

Brandon C. Johnson

Department of Earth, Environmental and Planetary Sciences
Brown University
324 Brook St., Box 1846
Providence, RI 02912

Email: Brandon_Johnson@Brown.edu
Phone: 401-863-2417
Office: 303 Lincoln Field Building
Web: brandoncjohnson.com

Education

Ph.D. Physics, “The formation of distal impact ejecta”, Advisor H. Jay Melosh
2013 - Purdue University

B.S. Physics with Mathematical Sciences Minor (summa cum laude)
2009 - Michigan Technological University

Research and Teaching Experience

Brown University

2015 - Present Assistant Professor

Massachusetts Institute of Technology

2014 - 2015 Postdoctoral Associate – Advisor: Maria Zuber

Purdue University

2010 - 2014 Graduate Research Assistant – Advisor: H. Jay Melosh
2009 - 2010 Graduate Research Assistant
2009 - 2010 Graduate Teaching Assistant
2009 Pedagogical Methods for Physics Graduate Students (Course)

Michigan Technological University

2006 - 2009 Undergraduate Research Assistant
2006 - 2009 Undergraduate Teaching Assistant

Honors and Awards

Lark-Horovitz Award, for outstanding research in physics (Purdue University, 2013)
Nininger Meteorite Award (Center for Meteorite Studies Arizona State University, 2012)
NS Mackie Endowed Scholarship (Michigan Technological University, 2007)
Class of 1965 Endowed Scholarship (Michigan Technological University, 2006)
Board of Control Scholarship (Michigan Technological University, 2005-2009)

Selected Press Coverage

2015 – Regarding chondrule work published in *Nature*

Asteroids May Not Be Planet Building Blocks After All. Space.com

A twist on planetary origins. ScienceDaily and [MIT news](http://MITnews)

Meteorite material born in molten spray as embryo planets collided. Phys.org

2014 – Regarding crater survival work published in *Geology*

Where have all the craters gone? [The Economist](#) (in print and online)

Where have all the craters gone? [Phys.org](#)

2013 – Regarding mascon work published in *Science*

Montesi, L. Solving the Mascon Mystery. [Science Perspective](#)

Revealed: The Awesome Explanation for the Moon's Extra Gravity. [Time](#)

The moon's mysteriously uneven gravity is explained at last. [LA Times](#)

Mystery of Moon's Lumpy Gravity Explained. [Space.com](#)

2013 – Regarding projectile remnant work published in *Nature Geoscience*

Asphaug, E. Go and catch a falling star. [Nature Geoscience News & Views](#)

Surprise! Moon Craters May Hold Ancient Asteroid Pieces. [Space.com](#)

Alien Debris Found in Lunar Craters. [Discovery News](#)

2012 – Regarding spherule work published in *Nature*

Kyte, F. T. Focus on ancient bombardment. [Nature News & Views](#)

Goldin, T. Earth's ancient catastrophes. [Nature Geoscience News & Views](#)

Asteroids Battered Young Earth Longer Than Thought. [Huffington Post](#) and [Space.com](#)

Publications

Johnson B. C., et al. The formation of the Orientale lunar multi-ring basin. (Draft for submission to *Science*)

Milbury C., **Johnson B. C., et al.** Pre-Impact Porosity Controls the Gravity Signature of Lunar Craters (Submitted to *Geophysical Research Letters*)

Johnson B. C., et al. Spherule layer, crater scaling laws, and the population of ancient terrestrial impactors. (Submitted to *Icarus*)

Parkos D., Alexeenko A., Kulakhmetov, M., **Johnson B. C.,** Melosh H. J. NO_x Production and Rainout from Chicxulub Impact Ejecta Reentry. (Submitted to *Journal of Geophysical Research: Planets*)

Soderblom J.M., Evans A.J., **Johnson B.C., et al.** The fractured Moon: Production and saturation of porosity in the lunar highlands from impact cratering. *Geophysical Research Letters* 42, doi: 10.1002/2015GL065022 (2015).

Steckloff J. K., **Johnson B. C., et al.** Dynamic Sublimation Pressure and the Catastrophic Breakup of Comet ISON. *Icarus* 258, 430-437 (2015).

