Curriculum Vitae - Miki Nakajima

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Contact Information

Department of Earth and Environmental Sciences
Department of Physics and Astronomy
Laboratory for Laser Energetics
University of Rochester
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Education

California Institute of Technology 2010 – 2016
Ph.D., Planetary Science Minor in Computational Science and Engineering
M.Sc., Planetary Science 2010 – 2013
Advisor: D. J. Stevenson

Tokyo Institute of Technology 2007 – 2009
M.Sc., Earth and Planetary Sciences
Advisors: S. Ida and H. Genda

University of California, Santa Cruz 2007 – 2008
Exchange Program, Astronomy and Astrophysics
Advisors: E. Asphaug and D. N. C. Lin

Tokyo Institute of Technology 2003 – 2007
B.Sc., Earth and Planetary Sciences
Advisors: S. Ida and M. Ikoma

Academic Employment

University of Rochester
Assistant Professor, Earth and Environmental Sciences Jul 2018 –
Secondary appointment in Physics and Astronomy
Secondary appointment in Laboratory for Laser Energetics

Carnegie Institution for Science Dec 2015 – Jun 2018
Carnegie Postdoctoral Fellow

Visiting Position

Carnegie Institution for Science, Earth and Planets Laboratory
Visiting Scientist Jan 2023 – Feb 2023
Institut de Physique du Globe de Paris
Visiting Scientist May 2023 – Jun 2023

Teaching Experience

Physics of Planetary interiors, University of Rochester (UR)	Spring 2022, 2019, Fall 2020
Designing Your Space Mission, UR	Fall 2021, Spring 2020
Geodynamics, UR	Spring 2024, 2021, Fall 2019
TA, Introduction to the Solar System, Caltech	Spring 2012, 2013
TA, Planetary Structure and Evolution, Caltech	Spring 2014, 2015

Mentoring

Alex Jasko, UR graduate student	Aug 2023 –
Nicolas Litza, UR graduate student	Aug 2021 –
Alice Chau, UR postdoctoral scholar	Sep 2023 –

Kim Cone, UR postdoctoral scholar — Jul 2023 –
Jérémy Couturier, UR postdoctoral scholar — Nov 2022 –
Victor Lherm, UR postdoctoral scholar — Oct 2021 –
Soren Helhoski, UR undergraduate student — Dec 2019 –
Scott Hull, UR graduate student (PhD) — Aug 2019 – April 2024
Turi Useda, High school summer intern — Jul 2023 – Aug 2023
Aidan Parris, High school summer intern — Jul 2023 – Aug 2023
Sarah Harter, UR graduate student (Provost fellow, MS) — Aug 2021 – Aug 2023
Ian Szumila, UR postdoctoral scholar — July 2021 – July 2023
Angel Paz, Research Experiences for Undergraduates (REU) student — June 2021 – May 2023
Natalie Allen, UR undergraduate student — Jan 2020 – Aug 2022
Arnav Sharma, UR undergraduate student — Oct 2019 – Mar 2022
Jeremy Atkins, UR undergraduate student — Aug 2018 – Mar 2021
Pham Nguyen, UR graduate student — Mar – Oct 2020
Nicolas Litza, Research Experiences for Undergraduates (REU) student — May – Aug 2020
Tyler Labree, Research Experiences for Undergraduates (REU) student — May – Aug 2019
Keegan Ryan, Caltech undergraduate student (with D. J. Stevenson) — Jun – Sep 2013

Awards

Computational Infrastructure for Geodynamics Distinguished Speaker — 2023 – 2024
NSF CAREER Award — 2023 – 2028
Postdoctoral Innovation and Excellence Award — 2017
Carnegie DTM Postdoctoral Fellowship, $62,000 annually — 2015 – 2018
NASA Earth and Space Science Fellowship (NESSF), $30,000 annually — 2014 – 2015
Murata Overseas Scholarship, $30,000 annually — 2010 – 2012
Yoshida Scholarship (fellowship for studying abroad) — (declined) 2010 – 2013
JSPS Research Fellowships for Young Scientists — 2010
Moriyasu Graduate Student Scholarship — 2009 – 2010
Study Abroad Scholarship, Japan Student Services Organizations — 2007 – 2008

