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Joel Ong Jia Mian, PhD
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Curriculum Vitæ

Scientific Positions

2025 – 2029 **Research Fellow**, *Sydney Institute for Astronomy*, University of Sydney, Australia
Independent research on theoretical and observational stellar astrophysics.
Host: Prof. Timothy Bedding

2022 – 2025 **NASA Hubble Fellow**, *Institute for Astronomy*, University of Hawai'i at Mānoa, Honolulu, HI, USA
Technique development for rotational characterisation using mixed modes in evolved stars.
Host: Assoc. Prof. Jennifer van Saders

2016 – 2022 **Graduate Research Assistant**, *Astronomy Dept.*, Yale University, New Haven, CT, USA
- Basu Group: various projects in both theoretical and observational asteroseismology
- Fischer Group: data reduction, calibration, velocimetry software for the EXtreme PREcision Spectrograph (EXPRES)

Summer 2014 **Intern**, *Defence Medical & Environmental Research Institute (DMERI)*, DSO National Laboratories, Singapore
Numerical simulations for various dissipation and transport phenomena (project classified).
Advisor: Dr. Mun Cheok Hong

2012 – 2013 **Undergraduate Researcher**, *Special Programme in Science*, National University of Singapore
Numerical raytracing and optical design for astronomical instrumentation.
Advisor: Dr. Abel Yang Jiahui

Education

2016 – 2022 **Yale University**, *Ph.D. in Astronomy*
- M.Sc. and M.Phil. en route to Ph.D., 2018
- PhD Thesis: Stellar Surfaces in the Frequency Domain
- Advisor: Prof. Sarbani Basu

2012 – 2016 **National University of Singapore (NUS)**, *B.Sc. (Hons) in Physics*
- Highest Distinction (First-Class Honours equivalent)
- Honours Thesis: Fermi-Walker Transport and EPR Correlation Experiments on Second-Order Tangent Bundles
- Advisor: Assoc. Prof. Kuldip Singh

2004 – 2009 **Hwa Chong Institution (HCI)**, *Singapore-Cambridge GCSE A-Levels (Integrated Programme)*

Grants as Principal Investigator or as Co-PI

2026 TESS Guest Investigator Cycle 9 (Large Proposal), NASA
(US$250,000: *"A Rotational And Asteroseismic Search For Merger And Engulfment Remnants With TESS"*
PI: J. M. J. **Ong**; Co-Is: D. Huber, D. R. Hey, Li Y., R. Garcia, D.-B. Palakkatharappil, N. Rui)

2025 Discover Early Career Researcher Award (DECRA), Australian Research Council
(AU$530,000: *"Unravelling the Internal Physics of Stars that have Rotational Twists"*
Chief Investigator: J. M. J. **Ong**; DE260101982; funded at 100% of requested level)

2024 TESS Guest Investigator Cycle 7 (Small Proposal), NASA
(US$70,000: *"Asteroseismic Probes Of Convective Boundary Mixing with 200s TESS FFIs"*
PI: J. M. J. **Ong**; Co-Is: D. R. Hey, M. T. Y. Hon, C. J. Lindsay, C. Reyes, D. Stello; 80NSSC25K7656)

2023 TESS Guest Investigator Cycle 6 (Small Proposal), NASA
(US$70,000: *"Magnetic Activity On Rapidly-Rotating Red Giants With 200-Second TESS FFIs"*
PI: J. M. J. **Ong**; Co-Is: L. Cao, C. Gehan, D. R. Hey, J. Hinkle, M. T. Y. Hon, C. J. Lindsay, J. van Saders; 80NSSC24K0475)

2023 Heising-Simons Foundation Grant
(US$50,000, for organising the 2023 AMP-UP Workshop — Erika M. Holmbeck, J. M. Joel **Ong**, Ryan J. MacDonald; #2023-4742)

2019, 2020 Dean's Fund for Research Workshops, Seminars and Colloquia, Yale
(US$1000, for organising the Yale Exoplanet Seminar)

2019 TESS Guest Investigator Cycle 2 (Small Proposal), NASA
(US$50,000: *"Contemporaneous Photometric/Spectroscopic Characterisation of Stellar Surfaces"*
PI: Debra A. Fischer; Co-Is: J. M. Joel **Ong** (Science PI), Rachael M. Roettenbacher; G022092)

Fellowships and Other Honours

2022 NASA Hubble Fellowship Program — Hubble Fellow
(US$395,000: *"Constraining Post-Main-Sequence Angular Momentum Evolution with Mixed-Mode Asteroseismology"*
Administrative PI: J. L. van Saders; HF2-51517)

Academic Prizes

2026 NUS Development Grant, *Faculty of Science*, National University of Singapore
(SG$20,000 per year awarded, for outstanding Singaporean early-career researchers)

2023 Dirk Brouwer Memorial Prize, *Astronomy Dept.*, Yale
(for outstanding PhD dissertation)

2020 Tinsley Award, *Astronomy Dept.*, Yale
(for best 2019 student paper: **Ong** & Basu 2019b)

2018 Henry A. Smith Fellowship in Astronomy, Yale

2017 Singapore National Academy of Science Award (Physics)

2016 Institute of Physics Singapore Medal

2012 – 2016 Dean's List, *Faculty of Science*, NUS

Fall 2015 Senior Honour Roll, *University Scholars Programme*, NUS

2013 – 2015 Jurong Shipyard Book Prize (Physics)

