

Curriculum Vitae: Catherine Louise Johnson

Address: Dept. Earth, Ocean and Atmospheric Sciences **Email:** cjohnson@eoas.ubc.ca
University of British Columbia Vancouver. **Citizenship:** USA
Planetary Science Institute, Tucson, AZ **Email:** cjohnson@psi.edu

Employment History

2010 – present: *University of British Columbia, Vancouver.* Professor of Geophysics
2010 – present: *Planetary Science Institute, Tucson.* Senior Scientist
2006 – 2010: *University of British Columbia, Vancouver.* Associate Professor of Geophysics
2003 – 2006: *Scripps Institution of Oceanography.* Associate Professor of Geophysics
2001 – 2003: *Scripps Institution of Oceanography.* Assistant Professor of Geophysics
1998 – 2001: *Incorporated Research Institutions for Seismology (IRIS)*
Education & Outreach Program Manager
1995 – 1997: *Carnegie Institution of Washington.* Postdoctoral Researcher

Education

1989 – 1994: *Scripps Institution of Oceanography, UCSD.* PhD in Geophysics
1985 – 1989: *University of Edinburgh, Edinburgh, Scotland.* B. Sc. Honors, Geophysics
1987 – 1988: *University of Pennsylvania, Philadelphia.* Junior year abroad

Major Areas of Research Contributions:

Comparative planetary geophysics: The magnetic fields of Mercury, Mars, Earth and the Moon; lithospheric structure on, and interior evolution of, Venus; lunar and martian seismicity and interior structure.

Mission Experience

2012 – 2018: Co-I, InSight Discovery Mission.
2011 – 2018: Co-I, OSIRIS-REx Mission
2015 – 2018: OSIRIS-REx Laser Altimeter (OLA) Deputy Instrument Scientist.
2007 – 2016: Participating Scientist, MESSENGER Mission. Vice Chair, Geophysics Group, MESSENGER Science Steering committee (2013-2016).

Honors

2014: Bullard Lecturer, Geomagnetism, Paleomagnetism and Electromagnetism Section, American Geophysical Union (AGU) Fall Meeting.
2013: Fellow, American Geophysical Union.
2009: 3-year Canadian NSERC Discovery Accelerator Grant for 2010-2013. 100 total are awarded each year across all NSERC Science and Engineering Disciplines.
2006 – 2007: Peter Wall Early Career Scholar, UBC.

Service to the Community (excludes university service)

2019 – 2020: President, Geomagnetism, Paleomagnetism and Electromagnetism (GPE) Section, AGU.
2017 – 2018: President-Elect GPE Section, AGU.
2017 – 2018: Chair, Fellows Committee, GPE Section, AGU.
2017 – 2018: Chair, Gilbert Award Committee, GPE Section, AGU.
2015: AGU awards committees: Fleming Medal, Gilbert Award, Fellows committee.
2014 – 2015: NSERC Discovery Grants Panel, Geosciences Evaluation Group.
2012: Organized MESSENGER Science Team Meeting (100+ people), Vancouver.

Curriculum Vitae: Catherine Louise Johnson

- 2011 – 2014: Advisory Board, Studies of the Earth's Deep Interior.
- 2010: NSERC Industrial Chair Site Visit Committee, Univ. Western Ontario.
- 2010: Co-organized "Ground-Based Geophysics on the Moon" workshop, ASU.
- 2008 – 2010: AGU, Fall Meeting Program Committee Chair.
- 2008: Chair, Geophysics group, NASA LASER proposal review panel.
- 2008: Member, International Review Panel for U.K. proposed mission "MoonLITE".
- 2004 – 2006: Secretary, Geomagnetism and Paleomagnetism section, AGU.
- 2005 – 2006: Geomagnetism and Paleomagnetism Fall Program Committee representative.
- 2006: National Academy of Sciences, National Research Council Space Studies Board review committee for NASA's 2007-2016 Mars Architecture.
- 2004: Chair, NASA Proposal Review Panel to select Co-I for Japanese Lunar-A mission
- 2004 – 2006: Guest Editor, G-Cubed, AGU.
- 2001 – 2005: Assistant Editor, Geophysical Research Letters, AGU.
- 1998 – 2004: Committee on Education and Human Resources, AGU.
- 1998 – 2001: Professional development workshops for K-college educators throughout the U.S.
- 1998 – 2001: Workshops for Teach for America teachers on topics in earth science.
- 1998 – 2001: Development of museum exhibits at New Mexico Natural History Museum, Denver Museum of Science, American Museum of Natural History, Franklin Institute.
- 1997 – 1999: NASA Planetary Geology and Geophysics Program (PGG) Proposal Review Panel.
- 1997 – 1999: PGG Program Management Operations Working Group.
- 1998: NASA Planetary Instrument Definition and Development Proposal Review Panel.
- 1995 – 1998: NASA Cartography and Geological Mapping Working Group.

Invited Appointments and Lectureships

- 2013: Short Course: "Mathematical Modeling of Geophysical Fluids", African Institute for Mathematical Sciences, Cape Town, South Africa.
- 2012 – 2013: Visiting Scientist, Southwest Research Institute, Boulder.
- 2010 – present: Annual "Graduate Short Course in Planetary Science", University of Western Ontario, Canada.
- 2008: Cooperative Institute for Deep Earth Research, (CIDER), Santa Barbara. USA.
- 2006: Invited Professor, Institut de Physique du Globe de Paris, Paris, France.