Grants

Raised $2.39M as PI since 2018

NASA Topical Workshops, Symposia, and Conferences (PI), Title: Workshop on Planetary Impacts During the Total Solar Eclipse. $96,803.00 — Jan 2024 – Dec 2024

NSF CAREER, Title: CAREER: GLOW: Investigation on the evolution of magnetic fields of early Earth and beyond with cutting-edge research opportunities for future scientists, $556,287 — Feb 2023 – Feb 2028

1 shot day at the OMEGA Laser Facility (PI), Title: EOS and conductivity of mantle materials — Mar 2023

CMAP SEED funding, $10,000 — Aug 2022

NASA Solar System Workings, 2020 (PI), Title: Exploring the early impact history of the Moon via numerical and experimental approaches, $499,971 — Aug 2021 – Jul 2024

0.5 shot day at the OMEGA Laser Facility (PI), Title: EOS and conductivity of mantle materials — Mar 2022

CMAP SEED funding, $10,000 — Aug 2021

NSF CSEDI (PI), Title: Searching For Hadean Impacts: Clues From the Sudbury Impact Basin and Machine Learning Approaches, $361,878 — Aug 2021 – Aug 2024

Blue Ribbon panel (High-Risk/High-Impact), NASA Emerging Worlds, 2020 (PI), Title: Moon Formation via Streaming Instability, $472,194 Jul 2021 – Jul 2024

Japan Society for the Promotion of Science, Kakenhi Kiban A (Collaborator), Title: A comprehensive model for the origin of rocky planets, icy planets, and gas giants in the solar system and beyond, $431,240 Apr 2021 – Mar 2026

The Sloan Research Foundation (Co-I), Title: AEThER: Atmospheric Empirical, Theoretical, and Experimental Research, $111,950 Sep 2021 – Aug 2023

NSF Physics Frontier Center (Senior personnel), Title: The Center for Matter at Atomic Pressures (CMAP), $12,960,000 Aug 2020 – Aug 2025

NASA Emerging Worlds, 2018 (PI), Title: Volatile Escape from Giant Impact Ejecta, $387,123 Feb 2019 – Feb 2022

Professional Service

Organizer of a research workshop during the total solar eclipse in Rochester, NY, 2024 (59 participants), Faculty Council member, 2023–2024, Faculty search chair in EES, UR, 2023–2024, Member of the Mercury and the Moon panel of the Planetary Science and Astrobiology Decadal Survey 2023 – 2032, National Academy of Sciences, Engineering, and Medicine

Science Member of the Martian Moons eXploration Mission (MMX) (JAXA)

AGU Fall Meeting 2020 – 2022 Program Committee (FMPC)

Chair at Goldschmidt 2018, Chair at AGU 2017, 2018, 2022, Co-convener at AGU 2021, Chair at LPSC 2017

Referee for Nature, Nature Geoscience, Nature Astronomy, Nature Communications, Science, The Proceedings of the National Academy of Sciences, Geochemistry, Geophysics, Geosystems, Philosophical Transactions of the Royal Society A, Earth and Planetary Science Letters, Geochemistry, Geophysics, Geosystems, Astrophysical Journal, Icarus, Journal of Geophysical Research, Astronomy and Astrophysics

Review Panelist and Executive Secretary for NASA programs, Review panelist for NSF programs

Thesis committee

PhD defense: Scott Hull (2024), Brian Henderson(2022), Zaarah Mohamed (2021), Linda Crandall (2021), Ian Szumila (2021), Robert Fine (2020), Hongzhe Zhou (2020), Mario Cabrera (2019)

Oral exam: Ziqi (Evan) Zhang (2021), Scott Hull (2021), Tinghong Zhou (2020)

Master's thesis: Chayut Teeraratkul (2019)

Qualifying exam: Dylan Durkee (2024), Honor Hare (2023), Mary kate Ginnane (2022), Ziqi (Evan) Zhang (2021), Scott Hull (2020), Tinghong Zhou (2019), Esteban Wright (2019)

