

Daniel O'Conner Peluso

Astrophysicist, Exoplanet Researcher, Educator, & Music Producer

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Education

PhD, Astrophysics University of Southern Queensland	02/2024
M.Ed., Science Curriculum & Instruction University of San Diego	08/2017
B.S. Planetary Science University of Pittsburgh (Graduated Cum Laude)	04/2016

Research Experience

Affiliate Researcher SETI Institute Focus: Exoplanets and citizen science	09/2023 - Present
PhD Thesis by Publication Research University of Southern Queensland Thesis: Democratizing & Expanding Exoplanet Follow-up with the Unistellar Citizen Science Network & Astronomy Modeling Instruction Advisors: Brad Carter, Duncan Wright, Carl Pennypacker, Franck Marchis, and Colleen Megowan-Romanowicz	07/2019 - 02/2024
Astronomer-in-Residence Central Idaho Dark Sky Reserve & Boise State University Focus: Dark sky research, citizen science, & outreach.	Upcoming: July 2024
Astronomy Modeling Instruction Researcher American Modeling Teachers Association Mentor: Colleen Megowan-Romanowicz Focus: Astronomy Modeling Instruction for exoplanets	07/2019 - Present
Unistellar Education Associate & Exoplanet Research Assistant SETI Institute Mentors: Franck Marchis, Tom Esposito, Paul Dalba Focus: Exoplanets, citizen science, and citizen science astronomy education integration	10/2020 - 08/2023
Unistellar Exoplanet Research Assistant Unistellar Mentors: Franck Marchis and Tom Esposito Focus: Develop Unistellar exoplanet citizen science network	07/2019 - 10/2020
Research Assistant, Martian Meteorites (NASA Space Grant) University of Pittsburgh Geology Department Mentor: Brian Balta Focus: Shergottite martian meteorites in magma chambers	08/2015 - 04/2016
Geoscience Data Specialist & Mickey Leland Energy Fellow National Energy Technology Laboratory (NETL) Mentor: Kelly Rose Focus: Geoscience sample repositories and database systems	06/2015 - 06/2016

Research Publications: In Production or Peer-Review

Peluso, Daniel O., Dalba, Paul A., Wright, Duncan, Esposito, Thomas M. . . . U.C. Scientists. *Confirming the Warm and Dense Sub-Saturn TIC 139270665 b with the Automated Planet Finder and the Unistellar Citizen Science Network*, **accepted for publication** and currently (02/2024) **in production** with the *Astronomical Journal* (AJ).

Peluso, Daniel O., Megowan-Romanowicz, C. *Astronomy Modeling Instruction with Exoplanets: Motivating Science Teaching and Learning in the 21st Century*, currently **in peer-review** with the *Journal of Science Teacher Education* (JSTE).

Refereed Research Publications

[Google Scholar Profile](#)

Peluso, Daniel O., Esposito, T. M., Marchis, F., Dalba, P. A., Sgro, L., Megowan-Romanowicz, C., ... & Scientists, U. C. (2023). The Unistellar Exoplanet Campaign: Citizen Science Results and Inherent Education Opportunities. *Publications of the Astronomical Society of the Pacific*, 135(1043), 015001. doi: [10.1088/1538-3873/acia58](https://doi.org/10.1088/1538-3873/acia58)

Sgro, L. A., Esposito, T. M., Blaclard, G., Gomez, S., Marchis, F., Filippenko, A. V., **Peluso, D.O.**, . . . Arnaud, Y. (2023). Photometry of Type II Supernova SN 2023ixf with a Worldwide Citizen Science Network. *Research Notes of AAS*, 7(7), 141. doi:[10.3847/2515-5172/ace41f](https://doi.org/10.3847/2515-5172/ace41f)

Graykowski, A., Lambert, R. A., Marchis, ... **Peluso, D.**, ..., & Transom, I. M. (2023). Light Curves and Colors of the Ejecta from Dimorphos after the DART Impact. *Nature*, 1-3. doi: [10.1038/s41586-023-05852-9](https://doi.org/10.1038/s41586-023-05852-9)

Buie, M. W., Keeney B. A., ..., **Peluso, D.** (2021). Size and Shape of (11351) Leucus from Five Occultations. *The Planetary Science Journal*, 2(5), 202. doi:[10.3847/psj/ac1f9b](https://doi.org/10.3847/psj/ac1f9b)

Dalba, P. A., Kane, S. R., ..., **Peluso, D.** (2021). Giant Outer Transiting Exoplanet Mass (GOT 'EM) Survey. II. Discovery of a Failed Hot Jupiter on a 2.7 Yr, Highly Eccentric Orbit*. *The Astronomical Journal*, 162(4), 154. doi:[10.3847/1538-3881/ac134b](https://doi.org/10.3847/1538-3881/ac134b)

Abstracts & White Papers

Peluso, D. O., Megowan-Romanowicz, C., Pennypacker, C., Marchis, F., . . . & Sgro, L. *Astronomy Modeling Instruction with Exoplanets & the Unistellar Telescope Network*. In *AGU Fall Meeting 2023*. AGU. [Abstract ID: 1251176](#). [Paper Number: ED13A-03](#).

