Brandon C. Johnson

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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

Professional Appointments

Purdue University

2024 – Present	Professor of Earth, Atmospheric, and Planetary Sciences
2024 – Present	Professor of Physics and Astronomy by Courtesy
2020 – 2024	Associate Professor of Physics and Astronomy by Courtesy
2019 – 2024	Associate Professor of Earth, Atmospheric, and Planetary Sciences

Brown University

2015 – 2019	Assistant Professor of Earth, Environmental and Planetary Sciences

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

Michigan Technological University

2006 – 2009	Undergraduate Research Assistant
2006 – 2009	Undergraduate Teaching Assistant

Publications

[*]Denotes Student Advisee [†]Denotes Postdoctoral Advisee

Submitted / in press

Lee[*], S., **B. C. Johnson**. Spatial variation of rise time and dwell time induced by a hypervelocity impact. (Submitted to *J. Geophys. Res. Planets*)

Levison, H. F., R. Deienno, K. J. Walsh, **B. C. Johnson**, H. C. Connolly Jr., S. Wakita[†], R. E. Grimm. Chondrite parent bodies as escaped satellites of proto-planetary embryos. (Submitted to *Science Advances*).

Jones, M. J., F. Nichols-Fleming[*], A. J. Evans, **B. C. Johnson**, J. C. Andrews-Hanna. Can the Moon's Center of Mass–Center of Figure Offset be Explained with a Uniform Primordial Crust? (*J. Geophys. Res. Planets* in revision).

Ermakov, A. I., **B. C. Johnson**, J. C. Castillo, R. R. Fu, R. S. Park. Formation and evolution of Ceres' mascons. (*J. Geophys. Res. Planets* in revision)

Carlson*, M. A., **B. C. Johnson**. Effects of Vaporization on the Survivability and Fragmentation of Incoming Meteoroids. (in revision *Meteoritics & Planetary Science*)

Bjonnes, E., **B. C. Johnson**, A. Broquet, I. Garrick-Bethell, J. Andrews-Hanna, S. Wakita, W.S. Kiefer. Evidence for an early formation of Serenitatis basin at 4.25 Ga shifts lunar chronology. (*Geophys. Res. Lett.* in revision)

Wakita†, S., **B. C. Johnson**, J. M. Soderblom, J. K. Steckloff, A. V. Johnson, C. D. Neish, J. Shah. Impacts into Titan's methane-clathrate crust as a source of atmospheric methane. (revision submitted *J. Geophys. Res. Planets*)

Andrews-Hanna, J. C., W. F. Bottke, A. Broquet, A. J. Evans, G. Gowman, **B. C. Johnson**, J. T. Keane, J. N. Levin, A. Mallik, S. Marchi, S. A. Moruzzi, A. Roy, S. Wakita. The South Pole-Aitken impact basin as a window into early lunar evolution. (revision submitted *Nature*)

Published

[84] Cashion*, M. D., **B. C. Johnson**, R. Deienno, K. A. Kretke, K. J. Walsh, A. N. Krot. Chondrule formation indicates protracted growth of giant planet cores. *Icarus*, 429, 116400 (2025).

[83] Rajsic†, A., **B. C. Johnson**, G. S. Collins, H. C. F. C. Hay, Using the Melosh model of Acoustic fluidization to simulate impact crater collapse on the Earth and Moon. *J. Geophys. Res. Planets*, 129, e2024JE008562 (2024).

[82] Hay, H. C. F. C., G. S. Collins, T. M. Davison, A. Rajsic†, **B. C. Johnson**. Complex crater collapse: A comparison of the Block and Melosh Acoustic Fluidization Models of transient target weakening. *J. Geophys. Res. Planets*, 129, e2024JE008544 (2024).

[81] Park, H., I. Garrick-Bethell, **B. C. Johnson**, H. Jin. Evidence for magnetized basin ejecta on the Moon from observations and modeling of demagnetized craters. *J. Geophys. Res. Planets*, 129, e2024JE008420 (2024).

[80] Herd, C. D. K., J. S. Hamilton, E. L. Walton, L. L. Tornabene, A. Lagain, G. K. Benedix, A. I. Sheen, H. J. Melosh, **B. C. Johnson**, S. E. Wiggins†, T. G. Sharp, J. R. Darling. The source craters of the martian meteorites: Implications for the igneous evolution of Mars. *Science Advances*, 10, eadn2378 (2024).

[79] Nichols-Fleming*, F., A. J. Evans, **B. C. Johnson**, M. M. Sori. Moment of Inertia and Tectonic Record of Asteroid 16 Psyche May Reveal Interior Structure and Core Solidification Processes. *J. Geophys. Res. Planets,* 129, e2024JE008291 (2024).

[78] Alexander, A. M., S. Marchi, **B. C. Johnson**, S. E. Wiggins†, D. A. Kring. Impact-generated fragmentation, porosity and permeability within the Chicxulub impact structure. *Earth and Space Sci.,* 11, e2023EA003383 (2024).

[77] Wakita†, S., **B. C. Johnson**, E. A. Silber, and K. N. Singer. Multiring basin formation constrains Europa's ice shell thickness. *Science Advances,* 10, eadj8455 (2024).

[76] Kalousová, K., S. Wakita, C. Sotin, C. D. Neish, J. M. Soderblom, O. Souček, **B. C. Johnson**. Evolution of impact melt pools on Titan. *J. Geophys. Res. Planets*, 129, e2023JE008107 (2024).

[75] Cashion*, M. D., **B. C. Johnson**, H. Gibson, E. P. Turtle, M. M. Sori, H. J. Melosh. Europa's Double Ridges Produced by Ice Wedging. *J. Geophys. Res. Planets,* 129, e2023JE008007 (2024).

[74] Izquierdo, K., M. M. Sori, B. Checketts, I. Hampton, **B. C. Johnson**, J. M. Soderblom. Global Distribution and Volume of Cryptomare and Visible Mare on the Moon from Gravity and Dark Halo Craters. *J. Geophys. Res. Planets,* 129, e2023JE007867 (2024).

[73] Krot, A. N., K. Nagashima, M. A. Ivanova, D. Lauretta, G. Libourel, **B. C. Johnson,** F. E. Brenker, V. Hoffman, M Bizzaro. Mineralogy, petrology, and oxygen isotopic composition of chondritic and achondritic lithologies in the anomalous CB carbonaceous chondrites Sierra Gorda 013 and Fountain Hills. *Meteoritics and Planetary Science*, 59, 754–777 (2024).

