Dr. Margaret E. Landis
School for Earth and Space Exploration, Arizona State University, Tempe, AZ, USA
(46270) Margaretlandis • ORCID: 0000-0001-7321-2272

Education

University of Arizona, Tucson, AZ USA
Ph.D. Planetary Sciences 2018
M.S. Planetary Sciences 2015

Northern Arizona University, Flagstaff, AZ USA
B.S. Physics and Astronomy 2013
Minors in Mathematics and Biology, University Honors

Professional Experience

Assistant Professor
Arizona State University, School of Earth and Space Exploration *August 2025-present*

- Maintains externally funded research program on fundamental icy process in the solar system to support mentee researchers, NASA programmatic goals, and goals of spacecraft science teams
-

Professional Research Science Associate *June 2019-August 2025*
Laboratory for Atmospheric and Space Physics, University of Colorado at Boulder

- Maintained an externally funded research program focused on fundamental icy process on the Moon, Mars, and Ceres, with extensive mission and instrument participation
    - Funded research projects through NASA ROSES grants and mission participation include understanding the surface age and geology of the martian south polar ice sheet, active processes shaping the martian north polar ice sheet, lunar volatiles and volcanology, and the history and fate of water ice on Ceres
    - Manage funding as PI or institutional PI of >$2M since starting at LASP
- Supervised undergraduate, graduate, and post-doctoral researchers
- Leadership in LASP-wide initiatives & surfaces processes community interest groups
- Leadership in mission teams, including as science theme lead, team member, and Deputy Project Scientist

Postdoctoral Research Scientist *June 2018-June 2019*
Planetary Science Institute

- Dawn Gamma Ray and Neutron Detector (GRaND) science team
    - Used GIS methods to constrain forward models of neutron surface flux
    - Used thermophysical models to constrain plausible configurations of buried water ice at high-impact locations on Ceres
- 2001 Mars Odyssey neutron spectrometer data analysis
    - Designed a new Matlab-based peak finding technique to offset changes in instrument response due to long-duration exposure of the instrument to the space

environment
- Postdoctoral mentor: Dr. Thomas H. Prettyman

Graduate Research Assistant/Associate *August 2013-May 2018*
Lunar and Planetary Laboratory (LPL), University of Arizona
- PhD dissertation projects: (1) Mapping craters on the North and South Polar Layered Deposits of Mars using Java Mission-Planning and Analysis for Remote Sensing (JMARS) and ArcMap software, and (2) developing MatLab-based thermal and ice stability models to explore the vapor production of water ice on Ceres.
- Tested key hypotheses in the formation of and evolution of Mars' north polar layered deposits and Ceres' exosphere
- Leadership roles in graduate student programs, e.g., LPL's internal research conference
- Multiple awards for science and outreach excellence
- Dissertation advisor: Dr. Shane Byrne

National Science Foundation Graduate Research Internship Program *May-August 2017*
United States Geologic Survey (USGS), Astrogeology Science Center
- Completed work on an impact crater catalog for the South Polar Layered Deposits, Mars using Context Camera (CTX) data and USGS Crater Helper Tools in ArcMap.
- Collaborated with GIS and spacecraft image data support resources at the USGS

Graduate Teaching Assistant *August 2016-May 2016*
Lunar and Planetary Laboratory, University of Arizona
- PTYS170B2 "The Universe & Humanity: Origin & Destiny" (Fall 2015), for Dr. Kat Volk
- PTYS170A1 "Planet Earth: Evolution of the Habitable World" (Spring 2016), for Dr. Isamu Matsuyama

Mission Participation & Formulation
- High Resolution Imaging Science Experiment (HiRISE)
  - Polar Geology Science Theme Lead 2020-present
  - Climate Change Science Theme Lead 2022-present
  - Team member, Co-Investigator (January 2025) 2018-present
  - Graduate student, University of Arizona 2013-2018
- Dawn at Ceres
  - GRaND instrument science team member 2018-2019, end of mission
  - Guest Investigator Student 2015-2018
- Diviner lunar radiometer, Lunar Reconnaissance Orbiter 2019-present
  - Science team member
    - Currently under consideration for promotion to Co-I
- Lunar-VISE 2022-present
  - PRISM 2022 selection, Science Co-I. PI: K.L. Donaldson Hanna (UCF)
- **E**mirates **M**ission to the **A**steroid Belt (EMA), UAE/LASP collaboration 2021-2025
  - Deputy Project Scientist 2021-2025
  - Science team member 2021-2025