Outreach Activities

Society of Asian Scientists and Engineers (SASE) Professionalism Panel Apr 2024

Podcast Speaker for studying abroad (XPLANE Podcast, 4 episodes) Aug 2023

Hosting two high school students for summer school Jul-Aug 2023

Speaker at the Tokyo Institute of Technology for students aspiring for studying abroad via Zoom (organized by a student association FLAP) Jan 2023

Speaker at Astronomy Section Rochester Academy of Science Meeting Feb 2022

Panelist at XPLANE CAFÉ 5-minute challenge Dec 2021

Society of Asian Scientists and Engineers (SASE) Professionalism Panel Apr 2021

Speaker at the Society of Women in Astronomy and Physics (SWAP) meeting Oct 2020

Panelist at an event for Japanese students studying in USA	Aug 2020
Organizer for Student Presentations on Space Missions at Rochester Museum and Science Center	Apr 2020
Speaker at Astronomy Club Stargazing Night for Girl Scouts	Nov 2019
Speaker at STANYS (Science Teachers New York State) Conference	Nov 2019
Panelist at a STEM event by the Society of Asian Scientists and Engineers	Apr 2019
Organizer of USA Science and Engineering Festival	Apr 2018
Public lecture at the Virginia Astronomy Club	Mar 2018
Organizer of Science Outreach Program: Planet Hunting in Tokyo	Oct 2016
Presenter of Workshop on Studying Abroad at Tokyo Tech	Jun 2016
Organizer of USA Science and Engineering Festival	Apr 2016
Organizer of Community Science Event at Caltech	Feb 2015
Organizer of Japanese Students' Visit at Caltech	2013 – 2015

Publications

Nakajima's Mentee contributions are indicated by * (undergraduate student), ⋆ (graduate student), and • (postdoctoral scholar)

Nakajima, M., and Stevenson, D. J., Dynamical mixing of planetary cores by giant impacts. in prep.

Nakajima, M., ⋆Jasko, A., ⋆Hater, S., Szumillia, I., Polsin, D., Trail, D., Huff, M., Ocampo, I. K., Duffy, T. S., LaPierre, A., Sprowal, Z., Lherm, V., Stixrude, L. P., and Cone, K. A. Shock experiments on (Mg,Fe)O: Implications for Dynamo Generation in Earth's and Super-Earth's Basal Magma Oceans, in prep. (planned submission in August)

*Helhoski, S., **Nakajima, M.**, Gagne, J., Trail, D. A numerical model to constrain the origin of lunar impact ejecta, in prep. Conference abstract (LPSC 2021).

⋆Hull, S. D., **Nakajima, M.**, Canup, R. M. The Giant Impact Origin and Composition of Phobos and Deimos in prep. (planned submission in June)

⋆Hull, S. D., **Nakajima, M.**, Canup, R. M., Visscher, C., and Sossi, P. A. Hydrodynamic Volatile Escape and Moderately Volatile Isotope Fractionation in Giant Impact Ejecta, in prep. (planned submission in June)

Allibert, L., Siebert, J., Raymond, S., Hyodo, R., Genda, H., Charnoz, S., **Nakajima, M.** Collisional erosion of mantle silicate during accretion can set the elevated Fe/Mg ratio of the Earth. Submitted.

Rubie, D. C., Dale, K. I., Nathan, G., **Nakajima, M.**, Jennings, E.S., Golabek, G. J., Jacobson, S. A., Morbidelli, A. Tungsten isotope evolution during Earth's formation and new constraints on the viability of accretion simulations. Submitted.

•Lherm, V., **Nakajima, M.**, Blackman, E. G., Thermal and magnetic evolution of an Earth-like planet with a basal magma ocean, in review.

•Couturier, J., Quillen, A. C., **Nakajima, M.** NcorpiON : A O(N) software for N-body integration in collisional and fragmenting systems. Journal of Computational Physics, in review. Archive:arxiv.org/abs/2310.20374

Sossi, P. A., **Nakajima, M.**, Khan, A. Composition, Structure and Origin of the Moon, Treatise on Geochemistry, in review.

