

# Yuan-Sen TING 丁源森

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Google Scholar: [Link](#)

## PROFESSIONAL APPOINTMENTS

2024 - present	Associate Professor in Astrophysics <i>The Ohio State University</i> Center for Cosmology and Astroparticle Physics, Faculty
2024 - present	Adjunct Scientist <i>Max Planck Institute for Astronomy</i>
2024 - 2030	Honorary Professor
2022 - 2024	Associate Professor in Astrophysics & Computer Science
2021	Assistant Professor in Astrophysics & Computer Science <i>Australian National University</i> CSIRO/Data61, National Lab - Machine Learning group, Long-term Associate Visiting Grant - Univ. of Chicago (2023), Univ. of Toronto (2024), Harvard-Smithsonian (2024) Visiting Professor - Johns Hopkins (2022), Universiti Malaya (2024-25), Tsinghua (2024-27)
2017 - 21	NASA Hubble Fellow, Carnegie-Princeton Fellow, Institute for Advanced Study Fellow <i>Institute for Advanced Study, Princeton</i> <i>Princeton University</i> <i>Carnegie Institution for Science</i> A four-way joint postdoctoral fellowship position at these three institutions

## EDUCATION

2017	PhD, Astrophysics and Astronomy <i>Harvard University</i> Supervisor: Charlie Conroy Funded through a NASA Earth and Space Science Fellowship
2014	Master of Arts, Astrophysics and Astronomy <i>Harvard University</i>
2012	Bachelor (First-Class Honours, 2011) and Master of Science, Physics, minor in Mathematics <i>National University of Singapore</i> National Academy of Science Award for being the best Master student in Physics Institute of Physics Medal for being the best Honours year student in Physics Jurong Book Prize for being the best sophomore student in Physics
2011	Engineer's Degree (equivalent to Bachelor and Master of Engineering) <i>Ecole Polytechnique, France</i> Concurrent with the degrees from the National University of Singapore Funded through a full Eiffel scholarship

## RESEARCH INTEREST

Our research group advances statistical inference in astronomy through the application of deep learning techniques, leveraging the wealth of data from large-scale surveys across various observational domains: spectroscopy (SDSS-V, DESI), astrometry (Gaia), photometry (Euclid, Roman), and time-series observations (LSST, TESS). We investigate a wide range of topics spanning all cosmic scales, with a primary focus on galactic evolution, particularly our own Milky Way. Our work extends to refining inference techniques in stellar spectroscopy and asteroseismology by developing deep learning foundation models for both time series and spectroscopic data. Additionally, we are pushing the boundaries of cosmological inference in weak lensing and reionization through simulation-based inference with deep generative models. Our group is at the forefront of agentic research, harnessing the capabilities of large language models as research agents to autonomously formulate scientific hypotheses, design experiments and execute research.

## OTHER PROFESSIONAL EXPERIENCES

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2020-present	Columnist <i>Sin Chew Daily, Malaysia</i> 星洲日报 Largest Chinese newspaper outside Greater China, with a daily circulation > one million
2020-21	Chief Science Officer <i>Hephaestus Analytical, London</i> London-based start-up leveraging advanced data analytics to combat art forgeries

## RESEARCH INCOME AS THE PRINCIPAL INVESTIGATOR

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U\$3.5M in funding + U\$13.3M worth of computing

2025	NSF National Artificial Intelligence Research Resource Program	
2024	NSF Astronomy and Astrophysics Research Grants	
2024	Alexander von Humboldt Fellowship	
2023-25	Microsoft Accelerating Foundation Models Academic Research Grant	
2023	OpenAI Research Access Program	
2021	Australian Research Council DECRA Fellowship	
2021	International Astronomical Union Grant to host the first IAU Symposium in Southeast Asia since 1990	
2020	ANU Futures Scheme	
2018	NASA Hubble Research Award	
2017	Alexander von Humboldt Research Award ( <i>relinquished</i> )	
2015	NASA Earth and Space Science Research Award	
2026	Innovative Novel Comp. Impact on Theory and Experiment (INCITE, Co-PI)	3.76M GPU Hours
2025	NVIDIA Academic Grant Program	26K GPU Hours
2024-25	Oak Ridge National Laboratory Frontier Nodes	620K GPU Hours
2020-24	Australian National Computational Infrastructure	112M CPU Hours

## AWARDS AND HONOURS

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2025	OSU MKHSTRY (Make History) Fellow	
2024	Alexander von Humboldt Fellowship	
2021	Australian Research Council Discovery Early Career Researcher Award (DECRA)	
2019	AURA Future Leader	by The Association of Universities for Research in Astronomy
2018	NASA Hubble Fellowship	
2017	Institute for Advanced Study Fellowship	
2017	Carnegie-Princeton Fellowship	
2017	CCAPP Prize Prize in Cosmology and AstroParticle Physics	
2016	Selected to attend the Lindau Meeting of Nobel Laureates	
2015	NASA Earth and Space Science Fellowship	
2014	Malaysian Perdana Scholar Award	
2005	Australian Mathematics Competition Gold Medal	1/10,000 participants from >8 countries
2005	Top 10 in both Mathematics and Computer Science Nationwide, Unified Examination Certificate	

## REFEREED ARTICLES

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Total refereed publications: 243 This includes 1 in Annual Review of Astronomy and Astrophysics, 1 in Nature and 3 in Nature Astronomy and 1 in ICCV conference, 15 in ICML (with 3 workshop spotlight), as well as 4 NeurIPS workshop
103 papers as first/joint first (32) or supervising author, and 29 other papers as second/third author These are referred to as “key role” papers, comprising more than half (132/243) of my total publications.
Total citations: >11000 4500 citations are from key role papers
h-index: 57 Out of which, the h-index from key role papers is 35

## ACADEMIC PRESENTATION

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Departmental colloquia/seminars: a career total of 223 talks  
including 61 invited departmental colloquia + two-thirds (149/223) were invited talks  
Invited departmental colloquia includes Yale, MIT, UMich, UTAustin, Hawaii, Penn State, OSU,  
Georgia Tech, Maryland, Max Planck, EPFL, UToronto, UBC, Tokyo U., Tsinghua, Peking U.

Conferences: a career total of 89 presentations, of which two-thirds (52/89) were invited

## RESEARCH HIGHLIGHTS

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Works from students and postdocs whom I supervised are indicated with \*

### Machine Learning

#### *Agentic AI Systems for Astronomy*

Pioneered autonomous discovery using real astronomical data through multi-agent LLM collaboration;  
Developed the AstroSage and AstroLLaMA series, the first astronomy-specialized large language model.

Sun\*, YST+, 2024b, 2024a | YST & AstroMLab, 2024 | Nguyen\*, YST+ 2023

#### *Beyond Field-Level Inference with Graph Neural Networks and Point Cloud Generative Models*

Advanced cosmological and galactic inferences using graph and point cloud generative deep learning models

Lee+ 2024 | YST & Sharma\*, ICML W, 2023 | Tang\* & YST, ICML W, 2022 (ICML spotlight talk)

#### *Physics-Inspired Neural Networks*

Developed neural network-based solvers for PDEs to determine gravitational potentials and CGM properties.

Green, YST & Kamdar\*, 2023 | Nguyen, YST+, NeurIPS W, 2023 | Green & YST, NeurIPS W, 2020

### Cosmology

#### *Alternate Statistics for Higher-Order Moments*

Introduced scattering transform to enhance quantification of cosmic web, reionization, and parity violation.

Craigie\*, Taylor, YST+ 2024 | Greig\*, YST+ 2022 | Cheng\*, YST+ 2020 (Intl. Astrostatistics Assoc. Award)

#### *Black Hole Physics & Lyman-Alpha Forest*

Developed unsupervised methods (QFA) to infer quasar continua from the observed quasar spectra

Sun\*, YST & Zheng, 2023 | Sun\*, YST & Zheng, ICML W, 2022

### Galaxy Evolution

#### *Star Formation, Interstellar Medium & Galactic Outflow*

Advanced statistical modeling to probe star formation, ISM dynamics via the elemental signatures in stars.

