Chih-Chun "Dino" Hsu

Center for Interdisciplinary Exploration and Research in Astrophysics (CIERA), Northwestern University
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CURRENT POSITION

Postdoctoral Associate September 2022–present
Center for Interdisciplinary Exploration and Research in Astrophysics, Northwestern University, Evanston, IL
Supervisor: Jason Jinfei Wang

EDUCATION

University of California, San Diego, La Jolla, CA, USA
Doctor of Philosophy (Ph.D.) in Physics September 2022
Thesis: "Kinematics, Multiplicity, Rotational Dynamics, and Population Properties of Ultracool Dwarfs Inferred from High-Resolution Near-Infrared Spectroscopy"
Advisor: Adam J. Burgasser

National Tsing Hua University, Hsinchu, Taiwan
Bachelor of Science (B.S) in Physics June 2014
GPA: 4.22/4.3; ranked 1st out of the graduating class

RESEARCH INTERESTS

lowest-mass stars; brown dwarfs; exoplanets; medium-/high-resolution spectroscopy; very low-mass binaries; stellar populations; stellar kinematics; stellar rotation; stellar and exoplanet atmosphere and abundance

RESEARCH EXPERIENCE

Postdoctoral Associate 2022–present
Center for Interdisciplinary Exploration and Research in Astrophysics, Northwestern University, Evanston, IL
Supervisor: Jason Jinfei Wang

Graduate Research Student 2016–2022
Center for Astrophysics and Space Sciences, UC San Diego, La Jolla, CA
Advisor: Adam J. Burgasser

Research Assistant 2015–2016
Institute of Astronomy, National Tsing Hua University, Hsinchu, Taiwan
Supervisor: Huei-Ru "Vivien" Chen

Undergraduate Research Student 2013–2014
Physics Department, National Tsing Hua University, Hsinchu, Taiwan
Advisor: Kingman Cheung

ACADEMIC HONORS & AWARDS

Cool Stars 21 Travel Grant July 2022
Cool Stars 21st Meeting, Toulouse, France

Rodger Doxsey Travel Prize June 2022
AAS 240th Meeting, Pasadena, CA
Awarded for providing graduate students/postdocs within one year of receiving or receipt of their PhD a monetary prize to enable the oral presentation of their dissertation research (transferred from the AAS 239 th Meeting).

Friends of the International Center fellowship 2020
UC San Diego, La Jolla, CA
Awarded for promoting international friendship, understanding, and cooperation.

Carol and George Lattimer Award for Graduate Excellence 2019–2020
UC San Diego, La Jolla, CA
Awarded to graduate students in the Divisions of Physical Sciences who seek interdisciplinary approaches to problem-solving and have a strong commitment to education, mentorship, and service.

Physics Chair's Challenge Award * 3 2017, 2018, 2022
UC San Diego, La Jolla, CA
Awarded for supporting educational excellence and training for physics students.

Physics Excellence Award 2016
UC San Diego, La Jolla, CA
Awarded to highly qualified students admitted to the Physics PhD program.

College of Science Elite Student Award * 3 2012–2014
National Tsing Hua University, Hsinchu, Taiwan
Awarded to the top student of class based on academic achievements.

Academic Achievement Award * 5 2011–2014
National Tsing Hua University, Hsinchu, Taiwan
Awarded to top 5 % of class.

College of Science Scholarship 2013
National Tsing Hua University, Hsinchu, Taiwan
Awarded to one student in College of Science based on academic achievements.

RESEARCH COLLABORATION

Member of Keck Planet Imager and Characterizer (KPIC)
Member of Backyard Worlds: Planet 9
Member of Sloan Digital Sky Survey (SDSS) IV

PUBLICATION SUMMARY

36 peer-reviewed publications, 4 first-author publications, and 10 non-refereed-publications; h-index 12 (450+ total citations)

FIRST AUTHOR PUBLICATIONS

[4] **Hsu, C.**; Burgasser, A. J.; Theissen, C. A.; Birky, J. L.; Aganze, C.; Gerasimov, R.; Schmidt, S. J.; Blake, C. H.; Covey, K. R.; Moreno-Hilario, E.; Gelino, C. R.; Serna J.; Brownstein, J. R.; Cunha K.,"*The Brown Dwarf Kinematics Project (BDKP). VI. Ultracool Dwarf Radial and Rotational Velocities from SDSS/APOGEE High-resolution Spectroscopy*", accepted to ApJS, July 2024, arXiv:2403.13760.

[3] **Hsu, C.**; Wang, J. J.; Xuan, J. W.; Ruffio, J.-B.; Morris, E.; Echeverri, D.; Xin, Y.; Liberman, J.; Finnerty, L.; Hortsman, K.; Sappey B.; Doppmann G.; Mawet, D.; Jovanovic, N.; Fitzgerald, M. P.; Delorme, J.-R.; Wallace, J. K.; Baker, A.; Bartos, R.; Blake, G. A.; Calvin, B.; Cetre, S.; Lopez, R. A.; Pezzato, J.; Schofield, T.; Skemer, A.,"Rotation and Abundances of the Benchmark Brown Dwarf HD 33632 Ab from Keck/KPIC High-resolution Spectroscopy", accepted to ApJ, June 2024, arXiv:2405.08312.

[2] **Hsu, C.**; Burgasser, A. J.; Theissen, C. A.,"*Discovery of the Exceptionally*

Short Period Ultracool Dwarf Binary LP 413-53AB", ApJL, 945, L6, March 2023

[1] **Hsu, C.**; Burgasser, A. J.; Theissen, C. A.; Gelino, C. R.; Birky, J. L.; Diamant, S. J. M.; Bardalez Gagliuffi, D. C.; Aganze, C.; Blake, C. H.; Faherty, J. K.,"The Brown Dwarf Kinematics Project (BDKP). V. Radial and Rotational Velocities of T Dwarfs From Keck/NIRSPEC High-Resolution Spectroscopy", ApJS 257, 45, December 2021.