[72] Carlson*, M. A., H. J. Melosh, **B. C. Johnson**. Atmospheric Interactions of Ejecta on Earth and Mars Including the Effect of Vaporization. *The Planetary Science Journal* 4:194 (2023).

[71] Osinski, G. R., H. J. Melosh, et al. Lunar Impact Features and Processes. *Reviews in Mineralogy and Geochemistry* 89, 339–371 (2023).

[70] Gosselin*, G. J., A. M. Freed, **B. C. Johnson**. Crustal Block and Muted Ring Development During the Formation of Mercury's Caloris Megabasin. *J. Geophys. Res. Planets,* 128, e2023JE007920 (2023).

[69] Maruzzi, S., J. C. Andrews-Hanna, P. Schenk, **B. C. Johnson**. Pluto's Sputnik Basin as a Peak-Ring or Multiring Basin: A Comparative Study. *Icarus*, 405, 115721 (2023).

[68] Bjonnes*, E., **B. C. Johnson**, J. C. Andrews-Hanna, Basin Crustal Structure at the Multiring Basin Transition. *J. Geophys. Res. Planets*, 128, e2022JE007507 (2023).

[67] Denton*, C. A., G. J. Gosselin*, A. M. Freed, **B. C. Johnson**. The formation and evolution of Pluto's Sputnik basin prior to nitrogen ice fill. *Icarus,* 398, 115541 (2023).

[66] Wakita†, S., **B. C. Johnson**, J. M. Soderblom, J. Shah, C. D. Neish, J. K. Steckloff. Modeling the formation of Selk impact crater on Titan: Implications for Dragonfly. *The Planetary Science Journal*, 4, 51 (2023).

[65] Steckloff, J. K., G. Sarid, **B. C. Johnson**, The effects of early collisional evolution of amorphous water ice bodies. *The Planetary Science Journal*, 4, 4 (2023).

[64] Range, M. M., B. K. Arbic, **B. C. Johnson**, T. C. Moore, V. Titov, A. J. Adcroft, J. K. Ansong, C. J. Hollis, J. Ritsema, C. R. Scotese, H. Wang. The Chicxulub impact produced a powerful global tsunami. *AGU Advances*, 3, e2021AV000627 (2022).

[63] Wakita†, S., H. Genda, K. Kurosawa, T. M. Davison, **B. C. Johnson**, Effect of impact velocity and angle on deformational heating and post-impact temperature. *J. Geophys. Res. Planets* 127, e2022JE007266 (2022).

[62] Wiggins*, S. E., **B. C. Johnson**, G. Collins, H. J. Melosh, S. Marchi. Widespread Impact-Generated Porosity in Early Terrestrial Crusts. *Nature Communications* 13, 4817 (2022).

[61] Cashion*, M. D., **B. C. Johnson**, A. N. Krot, K. Kretke, S. Wakita†, T. M. Davison. Chondrule formation via impact jetting in the icy outer solar system. *Icarus* 384, 115110 (2022).

[60] Lisse, C. M., M. L. Sitko, S. J. Wolk, H. M. Günther, S. Brittan, J. D. Green, J. Steckloff, **B. C. Johnson**, C. C. Espaillat, M. Koutoulaki, S. Y. Moorman, A. P. Jackson. RW Aur A: SpeX Spectral Evidence for Differentiated Planetesimal Formation, Migration, and Destruction in an ∼3 Myr Old Excited CTTS System. *The Astrophysical Journal* 928, 189 (2022).

[59] Jones*, M. J., A. J. Evans, **B. C. Johnson**, M. B. Weller, J. C. Andrews-Hanna, S. M. Tikoo, J. T. Keane. A South Pole-Aitken Impact Origin of the Lunar Compositional Asymmetry. *Science Advances* 8, eabm8475 (2022).

[58] Bjonnes*, E., **B. C. Johnson**, E. A. Silber, K. N. Singer, A. J. Evans, Ice shell structure of Ganymede and Callisto based on impact crater morphology. *J. Geophys. Res. Planets* 127, e2021JE007028 (2022).

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[56] Wakita†, S., **B. C. Johnson**, J. M. Soderblom, J. Shah, C. D. Neish. Methane-saturated layers limit the observability of impact craters on Titan. *The Planetary Science Journal* 3, 50 (2022).

[55] Nichols-Fleming*, F., A. J. Evans, **B. C. Johnson**, M. M. Sori. Porosity Evolution in Metallic Asteroids: Implications for the Origin and Thermal History of Asteroid 16 Psyche. *J. Geophys. Res. Planets* 127, e2021JE007063 (2022).

[54] Elliott*, J. R., H. J. Melosh, **B. C. Johnson**. The role of target strength on the ejection of Martian meteorites. *Icarus* 375, 114869 (2022).

[53] Krot, A. N., M.I. Petaev, K. Nagashima, E. Dobrică, **B. C. Johnson**, M. D. Cashion*. Impact plume-formed and protoplanetary disk high-temperature components in CB and CH metal-rich carbonaceous chondrites. *Meteoritics & Planetary Science* 2*,* 352–380 (2022).

[52] Izquierdo, K., M. M. Sori, J. M. Soderblom, **B. C. Johnson**, S. E. Wiggins*. Lunar Megaregolith Structure Revealed by GRAIL Gravity Data. *Geophys. Res. Lett.* 48, e2021GL095978 (2021).

[51] Wakita†, S., **B. C. Johnson**, I. Garrick-Bethell, M. R. Kelley, R. E. Maxwell, T. M. Davison. Impactor material records the ancient lunar magnetic field in antipodal anomalies. *Nature Communications* 12, 6543 (2021).

[50] Crosta, A. P., E. A. Silber, M. C. Lopes, **B. C. Johnson**, E. Bjonnes[*], M.J. Malaska, S. D. Vance, C. Sotin, A. Solomonidou, J. M. Soderblom. Modeling the formation of Menrva crater on Titan: Implications for habitability. *Icarus* 370, 114679 (2021).

[49] Steckloff, J. K., J. Debes, A. Steele, **B. C. Johnson**, E. R. Adams, S. A. Jacobson, A. Springmann. How Sublimation Delays the Onset of Dusty Debris Disk Formation around White Dwarf Stars. *The Astrophysical Journal Letters* 913, L31 (2021).