YST & Ji 2024 | Sharda, YST+ 2024 | YST & Weinberg 2022 | Krumholz & YST, 2018

#### *Secular Evolution of Galaxies*

Quantified how star migration and molecular cloud interactions contribute to the Milky Way's evolution.

Frankel\*, Sanders, YST+, 2020 (Ernst Patzer Prize) | YST & Rix, 2019 | Frankel\*, Rix, YST+, 2018

### Stellar Astrophysics

#### *Stellar Binaries, Close & Wide*

Developed single-epoch methods for detecting binaries, improving mass calibration and formation studies.

Hwang, YST, Cheng & Speagle, 2023 | Hwang\*, YST, & Zakamska, 2022 | El-Badry\*, YST+, 2019

#### *Stellar Spectroscopy and Asteroseismology*

Developed Transformer-based neural networks to extract detailed stellar properties from spectra.

Established neural scaling laws for spectroscopy and time series data, advancing foundational models.

Rozanski\*, YST+, 2024 | Pan\*, YST+ 2024 | Zhang, Xiang, YST+ 2024 | Xiang, YST+, 2019 | YST+, 2019

### Exoplanet

#### *Planet Engulfment*

Showed that > 10% of stars consume planets, suggesting frequent scattering in super-Earth systems.

Liu\*, YST, Yong\*+, Nature (Cover Page), 2024 | Yong\*, Liu\*, YST+, 2023

## SUPERVISION

Supervised 12 postdocs + 63 students (34 PhDs, 1 Law School, 6 Masters, 19 undergrads, 3 high-school)  
34 of these postdocs/students are from my home institutions (OSU/ANU)

which has led to 76 refereed publications

Three of which have won key awards, including International Astrostatistics Associate Award  
Max Planck's Ernst Patzer Prize, and IOP Publishing Top Cited Paper Award

## TEXTBOOK

Statistical Machine Learning for Astronomy - 2025 [arxiv:2506.12230](https://arxiv.org/abs/2506.12230)  
This ~700-page textbook provides a systematic treatment of statistical machine learning for astronomical research through a unified Bayesian framework that connects modern data analysis techniques with statistical methods.

Coding Essentials for Astronomers - 2025 [Open Textbook](#)  
Foundational Python, scientific computing, and modern coding practices with large language models.

## TEACHING

2024-present	Lecturer — Advanced Data Analysis in Astronomy (ASTRON 5550), undergraduate final-year level — Astronomy Data Analysis (ASTRON 1221), undergraduate freshman level — AI Fluency Weekly Seminar, upskilling students and faculty in the astronomy department	<i>The Ohio State University</i>
2022-24	Lecturer — Astronomical Computing (ASTR4004/8004), undergraduate and graduate school level — Statistical Machine Learning (COMP4670/8600), undergraduate and graduate school level	<i>Australian National University</i>
2020-present	Summer School Lecturer / Workshop Lecturer / Guest Lecturer / Special Seminar NASA AI/ML Science & Tech. Interest Group (2025) LLMs as Autonomous Agents Max Planck Inst. Astronomy (2025) Teaching Astronomy with Large Language Models The Ohio State University (2025) Teaching Astronomy with Large Language Models American University of Sharjah (2024) Deep Learning and Stellar Spectroscopy Intersect 4th collaborative course (2024) HPC and Data in Astrophysics Westlake University (2024) Expediting Astronomical Research with LLMs and SBI University of Chicago (2024) Generative Models for Astronomy University of Rwanda (2024) Unsupervised Learning with Neural Networks Universiti Malaya (2023) Introduction to Python with Co-Pilot and ChatGPT University of Hawaii (2023) Introduction to Simulation-Based Inferences IAU Symposium 377 (2023) Introduction to Python and Deep Learning Australian ANITA (2022) Introduction to Flow-Based Generative Modeling Tsinghua University (2020) Higher-Order Moment Statistics with Scattering Transform	
2023	Online Education <a href="#">Platform</a> Contributor	<i>Frogasia</i>
2021-23	Academic Council Lecturing, setting test questions, and selecting a Malaysian team for the International Olympiad	<i>Malaysian Olympiad on Astronomy &amp; Astrophysics</i>
2017	Community Teaching in Mathematics <a href="#">PTI</a> is a volunteer program teaching accredited college classes to prison inmates in New Jersey	<i>Princeton Prison Teaching Initiative (PTI)</i>
2014	Teaching Assistant in Astrophysics — Stellar Astrophysics, graduate school Level	<i>Harvard University</i>
2010-11	Instructor in Physics and Mathematics — Mathematics: 1. Topology   2. Linear Algebra   3. Algebra — Physics: 1. Classical Mechanics   2. Electromagnetism The French-NUS program selects a group of 15 best students from NUS each year. These intense and accredited courses aim to prepare this unique group of students for the French Grande Ecoles entrance exam, with the specific format and mathematic rigour tailored for the Grand Ecoles. I designed the syllabus, gave lectures, and set all homeworks and exams.	<i>National University of Singapore</i>

## COMMUNITY ENGAGEMENT

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Public engagement and media outreach are integral parts of my academic career. I have given a **TEDx talk** in my home country of Malaysia, participated in a **podcast**, and have been writing **monthly columns** for Malaysia's largest Chinese newspaper since 2020. My experiences growing up in Malaysia have instilled in me a strong belief in the transformative power of education and have driven me to create various educational resources, including two **TED educational videos** that have collectively amassed approximately four million views worldwide. I have also developed the first interactive kiosk at the Harvard Science Center and designed numerous **interactive applets**, participated in the **Skype a Scientist program** during the pandemic and **taught in prison**. Furthermore, I have contributed to online education by creating a course on edX and editing a **1200-page quantum field theory (QFT) textbook** by Sidney Coleman.

- 2023 **TEDx Talk** @ Petaling Street, Kuala Lumpur, Malaysia  
*Seeing Humanity through Dystopian AI*
- 2020-24 Monthly Columns, Sin Chew Daily, Malaysia. A recent example below  
**2023/08: AI, ChatGPT, and My Mom's Roomba** translation
- 2026 NSF NAIRR Monthly Highlight Series Featured Interview
- 2025 The Ohio State University's "Astronomy In Real Life" Featured Interview
- 2025 The Ohio State University's "Scholar Feature" **Featured Article**
- 2025 The Ohio State University's "Science Sundays" Public Lecture
- 2025 The Ohio State University's "Voices of Excellence" **Podcast**
- 2024 TEDx Podcast **启动一刻**, Kuala Lumpur, Malaysia
- 2024 **Featured Interview** regarding the Nature publication, Sin Chew Daily, Malaysia
- 2024 **Featured Interview** on Astrobites
- 2023 Featured on ANU's computer science **departmental webpage's frontpage**
- 2023 Featured on ANU's computer science "AI Feature"
- 2023 Featured on an NASA Cosmic Origins Program interview
- 2023 Featured on UK's Royal Astronomical Society - "The Observatory"
- 2022 Featured in the "Search for Life in the Universe," a Malaysian government-funded documentary
- 2022 Featured in Australian Government Global Talent Program as a **highlighted recipient**
- 2020 Featured **Interview**, National Newspaper, Nanyang Daily, Malaysia translation
- 2020-22 Featured **Interview 1, 2**, National Newspaper, Sin Chew Daily, Malaysia translation
- 2019 Editor, *International Astronomical Union Symposium 377 Proceeding*
- 2019 Editor, **textbook**), *Quantum Field Theory, Lectures of Sidney Coleman*
- 2018 Featured in Institute for Advanced Study Newsletters, **Featured Article 1, Featured Article 2**
- 2014 Lead developer of an EdX **course**, showcasing interactive applets for teaching astronomy
- 2014 Lead developer of the first Harvard scientific interactive kiosk at the Harvard science center
- 2013 Harvard Science in the News **contributor**
- 2013 Classroom visit, "There's a Scientist in My Classroom!" Program, Cambridge, MA
- 2013 Astrobites **contributor**
- 2013 TED-Ed **Video: How to Measure Extreme Distances** (viewed 3.5M times)
- 2013 TED-Ed **Video: How do We Study the Stars?** (viewed 1M times)