CONTRIBUTING AUTHOR PUBLICATIONS

[32] Jerry W. Xuan, **Chih-Chun Hsu**, Luke Finnerty, Jason J. Wang, Jean-Baptiste Ruffio, Yapeng Zhang, Heather A. Knutson, Dimitri Mawet, Eric E. Mamajek, Julie Inglis, Nicole L. Wallack, Marta L. Bryan, Geoffrey A. Blake, Paul Molliere, Neda Hejazi, Ashley Baker, Randall Bartos, Benjamin Calvin, Sylvain Cetre, Jacques-Robert Delorme, Greg Doppmann, Daniel Echeverri, Michael P. Fitzgerald, Nemanja Jovanovic, Joshua Liberman, Ronald A. Lopez, Evan Morris, Jacklyn Pezzato, Ben Sappey, Tobias Schofield, Andrew Skemer, James K. Wallace, Ji Wang, Shubh Agrawal, Katelyn Horstman, "Are these planets or brown dwarfs? Broadly solar compositions from high-resolution atmospheric retrievals of $\sim$10–30 M_{Jup} companions", accepted to ApJ, May 2024

[31] Evan C. Morris, Jason J. Wang, **Chih-Chun Hsu**, Jean-Baptiste Ruffio, Jerry W. Xuan, Jacques-Robert Delorme, Callie Hood, Marta L. Bryan, Emily C. Martin, Jacklyn Pezzato, Dimitri Mawet, Andrew Skemer, Ashley Baker, Randall Bartos, Benjamin Calvin, Sylvain Cetre, Greg Doppmann, Daniel Echeverri, Luke Finnerty, Michael P. Fitzgerald, Nemanja Jovanovic, Joshua Liberman, Ronald Lopez, Ben Sappey, Tobias Schofield, J. Kent Wallace, Ji Wang, "kappa And b is a fast rotator from KPIC High Resolution Spectroscopy", accepted to AJ, May 2024

[30] Federico Marocco, J. Davy Kirkpatrick, Adam C. Schneider, Aaron M. Meisner, Mark Popinchalk, Christopher R. Gelino, Jacqueline K. Faherty, Adam J. Burgasser, Dan Caselden, Jonathan Gagne, Christian Aganze, Daniella C. Bardalez-Gagliuffi, Sarah L. Casewell, **Chih-Chun Hsu**, Rocio Kiman, Peter R. M. Eisenhardt, Marc J. Kuchner, Daniel Stern, Leopold Gramaize, Arttu Sainio, Thomas P. Bickle, Austin Rothermich, William Pendrill, Melina Thevenot, Martin Kabatnik, Giovanni Colombo, Hiro Higashimura, Frank Kiwy, Elijah J. Marchese, Nikolaj Stevnbak Andersen, Christopher Tanner, Jim Walla, Zbigniew Wedracki, The Backyard Worlds Collaboration, "Thirteen New M Dwarf + T Dwarf Pairs Identified with WISE/NEOWISE", ApJ, 967, 147, June 2024

[29] J. C. Costes, J. W. Xuan, A. Vigan, J. Wang, V. D'Orazi, P. Mollière, A. Baker, R. Bartos, G. A. Blake, B. Calvin, S. Cetre, J. Delorme, G. Doppmann, D. Echeveri, L. Finnerty, M. P. Fitzgerald, **C. Hsu**, N. Jovanovic, R. Lopez, D. Mawet, E. Morris, J. Pezzato, C. L. Phillips, J. Ruffio, B. Sappey, A. Schneeberger, T. Schofield, A. J. Skemer, J. K. Wallace, J. Wang, "Fresh view of the hot brown dwarf HD 984 B through high-resolution spectroscopy", accepted to A&A, April 2024

[28] Clarissa R. Do Ó, Ben Sappey, Quinn M. Konopacky, Jean-Baptiste Ruffio, Kelly K. O'Neil, Tuan Do, Gregory Martinez, Travis S. Barman, Jayke S. Nguyen, Jerry W. Xuan, Christopher A. Theissen, Sarah Blunt, William Thompson, **Chih-Chun Hsu**, Ashley Baker, Randall Bartos, Geoffrey A. Blake, Benjamin Calvin, Sylvain Cetre, Jacques-Robert Delorme, Greg Doppmann, Daniel Echeverri, Luke Finnerty, Michael P. Fitzgerald, Julie Inglis, Nemanja Jovanovic, Ronald A. López, Dimitri Mawet, Evan Morris, Jacklyn Pezzato, Tobias Schofield, Andrew Skemer, J. Kent Wallace, Jason J. Wang, Ji Wang,

Joshua Liberman, "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, June 2024

[27] Daniel Echeverri, Jerry W. Xuan, John D. Monnier, Jacques-Robert Delorme, Jason J. Wang, Nemanja Jovanovic, Katelyn Horstman, Garreth Ruane, Bertrand Mennesson, Eugene Serabyn, Dimitri Mawet, J. Kent Wallace, Sofia Hillman, Ashley Baker, Randall Bartos, Benjamin Calvin, Sylvain Cetre, Greg Doppmann, Luke Finnerty, Michael P. Fitzgerald, **Chih-Chun Hsu**, Joshua Liberman, Ronald Lopez, Maxwell Millar-Blanchaer, Evan Morris, Jacklyn Pezzato, Jean-Baptiste Ruffio, Ben Sappey, Tobias Schofield, Andrew J. Skemer, Ji Wang, Yinzi Xin, Narsireddy Anugu, Sorabh Chhabra, Noura Ibrahim, Stefan Kraus, Gail H. Schaefer, Cyprien Lanthermann, "Vortex Fiber Nulling for Exoplanet Observations: First Direct Detection of M Dwarf Companions around HIP 21543, HIP 94666, and HIP 50319", ApJL, 965, 15, April 2024

[26] Austin Rothermich; Jacqueline K. Faherty; Daniella Bardalez-Gagliuffi; Adam C. Schneider; J. Davy Kirkpatrick; Aaron M. Meisner; Adam J. Burgasser; Mark Kuchner; Katelyn Allers; Jonathan Gagné; Dan Caselden; Emily Calamari; Mark Popinchalk; Roman Gerasimov; Christian Aganze; Emma Softich; **Chin-Chun Hsu**; Preethi Karpoor; Christopher A. Theissen; Jon Rees; Rosario Cecilio-Flores-Elie; Michael C. Cushing; Federico Marocco; Sarah Casewell; Les Hamlet; Michaela B. Allen; Paul Beaulieu; Guillaume Colin; Jean Marc Gantier; Leopold Gramaize; Peter Jalowiczor; Martin Kabatnik; Frank Kiwi; David W. Martin; Billy Pendrill; Ben Pumphrey; Arttu Sainio; Jorg Schumann; Nikolaj Stevnbak; Guoyou Sun; Christopher Tanner; Vinod Thakur; Melina Thevenot; Zbigniew Wedracki, "89 New Ultracool Dwarf Co-Moving Companions Identified With The Backyard Worlds: Planet 9 Citizen Science Project", AJ, 167, 253, June, 2024