[48] **Johnson, B. C.**, R. E. Milliken, K. W. Lewis, G. S. Collins. Impact generated porosity in Gale crater and implications for the density of sedimentary rocks in lower Aeolis Mons. *Icarus* 366, 114539 (2021).

[47] Silber[†], E. A., **B. C. Johnson**, E. Bjonnes[*], J. A. MacGregor, N. K. Larsen, S. E. Wiggins[*]. Effect of ice sheet thickness on formation of the Hiawatha impact crater. *Earth and Planetary Science Letters* 566, 116972 (2021).

[46] Wakita[†], S., **B. C. Johnson**, C. A. Denton[*], T. M. Davison. Jetting during oblique impacts of spherical impactors. *Icarus* 360, 114365 (2021).

[45] Bjonnes[*], E., **B. C. Johnson**, A. J. Evans. Estimating Venusian thermal conditions using multiring basin morphology. *Nature Astronomy* 5, 498–502 (2021).

[44] Denton[*], C. A., **B. C. Johnson**, S. Wakita[†], A. M. Freed, H. J. Melosh, S. A. Stern. Pluto's antipodal terrains imply a thick subsurface ocean and hydrated core. *Geophys. Res. Lett.* 84, e2020GL091596 (2021).

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[41] Trowbridge[*], A. J., **B. C. Johnson**, A. M. Freed, H. J. Melosh. Why the Lunar South Pole-Aitken Basin is not a Mascon. *Icarus* 352, 113995 (2020).

[40] Lisse, C. M., H. Y. A. Meng, M. L. Sitko, A. Morlok, **B. C. Johnson**, A. P. Jackson, R. J. Vervack, C. H. Chen, S. J. Wolk, M. D. Lucas, M. Marengo, D. T. Britt. HD 145263: Spectral Observations of Silica Debris Disk Formation via Extreme Space Weathering? *The Astrophysical Journal* 894, 116 (2020).

[39] Bowling, T. J., **B. C. Johnson**, S.E. Wiggins[*], E. L. Walton, H. J. Melosh, T. G. Sharp. Dwell time at high pressure of meteorites during impact ejection from Mars. *Icarus* 343, 113689 (2020).

[38] Bowling, T. J., **B. C. Johnson**, S. Marchi, M. C. De Sanctis, J. C. Castillo-Rogez, C. A. Raymond. An endogenic origin of cerean organics. *Earth and Planetary Science Letters* 534, 116069 (2020).

[37] **Johnson, B. C.**, M. M. Sori, A. J. Evans. Ferrovolcanism on metal worlds and the origin of pallasites. *Nature Astronomy* 4, 41–44 (2020).

[36] Wiggins*, S. E., **B. C. Johnson**, T. J. Bowling, H. J. Melosh, E. A. Silber†. Impact Fragmentation and the Development of the Deep Lunar Megaregolith. *J. Geophys. Res. Planets* 124, 941–957 (2019).

[35] Bowling, T. J., F. J. Ciesla, T. M. Davison, J. E. C. Scully, J. C. Castillo-Rogez, S. Marchi, **B. C. Johnson**. Post-impact thermal structure and cooling timescales of Occator crater on asteroid 1 Ceres. *Icarus* 320, 110–118 (2019).

[34] **Johnson, B. C.**, J. C. Andrews-Hanna, G. S. Collins, A. M. Freed, H. J. Melosh, M. T. Zuber. Controls on the formation of lunar multiring basins. *J. Geophys. Res. Planets* 123, 3035–3050 (2018).

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[32] **Johnson, B. C.**, F. J. Ciesla, C. P. Dullemond, H. J. Melosh. Formation of chondrules by planetesimal collisions. In S. Russell, H. Connolly Jr., & A. Krot (Eds.), *Chondrules: Records of Protoplanetary Disk Processes* (pp. 343–360). Cambridge: Cambridge University Press (2018).

[31] Sori, M. M., P. B. James, **B. C. Johnson**, J. M. Soderblom, S. C. Solomon, M. A. Wieczorek, M. T. Zuber. Isostatic compensation of the lunar highlands. *J. Geophys. Res. Planets* 123, 645–665 (2018).

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[29] **Johnson, B. C.**, C. S. Campbell. Drop height and volume control the mobility of long runout landslides on the Earth and Mars. *Geophys. Res. Lett.* 44, 12091–12097 (2017).

[28] Silber†, E. A., **B. C. Johnson**. Impact crater morphology and the structure of Europa's ice shell. *J. Geophys. Res. Planets* 122, 2685–2701 (2017).

[27] **Johnson, B. C.**, R. Y. Sheppard*, A. C. Pascuzzo*, E. A. Fisher*, S. E. Wiggins*. Porosity and salt content determine if subduction can occur in Europa's ice shell. *J. Geophys. Res. Planets* 122, 2765–2778 (2017).

[26] Melosh, H. J., J. Kendall, B. Horgan, **B. C. Johnson**, T. J. Bowling, P. G. Lucey, G. J. Taylor. South Pole–Aitken basin ejecta reveal the Moon's upper mantle. *Geology* 45, 1063–1066 (2017).

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[24] **Johnson, B. C.**, K. J. Walsh, D. A. Minton, A. N. Krot, H. F. Levison. Timing of the formation and migration of giant planets as constrained by CB chondrites. *Science Advances* 2, e1601658 (2016).

[23] **Johnson, B. C.**, D. M. Blair, G. S. Collins, H. J. Melosh, A. M. Freed, G. J. Taylor, J. W. Head, M. A. Wieczorek, J. C. Andrews-Hanna, F. Nimmo, J. T. Keane, K. Miljković, J.

M. Soderblom, M. T. Zuber. Formation of the Orientale lunar multiring basin. *Science* 354, 441–444 (2016).

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[21] **Johnson, B. C.**, T. J. Bowling, A. J. Trowbridge, A. M. Freed. Formation of the Sputnik Planum basin and the thickness of Pluto's subsurface ocean. *Geophys. Res. Lett.* 43, 10068–10077 (2016).

[20] Miljković, K., G. S. Collins, M. A. Wieczorek, **B. C. Johnson**, J. M. Soderblom, G. A. Neumann, M. T. Zuber. Subsurface morphology and scaling of lunar impact basins. *J. Geophys. Res. Planets* 121, 1695–1712 (2016).

[19] **Johnson, B. C.,** C. S. Campbell, H. J. Melosh. Reply to comment by Iverson on "The reduction of friction in long runout landslides as an emergent phenomenon", *J. Geophys. Res. Earth Surf.* 121, 2243–2246 (2016).