## PROFESSIONAL LEADERSHIPS AND SERVICES

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I have embraced leadership roles in both AI for science and spectroscopic survey advancement. As astronomy's representative, I co-led an NSF white paper on AI for Science spanning the Mathematics and Physical Sciences directorate. I have served as inaugural chairperson of the **NASA Cosmic Program Star Interest Group** (2021-2015) and the **AI/ML Interest Group** (2025-). In shaping the future of wide-field surveys, I previously co-led the Milky Way group for the **MUST survey** (2021-2023) and led the machine learning group for the **FOBOS survey** (2019-2021). My initiation of the C3PO program, designed to study nearby comoving stars with unprecedented precision, culminated in a **Nature publication** featured on the cover. Deeply connected to my Malaysian heritage, I am dedicated to advancing astronomy in my homeland, where only 30 individuals among 30 million hold astronomy PhDs. In 2023, I organized Malaysia's first two major astronomy conferences and summer school. I co-founded the **Global Malaysian Astronomer Convention** to showcase Malaysian astronomers' work globally and discuss national educational policies. My successful IAU grant proposal brought the **first-ever IAU symposium to Malaysia**—Southeast Asia's first IAU conference since 1990. I was also the Malaysia's representative to the **East Asian Observatory**, strengthening astronomy across developing Southeast Asian nations.

*Other Involvements:*

2026-present	Executive Committee	After Sloan 5's Hidden Galaxy Explorer
2026-present	Working Group Chair	After Sloan 5's Hidden Galaxy Explorer
2025-present	Committee	CCAPP Science Board, OSU
2025-present	Advisory Committee	BuckAI Observatory (OSU Institute for AI in Earth Sciences)
2024-present	Institution Lead	SDSS-V Collaboration Council
2022-present	Co-Chair	IEEE "Deep Vision in Space" Task Force
2026	Chair	247th AAS Meeting Splinter Session - AI/ML in Astronomy
2025-26	Committee	Colloquium Committee, OSU
2025-26	Committee	Graduate Studies Committee, OSU
2025	Co-Chair	IJCNN 2026 Workshop - Deep Vision in Space @ Maastricht, Netherlands
2026	Reviewer	Chilean National Agency for Research and Development
2025	Co-Organizer	Philosophy Sees the Algorithm: Reconsidering Knowledge/Community
2025	Reviewer	Swiss National Science Foundation
2025	Reviewer	RCSA's Cottrell SEED New Research Directions Award
2025	Reviewer	NASA's Research Opportunities in Space and Earth Science
2025	Committee	Graduate Student Admission Committee, OSU
2025	Review Panelist	NASA's Roman Space Telescope Research Participation Opportunities
2025	Co-Chair	IJCNN 2025 Workshop - Deep Vision in Space @ Rome, Italy
2025	Reviewer	Chilean National Agency for Research and Development
2024-25	Co-PI	NSF's Future of AI and the Mathematical and Physical Sciences Workshop
2024-25	Committee	Graduate Student Committee, OSU
2024	Reviewer	Hubble Space Telescope Cycle 32 Bridge
2024	Committee	Graduate Student Admission Committee, OSU
2024	PhD Thesis Committee	Wassim Tenachi - Observatoire Astronomique de Strasbourg
2024	Organizing Committee	4th Collab. Graduate Edu. - HPC and Data in Astro. @ Australia
2024	Reviewer	Austrian Science Fund (FWF) ESPRIT Programme
2024	Co-Chair	IJCNN 2024 Workshop - Deep Vision in Space @ Yokohama, Japan
2024	SOC	Astronomy Big Data Exploration Camp @ Yunnan, China
2024	SOC	Simulation-Based Inference for Galaxy Evolution @ Bristol, UK
2024	SOC	New Comp. Methods in Milky Way Dynamics @ Ringberg, Germany
2024	Reviewer	NASA Future Investigators in Earth, Space Science & Technology
2023-24	Advisory Committee	Machine Learning in Australian Astronomy
2023	Australia Co-I	SpelTel: A 10-12 meter class Spectroscopic Survey Telescope
2023	Co-Chair	Computational Genomics Conference @ ANU
2023	Colloquium Committee	ANU Research School for Astrophysics and Astronomy
2023	Editor	Computational Astronomy, Intelligent Computing, AAAS
2023	SOC	IEEE WHISPER Multi-Modal Segmentation Contest @ Rome, Italy
2023	SOC Workshop Chair	International Joint Conf. on Neural Networks @ Gold Coast, Australia
2023	SOC	Astronomical Stellar Parameter Measurement @ Yunnan, China
2022	Reviewer	Australian Research Council (ARC) Laureate Fellowship (LF23)
2022	Reviewer	ARC Linkage Infrastructure, Equipment & Facilities (LE23)
2022	Reviewer	ARC Discovery Project Research Grant (DP23)
2022	Reviewer	ARC Discovery Early Career Researcher Award (DECRA, DE23)
2022	Advisory Committee	ANU Jubilee Fellowship
2022	Book Reviewer	World Scientific
2022	SOC	Machine Learning in Cool Stars @ Toulouse, France
2022	Committee	Graduate Student Admission Committee, ANU
2021-2025	PhD Thesis Committee	Samantha Usman - University of Chicago
2021-24	Chief Investigator	Australian-Rubin Observatory Agreement
2021	Advisory Committee	CSST, a UV-optical deep imaging satellite
2020-21	Working Group Leader	Earth2.0, a space satellite searching for Earth-analogs
2020	Review Panelist	NASA Astrophysics Data Analysis Program
2020	SOC	Machine Learning and Physics Conference @ Beijing, China

2020	Time Allocation Committee	Japan Subaru Telescope
2019-20	Reviewer	NASA Future Investigators in Earth, Space Science & Technology (x2)
2019	Time Allocation Committee	Gemini Observatory - Canada
2018-19	Time Allocation Committee	United States National Optical Astronomy Observatory
2018	Time Allocation Committee	China Telescope Access Program
2017-18	SOC Chair	The 1 <sup>st</sup> and 2 <sup>nd</sup> Princeton Postdocs Symposium
2013-16	Lead Ambassador	<b>World-Wide Telescope</b> (WWT) Ambassador Program
2012	Instructor	Harvard College Observing Program
2019-2023	PhD Thesis Committee	Tyler Nelson - University of Texas, Austin
2019	Master Thesis Committee	Spencer Bialek - University of Victoria
2017-present	Journal Referee	Nature, Nature Astronomy, Sci. Reports, ApJ, ApJL, AJ, MNRAS, A&A, Journal Geophysical Research, Annal Institute of Stat. Mathematics, Engineering Applications of Artificial Intelligence, ICML, JCAP, Modern Physics Letter A, The Innovation, Universe, Physics of the Dark Universe

## REFERENCES

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Prof. David Weinberg Ohio State University	Distinguished University Professor <i>phone: +1-614-292-2022, email: weinberg.21@osu.edu</i>
Prof. Hans-Walter Rix Max Planck Institute for Astronomy	Director <i>phone: +49-6221-528-210, email: rix@mpia.de</i>
Dr. John Mulchaey Carnegie Institution for Science	President <i>phone: +1-626-304-0257, email: mulchaey@carnegiescience.edu</i>
Prof. Brice Ménard Johns Hopkins University	Professor <i>phone: +1-410-516-5743, email: menard@jhu.edu</i>
Prof. Charlie Conroy Harvard University	Professor <i>phone: +1-617-495-7005, email: cconroy@cfa.harvard.edu</i>
Prof. Doug Finkbeiner Harvard University	Professor <i>phone: +1-617-384-8393, email: dfinkbeiner@cfa.harvard.edu</i>

## COMPLETE LIST OF SUPERVISIONS

I have acted as the main supervisor (“primary”) or as one of the two key supervisors (“secondary”) for my students. This list includes only those students with whom I interact on a weekly basis throughout my supervision period.