Selected Invited Seminars (last ~5 yrs)

- 2018: Dept. of Earth and Planetary Sciences, Johns Hopkins University
- 2017: William P. Smith Meeting, The Geological Society, London UK
- 2017: Massachusetts Institute of Technology, MA.
- 2016: Hampton University / National Institute of Aerospace, VA.
- 2015: Lamont Doherty Earth Observatory
- 2015: MESSENGER BepiColombo Workshop, DLR, Berlin, Germany.
- 2015: Lunar and Planetary Laboratory, University of Arizona.
- 2014: Bullard Lecture, GP Section, American Geophysical Union Fall Meeting
- 2014: Physics and Astronomy, UBC Vancouver
- 2013: Colorado School of Mines, Golden.
- 2013: Laboratory for Atmospheric and Space Physics, Univ. of Colorado.

Teaching

I am committed to effective teaching at all levels including non-scientist first year students, upper division general science majors, specialist majors / Honors students or graduate students. These

Curriculum Vitae: Catherine Louise Johnson

audiences present different opportunities and challenges in course design and implementation. I have continued my professional development in education through active participation in the Carl Weiman Science Education Initiative (CWSEI, <http://www.cwsei.ubc.ca>). I have developed and taught

- large enrollment Earth and planetary science courses, at the 1st year and 3rd year level (~60-180 students) for undergraduate non-scientists and general science majors,
- a 2nd year computing class (90-120 students) with labs for Earth Science Honors students,
- specialized third and fourth year undergraduate courses in geodynamics, remote sensing and planetary physics (~10-15 students) and
- graduate courses in planetary science, mathematics and inverse theory for geophysics, space physics.

Mentoring

Primary Supervisor:

Research Associate (1): L. Philpott (2012 – present), M. Al Asad (2016 – present).

Postdocs (4): H. Susorney (2017-present), A. Ritzer (2010–2013), K. Lawrence (2011–2012), J. Monteux (2009–2010), S. Mohit (2008–2010).

Graduate students (9): M. Russell (MSc., in progress), G. Peterson (PhD., in progress), A. Mittelholz (PhD, in progress), J-F. Blanchette-Guertin (PhD 2014), R. Winslow (PhD 2014), H. Uno (MSc 2009), K. Lawrence (PhD 2008), R. Bulow (PhD 2007), R. Comstock (MSc 2004).

Undergraduate Theses (3): J. Kalynn (2012), C. Hanneson (2016), A. Obertas (2015).

Undergraduate Interns (10), K-12 teachers (3), high school students (1).

Committee Member / Co-supervision: *Graduate thesis committees (15).*

Outreach

Interviewed for CBC’s Quirks and Quarks (2011, 2012, 2015, 2018), Discovery Channel, New Scientist, Australian Broadcasting Company, Science News, Forbes, Globe and Mail, New York Times, LA Times, C-FAX Radio, CTV News, Sky & Telescope (2012, 2015, 2018), Vancouver ScienceWorld “Future Science Leaders” Grade 10 program (2012). Consultant for Discovery Channel (2004), Science Museum Minnesota and Red Hill Studios, Sausalito (2001), and WNET, Public Television (1998).

Funding History

Agency	Title	PI/Co-I	Year
Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant	Magnetic Field Investigations of Mars and Mercury	PI	2016-2021
NSERC Promoscience and Promoscience Supplement	The Pacific Museum of the Earth Outreach Program	PI	2016-2018
Canadian Space Agency (CSA): Planetary Missions Co-Investigator	Geophysical Studies for the InSight Mission to Mars <i>(support for students; my</i>	PI	2015-2019

Curriculum Vitae: Catherine Louise Johnson

	<i>participation supported by NASA)</i>		
Canadian Space Agency	Geophysical Investigations of Asteroid Bennu <i>(Science investigations support)</i>	PI	2016-2021
CSA / Public Works of Canada	OSIRIS REx (OLA) Support <i>(Operational support for the OSIRIS REx Laser Altimeter (OLA) and data product delivery)</i>	Co-I	2013-2021
NSERC CREATE	Technologies and Techniques for Earth and Space Exploration	Co-I	2011-2016
NSERC Discovery Grant	Geophysical Investigations of Earth, Moon and Mercury	PI	2009-2016
NSERC Promoscience	The Pacific Museum of the Earth Outreach Program	PI	2011-2015
NASA, Planetary Geology and Geophysics Program	The Lunar Magnetic Field Record	PI	2013-2015
NSERC Accelerator Award	Geophysical Investigations of Earth, Moon and Mercury	PI	2010-2013
UBC Faculty of Science	Active Earth (Seismic Display, Pacific Museum of the Earth, Earth and Ocean Sciences)	PI	2010-2011
NSERC Promoscience	The Pacific Museum of the Earth Outreach Program	PI	2008-2011
NASA, MESSENGER Participating Scientist Program	Investigations of Mercury's Magnetic Field	PI	2007-2016
NASA, Planetary Geology and Geophysics Program	Geophysical Investigations of the Moon	PI	2008-2011
NSERC Discovery Grant	Geophysical Studies of the Terrestrial Planets	PI	2007-2009
Peter Wall Institute (UBC, Vancouver)	Early Career Scholar	PI	2006-2007
NASA, Planetary Geology and Geophysics Program	Geophysical Investigations of the Terrestrial Planets	PI	2005-2008
NSF, Geophysics Program	Modeling of the Geomagnetic Field on Million Year Time Scales	PI	2003-2006
NSF, Earth Sciences Directorate	Collaborative Proposal for Facility Support: Development and Maintenance of the Magnetics Information Consortium (MagIC)	Co-I	2003-2006
NSF, Digital Libraries	Bridging the Gap Between Libraries and Data Archives	Co-I	2001-2003
NASA, Planetary Geology and Geophysics Program	Geologic Mapping of the Sedna/Lavinia Region, Venus	Co-I	2001-2003
NSF, Professional	Building a Research Program in	PI	2000-2002

