

CURRICULUM VITAE

Catherine Walker

Glaciologist and Planetary Scientist
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Applied Ocean Physics and Engineering
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EDUCATION:

B.A., 2007, *magna cum laude* Astronomy with High Honors with a minor in Geology, Mount Holyoke College, South Hadley, MA.

Honors Thesis: Variations of Solar Wind Parameters over a Solar Cycle: Expectations for NASA's Solar TERrestrial RELations Observatory (STEREO) Mission

M.S., 2010, Atmospheric Oceanic and Space Sciences, University of Michigan, Ann Arbor, MI.

Ph.D. 2013, Atmospheric Oceanic and Space Sciences, University of Michigan, Ann Arbor, MI.

Dissertation: Fracture of Antarctic Ice Shelves and Implications for the Icy Satellites of the Outer Solar System

PROFESSIONAL EXPERIENCE:

Assistant Scientist, Woods Hole Oceanographic Institution, Department of Applied Ocean Physics and Engineering, 2019-present

Senior Management Fellow, Office of the Chief Scientist, NASA Headquarters, 2020-2021

Visiting Research Scientist, NASA Goddard Space Flight Center, Cryospheric Sciences Lab/ICESat-2 Project Science Office, 2018-present

NASA Postdoctoral Fellow, Caltech/NASA Jet Propulsion Laboratory, Sea Level and Ice Group/Earth Sciences Section, 2015-2018

Postdoctoral Fellow, Georgia Institute of Technology, School of Earth and Atmospheric Sciences, 2013-2015

Graduate Student Research Assistant, University of Michigan, Atmospheric Oceanic and Space Sciences Department, 2008-2013

JPL Graduate Research Fellow, NASA Jet Propulsion Laboratory, Planetary Geology and Geophysics Group, 2013

JPL Graduate Research Fellow, NASA Jet Propulsion Laboratory, Planetary Ices Group, 2010

Summer Aerospace Workforce Intern, NASA Goddard Space Flight Center, Planetary Magnetospheres Laboratory, 2008

Intern, NASA Goddard Space Flight Center, Optical Design & Analysis Group, 2007-2008

Graduate Student Researcher, Department of Physics and Space Sciences, Florida Institute of Technology/NASA Kennedy Space Life Sciences Lab, 2007

The NASA Academy, Goddard Space Flight Center, Optical Design and Analysis Group, 2007

Data Analyst, University of New Hampshire, Inst. for the Study of Earth, Oceans and Space, 2006-2007

Research & Discover Intern, University of New Hampshire, Inst. for the Study of Earth, Oceans and Space, 2006

Research Intern, University of New Hampshire, Inst. for the Study of Earth, Oceans and Space, 2005

HONORS/AWARDS:

NASA Astronaut Selection Semi-Finalist (top 120 of ~12,000 applicants), 2021
NASA Women's History Month - Highlighted Scientist, NASA Earth Sciences, 2020
NSF Next Generation of Polar Researchers (NGPR) Leadership, 2019
NASA Astronaut Selection, Highly Qualified (top ~600 of ~18,300 applicants), 2017
NASA Postdoctoral Program Fellow, 2015-2018
Antarctica Service Medal, US Department of Defense, 2015
Michigan Space Grant Consortium Fellow, 2011-2013
NASA Student Ambassador, State of Michigan, Selected by NASA HQ, 2009-2013
Rackham Graduate School Merit Fellow, UM Rackham Graduate School, 2008-2012
NSF-UAF International Polar Year Award, University of Alaska Fairbanks, 2012
International Polar Year Travel Award, Association of Polar Early Career Scientists, 2012
Sigma Xi Inductee, Mount Holyoke College, South Hadley, MA, 2007
Mary Dailey Irvine Prize for astronomy, Five College Astronomy Department, 2007
Mary Lyon Scholar, Mount Holyoke College, South Hadley, MA, 2007
Sarah Williston Scholar, Mount Holyoke College, South Hadley, MA, 2005
Massachusetts Opens Minds College Scholarship, MA Destination Imagination, 2003

PROFESSIONAL AFFILIATIONS:

Member, American Astronomical Society, Division of Planetary Sciences 2017-present
Member, The Planetary Society, 2014-present
Member, The International Glaciological Society (IGS), 2013-present
Member, Association for Polar Early Career Scientists (APECS), 2011-present
Member, American Geophysical Union (AGU), 2006-present