[25] J. Davy Kirkpatrick, Federico Marocco, Christopher R. Gelino, Yadukrishna Raghu, Jacqueline K. Faherty, Daniella C. Bardalez Gagliuffi, Steven D. Schurr, Kevin Apps, Adam C. Schneider, Aaron M. Meisner, Marc J. Kuchner, Dan Caselden, R. L. Smart, S. L. Casewell, Roberto Raddi, Aurora Kesseli, Nikolaj Stevnbak Andersen, Edoardo Antonini, Paul Beaulieu, Thomas P. Bickle, Martin Bilsing, Raymond Chieng, Guillaume Colin, Sam Deen, Alexandru Dereveanco, Katharina Doll, Hugo A. Durantini Luca, Anya Frazer, Jean Marc Gantier, Léopold Gramaize, Kristin Grant, Leslie K. Hamlet, Hiro Higashimura, Michiharu Hyogo, Peter A. Jałowiczor, Alexander Jonkeren, Martin Kabatnik, Frank Kiwy, David W. Martin, Marianne N. Michaels, William Pendrill, Celso Pessanha Machado, Benjamin Pumphrey, Austin Rothermich, Rebekah Russwurm, Arttu Sainio, John Sanchez, Fyodor Theo Sapelkin-Tambling, Jörg Schümann, Karl Selg-Mann, Harshdeep Singh, Andres Stenner, Guoyou Sun, Christopher Tanner, Melina Thévenot, Maurizio Ventura, Nikita V. Voloshin, Jim Walla, Zbigniew Wedracki, Jose I. Adorno, Christian Aganze, Katelyn N. Allers, Hunter Brooks, Adam J. Burgasser, Emily Calamari, Thomas Connor, Edgardo Costa, Peter R. Eisenhardt, Jonathan Gagné, Roman Gerasimov, Eileen C. Gonzales, **Chih-Chun Hsu**, Rocio Kiman, Guodong Li, Ryan Low, Eric Mamajek, Blake M. Pantoja, Mark Popinchalk, Jon M. Rees, Daniel Stern, Genaro Suárez, Christopher Theissen, Chao-Wei Tsai, Johanna M. Vos, David Zurek, The Backyard Worlds: Planet 9 Collaboration, "The Initial Mass Function Based on the Full-sky 20-pc Census of ∼3,600 Stars and Brown Dwarfs", ApJS, 271, 55, April 2024

[24] Holwerda, B. W.; **Hsu, Chih-Chun**; Hathi, Nimish; Bisigello, Laura; de la Vega, Alexander; Arrabal Haro, Pablo; Bagley, Micaela; Dickinson, Mark;

Finkelstein, Steven L.; Kartaltepe, Jeyhan S.; Koekemoer, Anton M.; Papovich, Casey; Pirzkal, Nor; Cook, Kyle; Robertson, Clayton; Casey, Caitlin M; Aganze, Christian; Pérez-González, Pablo G.; Lucas, Ray A.; Jogee, Shardha; Wilkins, Stephen; Burgarella, Denis; Kirkpatrick, Allison, "Cosmic Evolution Early Release Science Survey (CEERS): Multi-classing Galactic Dwarf Stars in the deep JWST/NIRCam", MNRAS, 529, 1067, March 2024

[23] Lingfeng Wei, Christopher A. Theissen, Quinn M. Konopacky, Jessica R. Lu, **Chih-Chun Hsu**, Dongwon Kim, "The 3D Kinematics of the Orion Nebula Cluster II: Mass-dependent Kinematics of the Inner Cluster", ApJ, 962, 174, February 2024

[22] Jerry W. Xuan, Jason J. Wang, Luke Finnerty, Katelyn Horstman, Simon Grimm, Anne Peck, Eric L. Nielsen, Heather A. Knutson, Dimitri Mawet, Howard Isaacson, Andrew W. Howard, Michael C. Liu, Sam Walker, Mark Phillips, Geoffrey Blake, Jean-Baptiste Ruffio, Yapeng Zhang, Julie Inglis, Nicole L. Wallack, Aniket Sanghi, Erica Gonzales, Fei Dai, Ashley Baker, Randall Bartos, Charlotte Bond, Marta L. Bryan, Benjamin Calvin, Sylvain Cetre, Jacques-Robert Delorme, Greg Doppmann, Daniel Echeverri, Michael P. Fitzgerald, Nemanja Jovanovic, Joshua Liberman, Ronald A. López, Emily C. Martin, Evan Morris, Jacklyn Pezzato, Garreth Ruane, Ben Sappey, Tobias Schofield, Andrew Skemer, Taylor Venenciano, James K. Wallace, Ji Wang, Peter Wizinowich, Yinzi Xin, Shubh Agrawal, Clarissa R. Do Ó, **Chih-Chun Hsu**, Caprice Phillips, "Validation of elemental and isotopic abundances in late-M spectral types with the benchmark HIP 55507 AB system", ApJ, 962, 10, February 2024

[21] Luke Finnerty, Jerry W. Xuan, Yinzi Xin, Joshua Liberman, Tobias Schofield, Michael P. Fitzgerald, Shubh Agrawal, Ashley Baker, Randall Bartos, Geoffrey A. Blake, Benjamin Calvin, Sylvain Cetre, Jacques-Robert Delorme, Greg Doppman, Daniel Echeverri, **Chih-Chun Hsu**, Nemanja Jovanovic, Ronald A. López, Emily C. Martin, Dimitri Mawet, Evan Morris, Jacklyn Pezzato, Jean-Baptiste Ruffio, Ben Sappey, Andrew Skemer, Taylor Venenciano, J. Kent Wallace, Nicole L. Wallack, Jason J. Wang, Ji Wang, "Atmospheric metallicity and C/O of HD 189733 b from high-resolution spectroscopy", AJ, 167, 43, January 2024

[20] Grady Robbins, Aaron M. Meisner, Adam C. Schneider, Adam J. Burgasser, J. Davy Kirkpatrick, Jonathan Gagne, **Chih-Chun Hsu**, Leslie Moranta, Sarah Casewell, Federico Marocco, Roman Gerasimov, Jacqueline K. Faherty, Marc J. Kuchner, Dan Caselden, Michael C. Cushing, Sherelyn Alejandro, The Backyard Worlds: Planet 9 Collaboration, The Backyard Worlds: Cool Neighbors Collaboration, "CWISE J105512.11+544328.3: A Nearby Y Dwarf Spectroscopically Confirmed with Keck/NIRES", ApJ, 958, 94, November 2023

[19] M. Ghachoui; A. Soubkiou; R. D. Wells; B. V. Rackham; A. H. M. J. Triaud; D. Sebastian; S. Giacalone; K. G. Stassun; D. R. Ciardi; K. A. Collins; A. Liu; Y. Gómez Maqueo Chew; M. Gillon; Z. Benkhaldoun; L. Delrez; J. D. Eastman; O. Demangeon; K. Barkaoui; A. Burdanov; B.-O. Demory; J. de Wit; G. Dransfield; E. Ducrot; L. Garcia; Y. Gómez Maqueo Chew; M. A. Gómez-Muñoz; M. J. Hooton; E. Jehin; C. A. Murray; P. P. Pedersen; F.J. Pozuelos; D. Queloz; L. Sabin; N. Schanche; M. Timmermans; E.J. Gonzales; C. D. Dressing; C. Aganze; A. J. Burgasser; R. Gerasimov; **C. Hsu**; C. A. Theissen; D. Charbonneau; J. M. Jenkins; D. W. Latham; G. Ricker; S. Seager; A. Shporer; J. D. Twicken; R. Vanderspek; J. N. Winn; K. I. Collins; A. Fukui; T. Gan; N. Narita; R. P. Schwarz, "TESS discovers a super-Earth orbiting the M dwarf star TOI-1680", A&A, 677, 31, September 2023

