

# LINDA TARBOX ELKINS-TANTON

Curriculum Vitae

July 2018

Director, School of Earth and Space Exploration, Arizona State University  
ISTB4-791, 781 East Terrace Road | Tempe, AZ 85287-6004  
Office: (480) 727-2451 | Mobile: (617) 784-3817 | ltelkins@asu.edu

## RESEARCH

Theory, observation, and experiments concerning terrestrial planetary formation, magma oceans, and subsequent planetary evolution including magmatism and interactions between rocky planets and their atmospheres. Inquiry and exploration learning. My mission is to create a generation of problem-solvers.

### Research Achievements

The structure, composition, and evolution of planetesimals includes partially differentiated and other complex compositional structures, which explain magnetic, volatile, mineralogical observations from meteorites and asteroids.

The Siberian flood basalts erupted most of their volume before the extinction occurred; the magmatism released carbon, sulfur, and halocarbons sufficient to drive catastrophic global climate change; the flood basalts began with a world-record volume of volcanoclastics, many erupted as tuffs burning a significant coal volume.

Magma ocean stages of terrestrial planet formation demonstrated to retain sufficient water to create habitable planets without additional water delivery (though that is inevitable as well), and the silicate differentiation produces by magma ocean solidification creates successful predictions about current-day Moon, Earth, Mercury, and Mars.

Drip magmatism | Lithospheric gravitational instabilities heat, melt, and produce magmatism while they sink in to the mantle; verified as the cause of some magmatism in Chile, in Tibet, in the Sierra Nevada, and in east Africa.

## EDUCATION

PhD, Geology and Geophysics, Massachusetts Institute of Technology, 2002; advisors, Timothy L. Grove and Bradford H. Hager

MS, Geochemistry, MIT, 1987; advisor, Timothy L. Grove

BS, Geology, MIT, 1987

## EMPLOYMENT

Principal Investigator, NASA Psyche mission, 2017–current, <https://psyche.asu.edu/>

Director and Foundation Professor, School of Earth and Space Exploration, Arizona State University, 2014–current, <http://sese.asu.edu/>

Director, Interplanetary Initiative, ASU, 2017–current, <https://interplanetary.asu.edu/>

Director, Origins Project, ASU, 2018–current

Affiliated Professor with the ASU Mary Lou Fulton Teachers College, 2018–current

Co-Founder, Beagle Learning, 2015–current

Director, Dept. of Terrestrial Magnetism, Carnegie Institution for Science, 2011 – 2014

Mitsui Assistant Professor of Geology, MIT, 2008 – 2010

Assistant Professor of Geology, MIT, 2007 – 2008

Research Associate and Senior Research Associate, Brown University, 2002-2006

PhD candidate, MIT, 1997–2002

Lecturer in Mathematics, St. Mary's College of Maryland, 1995-1997

Principal, Business Plan Writing, Annapolis, MD, 1990-1995

Circulation Analyst, US News & World Report, Washington DC, 1989-1990

Interim Publisher, International Wine Review Magazine, Ithaca, NY, 1988-1989

Research Associate, Touche Ross & Co., Philadelphia, PA, 1987-1988

## PUBLICATIONS

List available on [Google citations](#).

2018

103. Wu, J., S.J. Desch, L. Schaefer, L.T. Elkins-Tanton, K. Pahlevan, P.R. Buseck, Review of the origin of Earth's water: Inheritance plus nebular ingassing and storage of hydrogen in the core, accepted in *Journal of Geophysical Research, Planets*.
102. Black, B.A., R.R. Neely, J.-F. Lamarque, L. Elkins-Tanton, J.T. Kiehl, C.A. Shields, M. Mills, C. Bardeen, Systemic swings in end-Permian climate from Siberian Traps carbon and sulfur outgassing, accepted at *Nature Geoscience*.
101. Schaefer, L. and L. T. Elkins-Tanton, Magma oceans as a critical stage in the tectonic development of rocky planets, accepted at *Philosophical Transactions of the Royal Society*.
100. Ikoma, M., L. Elkins-Tanton, K. Hamano, J. Suckale, Water partitioning in planetary embryos and protoplanets with magma oceans, accepted at *Space Science Reviews*.
99. Scheinberg, A., K. Soderlund, L. T Elkins-Tanton, A basal magma ocean dynamo to explain the early lunar magnetic field, *Earth and Planetary Science Letters* 492, 144-151, 2018.
98. Perera, V., A. Jackson, L.T. Elkins-Tanton, E. Asphaug, Effect of Re-impacting Debris on the Solidification of the Lunar Magma Ocean, *Journal of Geophysical Research*, accepted.
97. Clark, B. E., M.A. Barucci, X.-D. Zou, M. Fulchignoni, A. Rivkin, C. Raymond, M. Yoshikawa, L. Elkins-Tanton, and H. Levison, Chapter 1: A brief history of spacecraft missions to asteroids and protoplanets, *In Abrey, N. editor, Meteorites and Asteroids*, Elsevier press.
96. Oh, D.Y, S. Collins, D. Goebel, B. Hart, G. Lantoine, S. Snyder, G. Whiffen, L. Elkins-Tanton, P. Lord, L. Rotlisburger. Development of the Psyche Mission for NASA's Discover Program, 35<sup>th</sup> International Electric Propulsion Conference, 2018.
95. Hart, W., G. Mark Brown, S. M. Collins, M. De Soria-Santacruz Pich, P. Fieseler, D. Goebel, D. Marsh, D. Y. Oh, S. Snyder, N. Warner, G. Whiffen, L. Elkins-Tanton, J. F. <sup>Bell</sup> III, D. J. Lawrence, P. Lord, Z. Pirkl, Overview of the spacecraft design for the Psyche mission concept, *IEEE Aerospace*, 2018.
94. Morbidelli A., M. Wieczorek, D. Nesvorny, V. Laurenz, S. Marchi, D. Rubie, L. T. Elkins-Tanton, S. Jacobsen, The timeline of the lunar bombardment - revisited, *Icarus* 305, 262-276, 2018.

2017

93. Saxena, P., L. T. Elkins-Tanton, N. Petro, A. Mandell, A model of the primordial lunar atmosphere, *Earth and Planetary Science Letters* 474, 198-205, 2017.
92. Tikoo, S. and L.T. Elkins-Tanton, The fate of water within Earth and super-Earths and implications for plate tectonics, *Philosophical Transactions of the Royal Society A* 375: 20150394, 2017.
91. Blackburn, T., C. M O'D. Alexander, R. Carlson, L.T. Elkins-Tanton, The accretion and impact history of the ordinary chondrite parent bodies, *Geochimica et Cosmochimica Acta* 200, 201-217, 2017.
90. Tian, ZhenLiang , J. Wisdom, L. Elkins-Tanton, Coupled orbital-thermal evolution of the early Earth-Moon system with a fast-spinning Earth, *Icarus* 281, 90-102, 2017.

2016

89. Ehlmann, Andrews-Hanna, Carter, Catling, Christiansen, Cohen, Dressing, Edwards, Elkins-Tanton, Farley, Fassett, Fischer, Fraeman, Golombek, Grotzinger, Hamilton, Hayes, Herd, Horgan, Hu, Jakosky, J. Johnson, Kasting, Kerber, Kite, Knutson, Lunine, Mahaffey, Mangold, McCubbin, Mustard, Niles, Quantin, Rice, Stack Morgan, Stevenson, Stewart, Toplis, Usui, Weiss, Werner, Wordsworth, Wray, Yingst, Yung, Zahnle, The Sustainability of

Habitability on Terrestrial Planets: Insights, Questions, and Needed Measurements from Mars for Understanding the Evolution of Earth-like Worlds, *Journal of Geophysical Research* 121, 1927-1961, 2016.

88. Oh, D., Goebel, D., Polanskey, C., Snyder, S., Carr, G., Collins, S., Lantoine, G., Landau, D., Elkins-Tanton, L., Lord, P., Tilley, S., Psyche: Journey to a Metal World, AIAA-2016-4541, 52<sup>nd</sup> AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Salt Lake City, UT, July 25-27, 2016. (Full research paper published in engineering conference proceedings.)
87. Furman, T., W.R. Nelson, L.T. Elkins-Tanton, Evolution of the East African Rift: Drip Magmatism, Lithospheric Thinning and Mafic Volcanism, *Geochimica et Cosmochimica Acta* 185, 418-434, 2016.
86. Lichtenegger, H.I.M., K.G. Kislyakova, P. Odert, N.V. Erkaev, H. Lammer, H. Gröller, C.P. Johnstone, L. Elkins-Tanton, L. Tu, M. Güdel, M. Holmström, Solar XUV and ENA-driven water loss from early Venus' magma ocean outgassed steam atmosphere, *Journal of Geophysical Research Space Physics* 121, 4718–4732, 2016.
85. Marchi, S., B.A. Black, L.T. Elkins-Tanton, W.F. Bottke, Massive impact-induced release of carbon and sulfur gases in the early Earth's atmosphere, *Earth and Planetary Science Letters* 449, 96–104, 2016.
84. Scheinberg, A., B. Weiss, R. Fu, S. Stanley, G. Schubert, L.T. Elkins-Tanton, Magnetic fields on asteroids and planetesimals, In *Planetesimals: Early Differentiation and Consequences for Planets*, Ed. L.T. Elkins-Tanton, B. Weiss, Cambridge University Press, 2016.
83. Fu, R., L.T. Elkins-Tanton, E. Young, R. Greenwood, Silicate melting and volatile loss during differentiation in planetesimals, In *Planetesimals: Early Differentiation and Consequences for Planets*, Ed. L.T. Elkins-Tanton, B. Weiss, Cambridge University Press, 2016.
82. Elkins-Tanton, L.T., The taxonomy of planetesimals: Consequences for Planets, In *Planetesimals: Early Differentiation and Consequences for Planets*, Ed. L.T. Elkins-Tanton, B. Weiss, Cambridge University Press, 2016.
81. Scheinberg, A., L.T. Elkins-Tanton, G. Schubert, D. Bercovici, Core solidification and dynamo evolution in a mantle-stripped planetesimal, *Journal of Geophysical Research* 121, 2-20, 2016.

