

DR XU (CHELSEA) HUANG

Senior Lecturer, ARC DECRA Fellow

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EMPLOYMENT

Senior Lecturer, Discovery Early Career Researcher, continuing position, University of Southern Queensland

Jan 2024 - Present

Lecturer, Discovery Early Career Researcher, continuing position, University of Southern Queensland

Dec 2021 - 2023

Juan Carlos Torres Fellow, MIT Kavli Institute for Astrophysics and Space Research

Jan 2017 - Nov 2021

Dunlap-CPS Fellow, University of Toronto

Sep 2015-Dec 2016

EDUCATION

PhD, Department of Astrophysical Sciences, Princeton University, *Sep 2015*

B.S., Department of Physics, Peking University, *Jun 2010*

Predoc Research, Kavli Institute for Astronomy and Astrophysics, Peking University, *Jul 2008-Jun 2010*

RESEARCH INTEREST

- Transiting extrasolar planet search and characterization.
- Transiting light curve modeling.
- Exoplanet system architecture
- Extrasolar planet statistics.
- General data science and computational astrophysics.

CAREER INTERRUPTION

International move during COVID-19 *2021*

Maternity Leave *Oct 2023 - Present*

AWARDS

NASA Silver Achievement Award, as a member of the TESS team *2019*

Top cited paper awards North America, IOP publishing, as a lead contribution author *2023*

GRANTS

• Future Fellow, Australia Research Council, \$871,587 AUD, 2024

• JWST Guest Observer GO3385 \$200,000 USD, 2023

• Discovery Early Career Researcher Award, Australia Research Council \$426,696 AUD, 2021

• Juan Carlos Torres fellow. \$312,000 USD, 2018-2021

• Dunlap-CPS fellow. \$180,000 CAD, 2015-2016

• ARC Discovery Grant DP220100365 (CI) \$273,000 AUD, 2022-2024

- HST Guest Observer, (Co-I) \$50,000 USD, 2023
- HST Guest Observer, HST-17152, (Co-I) \$120,000 USD, 2022
- TESS GI Cycle-3 proposal, (Co-I) \$50,000 USD, 2020
- TESS GI Cycle-1 proposal, G011108, (Co-I) \$50,000 USD, 2018
- UniSQ-led Minerva Australis contract with NASA (collaborator) \$805,000 AUD, 2023

SELECTED PUBLICATIONS (ADS LINK)

Summary: Number of papers: 127; Refereed: 117; h-index: 40; total citations 4900;

- (1) **Chelsea X.Huang**, Burt, J., Vanderburg, A., et al., “*TESS Discovery of a Transiting Super-Earth in the π Mensae System*”, 2019, *ApJL*, 868, L39 (citation: 164)
- (2) Guerrero, Natalia M., Seager, Sara, **Chelsea X.Huang** et al., “The TESS Objects of Interest Catalog from the TESS Prime Mission”, 2021, *ApJS*, 254, 39 (citation: 250)
- (3) Vanderspek, R.; **Chelsea X. Huang** ; Vanderburg, A., et al., TESS Discovery of an Ultra-short-period Planet around the Nearby M Dwarf LHS 3844, 2019, *ApJL*, 871, 24 (citation: 127)
- (4) **X.C.Huang**, Yanqin Wu and A.Triaud, “*Warm Jupiters are less lonely than hot Jupiters: close neighbours*”, 2016, *ApJ*, 825, 98 (citation:147)
- (5) **Chelsea X. Huang** ; Vanderburg, Andrew; Pál, Andras et al. Photometry of 10 Million Stars from the First Two Years of TESS Full Frame Images: Part I, (citation: 227)

COLLOQUIUM AND INVITED TALKS

International Space Science Institute, Beijing	2024
Seminar, Australian National University	2024
ESA Science Seminar,	2022
Seminar, Australian National University	2022
Colloquium, University of Queensland	2022
Stars SIG Seminar	2022
Colloquium, Purple Mountain Observatory	2021
Colloquium, Shanghai Observatory	2021
Colloquium, Tsinghua,	2021
Colloquium, Nanjing University	2021
Invited speaker, ET 2.0 Science conference, TD-Lee Insititute	2021
Colloquium, “Exoplanet in the Era of TESS”, Indiana University,	2020
Colloquium, Rice University,	2020
Colloquium, University of Maryland,	2020
Invited speaker, “A quick look into the first year of discoveries from TESS full frame images”, High-precision photometry for exoplanet and time domain astronomy, Royal Astronomical Society, London, 2019	
Invited speaker, “Architecture of Exoplanetary Systems.”, Research Conference on Origins of Solar Systems	2019
Invited speaker, AAS ExoPAG,	2019
Invited speaker, “A quick look into the early science result of TESS”, exoplanet day, UTSC,	2018
Invited keynote Speaker, “The two tales of warm Jupiters”, Inner Solar System planet Meeting,	2017
Colloquium, “Fantastic companions of giant planets and where to find them”, OSU,	2017
Invited, “Link Giant Planets to Super Earths”, Center for Astrophysics,	2017
Invited, “Link Giant Planets to Super Earths”, UC Santa Cruz,	2017