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[17] **Johnson, B. C.**, C. S. Campbell, H. J. Melosh. The reduction of friction in long runout landslides as an emergent phenomenon. *J. Geophys. Res. Earth Surf.* 121, 881–889 (2016).

[16] **Johnson, B. C.**, G. S. Collins, D. A. Minton, T. J. Bowling, B. M. Simonson, M. T. Zuber. Spherule layers, crater scaling laws, and the population of ancient terrestrial impactors. *Icarus* 271, 350–359 (2016).

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[14] Milbury, C., **B. C. Johnson**, H. J. Melosh, G. S. Collins, D. M. Blair, J. M. Soderblom, F. Nimmo, C. J. Bierson, R. J. Phillips, M. T. Zuber. Preimpact porosity controls the gravity signature of lunar craters. *Geophys. Res. Lett.* 42, 9711–9716 (2015).

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[11] **Johnson, B. C.**, D. A. Minton, H. J. Melosh, M.T. Zuber. Impact jetting as the origin of chondrules. *Nature* 517, 339–341 (2015).

[10] Freed, A. M., **B. C. Johnson**, D. M. Blair, H. J. Melosh, G. A. Neumann, R. J. Phillips, S. C. Solomon, M. A. Wieczorek, M. T. Zuber. The formation of lunar mascon basins from impact to contemporary form. *J. Geophys. Res. Planets* 119, JE004657 (2014).

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

[8] **Johnson, B. C.**, T. J. Bowling, H. J. Melosh. Jetting during vertical impacts of spherical projectiles. *Icarus* 238, 13–22 (2014).

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

[6] Bowling, T. J., **B. C. Johnson**, H. J. Melosh, B. A. Ivanov, D. P. O'Brien, R. Gaskell, S. Marchi. Antipodal topography created by the Rheasilvia impact on asteroid 4 Vesta. *J. Geophys. Res. Planets* 118, 1821–1834 (2013).

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[1] **Johnson, B. C.**, H. J. Melosh. Formation of spherules in impact produced vapor plumes. *Icarus* 217, 416–430 (2012).

Talks

Invited

Impact spherule layers and the early bombardment of the Earth. Harvard University Department of Earth and Planetary Sciences (2024).

South Pole-Aitken Basin Overview Panelists for Endurance Science Workshop (2023).

Impact basins as probes of planetary interiors. University of Kentucky, Department of Earth and Environmental Sciences (2023).

Impact basins as probes of planetary interiors. Pennsylvania State University, Department of Geosciences (2022).

Landslide Morphology and Mobility on Ceres. DAWN science team meeting (2021).

Impact fragmentation and the efficient fracturing of terrestrial crusts. Michigan Technological University, Earth Planetary and Space Sciences Institute (2020).

Impact fragmentation and other geophysical mayhem. Purdue University, Department of Physics and Astronomy (2020).

Multiring basins as probes of planetary interiors. University of Michigan, Department of Earth and Environmental Sciences (2020).

Impact basins as probes of planetary interiors. UC Santa Cruz, Department of Earth and Planetary Sciences (2020)

Formation of multiring basins. Purdue University, Department of Earth Atmospheric and Planetary Sciences (2019).

Basin formation on the Moon and Pluto. Science colloquium for American Museum of Natural History planetarium show (2018).

Formation of the Sputnik Planitia basins and the thickness of Pluto's subsurface ocean. Keynote Rhode Island Space Grant Symposium (2018).

Planetesimal Collisions. Workshop on Accretion Processes in Planet-Forming Regions, JPL (2018).

Formation of Chondrules by Planetesimal Collision. Chondrules and Protoplanetary Disk, Natural History Museum, London (2017).

The Formation of Impact Ejecta Layers and Chondrules. Brown University, Department of Earth, Environmental and Planetary Sciences (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, SEERVI SEED (2014).

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

The formation of distal impact ejecta. University of Chicago, Department of Geophysical Sciences (2013).

Contributed talks with Johnson or student advisee as first author

Lee. S. B. C. Johnson, A. Rajsic. Formation of Ganymede's craters using the Melosh model of Acoustic Fluidization. 55th *Lunar and Planetary Science Conference*, Abstract #2152 (2024).

Cashion*, M. D., **B. C. Johnson**, M. M. Sori, H. Gibson, H. J. Melosh, E. P. Turtle. Double ridges on Europa produce by ice wedging. *54th Lunar and Planetary Science Conference*, Abstract #2007 (2023).

Denton*, C. A., G. J. GosselinG, A. M. Freed, **B. C. Johnson**. The formation and evolution Sputnik basin, Pluto, prior to nitrogen ice fill. 54th *Lunar and Planetary Science Conference*, Abstract #2320 (2023).

Lee* S., **B. C. Johnson**. Spatial variation of dwell time induced by a hypervelocity impact. 54th *Lunar and Planetary Science Conference*, Abstract #2320 (2023).

Cashion*, M. D., **B. C. Johnson**, R, Deienno, K. Kretke, K. J. Walsh, A. N. Krot.

Chondrules as byproducts of giant planet formation. *Meteoritical Society meeting* (2022).

Nichols-Fleming*, F., A. Evans, **B. C. Johnson**, M. M. Sori. Porosity Evolution of Psyche and Other M-type Asteroids. 53rd *Lunar and Planetary Science Conference*, Abstract #1071 (2022).

Carlson*, M. C., H. J. Melosh, **B. C. Johnson**. Effects of Atmosphere on Ejecta Emplacement on Earth and Mars. 52nd *Lunar and Planetary Science Conference*, Abstract #1170 (2021).

Denton*, C. A., **B. C. Johnson**, S. Wakita†, A. M. Freed, H. J. Melosh, A. S. Stern. Antipodal Terrains Produced by Sputnik-Planitia Forming Impact Imply Pluto Has a Thick Ocean and Hydrated Core. 52nd *Lunar and Planetary Science Conference*, Abstract #1078 (2021).

Bjonnes*, E. E., **B. C. Johnson**, A. E. Evans. The Effects of Venus' Thermal Conditions on Multiring Basin Formation. 52nd *Lunar and Planetary Science Conference*, Abstract #1513 (2021).

Nichols-Fleming*, F., A. Evans, **B. C. Johnson**. Short-Lived Lunar Dynamos Driven by the Accretion of Cold Impactor Material. 52nd *Lunar and Planetary Science Conference*, Abstract #2177 (2021).