#### 2015

80. Black, B.A., B.P. Weiss, L.T. Elkins-Tanton, R.V. Veselovskiy, A. Latyshev, Siberian Traps volcanoclastic rocks and the role of magma-water interactions, *Geological Society of America Bulletin* 127, 1437-1452, 2015.
79. Scheinberg A., Fu R. R., Elkins-Tanton L. T., and Weiss B. P., Asteroid differentiation: Melting and large-scale structure. In *Asteroids IV* Ed. P. Michel et al., Univ. of Arizona, Tucson, 2015.
78. Pavlov, V., F. Fluteau, R. Veselovskiy, A. Fetisov, A. Latyshev, L. T. Elkins-Tanton, A. Sobolev, N. Krivolutsкая, Volcanic Pulses in the Siberian Traps as Inferred from Permo-Triassic Geomagnetic Secular Variations, In *Volcanism and Global Environmental Change*, Ed. A. Schmidt, K. Fristad, L. Elkins-Tanton, Cambridge University Press. 2015.
77. Ukstins Peate, I. and L.T. Elkins-Tanton, Large igneous provinces and explosive basaltic volcanism, In *Volcanism and Global Environmental Change*, Ed. A. Schmidt, K. Fristad, L. Elkins-Tanton, Cambridge University Press, 2015.
76. Black, B., J.-F. Lamarque, C. Shields, L. T. Elkins-Tanton, J. Kiehl, Environmental effects of large igneous province magmatism: A Siberian perspective, In *Volcanism and Global Environmental Change*, Ed. A. Schmidt, K. Fristad, L. Elkins-Tanton, Cambridge University Press, 2015.

#### 2014

75. Piskorz, D., L. T. Elkins-Tanton, S. Smrekar, Coronae formation on Venus via extension and lithospheric instability, *Journal of Geophysical Research, Planets*, 119, 2568-2582, 2014.
74. Foley, B., D. Bercovici, L.T. Elkins-Tanton, Initiation of Plate Tectonics from Post-Magma Ocean Thermo-Chemical Convection, *Journal of Geophysical Research, Solid Earth*, 119, 8538-8561, 2014.
73. Brown, S., L.T. Elkins-Tanton, R. Walker, Effects of magma ocean crystallization and overturn on the development of <sup>142</sup>Nd and <sup>182</sup>W isotopic heterogeneities in the primordial mantle, *Earth and Planetary Science Letters*, 408, 319-330, 2014.
72. Marchi, S., W.F. Bottke, L.T. Elkins-Tanton, M. Bierhaus, K. Wuennemann, A. Morbidelli, D. A., Kring, Widespread mixing and burial of Earth's Hadean crust by asteroid impacts, *Nature*, 511, 578-582, 2014.
71. Elkins-Tanton, L.T. and D. Bercovici, Contraction or expansion of the Moon's crust during magma ocean freezing? *Philosophical Transactions of the Royal Society A*, 372, 20130240, <http://dx.doi.org/10.1098/rsta.2013.0240>, 2014.

70. Black, B.A., E.H. Hauri, L.T. Elkins-Tanton, Sulfur isotopic evidence for sources of volatiles in Siberian Traps magmas, *Earth and Planetary Science Letters*, 394, 58-69, 2014.
69. Scheinberg, A., L.T. Elkins-Tanton, S. Zhong, Timescale and morphology of Martian mantle overturn immediately following magma ocean solidification, DOI: 10.1002/2013JE004496, *Journal of Geophysical Research* 119, 454-467, 2014.
68. Fu, Roger R. and L. T. Elkins-Tanton, The fate of magmas in planetesimals and the retention of primitive chondritic crusts, *Earth and Planetary Science Letters* 390, 127-138, 2014.
67. Black, B.A, J.-F. Lamarque, C. Shields, L. Elkins-Tanton, J. Kiehl, Acid rain and ozone depletion from pulsed Siberian Traps magmatism, *Geology*, 42, 67-70, 2014.
66. Erkaev, N. V., H. Lammer, L. Elkins-Tanton, P. Odert, K. G. Kislyakova, Yu. N. Kulikov, M. Leitzinger, M. Güdel, Escape of the martian protoatmosphere, *Planetary and Space Science* 98, 106-119, 2014.

#### 2013

65. Elkins-Tanton, L.T., Occam's origin of the Moon, *Nature Geoscience (News and Views)*, 2013.
64. Elkins-Tanton, L.T., Evolutionary dichotomy for rocky planets, *Nature (News and Views)*, 2013.
63. Lammer H., M. Blanc, W. Benz, M. Fridlund, V. Coudé du Foresto, M. Güdel, H. Rauer, S. Udry, R.-M. Bonnet, M. Falanga, D. Charbonneau, R. Helled, W. Kley, J. Linsky, L. T. Elkins-Tanton, Y. Alibert, E. Chassefière, T. Encrenaz, A. P. Hatzes, D. Lin, R. Liseau, W. Lorenzen, S. N. Raymond, The Science of Exoplanets and their Systems. *Astrobiology* 13 (9) 793-813, 2013.
62. Elkins-Tanton, L.T., What makes a habitable planet? *Eos, Transactions of the American Geophysical Union* 94, 149-150, 2013.
61. Mandler, B.E. and L. T. Elkins-Tanton, The origin of eucrites, diogenites and olivine diogenites: magma ocean crystallization and shallow magma chamber processes on Vesta, *Meteoritics & Planetary Science*, 1–17, doi: 10.1111/maps.12135, 2013.
60. Vilim, R., S. Stanley, L. Elkins-Tanton, The effect of lower mantle metallization on magnetic field generation in rocky exoplanets, *Astrophysical Journal Letters*, 768, L30, doi:10.1088/2041-8205/768/2/L30, 2013.
59. Weiss, B.P. and L.T. Elkins-Tanton, Differentiated Planetesimals and the Parent Bodies of Chondrites, *Annual Review of Earth and Planetary Sciences*, 41, 21.1–21.32, DOI: 10.1146/annurev-earth-040610-133520, 2013.

#### 2012

58. Johnson B.C., C.M. Lisse, C.H. Chen, H.J. Melosh, M.C. Wyatt, P. Thebault, W.G. Henning, E. Gaidos, L.T. Elkins-Tanton, J.C. Bridges, A. Morlok. A self-consistent model of the circumstellar debris created by a giant hypervelocity impact in the HD172555 system. *Astrophysical Journal*, 761, 45, doi:10.1088/0004-637X/761/1/45, 2012.
57. Suckale, J., L. Elkins-Tanton, and J. A. Sethian, Crystals stirred up: 2. Numerical insights into the formation of the earliest crust on the Moon, *Journal of Geophysical Research*, VOL. 117, E08005, doi:10.1029/2012JE004067, 2012.
56. Suckale, J., J.A. Sethian, J.-D. Yu, and L.T. Elkins-Tanton, Crystals stirred up: 1. Direct numerical simulations of crystal settling in nondilute magmatic suspensions, *Journal of Geophysical Research*, VOL. 117, E08004, doi:10.1029/2012JE004066, 2012.
55. Black, B.A., L.T. Elkins-Tanton, M.C. Rowe, I. Uktins-Peate, Magnitude and Consequences of Volatile Release from the Siberian Traps, *Earth and Planetary Science Letters* 317-318, 363-373, 2012.
54. Elkins-Tanton, L.T., Magma oceans in the inner solar system, *Annual Review of Earth and Planetary Sciences*, 40, 113-139, 2012.
53. Zuber, M.T., H. Y. McSween, R.P. Binzel, L.T. Elkins-Tanton, A.S. Konopliv, C.M. Pieters, D.E. Smith, Origin, internal structure, and evolution of 4 Vesta, *Space Science Reviews*, DOI 10.1007/s11214-011-9806-8, p1 – 17, 2012.
52. Weiss, B.J., L.T. Elkins-Tanton, M.A. Barucci, H. Sierks, C. Snodgrass, J.-B. Vincent, S. Marchi, M. Pätzold, I. Richter, P.R. Weissman, M. Fulchignoni, R.P. Binzel, Possible evidence for partial differentiation of asteroid Lutetia from Rosetta, *Planetary and Space Science*, 66, doi:10.1016/j.pss.2011.09.012, 137-146, 2012.

#### 2011

51. Suckale, J., B. H. Hager, L. T. Elkins-Tanton, and J. Nave, Reply to the comment by Mike R. James et al. on “It takes three to tango: 2. Bubble dynamics in basaltic volcanoes and ramifications for modeling normal Strombolian activity”, *Journal of Geophysical Research.*, 116, B06208, doi:10.1029/2011JB008351, 2011
  50. Elkins-Tanton, L.T. and T.L. Grove, Water (hydrogen) in the lunar mantle: Results from petrology and magma ocean modeling, *Earth and Planetary Science Letters* 307, 173-179, 2011.
  49. Gelman, S.E., L.T. Elkins-Tanton, and S. Seager, Mantle evolution in tidally locked terrestrial planets: Degree-1 convection and implications for habitability, *The Astrophysical Journal* 735, 1-8, DOI: 10.1088/0004-637X/735/2/72, 2011.
  48. Elkins-Tanton, L.T., B.P. Weiss, M.T. Zuber, Chondrites as samples of differentiated planetesimals, *Earth and Planetary Science Letters* 305, 1-10, DOI: 10.1016/j.epsl.2011.03.010, 2011.
  47. Carporzen L., B.P. Weiss, L. Elkins-Tanton, D.L. Shuster, D.S. Ebel, J. Gattacceca, Magnetic evidence for a partially differentiated carbonaceous chondrite parent body, *Proceedings of the National Academy of Science*, DOI:10.1073/pnas.1017165108e, 2011.
  46. Elkins-Tanton, L.T., S. Burgess, and Qing-Zhu Yin, The lunar magma ocean: Reconciling the solidification process with lunar petrology and geochronology, *Earth and Planetary Science Letters* 304, 326-336, DOI: 10.1016/j.epsl.2011.02.004, 2011.
  45. Elkins-Tanton, How much water does it take to be wet? Water on the Moon, invited Quick Study in *Physics Today*, March 2011.
  44. Elkins-Tanton, L.T., Formation of early water oceans on rocky planets, *Astrophysics and Space Science*, 302(2), 359, DOI: 10.1007/s10509-010-0535-3, 2011.
- 2010
43. Bottke, W.F., R.J. Walker, J.M.D. Day, D. Nesvorny, L.T. Elkins-Tanton, Stochastic late accretion to Earth, the Moon, and Mars, *Science* 330, DOI 10.1126/science.1196874 , 1527-1530, 2010.
  42. Ford, H.A., K. Fischer, D. Abt, C.A. Rychert, and L.T. Elkins-Tanton, The lithosphere–asthenosphere boundary and cratonic lithospheric layering beneath Australia from Sp wave imaging, *Earth and Planetary Science Letters* 300, 299-310, doi:10.1016/j.epsl.2010.10.007, 2010.
  41. Till, Christy B, Linda T. Elkins-Tanton, and Karen M. Fischer, A mechanism for low extent melts at the lithosphere–asthenosphere boundary, *Geochem. Geophys. Geosyst.*, 11, Q10015, doi:10.1029/2010GC003234, 2010.
  40. Suckale, Jenny, Bradford Hager, Linda T. Elkins-Tanton, and Jean-Christophe Nave, It takes three to tango: 2. Bubble dynamics in basaltic volcanoes and ramifications for modeling normal Strombolian activity, *Journal of Geophysical Research*, 115, B07410, doi:10.1029/2009JB006917, 2010.
  39. Meyer, Jennifer, Linda T. Elkins-Tanton, Jack Wisdom, Coupled thermal-orbital evolution of the early Moon, *Icarus* 208, 1-10, 2010.
  38. Smrekar, Suzanne E., E.R. Stofan, N. Mueller, A. Treiman, L. Elkins-Tanton, J. Helbert, Recent hotspot volcanism on Venus from VIRTIS emissivity data, *Science* 328, 605-608, 2010.
- 2009
37. Miller-Ricci, E., M. Meyer, S. Seager, L. Elkins-Tanton, On the emergent spectra of hot protoplanet collision afterglows, *Astrophysical Journal* 704, 770-780, 2009.
  36. Brown, S. and L. T. Elkins-Tanton, Composition of Mercury’s oldest crust from magma ocean models, *Earth and Planetary Science Letters* 286, 446-455, 2009.
  35. West, John D., Matthew J. Fouch, Jeffrey B. Roth, Linda T. Elkins-Tanton, Vertical mantle flow associated with a lithospheric drip beneath the Great Basin, *Nature Geoscience* 2, 438-443, 10.1038/NGEO526, 2009.
  34. McCanta, M., L. Elkins-Tanton, M.J. Rutherford, Expanding the application of the Eu-oxybarometer to the lherzolithic shergottites and nakhlites: implications for the oxidation state heterogeneity of the Martian interior, *Meteoritics and Planetary Science* 44(5), 725-745, 2009.
- 2008
33. Weiss, B.P., J.S. Berdahl, L. Elkins-Tanton, S. Stanley, A. J. Irving, E.A. Lima, L. Carporzen, M.E. Zucolotto, Magnetism on the angrite parent body and the early evolution of planetesimals, *Science* 322, 713-716, 2008.
  32. Elkins-Tanton L.T. and S. Seager, Coreless terrestrial exoplanets, *Astrophysical Journal* 688, 628-635, 2008.