RESEARCH INTERESTS:

Ice dynamics, ice-ocean interactions, polar oceanography, planetary and Earth surface processes, topography and morphology, satellite remote sensing, planetary science, observations

PROFESSIONAL ACTIVITIES:*WHOI (Non-Education Related):*

Committee for Diversity, Equity and Inclusion (CDEI), 2019-present
Co-Chair, 2022-present / Community Building Working Group co-lead, 2019-present
WHOI Ocean Encounters participant, "Antarctica!", 2022
Reviewer for "Polar Research" related topics on the WHOI Ocean Learning Hub, 2022-pres.
AOPE Department Recruitment Committee, 2022-present
Woods Hole Native American-related Activities Working Group, 2021-present
Henry Stommel Award Committee, 2021-present
AOPE Department Standing Committee for Diversity, 2020-present
Room Naming Committee, 2020-present
UNAVCO/IRIS Institutional Representative for WHOI, 2020-present
DSL Chief Scientist of Deep Submergence Hiring Committee, 2021
WHOI Geology and Geophysics Hiring Search Committee, 2020-2021
AOPE Departmental Seminar Coordinator, 2019-2020

Outside WHOI (Other than Attendance at Society/National Meetings):

Peer reviewer for >15 journals (incl. Nature, Science, AGU journals), 2011-present
SETI Institute Frontier Development Lab (FDL) Expert Advisor, Digital Twin Earth, 2021

Ice, Cloud and land Elevation Satellite-2 (ICESat-2) mission Science Team member, 2020-pres
 NASA Astrobiology Institute, Habitability of Hydrocarbon Worlds Team member, 2018-pres
 JPL Vital Signs: Ocean Worlds working group member, 2018-pres
 AGU Fall Meeting Session Organizer and Convener, 2016-pres
 2016-pres., “Ice and Ocean Worlds: Geology, Oceanography, Chemistry, Habitability”
 2022 co-convener, “Breaking Points: Rifting, Calving, and Icebergs”
 2021 co-convener, “Icebergs: Origin, decay, and everything in between”
 2019-2020 session co-convener, “Controls on Tidewater Glacier Terminus Dynamics”
 Technical Organizing Committee, IEEE Antarctic and Southern Ocean Forum, 2020-2021
 Member, NASA Mars Ice Core Working Group, NASA Headquarters, 2021
 Collaborator, JPL Europa Seismic Package (ESP) working group, 2018-2021
 NASA MEaSURES Inter-mission Times Series of Land Ice Velocity and Elevation (ITS_LIVE) project team, 2018-2020
 NASA Ocean worlds Scientific Exploration and ANalogs (OSEAN) group, 2018-2020
 Scientific Organizing Committee, Ocean Worlds 4 Workshop, 2019
 Reviewer, IPCC Sixth Assessment Report (AR6): The Physical Science Basis, Chapter 9: Ocean, cryosphere, and sea level change, 2019
 Reviewer, IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC), Chapter 3: The Polar Regions, 2018
 Consultant, Space Exploration Architecture (SEArch) lunar habitat project, 2017
 California Academy of Sciences’ Environmental Literacy Initiative, 2017
 JPL Under-ice Exploration working group, 2015-2018
 Roadmap to Ocean Worlds (ROW) Team (Outer Planets Assessment Group), 2016-2018
 Session organizer, Astrobiology Science Conference (AbSciCon) Chicago, 2015
 Suborbital Applications, Commercial Spaceflight Foundation Advisory Committee, 2012-2015
 Chair, Michigan Engineering Graduate Symposium, 2011-2012
 University of Michigan College of Engineering recruit-at-home representative, 2012-2013
 Session convener, International Polar Year: From Knowledge to Action Conference, 2012
 Co-chair, Michigan Geophysical Union Annual Meeting, 2009-2011
 Chair, Atmospheric Oceanic & Space Sciences Graduate Student Organization, 2009-2010
 Mission Support team for the Mars Society’s Mars Desert Research Station, 2007-2012
 World Space Exposition team member, NASA Kennedy Space Center, 2007
 Mount Holyoke College Second Saturday (community service) Program leader, 2003-2007

PARTICIPATION IN EDUCATION PROGRAM:

Guest lecture, 2.688 Principles of Ocean Instrumentation, Spring Semester 2022
 Co-Instructor, EAPS 12.S595 Antarctica in a Changing Climate, Spring Semester 2021
 Co-Instructor, EAPS 12.421 Principles of Remote Sensing, Fall Semester 2020
 Course advisor, Aero/Astro/EAPS 16.83J/12.43J Space Systems Engineering, Spring 2019
 Moderator, Summer Student Ethics/Responsible Conduct of Research Workshop, 2019

SUPERVISION AT WHOI:

Dr. Chase Chivers, WHOI Postdoctoral Scholar, June 2022-pres
 Dr. Melisa Diaz, WHOI Postdoctoral Scholar, Sept 2020-pres (co-advisors S. Das, C. German)
 Fiona Clerc, PhD Committee, 2022-pres.
 Bailey Fleugel, Joint Program Student, Second Generals Advisor, 2022-pres.
 Alan Gaul, Joint Program Student, PhD Committee, 2021-pres.

Joanna Millstein, Joint Program Student, Second Generals & PhD Committee, 2019-pres.
Jordan McDavid, PEP Summer Student, 2022
Camryn Kluetmeier, Summer Student Fellow (SSF), 2021
Zoe Screwvala, Summer Student Fellow (SSF), 2020 (now a Fulbright grantee)

PAPERS IN REFEREED JOURNALS AND BOOKS:

In Press:

Walker, C. C., J. N. Bassis and B. E. Schmidt (2021). Propagation of vertical fractures through planetary ice shells: The role of basal fractures at the ice-ocean interface and proximal cracks. *The Planetary Science Journal*, Vol. 2, No. 4, doi:10.3847/PSJ/ac01ee.

Walker, C. C., M. K. Becker, & H. A. Fricker (2021). A high resolution, three-dimensional view of the D-28 calving event from Amery Ice Shelf with ICESat-2 and satellite imagery. *Geophysical Research Letters*, 48, e2020GL091200. doi:10.1029/2020GL091200.

Buffo, J. J., B. E. Schmidt, C. Huber and **C. C. Walker** (2020). Entrainment and dynamics of ocean-derived impurities within Europa's ice shell. *Journal of Geophysical Research: Planets*, 125, e2020JE006394. doi:10.1029/2020JE006394

Contribution: I conducted the fracture modeling to determine pathways for impurity entrainment in Europa's ice shell, and helped to edit the manuscript and revisions.

Walker, C. C. and A. S. Gardner (2019). Evolution of ice shelf rifts: Implications for formation mechanics and morphological controls, *Earth and Planetary Science Letters*, 526, 115764, doi:10.1016/j.epsl.2019.115764.

Suer, T.-A., S. Padovan, J. Whitten, R. W. Potter, S. Shkolyar, M. Cable, **C. C. Walker**, and ten others (2017). FIRE - Flyby of Io with Repeat Encounter: A conceptual design for a New Frontiers mission to Io, *Advances in Space Research*, 60(5), 1080, doi:10.1016/j.asr.2017.05.019.

Contribution: I led the section on Propulsion design and edited the whole manuscript.

Walker, C. C. and A. S. Gardner (2017). Rapid drawdown of Antarctica's Wordie Ice Shelf glaciers in response to ENSO/Southern Annular Mode-driven warming in the Southern Ocean (2017), *Earth and Planetary Science Letters*, 476, 100-110, doi:10.1016/j.epsl.2017.08.005.

Spears, A., M. West, M. Meister, **C. C. Walker**, J. J. Buffo, T. Collins, A. Howard & B. E. Schmidt (2016). The Icefin Under-Ice Unmanned Underwater Vehicle: Development And Deployment In Antarctica, *IEEE Robotics and Automation Magazine*, 23 (4), 30-41, doi:10.1109/MRA.2016.2578858.

Contribution: I participated in the initial Antarctic deployment of Icefin and helped to edit the manuscript.

Walker, C. C. and Schmidt, B. E. (2015). Ice collapse over trapped water bodies on Enceladus and Europa, *Geophysical Research Letters*, 42: 712–719. doi:10.1002/2014GL062405.

Walker, C. C., J. N. Bassis, H. A. Fricker, and R. J. Czerwinski (2015). Observations of interannual and spatial variability in rift propagation in the Amery Ice Shelf, Antarctica, 2002-2014, *Journal of Glaciology*, 61(226), 243-252, doi:10.3189/2015JoG14J151.