Curriculum Vitae: Catherine Louise Johnson

Opportunities for Women in Research and Education (POWRE)	Geomagnetism and Paleomagnetism		
NASA, Planetary Geology and Geophysics Program	Comparative Studies of Planetary Lithospheres	PI	1999-2002
NSF, Geophysics Program	Time-Averaged Field Investigations	Co-I	1998-2001
NSF, Geophysics Program	Long Term Structure and Variability in the Geomagnetic Field	Co-I	1996-1999
NASA, Planetary Geology and Geophysics Program	Lithospheric Thickness Variations on Venus from Magellan Data	PI	1995-1998
NSF, Geophysics Program	Lava Flow Records of Paleosecular Variation from the Azores	Co-I	1995-1996

Refereed Publications

First authorship: My philosophy is that work done by my students or postdocs should result in publications on which that individual is first author. Publications with the first author in bold font, indicate a student/post-doc supervised by me at the time the research was done.

1. McKenzie, D., P. G. Ford, **C. Johnson**, B. Parsons, D. Sandwell, S. Saunders, & S. C. Solomon, Features on Venus Generated by Plate Boundary Processes, *Journal of Geophysical Research Planets*, 97, 13,533-13,544, 1992
2. **Johnson, C. L.** & D. T. Sandwell, Joints in Venusian Lava Flows, *Journal of Geophysical Research Planets*, 97, 13, 601-13,610, 1992
3. **Johnson, C. L.** & D. T. Sandwell, Lithospheric Flexure on Venus, *Geophysical Journal International*, 119, 627-647, 1994
4. Sandwell, D.T., Winterer, E.L., Mammertickx, J., Duncan, R. A., Lynch, M. A., Levitt, D. A. & **C. L. Johnson**, Evidence for Diffuse Extension of the Pacific Plate: No Mini Hot Spot, No Convection, *Journal of Geophysical Research*, 100, 15,087-15,099, 1995
5. **Johnson, C. L.** & C. G. Constable, The Time-Averaged Geomagnetic Field as Recorded by Lava Flows Over the Past 5 Myr, *Geophysical Journal International*, 122, 489 - 519, 1995.
6. **Johnson, C. L.** & C. G. Constable, Palaeosecular Variation Recorded by Lava Flows over the last 5 Million Years, *Philosophical Transactions of the Royal Society of London*, 354, #1704, 89-141, 1996
7. **Johnson, C. L.** & C. G. Constable, Long Term Structure in the Geomagnetic Field: Global and Regional Biases 0 - 5 Ma, *Geophysical Journal International*, 131, 643-666, 1997
8. Sandwell, D. T., **C. L. Johnson**, F. Bilotti & J. Suppe, Driving Forces for Limited Tectonics on Venus, *Icarus*, 129, 232-244, 1997
9. Phillips, R. J., **C. L. Johnson**, S. J. Mackell, P. Morgan, D. T. Sandwell, & M. T. Zuber, Lithospheric Mechanics and Dynamics of Venus, *chapter in Venus II*, University of Arizona Press, 1997
10. **Johnson, C. L.** & C. G. Constable, Persistent Anomalous Geomagnetic Fields Beneath the Pacific, *Geophysical Research Letters*, 25, 1011-1014, 1998
11. **Johnson, C. L.**, J. Wijbrans, C. G. Constable, J. Gee, H. Staudigel, L. Tauxe, V. H. Forjaz, & M. Salgueiro, $^{40}\text{Ar}/^{39}\text{Ar}$ Dating and Paleomagnetism of Sao Miguel Lavas, Azores, *Earth and Planetary Science Letters*, 160, 637-649, 1998
12. Zuber, M. T., D. E. Smith, J. B. Abshire, R. S. Azfal, O. Aharonson, K. Fishbaugh, P. G. Ford, H. V. Frey, J. B. Garvin, J. W. Head, A. B. Ivanov, **C. L. Johnson**, D. O. Muhleman, G. A. Neumann, G. H. Pettengill, R. J. Phillips, S. C. Solomon, X. Sun, H. J. Zwally, W. B. Banerdt,