Nakajima, M., *Atkins, J., Simon, J. B., and Quillen, 2024. The Limited Role of the Streaming Instability during Moon and Exomoon Formation. The Planetary Science Journal, 5, 145. doi:10.3847/PSJ/ad4863

Quillen, A. C., Luniewski, S., Rubinstein, A. E., •Couturier, J., Glade, R., **Nakajima, M.**, 2024. Wind erosion and transport on planetesimals. Icarus, 411, 115948. doi:10.1016/j.icarus.2024.115948

*Hull, S. D., **Nakajima, M.**, Hosono, N., Canup, R. M., Gassmöller, R. 2024. Effect of Equation of State and Cutoff Density in Smoothed Particle Hydrodynamics Simulations of the Moon-Forming Giant Impact. The Planetary Science Journal, 5, 9. doi:10.3847/PSJ/ad02f7

Canup, R., Righter, K., Dauphas, N., Pahlevan, K., Ćuk, M., Lock, S. J., Stewart, S. T., Salmon, J., Rufu, R., **Nakajima, M.**, Magna, T., 2023. Origin of the Moon, New Views of the Moon II. Reviews in Mineralogy and Geochemistry, 89, 53-102. doi:10.2138/rmg.2023.89.02

Dale, K. I., Rubie, D. C., **Nakajima, M.**, Jacobson, S., Nathan, G., Golabek, G. I., Cambioni, S., Morbidelli, A., 2023. An improved model of metal/silicate differentiation during Earth's accretion. Icarus, 406, 115739. doi.org/10.1016/j.icarus.2023.115739.

Allibert, L., Landeau, M., Röhlen, R., Augustin, M., A., **Nakajima, M.**, Wünnemann, K., 2023. Planetary impacts: effects of the impact speed on the crater depth. Journal of Geophysical Research: Planets, 128, e2023JE007823. doi:10.1029/2023JE007823.

Lichtenberg, T., Schaefer, L., **Nakajima, M.**, and Fischer, R. A., 2023. Geophysical evolution during rocky planet formation. Protostars and Planets VII. 907-946. 2023ASPC..534..907L.

*Szumila, I., Trail, D., Erickson, T., Simon, J. I., Wielicki, M. M., Lapen, T., **Nakajima, M.**, Fries, M., 2023. Microstructural and isotopic characterization of synthetically-shocked sanidine-zircon mixture: implications for planetary impact chronology. American Mineralogist, 108, 1516–1529. doi:10.2138/am-2022-8604.

*Allen, N., **Nakajima, M.**, Wünnemann, K., *Helhoski, S., Trail, D., 2022. A Revision of the Formation Conditions of the Vredefort Crater. Journal of Geophysical Research: Planets, 127, e2022JE007186. doi: 10.1029/2022JE007186.

Wright, E., Quillen, A., Sanchez, P., Schwartz, S. R., **Nakajima, M.**, and Askari, H., 2022. Ricochets on Asteroids II: Sensitivity of laboratory experiments of low velocity grazing impacts on substrate grain size. Icarus, 376, 114868. doi.org/10.1016/j.icarus.2021.114868.

Nakajima, M., Genda, H., Asphaug, E. I., and Ida, S., 2022. Large planets may not form fractionally large moons. Nature Communications, 13, 568. doi: 10.1038/s41467-022-28063-8

Tarduno, J. A., Cottrell, R. D., Lawrence, K., Bono, R. K., Huang, W., Johnson, C. L., Blackman, E. G., Smirnov, A. V., **Nakajima, M.**, Neal, C. R., Zhou, T., Ibanez-Mejia, M., Oda, H., and Crummins, B., 2021. Absence of a long-lived lunar paleomagnetosphere. Science Advances, 7, eabi7647. doi: 10.1126/sciadv.abi7647

Nakajima, M., Golabek, G. J., Wünnemann, K., Rubie, D. C., Burger, Melosh, H. J., Jacobson, S. A., C., Manske, L., and Hull, S. D., 2021. Scaling laws for the geometry of an impact-induced magma ocean. Earth and Planetary Science Letters, 568, 116983. doi: 10.1016/j.epsl.2021.116983