[18] Daniel Echeverri; Jerry Xuan; Nemanja Jovanovic; Garreth Ruane; Jacques-Robert Delorme; Dimitri Mawet; Bertrand Mennesson; Eugene Serabyn; J. Kent Wallace; Jason Wang; Jean-Baptiste Ruffio; Luke Finnerty; Yinzi Xin; Maxwell Millar-Blanchaer; Ashley Baker; Randall Bartos; Benjamin Calvin; Sylvain Cetre; Greg Doppmann; Michael P. Fitzgerald; Sofia Hillman; Katelyn Horstman; **Chih-Chun Hsu**; Joshua Liberman; Ronald Lopez; Evan Morris; Jacklyn Pezzato; Caprice L. Phillips; Bin B. Ren; Ben Sappey; Tobias Schofield; Andrew J. Skemer; Connor Vancil; Ji Wang, "Vortex fiber nulling for exoplanet observations: implementation and first light", JATIS, 23063G, September 2023

[17] Xin, Yinzi; Xuan, Jerry W.; Mawet, Dimitri; Wang, Jason; Ruane, Garreth; Echeverri, Daniel; Jovanovic, Nemanja; Do'O, Clarissa; Fitzgerald, Michael; Horstman, Katelyn; **Hsu, Chih-Chun**; Liberman, Joshua; Lopez, Ronald A.; Phillips, Caprice L.; Ren, Bin B.; Ruffio, Jean-Baptiste; Sappey, Ben, "On-sky speckle nulling through a single-mode fiber with the Keck Planet Imager and Characterizer", JATIS, 23026L, August 2023

[16] F. J. Pozuelos; M. Timmermans; B. V. Rackham; L. J. Garcia; A. J. Burgasser; S. R. Kane; M. N. Günther, K. G. Stassun, V. Van Grootel, M. Dévora-Pajares, R. Luque, B. Edwards, P. Niraula, N. Schanche, R. D. Wells, E. Ducrot, S. Howell, D. Sebastian, K. Barkaoui, W. Waalkes, C. Cadieux, R. Doyon, R. P. Boyle, J. Dietrich, A. Burdanov, L. Delrez, B.-O. Demory, J. de Wit, G. Dransfield, M. Gillon, Y. Gómez Maqueo Chew, M. J. Hooton, E. Jehin, C. A. Murray, P. P. Pedersen, D. Queloz, S. J. Thompson, A. H. M. J. Triaud, S. Zúñiga-Fernández, K. A. Collins, M. M. Fausnaugh, C. Hedges, K. M. Hesse, J. M. Jenkins, M. Kunimoto, D. W. Latham, A. Shporer, E. B. Ting, G. Torres, P. Amado, J. R. Rodón, C. Rodríguez-López, J. C. Suárez, R. Alonso, Z. Benkhaldoun, Z. K. Berta-Thompson, P. Chinchilla, M. Ghachoui, M. A. Gómez-Muñoz, R. Rebolo, L. Sabin, U. Schroffenegger, E. Furlan, C. Gnilka, K. Lester, N. Scott, C. Aganze, R. Gerasimov, **C. Hsu**, C. Theissen, D. Apai, W. P. Chen, P. Gabor, T. Henning, L. Mancini, "A super-Earth and a mini-Neptune near the 2:1 MMR straddling the radius valley around the nearby mid-M dwarf TOI-2096", A&A, 672, 70, April 2023

[15] Schneider, Adam C.; Burgasser, Adam J.; Bruursema, Justice; Munn, Jeffrey A.; Vrba, Frederick J.; Caselden, Dan; Kabatnik, Martin; Rothermich, Austin; Sainio, Arttu; Bickle, Thomas P.; Dahm, Scott E.; Meisner, Aaron M.; Kirkpatrick, J. Davy; Suarez, Genaro; Gagne, Jonathan; Faherty, Jacqueline K.; Vos, Johanna M.; Kuchner, Marc J.; Williams, Stephen J.; Bardalez Gagliuffi, Daniella; Aganze, Christian; **Hsu, Chih-Chun**; Theissen, Christopher; Cushing, Michael C.; Marocco, Federico; Casewell, Sarah; Backyard Worlds: Planet 9 Collaboration, "Redder than Red: Discovery of an Exceptionally Red L/T Transition Dwarf", ApJL, 943, L16, February 2023

[14] Kiwy, Frank; Faherty, Jacqueline K.; Meisner, Aaron; Schneider, Adam C.; Kirkpatrick, J. Davy; Kuchner, Marc J.; Burgasser, Adam J.; Casewell, Sarah; Kiman, Rocio; Calamari, Emily; Aganze, Christian; **Hsu, Chih-Chun**; Sainio, Arttu; Thakur, Vinod; The Backyard Worlds: Planet 9 Collaboration, "Discovery of 34 low-mass comoving systems using NOIRLab Source Catalog DR2", AJ, 164, 3, July 2022

[13] Aganze, Christian; Burgasser, Adam J ; Malkan, Mathew; Theissen, Christopher A; Tejada Arevalo, Roberto A; **Hsu, Chih-Chun**; Bardalez Gagliuffi, Daniella C; E Ryan, Russell, Jr; Holwerda, Benne, "Beyond the Local Volume II: Population Scaleheights and Ages of Ultracool Dwarfs in Deep HST/WFC3 Parallel Fields", ApJ, 934, 73, July 2022

[12] Softich, Emma; Schneider, Adam C.; Patience, Jennifer; Burgasser, Adam J.; Shkolnik, Evgenya; Faherty, Jacqueline K.; Caselden, Dan; Meisner, Aaron M.; Kirkpatrick, J. Davy; Kuchner, Marc J.; Gagne, Jonathan; Bardalez-Gagliuffi, Daniella; Cushing, Michael C.; Casewell, Sarah L.; Aganze, Christian; **Hsu, Chih-Chun**; Andersen, Nikolaj Stevnbak; Kiwy, Frank; Thevenot, Melina; The Backyard Worlds: Planet 9 Collaboration, "CWISE J014611.20-050850.0AB: The Widest Known Brown Dwarf Binary in the Field", ApJL, 922, L12, February 2022

[11] Theissen, C. A.; Konopacky , Q. M.; Lu, J. R.; Kim D.; Zhang, S. Y.; **Hsu, C.**; Chu, L.; Wei, L., "The 3-D Kinematics of the Orion Nebula Cluster: NIRSPEC-AO Radial Velocities of the Core Population", ApJ, 926, 141, February 2022

[10] Aganze, Christian; Burgasser, Adam J ; Malkan, Mathew; Theissen, Christopher A; Tejada Arevalo, Roberto A; **Hsu, Chih-Chun**; Bardalez Gagliuffi, Daniella C; E Ryan, Russell, Jr; Holwerda, Benne, "Beyond the Local Volume I: Surface Densities of Ultracool Dwarfs in Deep HST/WFC3 Parallel Fields", ApJ, 924, 144, January 2022

