

Associate Professor Yuan-Sen TING 丁源森

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PROFESSIONAL APPOINTMENTS

2021 - present	Associate Professor (with tenure) in Astrophysics & Computer Science <i>Australian National University</i> CSIRO/Data61 - Machine Learning Group, visiting scientist Astro-3D - ARC Center of Excellence, associate investigator
2021	Fellow (with tenure, equivalent to Assistant Prof.) in Astrophysics & Computer Science <i>Australian National University</i>
2017 - 2021	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 Sciences</i> The first six-year 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> Supervisor: Ken Freeman (Australian National University) 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 an Eiffel's full scholarship

RESEARCH INTEREST

My research group tackles the most challenging aspects of astrophysics in light of large datasets. My work draws heavily on a combination of **machine learning**, **statistical inferences**, and **theoretical modeling** to shed light on the most fundamental questions of star formation, galactic evolution, interstellar medium, black holes, and cosmology.

I primarily work on **the Milky Way**, capitalizing on a wide range of on-going **large-scale surveys** and most key future surveys in the next decade, including spectroscopy (SDSS-V, DESI, H3, MUST, GALAH, LAMOST, 4MOST, Keck/FOBOS), astrometry (Gaia), photometry (Rubin, CSST, Skymapper, Roman) and asteroseismology (TESS, Earth2.0). I am an "end-to-end" large survey-oriented scientist – I develop novel machine learning methods to maximally harness information in the data, build theoretical models, and confront them with observations through statistical inference.

OTHER PROFESSIONAL EXPERIENCES

2021 - present	Visiting Fellow <i>Institute of Strategic and International Studies, Malaysia</i> A premier think-tank. I serve as a data analytic consultant to guide nation-building initiatives
2020 - 2021	Chief Science Officer <i>Hephaestus Analytical</i> A start-up company in London whose aim is to eliminate art forgery with scientific tools
2020	Columnist <i>Sin Chew Daily</i> 星洲日报 The largest-selling Chinese newspaper outside greater China, with a million daily circulation

GRANTS AWARDED AS LEAD CHIEF INVESTIGATOR 3.2M AUD in grant + 5.1M AUD worth of computing time

Note: CI in the Australian System = Chief Investigator = PI or Principal Investigator in the US system

2021	Australian Research Council DECRA Fellowship - lead CI	AUD 440,000
2021	International Astronomical Union - lead CI	Euro 35,000
2020	ANU Futures Scheme + Start-Up - lead CI	AUD 2,100,000
2018	NASA Hubble Research Award - lead CI	USD 320,000
2017	Alexander von Humboldt Research Award (<i>relinquished</i>) - lead CI	Euro 125,000
2015	NASA Earth and Space Science Research Award - lead CI	USD 90,000
2022	Australian National Computational Infrastructure - lead CI	19.2M CPU Hours
2022	AAL Supercomputer Time Allocation Committee - lead CI (45%), CI (55%)	3.7M CPU Hours
2021	Australian National Computational Infrastructure - lead CI	20.5M CPU Hours
2021	AAL Supercomputer Time Allocation Committee - CI	3.5M CPU Hours
2020	Australian National Computational Infrastructure - lead CI	23.0M CPU Hours

AWARDS AND HONOURS

2021	Australian Research Council Discovery Early Career Researcher Award (DECRA)
2019	AURA Future Leader, The Association of Universities for Research in Astronomy
2018	NASA Hubble Fellowship
2017	Institute for Advanced Study School of Natural Sciences Fellowship
2017	Carnegie-Princeton Fellowship
2017	CCAPP Price Prize in Cosmology and AstroParticle Physics
2016	Selected to attend the Lindau Meeting of Nobel Laureates
2015	NASA Earth and Space Science Fellowship
2005	Australian Mathematics Competition Gold Medal awarded to one in ten thousand participants from more than eight countries