31. Stanley, S., L. Elkins-Tanton, M. Zuber, and E.M. Parmentier, Mars' paleomagnetic field as the result of a single-hemisphere dynamo, *Science* 321, 1822-1825, 2008.
30. Elkins-Tanton L.T. and S. Seager, Ranges of atmospheric mass and composition for terrestrial exoplanets, *Astrophysical Journal* 685, 1237-1246, 2008.
29. Elkins-Tanton L.T., Linked magma ocean solidification and atmospheric growth for Earth and Mars, *Earth and Planetary Science Letters* 271, 181-191, 2008.
28. Adams E.R., S. Seager, L. Elkins-Tanton, Ocean planet or thick atmosphere: On the mass-radius relation for solid exoplanets with massive atmospheres, *Astrophysical Journal* 673, 1160-1164, 2008.
27. Farmer, G.L., T. Gailley, L.T. Elkins-Tanton, Mantle "source volumes" and the origin of the mid-Tertiary ignimbrite flare-up in the southern Rocky Mountains, Western U.S., *Lithos* 102, 279-294, 2008.

#### 2007

26. Smrekar, S.E., L.T. Elkins-Tanton, J. Leitner, A. Lenardic, S. Mackwell, L. Moresi, C. Sotin, E.R. Stofan, Tectonic and thermal evolution of Venus and the role of volatiles: Implications for understanding the terrestrial planets, *In* AGU monograph 176, *Venus as a Terrestrial Planet*, 45-71, 2007.
25. Cagnioncle, A., E. M. Parmentier, and L. T. Elkins-Tanton. Effect of solid flow above a subducting slab on water distribution and melting at convergent plate boundaries, *Journal of Geophysical Research* 112, B09402, doi:10.1029/2007JB004934, 2007.
24. Elkins-Tanton, L. T., S. E. Smrekar, P. C. Hess, and E. M. Parmentier, Volcanism and volatile recycling on a one-plate planet: Applications to Venus. *Journal of Geophysical Research* 112, E04S06, doi:10.1029/2006JE002793, 2007.
23. Elkins-Tanton, L. T., Continental magmatism, volatile recycling, and a heterogeneous mantle caused by lithospheric gravitational instabilities, *Journal of Geophysical Research* 112, B03405, doi:10.1029/2005JB004072, 2007.
22. Elkins-Tanton L.T., D. Draper, C. Agee, J. Jewell, A. Thorpe, P. Hess, The last lavas erupted during the main phase of the Siberian flood basalts: Results from experimental petrology, *Contributions to Mineralogy and Petrology* 153(2), doi:10.1007/s00410-006-0140-1, 191-209, 2007.
21. Barr, J., T.L. Grove, L. Elkins-Tanton, High-magnesian andesite from Mount Shasta: A product of magma mixing and contamination, not a primitive melt: Comment and reply. *Geology* 35, p 147, doi: 10.1130/G24058C.1, 2007.

#### 2006

20. Shearer C.K., P.C. Hess, M.A. Wieczorek, M.E. Pritchard, E.M. Parmentier, L.E. Borg, J. Longhi, L.T. Elkins-Tanton, C.R. Neal, I. Antonenko, R.M. Canup, A.N. Halliday, T.L. Grove, B.H. Hager, D.-C. Lee, U. Weichert, Thermal and magmatic evolution of the Moon, in *New Views of the Moon*, B.L. Joliff, M.A. Wieczorek, C.K. Shearer, C.R. Neal, Eds, Reviews in Mineralogy and Geochemistry 60, Mineral. Soc. America, Chantilly, Virginia, 2006.

#### 2005

19. Elkins-Tanton L.T., E.M. Parmentier, P.C. Hess, Possible formation of ancient crust on Mars through magma ocean processes, *Journal of Geophysical Research* 110, E12S01, doi:10.1029/2005JE002480, 2005.
18. Elkins-Tanton L.T. and B. H. Hager, Giant meteoroid impacts can cause volcanism, *Earth and Planetary Science Letters*, 239, 219-232, doi: 10.1016/j.epsl.2005.07.029, 2005.
17. Elkins-Tanton L.T., S. Zarnek, and E.M. Parmentier, Early magnetic field and magmatic activity on Mars from magma ocean overturn, *Earth and Planetary Science Letters* 236, 1-12, 2005.
16. Elkins-Tanton L.T., Continental magmatism caused by lithospheric delamination, in *Plates, Plumes, and Paradigms*, eds. G.R. Foulger, J.H. Natland, D.C. Presnall, D.L. Anderson, Geological Society of America, 449-461, 2005.
15. Grove T.L., M.B. Baker, R.C. Price, S.W. Parman, L.T. Elkins-Tanton, N. Chatterjee, and O. Müntener, Magnesian andesite and dacite lavas from Mt. Shasta, northern California: products of fractional crystallization of H<sub>2</sub>O-rich mantle melts. *Contributions to Mineralogy and Petrology*: DOI: 10.1007/s00410-004-0619-6, 2005.

#### 2004

14. Elkins-Tanton L.T., B. H. Hager, and T.L. Grove, Magmatic effects of the Lunar Late Heavy Bombardment. *Earth and Planetary Science Letters*: 222, 17-27, 2004.

13. Kelly, D.C. and L.T. Elkins-Tanton, Bottle-green microtektites from the South Tasman Rise: Deep-sea evidence for an impact event near the Miocene/Pliocene boundary, *Meteoritics and Planetary Science* 39, 1921-1929, 2004.

#### 2003

12. Elkins-Tanton L.T. and T.L. Grove, Evidence for deep melting of hydrous, metasomatized mantle: Pliocene high potassium magmas from the Sierra Nevadas, *Journal of Geophysical Research*: 108, 2350, DOI 10.1029/2002JB002168, 29 July 2003.
11. Elkins-Tanton L.T., P. Aussillous, J. Bico, D. Quéré, J.W.M. Bush, A laboratory model of splash-form tektites, *Meteoritics and Planetary Science*: 38, 1331-1340, 2003.
10. Elkins-Tanton L.T., E.M. Parmentier, and P.C. Hess, Magma ocean fractional crystallization and cumulate overturn in terrestrial planets: Implications for Mars, *Meteoritics and Planetary Science*: 38, 1753-1771, 2003.
9. Elkins-Tanton L.T., N. Chatterjee, and T.L. Grove, Magmatic processes that produced lunar fire fountains, *Geophysical Research Letters*: 30(10), p. 1513, DOI 10.1029/2003GL017082, 2003.
8. Grove T.L., L.T. Elkins-Tanton, S.W. Parman, N. Chatterjee, O. Müntener, G.A. Gaetani, Fractional crystallization and mantle-melting controls on calc-alkaline differentiation trends, *Contributions to Mineralogy and Petrology*: 145, p 515-533, DOI 10.1007/s00410-003-0448-z, 2003.
7. Elkins-Tanton L.T., N. Chatterjee, and T.L. Grove, Experimental and petrological constraints on lunar differentiation from the Apollo 15 green picritic glasses, *Meteoritics and Planetary Science*: 38, 515-527, 2003.

#### 2002 and previous

6. Elkins-Tanton L.T., J. A. Van Orman, B. H. Hager, and T. L. Grove, Reexamination of the lunar magma ocean cumulate overturn hypothesis: Melting or mixing is required, *Earth and Planetary Science Letters*: 196, 249-259, 2002.
5. Elkins Tanton L.T., T.L. Grove, and J. Donnelly-Nolan, Hot shallow melting under the Cascades volcanic arc, *Geology*: 29, 631-634, 2001.
4. Elkins Tanton L.T. and Bradford H. Hager, Melt intrusion as a trigger for lithospheric foundering and the eruption of the Siberian flood basalt, *Geophysical Research Letters*: 27, 3937-3940, 2000.
3. Elkins L.T., T.L. Grove, J. Delano, V. Fernandez, Origin of lunar ultramafic green glasses: Constraints from phase equilibrium studies, *Geochimica et Cosmochimica Acta*: 64, 2339-2350, 2000.
2. Elkins, Linda T. and Timothy L. Grove, Ternary feldspar experiments and thermodynamic models, *American Mineralogist*: 75, 544-559, 1990.
1. Karig, D.E. and L.T. Elkins, Geology of the Cayuga Lake region, NYSGA Annual Meeting Guidebook, 1986.

