

Daniel Hey  
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## RESEARCH POSITIONS

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**Institute for Astronomy, University of Hawaii** Hawaii  
*Variable Stars Postdoctoral Fellow* 2022 | present

## EDUCATION

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**University of Sydney** Sydney  
*PhD Astronomy & Astrophysics* 2018 | 2021  
Thesis: [Astero-seismology and Pulsation Timing of the A-type Stars Observed by Kepler](#)  
Advisors: Dr. Simon Murphy and Dr. Timothy Bedding

**University of Wollongong** Wollongong  
*B.Sc. Physics (Honours) (First class)* 2013 | 2017

## SELECTED GRANTS

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1. PI, **D. Hey**, NASA ADAP, 2023, **\$600,000**, *A Benchmark Sample for Stellar Astrophysics: Pulsation Timing of Intermediate-Mass Stars using Kepler, K2, and TESS*
2. PI, **D. Hey**, TESS Guest Investigator Cycle 6, 2023, **\$60,000**, *Wide binary Demographics and Exoplanet Occurrence around Intermediate-Mass stars using TESS pulsation timing*
3. Co-I, D. Huber, TESS Guest Investigator Cycle 5, 2022, \$60,000, *Precise Exoplanet Transits For The Brightest Stars Using Tess 20-Second Cadence Data*
4. PI, **D. Hey**, KECK HIRES observing time, 2022, *Identifying Binary Companions to Post-Mass-Transfer Helium-Burning Red Giants*
5. Co-I, V. Antoci, TESS Guest Investigator Cycle 4, 2021, *Astero-seismology Of A And F Stars*
6. Co-I, D. Huber, TESS Guest Investigator Cycle 4, 2021, \$60,000, *Ages of Young Moving Groups using High-Frequency Delta Scuti Stars with Regular Spacings*

## PUBLICATIONS

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Bibliography: [Google scholar](#)

- 9 first-author publications, 25 co-author
- Citations: 1,926
- h-index: 18

## SELECTED PUBLICATIONS

1. **D. Hey**, C. Aerts, *A&A* *Confronting sparse Gaia DR3 photometry with TESS for a sample of about 60,000 hot massive non-radial pulsators*, in press
2. **D. Hey**, D. Huber, B.J. Shappee, 2023, *AAS*, *The far side of the Galactic bulge revealed through semi-regular variables*, <https://doi.org/10.3847/1538-3881/ad01bf>
3. **D. Hey**, B.T. Montet, B.J.S. Pope, S.J. Murphy, and T.R. Bedding, 2021, *AJ*, *A Search for Transits among the Delta Scuti Variables in Kepler*, <https://doi.org/10.3847/1538-3881/ac1b9b>
4. **D. Hey**, S.J. Murphy, D. Foreman-Mackey et al., 2020, *JOSS*, *Maelstrom: A Python package for identifying companions to pulsating stars from their light travel time variations*, <https://doi.org/10.21105/joss.02125>
5. **D. Hey**, S.J. Murphy, D. Foreman-Mackey, T.R. Bedding, B.J.S. Pope, D.W. Hogg, 2020, *AJ*, *Forward Modeling the Orbits of Companions to Pulsating Stars from Their Light Travel Time Variations*, <https://doi.org/10.3847/1538-3881/ab7d38>
6. **D. Hey**, S.J. Murphy, T.R. Bedding, D.L. Holdsworth, D.R. Kurtz, 2019, *MNRAS*, *Six new rapidly oscillating Ap stars in the Kepler long-cadence data using super-Nyquist asteroseismology*, <https://doi.org/10.1093/mnras/stz1633>

## SELECTED SOFTWARE

1. D. Foreman-Mackey, R. Luger, E. Agol, et al., 2021, **JOSS**, *exoplanet: Gradient-based probabilistic inference for exoplanet data & other astronomical time series*, **936** monthly downloads
2. A. Prsa, K.E. Conroy, et al., ongoing, *Physics of Eclipsing Binaries*, **923** monthly downloads
3. **D. Hey**, W. Ball, 2019, ASCL, *Echelle: Dynamic echelle diagrams for asteroseismology*, **112** monthly downloads
4. J. Cardoso, C. Hedges, et al., 2018, ASCL, *Lightkurve: Kepler and TESS time series analysis in Python*, **3,169** monthly downloads

## TEACHING EXPERIENCE

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- Data Science in Python for Business (BUSS6002), University of Sydney, 2019-2021

## HONOURS AND AWARDS

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School of Physics Research Award in Breakthrough Research in Physical Sciences	2022
Australian Government Research Training Program Scholarship	2018
University of Sydney Merit Award Top-Up Scholarship	2018
Lastek Award for Best Thesis in Spectroscopy	2017

## CONFERENCES & TALKS

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TESS Science Conference III ( <i>invited</i> )	2024
TASC Conference, Porto	2024
AAS 243, New Orleans ( <i>invited</i> )	2023
TASC conference, University of Hawaii	2023
IfA Colloquium, University of Hawaii	2022
TESS Ninja 3, University of Sydney	2020
TESS Data Analysis, University of Hawaii	2020
TESS Science Conference I, Boston	2019
TESS and Kepler Asteroseismic Conference (contributed), Boston	2019
University of Sydney Morning Tea ( <i>invited</i> )	2019 & 2020
Third Australia-China Symposium on Terahertz Science ( <i>invited</i> )	2018

## SELECTED PRESS RELEASES

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- *Surprise! TESS Shows Ancient North Star Undergoes Eclipses*, 2020, <https://www.nasa.gov/feature/goddard/2020/surprise-tess-shows-ancient-north-star-undergoes-eclipses>
- *The 'beating hearts' of these pulsating stars create music to astronomers' ears*, 2020, <https://edition.cnn.com/2020/05/15/world/pulsating-stars-delta-scuti-scnrnd/index.html>

## ADVISING EXPERIENCE

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### UNDERGRADUATE

Ella Roselli, REU, <i>Columbia University</i>	2023
Kiana Ejercito, REU & continuing project, <i>University of Hawaii</i>	2022
Jessica Nagasako, REU, <i>Rochester University</i>	2022
Jean-Claude Dumaslan, REU, <i>University of Hawaii</i>	2022
Luke Benavitz, REU, <i>University of Hawaii</i>	2022
Kaleo Toguchi-Tani, REU, <i>Whitman College</i>	2022
Natasha Barac, Summer research project, <i>University of Sydney</i>	2021
William Giang, Summer research project, <i>University of Sydney</i>	2021

### GRADUATE

Keyan Gootkin, PhD candidate, <i>University of Hawaii</i>	2023
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