Cashion*, M. D., **B. C. Johnson,** S. WakitaP, T. Davison, A. N. Krot, K. Kretke, K. Walsh. Producing Chondrules in the Outer Solar System: The Effect of Ice on Impact Jetting. 52nd *Lunar and Planetary Science Conference*, Abstract #1737 (2021).

Gosselin*, G. J., A. M. Freed, **B. C. Johnson**. Where Have All the Rings Gone? Exploring the Reputed Multiring Nature of Mercury's Caloris Basin. 52nd *Lunar and Planetary Science Conference*, Abstract #1529 (2021).

Wiggins*, S.E., **B. C. Johnson.** Solid Fragments Ejected by Lunar Hypervelocity Impacts. 52nd *Lunar and Planetary Science Conference*, Abstract #2307 (2021).

Nichols-Fleming*, F., A. Evans, **B. C. Johnson**. Short-Lived Lunar Dynamos Driven by the Accretion of Cold Impactor Material. 51st *Lunar and Planetary Science Conference*, Abstract #2187 (2020). (Canceled COVID-19)

Denton*, C. A., **B. C. Johnson**, A. M. Freed, H. J. Melosh. Seismology on Pluto?! Antipodal Terrains Produced by Sputnik Planitia Forming Impact. 51st Lunar and Planetary Science Conference, Abstract #1220 (2020). (Canceled COVID-19)

Bjonnes*, E. E., **B. C. Johnson**, A. E. Evans. Determining Venus' Thermal Condition Through Multiring Basin Formation. 51st Lunar and Planetary Science Conference, Abstract #2511 (2020). (Canceled COVID-19)

Johnson, B. C., M. M. Sori, A. J. Evans. Ferrovolcanism, Pallasites, and Psyche. *50th Lunar and Planetary Science Conference*, Abstract #1625 (2019).

Denton*, C. A., **B. C. Johnson**. Formation of the Sputnik Planitia basin: Moving towards refined constraints on ocean thickness. *Large Meteorite Impacts VI*, Abstract #5104 (2019).

Bjonnes[*], E. E., **B. C. Johnson**, J. C. Andrews-Hanna. Exploring the Peak-Ring to Multiring Basin Transition on the Moon. *50th Lunar and Planetary Science Conference*, Abstract #2026 (2019).

Wiggins[*], S.E., **B. C. Johnson**, G. S. Collins, T. J. Bowling, H. J. Melosh, E. A. Silber[†]. Impact-Generated Porosity at Depth Within the Lunar Crust. *48th Lunar and Planetary Science Conference*, Abstract #2157 (2018).

Bjonnes[*], E. E., **B. C. Johnson**. Modeling of Mead Impact Basin and implications for planetary heat flow. *AGU fall meeting* (2018)

Bjonnes[*], E. E., **B. C. Johnson**. Formation of Impact Craters on Ganymede and Callisto as a Constraint on Ice Shell Structure. *49th Lunar and Planetary Science Conference*, Abstract #1548 (2018).

Johnson, B. C., C. S. Campbell, M. M. Sori. Fall Height and Volume Control Landslide Mobility Throughout the Solar System. *49th Lunar and Planetary Science Conference*, Abstract #1555 (2018).

Wiggins[*], S.E., **B. C. Johnson**, E. A. Silber[†], T. J. Bowling, H. J. Melosh. Impact Fragmentation and Development of the Lunar Megaregolith. *49th Lunar and Planetary Science Conference*, Abstract #1295 (2017).

Johnson, B. C., J. C. Andrews-Hanna, G. S. Collins, A. M. Freed, H. J. Melosh, M. T. Zuber. Multiring Basin Formation: Controls on Ring Location and Spacing. *48th Lunar and Planetary Science Conference*, Abstract #1536 (2017).

Johnson, B. C., T. J. Bowling, A. J. Trowbridge, A. M. Freed. Formation of the Sputnik Planum basin and the thickness of Pluto's subsurface ocean. *AGU fall meeting*, P44A-06 (2016).

Johnson, B. C., K. J. Walsh, D. A. Minton. Late Formation and Migration of Giant Planets as Constrained by Formation of CB Chondrites. *47th Lunar and Planetary Science Conference*, Abstract #1136 (2016).

Johnson, B. C., T. J. Bowling, H. J. Melosh[M]. Steps Toward Implementing the Grady-Kipp Fragmentation Model in an Eulerian Hydrocode. *47th Lunar and Planetary Science Conference*, Abstract #1492 (2016).

Johnson, B. C., J. C. Andrews-Hanna, G. S. Collins, H. J. Melosh, J. W. Head, D. M. Blair, A. M. Freed, K. Miljković, J. M. Soderblom, M. T. Zuber. The Formation of Lunar Multi-Ring Basins. *46th Lunar and Planetary Science Conference*, Abstract #1362 (2015).

Johnson, B. C., D. A. Minton, H. J. Melosh. 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., D. M. Blair, A. M. Freed, H. J. Melosh, J. C. Andrews-Hanna, G. A. Neumann, R. J. Phillips, D. E. Smith, S. C. Solomon, M. A. Wieczorek, M. T. Zuber. The Origin of Mascon Basins, Part I. Impact and Crater Collapse. *44th Lunar*

and Planetary Science Conference, Abstract #1456 (2013).

Johnson, B. C., T. J. Bowling, H. J. Melosh. Formation of Valhalla-Like Multi-Ring Basins. *44th Lunar and Planetary Science Conference*, Abstract #1719 (2013).