- ‘Term’ denotes short-term projects, lasting from six months to a year.
- ‘Thesis’ indicates multi-year projects.
- ‘HD’ represents an Honours thesis awarded with high distinction, first-class honors or both.

### Postdocs

2025–present	Milan Pesta	OSU (Astrophysics)	primary supervisor	
2023–present	Tomasz Rózański	ANU (Astrophysics)	primary supervisor	3 papers
2025–present	Xiaosheng Zhao	Johns Hopkins	secondary supervisor	4 papers
2025–present	Yuting Wang	Max Planck	secondary supervisor	
2023–present	Jiadong Li	Max Planck	secondary supervisor	4 papers
2022–25	Erwin Chen	OSU (Astro)	primary supervisor	2 papers
2023–24	Bradley Greig	ANU (Astro) → Government	primary supervisor	5 papers
2022–24	Jie Yu	ANU (Astro) → Nanjing Faculty	primary supervisor	3 papers
2020–24	Ioana Ciucă	ANU (Astro)	primary supervisor	3 papers
2020–23	David Yong	ANU (Astro) → Government	primary supervisor	1 paper
2023–24	Qinghui Sun	Tsinghua → STJU Faculty	secondary supervisor	2 papers
2021–24	Fan Liu	Swinburne → NAOC Staff	secondary supervisor	1 paper

### PhD/Graduate Students

2025–present	Serat Saad	OSU (Astrophysics)	primary supervisor (thesis)	1 paper
2025–present	Anning Gao	OSU (Astrophysics)	primary supervisor (thesis)	
2025–present	Devisree Tallapaneni	OSU (Astrophysics)	secondary supervisor (semester)	
2025–present	Blaise Tayese	OSU (Law, AI Regulation)	secondary supervisor (semester)	
2025–present	Lucas Pinheiro	OSU (Engineering)	secondary supervisor (thesis)	1 paper
2025–present	Chuhan Zhang	ANU (Astrophysics)	secondary supervisor (thesis)	
2023–present	Yanjun Sheng	ANU (Astrophysics)	primary supervisor (thesis)	2 papers
2024–present	James McNeil	ANU (Computer Science)	primary supervisor (thesis)	
2024–present	Yuwei Yang	ANU (Computer Science)	secondary supervisor (thesis)	1 paper
2022–present	Zechang Sun	Tsinghua University	primary supervisor (thesis)	5 papers
2024–25	Dylan Leung	OSU (Physics)	secondary supervisor (term)	
2023–24	Maja Jablonska	ANU (Astrophysics)	secondary supervisor (thesis)	
2022–23	Zefeng Li	ANU → Durham Postdoc	secondary supervisor (thesis)	1 paper
2017–19	Jane Lin	ANU → industry	secondary supervisor (thesis)	2 papers
2024	Milan Pesta	Charles University → OSU Fellow	primary supervisor (term)	
2023–24	Junhui Liu	Xiamen University → government	primary supervisor (term)	1 paper
2023–24	Rui Pan	Hong Kong UST → UIUC PhD	secondary supervisor (term)	2 papers
2022–25	Matt Craigie	U. Queensland → JPL/NASA Fellow	primary supervisor (thesis)	3 papers
2022–23	Jiaxuan Li	Princeton University	primary supervisor (term)	
2022–23	Xiaosheng Zhao	Tsinghua → John Hopkins	primary supervisor (term)	1 paper
2022–23	Tomasz Rózański	Wroclaw University → ANU	primary supervisor (term)	1 paper
2021–22	Sunny Tang	UIUC → Finance, JP Morgan	primary supervisor (term)	1 paper
2021–22	Danny H. Darrington	Liverpool LJMU → CCA Fellow	primary supervisor (term)	
2020–21	Hsiang-Chih Hwang	J. Hopkins → IAS → Renaissance	primary supervisor (term)	3 papers
2020–21	Tyler Nelson	UT Austin → U. Southern Maine	primary supervisor (term)	1 paper
2020–21	Sankalp Gilda	U. Florida → industry	secondary supervisor (term)	1 paper
2019–21	Madeline Lucey	UT Austin → UPenn/NSF Fellow	primary supervisor (term)	2 papers

2019–21	Rohan Naidu	Harvard → MIT Pappalardo/Hubble	secondary supervisor (term)	1 paper
2019–20	Sihao Cheng	J. Hopkins → IAS-Perimeter Fellow	secondary supervisor (thesis)	1 paper
2018–20	Nathan Sandford	UC Berkeley → U. of Toronto	secondary supervisor (term)	2 papers
2018–20	Lachlan Lancaster	Princeton → Simons Junior Fellow	secondary supervisor (term)	1 paper
2017–20	Neige Frankel	Max Planck → UToronto Fellow	secondary supervisor (thesis)	3 papers
2017	Kareem El-Badry	Berkeley → Harvard Fellow	secondary supervisor (term)	2 papers
2016–21	Harshil Kamdar	Harvard → industry	secondary supervisor (thesis)	3 papers
2016–19	Mikhail Kovalev	Max Planck → Yunnan postdoc	secondary supervisor (thesis)	1 paper

#### Master/Postbac Students

2025–present	Maxwell Zhang	OSU (Postbac, Astro)	primary supervisor (thesis)	
2025–present	Jinchu Li	Georgia Tech (MSc, CS)	primary supervisor (term)	1 paper
2025	Yuting Shen	Georgia Tech (MSc, CS) → Texas A&M PhD	primary supervisor (term)	
2023	Josh Nguyen	ANU (MSc, CS) → UPenn PhD	primary supervisor (term)	1 paper
2022–23	Yanjun Sheng	ANU (MSc, Astro) → ANU PhD	primary supervisor (thesis)	
2022–23	Rachel Lim	Cambridge → Finance, Deloitte	primary supervisor (term)	

#### Undergraduates

2025–present	Chee Chung Chan	Universiti Malaya (Honours, Physics)	secondary supervisor (thesis)	
2022–23	Ziqi Yuan	ANU (Honours, Astro) → Lund PhD	primary supervisor (thesis)	HD
2022–25	Bhavesh Sharma	ANU (Honours, CS) → Melboure MSc	primary supervisor (thesis)	HD, 1 paper
2023	Anthony Siharath	ANU (Honours, CS) → Software Eng	secondary supervisor (thesis)	HD
2022	Shu Zou	ANU (Honours, CS) → ANU PhD	primary supervisor (thesis)	HD
2022	Bowen Tang	ANU (Honours, CS) → ANU PhD	primary supervisor (thesis)	HD
2021–23	Zeefan Khan	ANU (Honours, Eng) → Software Eng	primary supervisor (thesis)	
2023–24	Charles O’Neill	ANU (CS, PhB) → Oxford PhD	secondary supervisor (term)	
2022	Bede Denham	ANU (Engineering)	secondary supervisor (term)	
2021–22	Anne Xie	ANU (Astro, PhB) → Teaching	primary supervisor (term)	
2021–22	Ashley Tan	ANU (Astro) → ANU PhD	primary supervisor (term)	
2021–22	Yangda Bei	ANU (CS, PhB)	primary supervisor (term)	
2020–21	Yukang Liu	ANU (CS) → Simon Fraser PhD	primary supervisor (term)	
2021–24	Jiashu Pan	Nanjing → Westlake PhD	primary supervisor (thesis)	3 papers
2021–22	Zechang Sun	Tsinghua → Tsinghua PhD	primary supervisor (thesis)	1 paper
2021–22	Yong-Sheng Yap	National Tsinghua → Cambridge PhD	primary supervisor (term)	
2020–21	Vedant Chandra	Johns Hopkins → Harvard PhD	primary supervisor (term)	
2019–20	Teaghan O’Briain	Victoria → UVictoria PhD	secondary supervisor (thesis)	2 papers
2018	Erwin Chen	Wisconsin → USydney PhD	primary supervisor (term)	

#### High School Students

2025	Howard Qian	High School	primary supervisor (term)	
2024–25	Dun Li Chan	High School	primary supervisor (term)	
2019	Jupiter Ding	High school → Princeton UG	primary supervisor (term)	