REFEREED JOURNAL ARTICLES

134 publications in total Including (in Astronomy) 1 Nature Astronomy & (in Machine Learning) 2 NeurIPS and 1 ICML Workshops
41 papers as the first or supervising author & 18 other papers as second or third author Hereafter "lead-authored" papers, which constitute about half (59/134) of my publications
3900 citations in total 1650 citations from lead-authored papers
m-index = 3.5 [h-index (35)/ years since the first publication] "A value of m-index=3 characterizes truly unique individuals," Hirsch 2005
h-index = 35 h-index = 27, m-index=2.7 from lead-authored papers

ACADEMIC PRESENTATION

- | On average 30 presentations per year
- | Departmental colloquia/seminars: a career total of 126 talks
including 30 invited departmental colloquia + more than half (68/126) were invited talks
Recent invited departmental colloquia includes Yale, Tsinghua, Peking University, UT Austin,
Ohio State, EPFL, UBC, Melbourne, Swinburne, UC Davis, Penn State, Maryland, Waterloo
- | Conferences: a career total of 49 presentations, half of which (24/49) were invited

RESEARCH HIGHLIGHTS

Works from students whom I supervised are indicated with *

Machine Learning

- 2020 | *Physics-Inspired Neural Networks*
Showed that we can infer the gravitational potential of a system without relying on parameteric models
[Green & YST, NeurIPS W, 2020](#)
- 2020 | *Overcoming Model Systematics*
Demonstrated that we can auto-calibrate imperfect physical models by leveraging unlabelled datasets
[O'Briani*, YST+, ICML W, 2020a](#) | [O'Briani*, YST+, 2020b](#)
- 2020 | *Telescope Operation and Scheduling*
Illustrated that we can improve telescope operation (and 10% cost) by processing real-time metadata
[Gilda, YST+ NeurIPS W, 2020](#)

Cosmology

- 2020-22 | *Weak Lensing & Reionization*
Introduced scattering transform, an ML-based descriptor that outperforms other higher-order statistics
[Greig, YST & Kaurov 2022](#) | [Cheng*, YST+ 2020 \(International Astrostatistics Association Award\)](#)

Galaxy Evolution

- 2012-21 | *Statistical Clustering of Stars*
Pioneered the studies of chemo-dynamical alignments of stars to unravel how stars form and disperse
[YST & Weinberg 2022](#) | [Kamdar*, Conroy, YST+ 2021](#) | [Krumholz & YST, 2018](#) | [YST+ 2012](#)
- 2018-20 | *Radial Migration and Vertical Heating*
Showed that scattering with molecular clouds dominates the growth of the Milky Way's thickness
[YST & Rix, 2019](#)
Demonstrated that the spiral arms' influence, instead of scattering, drives the radial excursion of stars
[Frankel*, Sanders, YST+, 2020 \(Ernst Patzer Prize\)](#) | [Frankel*, Rix, YST+, 2018](#)

Stellar Astrophysics

- 2017-20 | *Low-Resolution Stellar Spectroscopy*
Showed that low-resolution spectra also contain extensive information for > 20 elemental abundances
[Sandford*, YST & Weisz, 2020](#) | [Xiang, YST+, 2019](#) | [YST, Conroy, Rix+, 2019, 2017a, b](#)
- 2019-22 | *Stellar Binaries, Close & Wide*
Illustrated that cluster environment and triplets unfolding largely shape the occurrence of wide binaries
[Hwang*, YST, & Zakamska, 2022b](#) | [Hwang*, YST+, 2022a, 2020](#)
Pioneered a full fitting spectral technique to detect very long period spectroscopically unresolved binaries
[El-Badry*, YST+, 2019](#) | [El-Badry*, Rix, YST+, 2019](#)
- 2018-20 | *Asteroseismology, Stellar Interior & Convective Mixing*
Discovered that photospheric surface properties of stars also reflect their interiors and evolutionary stages
[Lucey*, YST+, 2020](#) | [YST, Hawkins & Rix, 2018](#) | [Hawkins, YST & Rix, 2018](#)
Revealed ubiquitous lithium production during the transition from hydrogen shell to helium core burning
[Kumar, Reddy, Campbell, Maben, Zhao & YST, Nature Astronomy, 2020](#)