[9] Gagliano, Alexander; Izzo, Luca; Kilpatrick, Charles D.; Mockler, Brenna; Jacobson-Galán, Wynn Vincente; Terreran, Giacomo; Dimitriadis, Georgios; Zenati, Yossef; Auchettl, Katie; Drout, Maria R.; Narayan, Gautham; Foley, Ryan J.; Margutti, R.; Rest, Armin; Jones, D. O.; Aganze, Christian; Aleo, Patrick D.; Burgasser, Adam J.; Coulter, D. A.; Gerasimov, Roman; Gall, Christa; Hjorth, Jens; **Hsu, Chih-Chun**; Magnier, Eugene A.; Mandel, Kaisey S.; Piro, Anthony L.; Rojas-Bravo, César; Siebert, Matthew R.; Stacey, Holland; Stroh, Michael Cullen; Swift, Jonathan J.; Taggart, Kirsty; Tinyanont, Samaporn, "An Early-time Optical and Ultraviolet Excess in the Type-Ic SN 2020oi", ApJ, 924, 55, January 2022

[8] Faherty, Jacqueline K; Gagne, Jonathan; Popinchalk, Mark; Vos, Johanna M.; Burgasser, Adam J.; Schumann, Jorg; Schneider, Adam C.; Kirkpatrick, J. Davy; Meisner, Aaron M.; Kuchner, Marc J.; Bardalez Gagliuffi, Daniella C.; Marocco, Federico; Caselden, Dan; Gonzales, Eileen C.; Rothermich, Austin; Casewell, Sarah L.; Debes, John H.; Aganze, Christian; Ayala, Andrew; **Hsu, Chih-Chun**; Cooper, William J.; Smart, R. L.; Gerasimov, Roman; Theissen, Christopher A.; The Backyard Worlds: Planet 9 Collaboration, "A Wide Planetary Mass Companion Discovered Through the Citizen Science Project Backyard Worlds: Planet 9", ApJ, 923, 48, December 2021

[7] Schneider, Adam C.; Meisner, Aaron M.; Gagne, Jonathan; Faherty, Jacqueline K.; Marocco, Federico; Burgasser, Adam J.; Kirkpatrick, J. Davy; Kuchner, Marc J.; Gramaize, Leopold; Rothermich, Austin; Brooks, Hunter; Vrba, Frederick J.; Bardalez Gagliuffi, Daniella; Caselden, Dan; Cushing, Michael C.; Gelino, Christopher R.; Line, Michael R.; Casewell, Sarah L.; Debes, John H.; Aganze, Christian Ayala, Andrew; Gerasimov, Roman; Gonzales, Eileen C.; **Hsu, Chih-Chun**; Kiman, Rocio; Popinchalk, Mark; Theissen, Christopher; Backyard Worlds: The Planet 9 Collaboration, "Ross 19B: An Extremely Cold Companion Discovered via the Backyard Worlds: Planet 9 Citizen Science Project", ApJ, 921, 150, November 2021

[6] Meisner, Aaron M.; Schneider, Adam C.; Burgasser, Adam J.; Marocco, Federico; Line, Michael R.; Faherty, Jacqueline K.; Kirkpatrick, J. Davy; Caselden, Dan; Kuchner, Marc J.; Gelino, Christopher R.; Gagne, Jonathan; Theissen, Christopher; Gerasimov, Roman; Aganze, Christian; **Hsu, Chih-Chun**; Wisniewski, John P.; Casewell, Sarah L.; Bardalez Gagliuffi, Daniella C.; Logsdon, Sarah E.; Eisenhardt, Peter R. M., "New Candidate Extreme T Subdwarfs from

the Backyard Worlds: Planet 9 Citizen Science Project", ApJ, 915, 120, July 2021

[5] J. Davy Kirkpatrick; Christopher R. Gelino; Jacqueline K. Faherty; Aaron M. Meisner; Dan Caselden; Adam C. Schneider; Federico Marocco; Alfred J. Cayago; R. L. Smart; Peter R. Eisenhardt; Marc J. Kuchner; Edward L. Wright; Michael C. Cushing; Katelyn N. Allers; Daniella C. Bardalez Gagliuffi; Adam J. Burgasser; Jonathan Gagne; Sarah E. Logsdon; Emily C. Martin; James G. Ingalls; Patrick J. Lowrance; Ellianna S. Abrahams; Christian Aganze; Roman Gerasimov; Eileen C. Gonzales; **Chih-Chun Hsu**; Nikita Kamraj; Rocio Kiman; Jon Rees; Christopher Theissen; Kareem Ammar; Nikolaj Stevnbak Andersen; Paul Beaulieu; Guillaume Colin; Charles A. Elachi; Samuel J. Goodman; Leopold Gramaize; Leslie K. Hamlet; Justin Hong; Alexander Jonkeren; Mohammed Khalil; David W. Martin; William Pendrill; Benjamin Pumphrey; Austin Rothermich; Arttu Sainio; Andres Stenner; Christopher Tanner; Melina Thevenot; Nikita V. Voloshin; Jim Walla; Zbigniew Wedracki; "The Field Substellar Mass Function Based on the Full-sky 20-pc Census of 525 L, T, and Y Dwarfs", ApJS, 253, 7, March 2021

[4] Sahlmann, Johannes; Dupuy, Trent J.; Burgasser, Adam J.; Filippazzo, Joseph C.; Martín, Eduardo L.; Bardalez Gagliuffi, Daniella C.; **Hsu, Chih-Chun**; Lazorenko, Petro F.; Liu, Michael C., "Individual Dynamical Masses of DENIS J063001.4−184014AB Reveal A Likely Young Brown Dwarf Triple", MNRAS, 500, 5453, January 2021

[3] Meisner, Aaron M.; Faherty, Jacqueline K.; Kirkpatrick, J. Davy; Schneider, Adam C.; Caselden, Dan; Gagné, Jonathan; Kuchner, Marc J.; Burgasser, Adam J.; Casewell, Sarah L.; Debes, John H.; Artigau, Étienne; Bardalez Gagliuffi, Daniella C.; Logsdon, Sarah E.; Kiman, Rocio; Allers, Katelyn; **Hsu, Chih-Chun**; Wisniewski, John P.; Allen, Michaela B.; Beaulieu, Paul; Colin, Guillaume Durantini Luca, Hugo A.; Goodman, Sam; Gramaize, Léopold; Hamlet, Leslie K.; Hinckley, Ken; Kiwy, Frank; Martin, David W.; Pendrill, William; Rothermich, Austin; Sainio, Arttu; Schümann, Jörg; Andersen, Nikolaj Stevnbak; Tanner, Christopher; Thakur, Vinod; Thévenot, Melina; Walla, Jim; Wędracki, Zbigniew; Aganze, Christian; Gerasimov, Roman; Theissen, Christopher; The Backyard Worlds: Planet 9 Collaboration, "Spitzer Follow-up of Extremely Cold Brown Dwarfs Discovered by the Backyard Worlds: Planet 9 Citizen Science Project", ApJ, 889, 123, August 2020