## BOOKS

*Earth*, Bloomsbury Academic, 2017, Jeffrey Jerome Cohen and L.T. Elkins-Tanton.

*Planetesimals: Early Differentiation and Consequences for Planets*, (edited volume) Cambridge University Press, 2017, editors L.T. Elkins-Tanton and B. Weiss.

*Volcanism and Global Environmental Change*, (edited volume) Cambridge University Press, 2015, editors A. Schmidt, K. Fristad, L.T. Elkins-Tanton.

*The Solar System*, a six-book reference series, published by Chelsea House, an imprint of Facts on File, Inc, 1<sup>st</sup> edition 2006; 2<sup>nd</sup> edition 2010, L.T. Elkins-Tanton.

*The Sun, Mercury, and Venus, The Earth and the Moon, Mars, Asteroids, Meteorites, and Comets, Jupiter and Saturn, Uranus, Neptune, Pluto, and the Outer Solar System*

## SPACECRAFT PROPOSAL, REVIEW, AND MISSION INVOLVEMENT

Europa Lander Tiger Team, 2017

Standing Review Board for the NASA Europa Clipper flagship mission (2016 – )

Psyche Discovery mission, Principal Investigator (2012 -). Selected for flight as Discovery 14 (Jan. 2017).

VERITAS Venus orbiter Discovery mission proposal, Co-I (2010 - ). PI is S. Smrekar. Reached Phase A in 2015.  
Mars 2020 Rover, science definition team member (2013).  
SAGE Venus lander, New Frontiers proposal, Co-I (2010 - ). PI is Larry Esposito. Reached Phase A in 2011.  
International Lunar Network, science definition team member (2008).

## HONORS AND AWARDS

Member of the American Academy of Arts and Sciences, 2018  
Fellow of the American Mineralogical Society, 2017  
Fellow of the American Geophysical Union, 2016  
Mineralogical Society of America Distinguished Lecturer, 2013-2014  
Astor Fellow, Oxford University, 2013, including the first Lobanov Planetary Science Lectureship  
Masursky Lecture, Lunar and Planetary Science Conference, 2013  
Asteroid (8252) Elkins-Tanton  
Lowell Thomas Award from The Explorers Club, 2010  
Outstanding MIT Faculty Undergrad Research Mentor Award, 2008-2009  
Mitsui Career Development Chair, 2008-2011  
NAS Kavli Fellow, Frontiers of Science, U.S. (participant), 2008  
NAS Kavli Fellow, Frontier of Science France-US, France (speaker), 2008  
National Science Foundation CAREER award, June, 2008  
National Defense Science and Engineering Graduate fellowship, 1997-2000.  
Amelia Earhart graduate fellowships from Xonta International, 1999 and 2000.

## SERVICE

Cambridge University Press Planetary Science Series Editorial Board member, 2018 –  
The Hague Space Resources Technical Panel, 2018 –  
Intelligence Science and Technology Experts Group, National Academy of Sciences, 2015 –  
Aerospace States Association – Arizona Chapter Board Member 2016 –  
*New Space* Editorial Board founding member, 2012 –  
The Explorers Club Space Advisory Committee member, 2013 – 2016  
Centre for Earth Evolution and Dynamics, Oslo, Int'l Advisory Board Member, 2012 – 2017  
NAS Committee on Astrobiology and Planetary Science (CAPS), 2012 – 2015  
Planetary Division of the American Geophysical Union President, 2015 – 2016  
Planetary Division of the American Geophysical Union President-Elect, 2012 – 2014  
Planetary Division of the American Geophysical Union Secretary, 2010 – 2012  
Lead Organizer, Workshop on Planetary Formation and Evolution, Washington DC, October 2013  
Flag and Honors Committee, The Explorers Club, 2011 – 2013  
Journal of Geophysical Research: Planets Associate Editor, 2010 – 2012  
NAS Decadal Survey for Planetary Science, 2009-2010, Mars Panel Member  
SENCr Microanalytical and Imaging Center Advisory Board, 2009 – 2010  
Proposal reviewer for NASA, NSF, NOW (Netherlands), NERC (United Kingdom), ETH (Eidgenössische Technische Hochschule), DFG (Germany); service on numerous panels.



## POSTDOCTORAL, GRADUATE, AND UNDERGRADUATE RESEARCHERS SUPERVISED (PRIMARY SUPERVISION ONLY LISTED)

Kevin Hubbard, ASU Ph.D. student, 2017 – present  
Hannah Bercovici, ASU Ph.D. student, 2017 – present  
John Morgan Christoph, ASU Ph.D. student 2017 - present  
Joe O'Rourke, ASU Exploration Fellow, 2017 - present  
Laura Schaefer, ASU postdoctoral fellow 2016-present; starting tenure-track appointment at Stanford University in 2019.  
Kaveh Palevan, ASU postdoctoral fellow 2016 - present  
Terrence Blackburn, Carnegie postdoctoral fellow 2012-2014, now tenure-track at UC Santa Cruz.  
Aaron Scheinberg, MIT Ph.D. 2015, Mantle dynamics and geodynamos in the early solar system, now a researcher at Princeton University.  
Benjamin Black, MIT Ph.D., 2013, Links between the volcanism and atmospheric chemistry, subsequently postdoc at Berkeley, now tenure-track appointment at City College of New York.  
Jenny Suckale, MIT Ph.D. 2011, Numerical models of bubbles and crystals in magmatic systems, subsequently fellow at Harvard University, now tenure-track appointment at Stanford University.  
Stephanie Brown, MIT S.B. Thesis 2010, S.M. 2011, Dwornik Honorable Mention for best student presentation at LPSC 2008, now Ph.D. student at MIT.  
Sean Wahl, MIT S.B. Thesis 2011, now Ph.D. student at Berkeley.  
Danielle Piskorz, MIT S.B. 2011, following Ph.D. at CalTech, employee at Aerospace Corporation.  
Romain Meyer, MIT Postdoctoral scholar 2008-2010, now researcher at U. Bergen.  
Sarah Gelman, MIT S.B. Thesis, 2009, Goetze award for best thesis, now Ph.D. student at Univ. Washington and ETH.  
Andrew Thorpe, B.S. Honors Thesis 2004 at Brown University.  
Jessica Jewell, B.S. Honors Thesis 2004 at Brown University. Now Research Scholar at the International Institute for Applied Systems Analysis.

## TEACHING EXPERIENCE

ASU SES494-591, Earth Without Life, Fall 2017  
ASU SES494-591, Life on Small Worlds, Fall 2016  
ASU SES395, Exploration: The Human Imperative, Spring 2016. Spring 2017.  
ASU SES494-591, Detecting Habitable Planets, Fall 2015  
MIT 12.001, Introduction to Geology, Spring 2007, Spring 2008  
This course is MIT's introduction to geology for undergraduate majors; without an institute-wide science distribution requirement, it normally has ~25 students, and includes a strong lab component. The subject was rated 6.1/7 and I was rated 6.6/7.  
MIT 12.472, Building Earth-like planets: From nebular gas to ocean worlds, Fall 2008, Fall 2009, Spring 2011  
I developed this course as an investigation in the current understanding of how planets form and what makes them habitable. The subject was rated 6.7/7 and I was rated 6.5/7.  
MIT 12.470, Essentials of Geology, Spring 2009, Spring 2010

I developed this course as an intense, one-semester introduction for physics, math, and engineering students entering Ph.D. programs in Earth and planetary science. The subject was rated 6.3/7 and I was rated 6.7/7.

MIT 21L.A23/12.A41, Catastrophes, tedium, discoveries: When expeditions do science, Fall 2009.

Prof. Mary Fuller and I developed this freshman seminar on the historic place of science in exploration; we covered the *Beagle* and the American Exploration Expedition, as well as space flight and searches for the northwest passage.

Earth and Space Science, a summer course for middle- and high-school science teachers, Summer 2010, 2011, 2012, 2013.

Originally funded through my CAREER grant, Dr. James Tanton and I developed and taught this course to bring secondary-school teachers up to date on the science and to integrate the needed math at each step. The course included labs and exercises, and we are writing a simple textbook for it. Credit or PDPs were offered through the University of Massachusetts, Amherst STEM program. Assessments were very high, and we attracted teachers from five states.

## RESEARCH CONTRACTS AND GRANTS

Title	Agency	Total Funds	Duration	E-T %	Role
Psyche: Journey to a Metal World	NASA Discovery Program	~\$850M	2017-~2030	9%	PI
Psyche's UV Reflectance Spectra: Exploring the origins of the largest exposed-core metallic asteroid	Space Telescope Foundation	Hubble time allocation	2017	0%	Co-I with PI T. Becker, SwRI
Water from the Heavens: The Origins of Earth's Hydrogen	Keck Foundation	\$1,500,000	1/1/2016 - 12/31/2018	3%	Co-I with PI P. Buseck, ASU
Psyche: Mission to a metal world (NNM16AA09C, NNN12AA01C)	NASA	\$3,000,000	11/13/15 – 11/12/16	12%	PI
STEM Education Exploration Connection (NNX16AD79A)	NASA	\$10,183,000	1/1/16 – 1/1/21	50%	PI
How strong is the Venusian crust? The roles of trace amounts of water and ductile shear zones	NASA Solar System Workings	\$357,053	7/1/15- 6/30/18	0%	Collaborator with PI D. Kohlstedt, U Minn.
Infrastructure for Interdisciplinary Research in Earth and Space Science at the Carnegie Institution (0963396)	NSF ARI	\$1,093,000	9/1/2010 – 9/1/2014	100% for infrastru cture	PI from 2011- 2014
Collaborative Research: Application of siderophile elements to mantle geodynamics (1160656, 1160728)	NSF CSEDI	\$545,965	5/1/2012 – 4/30/2016	31%	Co-I with PI R. Walker, U MD
ASGARD: Development of a seismometer for planetary applications (NNX10AJ84G)	NASA Planetary Instrumentati on Dev.	\$899,919	6/1/10 – 5/30/13	16%	Co-I with PI Draper Labs

