Dr. CLAIRE MARIE GUIMOND

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Appointments

Postdoctoral Research Associate in Planetary Atmospheres

University of Oxford, Department of Physics, Oxford, UK (2023-)

Brownlee Junior Research Fellow (non-stipendiary)

Linacre College, Oxford, UK (2023-)

Qualifications

Doctor of Philosophy in Earth Sciences

University of Cambridge, UK (2019-2023)

• supervisors: Dr. Oliver Shorttle & Dr. John Rudge

• thesis title: Inside-out diversity of rocky planets

Grants

Principal investigator

• Oxford University Press John Fell Fund, Oxoplanets: Interdisciplinary Planetary Research at Oxford (2024–2026)

Selected awards

- Harding Distinguished Postgraduate Research Scholarship, Cambridge Trust
- Alexander Graham Bell Canada Graduate Scholarship Doctoral, Natural Sciences and Engineering Research Council of Canada (NSERC), declined
- Postgraduate Scholarship Doctoral, NSERC
- Canada Graduate Scholarship Master's, NSERC

Publications

Invited review articles

Guimond C. M., Wang H., Seidler F., Sossi P., Mahajan A., Shorttle O. (2024). From stars to diverse mantles, melts, crusts, and atmospheres of rocky planets. *Reviews in Mineralogy and Geochemistry*, 91.

Peer-reviewed

- Law R., Born A., Voigt P., MacGregor J., **Guimond C.M.** Exploring the conditions conducive to convection within the Greenland Ice Sheet [submitted to *Geophysical Research Letters*].
- Hammond M., **Guimond C.M.**, et al. (2025). Reliable Detections of Atmospheres on Rocky Exoplanets with Photometric JWST Phase Curves. *The Astrophysical Journal Letters* [in press].
- **Guimond C. M.,** Shorttle O., Rudge J.F. (2023). A mineralogical reason why all exoplanets cannot be equally oxidising. *Monthly Notices of the Royal Astronomical Society*, 525, 3.
- **Guimond C. M.**, Shorttle O., Rudge J.F. (2023). Mantle mineralogical limits to rocky planet water inventories. *Monthly Notices of the Royal Astronomical Society*, 521, 2.
- **Guimond C. M.**, Rudge J.F., Shorttle O. (2022). Blue marble, stagnant lid: Could dynamic topography avert a waterworld? *The Planetary Science Journal*, 3, 66.
- **Guimond C. M.,** Noack L., Ortenzi G., Sohl F. (2021). Low volcanic outgassing rates for a stagnant lid Archean earth with graphite-saturated magmas. *Physics of the Earth and Planetary Interiors*, 320.
- Ortenzi G., Noack L., Sohl F., **Guimond C. M.**, Grenfell J. L., Dorn C., Schmidt J. S., Vulpius S., Katyal N., Kitzmann D., Rauer H. (2020). Mantle redox state drives outgassing chemistry and atmospheric composition of rocky planets. *Scientific Reports*, 10.
- **Guimond C. M.** & Cowan N. B. (2019). Three direct imaging epochs could constrain the orbit of Earth 2.0 inside the habitable zone. *The Astronomical Journal*, 157, 5.
- **Guimond C. M.** & Cowan N. B. (2018). The direct imaging search for Earth 2.0: Quantifying biases and planetary false positives. *The Astronomical Journal*, 155, 230.

Invited talks & seminars

- Astrophysics seminar, **University of Exeter**, UK (2024)
- Geophysical Fluid Dynamics seminar, ETH Zurich, CH (2024)
- Geophysics colloquiuum, **University College London**, UK (2024)
- Exoplanet Geoscience workshop, International Space Science Institute, CH (2024)
- Planetary exploration seminar, Birkbeck University of London, UK (2023)
- Invited talk, American Geophysical Union Fall Meeting, USA (2022)
- CLEVER Planets Seminar Series, Rice University, USA (2022)

Selected service

Chair, Oxford Planets Day Meeting (2025)

• Originator of and Chair of organising committee for local scientific meeting.

Host, Rocky Worlds Discussions (2024-)

• Responsible for planning and chairing monthly virtual seminar series.

Social Officer, Harding Postgraduate Scholarship Programme (2022–2023)

• Responsible for organising large (100-person) social events, including residential trip.