Curriculum Vitae: Catherine Louise Johnson

- T. C. Duxbury, Observations of the North Polar Region of Mars from the Mars Orbiter Laser Altimeter, *Science*, 282, 2053-2060, 1998.
13. Constable, C. G. & C. L. Johnson, Anisotropic Paleosecular Variation Models: Implications for Geomagnetic Field Observables, *Physics of the Earth and Planetary Interiors*, 115, 17-34, 1999.
 14. Johnson, C. L., S. C. Solomon, J. W. Head, R. J. Phillips, M. T. Zuber & D. E. Smith, Lithospheric Loading by the Northern Polar Cap on Mars, *Icarus*, 144, 313-328, 2000.
 15. Constable, C. G., C. L. Johnson & S. P. Lund, Global Geomagnetic Field Models for 0-3ka: Transient or Permanent Flux Lobes? *Philosophical Transactions of the Royal Society of London*, 358, 991-1008, 2000.
 16. Smith, D. E., M. T. Zuber, H. V. Frey, J. B. Garvin, J. W. Head, D. O. Muhleman, G. H. Pettengill, R. J. Phillips, S. C. Solomon, H. J. Zwally, W. B. Banerdt, T. C. Duxbury, M. P. Golombek, F. G. Lemoine, G. A. Neumann, D. D. Rowlands, O. Aharonson, P. G. Ford, A. B. Ivanov, C. L. Johnson, P. J. McGovern, J. B. Abshire, R. S. Azfal & X. Sun, Mars Orbiter Laser Experiment, *Journal of Geophysical Research Planets*, 106, 23,689 – 23,732, 2001
 17. L. Tauxe, C. G. Constable, C. L. Johnson, W. R. Miller, H. Staudigel. Paleomagnetism of the Southwestern USA Recorded by 0-5 Ma Igneous Rocks, *Geochemistry, Geophysics, Geosystems*, 4, doi: 10.1029/2002GC000343, 2003.
 18. Johnson, C. L. & M. R. Richards, A Conceptual Model for the Relationship between Coronae and Large-scale Mantle Dynamics on Venus, *Journal of Geophysical Research Planets*, 108, doi: 10.1029/2002JE001962, 2003.
 19. D. Kilb, C. S. Keen, R. L. Newman, G. M. Kent, D. T. Sandwell, F. L. Vernon, C. L. Johnson, J.A. Orcutt. The Visualization Center at Scripps Institution of Oceanography: Education & Outreach. *Seismological Research Letters*, 74, 641-648, 2003.
 20. Johnson, C. L., & R. J. Phillips, Evolution of the Tharsis Region of Mars: Insights from Magnetic Field Observations, *Earth and Planetary Science Letters*, 230, 241-254, 2004
 21. Bulow, R., C. L. Johnson, & P. Shearer. New Events Discovered in the Lunar Apollo Seismic Data. *Journal of Geophysical Research Planets*, 110, E10003, doi:10.1029/2005JE002414. 2005.
 22. Solomon, S. C., O. Aharonson, J. M. Aurnou, W. B. Banerdt, M. H. Carr, A. J. Dombard, H. V. Frey, M. P. Golombek, S. A. Hauck, J. W. Head, B. Jakosky, C. L. Johnson, P. J. McGovern, G. A. Neumann, R. J. Phillips, D. E. Smith, M. T. Zuber. New Perspectives on Ancient Mars, *Science*, 307, 1214-1220, 2005.
 23. Constable, C. G. & C. L. Johnson. A Paleomagnetic Power Spectrum. *Physics of the Earth and Planetary Interiors*, 153, 61-73, 2005.
 24. Lawrence, K. L., C. G. Constable and C. L. Johnson, The time-averaged field and paleosecular variation at 20° latitude, *Geochemistry, Geophysics, Geosystems*, 7, doi:10.1029/2005GC001181, 2006.
 25. Dombard, A. J., C. L. Johnson, M. A. Richards & S. C. Solomon, A Magmatic Loading Model for Coronae on Venus, *Journal of Geophysical Research Planets*, 112, doi:10.1029/2006JE002731, 2007.
 26. Bulow, R., C. L. Johnson, B. G. Bills, P. M. Shearer, Temporal and Spatial Properties of Some Deep Moonquake Clusters, *Journal of Geophysical Research Planets*, 112, E09003, doi:10.1029/2006JE002847 2007
 27. Lognonné, P. & C. L. Johnson, Planetary Seismology, in *Treatise in Geophysics*, vol. 10, ch. 4, 2007.
 28. Johnson, C. L. & P. McFadden, Paleosecular Variation and the Time-Averaged Paleomagnetic Field, in *Treatise in Geophysics*, vol 5, ch. 11, 2007.
 29. Johnson, C. L., and 11 others, Recent Investigations of the 0-5 Ma Geomagnetic Field Recorded by Lava Flows, *Geochemistry, Geophysics, Geosystems*, doi:10.1029/2007GC001696, 2008
 30. Lawrence, K. L., C. L. Johnson, J. S. Gee, L. Tauxe, Lunar Paleointensity Measurements: Implications for Lunar Magnetic Evolution, *Physics of the Earth and Planetary Interiors*, (Editor Keke Zhang), 168, 71–87, 2008.