SELECTED CONTRIBUTED TALKS

”Planets from the TESS Full Frame Images”, TESS Science Conference I, MIT,	2019
“Early TESS Science result”, TESS science meeting, MIT,	2018
“TESS Quick lookup Pipeline”, TESS science meeting, MIT,	2018
“Link Giant Planets to Super Earths”, Exoplanets and Planet Formation, Shanghai,	2017
“Planets across the HR diagram with the Transiting Exoplanet Survey Satellite Full Frame Images”, AAS, Austin,	2017
“Link Giant Planets to Super Earths”, Formation and Dynamical Evolution of Exoplanets, Aspen,	2017
“Super Stamp Photometry of Microlensing targets of K2 Campaign 9”, 21st International Microlensing Conference, Pasadena, CA,	2017
“Aiming for the next bright super earth - Synergies of Ground and Space based Transiting Planets Survey”, AAS225th meeting, Seattle,	2015
“Synergies of ground and space based transit surveys”, Women in Aerospace Symposium, MIT, Cambridge,	2014
“Probing the evolution history of giant planets with high precision Kepler light curves”, Kavli Institute for Astronomy and Astrophysics, Peking,	2013
“Ohmic heating in the interior of hot Jupiters”, International Summer Institute for Modeling in Astrophysics, Kavli Institute for Astronomy and Astrophysics, Peking,	2011

ADVISING

Current Students:

Alex Venner, UniSQ third year PhD student, I am the principal supervisor, published 2 papers since start of PhD, submitted an additional draft to MNRAS. Lead PI for 2.37 hours of JWST time, Co-I for 118 hours of JWST time. Awarded time on NOIRLAB CHIRON, ESO/SPHERE, ESO/ESPRESSO, ESA/CHEOPS, PFS as lead PI. 2022-

Shishir Dholakia, UniSQ third year PhD student, I am the principal supervisor, one paper submitted to MNRAS, one paper in preparation. 2022-

Emma Nabbie, UniSQ third year PhD student, I am a co-supervisor for her PhD projects, and currently primarily supervise her two papers. One of them accepted by MNRAS, the other paper submitted to Nature Astronomy. Awarded time on ESA/CHEOPS, ESO/CRIES+, LCO 2022-

Ava Morrisay, UniSQ third year PhD student, one paper accepted to AJ, I am a co-supervisor for her PhD projects. 2022-

Sydney Vach, UniSQ second year PhD student, I am a co-supervisor for her PhD projects, one paper accepted to AJ, another submitted to MNRAS, awarded time on ESA/CHEOPS 2023-

Tyler Fairnington, UniSQ Honors student, I am the principal supervisor, one paper accepted by MNRAS. Tyler is the only undergraduate awarded ESA/CHEOPS time as lead PI. Also awarded time on NOIRLAB NEID.

Lizhou Sha, third year PhD student at the University of Wisconsin-Madison, I was the undergraduate project supervisor of Lizhou at MIT, and now a co-supervisor for his PhD projects. From our projects, he published two first author paper in AJ and MNRAS, contributing coauthors in three TESS publications. 2018-

Past students:

Nataliea Lawson, UniSQ PhD student, now Annie Jump Cannon Fellows at University of Delaware, I am a co-supervisor for her PhD projects. Two paper accepted by AJ and MNRAS, respectively. 2022-2024

Dr Jayin Dong, now Assistant professor at University of Illinois Urbana-Champaign, was Flatiron Research Fellow. I was a co-supervisor while Dr Dong was a graduate student at Pen State University, we collaborated on multiple papers published in ApJL, ApJS, contributing coauthors in three TESS publications. 2019-2021

Evan Tey, primarily supervised by me, MIT undergraduate student, TESS software engineer. Two papers accepted by AJ. 2020-2022

Caden Armstrong, summer undergraduate research project, UTSC 2015

Emily Deibert, now PhD student at University of Toronto, summer undergraduate research project at University of Toronto, work published in AJ, 2016

Naireen Hussain, summer undergraduate research project, University of Toronto, work published in Galbraith Society Journal, 2016

Eric Shore, summer undergraduate research project, University of Toronto, 2016

Miranda Herman, graduate student research project, work published in AJ, University of Toronto, 2016

TEACHING

Co-Supervisor, for Undergraduate Research Summer Project (10 week long) at University of Southern Queensland, 2023