Esposito, T., Avsar, A., Marchis, F., Dalba, P., & **Peluso, D.** (2022). Hot and Cold Jupiters: Exoplanet Transit Results from the Unistellar Citizen Scientist Network. In *American Astronomical Society Meeting Abstracts* (Vol. 54, No. 6, pp. 339-07).

Marchis, F., Esposito, T., Blaclard, G., Asencio, J., Klavans, V., **Peluso, D. O.**, ... & Carter, B. (2022). Citizen Science and Scientific Results from the World's Largest Network of Backyard Astronomers. *Authorea Preprints*.

Esposito, T. M., Avsar, A., **Peluso, D. O.**, Marchis, F., Santana, P., Klavans, V., & Nachury, L. (2021). TESS Planet Candidate Follow-up by Citizen Scientists in the Global Unistellar eVscope Network. In *Posters from the TESS Science Conference II (TSC2)* (p. 155).

Marchis, F., **Peluso, D.**, Esposito, T., Megowan-Romanowicz, C., Pennypacker, C., & Unistellar Science Team. (2021). A Large Citizen Science Astronomy Network for All of Us. In *American Astronomical Society Meeting Abstracts* (Vol. 53, No. 1, pp. 412-06).

Esposito, T. M., Marchis, F., **Peluso, D.**, Avsar, A., & Zellem, R. T. (2021). Transiting Exoplanet Followup by Citizen Scientists with the Global Unistellar eVscope Network. In *American Astronomical Society Meeting Abstracts* (Vol. 53, No. 1, pp. 239-03).

Marchis, F., Esposito, T., Asencio, J., Demuys, I., **Peluso, D.**, ... & Nachury, L. (2020). First Results With a Network of Small Digital & Smart Telescopes: Citizen Science For Astronomy. In *AAS/Division for Planetary Sci. Meeting Abstracts* (Vol. 52, No. 6, pp. 413-02).

Marchis, F., Esposito, T., Asencio, J., Demuys, I., **Peluso, D.**,... & Nachury, L. (2020). Enabling and Empowering Citizen Science in Astronomy With a Network of Small Digital & Smart Telescopes. In *AGU Fall Meeting Abstracts* (Vol. 2020, pp. ED025-06).

Marchis, F., **Peluso, D.** *Unistellar and its Largest Citizen Science Astronomy Network: From Planetary Defense to Exoplanet Transits*. SPIE. *Astronomical Telescopes + Instrumentation*. Paper No. AS103-48 submitted for June 2020 conf, Yokohama, Japan.

Marchis, F., Arbouch, E., **Peluso, D.**, Harman, P.,... & Veres, P. (2019). Citizen Science Astronomy with the Unistellar Network: From Planetary Defense to Exoplanet Transits. In *AGU Fall Meeting 2019*. AGU. [Abstract ED14A-03](#).

Peluso, Daniel O. and Balta, J. Brian. (2016) *Rare Earth Element Variations in Recharging Martian Magma Chambers: Impact on Sphertite Compositions*. 47th Lunar & Planetary Sci. Conference. [Abstract #1789](#).

Peluso, D. O., Bean, A., Rose, K., et al. *Geoscience Collection Management Systems: A Beginners Guide*. NETL-TRS-7-2016. U.S. Dept. of Energy, National Energy Technology Laboratory: Pittsburgh, PA, 2016.

Bean, A., **Peluso, D. O.**, Rose, K., et al. *Assessment of & Recommendations for Management of NETL's Physical and Digital Geo-Sample Assets*. NETLTRS-5-2016. U.S. Dept. of Energy, National Energy Technology Laboratory: Pittsburgh, PA, 2016.

Teaching Experience

Astronomy Instructor
Napa Valley College

2024 - Present

Astrophysics Teacher Griffin Academy	2023 - Present
Astronomy Modeling Instruction with Exoplanets American Modeling Teachers Association University of Pacific [Graduate Level]	2022 - Present
Physics Teacher Mare Island Technology Academy	2018-2020
Physics Teacher Summit K2	2017-2018

Mentoring Experience

Alex Schulz, University of Geneva Topic: NASA Exoplanet Watch follow-up observations in prep for student first-author JAAVSO paper submission	08/2022 - Present
Hanna Johnson, Deer Valley High School Topic: Citizen science (exoplanets) with the Unistellar network	07/2023 - Present
Jeff Zhou, Waldorf High School Topic: Citizen science with the Unistellar network. Artifact	01/2023 - 06/2023