Curriculum Vitae: Catherine Louise Johnson

31. Jellinek, M., C. L. Johnson & G. Schubert, Constraints on the elastic thickness and heat flow at Tharsis from topography and magnetic field observations, *Journal of Geophysical Research*, 113, E09004, doi:10.1029/2007JE003005, 2008.
32. Anderson, B. J., M. H. Acuña, H. Korth, M. E. Purucker, C. L. Johnson, J. A. Slavin, S. C. Solomon, & R. L. McNutt, Jr. The Magnetic Field of Mercury: New Constraints on Structure from MESSENGER, *Science*, 321, 82-85, 2008.
33. **Ziegler, L.**, C. G. Constable & C. L. Johnson, Testing the Robustness and Limitations of 0-1Ma Absolute Paleointensity Data, *Physics of the Earth and Planetary Interiors*, 170, 34-45, 2008.
34. **Lawrence, K. L.**, L. Tauxe, H. Staudigel, C. G. Constable, A. Koppers, W. McIntosh, and C. L. Johnson, Paleomagnetic Field Properties near the Southern Hemisphere Tangent Cylinder, *Geochemistry, Geophysics, Geosystems*, vol. 10, #1, doi:10.1029/2008GC002072, 2009
35. **Uno, H.**, C. L. Johnson, B. J. Anderson, H. Korth & S. C. Solomon, Mercury's Internal Magnetic Field: Constraints from Regularized Inversions, *Earth and Planetary Science Letters*, 285, issues 3-4, 328-339, 2009.
36. **Mohit, P. S.**, C. L. Johnson, O. Barnouin-Jha, M. T. Zuber, & S. C. Solomon, Shallow Basins on Mercury: Evidence of Relaxation? *Earth and Planetary Science Letters*, 285, issues 3-4, 355-363, 2009.
37. **Weber¹, R.**, B.G. Bills, C.L. Johnson, Constraints on deep moonquake focal mechanisms through analyses of tidal stress, *J. Geophys. Res. Planets*, 114, E05001, doi:10.1029/2008JE003286, 2009
38. Lognonné, P.L., M. Le Feuvre, C.L. Johnson & R. Weber. Moon meteoritic seismic hum: state prediction, *J. Geophys. Res.*, 114, E12003, doi:10.1029/2008JE003294, 2009
39. Anderson, B. J., M. H. Acuna, H. Korth, J. A. Slavin, H. Uno, C. L. Johnson, M. E. Purucker, S. C. Solomon, J. M. Raines, T. H. Zuburchen, G. Gloeckler & R. L. McNutt, The Magnetic Field of Mercury, *Space Science Reviews*, doi: 10.1007/s11214-009-9544-3, 2009
40. Aubert, J., C. L. Johnson & J. A. Tarduno, Observations and Models of the Long-Term Evolution of Earth's Magnetic Field, *Space Science Reviews*, doi: 10.1007/s11214-010-9684-5, 2010.
41. Zuber, M.T., L.G.J. Montési, G.T. Farmer, S.A. Hauck II, J. Andreas Ritzer, R.J. Phillips, S.C. Solomon, D.E. Smith, M. Talpe, J. W. Head III, G. A. Neumann, T.R. Watters and C.L. Johnson, Lithospheric strain accommodation on Mercury from altimetric profiles of ridges and lobate scarps measured during MESSENGER flybys 1 and 2, *Icarus*, 209, 247-255, 2010
42. Smith, D. E., M. T. Zuber, R. J. Phillips, S. C. Solomon, G. A. Neumann, F. G. Lemonine, S. J. Peale, J.-L. Margot, M. H. Torrence, M. J. Talpe, J. Head III, S. A. Hauck II, C. L. Johnson, M. E. Perry, O. Barnouin-Jha, D. K. Srinivasan, & R. J. McNutt, The Equatorial Shape and Gravity Field of Mercury from MESSENGER Flybys 1 and 2, *Icarus*, 209, 88-100, 2010
43. Alexeev, I. I., E. S. Belenkaya, J. A. Slavin, D. H. Baker, B. J. Anderson, S. A. Boardsen, C. L. Johnson, H. Korth, M. E. Purucker, M. Sarantos, and S. C. Solomon, Mercury's magnetospheric magnetic field after the first two MESSENGER flybys, *Icarus*, 209, 23-29, 2010
44. **Weber¹, R.C.**, Bills, B.G. and C. L. Johnson, A Simple Physical Model for Deep Moonquakes, *Physics of the Earth and Planetary Interiors*, 182, #3-4, 152-160, 2010
45. Watters, T. & C. L. Johnson, Lunar Tectonics, in *Planetary Tectonics*, Cambridge University Press, 2010.
46. **Ziegler, L. B.**, C. G. Constable, C. L. Johnson, and L. Tauxe. PADM2M: A Penalized Maximum Likelihood Model of the 0-2 Ma Paleomagnetic Axial Dipole Moment, *Geophys. J. Int.*, doi: 10.1111/j.1365-246X.2010.04905.x, 2011
47. **Monteux, J.**, Jellinek, M. and C. L. Johnson, Why Might Planets and Moons Have Early Dynamos?, *Earth & Planet. Sci. Lett*, 310, 349-359, 2011.
48. Anderson, B. J., C. L. Johnson, H. Korth, M. E. Purucker, R. M. Winslow, J. A. Slavin, S. C. Solomon, R. L. McNutt, Jr., J. M. Raines, T. H. Zurbuchen: The Global Magnetic Field of Mercury from MESSENGER Orbital Observations, *Science*, 333, 1859-1862, 2011
49. Korth, H., B. J. Anderson, J. M. Raines, J. A. Slavin, T. H. Zurbuchen, C. L. Johnson, M. E. Purucker, R. M. Winslow, S. C. Solomon, R. L. McNutt Jr., Plasma Pressure in Mercury's