Main organiser/lecturer, for weekly programming and Machine Learning workshop at University of Southern Queensland, 2023

Supervisor, for Undergraduate Research Course (14 week long) at University of Southern Queensland, 2022

Co-Supervisor/lecturer, for NSF sponsored Undergraduate Summer exchange program (10 week long, 4 students each year) with Kutztown University, US at University of Southern Queensland, 2022-2023

Guest Lecturer, for undergraduate Winter Study class at the Williams College, 2018-2019

Guest Lecturer, for MIT Graduate-level research courses Astroinformatics for Exoplanets. Fall, 2016

Guest Lecture for PMU-199F, “The Physical and Mathematical Universes”, Undergraduate-level astronomy course for general audience, at University of Toronto, 2016

Co-Lecture, for Machine Learning workshop at University of Toronto, 2016

Supervisor for Summer Undergraduate Research Program (16 week long) at University of Toronto, 2016

Teaching Assistant for AST 203: “The Universe”, Undergraduate-level astronomy course for general audience, Princeton. 2013

Lecturer for MAT 108 at the NJ STEP Project, Undergraduate-level statistic class. 2013 - 2014

Teaching Assistant for MAT 135 and MAT 037 at the NJ STEP Project, Undergraduate-level algebra and pre-algebra class for students in state prisons of New Jersey. 2012

ACCEPTED PROPOSALS

NOIRLab NEID (Co-I, student PIs), 16 hours 2024

ESO/VLT/ESPRESSO (Co-I, student PIs), 6 hours 2024

ESO/VLT/ESPRESSO (Co-I), 26 hours 2024

ESO/VLT/CRIRES+, (Co-I, student PIs), 6 hours 2024

ESA/CHEOPS, (Co-I, student PIs), 70 hours, 2024

JWST Medium sized program (PI), 30 hours 2023

ESO/HARPS (PI), 2 nights 2023

ESO/VLT (PI), 7 hours	2023
ESA/CHEOPS (Co-I, student PIs), 123 hours	2023
ESO/VLT(Co-I), 1 night	2023
LCO Network (Co-I, student PIs), 45 hours	2023
HST (Co-I), 20 orbits	2023
ESA/CHEOPS (Co-I, student PIs), 75 hours	2022
HST (Co-I), 5 orbits	2022
LCO Network (Co-I, student PIs), 40 hours	2022
ESA/CHEOPS (Co-I, student PIs), 10 hours	2021
MAROON-X (Co-I), 12.5 hours	2021
PSU NEID (Co-I), 38.5 hours	2020-2021
NOIRLab CHIRON (Co-I), 80 hours	2020-2021
NOIRLab LCOGT (Co-I), 80 hours	2020-2021
NOIRLab MINERVA-Australias (Co-I), 40 hours	2021
TESS GI cycle-4 proposal (Co-I)	2021
TESS GI cycle-3 proposal (Co-I)	2020
TESS GI cycle-1 proposal (Co-I)	2018
Magellan PFS, 15 nights(Co-I)	2018-2019
NOAO, 30 hr CHIRON, 0.5 nights NEID (Co-I)	2018-2019
ANU 2.3 m ecchele, 15 nights (Co-I)	2018

SERVICE (SELECTED)

<i>Recruitment Panel member</i> for UniSQ Centre for Astrophysics HDR student	2022-2023
<i>Recruitment Panel member</i> for iLaunch Chief Technical Officer	2022
<i>Co-organiser</i> for UniSQ work experience students	2022-2023
<i>SOC</i> : AOGS, TESS Science Conference II	
<i>science team member</i> : TESS, ET2.0 (external)	
<i>Steering committee member</i> : The TESS Object of Interest working group	2017-now
<i>External Reviewer</i> for various grants and telescope proposal, including NASA XRP, NSF, HST, ARC Discovery, ARC DECRA	
<i>Journal Referee</i> : Nature, Nature astronomy, AAS Letter, the Astrophysical Journal, MNRAS and A&A	2014-now
<i>Conference co-Organizer</i> : TESS ninja (2018), TESS data workshop (2019)	

OUTREACH

<i>Speaker</i> at the World Science Festival, Brisbane.	2023
<i>Speaker</i> at the annual Astronomy Festival at UniSQ.	2022

<i>Key organizer</i> of local school visits to Mt Kent Observatory.	2022-present
<i>Author</i> , for Nature Astronomy News & Views article,	2021
<i>Key organizer</i> of University of Toronto "girls in STEM" workshop.	2016
<i>Key organizer</i> of University of Toronto transit of mercury event.	2016
<i>Key organizer</i> of the Monthly Public Observation at Peyton Observatory, Princeton.	2010-2015
<i>Mandarin reviewer</i> for the Hayden Planetarium show in <i>New York Natural History Museum</i> , "Dark Universe".	