

# Andrea Zorzi

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## Education

- 2020 – Present **Stanford University** Stanford, CA, USA  
PhD Candidate in Earth and Planetary Sciences  
Mentor: Prof. Laura Schaefer
- 2017 – 2019 **Delft University of Technology** Delft, The Netherlands  
MSc in Aerospace Engineering  
Mentors: Prof. Imke de Pater and Prof. Daphne Stam
- 2014 – 2017 **Università degli Studi di Padova** Padova, Italy  
BSc in Aerospace Engineering  
Mentor: Prof. Carlo Bettanini Fecia di Cossato

## Research Experience

- Oct 2019 – Jun 2020 **Max Planck Institute for Solar System Research** Göttingen, Germany  
Graduate Assistant  
Mentors: Dr. Ladislav Rezac and Dr. Paul Hartogh  
Modeling of neural network for automated recognition of sub-millimeter rotational transitions of water isotopes in non-LTE conditions and application on Rosetta's MIRO radiances data. Work published in *Astronomy & Astrophysics*.
- Sep 2018 – Feb 2019 **University of California, Berkeley** Berkeley, CA, USA  
Visiting Student Researcher  
Mentor: Prof. Imke de Pater  
Radiative transfer modeling of Neptune's atmosphere HST visible data between 1994 and 2018. Published in TU Delft Repository as MSc Thesis.

## Honors and Scholarships

- Sep 2022 – Sep 2025 **NASA FINESST Fellow**  
Fellowship for doctoral project "Impact-Induced Formation of Prebiotic Molecules on Terrestrial Planets".
- May 2024 – Aug 2024 **JPL Planetary Science Summer School Participant**  
Design of New Frontier mission class Titan orbiter (Session 1).
- Sep 2019 **Early Career Scientist bursary (EPSC-DPS)**  
Europlanet Society sponsorship to support participants from under-represented states and early career researchers at the EPSC-DPS Meeting.
- Aug 2018 **Justus and Louise Van Effen Research Grant (TU Delft)**  
Funding for short-term research stay (6 months) at one of the universities that belong to the top-20 for Engineering and Technology Universities.

## Publications

- Chaverot, G., Zorzi, A., Ding, X., Itcovitz, J., Fan, B., Bhatnagar, S., et al. (2024). Resilience of snowball Earth to stochastic events. *Geophysical Research Letters* 51, e2024GL109512.
- Chavez, E., de Pater, I., Redwing, E., Molter, E. M., Roman, M. T., Zorzi, A., Alvarez, C., Campbell, R., de Kleer, K., Hueso, R., Wong, M. H., Gates, E., Lynam, P. D., Davies, A. G., Aycocock, J., McIlroy, J., Pelletier, J., Ridenour, A., and Stickel, T. (2023). Evolution of Neptune at near-infrared wavelengths from 1994 through 2022. *Icarus* 404, 115667.
- Zorzi, A., Tikoo, S. M., Beroza, G. C., & Sleep, N. H. (2022). Reevaluating links between meteorite impacts and early Cenozoic global warming. *Geophys. Res. Letters*, 49, e2022GL099313.
- Rezac, L., Zorzi, A., Hartogh, P., Pinzón-Rodríguez, O., Marshall, D., Biver, N., Bockelée-Morvan, D., Crovisier, J., Ip, W. H., Gulkis, S., and the MIRO team (2021). Gas terminal velocity from MIRO/Rosetta data using neural network approach, *A&A* 648, A21.
- Zorzi, A., Tikoo, S. M., Sori, M. M., and Bramson, A. M. Lifetime of Impact-Induced Subglacial Hydrothermal Systems on Mars. *In review*.
- Zorzi, A., and Schaefer, L. K. Impact Induced Formation of Prebiotic Species on Terrestrial Planets. *In prep*.
- Zorzi, A., and Schaefer, L. K. Thermal Evolution of Non-synchronous Lava Worlds. *In prep*.

## Conference/Seminars Presentations

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| Oct 2024  | <b>Lifetime of Impact-Induced Subglacial Hydrothermal Systems on Mars</b><br><u>Zorzi, A.</u> , Tikoo, S. M., Sori, M. M., and Bramson, A. M.<br>Oral presentation for the 2024 DPS Meeting.  |
| Mar 2024  | <b>Thermal Evolution of Rotating Lava Worlds</b><br><u>Zorzi, A.</u> , Schaefer, L.<br>Poster for the Extreme Solar Systems V Meeting.  |
| Oct 2023  | <b>Prebiotic species formation during terrestrial planets late accretion using a neural network approach</b><br><u>Zorzi, A.</u> , Schaefer, L.<br>Oral presentation for the 2023 DPS-EPSC Joint Meeting.   |
| Sept 2023 | <b>Impact-Induced Formation of Prebiotic Molecules on Terrestrial Planets</b><br><u>Zorzi, A.</u> , Schaefer, L.<br>Poster for 2022 AGU Fall Meeting (Dec 2022) and 2023 Planet ESLAB (Mar 2023). Talk for UCSC PLUNCH Seminar (Jan 2023) and BAPS (Sept 2023).                           |
| Dec 2022  | <b>Termination of Snowball States: Constraining the Climate Forcing of Stochastic Events</b><br>Ding, X., Chaverot G., Fan, B., Graham, R.J., Itcovitz, J., Ji, A., Macdonald, F., Mittal, T., Pierrehumbert, R. and <u>Zorzi, A.</u><br>Oral presentation for the 2022 AGU Fall Meeting. |

Dec 2021

**Could Cenozoic Impacts Have Triggered Rapid Global Warming?**

Zorzi, A., Tikoo, S. M., Beroza, G. C., and Sleep, N. H.

Poster for the 2021 AGU Fall Meeting.

Sep 2019

**Long-term evolution of Neptune's atmosphere**

Zorzi, A., Molter, E., de Pater, I., Luszcz-Cook, S.H., Tollefson, J., and Wong, M.H.

Poster for the 2019 ESPC-DPS Joint Meeting.