## RECENT ACADEMIC PRESENTATIONS (from the past year)

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### Conference Presentations

<b>Invited Talk</b> , “Annual Cosmic Horizons Conference,” Charlottesville, United States	July 2026
<b>Invited Panel</b> , “AI Unlocked: Empowering Higher Ed Research & Discovery,” Columbus, United States	April 2026
<b>Invited Talk</b> , “2nd Annual National AI Research Resource Meeting,” Charlottesville, United States	March 2026
<b>Invited Talk</b> , “NSF Astronomy and Astrophysics Advisory Committee,” remote event	Jan 2026
Contributed Talk, “AAS Meeting- NASA AI/ML Science & Tech. Interest Group,” Phoenix, United States	Jan 2026
Contributed Talk, “AAS Meeting- NASA Joint Program Analysis Group,” Phoenix, United States	Jan 2026
Contributed Talk, “The 3rd Workshop on A.I. for Scientific Publications,” remote event	Dec 2025
Contributed Talk, “Philosophy Sees the Algorithm: Reconsidering Knowledge,” Columbus, United States	Dec 2025
<b>Invited Talk</b> , “NASA’s Cosmic Origins Program Early Career Workshop,” remote event	Oct 2025
<b>Invited Talk</b> , “College of Arts and Sciences AI Summit,” Columbus, United States	Oct 2025
Poster, “SDSS-V Collaboration Meeting,” Heidelberg	June 2025
<b>Invited Talk</b> , “AI-Empowered Astronomy for Open Science,” remote event	April 2025

### Departmental Colloquia & Seminars

Invited talks are in **boldface**, departmental colloquia are marked with \*\*.

<b>Observatorio Nacional in Rio de Janeiro**</b> , Rio de Janeiro, Brazil	June 2026
<b>University of Michigan**</b> , Ann Arbor, United States	April 2026
<b>Rutgers University**</b> , remote event	Feb 2026
<b>Fudan University</b> , Shanghai, China	Feb 2026
<b>Tsung-Dao Lee Institute**</b> , Shanghai, China	Jan 2026
<b>NSF-Simons AI Institute for the Sky**</b> , Chicago, United States	Nov 2025
<b>Argonne National Laboratory**</b> , Lemont, United States	Nov 2025
<b>Indiana University**</b> , Bloomington, United States	Nov 2025
<b>Space Research Centre of Polish Academy of Sciences</b> , Warsaw, Poland	July 2025
<b>Max Planck Institute for Astronomy**</b> , Heidelberg, Germany	June 2025
University of Wrocław, Wrocław, Poland	June 2025
<b>Max Planck Institute for Astronomy</b> , Heidelberg, Germany	May 2025
<b>Stanford University</b> , Palo Alto, United States	April 2025
<b>Stanford University, KIPAC</b> , Palo Alto, United States	April 2025
<b>University of Chicago</b> , Chicago, United States	April 2025
<b>ESO AI Forum Seminar Series</b> , remote event	April 2025
<b>NSF-Simons AI Institute for Cosmic Origins (CosmicAI)**</b> , Austin, United States	April 2025
<b>The University of Texas at Austin**</b> , Austin, United States	April 2025
<b>Boston University**</b> , Boston, United States	Feb 2025

\*: publications from students or postdocs whom I supervised.

\*\* : equal contribution / joint first-authored

— Refereed Publications - As 1st-3rd or Supervising Author—

— 2026 —

243. **Y.-S. Ting**, *Annual Review of Astronomy and Astrophysics*, in-press.  
*Deep Learning in Astrophysics*
242. **J. Li\***, **Y.-S. Ting**, et al., *International Conference on Learning Representations (ICLR)*, submitted  
*Predicting New Concept–Object Associations in Astronomy by Mining the Literature*
241. **Y.-S. Ting**, *The Open Journal of Astrophysics*, submitted  
*Why Machine Learning Models Systematically Underestimate Extreme Values II: How to Fix It with LatentNN*
240. **S. Saad\*** & **Y.-S. Ting**, *The Open Journal of Astrophysics*, submitted  
*High-Precision Differential Radial Velocities of C3PO Wide Binaries: A Test of Modified Newtonian Dynamics (MOND)*
239. **Y.-S. Ting**, **S. Saad**, F. Liu, & Y. Shen, *The Open Journal of Astrophysics*, submitted  
*Egent: An Autonomous Agent for Equivalent Width Measurement*
238. **B. Chen\***, M. Orkney, **Y.-S. Ting**, & M. Hayden, *The Open Journal of Astrophysics*, submitted  
*The Dawn is Quiet Here II: Gaia XP Constraints on the Milky Way’s Proto-Galaxy from Very Metal-Poor MDF Tails*
237. **X. Zhao\***, **Y.-S. Ting**, et al., *The Astrophysical Journal*, submitted  
*Generalization from Low- to Moderate-Resolution Spectra with Neural Networks for Stellar Parameter Estimation: A Case Study with DESI*
236. **L. Pinheiro\***, Z. Chen, B. Piazza, N. Shroff, Y. Liang, **Y.-S. Ting**, H. Sun, submitted  
*Large Language Models Achieve Gold Medal Performance at the International Olympiad on Astronomy & Astrophysics (IOAA)*  
Notable media mention: [新智元](#), [知乎](#), [机器之心](#)
235. M. Krumholz, **Y.-S. Ting**, et al., *Monthly Notices of the Royal Astronomical Society*, submitted  
*Metallicity Fluctuation Statistics in the Interstellar Medium and Young Stars - II. Elemental Cross-Correlations and the Structure of Chemical Abundance Space*
234. **Y.-S. Ting** & T. O’Brian, *The Open Journal of Astrophysics*, submitted  
*Teaching Astronomy with Large Language Models*
233. **M. Craigie\***, E. Huff, **Y.-S. Ting**, R. Ruggeri, & T. Davis, *Physical Review D*, submitted  
*Learning Intrinsic Alignments from Local Galaxy Environments*
232. **M. Craigie\***, **Y.-S. Ting**, R. Ruggeri, & T. Davis, *Physical Review D*, submitted  
*Learning Balanced Field Summaries of the Large-Scale Structure with the Neural Field Scattering Transform*
231. **Z. Sun\***, **Y.-S. Ting**, et al., *The Astrophysical Journal*, submitted  
*Mephisto: Self-Improving Large Language Model-Based Agents for Automated Interpretation of Multi-band Galaxy Observation*
230. T. de Haan, **Y.-S. Ting**, & Team AstroMLab, *Astronomy & Computing*, submitted  
*AstroMLab 4: Benchmark-Topping Performance in Astronomy Q&A with a 70B-Parameter Domain-Specialized Reasoning Model*
229. **J. Li\***, H.-W. Rix, **Y.-S. Ting**, et al., *The Astrophysical Journal*, in-press.  
*Variations in the Milky Way’s Stellar Mass Function at  $[Fe/H] < -1$*

