

Chih-Chun “Dino” Hsu

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EDUCATION	University of California, San Diego , La Jolla, CA, USA Doctor of Philosophy (Ph.D.) in Physics Advisor: Adam Burgasser	Expected June 2022
	National Tsing Hua University , Hsinchu, Taiwan Bachelor of Science (B.S) in Physics	June 2014
RESEARCH INTERESTS	lowest-mass stars; brown dwarfs; exoplanets; medium-/high-resolution spectroscopy; very low-mass binaries; stellar populations; stellar kinematics; stellar rotation	
RESEARCH EXPERIENCE	Graduate Research Student Center for Astrophysics and Space Sciences, UC San Diego, La Jolla, CA Advisor: Adam Burgasser	2016–present
	Research Assistant Institute of Astronomy, National Tsing Hua University, Hsinchu, Taiwan Supervisor: Huei-Ru “Vivien” Chen	2015–2016
	Undergraduate Research Student Physics Department, National Tsing Hua University, Hsinchu, Taiwan Advisor: Kingman Cheung	2013–2014
	Friends of the International Center fellowship (\$2,000) UC San Diego, La Jolla, CA Awarded for promoting international friendship, understanding, and cooperation.	2020
	Carol and George Lattimer Award for Graduate Excellence (\$4,000) 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.	2019–2020
ACADEMIC HONORS & AWARDS	Physics Chair’s Challenge Award * 2 (\$500) UC San Diego, La Jolla, CA Awarded for supporting educational excellence and training for physics students.	2017–2018
	Physics Excellence Award (\$9,200) UC San Diego, La Jolla, CA Awarded to highly qualified students admitted to the Physics PhD program.	2016
	College of Science Elite Student Award * 3 National Tsing Hua University, Hsinchu, Taiwan Awarded to the top student of class based on academic achievements.	2012–2014
	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.

PUBLICATIONS 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”, accepted in ApJ, arXiv:2108.05321

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”, submitted to ApJ, arXiv:2105.05871.

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., “The Brown Dwarf Kinematics Project (BDKP). V. Radial and Rotational Velocities of T Dwarfs From Keck/NIRSPEC High-Resolution Spectroscopy”, accepted in ApJS, arXiv:2107.01222.

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”, accepted in ApJ, arXiv:2106.01387, June 2021

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 Wdracki; “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

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

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

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; Schumann, 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

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

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

TALKS

“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

“Ultracool Dwarf Kinematics and Ages Revealed by High-Resolution Spectroscopy”
November 13, 2020
CASS Journal Club, UC San Diego, La Jolla, CA

“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”
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

“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

PRESS COVERAGE

“Here’s how cool a star can be and still achieve lasting success”,
Science News, August 2021

WORKSHOPS

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

TELESCOPE TIME AWARDED	<i>W. M. Keck Telescopes, Keck II 10-meter</i>	
	Co-I: 2021B : “Galactic Archaeology with Ultracool Dwarfs: Kinematic Structure Among L Dwarfs”	
	<ul style="list-style-type: none"> • 1.75 nights awarded (NIRSPEC) 	
	Co-I: 2021B : “The Old and the Quick: A Search for Halo Brown Dwarfs with Backyard Worlds”	
	<ul style="list-style-type: none"> • 2 nights awarded (NIREs) 	
	Co-I: 2019B–2020B : “Completing the Kinematic Census of Local T Dwarfs”	
	<ul style="list-style-type: none"> • 5.75 nights awarded (NIRSPEC) 	
	Co-I: 2018B–2021A : “NIREs Follow-up of Young T Dwarfs from Backyard Worlds”	
	<ul style="list-style-type: none"> • 9 nights awarded (NIREs) 	
	<i>NASA InfraRed Telescope Facility (IRTF)</i>	
	Co-I: 2018A–2019B : “Training the Cannon: Calibrating APOGEE Observations of Ultracool Dwarfs”	
	<ul style="list-style-type: none"> • 6 nights awarded (iSHELL) 	
	<i>Keck II 10-meter/NIRSPEC 7 nights</i>	2017–2018
	<i>Keck I 10-meter/HIRES 0.5 nights</i>	2018
	<i>Shane Telescope 3-meter</i>	
ADDITIONAL OBSERVING EXPERIENCE	<ul style="list-style-type: none"> • Kast Double Spectrograph: 22 nights 	2018–2021
	<ul style="list-style-type: none"> • ShaneAO/ShARCS: 1 night 	2019
	<i>NASA InfraRed Telescope Facility (IRTF)/SpeX 0.5 nights</i>	2021
	Brigette Vazquez, UC San Diego	2021–Present
	Delilah Jacobsen, UC San Diego	2021–Present
UNDERGRAD MENTORSHIP	Tianxing “Sky” Zhou, UC San Diego	2021–Present
	<i>Teaching assistant for PHYS 2D</i>	
	UC San Diego, La Jolla, CA	Spring 2021
	<ul style="list-style-type: none"> • lower-division modern physics lecture for engineering/physical science majors 	
	<i>Teaching assistant for PHYS 5</i>	
	UC San Diego, La Jolla, CA	Fall 2020
	<ul style="list-style-type: none"> • lower-division introductory stellar astrophysics lecture for non-physics major 	
	<i>Teaching assistant for PHYS 2DL</i>	Spring & Fall 2017, 2019, Spring 2020
	UC San Diego, La Jolla, CA	
	<ul style="list-style-type: none"> • lower-division modern physics lab for engineering/physical science majors 	
TEACHING	<i>Teaching assistant for PHYS 1A</i>	
	UC San Diego, La Jolla, CA	Spring 2018
	<ul style="list-style-type: none"> • 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

Python Workshop for Physics Undergraduate Students November 2019,
November 2020

- UC San Diego, La Jolla, CA

**2019 Institute for Scientist & Engineer Educations (ISEE)
Professional Development Program (PDP)** March–September 2019
UC Santa Cruz/UC Los Angeles, 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

PROFESSIONAL AFFILIATIONS **American Astronomical Society (AAS)** 2018–Present

SKILLS Python, L^AT_EX, Github, HTML; Languages: Mandarin (native), English (fluent)

REFERENCES

Dr. Adam Burgasser

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University of California San Diego
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Dr. Quinn Konopacky

Associate Professor of Physics
University of California San Diego
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Dr. Christopher Theissen

NASA Sagan Postdoctoral Fellow
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[CV compiled on 2021-09-10]