Computer Skills

Languages: Python, Jupyter notebooks, LaTeX, HTML

Methods: MCMC, Bayesian inference/analysis, Chi-squared tests, time-series analysis, transit photometry, radial velocity measurements, light curve analysis, data reduction and image processing

Software: DS9, JS9, MATLAB, Slack, Adobe Professional Suite, Final Cut Pro, Maya, Microsoft Office Suite, Pro Tools, Logic Pro X

Contributed Talks

- Peluso, D. O., et al. (12/2023). *Astronomy Modeling Instruction with Exoplanets & the Unistellar Telescope Network*. American Geophysical Union (AGU). San Francisco, CA, USA.
- Peluso, D.O. et al. (9/2023). *Improving Competency, Motivation, & Engagement in Teachers & Students with Astronomy Modeling Instruction with Exoplanets*. NSF NOIRLab Fall 2023 Project ASTRO Workshop. Tucson, AZ, USA. [Remotely Given]
- Peluso, D.O. et al. (8/2023). *Citizen Science Exoplanet Detections with the Unistellar Network and Improving K-12 Science Education with the Astronomy Modeling Pedagogy*. Global Hands-on Universe Conf.. Kagoshima, Japan. [Remotely Given]
- Peluso, D.O. et al. (7/2023). Peluso, D.O. (8/2023). *Citizen Science Exoplanet Detections with the Unistellar Network and Improving K-12 Science Education with the Astronomy Modeling Pedagogy*. Chabot Space & Science Center. Oakland, CA, USA.
- Peluso, D.O. et al. (7/2023). *Improving Competency, Motivation, & Engagement in Teachers & Students with Astronomy Modeling Instruction with Exoplanets*. American Assoc. of Physics Teachers Conf. Summer 2023. Sacramento, CA, USA. Abstract ID 9101.
- Peluso, D.O. et al. (6/2023). *Citizen Science Exoplanet Detections with the Unistellar Network and Improving K-12 Science Education with the Astronomy Modeling Pedagogy*. Colloquial Talk, University of Southern Queensland. Toowoomba, Australia.
- Peluso, D.O. et al. (8/2022). *The Unistellar Citizen Science Exoplanet Network: Early Results and Prospects for Future Growth in Education and Citizen Science*. Global Hands-on Universe Conference. Global virtual conference.
- Peluso, D.O. et al. (8/2020). *Expanding Exoplanet Research: Student Inquiry-Based Citizen Science Pedagogy & Networked Telescopes*. Global Hands-on Universe Conference. Global virtual conference.
- Peluso, D.O. et al. (6/2020). *Expanding Exoplanet Research: Student Inquiry-Based Citizen Science Astronomy with Unistellar eVsopes*. Colloquial Talk, University of Queensland. Brisbane, Australia. [Remotely Given]
- Peluso, D.O. (12/2016). *The Quest for Another Earth*. American Geophysical Union (AGU). San Francisco, CA, USA.

Outreach & Accomplishments

- Engage public high school students through the "Gee Whiz Astronomy" program, bridging my Vallejo, CA students with peers in Chile, bolstering math and science proficiency among Hispanic students, and fostering global interest in tech careers.
- Feature blog post on astronomy ed. on the **American Astronomical Society** (AAS) Education Blog in December 2022. [LINK](#)
- Led Galaxy Explorer high school students at Chabot Space & Science Center in observation of exoplanet and including them in upcoming published work in major astronomical journal. [BLOG LINK](#)
- Developed several science education and outreach videos featured on the [SETI Institute's YouTube channel](#)
- Guest on the American Modeling Teachers Association (AMTA) Science Modeling Talks podcast in [2020](#) and [2022](#)

- Guest on **Neil deGrasse Tyson's** new **StarTalk** spin-off show, StarTalk All-Stars, to discuss science education and astrobiology with **Dr. David Grinspoon** (episode, [Are You Smarter Than an 8th Grader](#), aired 1 Feb. 2017)
- Award winning self-produced and written exoplanet science documentary, [The Quest for Another Earth](#), featured at international science conferences.
- Secured rights to feature music of internationally known rock group, **Muse**, in self-produced video of the International Space Station (ISS) transiting the Moon. The video was featured on [Muse's Twitter](#) to over 2.6 million fans worldwide. [VIDEO LINK](#).
- **NASA Space Grant** awarded for planetary science research at University of Pittsburgh.
- Invited to write science communication blog posts on the SETI Institute's [Cosmic Diary](#) blog.
- Feature on [SETI Institute's website](#) for capturing the transit of Mercury in Nov. 2019 with the Unistellar eVscope.
- Accomplished singer-songwriter and music producer with over **15 years experience recording and releasing original music with projects such as Dan Peluso Band, Falling Andes, and Conner Eko**
- Original **self-produced music** has been featured in podcasts, music blogs, and on terrestrial and **satellite radio (Sirius XM)**