228. A. Ferguson\*\*, M. LaFleur\*\*, L. Ruthotto\*\*, J. Thaler\*\*, **Y.-S. Ting\*\***, P. Tiwary\*\*, S. Villar\*\*, Perspective to Machine Learning: Science and Technology, in-press.  
*The Future of Artificial Intelligence and the Mathematical and Physical Sciences (AI+MPS)*  
 \*\* All authors here are co-organizers and contribute equally
227. **X. Zhao\***, [+8 coauthors including **Y.-S. Ting**], *The Astrophysical Journal*, in-press.  
*SpecCLIP: Combining and Translating Spectroscopic Measurements for Stars*
226. **J. Li\***, H.-W. Rix, **Y.-S. Ting**, et al., *Astronomy & Astrophysics*, in-press.  
*Millions of Main-Sequence Binary Stars from Gaia BP/RP Spectra*
225. Y. Lu, M. Pinsonneault, **Y.-S. Ting**, et al., *The Astronomical Journal*, 171, 38  
*Anchoring Stellar Age Indicators: A Cross Calibration of [C/N] and Gyrochronology Ages via the Age-Velocity Dispersion Relation*
- 2025 —
224. W. Zhang, Q. Lin, **Y.-S. Ting**, et al. *Astronomy & Astrophysics*, 703, A276  
*Interpreting Deep Learning-Based Stellar Mass Estimation Via Causal Analysis and Mutual Information Decomposition*
223. **Y. Sheng\*** & **Y.-S. Ting**, *Monthly Notices Royal Astronomical Society*, 544, 2434  
*LMC-induced Perturbations in the Milky Way Halo: I. HaloDance Simulation Suite and Observational Forecasts*
222. **Y.-S. Ting**, A. Accomazzi, T. Ghosal, et al., *International Joint Conference on Neural Networks (IJCNN) Workshop AstroMLab 5: Structured Summaries and Concept Extraction for 400,000 Astrophysics Papers*
221. **Q. Sun\***, **Y.-S. Ting**, B. Twarog, B. Twarog, & F. Liu *The Astrophysical Journal*, 991, 185  
*C3PO V: Rotational Spin-Down as the Main Cause of the Main-Sequence Lithium Dip*
220. **J. Li\***, **Y.-S. Ting**, et al., *The Astrophysical Journal Supplement Series*, 277, 47  
*Identification of 30,000 White Dwarf-Main Sequence Binaries Candidates from Gaia DR3 BP/RP(XP) Low-Resolution Spectra*
219. **J. Yu\***, [+14 coauthors including **Y.-S. Ting**], *Nature Astronomy*, 9, 1045  
*Enhanced Magnetic Activity in Rapidly Rotating Binary Stars*
218. **Y.-S. Ting**, *The Open Journal of Astrophysics*, 8  
*Why Machine Learning Models Systematically Underestimate Extreme Values*
217. N. Ramachandra\*\*, **Y.-S. Ting\*\***, et al., *International Conference ML (ICML) Workshop Teaching LLMs to Speak Spectroscopy*
216. T. de Haan, **Y.-S. Ting**, & Team AstroMLab, *International Conference ML (ICML) Workshop AstroSage: Leading Performance in Astronomy Q&A with a 70B-Parameter Domain-Specialized Mode*
215. **T. Rozanski\*** & **Y.-S. Ting**, *International Conference ML (ICML) Workshop Scaling Laws for Transformer-Based Stellar Spectral Emulation*
214. Z. Jin, Y. Lu, **Y.-S. Ting**, et al., *International Conference ML (ICML) Workshop Causal Discovery of Latent Variables in Galactic Archaeology*
213. **X. Zhao\***, **Y.-S. Ting**, A. Szalay, R. Wyse & Y. Huang, *International Conference ML (ICML) Workshop*, **spotlight presentation**  
*Finetuning Stellar Spectra Foundation Models with LoRA*
212. **J. Li\***, M. Jian, **Y.-S. Ting**, & G. Green, *International Conference ML (ICML) Workshop, Differentiable Stellar Atmospheres with Physics-Informed Neural Networks*
211. **Y. Yang\***, ..., **Y.-S. Ting**, L. Zheng. *International Conference on Computer Vision (ICCV)*, 2653  
*Effective Training Data Synthesis for Improving MLLM Chart Understanding*
210. **T. Rozanski\*** & **Y.-S. Ting**, *The Open Journal of Astrophysics*, 8  
*Scaling Laws for Emulation of Stellar Spectra*

209. **M. Craigie\*** P. Taylor, **Y.-S. Ting**, et al., *Physical Review D*, 112, 023503  
*Unsupervised Searches for Cosmological Parity Violation: Improving Detection Power with the Neural Field Scattering Transform*
208. M. Zhang, M. Xiang, **Y.-S. Ting**, et al., *The Astrophysical Journal*, 279, 5  
*Homogeneous Stellar Atmospheric Parameters and 22 Elemental Abundances for Six Million FGK Stars Derived From LAMOST Low-resolution Spectra with DD-PAYNE*
207. **J. Yu\***, **Y.-S. Ting**, et al., *Monthly Notices Royal Astronomical Society*, 538, 2408  
*C3PO IV: Co-natal Stars Depleted in Refractories are Magnetically More Active — Possible Imprints of Planets*
206. S. Zhang, H. Zhang, **Y.-S. Ting**, et al., *The Astrophysical Journal Supplement Series*, 277, 47  
*Half a Million M Dwarf Stars Characterized Using Domain-Adapted Spectral Analysis*
205. T. de Haan, **Y.-S. Ting**, & Team AstroMLab, *Nature's Scientific Reports*, 15, 13751  
*AstroMLab 3: Achieving GPT-4o Level Performance in Astronomy with a Specialized 8B-Parameters Large Language Model*
204. **Y.-S. Ting**, *Nature Astronomy*, 9, 317  
*Artificial Intelligence Compels the Astronomy Community to Rethink Research Identity and Redefine Excellence*  
Read the article [here](#)
203. **Y.-S. Ting** & A. Ji, *The Open Journal of Astrophysics*, 8  
*Quantifying Bursty Star Formation in Dwarf Galaxies*
202. **T. Rozanski\***, **Y.-S. Ting**, & **M. Jablonska\***, *The Astrophysical Journal*, 980, 66  
*TransformerPayne: Enhancing Spectral Emulation Accuracy and Data Efficiency by Capturing Long-Range Correlations*
201. **Y.-S. Ting** & Team AstroMLab, *Astronomy & Computing*, 51, 100893  
*AstroMLab 1: Who Wins Astronomy Jeopardy!?*  
Notable media mention: [Nature Astronomy](#)
200. **Q. Sun\***, **Y.-S. Ting**, et al., *The Astrophysical Journal Letter*, 978, 107  
*C3PO III: Lithium Signatures Following Planet Engulfment by Stars*
- 2024 —
199. **F. Liu\***, **Y.-S. Ting**, **D. Yong\***, et al., *Nature*, 627, 501  
*At Least One in a Dozen Stars Shows Evidence of Planetary Ingestion*  
Read the article [here](#), ranked **top 25** of > 1000 papers published in Nature based on online attention.  
Notable media mention: [BBC](#), [Reuter](#), [The Conversation](#), [ANU Reporter](#), [Physics World](#), [SBS](#), [Scientific American](#), [Newscientist](#), [Physics.org](#), [Channel News Asia](#), [Cosmos](#), [USA Today](#), [The Guardian](#), [科普中国](#)
198. **J. Liu\***, B. Zhang, J. Wu, & **Y.-S. Ting**, *The Astrophysical Journal Supplementary Series*, 275, 40  
*Double-lined Spectroscopic Binaries from the LAMOST Low-Resolution Survey*
197. **Y. Sheng\***, **Y.-S. Ting**, X. Xue, J. Chang, *Monthly Notices Royal Astronomical Society*, 534, 2694  
*Uncovering the First-Infall History of the LMC Through Its Dynamical Impact in the Milky Way Halo*
196. **Z. Sun\***, **Y.-S. Ting**, et al., *Neural Information Processing Systems (NeurIPS) Workshop 2024*  
*Interpreting Multi-band Galaxy Observations with Large Language Model-Based Agents*  
Notable media mention: [Microsoft](#), [Microsoft Asia](#)
195. **R. Pan\***, Team AstroMLab, & **Y.-S. Ting**, SuperComputing (SC24) AI4S Workshop 2024  
*AstroMLab 2: AstroLLaMA-2-70B Model and Benchmarking Specialised LLMs*
194. **B. Chen\***, **Y.-S. Ting**, & M. Hayden, *Publications of the Astronomical Society of Australia*, 41, e063  
*The Dawn is Quiet Here: Rise in  $[\alpha/\text{Fe}]$  is a Signature of Massive Gas Accretion that Fueled Proto-Milky Way*
193. **B. Greig\***, [+10 coauthors including **Y.-S. Ting**], *Monthly Notices Royal Astronomical Society*, 533, 3312  
*Blind QSO Reconstruction Challenge: Exploring Methods to Reconstruct the Ly $\alpha$  Emission Line of QSOs*