Curriculum Vitae: Catherine Louise Johnson

- Equatorial Magnetosphere Derived from MESSENGER Magnetometer Observations, *Geophysical Research Letters*, 38, doi:10.1029/2011GL049451, 2011
50. Zuber, M. T., D. E. Smith, R. J. Phillips, S. C. Solomon, G. A. Neumann, S. A. Hauck, II, S. J. Peale, O. S. Barnouin, J. W. Head, C. L. Johnson, F. G. Lemoine, E. Mazarico, X. Sun, M. H. Torrence, A. M. Freed, C. Klimczak, J.-L. Margot, J. Oberst, M. E. Perry, C. M. Ernst, R. J. McNutt, Jr., J. A. Balcerski, N. Michel, M. J. Talpe, and D. Yang, Topography of the northern hemisphere of Mercury from MESSENGER laser altimetry, *Science*, 336, 217-220, 2012.
 51. Smith, D. E., M. T. Zuber, R. J. Phillips, S. C. Solomon, S. A. Hauck, II, F. G. Lemoine, E. Mazarico, G. A. Neumann, S. J. Peale, J.-L. Margot, C. L. Johnson, M. H. Torrence, M. E. Perry, D. D. Rowlands, S. Goossens, J. W. Head, and A. H. Taylor, Gravity field and internal structure of Mercury from MESSENGER, *Science*, 336, 214-217, 2012.
 52. **Winslow, R. M.**, C. L. Johnson, B. J. Anderson, H. Korth, J. A. Slavin, M. E. Purucker and S. C. Solomon, Observations of Mercury's northern cusp region with MESSENGER's Magnetometer, *Geophysical Research Letters*, 39, L08112, 10.1029/2012GL051472, 2012.
 53. **Blanchette-Guertin, J.-F.**, C. L. Johnson and J. F. Lawrence, Investigations of Scattering in Lunar Seismic Data, *J. Geophys. Res.*, 117, doi:10.1029/2011JE004042, 2012.
 54. Slavin, J. A., S. M. Imber, S. A. Boardsen, G. A. DiBraccio, T. Sundberg, M. Sarantos, T. Nieves-Chinchilla, A. Szabo, B. J. Anderson, H. Korth, T. H. Zurbuchen, J. M. Raines, C. L. Johnson, **R. M. Winslow**, R. M. Killen, R. L. McNutt Jr. and S. C. Solomon. MESSENGER observations of a flux-transfer-event shower at Mercury, *J. Geophys. Res.*, 117, 10.1029/2012JA017926, 2012
 55. Baker, D. N., G. Poh, D. Odstrcil, C. N. Arge, M. Benna, C. L. Johnson, H. Korth, D. J. Gershman, G. C. Ho, W. McClintock, T. Cassidy, J. M. Raines, A. W. Merkel, D. Schriver, J. A. Slavin, S. C. Solomon, P. M. Travnicek, **R. M. Winslow**, and T. H. Zurbuchen, Solar wind forcing at Mercury: WSA-ENLIL model results. *J. Geophys. Res.*, 117, 10.1029/2012JA018064, 2012.
 56. Korth, H., B. J. Anderson, C. L. Johnson, **R. M. Winslow**, J. A. Slavin, M. E. Purucker, S. C. Solomon, and R. L. McNutt Jr., Characteristics of the plasma distribution in Mercury's equatorial magnetosphere derived from MESSENGER Magnetometer observations. *J. Geophys. Res.*, 117, 10.1029/2012JA018952, 2012.
 57. Anderson, B. J., C. L. Johnson, H. Korth, **R. M. Winslow**, J. E. Borovsky, M. E. Purucker, J. A. Slavin, S. C. Solomon, M. T. Zuber, and R. L. McNutt Jr. Low-degree structure in Mercury's planetary magnetic field, *J. Geophys. Res.*, 117, 10.1029/2012JE004159, 2012
 58. Johnson, C. L., M. E. Purucker, H. Korth, B. J. Anderson, **R. M. Winslow**, M. M. H. Al Asad, J. A. Slavin, Igor. I. Alexeev, R. J. Phillips, M. T. Zuber, and S. C. Solomon. MESSENGER observations of Mercury's magnetic field structure, *J. Geophys. Res.*, 117, E00L14, 10.1029/2012JE004217, 2012
 59. **Kalynn, J.**, C. L. Johnson, G. R. Ozinski, O. Barnouin. Topographic Characterization of Complex Lunar Craters with LOLA Data, *Geophys. Res. Lett.*, 40, 38-42, DOI: 10.1029/2012GL053608, 2013.
 60. **Winslow, R. M.**, B. J. Anderson, C. L. Johnson, J. A. Slavin, H. Korth, M. E. Purucker, N. Baker and S. C. Solomon, Mercury's magnetopause and bow shock from MESSENGER Magnetometer observations, *J. Geophys. Res.*, 118, 2213-2227, doi:10.1002/jgra.50237, 2013.
 61. **Monteux, J.**, A. M. Jellinek, C. L. Johnson, Dynamics of core merging after a martian mega-impact, *Icarus*, 226, 20-32, 2013.
 62. Anderson, B. J., C. L. Johnson and H. Korth, A Magnetic Disturbance Index for Mercury's Magnetic Field Derived from MESSENGER Magnetometer Data, *G-cubed*, 14, #9, doi:10.1002/ggge.20242, 2013.
 63. Masters, A., J. A. Slavin, G. A. DiBraccio, T. Sundberg, **R. M. Winslow**, C. L. Johnson, B. J. Anderson & H. Korth, A comparison of magnetic overshoots at the bow shocks of Mercury and Saturn, *J. Geophys. Res.*, 118, 10.1002/jgra.50428, 2013.
 64. Hauck, II, S. A., J.-L. Margot, S. C. Solomon, R. J. Phillips, C. L. Johnson, F. G. Lemoine, E. Mazarico, T. J. McCoy, S. J. Peale, M. E. Perry, D. E. Smith, M. T. Zuber, The curious case of Mercury's internal structure, *J. Geophys. Res. Planets*, 118, 1204-1220, doi:10.1002/jgre.20091, 2013.

