

# Daniel T. Britt

## Asteroid 4395 Danbritt

### *Education/Training*

Brown University	Ph.D. 1991; Geological Sciences
Brown University	M.S. 1987; Geological Sciences
University of Washington	B.S. 1985; Geological Sciences
University of Washington	M.A. 1976; Economics
University of Washington	B.A. 1972; Economics

### *Employment History*

Pegasus Professor: University of Central Florida: 2017-Present  
Professor: University of Central Florida: 2003-Present.  
Director: Center for Lunar and Asteroid Surface Science: 2014-Present  
NASA Lucy Mission Co-Investigator  
NASA New Horizons Kuiper Belt Mission Co-Investigator  
Research Associate Professor: The University of Tennessee: 1999-2003.  
Project Manager: Imager for Mars Pathfinder (IMP) Instrument: 1993-1998.  
NASA Planetary Astronomy Postdoctoral Fellow: 1991-1993.  
The Boeing Company: Economist and Software Manager: 1977-1982.  
University of Washington: Research Associate in Economics: 1974-1976.  
United States Air Force: Minuteman ICBM Missile Launch Officer 1972-1974.

### *Summary*

Pegasus Professor of Astronomy and Planetary Science at the University of Central Florida specializing in the surface processes, physical properties, and resource potential of the regoliths of atmosphereless bodies. He is the Director of the Center for Lunar and Asteroid Surface Science (CLASS), a NASA-funded institute focused on solving exploration and resource problems of atmosphereless bodies. His group has developed a range of mineralogically realistic simulants for asteroid, Martian, and Lunar surface materials and run the Exolith Laboratory, the leading source of regolith simulants for the planetary exploration community. Space flight hardware work includes development of radiometric calibration targets for five Mars landers. He has been a Co-Investigator on the Mars Pathfinder, Deep Space 1, New Horizons, and Lucy missions. His research includes diverse topics such as the surface morphology of comets, the density and porosity of small bodies, resource extraction and processing, and the mineralogy of asteroids and the Moon.

### *Awards:*

Pegasus Professor  
7 NASA Group Achievement Awards  
Fellow, Meteoritical Society  
NASA Planetary Astronomy Postdoctoral Fellow  
NASA Graduate Student Fellow  
Smithsonian Graduate Student Fellow  
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### *Selected Service:*

NASA ARM FAST Advisory Panel  
Steering Committee, Small Bodies Assessment Group 2014-2017  
Chair, Division for Planetary Sciences of the American Astronomical Society 2011-2012  
President of Planetary Division of the Geological Society of America, 1998-1999  
Elected to the Florida Academy of Sciences 2010.

NASA Planetary Data System Small Bodies Node Advisory Committee  
Panel Chair, NASA Planetary Instrument Development Program Review Panel, 2011  
Invited Participant: NASA Blue Sky workshop on Human Exploration of the Martian Moons.  
Chair, Program Committee, Division for Planetary Sciences Meeting, 2007  
Chair, Program Committee, Division for Planetary Sciences Meeting, 2004  
Program Committee, Division for Planetary Sciences Meeting, 2003  
Chair, Program Committee, 64th Meteoritical Society Meeting, 2001

### ***Selected Publications***

- Scheeres DJ, Britt DT, Carry B, and Holsapple KA (2015) Asteroid Interiors and Morphology. In Asteroids IV (P. Michel, F.E. DeMeo and W. Bottke eds.), University of Arizona Press, pp. 745-766
- Taylor L.A., Pieters C.M., and Britt D.T. (2016) Evaluations of lunar regolith simulants Planetary and Space Science, Volume 126, July 2016, Pages 1–7.
- Cannon K.M. Britt D.T., Covey S.D., Smith T.M., and Fritsche R. (2018) Mars Global Simulant MGS-1: Developing a high-fidelity mineralogy-based simulant for basaltic Martian soil. *Icarus* 317, 470-478.
- Metzger P.T., Britt D.T., Covey S.D., Schultz C., Cannon K.M., Grossman K.D., Mantovani J.G., and Mueller R.P. (2019) Measuring the fidelity of asteroid regolith and cobble simulants. *Icarus* 321, 632-646.
- Zacny, Kris, Edward B. Bierhaus, Daniel T. Britt, Benton Clark, Christine M. Hartzell, Leslie Gertsch, Anton V. Kulchitsky, Anton V., Johnson, Jerome. B., Metzger, Phil, Reeves, David M. and Sanchez, Paul. “Geotechnical Properties of Asteroids Affecting Surface Operations, Mining, and In Situ Resource Utilization Activities.” In *Primitive Meteorites and Asteroids*, pp. 439-476. Elsevier, 2018
- Britt D.T., Cannon K.M., Donaldson Hanna K., Hogancamp J., Poch O., Beck P., Martin D., Escrig J., Bonal L., and Metzger P.T. (2019) Simulated asteroid materials based on carbonaceous chondrite mineralogies. *Meteoritics* 54, Nr 9, 2067–2082 doi: 10.1111/maps.13345.
- Cannon K.M. and Britt D.T. (2020) Ice Prospecting on the Moon at Mining Scales. *Earth and Space* 2021, 311-317
- Opeil C.P., Britt D.T., Macke R.J., and Consolmagno G.J. (2020) The surprising thermal properties of CM carbonaceous chondrites. *Meteoritics & Planetary Science* 1–20. doi: 10.1111/maps.13556
- Cannon K.M. and Britt D.T. (2020) Accessibility data set for large permanent cold traps at the lunar poles. *Earth and Space Science*, 7, e2020EA001291.
- Cannon K.M., Deutsch A.N., Head J.W., and Britt D.T. (2020). Stratigraphy of ice and ejecta deposits at the lunar poles. *Geophysical Research Letters*, 46,e2020GL088920.
- Landsman, Z.A., Schultz, C.D., Britt, D.T., Peppin, M., Kobrick, R.L., Metzger, P.T. Orlovskaya, N., (2021) Phobos Regolith Simulants PGI-1 and PCA-1, *Advances in Space Research*, doi:<https://doi.org/10.1016/j.asr.2021.01.024>
- Long-Fox, J., Lucas M.P., Landsman Z., Millwater C., Britt D. and Neal C. (2022) Applicability of Simulants in Developing Lunar Systems and Infrastructure: Geotechnical Measurements of Lunar Highlands Simulant LHS-1. *Proceedings of the American Association of Civil Engineers*, in press.