SUPERVISION

Supervised 4 postdocs and 33 students (18 PhDs/Masters, 14 undergraduates, 1 high-schooler)
14 of them at the Australian National University

which has led to 25 publications in the last four years
Two of these publications have also won key awards for outstanding contributions

TEACHING

2021-present	Academic Council Lecturing, setting test questions and selecting a Malaysian team for the International Olympiad	<i>Malaysian Olympiad on Astronomy & Astrophysics</i>
2022	Summer School Instructor Applications of neural density estimators in astrophysics	<i>Australian National Institute for Theoretical Astrophysics</i>
2020	Guest Lecturer in Astrophysics – Statistics, Data Mining, and Machine Learning in Astronomy	<i>Tsinghua University</i>
2017	Community Teaching in Mathematics PTI is a volunteer program. We teach accredited college classes to prison inmates in New Jersey	<i>Princeton Prison Teaching Initiative (PTI)</i>
2014	Teaching Assistant in Astrophysics – Stellar Astrophysics, a graduate course	<i>Harvard University</i>
2010-2011	Lecturer in Physics and Mathematics – Mathematics: 1. Topology 2. Linear Algebra 3. Algebra – Physics: 1. Classical Mechanics 2. Electromagnetism	<i>National University of Singapore</i>

PROFESSIONAL LEADERSHIPS AND SERVICES

Astronomy Decadal Survey:

- I co-chair (2021-) the **NASA Cosmic Origins Program** - Stars Science Interest Group.
The program provides a community platform to facilitate science cases in the US decadal survey.

On-going Spectroscopic Surveys:

- I am an active member in a myriad of on-going (2020-2025) large scale spectroscopic surveys with 2-4m telescopes, including SDSS-V, 4MOST, DESI, H3, GALAH, Gaia-ESO and LAMOST-II.

Future Spectroscopic Surveys:

- I am leading the Milky Way science group for the 6.5m MUST survey and the machine learning science group for the Keck/FOBOS survey and two of the four planned (2025-2030) spectroscopic surveys.
- Further along the line, I am leading the ANU/Australian science team. The team builds science cases for stellar astrophysics and Galactic Archaeology for the future 12-15m European-WST survey (2035).

Deep Imaging:

- I am a chief investigator in the Australian-Rubin Observatory data-access agreement.
- I am part of the scientific advisory group of CSST, a UV-optical deep imaging space satellite (2023).

Transit Surveys:

- I led (2020-2021) the spectroscopic group for Earth2.0, a space satellite searching for Earth-analogs.

I have dedicated my career to providing an alternative vision of scientists for Malaysians. Southeast Asians are disproportionately underrepresented among astronomers. E.g., only one in a million Malaysians hold a Ph.D. in astronomy. To combat the status quo, I co-founded the first two Malaysian astronomy conferences. I also serve as the Malaysian liaison in East-Asian-Observatory and wrote regularly in national newspapers.

Conferences Organization

2022	Co-Founder	Early Disk-Galaxy Formation from JWST to the Milky Way @ Malaysia
2022	Co-Founder	Global Malaysian Astronomers Convention @ Kuala Lumpur, Malaysia
2022	SOC	Machine Learning in Cool Stars @ Toulouse, France
2022	SOC	Machine Learning and Physics Conference @ Beijing, China
2017-2018	Founder	The 1 st and 2 nd Princeton Postdocs Symposium