Upgrade of the Alliance for Computational Earth Science (ACES) High Performance Computing Facility	NSF EAR Instrumentation and Facilities	\$75,000	5/1/10 – 4/30/11	100% for infrastructure	Co-I with PI B. Hager, MIT
Catastrophes, tedium, discoveries: When expeditions do science	MIT Research Funds	\$16,388	6/1/09 – 6/1/10	50%	Co-I with PI M Fuller, MIT
Lunar volatiles and magma ocean differentiation: Reconciling new results with old ideas (NNX09AM63G)	NASA LASER	\$173,481	7/1/09 – 6/30/12	20%	Co-I with PI M. McCanta, Tufts
Moon as cornerstone to the terrestrial planets: The formative years (NNA09DB34A)	NASA Lunar Institute	\$2,790,282	8/1/2011 – 7/31/2014	100% for shared students	Team member with PI C. Pieters, Brown U., & Institutional PI M. Zuber, MIT
Unusual lavas in Arctic Siberia: Connections to the world's largest volcanic event, the world's largest extinction, and river channels on Venus	MIT Research grant from the Wade fund	\$50,000	7/1/08 – 6/30/09	100%	PI
Collaborative research: The Siberian Traps and the end-Permian extinction: Coincidence and causality (0807585 etc)	NSF Continental Dynamics	\$3,000,000	8/1/08 – 7/31/13	44%	Lead PI
CAREER: Building rocky planets: From Mercury and Vesta to GL 581c	NSF Astronomy	\$724,320	3/7/08 – 5/31/13	100%	PI
The role of water in the early formation of Mars: Wet magma ocean crystallization, the growth of a water atmosphere, and retention of water in the mantle (NNX06AB18G)	NASA Mars Fundamental Research	\$258,025	6/1/06 – 1/31/11	100%	PI
Collaborative research: Lithospheric removal: The Sierra Nevada as the prototype of a fundamental process in mountain building	NSF Continental Dynamics	\$102,297	9/1/06 – 8/31/10	100%	PI
Consequences of tidal heating on the internal evolution of the early Earth, with comparison to Venus, Mars, and Mercury	Strategic University Research Partnership MIT-JPL	\$19,320	7/1/08- 6/30/09	100%	PI
The lithosphere-asthenosphere boundary: Integrated modeling of scattered wave observations and mantle dynamics	NSF Geophysics	\$380,000	4/1/06 – 3/31/09	50%	Co-I with PI K. Fischer, Brown U.
Workshop on the Siberian traps and the end-Permian extinction	NSF Continental Dynamics	\$20,075	9/1/05 – 12/31/06	100%	PI

Early crustal formation on Mars	NASA Mars Fundamental Research	\$54,361	7/1/05 – 12/31/06	100%	PI
Petrology and physics of magma ocean crystallization (NNG04GB30G)	NASA Mars Fundamental Research	\$48,700	4/1/04 – 3/31/05	100%	PI
Lithospheric controls on flood basalt volcanism (EAR-0309057)	NSF Petrology & Geochem.	\$113,912	7/1/03 – 12/1/05	100%	PI

#### PAPERS PRESENTED AT CONFERENCES

1. Elkins, Linda T. and Timothy L. Grove, Phase equilibrium investigations of ternary feldspars, Geological Society of America Abstracts, 1987.
2. Stark, R, L.T. Elkins, S. Strickland, Conveying the beauty of mathematics in a liberal arts course, Mathematical Association of America mid-Atlantic Spring conference, 1996.
3. Grove T.L., G.A. Gaetani, S.W. Parman, and L.T. Elkins, Mass transfer processes in the southern Cascade subduction zone: The influence of variable water content on mantle melting, Materials Recycling near Convergent Plate Boundaries, Carnegie Institute of Washington, Puerto Azul, Philippines, p.24, 1997.
4. Van Orman J., L.T. Elkins, T. L. Grove, Origin of high-Ti lunar ultramafic glasses: Experimental evidence from melting of magma ocean cumulates and depths of positive buoyancy for melts of varying Ti-content, Lunar and Planetary Science Conference XXX Abstracts, 1999.
5. Elkins, L.T. and T.L. Grove, Origin of lunar ultramafic green glasses: Constraints from phase equilibrium studies, Lunar and Planetary Science Conference XXX Abstracts, 1999.
6. Donnelly-Nolan J., L.T. Elkins, T.L. Grove, Primitive high-alumina olivine tholeiites from Medicine Lake Volcano — Mt. Shasta region, N. California: Depths and extents of mantle melting, American Geophysical Union Abstracts, Fall Meeting, 1999.
7. Elkins, L.T. and B. Hager, An emplacement model for the Siberian flood basalts to fit geologic, tectonic, and paleoclimatic constraints, American Geophysical Union Abstracts, Fall Meeting, 1999.
8. Elkins Tanton, L.T., J.A. Van Orman, B.H. Hager, and T.L. Grove, Constraints on early lunar high titanium cumulate overturn, Workshop on New Views of the Moon III Abstracts, Lunar and Planetary Institute, Houston TX, 2000.
9. Elkins Tanton, L.T. and T.L. Grove, Lunar mantle composition and thermal history: Constraints from phase equilibrium studies, Workshop on New Views of the Moon III Abstracts, Lunar and Planetary Institute, Houston TX, 2000.
10. Elkins Tanton, L.T. and B.H. Hager, Giant impact craters lead to flood basalts: A viable model, GSA Annual Meeting Abstracts, 2000.
11. Elkins Tanton, L.T. and T.L. Grove, Lunar mantle compositions and thermal history: Constraints from phase equilibrium studies, Lunar and Planetary Science Conference XXXII Abstracts, 2001.
12. Elkins Tanton, L.T., J.A. Van Orman, and T.L. Grove, Is the sinking high-Ti cumulate hypothesis sunk? Lunar and Planetary Science Conference XXXII Abstracts, 2001.
13. Elkins Tanton, L.T., B.H. Hager, and T.L. Grove, Magmatic effects of the lunar late heavy bombardment, American Geophysical Union Abstracts, Spring Meeting, 2001.

14. Elkins Tanton, L.T. and T.L. Grove, Evidence of a Deep Origin for Primitive Pliocene Absarokites From the Sierra Nevada, California, American Geophysical Union Abstracts, Fall Meeting, 2001.
15. Elkins Tanton, L.T., B.H. Hager, and T.L. Grove, Magmatic effects of the lunar late heavy bombardment, Lunar and Planetary Science Conference XXXIII Abstracts, 2002.
16. Elkins-Tanton, L.T., D.C. Kelly, J. Bico, J.W.M. Bush, Microtektites as vapor condensates, and a possible new strewn field at 5 Ma, Lunar and Planetary Science Conference XXXIII Abstracts, 2002.
17. Kelly, C.K., L.T. Elkins-Tanton, Bottle-green microtektites from the South Tasman Rise (ODP Site 1169): Evidence for an impact near the Miocene/Pliocene boundary, GSA Annual Meeting Abstracts, 2002.
18. Parmentier, E.M. and L.T. Elkins-Tanton, Convection and layering in the Martian mantle, Unmixing the SNCs: Chemical, Isotopic, and Petrologic Components of the Martian Meteorites, workshop at the Lunar and Planetary Science Institute, Houston TX, October 2002.
19. Elkins-Tanton L.T. and T.L. Grove, Evidence for the formation of Pliocene Sierran high potassium magmas from deep melting of a phlogopite-clinopyroxene metasomatized peridotite, American Geophysical Union Abstracts, Fall Meeting, 2002.
20. Grove T.L., L.T. Elkins-Tanton S.W. Parman, N. Chatterjee, G.A. Gaetani, O. Müntener, Mantle melting controls on liquid lines of descent in magmatic systems, American Geophysical Union Abstracts, Fall Meeting, 2002.
21. Elkins-Tanton L.T., E.M. Parmentier, P.C. Hess, A model for Martian magma ocean crystallization and overturn, Lunar and Planetary Science Conference XXXIII Abstracts, 2003.
22. Elkins-Tanton L.T., N. Chatterjee, T.L. Grove, Magmatic processes that produced lunar fire fountains: Evidence from vesicular rims on picritic glass beads, Lunar and Planetary Science Conference XXXIII Abstracts, 2003.
23. Elkins-Tanton L.T., E.M. Parmentier, P.C. Hess, A model for Martian magma ocean crystallization and overturn, EGS/AGU/EUG combined meeting abstracts, Spring 2003. INVITED.
24. Elkins-Tanton L.T., P. Aussillous, J. Bico, D. Quéré, J.W.M. Bush, A laboratory model for splash-form tektites, EGS/AGU/EUG combined meeting abstracts, Spring 2003. INVITED.
25. Grove, T.L., Parman, S.W., Elkins-Tanton, L.T., and Müntener, O., Mantle melting and plate tectonic controls on magmatism in the cascade arc: a petrologic perspective, GSA Annual Meeting Abstracts, 2003.
26. Grove, T.L., Elkins-Tanton, L.T., and Hesse, M., Melting processes in continental lithosphere: effects of mantle metasomatism on melt composition, GSA Annual Meeting Abstracts, 2003.
27. Rilling J.L., A.M. Cagnioncle, L.T. Elkins-Tanton, and E.M. Parmentier, Melting due to Buoyant Migration of Water in the Hot Mantle Wedge Above a Subducting Plate, American Geophysical Union Abstracts, Fall Meeting, 2003.
28. Elkins-Tanton L.T., Jessica Jewell, and Paul C. Hess, Preliminary experimental results on a meimechite composition from Meymecha, Siberia, American Geophysical Union Abstracts, Fall Meeting, 2003.
29. Elkins-Tanton L.T. and E.M. Parmentier, Consequences of high crystallinity for the evolution of the lunar magma ocean: trapped plagioclase, Lunar and Planetary Science Conference XXXV Abstracts, March 2004.
30. Zaranek S.E., E.M. Parmentier, and L.T. Elkins-Tanton, Overturn of unstably stratified, inhomogeneous fluids: Implications for the early evolution of planetary mantles, Lunar and Planetary Science Conference XXXV Abstracts, March 2004.
31. Cagnioncle A.M., L.T. Elkins-Tanton, and E.M. Parmentier, Melting and Fluid Migration in the Hot Mantle Wedge Above a Subducting Plate, American Geophysical Union Abstracts, Spring Meeting, 2003.