2015 Diamond Jubilee Student Exchange Award, *Faculty of Science*, NUS

2011 NUS Undergraduate (Merit) Scholarship

2008 IV Азиатско-Тихоокеанская Астрономическая Олимпиада — III диплом

Scientific Meetings and Presentations

* Denotes remote presentations

Invited Presentations at Scientific Meetings

04/2026 *Liberating Asteroseismic Inversions from the Tyranny of Stellar Modelling* (invited talk) — *Cluster Asteroseismology, ISSI Beijing*

12/2025 *Methods for Asteroseismic Analysis in Solar-like Oscillators* (invited talk) — *Structure and Evolution of Astronomical Objects, İzmir**

10/2025 *Asteroseismic Probes of Binary Interactions* (invited talk/discussion leader, joint with N. Rui) — *Binaries Workshop 2025, Florence*

08/2025 *Probing Internal Rotation and Magnetism with Evolved-Star Asteroseismology* (invited talk) — *Earth 2.0 Science Meeting, Shanghai**

01/2025 *Analytical Methods for Multicavity Stellar Oscillations* (invited talk) — *IAStrophysical Waves, IAS, Princeton*

08/2023 *New Observations and Asteroseismology* (discussion leader) — *MIAPbP, Garching bei München*

07/2023 *Solar-Like Oscillations: Life after Kepler* (invited review: [recording]) — *TASC VII/KASC XIV, Honolulu*

06/2023 *TESS Observes a Rapidly Rotating Engulfment Candidate* (invited talk) — *TESS Mission Update Meeting, MIT, Cambridge**

11/2021 *Asteroseismology* (invited discussion panellist) — *Transport in Stellar Interiors, KITP, Santa Barbara*

Invited Seminars and Colloquia

09/2026 Astrophysics Seminar, Monash University — *Seminar*

05/2026 Research School of Astronomy and Astrophysics, Australian National University — *Colloquium*

04/2026 Department of Physics, National University of Singapore — *Seminar*

04/2026 Centre for Astrophysics, University of Southern Queensland — *Colloquium**

01/2026 Kavli Institute for Astronomy and Astrophysics, Peking University — *Colloquium*

12/2025 T.D. Lee Institute, Shanghai Jiaotong University — *Seminar*

06/2025 Department of Astrophysics, CEA Paris-Saclay — *Seminar*

03/2025 Department of Astrophysics, Westlake University — *Colloquium**

01/2025 Centre for Astrophysics | Harvard & Smithsonian — *Colloquium*

01/2025 Department of Astronomy, Tsinghua University — *Colloquium*

11/2024 Department of Astrophysics, CEA Paris-Saclay — *Seminar*

11/2024 Ad Valvas Seminar — Institute of Astronomy, KU Leuven — *Seminar*

10/2024 SESTAS Seminar — Max Planck Institute for Astrophysics — *Seminar*

09/2024 TAPIR Seminar — California Institute of Technology — *Seminar*

02/2024 Centre for Computational Astrophysics, Flatiron Institute — *Colloquium*

01/2024 Department of Astronomy, Columbia University — *Colloquium*

11/2023 Department of Physics, National University of Singapore — *Colloquium*

09/2023 Department of Astronomy, American Museum of Natural History — *Seminar*

08/2023 Dept. of Space & Climate Physics, University College London — *Seminar*

08/2023 Sun, Stars, and Exoplanets, University of Birmingham — *Seminar*

02/2023 Department of Astronomy, Tsinghua University — *Colloquium**

01/2023 Department of Astronomy, Indiana University Bloomington — *Colloquium**

07/2022 Sun, Stars, and Exoplanets, University of Birmingham — *Seminar*

01/2022	Monday Science Seminar — University of Wisconsin – Madison	*Seminar**
12/2021	The Good Vibrations Seminar — LESIA, Paris Observatory [recording]	*Seminar**
11/2021	Stars and Compact Objects — Centre for Computational Astrophysics, Flatiron Institute	*Seminar*
10/2021	Special Programme in Science, National University of Singapore	*Seminar**
09/2021	Department of Astronomy, American Museum of Natural History	*Seminar**
02/2021	iSIMBA Seminar — Aarhus University	*Seminar**

Internal Seminars and Colloquia

11/2025	SIfA Seminar, University of Sydney	*Seminar*
12/2024	Star and Planet Lunch, IfA, University of Hawai'i at Mānoa	*Seminar*
03/2024	Star and Planet Lunch, IfA, University of Hawai'i at Mānoa	*Seminar*
06/2023	Star and Planet Lunch, IfA, University of Hawai'i at Mānoa	*Seminar*
10/2022	Institute for Astronomy, University of Hawai'i at Mānoa [recording]	*Colloquium*