Quillen, A. C., Zaidouni, F., **Nakajima, M.**, Wright, E., 2021. Accretion of Ornamental Equatorial Ridges on Pan, Atlas and Daphnis. Icarus, 357, 114260. doi: 10.1016/j.icarus.2020.114260

Wright, E., Quillen, A., South, J., Nelson, R. C., Sanchez, P., Siu, J., Askari, H., **Nakajima, M.**, and Schwartz, S. R., 2020. Ricochets on Asteroids: Experimental study of low velocity grazing impacts into granular media. Icarus, 351, 113963. doi: 10.1016/j.icarus.2020.113963

Wright, E., Quillen, A. C., South, J., Nelson, R. C., Sanchez, P., Martini, L., Schwartz, S., **Nakajima, M.**, Asphaug, E., 2020. Boulder Stranding in Ejecta Launched by an Impact Generated Seismic Pulse. Icarus, 337, 113424. doi: 10.1016/j.icarus.2019.113424

Quillen, A. C., Lane, M., **Nakajima, M.**, and Wright, E., 2020. Excitation of Tumbling in Phobos and Deimos. Icarus, 340, 113641. doi: 10.1016/j.icarus.2020.113641

Quillen, A. C., Martini, L., and **Nakajima, M.**, 2019. Near/far side asymmetry in the tidally heated Moon. Icarus, 329, 182-196. doi: 10.1016/j.icarus.2019.04.010

Nakajima, M., and Stevenson, D. J., 2018. Inefficient volatile loss from the Moon-forming disk: reconciling the giant impact hypothesis and a wet Moon. Earth and Planetary Science Letters, 487, 117-126. doi: 10.1016/j.epsl.2018.01.026

Hauri, E. H., Saal, A. E., **Nakajima, M.**, Anand, M., Rutherford, M. J., Van Orman, J. A., and Le Voyer, M., 2017. Origin and Evolution of Water in the Moon's Interior. Annual Review of Earth and Planetary Sciences, 45, 89-111. doi: 10.1146/annurev-earth-063016-020239

Jacobson, S. A., Rubie, D. C., Hernlund, J., Morbidellie, A., and **Nakajima, M.**, 2017. Formation, Stratification and Mixing of the Cores of Earth and Venus. Earth and Planetary Science Letters, 474, 375-386. doi: 10.1016/j.epsl.2017.06.023

Nakajima, M., 2016. Core Science: Stratified by a Sunken Impactor. Nature Geoscience, News & Views, 9, 734 - 735. doi: 10.1038/ngeo2815

Nakajima, M., and Ingersoll, A. P., 2016. Controlled boiling on Enceladus. 1. Model of the vapor-driven jets. Icarus, 272, 309-318. doi: 10.1016/j.icarus.2016.02.027

Ingersoll, A. P., and **Nakajima, M.**, 2016. Controlled boiling on Enceladus. 2. Model of the liquid-filled cracks, 272, 319-326. doi: 10.1016/j.icarus.2015.12.040

Nakajima, M., and Stevenson, D. J., 2015. Melting and Mixing States of the Earth's Mantle after the Moon-Forming Impact. Earth and Planetary Science Letters, 427, 286-295. doi: 10.1016/j.epsl.2015.06.023

Nakajima, M., and Stevenson, D. J., 2014. Investigation of the Initial State of the Moon-Forming Disk: Bridging SPH Simulations and Hydrostatic Models. Icarus, 233, 259-267. doi: 10.1016/j.icarus.2014.01.008

Invited Seminars

Jan 2024, Consequences of giant impacts: Moon formation and magma ocean dynamos. Seminar, University of Tokyo, Tokyo, Japan.

Nov 2023, Consequences of giant impacts: Moon formation and magma ocean dynamos. Department Seminar, Tulane University, New Orleans, LA, USA.