Walker, C. C., J. N. Bassis, H. A. Fricker, and R. J. Czerwinski (2013). Structural and environmental controls on Antarctic ice shelf rift propagation inferred from satellite monitoring, *Journal of Geophysical Research-Earth Surface*, 118, doi:10.1002/2013JF002742.

Walker, C. C., J. N. Bassis, and M. W. Liemohn (2012). On the application of simple rift basin models to the south polar region of Enceladus, *Journal of Geophysical Research-Planets*, 117, E07003, doi:10.1029/2012JE004084.

Bassis, J. N. and **C. C. Walker** (2011). Upper and lower limits on the stability of calving glaciers from the yield strength envelope of ice, *Proceedings of the Royal Society A Math, Phys. Eng. Sci.*, 468 (2140), doi:10.1098/rspa.2011.0422.

Contribution: I was involved in discussing the theory presented in the study, assisted with the observations of glacier cliff heights that demonstrated the theoretical conclusions, and helped to write, edit and revise the manuscript.

Manuscripts Submitted (2022):

*Udell-Lopez, K. T., Schmidt, B. E., Washam, P., **Walker, C. C.**, Hedgepeth, J. J., and Wood, A. S., Dynamic links between summer surface hydrology and terminus change at three major Greenland outlet glaciers revealed with high resolution satellite imagery. Manuscript submitted to *Journal of Glaciology*.

Buffo, J. J., C. R. Meyer, C. J. Chivers, **C. C. Walker**, C. Huber and B. E. Schmidt, Geometry of Freezing Impacts Ice Composition: Implications for Icy Satellites. Manuscript submitted to *Journal of Geophysical Research - Planets*.

Schmidt, B. E. and the VERNE team (incl. **C. C. Walker**). Vertical Entry Robot for Navigating Europa (VERNE): An ice- and ocean-profiling thermomechanical subsurface mission to search for life on Europa. Manuscript submitted to *The Planetary Science Journal*.

OTHER PUBLICATIONS:

Walker, C. C., K. N. Singer, K. L. Craft and 16 others (2021). The Importance of Further Studies and Missions to Understand Cryovolcanism. *White paper submitted to The National Academies Planetary Science and Astrobiology Decadal Survey 2023-2032*. doi:10.3847/25c2cfcb.b812ddd9.

Mars Ice Core Working Group (incl. **C. C. Walker**) co-chairs M.R. Albert and M. Koutnik (2021), First Ice Cores from Mars. *White paper prepared for NASA Mars Program*.

PUBLISHED ABSTRACTS (SELECTED):

Eidam, E. F., **C. C. Walker**, K. Bisson, M. Paris, L. Cooper, Novel application of ICESat-2 ATLAS data to determine coastal light attenuation as a proxy for suspended particulate matter, *submitted to OCEANS 2022 MTS/IEEE Hampton Roads*, May 2022.

Hammond, N. P., G. C. Collins, J. C. Goodman, **C. C. Walker**, and C. McCarthy (2022). Shear Madness: Modeling Strike-slip fault evolution on Europa, *Lunar and Planetary Science LIII*, No. 2590.

Walker, C. C., B. E. Schmidt and L. C. Quick (2020). Flexural dynamics and flow in near-surface ice-water systems on Europa, *Lunar and Planetary Science LI*, No. 2736.

Buckley, I., M. West, M. Egerstedt, **C. C. Walker** (2019). A Backstepping Approach for Networked Control of a Multi-Vehicle Team of Autonomous Under-Ice Profilers, *OCEANS 2019 MTS/IEEE Seattle*, pp.1-7, doi: 10.23919/OCEANS40490.2019.8962667.

