

# CLAIRE MARIE GUIMOND

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## Education

Doctor of Philosophy in Earth Sciences (2019–)  
University of Cambridge, Cambridge, England, UK  
• *supervisor*: Dr. Oliver Shorttle

Master of Science in Earth & Planetary Science (2016–2018)  
McGill University, Montréal, Québec, Canada  
• cGPA: 4.0 (out of 4.0)  
• *supervisor*: Dr. Nicolas Cowan    *thesis title*: The direct imaging search for Earth 2.0

Bachelor of Science, honours in Earth System Science (2011–2015)  
with Minor Concentration English Literature  
McGill University, Montréal, Québec, Canada  
• cGPA: 3.7 (out of 4.0)  
• major specialization GPA: 3.9  
• *supervisor*: Dr. Boswell Wing    *thesis title*: Controls on sulfur isotope fractionation in deep sea pore water

## Publications

### Peer-reviewed

**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.

### Submitted/under review

**Guimond, C. M.**, Noack, L., Ortenzi, G., and Sohl, F. The early Earth atmosphere told by mantle convection and outgassing. Submitted to *Earth & Planetary Science Letters*. Ref EPSL-D-19-01192

Ortenzi, G., Noack, L., Sohl, F., **Guimond, C. M.**, Grenfell, J. L., Dorn, C., Schmidt, J. M., Vulpius, S., Katyal, N., Kitzmann, D., and Rauer, H. The strong dependence of degassed composition upon the interior redox state of rocky exoplanets. Submitted to

### Non peer-reviewed

**Guimond, C. M.** & Cowan, N. B. (2019). Determining orbits of directly imaged exoplanets within the habitable zone. American Astronomical Society, AAS Meeting #233, abstract id. 402.07

HabEx team, 200+ contributors including **Guimond, C. M.** (2019). The Habitable Exoplanet Observatory Final Report. Technical document prepared for NASA.

LUVOR team, 200+ contributors including **Guimond, C. M.** (2018). The LUVOR Mission Concept Study Interim Report. Technical document prepared for NASA.

Halevy, I., Wing, B. A., Wenk, C., & **Guimond, C. M.** (2015). Sedimentary environments and preservation biases limit sulfur isotope fractionation observed in pyrite, despite large microbial fractionations. American Geophysical Union, Fall Meeting 2015, abstract id. B24A-08

In preparation

**Guimond, C. M.** & Barnes, R. A feedback between tidal and radiogenic heating in planetary interiors. *In prep.*

## Awards

2019/2020

- Harding Distinguished Postgraduate Research Scholarship (Cambridge Trust)

2017/2018

- Carl Reinhardt Fellowship (McGill University)
- Graduate Excellence Award (McGill University)
- Graduate Mobility Award (McGill University)
- Trainee Fellowship (Technologies for Exoplanetary Sciences CREATE program)
- X-I2 Internship Award (Technologies for Exoplanetary Sciences CREATE program)

2016/2017

- Robert Wares Fellowship (McGill University)
- Carl Reinhardt Fellowship (McGill University)
- Graduate Excellence Award (McGill University)

2015/2016

- Canada Graduate Scholarship - Master's (NSERC)

## Invited seminars

2019

- "Direct imaging of habitable zone planets,"  
Max Planck Institute for Solar System Research, Göttingen, Germany
- "The origin of Earth's secondary atmosphere,"  
Freie Universität Berlin, Berlin, Germany

## Contributed talks (external)

2019

- "Determining orbits of directly imaged exoplanets within the habitable zone,"  
233<sup>rd</sup> Meeting of the American Astronomical Society, Seattle WA, USA
- "How well can we image Earth-sized planets?"  
Rencontres exobiologiques pour doctorants, Le Teich, France
- "Habitability of super-Earths,"  
Europlanet Early Career Annual Week, Lisbon, Portugal

2018

- "The Large UV-Optical-IR Surveyor,"  
Future of Space Astronomy in Canada, Montreal QC, Canada
- "Finding Earth 2: Blue dot or red herring?"  
Astrophysical Frontiers in the Next Decade and Beyond, Portland OR, USA
- "Finding Earth 2: Blue dot or red herring?"  
CRAQ annual meeting, Saint-Alexis QC, Canada

2017

- "Biases and planetary false positives in the search for Earth twins,"  
Exoclipse conference, Boise ID, USA
- "Looking for Earth twins on the back of an envelope,"  
CRAQ annual meeting, Saint-Alexis QC, Canada
- "Biases and planetary false positives in the search for Earth twins,"  
Technologies for Exoplanetary Science symposium, Montreal QC, Canada

Contributed posters	<p>2018</p> <ul style="list-style-type: none"> <li>• "Biases and planetary false positives in the search for Earth twins," Canadian Astronomical Society Annual Meeting, Victoria BC, Canada</li> <li>• "Exoplanet and solar system science with LUVOIR," Astrophysical Frontiers in the Next Decade and Beyond, Portland OR, USA</li> </ul>
Public talks	<p>2018</p> <ul style="list-style-type: none"> <li>• "How to image Earth 2.0," Astronomy on Tap, Montreal QC, Canada</li> </ul>
Work experience	<p>TRR 170 Internship, Department of Geochemistry, Freie Universität Berlin, Germany (January–July 2019)</p> <ul style="list-style-type: none"> <li>• Led and managed research project in planetary science, focusing on numerical modelling of the coupled thermo-chemical evolution of the early Earth's mantle and atmosphere, with Dr. Lena Noack. In collaboration with Dr. Frank Sohl at the Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Centre).</li> </ul> <p>Research Assistant, Department of Physics, McGill University, Montreal QC, Canada (September–December 2018)</p> <ul style="list-style-type: none"> <li>• Led and managed research project in exoplanet science, focusing on numerical modelling of space telescope observations, under the advising of Dr. Nicolas Cowan. Co-advised honours undergraduate student.</li> </ul> <p>Teaching Assistant, Department of Earth &amp; Planetary Sciences, McGill University, Montreal QC, Canada (2016–2018)</p> <ul style="list-style-type: none"> <li>• Led teaching laboratory units, held help sessions, graded assignments and exams, provided general course support.</li> </ul> <p>Research Assistant, Department of Natural Resource Sciences, McGill University, Montreal QC, Canada (Summer 2015 field season)</p> <ul style="list-style-type: none"> <li>• Member of research team headed by Dr. Ian Strachan. Obtained field samples in wetland sites, performed gas chromatography analysis in the lab. Engineered novel instrumentation for sample collection.</li> </ul> <p>Research Student, Department of Cardiovascular Surgery, Hospital for Sick Children, Toronto ON, Canada (Summer 2013 &amp; 2014)</p> <ul style="list-style-type: none"> <li>• Member of clinical research team. Worked with Dr. Glen Van Arsdell (Chair of the Division of Cardiac Surgery at the University of Toronto). Responsible for data collection in several clinical research studies, focusing on congenital heart disease surgical outcomes. Conducted reviews of the literature.</li> </ul>
Other internal activities	<p>Planet Lunch curator/coordinator, Department of Earth &amp; Planetary Sciences, McGill University, Montreal QC, Canada (2018)</p> <ul style="list-style-type: none"> <li>• Organized interdisciplinary weekly discussion group.</li> </ul>