MIKI NAKAJIMA

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Department of Earth and Environmental Sciences, University of Rochester (UR)
227 Hutchison Hall, P.O. Box 270221, Rochester, NY 14627, USA

ACADEMIC EMPLOYMENT

University of Rochester
Associate Professor, Earth and Environmental Sciences — Jul 2025 –
Assistant Professor, Earth and Environmental Sciences — Jul 2018 – Jun 2025
Secondary appointment in Physics and Astronomy
Secondary appointment in Laboratory for Laser Energetics

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

EDUCATION

California Institute of Technology — 2010 – 2016
Ph.D., Planetary Science (defended on Oct 30 2015)
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

VISITING POSITIONS

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

SELECTED AWARDS

Computational Infrastructure for Geodynamics Distinguished Speaker — 2023 – 2024
NSF CAREER Award — 2023 – 2028

Carnegie 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 2025
Meteoritical Society Travel Award (co-PI). $5000 May 2023
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
Shot days at the OMEGA Laser Facility (PI) 7 days, 2022 – 2025
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 Oct 2021 – Oct 2024
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 2025
Blue Ribbon panel (High-Risk/High-Impact), NASA Emerging Worlds, 2020 (PI), Title: Moon Formation via Streaming Instability, $472,194 Jul 2021 – Jul 2025
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 2025
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 2025

PEER-REVIEWED 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.

*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. (to be submitted by the end of Feb 2025)

Nakajima, M., ⋆Hater, S., ⋆Jasko, A., Polsin, D., •Szumila, I., •Cone, K. A., •Lherm, V., Blackman, E., Stixrude, L., Dragulet, F., Trail, D., Huff, M., Rygg, J. R., Paz, A., Collins, G. W., LaPierre, and A., Sprowal, Z. Electrical conductivities of (Mg,Fe)O at extreme pressures and implications for planetary magma oceans. Nature Astronomy, in press.

⋆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. Icarus, in review.

Ballmer, M. D., Spaargaren, R. J., Mallik, A., Córdoba, A. M., **Nakajima, M.**, and Vilella, K. Present-day Earth mantle structure set up by crustal pollution of the basal magma ocean. Science Advances 11, eadu2072. doi:10.1126/sciadv.adu2072

Allibert, L., Siebert, J., Raymond, S., Hyodo, R., Genda, H., Charnoz, S., **Nakajima, M.**, 2025. Collisional erosion of mantle silicate during accretion can set the elevated Fe/Mg ratio of the Earth. Icarus 429, 116385 doi:10.1016/j.icarus.2024.116385

Rubie, D. C., Dale, K. I., Nathan, G., **Nakajima, M.**, Jennings, E.S., Golabek, G. J., Jacobson, S. A., Morbidelli, A., 2025. Tungsten isotope evolution during Earth's formation and new constraints on the viability of accretion simulations. Earth and Planetary Science Letters, 651, 2025, 119139 doi:10.1016/j.epsl.2024.119139

•Couturier, J., Quillen, A. C., **Nakajima, M.**, 2025. NcorpiON : A O(N) software for N-body integration in collisional and fragmenting systems. New Astronomy, 114, 102313 doi:10.1016/j.newast.2024.102313

•Lherm, V., **Nakajima, M.**, Blackman, E. G., 2024. Thermal and magnetic evolution of an Earth-like planet with a basal magma ocean. Physics of the Earth and Planetary Interiors, 356, 107267 doi:10.1016/j.pepi.2024.107267

Sossi, P. A., **Nakajima, M.**, Khan, A., 2025. Composition, Structure and Origin of the Moon. Treatise on Geochemistry, 7, 417-479 (invited).
doi:10.1016/B978-0-323-99762-1.00138-8

Nakajima, M., ⋆Atkins, J., Simon, J. B., and Quillen, A. C., 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 (invited).