Curriculum Vitae: Catherine Louise Johnson

65. **Winslow, R. M., C. L. Johnson, B. J. Anderson, D. J. Gershman, J. M. Raines, R. J. Lillis, H. Korth, J. A. Slavin, S. C. Solomon, T. H. Zuburchen, M. T. Zuber.** Mercury's surface magnetic field determined from proton reflectometry. *Geophys. Res. Lett.*, 41, 4463-4470, doi:10.1002/2014GL060258, 2014.
66. Anderson, B. J., C. L. Johnson, H. Korth, J. A. Slavin, **R. M. Winslow, R. J. Phillips, R. L. McNutt, S. C. Solomon.** Steady-state field-aligned currents at Mercury. *Geophys. Res. Lett.*, 41, 7444-7452, doi:10.1002/2014GL061677, 2014.
67. **Philpott, L. C., C. L. Johnson, R. M. Winslow, B. J. Anderson, H. Korth, M. E. Purucker, S. C. Solomon,** Constraints on the secular variation of Mercury's magnetic field from the combined analysis of MESSENGER and Mariner 10 data. *Geophys. Res. Lett.*, 41, 6627-6634, doi:10.1002/2014GL061401, 2014.
68. Slavin, J. A., G. A. DiBraccio, D. J. Gershman, S. M. Imber, G. K. Poh, J. M. Raines, T. H. Zurbuchen, X. Jia, D. N. Baker, K.-H. Glassmeier, S. A. Livi, S. A. Boardsen, T. A. Cassidy, M. Sarantos, T. Sundberg, A. Masters, **C. L. Johnson, R. M. Winslow, B. J. Anderson, H. Korth, R. L. McNutt, Jr., and S. C. Solomon,** MESSENGER observations of Mercury dayside magnetosphere under extreme solar wind conditions, *J. Geophys. Res.: Space Physics*, 119, 8087-8116, 10.1002/2014JA020319, 2014.
69. Domingue, D. L. C. R. Chapman, R. M. Killen, T. H. Zurbuchen, J. A. Gilbert, M. Sarantos, M. Benna (both at GSFC), J. A. Slavin, D. Schriver, P. M. Trávníček, T. M. Orlando, A. L. Sprague, D. T. Blewett, J. J. Gillis-Davis (Univ. Hawaii), W. C. Feldman, D. J. Lawrence, G. C. Ho, D. S. Ebel, L. R. Nittler, F. Vilas, C. M. Pieters, S. C. Solomon, **C. L. Johnson, R. M. Winslow, J. Helbert, P. N. Peplowski, S. Z. Weider, N. Mouawad, N. R. Izenberg, W. E. McClintock,** Mercury's weather-beaten surface: Understanding Mercury in the context of lunar and asteroidal space weathering studies, *Space Science Reviews*, 181, 121-214, 2014.
70. **Blanchette-Guertin, J.-F., C. L. Johnson, J. F. Lawrence,** Modeling seismic energy propagation in highly scattering environments. *J. Geophys. Res. Planets*, 120, doi:10.1002/2014JE004654, 2015.
71. Lognonné, P. & **C. L. Johnson,** Planetary Seismology, in *Treatise in Geophysics* (revised edition), 2015.
72. Johnson, C. L. & P. McFadden, Paleosecular Variation and the Time-Averaged Paleomagnetic Field, in *Treatise in Geophysics* (revised edition), 2015.
73. Johnson, C. L., R. J. Phillips, M. E. Purucker, B. J. Anderson, P. K. Byrne, D. W. Denevi, J. M. Feinberg, S. A. Hauck II, J. W. W. Head III, H. Korth, P. B. James, E. Mazarico, G. A. Neumann, **L. C. Philpott, M. A. Siegler, N. A. Tsyganenko, S. C. Solomon,** Low-altitude Magnetic Field Measurements by MESSENGER Reveal Mercury's Ancient Crustal Field, *Science*, 348, pp 892-895, 2015.
74. Korth, H., N. A. Tsyganenko, **C. L. Johnson, L. C. Philpott, B. J. Anderson, M. Al Asad, S. C. Solomon, R. L. McNutt,** Modular model for Mercury's magnetospheric magnetic field confined within the average observed magnetopause, *JGR Space Physics*, doi:10.1002/2015JA021022, 2015.
75. Johnson, C. L., **L. C. Philpott, B. J. Anderson, S. A. Hauck II, D. Heyner, H. Korth, R. J. Phillips, R. M. Winslow and S. C. Solomon** (2016). MESSENGER Observations of Induced Magnetic Fields in Mercury's Core, *Geophys. Res. Lett.*, vol. 43, no. 6, pp. 2436–2444, 2016. doi: 10.1002/2015GL067370
76. Susorney H. C. M., O. S. Barnouin, C. M. Ernst and **C. L. Johnson** (2016), Morphometry of Impact Craters on Mercury from MESSENGER Altimetry and Imaging, *Icarus*, vol. 271, pp. 180 –193, doi: <http://dx.doi.org/10.1016/j.icarus.2016.01.022>.
77. Johnson, C. L. and S. A. Hauck, II (2016), A whole new Mercury: MESSENGER reveals a dynamic planet at the last frontier of the inner solar system, *J. Geophys. Res.: Planets*, 121, 2349–2362, doi:10.1002/2016JE005150.
78. Strauss, B. E., J. M. Feinberg, and **C. L. Johnson** (2016). Magnetic mineralogy of the Mercurian lithosphere, *J. Geophys. Res. Planets*, 121, 2225–2238, doi:10.1002/2016JE005054.
79. Korth, H., **C. L. Johnson, L. Philpott, N. A. Tsyganenko, and B. J. Anderson,** (2017). A dynamic model of Mercury's magnetospheric magnetic field. *Geophysical Research Letters*, 44, 10,147-10,154, doi: 10.1002/2017GL074699.