Sep 2023, Consequences of giant impacts: Moon formation and magma ocean dynamos. Department Seminar, Western Michigan University, Kalamazoo, MI, USA.

Sep 2023, Origin of moons in the solar system and beyond. EES Distinguished Speaker Series, Michigan State University, East Lansing, MI, USA.

June 2023, Origin of moons in the solar system and beyond. Seminar, Côte d'Azur Observatory, Nice, France.

May 2023, Origin of moons in the solar system and beyond. Seminar, Institut de Physique du Globe de Paris, Paris, France.

Apr 2023, Origin of moons in the solar system and beyond. Japan Aerospace Exploration Agency, Department Seminar, Tokyo, Japan.

Apr 2023, Origin of moons in the solar system and beyond. National Astronomical Observatory of Japan, Department Seminar, Tokyo, Japan.

Feb 2023, Origin of moons in the solar system and beyond. Special Seminar, The Earth and Planets Laboratory (EPL), Carnegie Institution for Science, Washington, DC, USA.

Nov 2022, Origin of moons in the solar system and beyond. TAP Colloquia, University of Arizona, Tucson, AZ, USA.

June 2022, Origin of moons in the solar system and beyond. Department Seminar, Zhejiang University, Hangzhou, China (Zoom).

May 2022, Origin of moons in the solar system and beyond. Department Seminar, Western Washington University, Bellingham, WA, USA (Zoom).

April 2022 Origin of moons in the solar system and beyond. Division Seminar, California Institute of Technology, Pasadena, CA, USA.

April 2022 Origin of moons in the solar system and beyond. EPSS Colloquium, University of California, Los Angles, Los Angeles, CA, USA.

Nov 2021 Origin of moons in the solar system and beyond. Astronomy Department Seminar, Rochester Institute of Technology, Rochester, NY, USA.

Nov 2021 Origin of moons in the solar system and beyond. Department Seminar at the Department of Earth and Atmospheric Sciences, Cornell University, Ithaca, NY, USA.

Feb 2021 Origin of Earth, the Moon, and exomoons. APS Colloquia, University of Colorado, Boulder, Boulder, CO, USA (Zoom).

Oct 2020 Origin of Earth, the Moon, and exomoons. Colloquium at the Physics Department, University of Albany, Albany, NY, USA.

Jul 2020 Consequences of Giant Impacts. IGPP Seminar, University of California, Santa Cruz Cruz, Santa Cruz, CA, USA.

Feb 2020 Origin of the Earth and Moon. Seminar, Ohio State University, Colombus, CA, USA.

Nov 2019 Origin of the Earth and Moon. AST Colloquium, Stanford University, Stanford, CA, USA.

Sep 2019 Origin of the Earth and Moon. AST Colloquium, Rochester Institute of Technology, Rochester, NY, USA.

Sep 2019 Origin of the Earth and Moon. Seminar, Vassar College, Poughkeepsie, NY, USA.

Sep 2019 Origin of the Earth and Moon. Department Colloquium Series, Department of Earth and Planetary Sciences, Harvard University, Boston, MA, USA.

June 2019 Origin of the Earth and Moon. Seminar, Institute de Physique du Globe de Paris (IPGP), Paris, France.

Apr 2019 Origin of the Earth and Moon. Nelson Lecture, Syracuse University, Syracuse, NY, USA.

Sep 2018 Origin of the Earth and Moon. Astronomy and Space Sciences, Cornell University, Ithaca, NY, USA.

Sep 2018 Origin of the Earth and Moon. EPS Seminar, The University of Edinburgh, Edinburgh, UK.

Sep 2018 Origin of the Earth and Moon. Seminar, Max Planck Institute for Solar System Research, Göttingen, Germany.

Jun 2018 Origin of the Earth, Moon, and Martian Moons. Seminar, Tohoku University, Sendai, Japan.

Jun 2018 Origin of the Earth, Moon, and Martian Moons. Seminar, University of Tokyo, Tokyo, Japan.

May 2018 Origin of the Earth, Moon and Martian Moons. Seminar, NASA Goddard Space Flight Center, Lanham, MA, USA.