32. Zaranek S.E., Elkins-Tanton L.T., Parmentier E.M., Role of Compositional Stratification on the Evolution of Planets, Computer Measurement Group Conference 2004, Courant Institute of Mathematical Sciences, New York, June 2004.
33. Elkins-Tanton L.T., S.E. Zaranek, and E.M. Parmentier, Martian early magnetic field as a result of magma ocean cumulate overturn, Workshop on Hemispheres apart: the origin and modification of the Martian crustal dichotomy, Houston TX, October 2004.
34. Elkins-Tanton L.T., S.E. Zaranek, and E.M. Parmentier, Martian early crust as a result of magma ocean cumulate overturn, Workshop on Hemispheres apart: the origin and modification of the Martian crustal dichotomy, Houston TX, October 2004.
35. Elkins-Tanton L.T., S.E. Zaranek, and E.M. Parmentier, Magma ocean cumulate overturn: Generation of an early magnetic field, Second Conference on Early Mars: Geologic, hydrologic, and climatic evolution and implications for life, Jackson Hole WY, October 2004.
36. Elkins-Tanton L.T., S.E. Zaranek, and E.M. Parmentier, Magma ocean cumulate overturn: Generation of an early crust, Second Conference on Early Mars: Geologic, hydrologic, and climatic evolution and implications for life, Jackson Hole WY, October 2004.
37. Draper D., L.T. Elkins-Tanton, J. Jewell, A. Thrope, C. Agee, High Volatile Content and Shallow Melting at the end of the Siberian Flood Basalts: Experimental Results, American Geophysical Union Abstracts, Fall Meeting, 2004.
38. Elkins-Tanton L.T., Lithospheric Delamination as a Process to Introduce Water Into the Mantle, American Geophysical Union Abstracts, Fall Meeting, 2004.
39. Zaranek S., L.T. Elkins-Tanton, E. Parmentier, Magma Ocean Overturn: Implications for The Creation of Large Scale Mantle Heterogeneities and Influences on Planetary Evolution, American Geophysical Union Abstracts, Fall Meeting, 2004.
40. Cagnioncle, A., E. Parmentier, L.T. Elkins-Tanton, The Effect of Solid Mantle Flow Above a Subducting Plate on Melting and Fluid Migration, American Geophysical Union Abstracts, Fall Meeting, 2004.
41. Elkins-Tanton L.T., P.C. Hess, S.E. Smrekar, and E.M. Parmentier, Volcanism and volatile recycling on Venus from lithospheric delamination, Lunar and Planetary Science Conference XXXVI Abstracts, March 2005.
42. Elkins-Tanton L.T. and E. M. Parmentier, The fate of water in the Martian magma ocean and the formation of an early atmosphere, Lunar and Planetary Science Conference XXXVI Abstracts, March 2005.
43. Elkins-Tanton L.T., Continental Magmatism Caused by Lithospheric Rayleigh-Taylor Instabilities, Chapman Conference "The Great Plume Debate," Fort William, Scotland, August 2005.
44. Elkins-Tanton L.T., P.C. Hess, S.E. Smrekar, and E.M. Parmentier, Volcanism and volatile recycling on Venus from lithospheric gravitational instabilities, Chapman Conference "Exploring Venus as a Terrestrial Planet," Key Largo, Florida, February 2006.
45. Elkins-Tanton L.T. and E.M. Parmentier, Water and carbon dioxide in the Martian magma ocean: Early atmospheric growth, subsequent mantle compositions, and planetary cooling rates, Lunar and Planetary Science Conference XXXVII Abstracts, March 2006.
46. Parmentier E.M., L. Elkins-Tanton, and P.C. Hess, Melt-solid segregation and fractional magma ocean solidification with implications for the evolution of Mars, Lunar and Planetary Science Conference XXXVII Abstracts, March 2006.
47. Elkins-Tanton L., After the fall: Lithospheric structure after thinning via gravitational instability, American Geophysical Union Abstracts, Fall Meeting, 2006.
48. Elkins-Tanton L.T. and E.M. Parmentier, Linked magma ocean solidification and atmospheric growth: The time from accretion to clement conditions. Differentiation of the Terrestrial Planets: A Multi-

- Planetary and Multi-Disciplinary Perspective (Lunar and Planetary Institute), Sonoma CA, December 2006.
49. Elkins-Tanton L.T., E.M. Parmentier, P.C. Hess, Mars vs. The Moon : The effects of length scales and initial composition on planetary differentiation. Differentiation of the Terrestrial Planets: A Multi-Planetary and Multi-Disciplinary Perspective (Lunar and Planetary Institute), Sonoma CA, December 2006.
  50. Parmentier, E.M., L.T. Elkins-Tanton, P.C. Hess, Melt-solid segregation and fractional magma ocean solidification with implications for planetary evolution. Differentiation of the Terrestrial Planets: A Multi-Planetary and Multi-Disciplinary Perspective (Lunar and Planetary Institute), Sonoma CA, December 2006.
  51. Elkins-Tanton L.T., E.M. Parmentier, P.C. Hess, The effects of magma ocean depth and initial composition on planetary differentiation. 38th Lunar and Planetary Science Conference Abstracts, March 2007.
  52. Parmentier E.M., L.T. Elkins-Tanton, S. Schoepfer, Melt-solid segregation, fractional magma ocean solidification, and implications for longterm planetary evolution. 38th Lunar and Planetary Science Conference Abstracts, March 2007.
  53. Elkins-Tanton L.T., E.M. Parmentier, Water in the formation and early evolution of Mars, 7th International Conference on Mars, Pasadena CA, July, 2007
  54. Elkins-Tanton, L.T., D.S. Draper, C.B. Agee, J. Jewell, A. Thorpe, P.C. Hess, Pressure and temperature of melting for the last lavas of the Siberian flood basalts: Results from experimental petrology. 1st Jóannes Rasmussen Conference, Faroe Islands, August, 2007.
  55. Elkins-Tanton, L.T., Lithospheric thinning as a result of large igneous province formation: Magma bursts and basin formation. 1st Jóannes Rasmussen Conference, Faroe Islands, August, 2007.
  56. Farmer, G.L., T. Gailley, L.T. Elkins-Tanton, Lithospheric mantle melting and the origin of the mid-Tertiary ignimbrite flare-up, southern Rocky Mountains, Geological Society of America Annual Meeting, Denver CO, October, 2007.
  57. Parmentier, E.M., L.T. Elkins-Tanton, and P.C. Hess, On the role of large-scale melting, melt extraction and mantle overturn on the evolution of planets, Geological Society of America Annual Meeting, Denver CO, October, 2007.
  58. Elkins-Tanton, L.T., and S. Seager. Atmospheres and oceans form initial degassing in terrestrial planets. Workshop on Planetary Atmospheres, Baltimore MD, November, 2007.
  59. Elkins-Tanton L.T.. Producing volatile-rich magmas without plate tectonics: Upside-down melting. Workshop on Water in Planetary Basalts. Houston TX, November, 2007.
  60. Brown, S.M. and L.T. Elkins-Tanton. Mercury's core fraction and ancient crustal composition: Predictions from planetary formation under extremely reducing conditions. American Geophysical Union Abstracts, December, 2007.
  61. Elkins-Tanton, L.T. On foundering lithosphere and volatile migration: Upside-down melting. American Geophysical Union Abstracts, December, 2007.
  62. Elkins-Tanton L.T. and E.M. Parmentier. Linked magma ocean solidification, cumulate mantle compositions, and atmospheric growth. American Geophysical Union Abstracts, December, 2007.
  63. Krawczynski M.J., L.T. Elkins-Tanton, T.L. Grove, Petrology of olivine diogenite MIL-3443,9: Constraints on eucrite parent body bulk composition and magmatic processes. 39th Lunar and Planetary Science Conference Abstracts, March 2008.
  64. Elkins-Tanton L.T., E. Maroon, M.J. Krawczynski, T.L. Grove, Magma ocean solidification processes on Vesta. 39th Lunar and Planetary Science Conference Abstracts, March 2008.

65. Elkins-Tanton L.T., S. Seager, Effects of oxidation on building rocky planets: From Mercury to a coreless terrestrial planet. 39th Lunar and Planetary Science Conference Abstracts, March 2008.
66. S. Brown and L.T. Elkins-Tanton, Predicting Mercury's ancient crustal composition. 39th Lunar and Planetary Science Conference Abstracts, March 2008.
67. Ganesan A.L., L.T. Elkins-Tanton, S. Seager, Temperature distributions on tidally-locked hot exoplanets. 39th Lunar and Planetary Science Conference Abstracts, March 2008.
68. Suckale J., B. Hager, L.T. Elkins-Tanton, J.C. Nave, Numerical modeling of bubble coalescence in basaltic magma flow. EGU General Assembly 2008.
69. Elkins-Tanton L.T. and S. Seager, The range of atmospheric mass and composition for super-Earths, Transiting Planets IAU Symposium No. 253, May, 2008.
70. Elkins-Tanton L.T., The effects of magma ocean depth and initial composition on planetary differentiation, Origin and Evolution of Planets, INVITED, The Z-Planet Initiative workshop, Ascona, Switzerland, June 2008.
71. Elkins-Tanton L.T. and I. Ukstins Peate, On topographic subsidence at initiation of magmatic provinces, Geological Society of America Annual Meeting, Houston TX, October, 2008.
72. Elkins-Tanton L.T., Temperatures of hot young accreting planets and timescales for cooling, American Astronomical Society Division of Planetary Sciences Meeting, Cornell University, October 2008.
73. Brown, S. and L.T. Elkins-Tanton, Ranges of likely earliest crustal compositions on rocky planets, American Astronomical Society Division of Planetary Sciences Meeting, Cornell University, October 2008.
74. Nave, J.C., J. Suckale, B.H. Hager, and L. Elkins-Tanton, No more troubles with bubbles: Numerical simulations of gas dynamics in viscous magmas, American Geophysical Union Abstracts, December 2008.
75. Elkins-Tanton, Till C.B., L.T. K. Fischer, Low-extent melts at the lithosphere-asthenosphere boundary, eastern North America, American Geophysical Union Abstracts, December 2008.
76. Elkins-Tanton L.T. and T. Furman, Lithospheric processes that enhance melting at rifts, INVITED, American Geophysical Union Abstracts, December 2008.
77. Stanley, S., L. Elkins-Tanton, M. Zuber, and E.M. Parmentier, Mars' paleomagnetic field as the result of a single-hemisphere dynamo, American Geophysical Union Abstracts, December 2008.
78. Brown S. and Elkins-Tanton L.T., Early planetary evolution: the crust and mantle before convection, INVITED, American Geophysical Union Abstracts, December 2008.
79. Gelman S., L.T. Elkins-Tanton, S. Seager, thermal structure and evolution of tidally-locked Super Earths, American Geophysical Union Abstracts, December 2008.
80. Carporzen L., B.P. Weiss, D.S. Ebel, L. T. Elkins-Tanton, Evidence for internally generated magnetic fields on the CV chondrite parent body, American Geophysical Union Abstracts, December 2008.
81. S.M. Clegg, J.E. Barefield, R.C. Wiens, C.R. Quick, S.K. Sharma, A.K. Misra, M. D. Dyar, M.C. McCanta, and L. Elkins-Tanton, Venus geochemical analysis by remote Raman-laser induced breakdown spectroscopy (Raman-LIBS), Venus Geochemistry: Progress, Prospects, and New Missions, Lunar and Planetary Institute workshop held at the Gilruth Center at the NASA Johnson Space Center, Houston TX, February 2009.
82. Elkins-Tanton L.T. and S.E. Smrekar, Magmatism on Venus: Upside-down melting in gravitational instabilities and a possible analog in the Siberian large igneous province, INVITED, Venus Geochemistry: Progress, Prospects, and New Missions, Lunar and Planetary Institute workshop held at the Gilruth Center at the NASA Johnson Space Center, Houston TX, February 2009.