*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., 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

NON PEER-REVIEWED PUBLICATIONS

*Hull, S.D., 2024. On the origin and composition of the terrestrial moons. Ph.D. thesis hdl.handle.net/1802/38088 (mentee's thesis)

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

MENTORING

Alex Jasko, UR graduate student (NSF GRFP fellow)	Aug 2023 –
Nicolas Litza, UR graduate student	Aug 2021 –
Sydney Licata, UR graduate student co-supervised with Prof. Dustin Trail	Aug 2024 –
Sarah Harter, UR graduate student (Provost fellow, MS)	Aug 2021 – Aug 2023
Pham Nguyen, UR graduate student	Mar – Oct 2020
Scott Hull, UR graduate student (PhD)	Aug 2019 – April 2024
Roshan Mehta, UR undergraduate student	Jul 2024 –
Soren Helhoski, UR undergraduate student	Dec 2019 – Aug 2024
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
Angel Paz, Research Experiences for Undergraduates (REU) student	Jun 2021 – May 2023
Nicolas Litza, REU student	May – Aug 2020
Tyler Labree, REU student	May – Aug 2019
Keegan Ryan, Caltech undergraduate student (with D. J. Stevenson)	Jun – Sep 2013
Jeremiah Tucker, High school summer intern	Jul 2024 – Aug 2024
Leixi Chen, High school summer intern	Jul 2024 – Aug 2024
Turi Useda, High school summer intern	Jul 2023 – Aug 2023
Aidan Parris, High school summer intern	Jul 2023 – Aug 2023
Laetitia Allibert, Visiting postdoctoral scholar	Mar 2024 – Apr 2024
Alice Chau, UR postdoctoral scholar	Sep 2023 –
Thea Faridani, UR postdoctoral scholar	Aug 2025 –
Kim Cone, UR postdoctoral scholar	Jul 2023 – Jun 2025
Jérémy Couturier, UR postdoctoral scholar	Nov 2022 – Aug 2024
Victor Lherm, UR postdoctoral scholar	Oct 2021 – Sep 2024
Ian Szumila, UR postdoctoral scholar	July 2021 – July 2023

FORMAL CLASS

Physics of Planetary interiors, UR	Spring 2022, 2019, Fall 2020
Designing Your Space Mission, UR	Spring 2025, Fall 2021, Spring 2020
Geodynamics, UR	Spring 2024, 2021, Fall 2019
Planetary impacts, UR	Fall 2024
Introduction to the Solar System, TA, Caltech	Spring 2012, 2013
Planetary Structure and Evolution, TA, Caltech	Spring 2014, 2015

SELECTED PROFESSIONAL SERVICES

Associate Editor, Planetary Research 2026 –
Special Issue Guest Editor, Icarus, 2024–present
Organizer of a research workshop during the total solar eclipse in Rochester, NY, 2024 (59 participants)
Faculty Council member, UR, 2023–2026
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

SELECTED OUTREACH ACTIVITIES

Hosting two high school students for summer school	Jul-Aug 2024
Panelist, Emerging Researchers in Exoplanetary Science (ERES)	Jul 2024
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

THESIS AND EXAM COMMITTEE

PhD defense: Adam Rubinstein (2025), David Bishel (2024), Nick Reilly (2024), Ziqi (Evan) Zhang (2024), Tinghong Zhou (2024), 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: Nic Litza (2024), Ziqi (Evan) Zhang (2021), Scott Hull (2021), Tinghong Zhou (2020)

Master's thesis: Sarah Harter (2023), Chayut Teeraratkul (2019)

Qualifying exam: Yoseph Dres (2025), Kristin Ringhand (2024), Dylan Durkee (2024), Honor Hare (2023), Mary kate Ginnane (2022), Ziqi (Evan) Zhang (2021), Scott Hull (2020), Tinghong Zhou (2019), Esteban Wright (2019)

INVITED SEMINARS

Impact induced heating and magma ocean dynamos, Seminar in School of Earth and Space Exploration, Arizona State University, Tempe, AZ, USA. Mar 2025
Effects of impacts on planetary magnetic fields, ELSI Mini-Workshop: Early Solar System, Earth-Life Science Institute, Institute of Science Tokyo, Tokyo, Japan. Dec 2024
Origin of the Moon and magma ocean dynamos, EEPS Seminar, Rice University, Houston, TX, USA. Nov 2024
Origin of moons in the solar system and beyond, EAR Research Seminar Series, NSF, Zoom. Jul 2024
Consequences of giant impacts: Moon formation and magma ocean dynamos. Seminar, University of Tokyo, Tokyo, Japan. Jan 2024
Consequences of giant impacts: Moon formation and magma ocean dynamos. Department Seminar, Tulane University, New Orleans, LA, USA. Nov 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. Sep 2023
Origin of moons in the solar system and beyond. Seminar, Côte d'Azur Observatory, Nice, France. June 2023
Origin of moons in the solar system and beyond. Seminar, Institut de Physique du Globe de Paris, Paris, France. May 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. Apr 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. Feb 2023
Origin of moons in the solar system and beyond. TAP Colloquia, University of Arizona, Tucson, AZ, USA. Nov 2022
Origin of moons in the solar system and beyond. Department Seminar, Zhejiang University, Hangzhou, China (Zoom). Jun 2022
Origin of moons in the solar system and beyond. Department Seminar, Western Washington University, Bellingham, WA, USA (Zoom). May 2022
Origin of moons in the solar system and beyond. Division Seminar, California Institute of Technology, Pasadena, CA, USA. Apr 2022
Origin of moons in the solar system and beyond. EPSS Colloquium, University of Cali-