- Walker, C. C.**, J. Kimura and A. S. Gardner (2019). Topographic signatures of icy dynamics using laser altimetry: implications for Ganymede Laser Altimeter, *Lunar and Planetary Science L*, No. 3193.
- Craft, K. L., **C. C. Walker**, L. C. Quick, R. P. Lowell (2019). “Freckles”, “spots” and domes on Europa and Ceres: surface features driven by subsurface cryovolcanic dike and surface response?, *Lunar and Planetary Science L*, No. 3102.
- Buffo, J. J., B. E. Schmidt, **C. C. Walker**, C. Huber (2019). Not So Solid: The Multiphase Nature of Sea Ice — Lessons from Earth and What it Means for Europa's Ice Shell, *Europa Deep Dive: Chemical Composition of Europa and State of Laboratory Data*, 2100, No. 3014.
- Buffo, J. J., B. E. Schmidt, **C. C. Walker**, and C. Huber (2018). Cold Case: Fractional Crystallization in Cryomagmatic Environments, *Bulletin of the American Astronomical Society*, Vol. 50, No. 415.08.
- Craft, K. L., R. P. Lowell, **C. C. Walker**, and L. C. Quick (2018). Investigating effects of subsurface cryovolcanic chamber pressurization on Ceres and icy moons – fracturing, cryovolcanism and surface response, *Cryovolcanism in the Solar System*, LPI No. 2045.
- Walker, C. C.**, B. E. Schmidt & J. J. Buffo (2018). Investigating active chaos formation as the source of Europa’s water vapor plumes, *Lunar and Planetary Science XLIX*, No. 1302.
- Walker, C. C.** and B. E. Schmidt (2016). From Order to Disorder: Characterizing the Transition from Cracked to Collapse on Europa, *Lunar and Planetary Science XLVII*, No. 2839.
- Spears, A., A. Howard, M. Meister, T. Collins, M. West, B. Schmidt, **C. C. Walker**, J. Buffo (2015). Design and Antarctic testing of the Icefin vehicle, *OCEANS 2015 - MTS/IEEE Washington*, pp. 1-6, doi:10.23919/OCEANS.2015.7401886.
- Schmidt, B. E., B. Gooch, K. M. Soderlund, G. W. Patterson, **C. C. Walker**, P. M. Schenk and D. D. Blankenship (2014), A chaos conveyor belt?, *Habitability of Icy Worlds*, LPI No. 4072.
- Walker, C. C.** and B. E. Schmidt (2014), Energy implications of fragmentation processes in Europa’s ice shell, *Habitability of Icy Worlds*, LPI No. 1774.
- Walker, C. C.**, B. E. Schmidt & J. N. Bassis (2014), On the Application of Fragmentation Theory to the Chaos Regions of Europa, *Lunar and Planetary Science XLV*, No. 2659.
- Walker, C. C.** and J. N. Bassis (2012), Mechanical failure of ice: Terrestrial ice shelf fracture models and the icy satellites, *Lunar and Planetary Science XLIII*, No. 2928.
- Walker, C. C.** and J. N. Bassis (2011), On the formation of a south polar basin in the ice shell of Enceladus. *Lunar and Planetary Science XLII*, No. 1719.
- Choukroun, M., J. C. Castillo-Rogez, **C. C. Walker** (2010). Effect of Microstructure and deformation regimes on anelasticity of water ice – Implications for Europa, Enceladus, and Titan, *Bulletin of the American Astronomical Society*, Vol. 42, 1074.
- Walker, C. C.**, M. W. Liemohn, C. D. Parkinson, and J. C. Castillo-Rogez (2010). On radar sounding applications for Enceladean ice, *IEEE International Geoscience and Remote Sensing Symposium*, 4522-4525, doi:10.1109/IGARSS.2010.5650687.
- Oliversen, R. J., **C. C. Walker** and eleven others (2008). Observations of Io and the plasma torus during 2007 and 2008. *Bulletin of the American Astronomical Society*, Vol. 40, No. 478.

Galvin, A. B., et al. (incl. **C. C. Walker**) (2007), Early Solar Wind Observations from the Plasma and Suprathermal Ion Composition (PLASTIC) Experiments on STEREO, *American Geophysical Union Joint Assembly Eos Transactions*, 88(23), SH34A-01.

Simunac, et al. (incl. **C. C. Walker**) (2007), Bulk Properties of Solar Wind Protons: Inter-comparison of Observations From STEREO, SOHO, ACE, and WIND, *American Geophysical Union Joint Assembly Eos Transactions*, 88(23), SH41A-10.