Apr 2018 Origin of the Earth, Moon and Martian Moons. Geoscience seminar, Scripps Institution of Oceanography, University of California, San Diego, CA, USA.

Mar 2018 Origin of the Earth, Moon and Martian Moons. Seminar, Smithsonian Institution, Washington, DC, USA.

Feb 2018 Origin of the Earth, Moon and Martian Moons. Department colloquium, Case Western Reserve University, Cleveland, OH, USA.

Nov 2017 Origin of the Earth and Moon. USNO Seminar, US Naval Observatory, Washington, DC, USA.

Oct 2017 Origin of the Martian Moons and Exomoons. Fall 2017 Colloquium, University of Rochester, Rochester, NY, USA.

Sep 2017 Origin of the Earth, Moon, and Martian Moons. Special Seminar, Physics & Geological Sciences, University of Colorado, Boulder, CO, USA.

May 2017 Origin of the Earth and Moon. TRR170 Seminar, Freie Universität Berlin, Berlin, Germany.

May 2017 Origin of the Earth and Moon. Seminar Series, University of Münster, Münster, Germany.

Mar 2017 Exploring Moons in the Solar System and Beyond. Special Seminar, University of Rochester, Rochester, NY, USA.

Mar 2017 Origin of the Earth and Moon. Special Seminar, University of Rochester, Rochester, NY, USA.

Feb 2017 Origin of the Earth and Moon. Special Seminar, University of Oxford, Oxford, UK.

Nov 2016 Origin of the Earth, the Moon, and exomoons. Astrophysics, Gravitation, and Cosmology Seminar, University of Illinois at Urbana-Champaign, Champaign, IL, USA.

Nov 2016 Implications of the Moon Formation for the Earth's Mantle and Magnetic Field. Geochemistry Seminar, University of Maryland, College Park, MA, USA.

Mar 2016 Controlled boiling on Enceladus: Model of the vapor-driven jets. Enceladus workshop, University of California, Berkeley, Berkeley, CA, USA.

Mar 2016 Origin of the Earth and Moon. Solar System Exploration Winter Seminar Series, NASA/Goddard Space Flight Center, Greenbelt, MA, USA.

Feb 2016 Origin of the Earth and Moon. Earth and Planetary Sciences Randolph Bromery Spring 2016 Seminar Series, Johns Hopkins University, Baltimore, MA, USA.

Feb 2016 Origin of the Earth and Moon. GeoSci Seminar, University of Chicago, Chicago, USA.

Nov 2015 Origin of the Earth and Moon. Plunch talk, University of California, Santa Cruz (UCSC), Santa Cruz, USA.

Sep 2015 Effects of giant impacts on planetary magnetic fields and exomoon formation. GFD Seminar, ETH Zurich, Zurich, Switzerland.

May 2015 Implications for mantle melting and the magnetic field from giant impact simulations. 2015 ACCRETE Group Meeting, Bayerisches Geoinstitut (BGI), Bayreuth, Germany.

May 2015 Implications for mantle melting, volatile loss, and the magnetic field from giant impact simulations, Brown University, Providence, RI, USA.

May 2015 Origin of the Earth and Moon, DEEPS Colloquia Series, Brown University, Providence, RI, USA.

Feb 2015 Moon formation recipes. iPLEX Lunch Talk, University of California, Los Angeles (UCLA), Los Angeles CA, USA.

Jan 2015 Origin of the Earth and Moon. DTM Weekly Seminar Series, Carnegie Institution of Washington DTM, Washington, DC, USA.

Nov 2014 Origin of the Earth and Moon and its implications for exomoon formation. Southwest Research Institute (SwRI), Boulder CO, USA.

Sep 2014 Initial states of the Earth's mantle and Moon-forming disk. GFD Seminar, ETH Zurich, Zurich, Switzerland.

Apr 2014 Do we understand the origin of the Moon? Woman in Aerospace Symposium, Massachusetts Institute of Technology (MIT), Boston MA, USA.

Selected Conference Talks

Nakajima, M., Jasko, A., Polsin, D., Lherm, V., , 2024. Formation and evolution of a magma ocean and basal magma ocean, EPOE 2024 workshop, Paris, France (*Invited*).