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

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

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

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

Grants

Current

Title: Effects of Methane Clathrate on the Depth of Titan's Craters
Source: NASA Cassini Data Analysis Program (CDAP)
PI: Jason Soderblom
Role: Co-I
Duration: 2024–2026

Title: Collisional vaporization and the origin of gas in debris disks
Source: NASA Exoplanets Research Program
PI: Yasuhiro Hasegawa
Role: Co-I
Duration: 2024–2026

Title: Lunar Structure, Composition, and Processes for Exploration (LunaSCOPE)
Source: NASA Solar System Exploration Research Virtual Institute (SSERVI)
PI: Alexander Evans
Role: Co-I
Duration: 2023–2028

Title: Center for Lunar Origin and Evolution (CLOE)
Source: NASA Solar System Exploration Research Virtual Institute (SSERVI)
PI: William Bottke
Role: Co-I
Duration: 2023–2028

Title: Formation and evolution of impact-generated topography on the Hadean Earth
Source: NASA Exobiology program
PI: Simone Marchi
Role: Co-I
Duration: 2023–2024

Title: Formation of icy multiring basins: exploring sensitivity to ice shell thickness and thermal structure on Europa, Ganymede, and Callisto
Source: NASA Solar Systems Working (SSW) program
Role: PI
Duration: 2021–2024 (NCE to 2025)

Past

Title: Dynamics of the early solar system and implications for the possible impact origin of chondrules
Source: NASA Emerging Worlds (EW) program
Role: PI
Duration: 2020–2023 (NCE to 2025)

Title: Effect of methane clathrate on crater size and implications for the age of Titan's surface
Source: NASA Cassini Data Analysis Program (CDAP)
PI: Jason Soderblom
Role: Co-I
Duration: 2023 (NCE to 2024)

Title: Are terrestrial planets forming around HD 166191?
Source: Joint Atacama Large Millimeter Array (ALMA) Observatory Cycle 10
PI: Kadin Worthin
Role: Co-I
Duration: 2023–2024

Title: Prebiotic chemistry in transient impact-generated hydrothermal systems
Source: NASA Habitable Worlds (HW) program
PI: Simone Marchi
Role: Co-I
Duration: 2021–2024

Title: The evolution of planetary crusts through lunar gravity and topography
Source: NASA Lunar Data Analysis Program (LDAP)
PI: Michael Sori
Role: Co-I
Duration: 2021–2024

Title: Unraveling the formation and evolution of Mercury’s Caloris Basin: Gaining insight into the architecture of a young terrestrial planet
Source: Future Investigators in NASA Earth and Space Science and Technology (FINESST) program
Role: Co-PI with Andy Freed
Duration: 2022–2024

Title: The Impact of Titan's Impacts
Source: NASA Cassini Data Analysis Program (CDAP)
PI: Jason Soderblom
Role: Co-I
Duration: 2020–2023 (NCE to 2024)

Title: Origins of the Lunar Asymmetry
Source: NASA Solar System Workings (SSW) program
PI: Alex Evans
Role: Co-I
Duration: 2019–2022 (NCE to 2024)

Title: Structure of Lunar Basins and Moon's Lithosphere as Constrained by GRAIL gravity and LOLA topography
Source: NASA Lunar Data Analysis Program (LDAP)
Role: PI
Duration: 2017–2020 (transfer and NCE to 2024)

Title: Are terrestrial planets forming around HD 166191?
Source: Joint Atacama Large Millimeter Array (ALMA) Observatory Cycle 9
Observation did not occur due to ALMA hacking incident
PI: Kadin Worthin
Role: Co-I
Duration: 2022–2023

Title: Sputnik Planitia as a probe for Pluto's interior structure and global tectonic evolution
Source: Future Investigators in NASA Earth and Space Science and Technology (FINESST) program
Role: PI
Duration: 2020–2022

Title: Constraining Ceres' subsurface structure at geological landmarks using the Dawn gravity and shape data
PI: Ryan Park and Anton Ermakov (Science PI)
Role: Co-I
Source: NASA Discovery Data Analysis Program (DDAP)
Duration: 2019–2020 extended to 2021

Title: True Polar Wander of Terrestrial Planets and its Implications for the Long Term Stability of Polar Volatiles
PI: Isamu Matsuyama and James Keane (Science PI)
Role: Co-I
Source: NASA Solar System Workings (SSW)
Duration: 2017–2020 extended to 2022

Title: Tracing Giant Collisions in the Extreme Debris Disks HD 23514 and HD 145263
PI: Christine Chen
Role: Co-I
Source: NASA Infrared Telescope Facility
Period: February 2019–July 2019

Title: Tracing Giant Collisions in the Extreme Debris Disks BD+20 307 and HD 15407
PI: Christine Chen
Role: Co-I
Source: NASA Infrared Telescope Facility
Period: August 2019–January 2020

Service

Purdue University

2023–present	Graduate Committee (Chair)
2021–2022	Multi-departmental search committee in Origins of Life
2020–2023	Graduate Committee (lead of New Grad. Seminar)
2019–2023	Strategic Planning Committee
2019–2021	Undergraduate Committee

Brown University

2018–2019	Planetary Climate Task Force
2018	DEEPS Tectonophysics Search Committee
2018–2019	Computer Committee
2017–2018	Colloquium Organizer Spring 2018
2017	DEEPS Tectonophysics Search Committee
2016–2017	BEARCORE (Ethics)
2016–2017	DEEPS Curriculum Committee
2015–2016	DEEPS Geophysical Modeling Search Committee

Graduate student advising (not including primary advisees)

Present:
Mariana Blanco-Rojas
Ian Pamerleau
Austin Blevins

Past:
Juliana Pereira (Civil Eng.)
Alexander Trowbridge
Matthew Jones (Brown)
Christopher Kremer (Brown)
Elizabeth Fisher (Brown)

Preliminary examination committee member (not otherwise advised)
Nir Badt (2019, Brown)
Alyssa Pascuzzo (2018, Brown) – Chair
Rachel Sheppard (2017, Brown)

Michael Bramble (2017, Brown

Profession

2025	Coauthor on the National Academy of Science's consensus study report "Proposed Science Themes for NASA's Fifth New Frontiers Mission"
2024–present	Member of the Network for Ocean Worlds (NOW) steering committee.
2023–present	Member of the National Academy of Sciences Committee on Astrobiology and Planetary Science (CAPS)
	CAPS provides an independent, authoritative forum for identifying and discussing issues in astrobiology and planetary science with the research community, the federal government, and the interested public. The committee supports scientific progress in astrobiology and planetary science by providing advice to the federal government on the implementation of decadal survey recommendations.
2019–present	Associate editor for *Icarus*

NASA review panelist (~yearly)
ad hoc reviewer for NASA and other agencies (several/year)

Reviewer for: *Science, Nature, Science Advances, Nature Astronomy*, *Nature Communicaitons*, *Earth Planet. Sci. Lett.*, *Geophys. Res. Lett., J. Geophys. Res. Planets, Icarus, Meteoritics & Planetary Science, Astrophysical Journal Letters, The Astrophysical Journal, Astrobiology*

I review ~10 manuscripts per year (for journals other than *Icarus*)

Outstanding reviewer recognition from *Earth and Planetary Science Letters*
Outstanding reviewer recognition from *Icarus*