192. **B. Greig\***, D. Prelogovi, Y. Qin, **Y.-S. Ting** & A. Mesinger, *Mon. Not. Royal Astron. Soc.*, 533, 2530  
*Inferring Astrophysical Parameters using the 2D Cylindrical Power Spectrum from Reionisation*
191. **B. Greig\***, D. Prelogovi, J. Mirocha, Y. Qin, **Y.-S. Ting** & A. Mesinger, *Mon. Not. Royal Astron. Soc.*, 533, 2502  
*Exploring the Role of the Halo Mass Function for Inferring Astrophysical Parameters During Reionisation*
190. **J. Pan\***, **Y.-S. Ting**, et al., International Conference ML (ICML) Workshop  
*The Scaling Law in Stellar Light Curves*
189. **Z. Sun\***, **Y.-S. Ting**, et al., International Joint Conference on Artificial Intelligence (IJCAI) AI4Research Workshop  
*Knowledge Graph in Astronomical Research with Large Language Models: Quantifying Driving Forces in Interdisciplinary Scientific Discovery*
188. P. Sharda, **Y.-S. Ting** & N. Frankel, *Monthly Notices Royal Astronomical Society*, 532, 1  
*A Path Towards Constraining the Evolution of the Intersellar Medium and Outflows in the Milky Way using APOGEE*
187. M. Zhang, M. Xiang, **Y.-S. Ting**, et al., *The Astrophysical Journal Supplementary Series*, 273, 19  
*Determining Stellar Elemental Abundances from DESI Spectra with Data-Driven Payne*
186. **J. Yu\***, L. Casagrande, **I. Ciucă**, **Y.-S. Ting**, et al., *Monthly Notices Royal Astronomical Society*, 530, 2953  
*New Evidence of Binarity in Young  $\alpha$ -rich Turn-Off and Subgiant Stars: Fast Rotation and Strong Magnetic Activity*
185. P. Taylor, **M. Craigie\*** & **Y.-S. Ting**, *Physical Review D*, 109, 083518  
*Unsupervised Searches for Cosmological Parity-Violation I: A Investigation with Convolution Neural Networks*
184. **Z. Li\***, Grand, Wisnioski, Mendel, Krumholz, **Ting+**, *Monthly Notices Royal Astronomical Society*, 528, 7103  
*Cosmological Evolution of Metallicity Correlation Functions from the Auriga Simulations*
183. **J. Pan\*\***, **Y.-S. Ting\*\*** & **J. Yu\***, *Monthly Notices Royal Astronomical Society*, 528, 5890  
*Astroconformer: The Prospects of Analysing Stellar Light Curves with Transformer-Based Deep Learning Models*
182. H. Hwang, **Y.-S. Ting**, S. Cheng, J. Speagle, *Monthly Notices Royal Astronomical Society*, 528, 4272  
*Dynamical Masses across the Hertzsprung-Russell Diagram*  
Notable mention: [AstroPlot of the Week](#), [Gaia Image of the Week](#)
- 2023 —
181. D. Nguyen, **Y.-S. Ting**, T. Thompson, L. Lopez & S. Lopez, *Neural Information Processing Systems Workshop 2023*  
*Neural ODEs as a Discovery Tool to Characterize the Structure of the Hot Galactic Wind of M82*
180. **Z. Sun\***, S. Huang, J. Speagle, **Y.-S. Ting** & Z. Cai, *Neural Information Processing Systems Workshop 2023*  
*Zephyr : Stitching Heterogeneous Training Data with Normalizing Flow for Photometric Redshift Inference*
179. **D. Yong\***, **F. Liu\***, **Y.-S. Ting**, et al., *Monthly Notices Royal Astronomical Society*, 526, 2181  
*C3PO: Towards a Complete Census of Co-moving Pairs of Stars. I. High precision stellar parameters for 250 stars*
178. **I. Ciucă\***, D. Kawata, **Y.-S. Ting**, et al., *Monthly Notices of the Royal Astronomical Society Letters*, 528, L122  
*Chasing the Impact of the Gaia-Sausage-Enceladus Merger of the Milky Way Thick Disc*  
Notable mention: [American Physics Society](#)
177. **Z. Sun\***, **Y.-S. Ting** & Z. Cai, *The Astrophysical Journal*, 269, 4  
*Quasar Factor Analysis – An Unsupervised and Probabilistic Quasar Continuum Prediction Algorithm with Latent Factor Analysis*
176. **T. Nguyen\***, **Y.-S. Ting**, et al., International Joint Conference on Natural Language Processing  
*AstroLLaMA: Towards Specialized Foundation Models in Astronomy*  
Notable mention: [Hugging Face Daily](#)
175. **X. Zhao\*\*\***, **Y.-S. Ting\*\***, K. Diao & Y. Mao, *The Astrophysical Journal*, 526, 1699  
*Can Diffusion Model Conditionally Generate Astrophysical Images?*

174. **Y.-S. Ting**<sup>\*\*</sup>, & **B. Sharma**<sup>\*\*</sup>, International Conference ML (ICML) Workshop  
*Weisfeiler-Lehman Graph Kernel Method: A New Approach to Weak Chemical Tagging*
173. **T. Rozanski**<sup>\*\*</sup>, **Y.-S. Ting**<sup>\*\*</sup>, & M. Jablonska, International Conference ML (ICML) Workshop  
*Toward a Spectral Foundation Model: An Attention-Based Approach with Domain-Inspired Fine-Tuning and Wavelength Parameterization*
172. **I. Ciucă**<sup>\*\*</sup>, **Y.-S. Ting**<sup>\*\*</sup>, S. Kruk & K. Iyer, International Conference ML (ICML) Workshop  
*Harnessing the Power of Adversarial Prompting and Large Language Models for Robust Hypothesis Generation in Astronomy*
171. **M. Lucey**<sup>\*</sup>, N. Al Kharusi, K. Hawkins, **Y.-S. Ting**, et al., *Monthly Notices Royal Astronomical Society*, 523, 4049  
*Carbon-Enhanced Metal-Poor Star Candidates from BP/RP Spectra in Gaia DR3*
170. **N. Sandford**<sup>\*</sup>, D. Weisz & **Y.-S. Ting**, *The Astrophysical Journal Supplementary Series*, 267, 18  
*Validating Stellar Abundance Measurements from Multiresolution Spectroscopy*
169. **B. Greig**<sup>\*</sup>, **Y.-S. Ting**, & A. Kaurov, *Monthly Notices of the Royal Astronomical Society*, 519, 5288  
*Detecting the Non-Gaussianity of the 21-cm Signal during Reionisation with the Wavelet Scattering Transform*
168. G. Green, **Y.-S. Ting** & **H. Kamdar**<sup>\*</sup>, *The Astrophysical Journal*, 942, 26  
*Deep Potential: Recovering the Gravitational Potential from a Snapshot of Phase Space*

— 2022 —

167. J. Leja, J. Speagle, **Y.-S. Ting**, et al., *The Astrophysical Journal*, 936, 165  
*A New Census of the  $0.2 < z < 3.0$  Universe, Part II: The Star-Forming Sequence*
166. **I. Ciucă**<sup>\*\*</sup> & **Y.-S. Ting**<sup>\*\*</sup>, International Conference ML (ICML) Workshop, **spotlight presentation**  
*Unsupervised Learning for Stellar Spectra with Deep Normalizing Flows*
165. **K. Tang**<sup>\*\*</sup> & **Y.-S. Ting**<sup>\*\*</sup>, International Conference ML (ICML) Workshop, **spotlight presentation**  
*Galaxy Merger Reconstruction with Equivariant Graph Normalizing Flows*
164. **Z. Sun**<sup>\*</sup>, **Y.-S. Ting** & Z. Cai, International Conference ML (ICML) Workshop  
*An Unsupervised Learning Approach for Quasar Continuum Prediction*
163. **J. Pan**<sup>\*\*</sup>, **Y.-S. Ting**<sup>\*\*</sup> & **J. Yu**<sup>\*</sup>, International Conference ML (ICML) Workshop  
*Astroconformer: Inferring Surface Gravity of Stars from Stellar Light Curves with Transformer*
162. M. Xiang, H.-W. Rix, **Y.-S. Ting**, et al., *Astronomy & Astrophysics*, 662, 66  
*Stellar Labels for Hot Stars from Low-Resolution Spectra - I. the HotPayne Method and Results for 330,000 Stars from LAMOST DR6*
161. **B. Greig**<sup>\*</sup>, **Y.-S. Ting**, & A. Kaurov, *Monthly Notices of the Royal Astronomical Society*, 513, 1719  
*Exploring the Cosmic 21-cm Signal from the Epoch of Reionisation Using the Wavelet Scattering Transform*
160. **H. Hwang**<sup>\*</sup>, **Y.-S. Ting**, at al., *Monthly Notices of the Royal Astronomical Society*, 513, 754  
*Wide Binaries from the H3 Survey: The Thick Disk and Halo have Similar Wide Binary Fractions*
159. **H. Hwang**<sup>\*</sup>, **Y.-S. Ting**, & N. Zakamska, *Monthly Notices of the Royal Astronomical Society*, 512, 3383  
*The Eccentricity Distribution of Wide Binaries and Their Individual Measurements*
158. **Y.-S. Ting** & D. Weinberg, *The Astrophysical Journal*, 927, 209  
*How Many Elements Matter?*

