

Yoshinori Miyazaki, Ph.D.

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Appointments

2020 - 2023 **Stanback Postdoctoral Fellow in Caltech Center for Comparative Planetary Evolution**
California Institute of Technology
Advisor: David J. Stevenson

Education

2014 - 2020 **Yale University** (New Haven, CT)
Ph.D., Earth and Planetary Sciences (December 2020)
M.Phil., Geology and Geophysics (December 2016)
Dissertation: “Developing a unified theory for the formation and evolution of terrestrial planets”
Advisor: Jun Korenaga

2010 - 2014 **The University of Tokyo** (Tokyo, Japan)
B.Sc. with honors, Earth and Planetary Physics (March 2014)
Thesis: “Convective instability of partially molten layer”
Advisor: Yutaka Abe

Publications

1. **Miyazaki, Y.**, and J. Korenaga, “A new mode of geodynamics in the Hadean facilitates the emergence of early life,” *submitted*
2. **Miyazaki, Y.**, and J. Korenaga, “Dynamic origin of enstatite chondrites and the evolutionary path to Earth formation,” *submitted*
(preprint: <https://arxiv.org/abs/2004.13911>)
3. Du, Z., Deng, J., **Miyazaki, Y.**, Mao, H-K., Karki, B. B., and Lee, K. K. M., “Fate of hydrous Fe-rich silicate melt in Earth's deep mantle,” *Geophysical Research Letters*, **46**, 2019
(<https://doi.org/10.1029/2019GL083633>)
4. **Miyazaki, Y.**, and J. Korenaga, “On the timescale of magma ocean solidification and its chemical consequences, 1. Thermodynamic database for liquid at high pressures,” *Journal of Geophysical Research: Solid Earth*, **124**, 3382-3398, 2019
(<https://doi.org/10.1029/2018JB016932>)

5. **Miyazaki, Y.**, and J. Korenaga, “On the timescale of magma ocean solidification and its chemical consequences, 2. Compositional differentiation under crystal accumulation and matrix compaction,” *Journal of Geophysical Research: Solid Earth*, **124**, 3399-3419, 2019 (<https://doi.org/10.1029/2018JB016928>)
6. Deng, J., **Miyazaki, Y.**, and Lee, K. K. M., “Implications for the melting phase relations in the MgO–FeO system at core–mantle boundary conditions,” *Journal of Geophysical Research: Solid Earth*, **124**, 1294-1304, 2019 (<https://doi.org/10.1029/2018JB015499>)
7. **Miyazaki, Y.**, Planavsky, N.J., Bolton, E.W., and Reinhard, C.T. “Making sense of massive carbon isotope excursions with an inverse carbon cycle model,” *Journal of Geophysical Research: Biogeosciences*, **123**, 2485, 2018 (<https://doi.org/10.1029/2018JG004416>)
8. **Miyazaki, Y.**, and Korenaga, J. “Chemical effects on vertical dust motion in early protoplanetary disks,” *The Astrophysical Journal*, **849**, 41, 2017 (<https://doi.org/10.3847/1538-4357/aa8cd1>)

Awards

Fellowship:

2020 - 2023 **Stanback Postdoctoral Fellowship in Comparative Planetary Evolution**
Awarded by California Institute of Technology for three years support for stipend and research project
Proposal title: “The redox evolution during magma ocean and its implication for the surface environment and the emergence of life on terrestrial planets”

Honors:

2020 **Elias Loomis Prize**
Awarded by Yale University to distinguished graduate students in studies of physics of the Earth

2019 **Karl K. Turekian Prize**
Awarded by Yale University to a distinguished graduate student in geochemical or cosmochemical studies

2019 **AbSciCon student travel grants**

2013, 2014 **The Dean’s award**
Awarded by School of Science, The University of Tokyo to an undergraduate student with outstanding performance

Presentations

1. **Miyazaki, Y.**, and Korenaga, J. “The evolution of early Earth during and after the solidification of magma ocean,” Rice University (**Invited talk**, January 2020)
2. **Miyazaki, Y.**, and Korenaga, J. “Serpentinization-driven evolution of the early mantle and atmosphere,” *American Geophysical Union Fall Meeting* (Talk, December 2019)

3. **Miyazaki, Y.**, and Korenaga, J. “Solidification of magma ocean and its implication for early Earth environment,” *AbSciCon* (Talk, June 2019)
4. **Miyazaki, Y.**, and Korenaga, J. “The chemical consequence of magma ocean solidification,” *American Geophysical Union Fall Meeting* (Poster, December 2018)
5. **Miyazaki, Y.**, Planavsky, J., Bolton, E., and Reinhard, C. “Global carbon cycle in Proterozoic,” *Northeastern Geobiology Symposium* (Poster, April 2016)
6. **Miyazaki, Y.**, and Korenaga, J. “Chemical consequence of dust settling in protoplanetary disks,” *47th Lunar and Planetary Science Conference* (Poster, March 2016)

Mentorship

2016-2017 John McNamara, Yale Class of 2017, for a project on a two-phase modeling of protoplanetary disk with Professor David Bercovici

Teaching Experience

Teaching Fellowship at Yale University

Fall 2015, 2017	G&G 100 Natural Disaster
Fall 2016	AMATH 428 Science of Complex Systems
Spring 2018	G&G 362 Observing Earth from the Space
Fall 2019	G&G 274 Fossil Fuels and World Energy

Skills

Programming:

C++, Python (PyTorch, Keras), R, MATLAB, and Fortran. Familiar with the UNIX system.

Language:

Japanese (native) and English (Oral Performance Assessment certified at Yale, December 2014)

Service, Outreach

2016-2017	Treasurer of Dana Club in the Department of Geology and Geophysics
2016	Participated in International Earth Science Olympiad (IESO) as a leading student organizer in the 10 th IESO in Japan
2010-2014	Student volunteer chair (Japan Earth Science Olympiad Committee)