Academic honors

Ronald Greeley Early Career Award in Planetary Science (AGU, 2018)
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)

Teaching and Advising

Courses

2025 (Spring)	EAPS 591: Planetary Origins
2024 (Fall)	EAPS 556: Planetary Surface Processes
2024 (Fall)	EAPS 602: New Graduate Student Seminar
2023 (Fall)	EAPS 591: Impacts
2022 (Fall)	EAPS 556: Planetary Surface Processes
2022 (Fall)	EAPS 602: New Graduate Student Seminar
2022 (Spring)	EAPS 591: Ocean Worlds

2021 (Fall)	EAPS 591: Impacts
2021 (Fall)	EAPS 602: New Graduate Student Seminar
2021 (Spring)	EAPS 591: Planetary Origins
2020 (Fall)	EAPS 602: New Graduate Student Seminar
2020 (Fall)	EAPS 556: Planetary Geology
2020 (Spring)	EAPS 591: Ocean Worlds
2018 (Fall)	GEOL 1390: Planetary Surface Processes
2018 (Spring)	GEOL 2880: Planetary Cratering
2017 (Spring)	GEOL 2920B: Ocean Worlds
2016 (Fall)	GEOL 2910P: Origin and evolution of planetary systems
2016 (Spring)	GEOL 2880: Planetary Cratering

Current graduate students
Sowon Lee (Advisor for Ph.D. since 5/2022)

Past PhD students
Dr. Greg Gosselin (co advised with Andy Freed) – Postdoc with me and Andy Freed
Dr. Melissa Cashion – Postdoc with Sarah Stewart at Arizona State University
Dr. Michael Carlson – Senior computational scientist Purdue Rosen Center for Advanced Computing
Dr. Fiona Nichols-Fleming (co advised with Alex Evans) – Postdoc with Emily Martin at Smithsonian National Air and Space Museum
Dr. Adeene Denton – Postdoc with Alyssa Rhoden at SouthWest Research Institute
Dr. Sean Wiggins – Postdoc at Lawrence Livermore National Laboratory
Dr. Evan Bjonnes – Postdoc Lawrence Livermore National Laboratory

Past Master's students
Hannah Gibson M.S.

Current Postdocs
Greg Gosselin

Current Research Scientists
Dr. Shigeru Wakita

Past Postdocs
Dr. Andrea Rajsic – Postdoc at Brown University
Dr. Shigeru Wakita – Research scientist at Purdue
Dr. Elizabeth Silber – Senior Geoscientist, Sandia National Laboratories

Current Undergrads
Livvy Lowe

Past Undergrads
Josuan Vega
Eva Veeningen
John Herring – Iowa State Ph.D. program
Brandi Daddario – Arizona State University Ph.D. program advised by Sarah Stewart

Taylor Bourikas – University of Central Florida Ph.D. program
Jon Brunton –M.S. Environmental Data Science and Machine Learning, Imperial College London, Atmospheric Data Scientist at Oak Ridge Associated Universities
Evan Kelch – Software engineer JP Morgan Chase
Pat Pesa – Morehead University M.S. program
Katherine Pisani – M.S. in Space Systems Engineering John Hopkins University, Guidance Navigation Control Analyst APL

Diversity Activities

Coauthor on "An URGE Pod Remix: Benefits, Challenges, and Next Steps from a Multi-Institution Pod" abstract # 857749 AGU Fall meeting 2021.

Coauthor on "MEGA Pod: Benefits and Lessons Learned From a Multi-Institution URGE Pod" abstract # 369951 GSA Connects 2021.

Bystander Intervention to stop anti-Asian/American and xenophobic harassment put on by Asian Americans Advancing Justice and hollaback! (May 14, 2021)

Spring 2021 Member of Midwest Equity in Geosciences Alliance (MEGA) URGE pod. URGE's (Unlearning Racism in GEoscience) primary objectives are to (1) deepen the community's knowledge of the effects of racism on the participation and retention of Black, Brown, and Indigenous people in Geoscience, (2) draw on existing literature, expert opinions, and personal experiences to develop anti-racist policies and strategies, and (3) share, discuss, and modify anti-racist policies and strategies within a dynamic community network and on a national stage.

Fall 2020 In the strategic planning committee I have been active in incorporating themes of diversity equity and inclusion as one of the main pieces of the strategic plan.

Departmental anti-racism training Nov. 17, 2020.

Pursuing Racial Justice Together (2020–2021)
Attended 18 lectures often followed by discussion amongst a small group of faculty, students, and staff. The lectures and workshops in Pursuing Racial Justice Together, distinguished learning series presented by the Division of Diversity and Inclusion explored themes related to race, racism, and systemic inequities.

UNH PowerPlay Bias Awareness & Intervention, an interactive seminar on bias intervention featuring an applied theatre troupe, Oct. 22, 2020

Safe Zone training, Purdue LGBTQ Center 2019

Maximizing Student Potential Conference, Division of Diversity and Inclusion 2019

Brown University

2018–2019 Member of oSTEM (Out in Science, Technology, Engineering, and Mathematics)

2018–2019 Planetary Climate Task Force
In the Task Force we read the National Academies report on Sexual Harassment of Women and LGBT+ Inclusivity in Physics and Astronomy Best Practices Guide and identified action items to help improve the departmental climate. Some

	tangible outcomes of the task force are the inclusion of gender neutral bathrooms in the building and the creation of a Code of Conduct.
2017	Safe Zone training
2016–2019	Participant in GWISE (Graduate Women in Science and Engineering) Book club

Other Engagement Activities

I comment on other researchers work in the news several times a year. I also advise journalists on whether stories are worth covering a few times a year.

I have been on local and regional news several times discussing fireball and airburst events.

I correspond with members of the public about suspected craters and meteorites several times a year.

2025	Associate Press interview regarding Asteroid 2024 YR4
2024	Coauthor of "The tsunami triggered by the Chicxulub impact" published in Physics Today. https://doi.org/10.1063/pt.htyz.zmzd
2023	Answered technical questions for Smithsonian Channel regarding complex craters on Earth.
2023	Chicxulub tsunami data set for NOAA Science On a Sphere which projects global data sets on a 6ft diameter sphere at over 175 museums across the world. A tweet of this data set was seen by over 2 million people!
2022	Answered technical questions from BBC studios regarding the Chicxulub impact.
2022	Discussed NASA's Double Asteroid Redirection Test (DART) with Terra Haute Tribune-Star
2022	Associated Press interview regarding Chicxulub Tsunami work
2022	On local and regional (live) news to discuss Artemis 1
2022	Associated Press interview regarding Artemis
2022	Guest on *Out Of The Blank* Podcast
2022	Public lecture for Cleveland Astronomical Society
2021–2024	Purdue Engineering Projects in Community Service **(**EPICS) project partner. Working on redevelopment of ImpactEarth! Website https://www.purdue.edu/impactearth/ (a website used in outreach to calculate the effects and hazards of impacts). EPICS is a service-learning design program in which teams of students partner with local and global community organizations to address human, community, and environmental needs

Served as GWISE Poster session judge.