Johnson B. C., et al. Impact jetting as the origin of chondrules. *Nature* 517, 339-341 (2015).

Freed A. M., **Johnson B. C.**, *et al.* The Formation of Lunar Mascon Basins from Impact to Contemporary Form. *Journal of Geophysical Research: Planets* 119, JE004657 (2014).

Johnson B. C. and Bowling T. J. Where have all the craters gone? The Earth's bombardment history and the expected terrestrial cratering record. *Geology* 42, 587-590 (2014).

Johnson B. C., *et al.* Jetting during vertical impacts of spherical projectiles. *Icarus* 238, 13-22 (2014).

Johnson B. C. and Melosh H. J. Formation of melt droplets, melt fragments, and accretionary impact lapilli during a hypervelocity impact. *Icarus* 228, 347-363 (2014).

Bowling T. J., **Johnson B. C.**, *et al.* Antipodal topography created by the Rheasilvia impact on asteroid 4 Vesta. *Journal of Geophysical Research: Planets* 118, 1821-1834 (2013).

Melosh H. J., Freed A. M., **Johnson, B. C.** *et al.* The Origin of Lunar Mascon Basins. *Science* 340, 1552-1555 (2013).

Yue Z., **Johnson B. C.**, *et al.* Projectile remnants in central peaks of lunar impact craters. *Nature Geosciences* 6, 435-437 (2013).

Johnson B. C., *et al.* A self-consistent model of the circumstellar debris created by a giant hypervelocity impact in the HD172555 system. *The Astrophysical Journal* 761, 45-58 (2012).

Johnson B. C. and Melosh H. J. Impact spherules as a record of an ancient heavy bombardment of Earth. *Nature* 485, 75-77 (2012).

Johnson B. C. and Melosh H. J. Formation of spherules in impact produces vapor plumes. *Icarus* 217, 416-430 (2012).

Invited Talks

The Formation of Impact Ejecta Layers and Chondrules. Brown University (2015).

Formation and Evolution of the Orientale Basin. Microsymposium 56, The Crust of the Moon: Insights Into Early Planetary Processes (2015).

The Formation of the Orientale Lunar Multi-Ring Basin. Brown University (2014).

A new model for distal impact ejecta and, perhaps, chondrules. California Institute of Technology (2014).

The formation of distal impact ejecta. University of Chicago (2013).

Contributed Talks as First Author

Johnson B. C., *et al.* The Formation of Lunar Multi-Ring Basins. 46th Lunar and Planetary Science Conference, Abstract #1362 (2015).

Johnson B. C., *et al.* The Impact Origin of Chondrules. 45th Lunar and Planetary Science Conference, Abstract #1471 (2014).

Johnson B. C., and H. J. Melosh. Jetting During the Vertical Impact of a Spherical Projectile. *Large Meteorite Impacts and Planetary Evolution V*, Abstract #3014 (2013).

Johnson B. C., et al. The Origin of Mascon Basins, Part I. Impact and Crater Collapse. *44th Lunar and Planetary Science Conference*, Abstract #1456 (2013).

Johnson B. C., et al. Formation of Valhalla-Like Multi-Ring Basins. *44th Lunar and Planetary Science Conference*, Abstract #1719 (2013).

Johnson B. C. and Melosh H. J. Distal Impact Ejecta: Melt Droplets, Impact Lapilli, and Tektites. *43rd Lunar and Planetary Science Conference*, Abstract #1456 (2012).

Johnson B. C. and Melosh H. J. New Estimates for the Number of Large Impacts Throughout Earth's History. *Early Solar System Impact Bombardment II*, Abstract #4027 (2012).

Johnson B. C. and Melosh H. J. New Estimates of the Sizes and Impact Velocities of Archean Impactors. *Geological Society of America Annual Meeting* (2011).

Johnson B. C. and Melosh H. J. Homogeneous Nucleation of Silica Dust Following a Hypervelocity Impact. *42nd Lunar and Planetary Science Conference*, Abstract #1069 (2011).

Service

Reviewer for: *Journal of Geophysical Research: Planets, Earth and Planetary Science Letters, Meteoritics & Planetary Science*

Outstanding reviewer recognition from *Earth and Planetary Science Letters*

NASA review panelist