83. Weiss B.P., L. Caporzen, L.T. Elkins-Tanton, D.S. Ebel, Paleomagnetic evidence for internally generated fields on the CV chondrite parent body, 40th Lunar and Planetary Science Conference Abstracts, March 2009.
84. Elkins-Tanton L.T. and B.P. Weiss, Chondrites as samples of differentiated planetesimals, 40th Lunar and Planetary Science Conference Abstracts, March 2009.
85. Elkins-Tanton L.T., Early planetary evolution: The crust and mantle before plate tectonics, 40th Lunar and Planetary Science Conference Abstracts, March 2009.
86. Brown S. and L.T. Elkins-Tanton, Earliest planetary crusts: Constraints on the formation of Mercury and implications for bodies of different sizes, 40th Lunar and Planetary Science Conference Abstracts, March 2009.
87. Gelman S.E., L.T. Elkins-Tanton, S. Seager, Mantle thermal evolution in tidally-locked super-Earths, 40th Lunar and Planetary Science Conference Abstracts, March 2009.
88. Weiss B., L. Caporzen, L. Elkins-Tanton, S. Stanley, D. Ebel, J. Berdahl, Magnetic records of early planetary differentiation, Geoldschmidt, June 2009.
89. West, John D., M.J. Fouch, J.B. Roth, and L.T. Elkins-Tanton, Vertical mantle flow associated with a lithospheric drip beneath the Great Basin, Earthscope meeting, May 2009.
90. Till, C.B., T.L. Grove, L.T. Elkins-Tanton, Experimental constraints on hydrous mantle melting at subduction zones, MARGINS meeting 2009.
91. Elkins-Tanton L.T., B.P. Weiss, M.T. Zuber, Internal differentiation in early-accreting planetesimals, American Astronomical Society Division for Planetary Sciences meeting, October 2009.
92. Elkins-Tanton L.T., Magma oceans on exoplanets and the early Earth, INVITED. American Astronomical Society Division for Planetary Sciences meeting, October 2009.
93. Meyer, Jennifer, L. Elkins-Tanton, and J. Wisdom, Coupled thermal-orbital evolution of the early Moon. American Astronomical Society Division for Planetary Sciences meeting, October 2009.
94. Ford, Heather, Karen Fischer, Linda Elkins-Tanton, the lithosphere-asthenosphere boundary beneath Australia imaged by Sp phases, American Geophysical Union Abstracts, San Francisco, December 2009.
95. Black, Benjamin, L. Elkins-Tanton, I. Ukstins-Peate, Volatile measurements from Siberian Traps melt inclusions, American Geophysical Union Abstracts, San Francisco, December 2009.
96. Suckale, J., J. Sethian, L.T. Elkins-Tanton, J.-D. Yu, Simulations of solid-fluid coupling with application to crystal entrainment in vigorous convection, American Geophysical Union Abstracts, San Francisco, December 2009.
97. Sethian J., J. Suckale, L.T. Elkins-Tanton, Bubble stability in vigorous convection: Ramifications for magma ocean degassing and formation of an early atmosphere, American Geophysical Union Abstracts, San Francisco, December 2009.
98. West J.D., M.J. Fouch, J.B. Roth, L.T. Elkins-Tanton, The Great Basin lithospheric drip: Detection of vertical mantle flow, American Geophysical Union Abstracts, San Francisco, December 2009.
99. Ukstins Peate I., L.T. Elkins-Tanton, On topographic subsidence and magma bursts at initiation of magmatic provinces, American Geophysical Union Abstracts, San Francisco, December 2009.
100. Elkins-Tanton L., S. Burgess, J. Meyer, J. Wisdom, Cooling the lunar magma ocean: Model results and geochronology, INVITED, American Geophysical Union Abstracts, San Francisco, December 2009.
101. Elkins-Tanton L., S. Smrekar, G. Tobie, The Earth's mantle before convection: Effects of magma oceans and the Moon, INVITED, American Geophysical Union Abstracts, San Francisco, December 2009.

102. Meyer, Romain, X. Song, L. Elkins-Tanton, Lithospheric mantle interactions during Cenozoic rifting of Central Europe: The Rhon mountains and the Iherzolite-bearing phonolite from the Veste Heldburg (Germany), American Geophysical Union Abstracts, San Francisco, December 2009.
103. Gelman, S., L. Elkins-Tanton, S. Seager, Mode 1 mantle convection in tidally-locked rocky exoplanets, American Geophysical Union Abstracts, San Francisco, December 2009.
104. Murphy, S.D., J. Bernstein, M. Chaparala, N. Borer, C. Gibbson, L. T. Elkins-Tanton, B. H. Hager, T. Herring, Multinode, low-cost, nano-g seismology instrumentation for lunar geophysics, Workshop on Ground-based Geophysics on the Moon, Tempe AZ, January 2010.
105. Elkins-Tanton, L.T., Predicting Lunar Interior Structure from Magma Ocean Processes, Workshop on Ground-based Geophysics on the Moon, Tempe AZ, January 2010.
106. Lisse, C.M., C. H. Chen, M. C. Wyatt, A. Morlok, P. Thebault, G. S. Orton, L. N. Fletcher, H. Fujiwara, J. C. Bridges, L. T. Elkins-Tanton, E. J. Gaidos, D. Trang, Silica Debris Star Systems — Spitzer Evidence for Lunar Formation Events & Crustal Stripping or Magma Oceans & Late Heavy Bombardments? 41st Lunar and Planetary Science Conference, Abstract #2390, March 2010.
107. Weiss, B.P., L. Carporzen, L. T. Elkins-Tanton, D. L. Shuster, D. S. Ebel, J. Gattacceca, M. T. Zuber, J. H. Chen, D. A. Papanastassiou, R. P. Binzel, D. Rumble, A. J. Irving, A Partially Differentiated Body for CV Chondrites? 41st Lunar and Planetary Science Conference, Abstract #1688, March 2010.
108. Suckale, J., L. T. Elkins-Tanton, The Possibility of Catastrophic Degassing and Implications for the Formation of Early Atmospheres, 41st Lunar and Planetary Science Conference, Abstract #1678, March 2010.
109. Elkins-Tanton, L. T., Water in the Lunar Mantle: Results from Magma Ocean Modeling, 41st Lunar and Planetary Science Conference, Abstract #1451, March 2010.
110. Black, Benjamin, L. Elkins-Tanton, I. Ukstins-Peate, Volatile Release from the Siberian Traps inferred from melt inclusions, European Geophysical Union Abstracts, Vienna, Austria, May 2010.
111. Burgess, S., S. Bowring, L.T. Elkins-Tanton, Evaluating a link between eruption of The Siberian Traps and the End-Permian Mass Extinction with high-precision geochronology, European Geophysical Union Abstracts, Vienna, Austria, May 2010.
112. Meyer, J., L. Elkins-Tanton, J. Wisdom. Coupled Thermal-Orbital Evolution of the Early Moon. European Geophysical Union Abstracts, Vienna, Austria, May 2010.
113. Meyer, R. and L.T. Elkins-Tanton, Interactions between magma and the lithospheric mantle during Cenozoic rifting in Central Europe. European Geophysical Union Abstracts, Vienna, Austria, May 2010.
114. Suckale, J., L.T. Elkins-Tanton, J. Sethian, J.-D. Yu, Simulations of solid-fluid coupling with application to crystal entrainment in vigorous convection. European Geophysical Union Abstracts, Vienna, Austria, May 2010.
115. Elkins-Tanton, Water in the lunar mantle: Result from magma ocean modeling. European Geophysical Union Abstracts, Vienna, Austria, May 2010.
116. Elkins-Tanton, L.T., B.P. Weiss, M.T. Zuber, Chondrites as samples of differentiated planetesimals. European Geophysical Union Abstracts, Vienna, Austria, May 2010.
117. Elkins-Tanton L.T. and I. Ukstins-Peate, On topographic subsidence and magma bursts at initiation of large igneous provinces, INVITED, Japan Geoscience Union meetings, Tokyo, May 2010.
118. Elkins-Tanton L.T., G. Tobie, S. Tikoo, S. Smrekar, The effects of magma oceans and the Moon on the Earth's mantle before plate tectonics, INVITED, Japan Geoscience Union meetings, Tokyo, May 2010.
119. Elkins-Tanton L.T., Volatile loss and atmospheric formation: Planetesimals, Moons, and Earths, INVITED, Japan Geoscience Union meetings, Tokyo, May 2010.