Served as a science fair judge several times.

Professional Memberships

America Astronomical Society Division for Planetary Sciences

American Geophysical Union
The Meteoritical Society
Geological Society of America

Selected Press Coverage and highlights

2025 – Regarding Europa double ridge work
JGR Planets Commentary article. Shallow Subsurface Water at the Base of Europa's Double Ridges

2024 – Regarding CB and CH metal-rich carbonaceous chondrites
Awarded as top 10 most cited paper by ***Meteoritics & Planetary Science***

2024 – Regarding Europa multiring basin work published in *Science Advances*
A 'snowball fight' may help scientists find life on Jupiter's moon Europa space.com
Icy impacts: Planetary scientists use physics and images of impact craters to gauge the thickness of ice on Europa Purdue (picked up by others)

2022 – Regarding Chicxulub tsunami work published in *AGU Advances*
Awarded as one of the most downloaded papers 1 year from publication in *AGU Advances*.
Editor Highlight
Nature Research Highlight
Asteroid that wiped out the dinosaurs also triggered a global tsunami *CNN*

2022 – Regarding impact porosity work published in *Nature Communications*
Selected as an Editor's Highlight
Why pummeled planets may be promising abodes for alien life *Space.com*
Breaking in a new planet *Purdue* (picked up by others)

2022 – Regarding lunar compositional asymmetry work published in *Science Advances*
Scientists come up with fresh take on moon mystery *CNN*
Differences between the Moon's near and far sides linked to colossal ancient impact *Brown*

2022 – Regarding Hiawatha crater age work published in *Science Advances*
Controversial impact crater under Greenland's ice is surprisingly ancient. *Science*
Incredibly old crater discovery debunks a hot theory about Earth's last ice age. *Inverse*

2022 – Regarding Psyche porosity evolution work publish in *JGR Planets*
The 'Iron Giant' Asteroid Worth More Than Our Global Economy May Have An Explosive Secret Say Scientists. *Forbes*
'Bizarre' Psyche asteroid may be less heavy metal more hard rock. *Futurity*
The iron-y: $10 quintillion asteroid might have less iron than believed. *The Jerusalem Post*

2021 – Regarding antipodal magnetic anomaly work published in *Nature Communications*
Selected as an Editor's Highlight
Asteroid material deposited during large impacts record the moon's ancient magnetic field *Phys.org*

2021 – Regarding Hiawatha crater work published in *EPSL*
Research sheds light on origins, age of massive impact crater *Phys.org* (picked up by others)

2021 – Regarding Venus multiring basin work published in *Nature Astronomy*
Thick lithosphere casts doubt on plate tectonics in Venus's geologically recent past. *Brown* (picked up by others)

2020 – Regarding Pluto antipodal focusing work published in *GRL*
Collision on One Side of Pluto Ripped Up Terrain on the Other. *Scientific American*
If Pluto has a subsurface ocean, it may be old and deep. *Science News*
Ancient Impact's Seismic Waves Reveal Pluto's Ocean, Core. *Eos*

2019 – Regarding Impact fragmentation work published in *JGR Planets*
Awarded as a top 10 most downloaded paper 1 year from publication in JGR Planets.
The Moon's Surface Is Totally Cracked. *Live Science* and *Space.com*
The Moon's crust is really cracked. *GeoSpace*

2019 – Regarding Lunar Multiring basin work published in *JGR Planets*
How the Moon Got Its Concentric Rings. *EOS research spotlight*

2019 – Regarding Ferrovolcanism work published in *Nature Astronomy*
Heavy-metal space volcanoes may have forged gem-studded meteorites. *National Geographic*
NASA to Seek Iron-Spewing Volcanoes at Psyche. *Scientific American*
Metal asteroids may have once had iron-spewing volcanoes. *ScienceNews*

2019 – Regarding Chicxulub tsunami work presented at *AGU meeting*
Huge Global Tsunami Followed Dinosaur-Killing Asteroid Impact. *EOS*
Dinosaur-Killing Asteroid Triggered A Mile-High Tsunami Across The Globe. *Forbes*
Dinosaur-Killing Asteroid Triggered Mile-High Tsunami That Spread Through Earth's Oceans. *Yahoo! News* (and others)

2017 – Regarding Europa subduction work published in *JGR Planets*
Journal highlight with commentary
New Evidence Points to Icy Plate Tectonics on Europa. *Gizmodo*
Boost for Odds of Life? Jupiter Moon Europa May Have Plate Tectonics. *Space.com*

2016 – Regarding CB chondrite work published in *Science Advances*
Study Sheds Light On Jupiter's Formation And Migration. *Yahoo! News* (and others)
Research offers clues about the timing of Jupiter's formation. *Brown* (picked up by others

2016 – Regarding Multiring basin work published in *Science*
Cover image of *Science* was selected as top 10 science images of 2016. *Science*
Mystery of How the Moon Got Its Bull's-Eye May Be Solved. *Space.com*
Research helps explain formation of ringed crater on the Moon. *Brown* (picked up by others)

2016 – Regarding Sputnik Planum (Pluto) work published in *Geophysical Research Letters*
Selected as in part as #40 of top 100 science discoveries of 2016 by *Discover Magazine*
Does Pluto have a hidden ocean? Its 'heart' holds a clue. *LA Times*
Pluto's Liquid Water Ocean Might Be Insanely Deep. *Gizmodo*

2016 – Regarding landslide work published in *JGR Earth Surface*
Journal highlight with commentary also highlighted in *Nature*
Why do some landslides travel so much farther than others? *Science*
Vibrations make large landslides flow like fluid. *Brown* (picked up by others)

2015 – Regarding chondrule work published in *Nature*
Asteroids May Not Be Planet Building Blocks After All. *Space.com*
A twist on planetary origins. *MIT news* (picked up others)
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*
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