Contributed Conference Presentations

11/2026	*Weighing Stellar Cores Using Momentum Conservation*	*Waves in Astrophysical Fluids, ISTA, Vienna*
09/2026	*The Aarchive: An Asteroseismic Archive*	*SPRIGS V, Macquarie, Sydney*
07/2026	*Sparse and Single-Mode Asteroseismic Inversions*	*TASC X/KASC XVII, Aarhus*
03/2026	*Asteroseismic Inversions*	*SPRIGS IV, UNSW, Sydney*
12/2025	*Core-Envelope Misalignment in Kepler-56: Implications for Planet Formation and Evolution*	*Exoplanets & Planet Formation II, Shanghai*
11/2025	*Why Is Kepler-56?*	*Australian Exoplanet Workshop, Newcastle*
09/2024	*Asteroseismology Reveals Core-Envelope Rotational Misalignment in Kepler-56*	*NHFP Symposium, NExScI, Pasadena*
07/2024	*TESS Observes a Rapidly-Rotating Engulfment Candidate*	*TESS Science Conference III, MIT, Cambridge*
07/2024	*Asteroseismic Diagnostics of Core-Envelope Rotational Misalignment*	*TASC VIII/KASC XV, Porto*
09/2023	*Asteroseismic Signatures of Post-Main-Sequence Planetary Engulfment*	*NHFP Symposium, CfA, Cambridge*
08/2023	*Asteroseismic Diagnostics of Misaligned Cores and Envelopes*	*MIAPbP, Garching bei München*
01/2023	*New Techniques for Rotational Measurements from Mixed-Mode Asteroseismology*	*AAS 241, Seattle*
09/2022	*Prospects for Seismic Probes of Radial Differential Rotation*	*NHFP Symposium, STScI, Baltimore*
08/2021	*Helium Abundances from Subgiant Ensemble Asteroseismology*	*TESS Science Conference II**
07/2019	*Structural and Evolutionary Diagnostics from Asteroseismic Phase Functions*	*TASC V/KASC XII, MIT, Cambridge*
07/2018	*Deviations from the Scaling Relation of the Large Frequency Separation*	*TASC IV/KASC XI, Aarhus*

Conference Posters

07/2026	*The Aarchive: An Asteroseismic Archive* (award winner)	*TASC X/KASC XVII, Aarhus*
07/2025	*Deconvolution in Observational Asteroseismology*	*TASC IX/KASC XVI, Vienna*
07/2025	*Structure Inversions in Structure-Dependent Coordinates*	*TASC IX/KASC XVI, Vienna*
07/2024	*Resolving an Asteroseismic Catastrophe: What do Red Giant Small Separations Signify?*	*TASC VIII/KASC XV, Porto*
07/2023	*Asteroseismic Diagnostics of Misaligned Cores and Envelopes*	*TASC VII/KASC XIV, Honolulu*
07/2022	*Interactions Between Differential Rotation and Mixed-mode Coupling*	*TASC VI/KASC XIII, KU Leuven*
07/2022	*Seismic Constraints on Helium Abundances from the TESS Southern CVZ*	*Cool Stars XXI, Toulouse*
10/2021	*Mixed Modes and the Asteroseismic Surface Term*	*PLATO Conference 2021**
08/2019	*An EPRV Pipeline for EXPRES*	*ERES V, Cornell, Ithaca*
08/2018	*Diagnosing PPNU with a Laser Frequency Comb on EXPRES*	*ERES IV, Penn State, State College*
08/2017	*Effects of PPNU on Extreme Precision Wavelength Calibration with a LFC*	*EPRV III, Penn State, State College; ERES III, Yale, New Haven*

Other Meetings

06/2026	Cool Stars XXIII *(Lead Splinter Organiser)*	*Tokyo, Japan*
04/2026	*Synergistic Research of Stellar Clusters and Asteroseismology in the Era of Space-Based Telescopes*	*ISSI Beijing, China*
10/2025	PLATO Workshop: *PLATO Open Time Proposals*	*MPA, Garching, Germany*
11/2024	CESAM2K20 Workshop II: *Transport Processes*	*Paris, France*
09/2023	AMP-UP Camp 2023 *(co-organiser, with Erika Holmbeck & Ryan MacDonald)*	*Pasadena, CA, USA*
08/2023	MIAPbP Program: *Stellar Astrophysics in the Era of Gaia, Spectroscopic, and Asteroseismic Surveys*	*Garching, Germany*
04/2022	AURA Board Meeting *(as AURA Future Leader)*	*virtual*
03/2022	*50 Years of the Skumanich Relations*	*Boulder, CO, USA*
04/2021	PLATO HOW 2: *Uncertainties in stellar properties determination*	*virtual*

03/2021 Cool Stars 20.5 *(pandemic edition)* — *virtual*

03/2019 TESS Workshop: *Building Early Science with* TESS — *Chicago, IL, USA*

10/2018 PLATO ESP2018: *Stellar Activity And Its Effect On The Characterisation Of Small Planets* — *Marseille, France*

07/2018 7th MESA Summer School — *KITP, UCSB*

Public Outreach

2026 Interview on American Astronomical Society YouTube Channel
(for the AAS Journal Author series)

2020 "Hearing Stars Like the Sun" — Astronomy On Tap New Haven

2019 "On the Discovery of Exoplanets" — Hwa Chong Institution, Singapore

Teaching Experience

2026 **Graduate Seminar**, *Sydney Institute for Astronomy*, University of Sydney
Developed and taught "Theory Time": a semester-long lecture series on astrophysical fluid and wave mechanics, at graduate level. Course covers asymptotic analysis of differential equations and special functions, global analysis of boundary-value and eigenvalue problems, perturbation theory, variational principles, and elements of representation theory and stochastic processes.

Summer 2025 **Invited Lecturer**, *MESA Summer School*, KU Leuven
Developed and delivered lectures and interactive hands-on exercises on asteroseismology at an international summer school, with focus on theoretical foundations and numerical pulsation calculations for stellar-evolution models. (Lecture Notes)

2022-2025 **Guest Lectures**, *Institute for Astronomy*, University of Hawai'i at Mānoa
Technical lectures on various advanced topics, by invitation of primary course instructors
- Undergraduate: overview of asteroseismology, for ASTR 423 Stellar Structure and Evolution (Spring 2025: R. Mendez)
- Graduate: relativity & electrodynamics, for ASTR 631 Radiative Transport (Spring 2024: C. Haggerty)
- Graduate: theoretical foundations of asteroseismology, for ASTR 623 Stellar Interiors and Evolution (Fall 2022: J. van Saders)

Summer 2024 **Special Seminar**, *Institute for Astronomy*, University of Hawai'i at Mānoa
Organised and co-taught single-day workshop introducing fundamentals of asteroseismology to REU students (with Li Y.)

