

Dr. Harry A. Ballantyne

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Employment

- 08/2024–
Present **Data scientist**, Universitätsspital Zürich, Switzerland (Supervisor: Prof. Daniel Barthelmes)
- 01/2024–
07/2024 **Research associate**, University Hospital Basel, Switzerland (Supervisor: Prof. Gunther Meinlschmidt)
- 09/2022–
12/2022 **Postdoctoral research associate**, University of Bern, Switzerland (Supervisor: Dr. Martin Jutzi)
- 08/2018–
09/2022 **PhD student**, University of Bern, Switzerland (Supervisor: Dr. Martin Jutzi)

Education

University of Bern

PHD IN PHYSICS WITH SPECIAL QUALIFICATION IN ASTRONOMY

Switzerland

08/2018 - 09/2022

- Advisor: Dr. Martin Jutzi
- Thesis title: Planetary-scale impacts and their geophysical consequences
- Grade: Summa cum laude honours

University of Sheffield

MPHYS PHYSICS AND ASTROPHYSICS WITH STUDY ABROAD

United Kingdom/Australia

09/2014 - 06/2018

- Advisor: Dr. Richard Parker
- Thesis title: The effects of binary evolution on planet formation
- Grade: First class honours
- Study Abroad: One year as an exchange student at Monash University, Australia

Skills

Programming Languages:

Python ★★★★★ R ★★★★★ C++ ★★★★★ Latex ★★★★★☆ Bash ★★★★★☆

Fortran ★★★★★☆ SQL ★★★★★☆ Excel ★★★★★☆ HTML ★★☆☆☆ CSS ★★☆☆☆

Version Control:

Git

Languages:

English (native), German (A2 level)

Publications

- Ballantyne, H. A.**, Asphaug, E., Denton, C. A., Emsenhuber, A. & Jutzi, M. (2024). Sputnik Planitia as an impactor remnant indicative of an ancient rocky mascon in an oceanless Pluto. *Nature Astronomy*. doi:10.1038/s41550-024-02248-1
- Cheng, K. W., **Ballantyne, H. A.**, Golabek, G. J., Jutzi, M., Rozel, A. B. & Tackley, P. J. (2024). Combined impact and interior evolution models in three dimensions indicate a southern impact origin of the Martian Dichotomy. *Icarus*. doi:10.1016/j.icarus.2024.116137
- Cheng, K. W., Rozel, A. B., Golabek, G. J., **Ballantyne, H. A.**, Jutzi, M. & Tackley, P. J. (2024). Mars's Crustal and Volcanic Structure Explained by Southern Giant Impact and Resulting Mantle Depletion. *Geophysical Research Letters*, 51, e2023GL105910. doi:10.1029/2023GL105910
- Ballantyne, H. A.**, Jutzi, M., Golabek, G. J., Mishra, L., Cheng, K. W., Rozel, A. B. & Tackley, P. J. (2023). Investigating the feasibility of an impact-induced Martian Dichotomy. *Icarus*, 392, 115395. doi:10.1016/j.icarus.2022.115395
- Ballantyne, H. A.**, Espaas, T., Norgrove, B. Z., Wootton, B. A., Harris, B. R., Pepper, I. L., Smith, R. D., Dommett, R. E., Parker, R. J. (2021). Long-term stability of planets in and around binary stars. *MNRAS*, 507, 4507. doi:10.1093/mnras/stab2324

Mentoring

09/2021– **Janis Witmer (co-supervised)**, Bachelor's student, Project: *Hit-and-run simulations of the Psyche forming impact* University of
Bern

Teaching Experience

09/2022– **Physics for medicine majors (bachelor's course)**, Teaching assistant for experiments and seminars
12/2022
02/2022– **Physics practical course for biology majors (bachelor's course)**, Teaching assistant for experiments
05/2022
02/2021– **Advanced statistical methods for physicists (master's course)**, Teaching assistant and examiner
09/2021
02/2020– **Physics I practical course**, Teaching assistant for experiments
05/2020

Presentations

Extensive experience presenting to a large audience, including international conferences such as:

- Lunar and Planetary Science Conference, Houston, USA (2021, 2022)
- Europlanet Science Congress, Various European Locations (2019, 2020, 2021, 2022)
- European Geosciences Union General Assembly, Vienna, Austria (2019)

Invited talks at various prestigious institutes including:

- University of Zurich (Zurich Planetary Seminar, 2022)
- Deutsches Zentrum für Luft und Raumfahrt, Berlin (3rd Workshop on Giant Collisions, 2022)
- ETH Zurich (ETH Zurich Planetary Geophysics Seminar, 2020)