.**, Jovanovic, N., Delorme, J.-R., et al. (2023a). "First light of the vortex fiber nulling mode on the Keck planet imager and characterizer". In: *SPIE Conference Series*. Vol. 12680. SPIE Conference Series, 126800M, 126800M.
- Finnerty, L., Horstman, K., Ruffio, J.-B., Wang, J. J., et al. (2023a). "Characterization of hot Jupiter atmospheres with Keck/KPIC". In: *SPIE Conference Series*. Vol. 12680. SPIE Conference Series, 1268006, 1268006.
- Hillman, S., Echeverri, D., Millar-Blanchaer, M. A., **Xuan**, **J.**, et al. 2023, "Exploring calibration algorithms to maximize the null depth in KPIC's vortex fiber nulling mode", arXiv e-prints, arXiv:2309.16073.
- Echeverri, D., Jovanovic, N., Delorme, J.-R., Xin, Y., et al. (2022). "Phase II of the Keck Planet Imager and characterizer: system-level laboratory characterization and preliminary on-sky commissioning". In: *Ground-based and Airborne Instrumentation for Astronomy IX*. Vol. 12184. SPIE Conference Series, 121841W, 121841W.
- Finnerty, L., Schofield, T., Delorme, J.-R., Sappey, B., et al. (2022). "On-sky performance and lessons learned from the phase I KPIC fiber injection unit". In: *Ground-based and Airborne Instrumentation for Astronomy IX*. Vol. 12184. SPIE Conference Series, 121844Y, 121844Y.
- Echeverri, D., Ruane, G., Jovanovic, N., Delorme, J.-R., et al. (2021). "Broadband vortex fiber nulling: high-dispersion exoplanet science at the diffraction limit". In: *Techniques and Instrumentation for Detection of Exoplanets X*. Vol. 11823. SPIE Conference Series, 118230A, 118230A.
- Bailey, V. P., Bottom, M., Cady, E., Cantalloube, F., et al. (2018). "Lessons for WFIRST CGI from ground-based high-contrast systems". In: *Space Telescopes and Instrumentation 2018: Optical, Infrared, and Millimeter Wave*. Vol. 10698. SPIE Conference Series, 106986P, 106986P.
- Klimovich, N., Xin, Y., Mawet, D., Ruane, G., et al. (2017). "Utilizing active single-mode fiber injection for speckle nulling in exoplanet characterization". In: *SPIE Conference Series*. Vol. 10400. SPIE Conference Series, 104000Y, 104000Y.