PAPERS PRESENTED AT MEETINGS AND INVITED LECTURES:

(first author only; *invited)

- 2022 ***Walker, C. C.** – Remote Sensing of the Cryosphere: Glaciers and ICESat-2, University of Maryland Geology Department, College Park, MD, April
- 2021 ***Walker, C. C.** - Active chaos regions as the source of water vapor plumes on Europa?, Europa Clipper Mission Science Team - Plumes Group, virtual, December
- Walker, C. C.,** T. Neumann, A. S. Gardner and C. Kluetmeier - Observations reveal coastal effects and structural changes associated with the breakup of West Ice Shelf, East Antarctica, *American Geophysical Union Fall Meeting*, virtual, December.
- *Walker, C. C.** - Earth's Poles in the Changing Climate, *Dolphins (Always) Know Best Webinar, Youth Climate Action Network - Taking It Global*, virtual podcast, January 2021.
- 2020 **Walker, C. C.** - Salty seas and sharks from space: Combining satellite remote sensing and in situ data sets to understand elasmobranch movement ecology in relation to ocean salinity, *American Geophysical Union Fall Meeting*, December.
- *Walker, C. C.,** Ocean World Ice Dynamics through an Antarctic Lens, OSEAN virtual seminar, July.
- *Walker, C. C.,** Remote Sensing at a Glacial Pace, MIT Glaciology, virtual, July.
- *Walker, C. C.,** ENSO-driven upwelling on the west Antarctic Peninsula, California Institute of Technology Oceanography seminar, virtual, May.
- *Walker, C. C.,** Ice-ocean interactions around Antarctica: Observations and implications for other ice-ocean worlds in the Solar System, seminar at Scripps Institution of Oceanography, La Jolla, CA, March.
- Walker, C. C. & A. S. Gardner,** In search of the perfect wave: Variability of marine-terminating glacier response along the Wilkes Land Coast to diverse oceanographic conditions, AGU Ocean Sciences, San Diego, CA, February.
- 2019 **Walker, C. C.,** A. S. Gardner, T. Neumann, H. A. Fricker, J. N. Bassis, and F. S. Paolo, Iceberg, right ahead!: The surprising and ongoing collapse of an East Antarctic ice shelf in response to changes in the ocean environment, *American Geophysical Union Fall Meeting*, San Francisco, CA, December.
- Walker, C. C.,** B. Smith, T. Neumann, A. Gardner, H. A. Fricker & the ICESat-2 Land Ice Team, ICESat-2 over the Polar Regions: Initial Observations of land ice from NASA's newest laser altimetry mission, IEEE International Geoscience and Remote Sensing Symposium, Yokohama, Japan, August.
- *Walker, C. C.,** Geophysical Modeling of Europa's Icy Shell and Terrestrial Analog Observations, Europa Clipper Mission Science Team PSG, Cornell University, June.

- *Walker, C. C.**, Remote Sensing of Ice on Earth and in Space: Dynamics at a Glacial Pace, NSF Next Generation of Polar Researchers (NGPR) workshop, USC Wrigley Boone Center, Catalina Island, CA, May.
- 2018** **Walker, C. C.**, A. S. Gardner, J. Nilsson and F. S. Paolo, The canary in Wilkes Land: Observations of unexpected marine-terminating glacier change in East Antarctica, American Geophysical Union Fall Meeting, Washington, DC, December.
- *Walker, C. C.**, Frozen Fractals All Around: How Fracture And Failure Processes Lead To Unique Landscapes Across Icy Surfaces Around The Solar System, Geological Society of America, Indianapolis, IN, November.
- Walker, C. C.**, B. E. Schmidt and J. J. Buffo, Ubiquitous and mysterious: Fracturing, collapse and expected outcomes above & below an icy shell, Asia and Oceania Geosciences Society, Honolulu, HI, June.
- 2017** **Walker, C. C.**, A. S. Gardner & J. Nilsson, The sleeping giant wakes its neighbors?: Observations of glacier change around Law Dome, East Antarctica, American Geophysical Union Fall Meeting, New Orleans, LA, December.
- *Walker, C. C.**, From the Earth to the Moons: Ice, Oceans, and Interactions, Pomona College Department of Physics/Astronomy, Claremont, CA, October.
- Walker, C. C.**, K. L. Craft and G. W. Patterson, Plumbing the depths: Water flow through fractures in Europa's subsurface, Europa Deep Dive 1: Ice-shell Exchange Processes, Houston, TX, November.
- Walker, C. C.** and A. S. Gardner, Clues from above: Antarctic ice shelf rift topography detected from space & airborne laser altimeters, International Glaciological Society, Boulder, CO, August.
- *Walker, C. C.**, From the Earth to the Moons: Ice, Oceans, and Interactions across the Solar System, Woods Hole Oceanographic Institution, Woods Hole, MA, March.
- 2016** **Walker, C. C.** and A. S. Gardner, On thin ice/in hot water: Rapid drawdown of Wordie Ice Shelf glacier tributaries in response to a warming ocean, American Geophysical Union Fall Meeting, San Francisco, CA, December.
- Walker, C. C.** and A. S. Gardner, Big Changes in Seller and Prospect Glaciers in the Decades After the Collapse of Wordie Ice Shelf, International Glaciological Society, La Jolla, CA, July.
- *Walker, C. C.**, Exploration of Earth's Cryosphere and its Role as Looking Glass for Ice-Ocean Worlds, University of Arizona, Tucson, AZ, January.
- 2015** **Walker, C. C.**, K. L. Craft, and B. E. Schmidt, Fathoms Below: The Propagation of Deep Water-filled Fractures and Implications for Surface Expression and Temporally-varying Activity at Europa, American Geophysical Union Fall Meeting, San Francisco, December.
- Walker, C. C.** and K. L. Craft, Endless (frozen) Summer: In Search of a Perfect Wave (or: conditions for water at Europa), Geological Society of America, Baltimore, MD, November.
- Walker, C. C.** and B. Schmidt, Extraterrestrial Glaciology: The role of subsurface lakes in ice shell-ocean interactions on Europa, International Glaciological Society, Cambridge, UK, August.

