EMMA NABBIE

PhD Student, University of Southern Queensland | Emma.Nabbie@usq.edu.au | https://enabbie.github.io

RESEARCH INTERESTS

Dynamics of multi-planet systems, detection and characterization of exoplanets and system architectures using transit timing variations, radial velocity, and atmospheric analysis.

EDUCATION

University of Southern Queensland, Toowoomba, QLD, Australia
Doctor of Philosophy in Astronomy 2022-2025

Thesis: "Close-in Giant Planet Evolution," advised by Chelsea Huang

University of Florida, Gainesville, FL
Bachelor of Science, Highest Honors 2018-2022

Thesis: "Investigating the Relationship Between the Properties of Circumstellar Disks and their Parent Stars," advised by Elizabeth Lada

EMPLOYMENT

NASA Jet Propulsion Laboratory
Astrophysics & Space Sciences Intern Summer 2021

PROPOSALS (PI DENOTED WITH *)

JWST Guest Observer Programs

Cycle 2 GO 3385: The first comparative atmospheric study of a Jovian planet and a sub-Neptune in the TOI-1130 system (Co-I; PI Chelsea Huang) **(30h, USD 200,000)**

Competitive Telescope Time Awarded

European Southern Observatory

***CRIRES+**, 114.272Y, Probing Helium Escape from a Stripped Giant Planet Core **(4.5h)**

ESPRESSO, 111.24W6 (Co-I; PI Chelsea Huang), An emerging dichotomy in small planet masses: the compositions of stripped planet cores **(6.78h)**

European Space Agency

***CHEOPS**, AO-4, Confirming the Transit Timing Variations of a Neptune-Sized Inner Companion to a Hot Jupiter **(36 orbits)**

PUBLICATIONS

[1] **E. Nabbie** et al. (2024) "Transit timing variations reveal a high mutual inclination system around KOI-134". To be submitted to Nature Astronomy.

[2] **E. Nabbie** et al. (2024) "Surviving in the Hot Neptune Desert: The Discovery of the Ultra-Hot Neptune TOI-3261b", AJ, 168, 132. doi:10.3847/1538-3881/ad60be

[3] S. Dholakia, L. Palethorpe, et al. (2024) "Gliese 12 b, A Temperate Earth-sized Planet at 12 Parsecs Discovered with *TESS* and *CHEOPS*", MNRAS, 531, 1276. doi:10.1093/mnras/stae1152

[4] N. Lowson et al. (2024) "Two mini-Neptunes transiting the adolescent K-star HIP113103 confirmed with TESS and CHEOPS", MNRAS, 527, 1146. doi:10.1093/mnras/stad2756

[5] T. Fairnington*, **E. Nabbie**, et al. (2024) "TOI-5126: a hot super-Neptune and warm Neptune pair discovered by TESS and CHEOPS", MNRAS, 527, 8768. doi:10.1093/mnras/stad3036 **(significant contribution; * denotes undergraduate)**

CONFERENCE TALKS

TESS Science Conference III – "Transit Timing Variations of TESS Multi-Planet Systems: A Catalog From the First Five Years" (July 2024)

AAS 240 – "Refining Parameters for RV Amenable TESS Planet Candidates" (June 2022)

SEMINARS AND COLLOQUIA

University of Wisconsin-Madison Science Seminar Series (**Invited;** September 2024)

European Southern Observatory, Santiago, Chile (December 2023)

Harvard-Smithsonian Center for Astrophysics (**Invited;** November 2023)

MIT Exoplanet Tea (**Invited;** November 2023)

Carnegie Earth and Planetary Lab Journal Club (**Invited;** November 2023)

JPL Exoplanet Exploration Program (October 2023)

CONFERENCE POSTERS

Extreme Solar Systems V, Christchurch, NZ (March 2024) | Open Problems in the Astrophysics of Gas Giants, Puerto Natales, Chile (December 2023)

ACADEMIC SERVICE & LEADERSHIP

LOC Member, 10th Australian Exoplanet Workshop

OUTREACH

"Meet a Scientist" Panel Member, 2023 World Science Festival Queensland: Toowoomba

Day-long event educating primary- to high-school students about various careers in STEM

Australian Broadcasting Corporation Radio Brisbane's "Stargazing" Segment

Multiple appearances on a professional radio show to communicate news in astronomy to the public

SKILLS

Programming: Python
Python Libraries: Astropy, Emcee, Matplotlib, Numpy, Scipy, Pandas
Languages: English (native speaker), French (fluent)

Last updated: Sep. 5th, 2024