Curriculum Vitae: Catherine Louise Johnson

80. **Urbancic, N. R.**, Ghent, C. L. Johnson, S. Stanley, D. Hatch, K. A. Carroll, W. B. Garry, and M. Talwani (2017). Subsurface density structure of Taurus-Littrow Valley using Apollo 17 gravity data, *J. Geophys. Res. Planets*, 122, 1181-1194, doi:10.1002/2017JE005296.
81. **Mittelholz, A.**, C. L. Johnson, and R. J. Lillis (2017). Global-scale external magnetic fields at Mars measured at satellite altitude, *J. Geophys. Res. Planets*, 122, 1243–1257, doi:10.1002/2017JE005308.
82. Moore, W. B., A. Lenardic, A. M. Jellinek, C. L. Johnson, C. Goldblatt and R. D. Lorenz, (2017). How habitable zones and super-Earths lead us astray. *Nature Astronomy*, (Comment), 1, 43, doi: 10.1038/s41550-017-0043.
83. Winslow, R. M., **L. Philpott**, C. Paty, N. Lugaz, N. Schwadron, C. L. Johnson and H. Korth (2017). Statistical study of ICME effects on Mercury’s magnetospheric boundaries and northern cusp region from MESSENGER, *J. Geophys. Res., Space Physics*, 122, 4960–4975, doi:10.1002/2016JA023548
84. Daly, M. G., O. S. Barnouin, C. Dickinson, J. Seabrook, C. L. Johnson, G. Cunningham, T. Haltigin, D. Gaudreau, C. Brunet, I. Aslam, A. Taylor, E. B. Bierhaus, W. Boynton, M. Nolan and D. S. Lauretta (2017). The OSIRIS-REx Laser Altimeter (OLA) Investigation and Instrument, *Space Sci. Rev.*, 212, 899-924, doi:10.1007/s11214-017-0375-3.
85. Cromwell, G., C. L. Johnson, L. Tauxe, C. G. Constable and N. Jarboe, PSV10: a global data set for 0-10 Ma time-averaged field and paleosecular variation studies, in press, *Geochem., Geophys. Geosys.*, doi: 10.1002/2017GC007318, published online, March 2018.
86. **Mittelholz, A.**, C. L. Johnson and A. Morschhauser, A New Magnetic Field Activity Proxy for Mars from MAVEN data, submitted to *Geophys. Res. Lett.*, March 2018.
87. Johnson, C. L., B. J. Anderson, H. Korth, R. J. Phillips and **L. C. Philpott**, Mercury’s Internal Magnetic Field, Chapter 5, Mercury from MESSENGER, Cambridge University Press, in press, 2018.

¹My former student, R. Bulow changed her name to R. Weber.