- Bifrost, Mars north polar helicopter concept team (https://www.hou.usra.edu/meetings/lowcostmars2022/pdf/5066.pdf)
- Oracle, Themis asteroid family tour concept (Landis et al., 2022 in *Planetary & Space Science*)
- Planetary Science Summer Seminar, 2016: Uranus orbiter concept team (OCEANUS)

Grants

"PEDAL--Planetary Elevation Data Analysis Laboratory"
PI: M.E. Landis (ASU)
NASA Planetary Science Early Career Award
Period of Performance: 2025-2028

"Water Ice Balance of the North Polar Layered Deposits, Mars"
PI: **M. E. Landis**
NASA Mars Data Analysis Program
Period of Performance: 2020-2026

"A Revised Geologic Map of the South Polar Layered Deposits, Mars"
PI: **M.E Landis**
NASA Planetary Data Archiving, Restoration, and Tools
Period of Performance: 2021-2026

"Impact-triggered Volatile Loss on Ceres"
PI: **M.E. Landis**
NASA Discovery Data Analysis Program
Period of Performance: 2021-2026

"Springtime North Polar Avalanches on Mars: A Nearly-Decadal Survey with MRO"
PI: **M.E. Landis**
Period of Performance: 2024-2027

"The Influence of Seasonal Frost on the Mars South Polar Residual Cap"
PI: M.E. Landis, FI: S.F.A Cartwright (CU-Boulder, Geology)
NASA Future Investigators in NASA Earth and Space Science and Technology
Period of Performance: 2025-2027

"Age constraints for the Martian South Polar Layered Deposits from impact cratering"
PI: A. Stickle (JHU/APL)
NASA Mars Data Analysis Program
Period of Performance: 2020-2025, pending NCE to 2026

"Elemental constrains on Ceres' hydrothermal evolution and crustal processes from data acquired by Dawn's Gamma Ray and Neutron Detector"
PI: T.H. Prettyman (PSI)
NASA Discovery Data Analysis Program
Period of Performance: 2020-2025

"The Origin of Water in the Exosphere of Dwarf Planet Ceres from Dawn and Herschel Observations"
PI: P. von Allmen (JPL)
NASA Discovery Data Analysis Program
Period of Performance: 2020-2024

"From Olivine to Feldspar: Tracing Martian Crustal Evolution with CRISM Mapping Data"

PI: M. Phillips (UArizona)
NASA Mars Data Analysis Program
Period of Performance: 2024-2027, to support S. Cartwright

"Icy Strata at the South Pole: An underutilized climatic record"
PI: S. Byrne (UArizona)
NASA Mars Data Analysis Program
Period of Performance: 2025-2028

"Crater Degradation as a Probe of Near-Surface Water Ice on Ceres"
PI: P. O'Brien (LASP)
NASA Discovery Data Analysis Program
Period of Performance: 2025-2028

Teaching & Mentorship (* indicates research mentee)

- Grace Shore*, Undergraduate Research Opportunities Program (UROP) summer intern, CU Astrophysical and Planetary Science Department (Summer 2023), research undergraduate (Fall 2023-Summer 2025), research affiliate (Fall 2025-present)
- Samuel Cartwright*, PhD candidate in CU Geosciences department, De Jure advisor (Fall 2022-present)
- Dr. Patrick O'Brien*, LASP postdoctoral research scholar, co-advisor for funded DDAP projects (November 2022-present)
- ASU, SES 502 "Exploring SESE Research" graduate seminar, ~19 enrolled students
- CU-Boulder, ASTR/ATOC/GEOL 5853 Spring 2023, "Asteroids" graduate seminar (co-taught with Paul Hayne, ~15 enrolled students)
- CU-Boulder, ASTR/ATOC/GEOL 5853 Fall 2021, "Liquid Water on Mars" graduate seminar (~15 enrolled students)
- Alex Innanen, University of York master's student intern advised through National Science and Engineering Research Council (NSERC) Technologies for Exo/Planetary Sciences internship program, Summer 2020, primary advisor: Dr. John Moores
- Dr. Andrew Wilcoski, University of Colorado Boulder, PhD student funded to collaborate on MDAP grant for North Polar Layered Deposits craters, Summer 2020-Summer 2023, primary advisor: Dr. Paul O. Hayne. ~3 months partial support on same MDAP after graduation to work on model validation and archiving.
- Worked with 3 teams of ~8 students from Dr. Daniel Kubitschek's ASEN 5148 "Spacecraft Design" course (Spring 2020) to develop specifications for three different Themis asteroid family mission architectures