fornia, Los Angles, Los Angeles, CA, USA. Apr 2022
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. Nov 2021
Origin of Earth, the Moon, and exomoons. APS Colloquia, University of Colorado, Boulder, Boulder, CO, USA (Zoom). Feb 2021
Origin of Earth, the Moon, and exomoons. Colloquium at the Physics Department, University of Albany, Albany, NY, USA. Oct 2020
Consequences of Giant Impacts. IGPP Seminar, University of California, Santa Cruz Cruz, Santa Cruz, CA, USA. Jul 2020
Origin of the Earth and Moon. Seminar, Ohio State University, Colombus, CA, USA. Feb 2020
Origin of the Earth and Moon. AST Colloquium, Stanford University, Stanford, CA, USA. Nov 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. Sep 2019
Origin of the Earth and Moon. Seminar, Institute de Physique du Globe de Paris (IPGP), Paris, France. Jun 2019
Origin of the Earth and Moon. Nelson Lecture, Syracuse University, Syracuse, NY, USA. Apr 2019
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. Sep 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. Jun 2018
Origin of the Earth, Moon and Martian Moons. Seminar, NASA Goddard Space Flight Center, Lanham, MA, USA. May 2018
Origin of the Earth, Moon and Martian Moons. Geoscience seminar, Scripps Institution of Oceanography, University of California, San Diego, CA, USA. Apr 2018
Origin of the Earth, Moon and Martian Moons. Seminar, Smithsonian Institution, Washington, DC, USA. Mar 2018
Origin of the Earth, Moon and Martian Moons. Department colloquium, Case Western Reserve University, Cleveland, OH, USA. Feb 2018
Origin of the Earth and Moon. USNO Seminar, US Naval Observatory, Washington, DC, USA. Nov 2017

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

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

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

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. Nov 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. Mar 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. Feb 2016

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

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

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

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

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

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

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

SELECTED CONFERENCE TALKS

Nakajima, M., Jasko, A. V., Lherm, V., Chau, A., Blackman, E., 2024. Effects of Impacts on the Planetary Magnetic Field, AGU Fall Meeting, Washington DC, USA (*Invited*).

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 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.

Nakajima, M., and Genda, H., Asphaug, E. I., and Ida, S., 2014. Constraints on Exomoon Formation. 46th DPS Meeting, Tucson AZ, USA.

Nakajima, M., and Stevenson, D. J., 2014. The Initial State of Earth's Mantle after the Moon-Forming Impact. International interdisciplinary workshop, Accretion and Early Differentiation of the Earth and Terrestrial Planets (ACCRETE), Nice, France.

Nakajima, M., and Stevenson, D. J., 2014. Moon-forming Disk - Formation and Water Loss. The proto-lunar disk splinter session, Accretion and Early Differentiation of the Earth and Terrestrial Planets (ACCRETE), Nice, France (*Invited*).

Nakajima, M., and Stevenson, D. J., 2014. Hydrodynamic Escape does not Prevent the "Wet" Moon Formation. 45th Lunar and Planetary Science Conference, 2770, The Woodlands TX, USA.

Nakajima, M., and Stevenson, D. J., 2013, Thermodynamic Processes During the Moon-Forming Impact. 44th Lunar and Planetary Science Meeting, The Woodlands TX, USA.

Nakajima, M., and Stevenson, D. J., 2012, The Initial State of the Moon Forming Disk and the Earth's Mantle. 43rd Lunar and Planetary Science Meeting, The Woodlands TX, USA.