[2] Schneider, Adam C.; Burgasser, Adam J.; Gerasimov, Roman; Marocco, Federico; Gagné, Jonathan; Goodman, Sam; Beaulieu, Paul; Pendrill, William; Rothermich, Austin; Sainio, Arttu; Kuchner, Marc J.; Caselden, Dan; Meisner, Aaron M.; Faherty, Jacqueline K.; Mamajek, Eric E.; **Hsu, Chih-Chun**; Greco, Jennifer J.; Cushing, Michael C.; Kirkpatrick, J. Davy; Bardalez-Gagliuffi, Daniella Logsdon, Sarah E.; Allers, Katelyn; Debes, John H.; Backyard Worlds: Planet 9 Collaboration, "WISEA J041451.67-585456.7 and WISEA J181006.18-101000.5: The First Extreme T-type Subdwarfs?", ApJ, 989, 77, July 2020

[1] Paudel, R. R., Gizis, J. E., Burgasser, A. J., **Hsu, C.**, "2MASS J10274572+0629104: the very short period young M6 dwarf binary system identified in K2 data", MNRAS, 486, 4144, July 2019

CONFERENCE PRECEEDINGS

[1] Wang, Jason J.; Mawet, Dimitri; Xuan, Jerry W.; **Hsu, Chih-Chun**; Ruffio, Jean-Baptiste; Horstman, Katelyn; Xin, Yinzi; Delorme, Jacques-Robert; Jovanovic, Nemanja; Zhang, Yapeng; Finnerty, Luke; Baker, Ashley; Bartos, Randall; Blake, Geoffrey A.; Calvin, Benjamin; Cetre, Sylvain; Doppmann, Gregory W.; Echeverri, Daniel; Fitzgerald, Michael P.; Liberman, Joshua; Lopez,

Ronald; Morris, Evan; Pezzato-Rovner, Jacklyn; Sappey, Ben; Schofield, Tobias; Skemer, Andrew; Wallace, J. Kent; Wang, Ji, "The high-contrast performance of the Keck Planet Imager and Characterizer", Proceedings of the SPIE, submitted, June 2024

NON-REFEREED PUBLICATIONS

[9] Austin Humphreys, Aaron M. Meisner, Adam J. Burgasser, **Chih-Chun Hsu**, Adam C. Schneider, Christopher A. Theissen, Christian Aganze, Roman Gerasimov, Noah Schapera, J. Davy Kirkpatrick, Federico Marocco, Jacqueline K. Faherty, Dan Caselden, Marc J. Kuchner, Michael C. Cushing, and The Backyard Worlds: Planet 9 Collaboration and The Belle silicon vertex detector group, "Spectroscopic Confirmation of the Nearby, Wide-separation L Dwarf Pair CWISE J061741.79+194512.8AB", RNAAS, 7, 184, August 2023

[8] Holwerda, Benne; Pirzkal, Nor; Burgasser, Adam J.; **Hsu, Chih-Chun**, "Detection and characterization of M-L-T-Y dwarfs belonging to the Milky Way Disks and Stellar Halo with the Roman Space Telescope", arXiv:2306.12363, June 2023

[7] Zhou, Tianxing; Jacobsen, Delilah; Vazquez-Segovia, Brigette; **Hsu, Chih-Chun**; Theissen, Christopher A.; Burgasser, Adam J., "Resolved Binaries with Late-M and L Dwarf Companions Identified in Gaia eDR3", RNAAS, 7, 50, March 2023

[6] Valencia, Julissa Villalobos; Burgasser, Adam J.; **Hsu, Chih-Chun**; Aganze, Christian, "Spectral Characterization of the Low-mass Companion μ Virgenes B", RNAAS, 6, 670, December 2022

[5] Schapera, Noah; Caselden, Dan; Meisner, Aaron M.; Burgasser, Adam J.; Schneider, Adam C.; Humphreys, Austin; **Hsu, Chih-Chun**; Softich, Emma; Smith, Leigh C.; Lucas, Philip W.; Kirkpatrick, J. Davy; Marocco, Federico; Faherty, Jacqueline K.; Kuchner, Marc J.; Cushing, Michael C.; Backyard Worlds: Cool Neighbors Collaboration, "VVV J165507.19-421755.5: A Nearby T Dwarf Hidden in the Galactic Plane", RNAAS, 6, 189, September 2022

[4] Theissen, Christopher A.; Burgasser, Adam J.; Martin, Emily C.; Cushing, Michael C.; Konopacky, Quinn M.; McLean, Ian S.; **Hsu, Chih-Chun**; Bardalez Gagliuffi, Daniella C.; Schneider, Adam C.; Kuchner, Marc J.; Faherty, Jacqueline K.; Beichman, Charles A.; Miles, Brittany; Skemer, Andy; Logsdon, Sarah E.; Meisner, Aaron M.; Kirkpatrick, J. Davy, "Keck NIRES Spectral Standards for L, T, and Y Dwarfs", RNAAS, 6, 151, July 2022

[3] Low, Ryan; Burgasser, Adam J.; Reylé, Céline; Gerasimov, Roman; **Hsu, Chih-Chun**; Theissen, Christopher A, "Spectroscopic Confirmation of an M6 Dwarf Companion to the Nearby Star BD-08 2582", RNAAS, 5, 26, February 2021

[2] Dimitriadis, G.; Foley, R. J.; Aganze, C.; Burgasser, A.; Gerasimov, R.; **Hsu, C.**; Low, R.; Theissen, C., "UCSC Transient Classification Report for 2020-03-04", TNSCR, 716, 1, March 2020

[1] Dimitriadis, G.; Foley, R. J.; Aganze, C.; Burgasser, A.; Gerasimov, R.; **Hsu, C.**; Low, R.; Theissen, C., "Spectroscopic Classifications of AT 2020dvr with the Lick Shane telescope", ATel, 13542, 1, March 2020

TALKS

"Rotation and Abundances of Low-mass Stars, Brown Dwarfs, and Exoplanets from Keck/KPIC High-resolution Spectroscopy" June 25, 2024
Cool Stars 22, University of California San Diego, San Diego, CA

"Probing Formation and Evolution of Low-mass Stars, Brown Dwarfs, and Giant Exoplanets using High-resolution Spectroscopy" (**invited**) May 20, 2024
Monday Science Seminar, Department of Astronomy, University of Wisconsin-Madison, WI

"The Brown Dwarf Kinematics Project (BDKP). VI. Ultracool Dwarf Radial and Rotational Velocities from SDSS/APOGEE High-Resolution Spectroscopy " January 10, 2024
AAS 243 Meeting, Ernest N. Morial Convention Center, New Orleans, LA