Services

2022	<i>Grant/Hiring</i>	ANU Computer Science Jubilee Joint Fellowship Consultant
2022		ANU Astrophysics director nomination committee
2022		ANU Astrophysics PhD admission committee
2021		ANU Astrophysics Postdoc hiring committee
2021		ANU DECRA and Future Fellowship peer review
2020		NASA Astrophysics Data Analysis Program panel
2019-2020		NASA Future Investigators in Earth, Space Sci. & Tech. review x 2
2019-2021	<i>Telescope Allocation</i>	Chinese Telescope Access Program x 2
2019		Canadian Time Allocation Committee
2019		Japanese Subaru Telescope
2018-2019		United States National Optical Astronomy Observatory x 2
2019-present	<i>MSc/PhD Thesis Review</i>	V. Patel (ANU)
2019-present	<i>MSc/PhD Thesis Committee</i>	S. Usman (UChicago), T. Nelson (UT Austin), S. Bialek (Victoria)
2022	<i>Book Review</i>	World Scientific (on machine learning)
2022	<i>Journal Editorial</i>	MDPI-Universe
2017-present	<i>Journal Review</i>	Nature Astronomy, ApJ, ApJS, MNRAS, A&A, Modern Physics Letter A, The Innovation, Universe

COMMUNITY ENGAGEMENT

- | I wrote monthly columns for the largest Chinese newspaper in Malaysia (~1M readers daily).
- | I worked with TED-Ed and produced two popular videos that have been viewed > 3.6M times
- | I led the effort and built the first-ever scientific interactive kiosk at the Harvard science center.
- | I build **interactive applets**, distilling the intricacies of complex astronomy concepts for the public. The applets are also now shown on **Wikipedia** to explain these concepts.

Media

2022	TEDx Talk @ Petaling Street, Kuala Lumpur, Malaysia	
2020	Monthly Columns, Sin Chew Daily, Malaysia. Some examples below	
	2020/09: <i>Hollywood Science Fiction: Lost in Space</i>	translation
	2020/07: <i>One World, Two Skies: The Bifurcation of the Sky by Technology</i>	translation
2022	Featured Interview , National Newspaper, Sin Chew Daily, Malaysia	
2020	Featured Interview , National Newspaper, Nanyang Daily, Malaysia	translation
2020	Featured Interview , National Newspaper, Sin Chew Daily, Malaysia	translation
2018	Newsletters, Institute for Advanced Study, [Featured Article 1], [Featured Article 2]	
2013	TED-Ed Video: How to Measure Extreme Distances	(viewed 3.0M times)
2013	TED-Ed Video: How do We Study the Stars?	(viewed 0.6M times)

Interactive Applets

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

Other writing

2019	Editor (a 1200-pages textbook), <i>Quantum Field Theory, Lectures of Sidney Coleman</i>
2013	Astrobits contributor & Harvard Science in the News contributor

Selected Outreach

2020	Volunteer, "Skype a Scientist" Program during the COVID pandemic, United States
2013-2016	Lead Ambassador, World-Wide Telescope (WWT) Ambassador Program, Cambridge, MA

REFERENCES

Prof. Charlie Conroy Harvard University	Professor of Astronomy <i>phone: +1-617-495-7005</i> <i>email: cconroy@cfa.harvard.edu</i>
Prof. Hans-Walter Rix Max Planck Institute for Astronomy	Director <i>phone: +49-6221-528-210</i> <i>email: rix@mpia.de</i>
Dr. John Mulchaey Carnegie Institution for Science	Director <i>phone: +1-626-304-0257</i> <i>email: mulchaey@carnegiescience.edu</i>
Prof. Jenny Greene Princeton University	Professor <i>phone: +1-609-258-0764</i> <i>email: jgreene@astro.princeton.edu</i>
Prof. David Weinberg Ohio State University	Distinguished University Professor, Department Chair <i>phone: +1-614-292-2022</i> <i>email: weinberg.21@osu.edu</i>
Prof. Brice Ménard Johns Hopkins University	Professor <i>phone: +1-443-345-6791</i> <i>email: menard@jhu.edu</i>
Prof. Ken Freeman Australian National University	Duffield Professor <i>phone: +61-2-6125-0264</i> <i>email: kenneth.freeman@anu.edu.au</i>
Prof. Alyssa Goodman Harvard University	Robert Wheeler Willson Professor <i>phone: +1-617-495-9278</i> <i>email: agoodman@cfa.harvard.edu</i>