2016–2020 **Teaching Fellow**, *Astronomy Department*, Yale University
- Graduate content-intensive courses (ASTR 550, Fall 2018 & 2020: Sarbani Basu)
- Undergraduate research methods (ASTR 255, Fall 2017: Marla Geha)
- Undergraduate content-intensive courses (ASTR S120, ASTR 210: various instructors)
- Undergraduate elective courses (ASTR 180, ASTR 160, ASTR 130: various instructors)

2015 – 2016 **Student Mentor**, *Special Programme in Science*, NUS
- Undergraduate elective courses (SP2174, SP3176: various instructors)

2015 **Laboratory Assistant**, *Physics Department*, NUS
- Laboratory demonstrations and grading for PC1142 (Physics II)

Advising and Mentorship

Graduate (Thesis)

2026 – Henri Gérard (USyd) — *PhD*

2026 – Tobias van Lier (HITS, with S. Hekker) — *PhD*

2021 – 2026 Christopher J. Lindsay (Yale, with S. Basu; publications: 2022; 2023; 2024; 2025; 2026) → NSF Fellow — *Masters & PhD*

Graduate (Projects)

2025 – Lea Schimak (USyd, with T. Bedding and C. Crawford) — *PhD Project*

2025 – Arnab Chowhan (USyd, with T. Bedding and D. Huber; publication: 2026) — *PhD Project*

2024 Claudia Reyes (UNSW, with D. Stello; publication: 2025) — *PhD Project*

2022 – 2024 Emily Hatt (Birmingham, with G. Davies and M. Nielsen; publication: 2024) — *PhD Project*

2023 Nicholas Rui (Caltech, with S. Mathis, CEA/Saclay; publication: 2024) — *PhD Project*

2026 – 2027 Stanislas Sendera Cartailler (stagiaire at USyd) — *Masters Project*

2023 – 2024 Willem Hoogendam (Hawai'i, ASTR 699-2: Directed Research; publication: 2026) — *Masters Project*

2022 – 2024 Federica Chiti (Hawai'i, with J. van Saders; publication: 2024) — *Masters Project*

Undergraduate

2026 Jonas Káral (USyd; Daylell Scholar) — *Undergraduate*

2026 Kyrie Ma (USyd; Denison Scholar) — *Summer Undergraduate*

2024 – Ciana-Lei Bence (Yale, with M. Rice, & Hawai'i) — *Undergraduate*

2024 Camille Chiu (Hawai'i, with Li Y. and D. Huber; REU) — *Summer Undergraduate*

2023 Trystan Wallace (Hawai'i; REU) — *Summer Undergraduate*

2020 – 2022 David P. Saunders (Yale; publication: 2023) *Undergraduate*

2017 Devesh Agrawal (Yale; astr 255: Research Methods in Astrophysics) *Undergraduate*

Other Mentorship

2026 Seona Lee (AMP-UP) *Graduate Student*

2025 Sophie Deam (AMP-UP) *Graduate Student*

2024 Varun Chaturmutha (AMP-UP) *Graduate Student*

2023 Niyati Desai (AMP-UP) *Graduate Student*

2022 Somdutta Ghosh (NHFP Mentoring Program, now AMP-UP) *Graduate Student*

2021 Daniel Chang (Yale Astro Sibs) *Undergraduate*

2019 Trustin Henderson (Yale Astro Sibs) *Undergraduate*

2018 Sophia Sánchez-Maes (Yale Astro Sibs) *Undergraduate*

Telescope Proposals

Hawai'i 2023B W. M. Keck Observatory (KPF), 1 night awarded (PI): *Measurement Systematics of Rapidly-Rotating Red Giants*

Hawai'i 2023A W. M. Keck Observatory (KPF), 1 night awarded (PI): *Re-characterisation of $V \sin i$'s with EPRV Spectroscopy*

Hawai'i 2023A W. M. Keck Observatory (KPF), 2 nights awarded (PI): *Rossiter-McLaughlin Measurements for Kepler-91b*

Observing Experience

2023 – W. M. Keck Observatory (Keck I, 10 m) with the Keck Planet Finder (KPF) — $\gtrsim$25 nights, on-site/synchronous remote

2019 Lowell Observatory (LDT, 4.3 m) with the EXtreme PREcision Spectrograph (EXPRES) — 3 nights, on-site

Service and Other Activities

Professional Service

2019 – **Journal Referee**, *Various journals, incl. ApJ, ApJL, A&A, MNRAS, JOSS, PNAS; average of 4 papers/yr*

2026 – 2027 **Hubble Space Telescope Time Allocation Committee**, *External Expert Reviewer*

2026 **Université Paris-Saclay STAR-φ Postdoctoral Fellowship**, *External Expert Reviewer*
(part of the European Commission Marie Skłodowska-Curie Actions COFUND Program)

2026 **Cool Stars XXIII Splinter Session 7**, *Convenor & Lead Organiser*

2024 **NASA Astrophysics Data Analysis Program**, *Panel Reviewer*

2024 **Agence Nationale de la Recherche — Appel à Projets Générique**, *Scientific Expert Reviewer*