Fellowships, Awards, Scholarships

- Asteroid (46270) Margaretlandis
- NASA Planetary Science Early Career Award (2025)
- NSF Graduate Research Fellowship (Fall 2014-Summer 2018)
  - 2017 Graduate Research Internship Program award to develop a South Polar Layered Deposits crater catalog at the US Geological Survey (advisors: Kenneth Herkenhoff, Colin Dundas)
- Gerard P. Kuiper Memorial Award, Lunar and Planetary Laboratory (Spring 2018)
- Award for Excellence in Scholarship, University of Arizona, College of Science, Department of Planetary Sciences/LPL (Spring 2018)

- Lunar and Planetary Institute Career Development Award for travel to the Lunar and Planetary Science Conference (March 2018)
- University of Arizona Graduate and Professional Student Council Travel grant for attendance at the Workshop on Theoretical and Laboratory Studies of Icy Regoliths
- Outstanding Service and Outreach award, Department of Planetary Sciences/Lunar and Planetary Laboratory (Spring 2017)
- Best Graduate Student Talk, Lunar and Planetary Laboratory Conference (Fall 2016)
- Mars Exploration Program Student Travel Grant, for attendance at the 6th International Conference on Mars Polar Science and Exploration (Summer 2016)
- Curson Travel Award (Spring 2016)
- Galileo Circle Scholar (Spring 2015, Spring 2017)
- Mars Exploration Program Student Travel Grant, for attendance at the Workshop on Issues in Crater Studies and the Dating of Planetary Surfaces (Spring 2015)
- Tom and Rose Bedwell Astronomy Scholarship (Spring 2013)
- Honors Academic Achievement Award (Spring 2013)
- Slipher Scholar (Junior and Senior, 2011 and 2012)
- American Association of University Women Certificate of Excellence for Achievement in Science (2008)

Community and Lab Service

- LASP internal strategic planning design team science division representative (2023-2024)
- Lead coordinator for LASP internal Mars 1-day symposium, August 2023
- Lunar Polar Volatiles Conference (2022) science and local organizing committee
- Planetary Crater Consortium Executive Council member (2021-2024)
    - Co-organized yearly workshop on topics in planetary impact cratering (https://www.lpi.usra.edu/pcc/)
- Executive secretary, external reviewer, and panelist for NASA ROSES proposal reviews
- Served as a peer reviewer for papers in Icarus, Geoscience, Geophysical Research Letters, Journal of Geophysical Research: Planets, and Planetary Science Journal

Invited Talks and Colloquia

- Arizona State University, School of Earth and Space Exploration seminar, March 2024, October 2024
- Friends of Magnetospheres (Boulder) colloquia on Ceres' bow shock, March 2024
- Northern Arizona University, Department of Astronomy and Planetary Sciences department seminar, December 2023
- Southwest Research Institute, Boulder Planetary Seminar, May 2023
- Georgia Tech Earth and Atmospheric Science Department Seminar, January 2023
- Georgia Tech Astrobiology and Planetary Science seminar, October 2022
- CLEVER Planets seminar (Rice University), September 2022 (https://www.youtube.com/watch?v=sf7SDu4moqE)
- JPL Ice Lunch talk, May 2018 & November 2021
- Pacific Northwest Aerospace Expo (Portland State Aerospace Society), October 2021 (https://www.youtube.com/watch?v=DnDl_OqyLwc)
- Geological Society of America, invited talk on Ceres' exosphere, October 2020