SUPERVISION - FULL LISTING

Either as the main (primary) supervisor or one of the ~two core supervisors (secondary) for the projects

* "semester" here means short-term project with a duration of 6 months to a year

Postdocs

2022–present	Jie Yu	Max Planck	secondary supervisor	
2022–present	Erwin Chen	ANU	primary supervisor	
2020–present	David Yong	ANU	primary supervisor	1 in prep.
2020–present	Ioana Ciucă	ANU Jubilee + Astro3D Fellow	primary supervisor	2 in prep.

Master / Ph.D. Students

2021–present	Jiashu Pan	ANU (PhD, Astrophysics)	primary supervisor (thesis)	1 paper
2022–present	Yanjun Sheng	ANU (MSc, Astrophysics)	primary supervisor (thesis)	
2022–present	Matt Craigie	U. Queensland	secondary supervisor (thesis)	
2021–present	Sunny Tang	U. Illinois Urbana-Champaign	primary supervisor (semester)	1 paper
2021–22	Danny H. Darrington	Liverpool John Moores → CCA	primary supervisor (semester)	
2020–21	Tyler Nelson	U. Texas at Austin	primary supervisor (semester)	1 paper
2020–21	Sankalp Gilda	U. Florida → industry	secondary supervisor (semester)	1 paper
2019–21	Madeline Lucey	U. Texas at Austin	primary supervisor (semester)	1 paper
2019–21	Rohan Naidu	Harvard → Pappalardo/Hubble	secondary supervisor (semester)	1 paper
2020	Hsiang-Chih Hwang	Johns Hopkins → IAS Fellow	primary supervisor (semester)	3 papers
2019–20	Sihao Cheng	J. Hopkins → IAS-Perimeter Fellow	secondary supervisor (thesis)	1 paper
2018–20	Nathan Sandford	Berkeley	secondary supervisor (semester)	1 paper
2018–20	Lachlan Lancaster	Princeton → Simons Junior Fellow	secondary supervisor (semester)	1 paper
2017–20	Neige Frankel	Max Planck → CITA Fellow	secondary supervisor (thesis)	3 papers
2017–19	Jane Lin	ANU → industry	secondary supervisor (thesis)	2 papers
2017	Kareem El-Badry	Berkeley → Caltech faculty	secondary supervisor (semester)	2 papers
2016–21	Harshil Kamdar	Harvard → Kairos Aerospace	secondary supervisor (thesis)	4 papers
2016–19	Mikhail Kovalev	Max Planck → Yunnan postdoc	secondary supervisor (thesis)	1 paper

Undergraduates

2022–present	Bhavesh Sharma	ANU (Honours, Mathematics/CS)	primary supervisor (thesis)	
2022–present	Bowen Tang	ANU (Honours, CS)	primary supervisor (thesis)	
2022–present	Shu Zou	ANU (Honours, CS)	primary supervisor (thesis)	
2021–present	Zeefan Khan	ANU (Honours, Engineering)	primary supervisor (thesis)	
2022–present	Ziqi Yuan	ANU (PhB, Physics)	primary supervisor (semester)	
2021–present	Anne Xie	ANU (PhB, Astrophysics)	primary supervisor (semester)	
2021–present	Zechang Sun	Tsinghua → Tsinghua PhD	primary supervisor (thesis)	1 paper
2021–22	Yangda Bei	ANU (PhB, Physics/CS)	primary supervisor (semester)	
2021–22	Ashley Tan	ANU (Astrophysics)	primary supervisor (semester)	
2021–22	Yong-Sheng Yap	National Tsinghua	primary supervisor (semester)	
2020–21	Yukang Liu	ANU (CS) → Simon Fraser PhD	primary supervisor (semester)	
2020–21	Vedant Chandra	Johns Hopkins → Harvard PhD	primary supervisor (semester)	
2019–20	Teaghan O'Briain	Victoria → Victoria PhD	secondary supervisor (thesis)	2 papers
2018	Erwin Chen	Wisconsin → Sydney PhD	primary supervisor (semester)	

High School Students

2019	Jupiter Ding	High school → Princeton UG	primary supervisor (semester)	
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RECENT ACADEMIC PRESENTATION (only showing events in less than 2 years)

Conference Presentations

Contributed Talk, "IAU GA: Stellar Synthetic Spectra to Study Stellar Populations" Busan, Korea	Aug 2022
Contributed Talk, "IAU General Assembly: Astrometry for 21st Century Astronomy" Busan, Korea	Aug 2022
Contributed Talk, "IAU Symposium 368: Machine Learning in Astronomy" Busan, Korea	Aug 2022
Invited Panel , "IAU Symposium 368: Machine Learning in Astronomy" Busan, Korea	Aug 2022
Invited Panel , "What is the Next Step in Machine Learning and Cosmology?" remote event	April 2022
Contributed Talk, "Learning the High-Redshift," remote event	Feb 2022
Invited Talk , "HRMOS Science Workshop," remote event	Oct 2021
Invited Talk , "Artificial Intelligence for Science, Industry and Society 2021," remote event	Oct 2021
Contributed Talk, "Star Clusters: the Gaia Revolution," remote event	Oct 2021
Contributed Talk, "Space and AI 2021," remote event	Sep 2021
Contributed Talk, "Astro3D 2021 Science Meeting," remote event	Aug 2021
Contributed Talk, "Astronomical Society of Australia Annual Science Meeting," remote event	July 2021
Invited Talk , "2021 GALAH Survey Science Meeting," remote event	June 2021
Invited Talk , "DESI Collaboration Meeting," remote event	June 2021
Contributed Talk, "Gaia eDR3 Early Science and Best Practices," remote event	June 2021
Poster, "Multi-object Spectroscopy for Statistical Measures of Galaxy Evolution," remote event	May 2021
Invited Talk , "MUST Collaboration Meeting," remote event	May 2021
Invited Talk , "Reference Star Workshop Series," remote event	Apr 2021
Contributed Talk, "Precision Spectroscopy 2021: Stellar Connections," remote event,	Feb 2021
Contributed Talk, "Australian LSST Workshop," remote event	Dec 2020
Invited Talk , "Scientific Goals of the Earth 2.0 Transit Survey Space Mission," remote event	Oct 2020
Invited Talk , "2020 Hubble Fellows Symposium," remote event	Sept 2020
Poster, "The Local Group: Assembly and Evolution," remote event	Aug 2020

Departmental Colloquia & Seminars

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

Melbourne University** , Melbourne, Australia	Aug 2022
Durham University , Durham, United Kingdom	June 2022
Liverpool John Moores University , Liverpool, United Kingdom	June 2022
Max Planck Institute for Astronomy , Heidelberg, Germany	May 2022
AI x Natural Science Journal Club, remote event	May 2022
Heidelberg Institute for Theoretical Studies, Heidelberg, Germany	May 2022
Charles University , Prague, Czech Republic	May 2022
CSIRO Data61, Queensland , Brisbane, Australia	Apr 2022
University of Queensland , Brisbane, Australia	Apr 2022
University of Queensland (Robotics) , Brisbane, Australia	Apr 2022
Yunnan University** , remote event	Apr 2022
Swinburne University** , Melbourne, Australia	March 2022
Australian National University, Canberra, Australia	March 2022
AI, ML and Friends Seminar Series, Canberra, Australia	March 2022
Astrochat, Astronomical Society of Penang, Malaysia , remote event	Feb 2022
École Polytechnique Fédérale de Lausanne** , remote event	Feb 2022
DESI Machine Learning Group , remote event	Dec 2021
Australian National University , remote event	Dec 2021
Carnegie Observatories , remote event	June 2021
Machine Learning Club - Debate , remote event	May 2021
UC Davis** , remote event	May 2021
Université Libre de Bruxelles** , remote event	Apr 2021
Tsung-Dao Lee Institute** , remote event	March 2021
University of Michigan , remote event	March 2021
Princeton University , remote event	March 2021
INAF-Osservatorio Astrofisico** , remote event	March 2021
Princeton University , remote event	Feb 2021
Australia Machine Learning in Astronomy Meetings, remote event	Feb 2021
University of Waterloo** , remote event	Nov 2020
University of Toronto , remote event	Oct 2020
The University of Texas at Austin** , remote event	Oct 2020
Astro3D Australia** , remote event	Oct 2020