2023 **NASA Astrophysics Theory Program**, *Panel Reviewer*

2023 **NHFP Symposium**, *Scientific Organising Committee*

2023 **TASC VII/KASC XIV**, *Local Organising Committee*

2023 **AAS 241**, *Chambliss Poster Judge*

2020 – 2022 **Yale Stellar Astrophysics Journal Club**, *Organiser*

2018 – 2021 **Yale Exoplanet Seminar**, *Co-organiser*

2020 – 2021 **Telescope Time Allocation Committee**, *Graduate Student Representative*, Yale Astronomy Dept

2017 **ERES III**, *Scientific & Local Organising Committees*

Scientific Collaborations

2025 – **Roman Science Collaboration**, *Member*

2023 – **California Planet Search**, *KPF Observer*

2022 – **PLATO Science Consortium**, *WP 120 and 160*

2022 – **Earth 2.0 Science Consortium**, *Asteroseismology SWG*

2018 – **TESS & Kepler Asteroseismic Science Consortia**, *WG1 & WG2*

Institutional Service

2026 – 2028 **EDI Contact Officer**, *School of Physics*, University of Sydney

2016 – 2022 **Graduate Student Affiliate**, *Ezra Stiles College*, Yale

2016 – 2022 **Leitner Family Observatory and Planetarium**, *Student Presenter*

2017 – 2018 **Telescope Time Allocation Committee**, *Administrative Assistant (part-time)*, Yale Astronomy Dept

2017 – 2018 **Yale Graduate Student Assembly**, *Elected Department Representative*

Community Initiatives and Outreach

2025 – **The Good Vibrations Seminar Series**, *Primary Organiser & Steering Committee Chair*

2022 – **AMP–UP (formerly NHFP Mentoring Program)**, *Pair Mentor & Co-Organiser (2023)*

2023 – 2024 **NHFP Equity**, *Program Office Liaison*

2018 –2022 **Yale Astro Sibs**, *Co-founder, Organiser, & Pair Mentor*

2018 – 2021 **Astronomy on Tap New Haven**, *Volunteer Treasurer & Presenter*

2015 – 2016 **University Scholars Programme, NUS**, *USP Peer Mentor*

2014 – 2015 **NUS Astronomical Society**, *Academic Consultant*, NUS

2015 **YHack CodeBlue**, *Student Instructor*, Yale University

2014 **Asian Physics Olympiad 2014**, *Academic Committee Liaison*, Singapore

2012 **International Biology Olympiad 2012**, *Team Liaison*, Singapore

Military Service

2015 – 2016 **Singapore Armed Forces**, *Armoured Reconnaissance Trooper (Reservist)*

2010 – 2012 **Singapore Armed Forces**, *Armoured Reconnaissance Trooper (Full-time National Service)*

Full List of Publications

ORCiD 0000-0001-7664-648X

Metrics 14 first-author publications, and 22 further as 2nd/3rd-author, out of 70 total accepted; $h = 21$ with 1,371 citations (via NASA ADS)

Erdős Number 4 (Erdős Pál → D. Frank Hsu → Bruce M. Maggs → Gregory P. Laughlin → JOJM)

† Denotes mentoree paper author ‡ First authors shared equal credit

1st-Author Publications

14. **Ong**, J. M. J., Basu, S., Hoogendam†, W. B., & Vanlaer, V. 2026, ApJ, 1007, 6. arXiv: 2606.25243,
Can Asteroseismic Structure Inversions Be Performed in Structure-dependent Coordinates?
13. **Ong**, J. M. J. 2025, ApJ, 980, 40. arXiv: 2412.19451,
Signatures of Core-Envelope Rotational Misalignment in the Mixed-Mode Asteroseismology of Kepler-56
12. **Ong**, J. M. J., Lindsay†, C. J., Reyes†, C., Stello, D., & Roxburgh, I. W. 2025, ApJ, 980, 199. arXiv: 2501.05343,
Resolving an Asteroseismic Catastrophe: Structural Diagnostics from p-mode Phase Functions off the Main Sequence
11. **Ong**, J. M. J., Nielsen, M. B., Hatt†, E. J., & Davies, G. R. 2024b, JOSS, 9, 6588. arXiv: 2407.09956,
Reggae: A Parametric Tuner for PBJam, and a Visualization Tool for Red Giant Oscillation Spectra
10. **Ong**, J. M. J., Hon, M. T. Y., Soares-Furtado, M., et al. (19 others). 2024a, ApJ, 966, 42. arXiv: 2402.16971,
Gasing Pangkah Collaboration. I. Asteroseismic Identification and Characterization of a Rapidly Rotating Engulfment Candidate
9. **Ong**, J. M. J. 2024, ApJ, 960, 2. arXiv: 2311.06990,
Red Giant Rotational Inversion Kernels Need Nonlinear Surface Corrections
8. **Ong**, J. M. J., & Gehan, C. 2023, ApJ, 946, 92. arXiv: 2302.12402,
Mode Mixing and Rotational Splittings. II. Reconciling Different Approaches to Mode Coupling
7. **Ong**, J. M. J., Bugnet, L., & Basu, S. 2022, ApJ, 940, 18. arXiv: 2210.01928,
Mode Mixing and Rotational Splittings. I. Near-degeneracy Effects Revisited
6. **Ong**, J. M. J., Basu, S., Lund, M. N., et al. (3 others). 2021c, ApJ, 922, 18. arXiv: 2108.07370,
Mixed Modes and Asteroseismic Surface Effects: II. Subgiant Systematics
5. **Ong**, J. M. J., Basu, S., & Roxburgh, I. W. 2021b, ApJ, 920, 8. arXiv: 2107.03405,
Mixed Modes and Asteroseismic Surface Effects: I. Analytic Treatment
4. **Ong**, J. M. J., Basu, S., & McKeever, J. M. 2021a, ApJ, 906, 54. arXiv: 2011.01957,
Differential Modeling Systematics across the HR Diagram from Asteroseismic Surface Corrections
3. **Ong**, J. M. J., & Basu, S. 2020, ApJ, 898, 127. arXiv: 2006.13313,
Semianalytic Expressions for the Isolation and Coupling of Mixed Modes
2. **Ong**, J. M. J., & Basu, S. 2019b, ApJ, 885, 26. arXiv: 1909.02580,
Structural and Evolutionary Diagnostics from Asteroseismic Phase Functions
1. **Ong**, J. M. J., & Basu, S. 2019a, ApJ, 870, 41. arXiv: 1811.06996,
Explaining Deviations from the Scaling Relationship of the Large Frequency Separation

Co-authored Publications with Essential Contributions

22. Rui, N. Z., **Ong**, J. M. J., Leclerc, A., et al. (5 others). 2026, MNRAS, 551, stag1426. arXiv: 2606.07787,
Extending Asteroseismic Magnetometry Across The Diverse Landscape Of Magnetic Structures
21. Leclerc‡, A., Le Saux‡, A., **Ong**‡, J. M. J., & Garcia, R. A. 2026, accepted to A&A. arXiv: 2607.04830,
On the feasibility of inverting the rotation of the solar core with mixed f/g modes
20. Lindsay†, C. J., **Ong**, J. M. J., Basu, S., Grunblatt, S., & Hon, M. T. Y. 2026, ApJ, 1000, 232. arXiv: 2603.03450,
The Effect of Different Methods for Accounting for α-enhancement on the Asteroseismic Modeling of Metal-poor Stars
19. Wang, X.-Y., Wang, S., & **Ong**, J. M. J. 2026, ApJL, 996, L7. arXiv: 2511.15610,
Unified Kraft Break at ∼6500 K: A Newly Identified Single-star Obliquity Transition Matches the Classical Rotation Break

18. Ahlborn, F., **Ong**, J. M. J., Van Beeck, J., et al. (3 others). 2025, A&A, 704, A230. arXiv: 2509.26319,
Impact of near-degeneracy effects on linear rotational inversions for red giant stars
17. Hey, D., Li, Y., & **Ong**, J. M. J. 2025, AJ, 170, 304. arXiv: 2503.09690,
Asteroseismology of the Red Giant Companions to Gaia BH2 and BH3
16. Lindsay†, C. J., Hon, M., **Ong**, J. M. J., et al. (6 others). 2025, ApJ, 989, 189. arXiv: 2507.01091,
Precise Asteroseismic Ages for the Helmi Streams
15. Rui, N. Z., Fuller, J., & **Ong**, J. M. J. 2025, ApJL, 985, L39. arXiv: 2505.03169,
It's Not Just a Phase: Oblique Pulsations in Magnetic Red Giants and Other Stochastic Oscillators
14. Li, Y., Huber, D., **Ong**, J. M. J., et al. (26 others). 2025, ApJ, 984, 125. arXiv: 2502.00971,
K-dwarf Radius Inflation and a 10-Gyr Spin-down Clock Unveiled through Asteroseismology of HD 219134 from the Keck Planet Finder
13. Nielsen, M. B., **Ong**, J. M. J., Hatt, E. J., et al. (7 others). 2025, AJ, 169, 322,
Asteroseismology with PBjam 2.0: Measuring Dipole Mode Frequencies in Coupling Regimes from Main Sequence to Low-Luminosity Red Giants
12. Reyes†, C., Stello, D., **Ong**, J. M. J., et al. (3 others). 2025, Nature, 640, 338. arXiv: 2504.01828,
Acoustic modes in M67 cluster stars trace deepening convective envelopes
11. Hatt†, E. J., **Ong**, J. M. J., Nielsen, M. B., et al. (6 others). 2024, MNRAS, 534, 1060. arXiv: 2409.01157,
Asteroseismic Signatures of Core Magnetism and Rotation in Hundreds of Low-Luminosity Red Giants
10. Hon, M. T. Y., Li, Y., & **Ong**, J. M. J. 2024, ApJ, 973, 154. arXiv: 2407.09427,
9. Lindsay†, C. J., **Ong**, J. M. J., & Basu, S. 2024, ApJ, 965, 171. arXiv: 2402.12461,
Fossil Signatures of Main-sequence Convective Core Overshoot Estimated through Asteroseismic Analyses
8. Rui†, N. Z., **Ong**, J. M. J., & Mathis, S. 2024, MNRAS, 527, 6346. arXiv: 2310.19873,
Asteroseismic g-mode period spacings in strongly magnetic rotating stars
7. Lindsay†, C. J., **Ong**, J. M. J., & Basu, S. 2023, ApJ, 950, 19. arXiv: 2304.06770,
Near-Core Acoustic Glitches are Not Oscillatory: Consequences for Asteroseismic Probes of Convective Boundary Mixing
6. Campante, T. L., Li, T., **Ong**, J. M. J., et al. (23 others). 2023, AJ, 165, 214. arXiv: 2304.01570,
Revisiting the Red-giant Branch Hosts KOI-3886 and ι Draconis: Detailed Asteroseismic Modeling and Consolidated Stellar Parameters
5. Saunders†, D., **Ong**, J. M. J., & Basu, S. 2023, ApJ, 947, 22. arXiv: 2302.11696,
Evolutionary and Observational Properties of Red Giant Acoustic Glitch Signatures
4. Lindsay†, C. J., **Ong**, J. M. J., & Basu, S. 2022, ApJ, 931, 116. arXiv: 2204.08485,
Mixed Mode Asteroseismology of Red Giant Stars Through the Luminosity Bump
3. Petersburg‡, R. R., **Ong**‡, J. M. J., Zhao‡, L. L., et al. (13 others). 2020, AJ, 159, 187. arXiv: 2003.08851,
An Extreme-Precision Radial-Velocity Pipeline: First Radial Velocities from EXPRES
2. Blackman, R. T., **Ong**, J. M. J., & Fischer, D. A. 2019, AJ, 158, 40. arXiv: 1906.01653,
The Measured Impact of Chromatic Atmospheric Effects on Barycentric Corrections: Results from EXPRES
1. Viani, L. S., Basu, S., **Ong**, J. M. J., Bonaca, A., & Chaplin, W. J. 2018, ApJ, 858, 28. arXiv: 1803.05924,
Investigating the Metallicity-Mixing-length Relation