- Walker, C. C.** and B. E. Schmidt, Opening the Ice Shell: The Role of Basal Fractures in Ice Shell-Ocean Interactions, Astrobiology Science Conference (AbSciCon), Chicago, IL, June.
- 2014 **Walker, C. C.**, J. N. Bassis and B. E. Schmidt, All is not lost: The transition from order to disorder in Greenland's glaciers, American Geophysical Union Fall Meeting, San Francisco, CA, December.
- Walker, C. C.**, J. N. Bassis and H. A. Fricker, Structural & environmental controls on Antarctic ice shelf rift propagation from satellite monitoring 2002-present, Forum for Research on Ice Shelf Processes (FRISP), Cologne, Germany, June.
- 2013 **Walker, C. C.** and J. N. Bassis, Breaking the ice: On the application of fragmentation theory to Antarctica's ice shelves, American Geophysical Union Fall Meeting, San Francisco, CA, December.
- ***Walker, C. C.**, Fracture of Antarctica's ice shelves and implications for icy satellites, Georgia Institute of Technology, Atlanta, GA, November.
- Walker, C. C.** and J. N. Bassis, Satellite Observations of fractures in structurally-compromised ice: Observations of rift behavior at the highly-fractured Amery Ice Shelf, East Antarctica. IEEE International Geoscience and Remote Sensing Symposium, Melbourne, Australia, July.
- 2012 **Walker, C. C.**, J. N. Bassis and H. A. Fricker. Decadal observations of rift propagation in the Amery Ice Shelf, East Antarctica. American Geophysical Union Fall Meeting, San Francisco, CA, December.
- Walker, C. C.** and J. N. Bassis. Earthquakes, tidal waves, and breaking Antarctica's ice shelves. Michigan Engineering Symposium, Ann Arbor, MI, November.
- Walker, C. C.** and J. N. Bassis, On the science return of deploying a seismometry instrument package at the icy satellites. International Workshop on Instrumentation for Planetary Missions, NASA Goddard, Greenbelt, MD, October.
- Walker, C. C.**, J. N. Bassis, H. A. Fricker, and R. J. Czerwinski, Intermittent propagation of rifts in the Amery Ice Shelf. Amery Ice Shelf Ocean Research (AMISOR) Workshop, Hobart, Australia, October.
- ***Walker, C. C.**, Simulating Mechanical Failure in Ice: Applying Models of Antarctica's Disintegrating Ice Shelves to the Icy Moons of the Outer Solar System, Michigan Space Grant Consortium, Ann Arbor, MI, October.
- Walker, C. C.**, J. N. Bassis, H. A. Fricker, and R. J. Czerwinski, Intermittent rifting in the Amery Ice Shelf, East Antarctica. West Antarctic Ice Sheet (WAIS) Conference, Eatonville, WA, September.
- Walker, C. C.**, J. N. Bassis and R. J. Czerwinski, Stresses in planetary ice shells: Implications from decadal observations of the Amery Ice Shelf, East Antarctica. International Polar Year (IPY): From Knowledge to Action Conference, Montreal, Quebec, Canada, April.
- 2011 **Walker, C. C.** and J. N. Bassis, Simulations of failure in ice: Implications of terrestrial fracture models as applied to icy satellites of the outer solar system. American Geophysical Union Fall Meeting, San Francisco, CA, December.