Starred shows publications from students whom I supervised.

— As 1st-3rd or supervising author—

— 2022 —

133. **Z. Sun***, **Y.-S. Ting** & Z. Cai, submitted
An Unsupervised Learning Approach for Quasar Continuum Prediction
132. **J. Pan***, **Y.-S. Ting** & J. Yu, submitted
Astroconformer: Inferring Surface Gravity from Stellar Light Curves with Transformer
131. G. Green, **Y.-S. Ting** & H. Kamdar, *The Astrophysical Journal*, submitted
Deep Potential: I. Recovering the Gravitational Potential from a Snapshot of Phase Space
130. Leja, Speagle, **Ting**, Johnson, Conroy, Whitaker, Nelson, von Dokkum, Franx, *The Astrophys. Journal*, submitted
A New Census of the $0.2 < z < 3.0$ Universe, Part II: The Star-Forming Sequence
129. **H. Kamdar***, C. Conroy & **Y.-S. Ting**, *The Astrophysical Journal*, submitted
Stellar Streams in the Galactic Disk: Predicted Lifetimes and Their Utility in Measuring the Galactic Potential
128. B. Greig, **Y.-S. Ting**, & A. Kaurov, *Monthly Notices of the Royal Astronomical Society*, in-press.
Exploring the Cosmic 21-cm Signal from the Epoch of Reionisation Using the Wavelet Scattering Transform
127. M. Xiang, H.-W. Rix, **Y.-S. Ting**, et al., *The Astrophysical Journal*, in-press.
Stellar Labels for Hot Stars from Low-Resolution Spectra I. the HotPayne Method and Results for 330,000 Stars from LAMOST DR6
126. **H. Hwang***, **Y.-S. Ting**, et 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
125. **H. Hwang***, **Y.-S. Ting**, & N. Zakamska, *Monthly Notices of the Royal Astronomical Society*, 512, 3383
The Eccentricity Distribution of Wide Binaries and Their Individual Measurements
124. **Y.-S. Ting** & D. Weinberg, *The Astrophysical Journal*, 927, 209
How Many Elements Matter?

— 2021 —

123. **H. Kamdar***, C. Conroy, **Y.-S. Ting**, K. El-Badry, *The Astrophysical Journal*, 922, 49
Spatial and Kinematic Clustering of Stars in the Galactic Disk
122. **T. Nelson***, **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
121. Greene, Lancaster, **Ting**, Koposov, Danieli, Huang, Jiang, Greco, Strader, *The Astrophysical Journal*, 917, 17
A Search for Wandering Black Holes in the Milky Way with Gaia and DECaLS
120. 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
119. 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
118. **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
117. **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 —

116. **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
115. G. Green & **Y.-S. Ting**, *Neural Information Processing Systems (NeurIPS) Workshop 2020*
Deep Potential: Recovering the Gravitational Potential from a Snapshot of Phase Space
114. **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
113. **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
112. **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 mentions: **AAS Nova**
111. 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
110. **N. Sandford***, D. Weisz & **Y.-S. Ting**, *The Astrophysical Journal Supplement Series*, 249, 24
Forecasting Chemical Abundance Precision for Extragalactic Stellar Archaeology
109. **T. O'Briain***, **Y.-S. Ting**, S. Fabbro, K. Yi, K. Venn, S. Bialek, International Conference ML (ICML) Workshop
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