120. Elkins-Tanton L.T., Formation of terrestrial planet atmospheres, INVITED, ExoClimes 2010: Exploring the diversity of planetary atmospheres, Exeter UK, September 2010.
121. Weiss B.P., L. Carporzen, L.T. Elkins-Tanton, D.L. Shuster, D.S. Ebel, J. Gattacceca, R.P. Binzel, Magnetic evidence for a partially differentiated carbonaceous chondrite parent body [and its possible connection with Asteroid 21 Lutetia?], American Astronomical Society Division for Planetary Sciences meeting, Pasadena CA, October 2010.
122. Elkins-Tanton L.T., B.P. Weiss, M.T. Zuber, Chondrites as samples of differentiated planetesimals, American Astronomical Society Division for Planetary Sciences meeting, Pasadena CA, October 2009.
123. Wahl, S., D. Stevenson, L. Elkins-Tanton, Modification of Mercury's bulk mantle composition by reaccumulation of condensed ejecta from a formative giant impact, American Astronomical Society Division for Planetary Sciences meeting, Pasadena CA, October 2009.
124. Black, Benjamin, L. Elkins-Tanton, I. Ukstins-Peate, Volatile Release from the Siberian Traps and the end-Permian environment, American Geophysical Union Abstracts, San Francisco, December 2010.
125. Elkins-Tanton, L.T. and T.L. Grove, Limitations on water in the lunar interior, American Geophysical Union Abstracts, San Francisco, December 2010.
126. Suckale, J., L.T. Elkins-Tanton, J. Sethian, J.-D. Yu, Direct numerical simulations of magmatic differentiation at the microscopic scale, American Geophysical Union Abstracts, San Francisco, December 2010.
127. Brown, S. and L.T. Elkins-Tanton, Effects of solar wind on Mercury's surface minerals, American Geophysical Union Abstracts, San Francisco, December 2010.
128. Scheinberg, A., L.T. Elkins-Tanton, S.J. Zhong, E.M. Parmentier, Mantles of terrestrial planets immediately following magma ocean solidification, American Geophysical Union Abstracts, San Francisco, December 2010.
129. Stanley, Sabine, R. Vilim, L.T. Elkins-Tanton, B. Weiss, Dynamo generation in asteroids and planetesimals, American Geophysical Union Abstracts, San Francisco, December 2010.
130. Bottke, W.F., R.J. Walker, J. Day, D. Nesvorny, L.T. Elkins-Tanton, The delivery of water to the lunar mantle by late planetesimal accretion, American Geophysical Union Abstracts, San Francisco, December 2010.
131. McCanta M.C., M.D. Dyar, L.T. Elkins-Tanton, A.H. Treiman, Weathering of Hawaiian basalts under sulfur-rich conditions: Applications to understanding surface-atmosphere interactions on Venus. 42<sup>nd</sup> Lunar and Planetary Science Conference, Houston TX, March 2011.
132. Walker R.J., J.M.D. Day, W.F. Bottke, L.T. Elkins-Tanton, D. Nesvorny, A.J. Irving, Abundances of highly siderophile elements in diogenites compared with the mantles of Earth, Mars, and the Moon: Consistent with stochastic late accretion. 42<sup>nd</sup> Lunar and Planetary Science Conference, Houston TX, March 2011.
133. Brown S.M. and L.T. Elkins-Tanton, An experimental approach to thermal and solar weathering of Mercury's crust. 42<sup>nd</sup> Lunar and Planetary Science Conference, Houston TX, March 2011.
134. Elkins-Tanton L.T., S. Burgess, Q.-Z. Yin, The lunar magma ocean: Reconciling the solidification process with lunar petrology and geochronology. 42<sup>nd</sup> Lunar and Planetary Science Conference, Houston TX, March 2011.
135. Weiss B.P., L. T. Elkins-Tanton, M. A. Barucci, H. Sierks, M. Pätzhold, C. Snodgrass, S. Marchi, I. Richter, P. R. Weissman, Evidence for partial differentiation of asteroid 21 Lutetia from Rosetta. 42<sup>nd</sup> Lunar and Planetary Science Conference, Houston TX, March 2011.
136. Elkins-Tanton L.T., Mechanisms for melting and volcanism on planetesimals, moons, and planets. INVITED, IUGG 2011, Melbourne, Australia, June-July 2011.

137. Suckale, J., L.T. Elkins-Tanton, J.A. Sethian, Small-scale collisions with big-scale effects: Direct numerical simulations of crystal interactions in dense suspensions and ramifications for magmatic differentiation. American Geophysical Union Abstracts, San Francisco, December 2011.
138. Elkins-Tanton, L.T. Formation of early water oceans on rocky planets, American Geophysical Union Abstracts, San Francisco, December 2011.
139. Elkins-Tanton, L.T. Heating and cooling of early-accreting planetesimals and effects on dynamo generation, INVITED, American Geophysical Union Abstracts, San Francisco, December 2011.
140. Foley, B.J., D. Bercovici, L.T. Elkins-Tanton, Initiation of plate tectonics from post-magma ocean chemical overturn. American Geophysical Union Abstracts, San Francisco, December 2011.
141. Black, B.A., L.T. Elkins-Tanton, B.P. Weiss, R.V. Veselovskiy, A.V. Latyshev, V.E. Pavlov, Emplacement temperatures and alteration histories of Siberian traps volcanoclastic deposits. American Geophysical Union Abstracts, San Francisco, December 2011.
142. Piskorz, D., L.T. Elkins-Tanton, S.E. Smrekar, Corona formation on Venus via extension and lithospheric instability. 43<sup>rd</sup> Lunar and Planetary Science Conference, Houston TX, March 2012.
143. Brown, S.M., L.T. Elkins-Tanton, the early dynamics and density structure of Mercury's mantle. 43<sup>rd</sup> Lunar and Planetary Science Conference, Houston TX, March 2012.
144. Elkins-Tanton, L.T., The fate of water in early-accreting internally heated planetesimals. 43<sup>rd</sup> Lunar and Planetary Science Conference, Houston TX, March 2012.
145. Meyer R., L.T. Elkins-Tanton, Experimental petrology constraints on melting conditions of high-potassium melts under the Central Sierra Nevada, California, USA. European Geophysical Union Meetings, Vienna, April 2012.
146. Elkins-Tanton, L.T., S. Tikoo, Delivery of volatiles to terrestrial planets during accretion: Setting the stage for plate tectonics. European Geophysical Union Meetings, Vienna, April 2012.
148. Elkins-Tanton L.T., B.A. Black, Environmental effects of the Siberian flood basalts and possible links with the end-Permian extinction. Chapman Conference "Volcanism and the Atmosphere" in Iceland, June 2012.
149. Elkins-Tanton, L.T. Compositional ranges for the earliest atmospheres degassed from rocky planets. LPI Workshop: Comparative Climatology of Terrestrial Planets, Boulder, CO, June 2012.
150. Elkins-Tanton, L.T. The real 1%: Volatiles in planetary accretion and the rapid development of habitability. Smithsonian –CfA workshop, Life in the Cosmos, Washington DC., Sept. 2012.
151. Elkins-Tanton, L.T. and R. Fu, On the composition and structure of planetesimals, AAS DPS conference, Reno, NV, October 2012.
152. Cohen, J. J. and L.T. Elkins-Tanton, The Deep and the Personal: The Earth, Time, and Thought, Plenary Lecture at BABEL Working Group Biennial Meeting, Boston MA, Sept. 2012.
153. Elkins-Tanton, L.T., A brief history of the Moon, Bergamo Science Festival, Bergamo Italy, October 2012.
154. Elkins-Tanton, L.T., N. Arndt; B.A. Black; K.E. Fristad; J.T. Kiehl; J. Lamarque; K.M. Meyer; J. Payne; S. Planke; C.A. Shields; H. Svensen, The Siberian Flood Basalts: Connecting the Mantle, the Continental Crust, and the Atmosphere. American Geophysical Union Abstracts, San Francisco, December 2012.
155. Black; L.T. Elkins-Tanton; J. Lamarque; C.A. Shields; J.T. Kiehl Modeling the atmospheric effects of the eruption of the Siberian Traps. American Geophysical Union Abstracts, San Francisco, December 2012.
156. Fu, R.R., L.T. Elkins-Tanton, Partially differentiated planetesimals may retain primitive crusts. Lunar and Planetary Science Meeting, Houston, 2013.

157. Elkins-Tanton, L.T., Benjamin P. Weiss, Erik Asphaug, William Bottke, Richard Binzel, Daniel D. Wenkert, , Bruce G. Bills: Differentiation in planetesimals with applications to asteroid (16) Psyche. Lunar and Planetary Science Meeting, Houston, 2013.
158. Wenkert D.D., Damon F. Landau, Bruce G. Bills, and Linda T. Elkins-Tanton. Explorations of Psyche and Callisto enabled by ion propulsion. Lunar and Planetary Science Meeting, Houston, 2013.
159. Mueller, N., A. Maturilli, J. Helbert, L. Elkins-Tanton. Igneous rock emissivity measurements at high temperatures in support of thermal modeling and infrared imaging of Venus' canali and lava flows. Lunar and Planetary Science Meeting, Houston, 2013.
160. Elkins-Tanton, L.T., On building an Earth-like planet. Lunar and Planetary Science Meeting, Houston, 2013.
161. Elkins-Tanton, L.T., Benjamin Black, J.-F. Lamarque, Christine Shields, Jeffrey Kiehl, The Siberian flood basalts: Connecting the mantle, the continental crust, and the atmosphere. Volcanism, Impacts, and Mass Extinctions. London, March 2013.
162. Lammer, H., N. Erkaev, P. Odert, L. Elkins-Tanton, K. Kislyakova, Y. Kulikov, M. Leitzinger, M. Güdel, Escape of the Venusian and Martian Protoatmospheres and Initial Water Inventories, Asia Oceania Geosciences Society, Brisbane, June 2013.
163. Elkins-Tanton, L.T., Dripping, thinning, melt injection, metasomatism: Geochemical consequences of small-scale convection under continents, INVITED, Goldschmidt Conference 2013, Florence, Italy, August, 2013.
164. Elkins-Tanton, L.T., Origin and evolution of volatiles in rocky airless bodies, INVITED, Goldschmidt Conference 2013, Florence, Italy, August 2013.
165. Black, B.A., L.T. Elkins-Tanton, J.-F. Lamarque, C. Shields, J.Kiehl, Global climate across the Permian-Triassic boundary: Modeling the effects of gas release from Siberian volcanism, INVITED, Geological Society of America annual meeting, 2013.
166. Black, B.A., L.T. Elkins-Tanton, J.-F. Lamarque, C. Shields, J.Kiehl, Atmospheric chemistry and climate from pulsed Siberian Traps magmatism, American Geophysical Union Abstracts, San Francisco, December 2013.
167. Blackburn, T., L.T. Elkins-Tanton, R. Carlson, C. Alexander, J. Hourigan, Using the U-Pb system's dual decay scheme towards reconstructing the thermal histories and origins of ordinary chondrites, American Geophysical Union Abstracts, San Francisco, December 2013.
168. Brown, S.M., L.T. Elkins-Tanton, R. Walker, Linking early Earth magma ocean crystallization and overturn with observed large low-shear-velocity provinces (LLVSPs) and short-lived radioisotopic measurements in Archean rocks, American Geophysical Union Abstracts, San Francisco, December 2013.
169. Marchi, S., W.F. Bottke, L.T. Elkins-Tanton, A. Morbidelli, K. Wuennemann, D.A. Kring, M. Bierhaus, The Bombardment of the Earth During the Hadean and Early Archean Eras, American Geophysical Union Abstracts, San Francisco, December 2013.
170. Behar, A., D.C. Roman, L.T. Elkins-Tanton, M.J. Fouch, Development and field-testing of the BENTO box: A new satellite-linked data collection system for volcano monitoring, American Geophysical Union Abstracts, San Francisco, December 2013.
171. Wenkert, D.D., L.T. Elkins-Tanton, E. Asphaug, S.H. Bairstow, J.F. Bell III, D. Bercovici, B.G. Bills, R.Binzel, W.F. Bottke, I. Jun, D. Landau, S. Marchi, D.Y. Oh, B.Weiss, M.T. Zuber, Journey to a metal world: Concept for a Discovery mission to Psyche, American Geophysical Union Abstracts, San Francisco, December 2013.
172. Elkins-Tanton, L.T., On the origins of atmospheres and oceans on rocky planets, INVITED, American Geophysical Union Abstracts, San Francisco, December 2013.

173. