

# Marc Teng Yen Hon

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**Principal Interests** Asteroseismology, Red Giants, Stellar Physics, Stellar Populations, Deep Learning, Artificial Intelligence, Machine Learning.

**Education** **UNSW Sydney, New South Wales, Australia**

*Doctor of Philosophy*, Astrophysics, July 2020

Thesis: Deep Learning in Asteroseismology

Advisor: Dennis Stello

**University of Wollongong, New South Wales, Australia**

*Bachelor of Science Advanced (First Class Honours)*, Physics and Mathematics, December 2015

Thesis: Magnetic Vortices in Micro-magnetic Materials

Advisor: Alexey Pan

<b>Awards and Scholarships</b>	Nvidia Developer GPU Grant	2018
	UNSW International Tuition Fee Scholarship	2016
	University of Wollongong (UoW) University Medal	2015
	UoW Australian Institute of Physics Prize	2015
	UoW Kittel-Lewis Prize	2015
	UoW David Martin Award	2015
	UoW Australian Institute of Physics Prize	2015

<b>Presentations</b>	TASC-5/KASC-12, MIT, Cambridge, USA (Contributed Talk)	2019
	TASC-4/KASC-11, Stellar Astrophysics Center, Aarhus, Denmark (Contributed Talk)	2018
	Computational Physics Lecture, UNSW Sydney, Sydney, Australia (Guest Lecture)	2018
	SAGE Seminar, Max Planck Institute for Solar System Research, Göttingen, Germany (Invited Talk)	2018
	Stars in Sydney, Macquarie University, Sydney, Australia (Contributed Talk)	2017
	TASC-3/KASC-10, Birmingham University, Birmingham, England (Contributed Poster)	2017

<b>Teaching Experience</b>	<b>Academic Tutor, School of Physics, UNSW Sydney</b>	
	Third-year Astrophysics	Semester 3 2019
	<b>Research Supervisor, School of Physics, UNSW Sydney</b>	
	Honours project co-supervisor	2019
	Taste of Research undergraduate program (6 students)	2017-2019
	<b>Teaching Assistant, University of Wollongong</b>	
<b>Community Service and Membership</b>	First-year Physics	2015
	Second-year Electromagnetism	2015
	<i>TESS</i> Asteroseismic Science Consortium Member	2016-present
	<i>Kepler</i> Asteroseismic Science Consortium Member	2016-present
	Astronomical Society of Australia Member	2017-present
	Journal Referee for <i>Astronomy &amp; Astrophysics</i>	2018-present
<b>Observing Experience</b>	Journal Referee for <i>Monthly Notices of the Royal Astronomical Society</i>	2019-present
	Journal Referee for <i>The Astrophysical Journal</i>	2020-present
	Anglo-Australian Telescope 3.9 meter, HERMES spectograph 9 nights	
<b>Proposals</b>	The K2-HERMES follow-up program, AAT, <b>69n, Co-I</b>	2016-2019
	The HERMES-TESS program, AAT, <b>31n, Co-I</b>	2016-2018
<b>Selected Press</b>	"How AI Can Determine the Future of Red Giants Like Our Sun", <a href="#">Nvidia Blog</a>	Aug 2017
	"Scientists Are Using Artificial Intelligence to Plot the Galaxy", <a href="#">Inverse</a>	May 2017
<b>References</b>	Dennis Stello	
	Associate Professor School of Physics UNSW Sydney	Email: d.stello@unsw.edu.au
	Daniel Huber	
	Assistant Astronomer (faculty)	Email: huberd@hawaii.edu
	Institute for Astronomy	
	University of Hawai'i – Manoa	

## PUBLICATION LIST

**Summary:** 18 total, 5 first author; 343+ citations; h-index<sup>1</sup>: 9

**First Author Publications**

1. **Hon, M.**; Bellinger, E. P.; Hekker, S.; et al.. “*Asteroseismic Ages of Subgiant Stars with Deep Learning*”, 2020, MNRAS (submitted).
2. **Hon, M.**; Stello, D.; García, R. A.; et al.. “*A search for red giant solar-like oscillations in all Kepler data*”, 2019, MNRAS, 485, 5616.
3. **Hon, M.**; Stello, D.; Zinn, J.. “*Detecting Solar-like Oscillations in Red Giants with Deep Learning*”, 2018, ApJ, 859, 64.
4. **Hon, M.**; Stello, D.; Yu, J.. “*Deep learning classification in asteroseismology using an improved neural network: results on 15 000 Kepler red giants and applications to K2 and TESS data*”, 2018, MNRAS, 476, 3233.
5. **Hon, M.**; Stello, D.; Yu, J.. “*Deep learning classification in asteroseismology*”, 2017, MNRAS, 469, 4578.

**Contributing Author Publications: Detecting/Characterizing Red Giant Oscillations**

6. Silva Aguirre, V.; Stello, D.; Stokholm, A; et al. including **Hon, M.**. “*Detection and Characterization of Oscillating Red Giants: First Results from the TESS Satellite*”, 2019, ApJL, 839, 2.
7. Grunblatt, S.; Huber, D.; Gaidos, E; et al. including **Hon, M.**. “*Giant planet occurrence within 0.2 AU of low-luminosity red giant branch stars with K2*”, 2019, AJ, 158, 227.
8. Bonanno, A.; Corsaro, E.; Del Sordo, F.; et al. including **Hon, M.**. “*Acoustic oscillations and dynamo action in the G8 sub-giant EK Eridani*”, 2019, A&A, 628, 7.
9. Huber, D.; Chaplin, W. J.; Chontos, A.; et al. including **Hon, M.**. “*A Hot Saturn Orbiting an Oscillating Late Subgiant Discovered by TESS*”, 2019, AJ, 157, 14.
10. Sharma, S.; Stello, D.; Bland-Hawthorn, J.; et al. including **Hon, M.**. “*The K2-HERMES Survey: Age and Metallicity of the Thick Disc*”, 2019, MNRAS, 490, 5335.

**Contributing Author Publications: Red Giant Evolutionary States**

11. Campante, T. L.; Corsaro, E.; Lund, M. N.; et al. including **Hon, M.**. “*TESS Asteroseismology of the known red-giant host stars HD 212771 and HD 203949*”, 2019, ApJ, 885, 35.
12. Elsworth, Y.; Hekker, S.; Johnson, J. A.; et al. including **Hon, M.**. “*Insights from the APOKASC Determination of the Evolutionary State of Red-Giant Stars by consolidation of different methods*”, 2019, MNRAS, 489, 4641.

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<sup>1</sup>Bibliographical source: NASA’s ADS, the most up-to-date source of astronomical journal publications.

13. Arentoft, T.; Grundahl, F.; White, T. R.; et al. including **Hon, M.**. “*Asteroseismology of the Hyades red giant and planet host  $\epsilon$  Tauri*”, 2019, A&A, 622, 12.
14. Silva Aguirre, V.; Bojsen-Hansen, M.; Slumstrup, D.; et al. including **Hon, M.**. “*Confirming chemical clocks: asteroseismic age dissection of the Milky Way disc(s)*”, 2018, MNRAS, 475, 5487.
15. Wu, Y.; Xiang, M.; Bi, S.; et al. including **Hon, M.**. “*Mass and age of red giant branch stars observed with LAMOST and Kepler*”, 2018, MNRAS, 475, 3633.
16. Yu, J.; Huber, D.; Bedding, T. R.; et al. including **Hon, M.**. “*Asteroseismology of 16,000 Kepler Red Giants: Global Oscillation Parameters, Masses, and Radii*”, 2018, ApJS, 236, 18.

#### Contributing Author Publications: Contributed Observational Data

17. Wittenmyer, R. A.; Sharma, S.; Stello, D.; et al. including **Hon, M.**. “*The K2-HERMES Survey. I. Planet-candidate Properties from K2 Campaigns 1-3*”, 2018, AJ, 155, 10.
18. Sharma, S.; Stello, D.; Buder, S.; et al. including **Hon, M.**. “*The TESS-HERMES survey data release 1: high-resolution spectroscopy of the TESS southern continuous viewing zone*”, 2018, MNRAS, 473, 2004.