"Rotation of Directly-Imaged Brown Dwarfs and Gas Giant Exoplanets with KPIC" October 27, 2023
Great Lakes Exoplanets Area Meeting, Indiana University, Bloomington, IN

"Discovery of the Shortest-Period Ultracool Dwarf Binary" January 11, 2023
AAS 241 Meeting, Seattle Convention Center, Seattle, WA

"Discovery of the Shortest-Period Ultracool Dwarf Binary" (**press conference**) January 10, 2023
AAS 241 Meeting Press Conference, Seattle Convention Center, Seattle, WA

"Kinematics, Rotation, and Multiplicity of Ultracool Dwarfs with High-Resolution Near-Infrared Spectroscopy" June 14, 2022
AAS 240 Meeting, Pasadena Convention Center, Pasadena, CA

"Forward-Modeling High-Resolution Spectroscopic Data of Ultracool Dwarfs with Large Public Archives" June 3, 2022
HDSI Internal Talk, Halicioglus Data Science Institute, UC San Diego, Virtual

"Kinematics, Rotation, and Multiplicity of Ultracool Dwarfs with High-Resolution Near-Infrared Spectroscopy" (**invited**) May 25, 2022
IPAC Seminar Series, Infrared Processing and Analysis Center, Virtual

"Radial and Rotational Velocities of T Dwarfs from Keck/NIRSPEC High-Resolution Spectroscopy" September 9, 2021
Keck Science Meeting, UC San Diego

"Precise Radial and Rotational Velocities of Ultracool Dwarfs with the APOGEE High-Resolution Spectrometer" August 11, 2021
2021 SDSS Collaboration Meeting, Virtual

"Radial Velocities and Kinematic Ages of Nearby T Dwarfs from Keck/NIRSPEC High-Resolution Spectroscopy" January 15, 2021
AAS 237 Meeting, Virtual

"Precise Radial and Rotational Velocities of Ultracool Dwarfs Using a Forward-Modeling Method with High-Resolution Spectroscopy" February 4, 2020
High-Resolution Infrared Spectroscopy for Exoplanet Characterization Hackathon, Caltech, Pasadena, CA

"Radial and Rotational Velocities of Ultracool Dwarfs From High-Resolution Spectroscopy" (**invited**) March 5, 2019
AMNH Astrophysics seminar, American Museum of Natural History, New York, NY

"Radial and Rotational Velocities of Ultracool Dwarfs From High-Resolution Spectroscopy" February 15, 2019
CASS Journal Club, UC San Diego, La Jolla, CA

POSTERS

"Rotation and Abundances of HD 33632 Ab with KPIC" July 2023
2023 Sagan Summer Workshop, Caltech, Pasadena, CA

"Kinematics, Rotation, and Multiplicity of Ultracool Dwarfs with High-Resolution Near-Infrared Spectroscopy" July 2022
The 21 Cambridge Workshops of Cool Stars, Stellar Systems and the Sun, Toulouse, France

"Radial Velocities and Kinematic Ages of Nearby T Dwarfs from Keck/NIRSPEC High-Resolution Spectroscopy" March 2021
The 20.5 Cambridge Workshops of Cool Stars, Stellar Systems and the Sun, Virtual

"Precise Radial and Rotational Velocities for over 440 Ultracool Dwarfs Observed with NIRSPEC" September 2020
Keck Science Meeting 2020, Virtual

"Precise Radial and Rotational Velocities for T Dwarfs Using NIRSPEC High-Resolution Spectrometer" September 2019
Keck Science Meeting 2019, UCLA, Los Angeles, CA

"Precise Radial and Rotational Velocities of Ultracool Dwarfs with APOGEE High-Resolution Spectra" June 2019
SDSS-IV/V Collaboration Meeting 2019, Ensenada, Mexico

"Radial and Rotational Velocities for 300+ Ultracool Dwarfs from NIRSPEC High-Resolution Spectroscopy" January 2019
AAS 233 Meeting, Seattle, WA

"Toward Measurements of Radial and Rotational Velocities of 300+ Ultracool Dwarfs from NIRSPEC High-Resolution Spectroscopy" September 2018
Keck Science Meeting 2018, Caltech, Pasadena, CA

"Precise Radial Velocities to Detect Exoplanets around Ultracool Dwarfs Using the NIRSPEC High-Resolution Spectrograph" September 2018
ExSoCal 2018, Caltech, Pasadena, CA

"Refined Measurements of Radial and Rotational Velocities of 300+ Ultracool Dwarfs from NIRSPEC High-Resolution Spectroscopy" July 2018
Cool Stars 20, Boston University, Cambridge, MA

SELECTED PRESS COVERAGE

"*Record breakers! Super-close dwarf stars orbit each other in less than a day* ",
Space.com, March 2023

"*Ultracool Dwarf Binary Stars Break Records* ",
W. M. Keck Observatory, February 2023

"*Ultracool dwarf binary stars break records* ",
Northwestern News, January 2023

"*Astronomers Spot A Tiny Binary System*",
Sky & Telescope, January 2023

"*Ultracool dwarf binary stars break records*",
Earth Sky, January 2023

"*This Record-Breaking Star System's Year Is Shorter Than One Earth Day*",
CNET, January 2023

"*Here's how cool a star can be and still achieve lasting success*",
Science News, August 2021

WORKSHOPS

Research Communication Training Program — March 26– May 29 2024
Northwestern University, Evanston, IL

2023 Sagan Summer Workshop — July 24–28 2023
Caltech, Pasadena, CA

Future Keck IR Spectroscopy Workshop — January 27 2021
Virtual

High-Resolution Infrared Spectroscopy for Exoplanet Characterization Hackathon — February 4–6 2020
Caltech, Pasadena, CA

Telluric Line Hack Week Workshop — February 25–28 2019
Flatiron Institute, New York, NY

2017 Kraft Observational Astronomy Workshop — October 12–16 2017
Lick Observatory, Mount Hamilton, CA

SciCoder Workshop — July 31–August 4 2017
Vanderbilt University, Nashville, TN

GRANTS & FUNDINGS

Characterizing the Lowest-mass Planet Hosts and Investigating the Potential Link 2024—2026 between Stellar Surface Gravity and Planet Occurrence
Co-I, NASA XRP (PI: Christopher Theissen), $618k — 2024–2026

Infrared Gold: A Student-Centered Program to Extract, Analyze, and Disseminate 20 Years of IRTF/SpeX Point-Source Spectroscopy
Co-I, NASA ADAP (PI: Adam Burgasser), $666,511 — 2022–2025

TELESCOPE TIME AWARDED

James Webb Space Telescope
Co-I: **Cycle 3**: "Arcana of the Ancients: A Spectral Metallicity Survey of the Lowest-Mass Stars and Brown Dwarfs", (PI: Adam Burgasser), 58.2 Primary Spacecraft Hours awarded