- Walker, C. C.** and J. N. Bassis, Simulations of mechanical failure in ice: Implications of terrestrial fracture models as applied to the icy satellites of the outer solar system. University of Michigan Engineering Graduate Symposium, Ann Arbor, MI, November.
- Walker, C. C.** and J. N. Bassis. Bounds on compressional features in Enceladus' ice shell from terrestrial ice sheet models. European Planetary Sciences Congress and AAS Division of Planetary Sciences Joint Meeting, Nantes, France, October.
- Walker, C. C.** and J. N. Bassis. On the formation of a south polar basin in the ice shell of Enceladus. United Kingdom Polar Network (UKPN). University of Reading, Reading, UK, July. (*1st Prize: European Space Agency (ESA) remote sensing student project competition)
- 2010 **Walker, C. C.**, J. N. Bassis, M. W. Liemohn and C. D. Parkinson. Ice and sea floor dynamics on Earth: Possibilities for a comparative planetology study. American Geophysical Union Fall Meeting, San Francisco, CA, December.
- 2009 **Walker, C. C.**, D. McKague, T. H. Zurbuchen and 20 others, Development of the Michigan Nanosatellite Pipeline: Design & Implementation. International Space Development Conference, Orlando, FL, May.
- Walker, C. C.**, R. J. Oliverson., J. K. Donaldson. Io and the not-so-mythical torus: Observation using the McMath-Pierce Solar Telescope and the Stellar Spectrograph, Michigan Geophysical Union Annual Meeting, Ann Arbor, MI, March.
- 2007 **C. C. Walker** and the GSFC NASA Academy, The Venus Sample Targeting, Attainment, and Return (V- STAR) Mission, NASA Goddard Space Flight Center Student Intern Presentations, August.
- Walker, C. C.** and B. J. Bos. Development of a Mars Dust Cyclone Instrument and Camera, NASA Goddard Space Flight Center Intern Presentations, August.
- 2006 **Walker, C. C.**, M. A. Popecki, A. B. Galvin and C. Farrugia. Variations of Solar Wind Parameters Over a Solar Cycle: Implications for STEREO Observations. American Geophysical Union Fall Meeting, San Francisco, CA, December.

RECENT MEDIA RELATIONS AND COVERAGE (since 2019 appointment):

- 2022 NASA Earth Day Edition of Chief Scientist Jim Green's *Gravity Assist* podcast: "Walking on Broken Ice with Catherine Walker"; Interviewed and quoted by The New York Times correspondent Henry Fountain: "Why Did Two Antarctic Ice Shelves Fail? Scientists Say They Now Know"; NPR News with correspondent Alison Keyes: "East Antarctic ice shelf collapses"; BBC Radio 4 News program: "Ice Shelf Collapse"; KPFA UpFront, San Francisco: "Conger Ice Shelf"; Associated Press reporter Seth Borenstein: "Ice shelf collapses in previously stable East Antarctica"; The New York Times correspondent Henry Fountain: "In a First, an Ice Shelf Collapses in East Antarctica"; The Guardian correspondent Donna Lu: "Satellite data shows entire Conger ice shelf has collapsed"; Scientific American writer Theo Nicitopoulos: "Backward-Flowing Rivers Can Destabilize Ice Shelves"; BBC News Science correspondent Jonathan Amos: "How a colossal block of ice became an obsession"
- 2021 Interviewed and quoted for Discover Magazine by reporter Theo Nicitopoulos: "'Tiger stripes' on a Saturn Moon Could Be Even More Unique Than Previously Thought"

- 2020 Interviewed and quoted by Susmita Baral for Vice.com: “4 Ideas to Save the Planet with Controversial Geoengineering”
- 2019 Interviewed and quoted by correspondent Katherine Wu for NOVA: “Like a giant Thermos, Pluto keeps its underground ocean from freezing”
- (additional outreach, interviews and press events prior to 2019 not listed)