Other Co-authored Publications

34. Chowhan†, A., Bedding, T. R., Huber, D., et al. (J.M.J. **Ong** #1 of 5 others). 2026, MNRAS. arXiv: 2604.13501,
CHARA Interferometry and TESS Asteroseismology of the Core-Helium Burning Red Giant κ Cyg
33. Metcalfe, T. S., van Saders, J. L., Ayres, T. R., et al. 2026, AJ, 171, 287. arXiv: 2603.17001,
Antisolar Differential Rotation May Have Revived Magnetic Braking in the Subgiant 31 Aquilae
32. Li, Y., Liu, M. C., Dupuy, T. J., et al. 2026, ApJ, 1002, 13. arXiv: 2512.06083,
A Test of Substellar Evolutionary Models with High-precision Ages from Asteroseismology and Gyrochronology for the Benchmark System HR 7672AB
31. Schimak, L. S., Bedding, T. R., Crawford, C. L., et al. 2026, MNRAS, 546, stag151. arXiv: 2601.12773,
Testing red clump models with the asteroseismic binary KIC 10841730
30. Brinkman, C. L., Weiss, L. M., Huber, D., et al. 2025, AJ, 170, 109. arXiv: 2410.00213,
The Compositions of Rocky Planets in Close-in Orbits Tend to Be Earth-like
29. Weeks, A., Huber, D., Stokholm, A., et al. 2025, MNRAS, 541, 2459,
Asteroseismology of the ancient naked-eye exoplanet host star ν^2 Lupi
28. Teng, H.-Y., Dai, F., Howard, A. W., et al. 2025, AJ, 170, 51. arXiv: 2505.10804,
Stellar Obliquity of the Ultra-short-period Planet System HD 93963
27. Lee, R. A., Dai, F., Howard, A. W., et al. 2025, ApJL, 983, L36. arXiv: 2502.16087,
TOI-6324 b: An Earth-Mass Ultra-Short-Period Planet Transiting a Nearby M Dwarf
26. Saunders, N., Grunblatt, S. K., Huber, D., et al. (J.M.J. **Ong** #1 of 26 others). 2025, AJ, 169, 75. arXiv: 2410.11037,

TESS Giants Transiting Giants. VII. A Hot Saturn Orbiting an Oscillating Red Giant Star