- LASP Scientist Seminar, September 2019 & November 2020
- Fiske Planetarium (CU-Boulder) podcast "A View From the Earth" July 2020 (https://www.youtube.com/watch?v=uu_jVPBFNkI)
- Boise State Department of Physics Seminar and Evening Lecture, April 2019 (NPR interview publicizing the talk: https://www.boisestatepublicradio.org/post/planetary-science-institute-researcher-looks-origins-solar-system-ceres)
- Caltech Geology & Planetary Sciences division colloquia, May 2018
- Western Washington University, geology departmental colloquium, Fall 2017
- US Geological Survey Astrogeology Center brown bag talk, June 2017

Outreach

- *Letters to a Pre-Scientist* (Fall 2017—present)
  - Wrote 4 letters/academic year to a middle school student about careers in science, technology, engineering, and math as part of a nation-wide program
- *Washington Aerospace Scholars Virtual Mentor Program* (January 2016—present)
  - Mentored ~5 students per academic year during an online space/planetary science course for high school juniors
- *Spirit Hound Science & Spirits, Lyons, CO*
  - ~45 minute public talk at Spirit Hound Distillery's science talk series
- *Space Drafts/Astronomy on Tap Tucson, Tucson, AZ*
  - ~30 minute public talk at Borderlands Brewery, on Mars polar research
  - https://www.youtube.com/watch?v=n40Th01er0o
- *American Astronomical Society "Astronomy Ambassador"*
  - Completed training at the November 2014 DPS meeting, Tucson, AZ
- *Northern Arizona University Astronomy Club, Flagstaff, AZ*
  - Member (Fall 2009-Spring 2013), President (Spring 2013), Treasurer (Spring 2010-Spring 2011)
  - Certified Telescope Operator (Fall 2009-Spring 2013)--weekly public nights at the 0.5m Barry Lutz Telescope for Education and Training
- *Spark Museum of Electrical Invention, Bellingham, WA* (Summer 2013)
  - Volunteer docent and educator
- *Tucson Festival of Books, Tucson, AZ* (March 2014, March 2015, March 2016)
  - Volunteer, Science City
- *Pima Air and Space Museum, Tucson, AZ* (Summer 2014, Summer 2015)
  - Volunteer for NightWings program
- *Art of Planetary Science, Tucson, AZ* (October-December 2013, October 2014, February 2017)
  - Submitted photographs, helped with set-up and night-of duties

Workshops and Summer Schools

- NASA PI Launchpad Workshop, 18-20 November 2019
- Alan Alda Center for Communicating Science Workshop, 6-7 February 2018
- Short Course and Field School at the Sudbury Impact Structure, 23-30 September 2017
- Workshop on the Theoretical and Laboratory Studies of Icy Regoliths, 5-7 September 2017
- Keck Institute for Space Studies "Unlocking the Climate Record Stored within Mars' Polar Layered Deposits" workshop participant, August 2017

- Planetary Science Summer School, Jet Propulsion Laboratory, Summer 2016
  - Shadowed the Team X risk chair, served as spacecraft camera team lead and moons/geology science theme participant for a Uranus orbiter mission concept study
- Workshop on Issues in Crater Studies and the Dating of Planetary Surfaces, May 2015
- NAIF SPICE training workshop, October 2014

Press & News Article Interviews

- Denver 9NEWS https://www.9news.com/video/news/astronomers-identify-fireball-meteor-seen-on-sky-this-weekend/73-9e1fe4ee-4075-4ac5-a383-80d854478f26
- BBC News, https://www.bbc.com/future/article/20230830-the-mysteries-of-the-moons-south-pole
- Nature News, https://www.nature.com/articles/d41586-023-02536-2#correction-0
- Quanta Magazine, https://www.quantamagazine.org/secrets-of-the-moons-permanent-shadows-are-coming-to-light-20220428/
- Science News, https://www.sciencenews.org/article/ice-moon-poles-ancient-volcano-eruption-water
- Popular Science, https://www.popsci.com/science/moxie-oxygen-mars-rocket-propellant/
- Scientific American, https://www.scientificamerican.com/article/the-milky-ways-spiral-arms-may-have-carved-earths-continents/
- Boise Public Radio, https://www.boisestatepublicradio.org/show/idaho-matters/2019-04-05/planetary-science-institute-researcher-looks-for-origins-of-solar-system-in-ceres

Peer-Reviewed Publications (*indicates student/mentee first author*)

Landis, M.E., T.H Prettyman, J. Castillo-Rogez, N. Yamashita (accepted). Role of natron in delaying retreat of buried ice tables on Ceres. Planetary Science Journal. doi: 10.3847/PSJ/ae0333

Landis, M.E., C.M. Dundas, A.S. McEwen, I.J. Daubar, P.O. Hayne, S. Byrne, S.S. Sutton, A. Britton, and K.E. Herkenhoff (2024). New, dated small impacts on the South Polar Layered Deposits, Mars, and implications for shallow subsurface properties. *Icarus 16 Years of MRO Special Issue.* doi:j.icarus.2024.115977

Landis, M.E., P.J. Acharya, N.R. Alsaeed, C. Andres, P. Becerra, W.M. Calvin, E.M. Cangi, S.F.A. Cartwright, M.S. Chaffin, S. Diniega, C.M. Dundas, C.J. Hansen, P.O. Hayne, K.E. Herkenhoff, D.M. Kass, A.R. Khuller, L. McKeown, P. S. Russell, I.B. Smith, S.S. Sutton, J.M. Widmer, J.L. Whitten (2024). Polar Science Results from Mars Reconnaissance Orbiter: Multiwavelength, multiyear insights. *Icarus 16 Years of MRO Special Issue.* doi:10.1016/j.icarus.2023.115794

Landis, M.E., J.L. Whitten (2022). Geologic context of the bright MARSIS reflectors in Ultimi Scopuli, South Polar Layered Deposits, Mars. *Geophysical Research Letters.* doi:10.1029/2022GL098724

Landis, M.E., P.O Hayne, J.-P. Williams, B.T. Greenhagen, D.A. Paige (2022). Spatial distribution and thermal diversity of surface volatile cold traps at the lunar poles. *Planetary Science Journal.* doi: 10.3847/PSJ/ac4585/

Landis, M.E., J.C. Castillo-Rogez, P. O. Hayne, K. H. G. Hughson, D. Kubitschek, T. H. Prettyman, A. S. Rivkin, B. E. Schmidt, J. E. C. Scully, N. Yamashita, M. N. Villarreal, and CU Aerospace Engineering Students. (2022). The case for a Themis asteroid family spacecraft mission. *Planetary and Space Science*. doi:10.1016/j.pss.2021.105413

Landis, M.E., S. Byrne, J.-P. Combe, S. Marchi, J. Castillo-Rogez, H.G. Sizemore, N. Schorghofer, T.H. Prettyman, P. Hayne, C. Raymond, C.T. Russell. (2019). Water Vapor Contribution to Ceres' Exosphere from Observed Surface Ice and Postulated Ice-Exposing Impacts. *Journal of Geophysical Research: Planets.* doi:10.1029/2018JE005780

Landis, M.E., S. Byrne, N. Schörghofer, B.E. Schmidt, P.O. Hayne, J. Castillo-Rogez, M.V. Sykes, J.-P. Combe, A. I. Ermakov, T.H. Prettyman, C. Raymond, C.T. Russell (2017), Conditions for Sublimating Water Ice to Supply Ceres' Exosphere, *Journal of Geophysical Research: Planets*, doi:10.1002/2017JE005335

Landis, M. E., S. Byrne, I. J. Daubar, K. E. Herkenhoff, and C. M. Dundas (2016). A revised surface age for the North Polar Layered Deposits of Mars, *Geophysical Research Letters* 43, 3060–3068, doi:10.1002/2016GL068434.

Malaspina, D.M., J.R. Szalay, A. Mazurkiewicz, D. Lee-Bellows, **M.E. Landis** (accepted). A Search for Meteoroid Streams and Their Sources in the Near-Sun Zodiacal Dust Cloud. *Planetary Science Journal.*

Jakosky, B. et al. (incl. **M.E. Landis**) (2026). The history of Martian water during the Hesperian and Amazonian epochs. *Icarus.* doi:10.1016/j.icarus.2025.116782

O'Brien, P., J.E.C. Scully, **M.E. Landis**, N. Schorghöfer, P.O. Hayne. (2024) Enhancement of the Cerean Exosphere by Sublimation from Complex Craters. *The Planetary Science Journal.* doi:10.3847/PSJ/ad60c9

Innanen, A.C., **M.E. Landis**, P.O. Hayne, J.E. Moores (2022). Possible Atmospheric Water Vapour Contribution from Martian Swiss Cheese Terrain. *The Planetary Science Journal.* doi: article/10.3847/PSJ/ac979e

Wynne, J.J. et al. (incl. **M.E. Landis**) (2022). Planetary Caves: A Solar System View of Processes and Products. *Journal of Geophysical Research: Planets.* doi:10.1029/2022JE007303

Wilcoski, A. X., P.O. Hayne, **M.E. Landis**. (2022). Polar Ice Accumulation from Volcanically Induced Transient Atmospheres on the Moon. *The Planetary Science Journal*, 3(5). doi: 10.3847/PSJ/ac649c

Sutton, S.S, et. al (incl. **M.E. Landis**) (2022). Revealing active Mars with HiRISE digital terrain models. *Remote Sensing 14*(10), 2403; https://doi.org/10.3390/rs14102403

Prettyman, T.P., N. Yamashita, **M.E. Landis,** J.C. Castillo-Rogez, B.L. Ehlmann, H.Y. McSween, M.J. Toplis, S. Marchi, C.M. Pieters, N. Schorghofer, C.T. Russell, M.D. Rayman, C.A. Raymond. (2021). Replenishment of Near-Surface Water Ice by Impacts Into Ceres' Volatile-Rich Crust: Observations by Dawn's Gamma Ray and Neutron Detector. *Geophysical Research Letters*. doi: 10.1029/2021GL094223

Dundas, C.M. et al. (incl. **M.E. Landis**) (2021). Active Mars: A Dynamic World. *Journal of Geophysical Research: Planets.* doi:10.1029/2021JE006876

Dundas, C.M. et al. (incl. **M.E. Landis**) (2021). Widespread Exposures of Extensive Clean Shallow Ice in the Mid-Latitudes of Mars. *Journal of Geophysical Research: Planets.* doi: 10.1029/2020JE006617

Smith, I.B., et al. (incl. **M.E. Landis**) (2020). The Holy Grail: A Roadmap for Unlocking the Climate Record Stored within Mars' Polar Layered Deposits. *Planetary and Space Science.* doi: 10.1016/j.pss.2020.104841

Scully, J.E.C. et al. (incl. **M.E. Landis**) (2020). The Varied Sources of Faculae-Forming

Brines in Ceres' Occator Crater, Emplaced via Brine Effusion in a Hydrothermal System. *Nature Communications.* doi: 10.1038/s41467-020-15973-8

Sizemore, H.G. et al. (incl. **M.E. Landis**) (2019). A Global Inventory of Ice-Related Morphological Features on Dwarf Planet Ceres: Implications for the evolution and current state of the cryosphere. *Journal of Geophysical Research: Planets.* doi:10.1029/2018JE005699

Chilton, H. et al. (incl. **M.E. Landis**) (2019). Landslides on Ceres: Inferences into ice content and layering in the upper crust. *Journal of Geophysical Research: Planets.* doi:10.1029/2018JE005634

Duarte, K.D. et al (incl. **M.E. Landis**) (2019). Landslides on Ceres: Diversity and Geologic Context. *Journal of Geophysical Research: Planets. doi:*10.1029/2018JE005673

Elder, C. M. et al. (incl. **M.E. Landis**). (2018). OCEANUS: A high science return Uranus orbiter with a low-cost instrument suite. *Acta Astronautica*, *148*, pp.1-11.

Ruesch, O., L.C. Quick, **M.E. Landis**, M.M. Sori, O. Čadek, P. Brož, K.A. Otto, M.T. Bland, S. Byrne, J.C. Castillo-Rogez, H. Hiesinger. (2018). Bright carbonate surfaces on Ceres as remnants of salt-rich water fountains. *Icarus*. doi: j.icarus.2018.01.022

Combe, J.-P. et al., (incl. **M.E. Landis**) (2018). Exposed H_2O-rich areas detected on Ceres with the Dawn Visible and InfraRed mapping spectrometer, *Icarus*, doi:10.1016/j.icarus. 2017.12.008

Schorghofer, N., S. Byrne, **M.E. Landis**, E. Mazarico, T.H. Prettyman, B.E. Schmidt, M.N. Villarreal, J. Castillo-Rogez, C.A. Raymond, C.T. Russell (2017). The putative cerean exosphere, *Astrophysical Journal*, 85:1, doi: 10.3847/1538-4357/aa932f

Robbins, S.J., W.A. Watters, J.E. Chappelow, V.J. Bray, I.J. Daubar, R.A. Craddock, R.A. Beyer, **M.E. Landis**, L.R. Ostrach, L. Tornabene, J.D. Riggs, B.P. Weaver (2017). Measuring impact crater depth throughout the solar system, *Meteoritics and Planetary Science*, doi: 10.1111/maps.12956

Combe, J.-P., T.B. McCord, F. Tosi, E. Ammannito, F.G. Carrozzo, M.C. De Sanctis, A. Raponi, S. Byrne, **M.E. Landis**, K.H.G. Hughson, C.A Raymond, C.T. Russell (2016). Detection of local H_2O exposed at the surface of Ceres, *Science*, 353:6303, doi:10.1126/science.aaf3010

Platz, T., A. Nathues, N. Schorghofer, Frank Preusker, E. Mazarico, S. E. Schröder, S. Byrne, T. Kneissl, N. Schmedemann, J.-P. Combe, M. Schafer, G.S. Thangjam, M. Hoffman, P. Gutierrez-Marques, **M.E. Landis**, W. Dietrich, J. Ripken, K.-D. Matz, C. T. Russell (2016). Surface water-ice deposits in the northern shadowed regions of Ceres. *Nature Astronomy* 1 (2016): 0007.

Sori, M.M., J. Bapst, A. Bramson, S. Byrne, **M.E. Landis** (2017). A Wunda-full world? Carbon dioxide ice deposits on Umbriel and other Uranian moons, *Icarus*, doi: 10.1016/j.icarus.2017.02.029

Sori, M. M., S. Byrne, C. W. Hamilton, and **M. E. Landis** (2016). Viscous flow rates of icy topography on the north polar layered deposits of Mars, *Geophys. Res. Lett.*, 43, 541–549, doi:10.1002/2015GL067298.

Book Chapters

Landis, M.E., J. Castillo-Rogez, C. Ahrens (2024). Ceres—A Volatile-Rich Dwarf Planet in the Asteroid Belt. In R. Soare, J.-P. Williams, C. Ahrens, F. Butcher & M. El-Maary

(Eds.) *Ices in the Solar System: A Volatile-Driven Journey from the Inner Solar System to it Far Reaches.* Elsevier Science. doi:10.1016/B978-0-323-99324-1.00010-9

Prettyman, T., Englert, P., Yamashita, N., & **Landis, M.E.** (2019). Neutron, Gamma-Ray, and X-Ray Spectroscopy of Planetary Bodies. In J. Bishop, J. Bell III, & J. Moersch (Eds*.), Remote Compositional Analysis: Techniques for Understanding Spectroscopy, Mineralogy, and Geochemistry of Planetary Surfaces*(Cambridge Planetary Science, pp. 588-603). Cambridge: Cambridge University Press. doi:10.1017/9781316888872.032

First Author White Papers

Landis, M. E., J. C. Castillo-Rogez, P. O. Hayne, H. H. Hsieh, K. H. G. Hughson, K. E. Miller, D. Kubitschek, T. H. Prettyman, A. S. Rivkin, B. E. Schmidt, J. E. C. Scully, N. Yamashita, M. N. Villarreal (2020) "Why we should study the Themis Asteroid Family in the 2023-2032 Decade". Submitted to the National Academy Planetary Science & Astrobiology Decadal Survey

Landis, M. E., B. T. Greenhagen, P. O. Hayne, D. A. Paige, J.-P. Williams (2020) "Temperature Variations Within the Moon's Permanently Shadowed Regions". Submitted to NASA Artemis Science White Papers