— 2021 —

157. **H. Kamdar**<sup>\*</sup>, C. Conroy, **Y.-S. Ting**, K. El-Badry, *The Astrophysical Journal*, 922, 49  
*Spatial and Kinematic Clustering of Stars in the Galactic Disk*
156. **T. Nelson**<sup>\*</sup>, **Y.-S. Ting**, K. Hawkins, A. Ji, H. Kamdar, K. El-Badry, *The Astrophysical Journal*, 921, 118  
*Distant Relatives: The Chemical Homogeneity of Comoving Pairs Identified in Gaia*
155. Greene, Lancaster, **Ting**, Kuposov, Danieli, Huang, Jiang, Greco, Strader, *The Astrophysical Journal*, 917, 17  
*A Search for Wandering Black Holes in the Milky Way with Gaia and DECaLS*

154. L. Spina, **Y.-S. Ting**, N. Frankel, et al., *Monthly Notices of the Royal Astronomical Society*, 503, 3279  
*The GALAH Survey: Tracing the Galactic Disc with Open Clusters*
153. M. Xiang, H.-W. Rix, **Y.-S. Ting**, et al., *The Astrophysical Journal Supplement Series*, 253, 22  
*Data-Driven Spectroscopic Estimates of Absolute Magnitude, Distance, and Binarity Method and Catalog of 16,002 O- and B-type Stars from LAMOST*
152. **H. Hwang\***, **Y.-S. Ting**, K. Schlaufman, N. Zakamska, *The Astrophysical Journal*, 501, 4329  
*The Non-Monotonic, Strong Metallicity Dependence of the Wide-Binary Fraction*
151. **T. O'Briain\***, **Y.-S. Ting**, S. Fabbro, K. Yi, K. Venn, S. Bialek, *The Astrophysical Journal*, 906, 130  
*Cycle-StarNet: Bridging the Gap between Theory and Data by Leveraging Large Data Sets*

— 2020 —

150. **S. Cheng\***, **Y.-S. Ting**, B. Menard, J. Bruna, *Monthly Notices of the Royal Astronomical Society*, 499, 5902  
*A New Approach to Observational Cosmology using the Scattering Transform*  
awarded the **International Astrostatistics Association Award** - for an outstanding publication
149. G. Green & **Y.-S. Ting**, *Neural Information Processing Systems (NeurIPS) Workshop 2020*  
*Deep Potential: Recovering the Gravitational Potential from a Snapshot of Phase Space*
148. **S. Gilda\***, **Y.-S. Ting**, et al., *Neural Information Processing Systems (NeurIPS) Workshop 2020*  
*Astronomical Image Quality Prediction based on Environmental and Telescope Operating Conditions*
147. **Naidu\***, Conroy, Bonaca, Johnson, **Y.-S. Ting**, Caldwell, Zaritsky, Cargile, *The Astrophysical Journal*, 901, 48  
*Evidence from the H3 Survey that the Stellar Halo is entirely Comprised of Substructure*  
**IOP Publishing Top Cited Paper Award** - one of the most cited papers from North America (2020-22)
146. **L. Lancaster\***, J. Greene, **Y.-S. Ting**, S. Koposov, B. Pope, R. Beaton, *The Astronomical Journal*, 160, 125  
*A Mystery in Chamaeleon: Serendipitous Discovery of a Galactic Symbiotic Nova*  
Notable media mention: **AAS Nova**
145. M. Xiang, H.-W. Rix, **Y.-S. Ting**, et al., *The Astrophysical Journal*, 898, 28  
*Chemically Peculiar A and F Stars with Enhanced s-Process and Iron-Peak Elements: Stellar Radiative Acceleration at Work*
144. **N. Sandford\***, D. Weisz & **Y.-S. Ting**, *The Astrophysical Journal Supplement Series*, 249, 24  
*Forecasting Chemical Abundance Precision for Extragalactic Stellar Archaeology*
143. **T. O'Briain\***, **Y.-S. Ting**, S. Fabbro, K. Yi, K. Venn, S. Bialek, International Conference ML (ICML) Workshop  
*Interpreting Stellar Spectra with Unsupervised Domain Adaptation*
142. **N. Frankel\***, J. Sanders, **Y.-S. Ting**, H.-W. Rix, *The Astrophysical Journal*, 896, 15  
*Keeping it Cool: Much Orbit Migration, yet Little Heating, in the Galactic Disk*  
the **Ernst Patzer Prize** - the best publication by a young Max Planck Institute for Astronomy scientist
141. **M. Lucey\***, **Y.-S. Ting**, N. Ramachandra, K. Hawkins, *Monthly Notices Royal Astronomical Society*, 495, 3087  
*From the Inner to Outer Milky Way: a Photometric Sample of 2.6 Million Red Clump Stars*
140. K. Hawkins, M. Lucey, **Y.-S. Ting**, et al., *Monthly Notices of the Royal Astronomical Society*, 492, 1164  
*Identical or Fraternal Twins? The Chemical Homogeneity of Wide Binaries from Gaia DR2*
139. **J. Lin\***, M. Asplund, **Y.-S. Ting**, et al. *Monthly Notices of the Royal Astronomical Society*, 491, 2043  
*The GALAH Survey: Temporal Chemical Enrichment of the Galactic Disc*

— 2019 —

138. M. Xiang, **Y.-S. Ting**, H.-W. Rix, et al., *The Astrophysical Journal*, 245, 34  
*Abundance Estimates for 16 Elements in 6 Million Stars from LAMOST DR5 Low-Resolution Spectra*
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110. P. Hu, J. Pan, R. Feng, T. Zhang, Z. Ma, **Y.-S. Ting**, G. Li & T. Wu, submitted  
*Solving Inverse Problems of Chaotic Systems with Bidirectional Conditional Flow Matching*
109. M. Jabłońska, [+6 authors including **Y.-S. Ting**], *Monthly Notices of the Royal Astronomical Society*, submitted  
*SPICE - Software for Modelling Synthetic Spectra of Stars with Non-Homogenous Surfaces*
108. Brooks, Sanders, Chandra, Garavito-Camargo, Dillamore, Price-Whelan, **Ting**, *MNRAS*, submitted  
*The Milky Way - Large Magellanic Cloud Interaction with Simulation Based Inference*
107. J. Zou, [+23 coauthors including **Y.-S. Ting**], *The Astrophysical Journal*, submitted  
*The Dark Energy Spectroscopic Instrument (DESI) Damped Ly  $\alpha$  System (DLAs) Survey: Data Release 1 (DR1) Automated Detection and New Constraints on Cosmic HI at  $z > 2$*
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98. V. Chandra, [+13 coauthors including **Y.-S. Ting**], *The Astrophysical Journal*, 988, 156  
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97. R. Emami, [+16 coauthors including **Y.-S. Ting**], *Publications of the Astronomical Society of Australia*, 42, e082  
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