25. Huber, D., Slumstrup, D., Hon, M., et al. 2024, ApJ, 975, 19. arXiv: 2407.17566,
Stellar Models are Reliable at Low Metallicity: An Asteroseismic Age for the Ancient Very Metal-Poor Star KIC 8144907
24. Chiti†, F., van Saders, J. L., Heintz, T. M., et al. (J.M.J. **Ong** #2 of 5 others). 2024, ApJ, 977, 15. arXiv: 2403.12129,
Rotation at the Fully Convective Boundary: Insights from Wide WD + MS Binary Systems
23. Hon, M., Huber, D., Li, Y., et al. (J.M.J. **Ong** #3 of 76 others). 2024, ApJ, 975, 147. arXiv: 2407.21234,
Asteroseismology of the Nearby K-Dwarf σ Draconis using the Keck Planet Finder and TESS
22. Metcalfe, T. S., van Saders, J. L., Huber, D., et al. 2024, ApJ, 974, 31. arXiv: 2408.05482,
TESS Asteroseismology of β Hydri: a Subgiant with a Born-again Dynamo
21. Dai, F., Howard, A. W., Halverson, S., et al. 2024, AJ, 168, 101. arXiv: 2407.21167,
An Earth-sized Planet on the Verge of Tidal Disruption
20. Lund, M. N., Basu, S., Bieryla, A., et al. 2024, A&A, 688, A13. arXiv: 2405.15919,
The K2 Asteroseismic KEYSTONE sample of Dwarf and Subgiant Solar-Like Oscillators. I. Data and Asteroseismic parameters
19. Gaidos, E., Thanathibodee, T., Hoffman, A., et al. (J.M.J. **Ong** #1 of 4 others). 2024, ApJ, 966, 167. arXiv: 2403.09970,
The Dynamic, Chimeric Inner Disk of PDS 70
18. Metcalfe, T. S., Buzasi, D., Huber, D., et al. 2023, AJ, 166, 167. arXiv: 2308.09808,
Asteroseismology and Spectropolarimetry of the Exoplanet Host Star λ Serpentis
17. Nielsen, M. B., Davies, G. R., Chaplin, W. J., et al. (J.M.J. **Ong** #2 of 5 others). 2023, A&A, 676, A117. arXiv: 2306.13577,
Simplifying asteroseismic analysis of solar-like oscillators: An application of principal component analysis for dimensionality reduction
16. Hon, M., Huber, D., Rui, N. Z., et al. 2023, Nature, 618, 917. arXiv: 2306.15877,
A Close-in Giant Planet Escapes Engulfment By Its Star
15. Jiang, C., Wu, T., Feinstein, A. D., et al. 2023, ApJ, 945, 20. arXiv: 2302.01102,
TESS Asteroseismic Analysis of HD 76920: The Giant Star Hosting an Extremely Eccentric Exoplanet
14. Gaulme, P., Borkovits, T., Appourchaux, T., et al. 2022, A&A, 668, A173. arXiv: 2210.05312,
KIC 7955301: A hierarchical triple system with eclipse timing variations and an oscillating red giant
13. Ball, W. H., Miglio, A., Chaplin, W. J., et al. 2022, MNRAS, 516, 3709. arXiv: 2208.02302,
Solar-like oscillations and ellipsoidal variations in TESS observations of the binary 12 Boötis
12. Huber, D., White, T. R., Metcalfe, T. S., et al. 2022, AJ, 163, 79. arXiv: 2108.09109,
A 20 Second Cadence View of Solar-type Stars and Their Planets with TESS: Asteroseismology of Solar Analogs and a Recharacterization of π Men c
11. Chontos, A., Huber, D., Kjeldsen, H., et al. 2021, ApJ, 922, 229. arXiv: 2012.10797,
TESS Asteroseismology of a Mensae: Benchmark Ages for a G7 Dwarf and Its M Dwarf Companion
10. Cunha, M. S., Roxburgh, I. W., Aguirre Børsen-Koch, V., et al. 2021, MNRAS, 508, 5864. arXiv: 2110.03332,
PLATO hare-and-hounds exercise: asteroseismic model fitting of main-sequence solar-like pulsators
9. Hill, M. L., Kane, S. R., Campante, T. L., et al. 2021, AJ, 162, 211. arXiv: 2107.13583,
Asteroseismology of ι Draconis and Discovery of an Additional Long-period Companion
8. Lillo-Box, J., Ribas, Á., Montesinos, B., et al. 2021, A&A, 653, A40. arXiv: 2106.05011,
Uncovering the ultimate planet impostor. An eclipsing brown dwarf in a hierarchical triple with two evolved stars
7. Nielsen, M. B., Davies, G. R., Ball, W. H., et al. 2021, AJ, 161, 62. arXiv: 2012.00580,
PBjam: A Python Package for Automating Asteroseismology of Solar-like Oscillators
6. Ball, W. H., Chaplin, W. J., Nielsen, M. B., et al. 2020, MNRAS, 499, 6084. arXiv: 2010.07323,
Robust asteroseismic properties of the bright planet host HD 38529
5. Brewer, J. M., Fischer, D. A., Blackman, R. T., et al. 2020, AJ, 160, 67. arXiv: 2006.02303,
EXPRES I. HD 3651 as an Ideal RV Benchmark
4. Jiang, C., Bedding, T. R., Stassun, K. G., et al. 2020, ApJ, 896, 65. arXiv: 2005.00272,
TESS Asteroseismic Analysis of the Known Exoplanet Host Star HD 222076
3. Blackman, R. T., Fischer, D. A., Jurgenson, C. A., et al. 2020, AJ, 159, 238. arXiv: 2003.08852,
Performance Verification of the EXtreme PREcision Spectrograph
2. Chaplin, W. J., Serenelli, A. M., Miglio, A., et al. 2020, NatAs, 4, 382. arXiv: 2001.04653,
Age Dating of an Early Milky Way Merger via Asteroseismology of the Naked-eye Star ν Indi
1. Huber, D., Chaplin, W. J., Chontos, A., et al. 2019, AJ, 157, 245. arXiv: 1901.01643,
A Hot Saturn Orbiting an Oscillating Late Subgiant Discovered by TESS

In Review

Hey, D., Huber, D., **Ong**, J. M. J., Stello, D., & Foreman-Mackey, D. 2024, submitted to ApJ. arXiv: 2403.02489,
Precise Time-Domain Asteroseismology and a Revised Target List for TESS Solar-Like Oscillators

Others, e.g. Large Collaboration and Instrument Papers (excluded from metrics)

Rauer, H., Aerts, C., Cabrera, J., et al. 2025, Experimental Astronomy, 59, 26. arXiv: 2406.05447,
The PLATO mission

Hart, K., Shappee, B. J., Hey, D., et al. 2023, arXiv e-prints. arXiv: 2304.03791,
ASAS-SN Sky Patrol V2.0

Ge, J., Zhang, H., Zang, W., et al. 2022, white paper. arXiv: 2206.06693,
ET White Paper: To Find the First Earth 2.0

Gaudi, S., Blackwood, G., Howard, A., et al. 2019, BAAS, 51, 232,
Extreme Precision Radial Velocity Working Group