Co-I: **Cycle 3**: "Is CWISE 1055+5443 the first young Y-type brown dwarf?", (PI: Aaron Meisner), 4.09 Primary Spacecraft Hours awarded

W. M. Keck Telescopes, Keck II 10-meter
PI: 2024B: "Precise Abundances of Ultracool Dwarfs using FGK Wide Binaries", 0.5 night awarded through Northwestern and 2.0 additional nights awarded as Co-I

through Theissen's UC access (NIRSPEC)

PI: 2023B–2024A: "Precise Characterization of M Dwarf Exoplanet Host Abundances for KPIC", 1.0 night awarded (NIRSPEC)

Co-I: **2022B–2024B**: "Abundances and Kinematics of Ultracool Dwarf Planet Host Twin Stars", 4.5 nights awarded (NIRSPEC)

Co-I: **2024A**: "Keck/NIRSPEC Cadence Program: NIRSPEC Observations of Ultrashort Period Ultracool Binaries", 0.8 nights awarded (NIRSPEC; Hsu science lead)

Co-I: **2021B–2022B**: "Galactic Archaeology with Ultracool Dwarfs: Kinematic Structure Among L Dwarfs", 5.25 nights awarded (NIRSPEC; Hsu thesis project)

Co-I: **2021B–2022B**: "The Old and the Quick: A Search for Halo Brown Dwarfs with Backyard Worlds", 5.5 nights awarded (NIRES)

Co-I: **2019B–2020B**: "Completing the Kinematic Census of Local T Dwarfs", 5.75 nights awarded (NIRSPEC; Hsu thesis project)

Co-I: **2018B–2021A**: "NIRES Follow-up of Young T Dwarfs from Backyard Worlds", 9 nights awarded (NIRES)

MMT Observatory
PI: 2023B-2024B: "Abundance Calibration of Ultracool Dwarfs Using FGK Wide-Binaries with MMT Hectochelle", 2.5 night awarded (Hectochelle)

Lick Observatory
PI: 2022B: "Calibrations of Chemical Abundances of Ultracool Dwarfs in Wide Binary Systems with Optical High-Resolution Spectroscopy of G-Type Primaries", 1 night awarded (APF)

NASA InfraRed Telescope Facility (IRTF)
PI: 2022B, 2023B: "Discovery of an Exceptionally Short-Period Very Low Mass Binary", 6 nights awarded (iSHELL)

Co-I: **2018A–2019B**: "Training the Cannon: Calibrating APOGEE Observations of Ultracool Dwarfs", 6 nights awarded (iSHELL)

ADDITIONAL OBSERVING EXPERIENCE

Keck II 10-meter/NIRSPEC 7 nights 2017–2018

Keck I 10-meter/HIRES 0.5 nights 2018

Shane Telescope 3-meter
- Kast Double Spectrograph: 22 nights 2018–2021
- ShaneAO/ShARCS: 1 night 2019

NASA InfraRed Telescope Facility (IRTF)/SpeX 2 nights 2021–2022

MENTORSHIP

Julianne Cronin, graduate student at Northwestern University 2023–present
Allie Salyga, undergraduate student at Northwestern University 2023–present
Brigette Vazquez, undergraduate student at UC San Diego
(now graduate student at the University of Michigan) 2021–2022

Delilah Jacobsen, undergraduate student at UC San Diego 2021–2022
Tianxing "Sky" Zhou, undergraduate student at UC San Diego 2021–2022

TEACHING

Teaching assistant for Workshop "How to Read Papers Efficiently and Effectively: A Workshop on Critical Reading for Students and Instructors" January 7, 2024
AAS 243 Meeting, Ernest N. Morial Convention Center, New Orleans, LA
- Introductory lecture of brown dwarf astrophysics for undergraduate and graduate physics/astronomy students

Guest lecture for ASTRON 314/414 May 11, 2023
Northwestern University, Evanston, IL
- Introductory lecture of brown dwarf astrophysics for undergraduate and graduate physics/astronomy students

Guest lectures for ASTRON 441 October 25 and 27, 2022
Northwestern University, Evanston, IL
- workshops on Overleaf and reading academic papers for first- and second-year astronomy Ph.D. students

Teaching assistant for PHYS 2D Spring 2021
UC San Diego, La Jolla, CA
- lower-division modern physics lecture for engineering/physical science majors

Teaching assistant for PHYS 5 Fall 2020
UC San Diego, La Jolla, CA
- lower-division introductory stellar astrophysics lecture for non-physics major

Teaching assistant for PHYS 2DL Spring & Fall 2017, 2019, Spring 2020, Fall 2021
UC San Diego, La Jolla, CA
- lower-division modern physics lab for engineering/physical science majors

Teaching assistant for PHYS 1A Spring 2018
UC San Diego, La Jolla, CA
- lower-division mechanics lab for life-science majors

Teaching assistant for PHYS 160 Winter 2018, Fall 2018
UC San Diego, La Jolla, CA
- upper-division introductory stellar astrophysics lecture for physics major

Teaching assistant for PHYS 2BL Fall 2016, Winter 2017
UC San Diego, La Jolla, CA
- lower-division electricity & magnetism lab for engineering/physics major

California Professoriate for Access to Physics Careers (CPAPC)
Southern California Physics GRE Bootcamp August 2017
- UC San Diego, La Jolla, CA

PUBLIC OUTREACH

Astronomy on Tap Chicago (invited) February 9th, 2023
Begyle Brewing, Chicago, IL
- Famous astronomy outreach program to general public
- "Discovery of the Closest-Separated, Fastest-Orbiting Ultracool Dwarf Couple"

Python Workshop for Physics Undergraduate Students
UC San Diego, La Jolla, CA 2019–2021 November
- Python-programming bridge program for transferred students to UC San Diego

2019 Institute for Scientist & Engineer Educators (ISEE)
Professional Development Program (PDP) March–September 2019
UC Santa Cruz/UC Los Angeless, CA
- Professional development team focused on effective and inclusive teaching, including mentoring, and also includes training in professional skills such as communication, teamwork, collaboration, and leadership.

Institute of the Americas (IOA) Science Innovation Camp July 20 2017
UC San Diego, La Jolla, CA
- Physics outreach for Latin American high school students (14–18 year old)

The Barrio Logan Science & Art Expo March 16 2019
Mercado del Barrio, San Diego, CA
- Physics outreach for Mexican families from around southern San Diego

REFEREE

The AAS Journals, MNRAS 2023-present
Gemini observing proposal (2023A) 2022

SERVICE

Co-organizer of the CIERA Observers Group Meetings 2023 Fall–present

PROFESSIONAL AFFILIATIONS

American Astronomical Society (AAS) 2018–Present

SKILLS

Python, LaTeX, Github, HTML; Languages: Mandarin (native), English (fluent)

REFERENCES

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[*CV compiled on 2024/07/05*]