Nakajima, M., Hater, S., Szumillia, I., Polsin, D., Trail, D., Huff, M., Ocampo, I. K., Duffy, T. S., LaPierre, A., Sprowal, Z., Lherm, V., Stixrude, L. P., and Cone, K. A., 2023. Shock experiments on (Mg,Fe)O: Implications for Dynamo Generation in Earth's and Super-Earth's Basal Magma Oceans, DI34A-06, AGU Fall Meeting, San Francisco, CA, USA (*Invited*).

Nakajima, M., 2023. Effects of Impacts on Planet Formation and Evolution. Origins of Solar Systems, Gordon Research Conference (GRC), Mount Holyoke College, South Hadley, MA, USA (*Invited*).

Lichtenberg, T., Schaefer, L. K., **Nakajima, M.**, Rebecca A. Fischer, 2023. Geophysical Evolution During Rocky Planet Formation. Protostars and Planets VII (PPVII), Kyoto, Japan (*Invited*).

Nakajima, M., Atkins, J., Simon, J. B., and Quillen, A. C., 2022. Moon Formation via Streaming Instability, EGU General Assembly 2022, EGU22-3311, Vienna, Austria (*Invited*).

Nakajima, M., 2022. Consequences of giant impacts on planetary evolution. 10th ELSI International Symposium, Zoom (*Invited*).

Nakajima, M., Atkins, J., Simon, J. B., and Quillen, A. C. The Moon formation via Streaming Instability. AGU Fall Meeting, 2021, New Orleans, LA, USA.

Nakajima, M., Genda, H., Asphaug, E., and Ida, S., 2020. Constraints on formation of the Moon and exomoons. AGU Fall Meeting, 2020, Zoom.

Nakajima, M., 2020. Origin of the Moon. Inaugural Prebiotic Chemistry and Early Earth Environments (PCE3) Community Workshop. Zoom Session (*Invited*).

Nakajima, M., 2020. Interdisciplinary investigations on planetary impacts and interiors. Gordon Research Conference. Holderness, NH, USA (*Invited*) (cancelled due to COVID-19).

Nakajima, M., 2019. Consequences of giant impacts. COMPRESS 2019, Big Sky, Montana, USA (*Keynote*).

Nakajima, M., 2019. Consequences of planetary impacts: mantle melting and core formation. European Week of Astronomy and Space Science (EWASS), Lyon, France (*Invited*).

Nakajima, M., and van Keken, P. E., 2018. Effects of plate tectonic simulations on mantle convection and mixing. 2018 AGU Fall Meeting, Washington, DC, USA.

Nakajima, M., and Canup, R. M., 2018. Origin of the Martian Moons and Their Water Abudances. Goldshcmidt 2018, Boston, MA, USA.

Nakajima, M., and Canup, R. M., 2017. Origin of the Martian Moons and Their Water Abudances. 48th Lunar and Planetary Science Conference, 2900, The Woodlands TX, USA.

Nakajima, M., and Hauri, E. H., 2017. Initial Water Abundance of the Bulk Silicate Moon. 48th Lunar and Planetary Science Conference, 2858, The Woodlands TX, USA.

Nakajima, M., Rubie, D., Melosh, H. J., Nimmo, F., Jacobson, S. A., Morbidelli, A., 2016. Extent of Mantle Melting by Giant Impacts. Magma Oceanology Workshop, Atami, Japan. (*Invited*)

Nakajima, M., and Stevenson, D. J., 2016, Dynamical mixing of planetary cores by giant impacts. 47th Lunar and Planetary Science Conference, 2053, The Woodlands TX, USA.

Nakajima, M., and Stevenson, D. J., 2015. The state of the Earth's mantle after the giant impact. 2015 AGU Fall Meeting, San Francisco, USA (*Invited*).

Nakajima, M., and Ingersoll, A. P., 2015. Controlled boiling on Enceladus: Model of the vapor-driven jets. 2015 AGU Fall Meeting, San Francisco, USA.

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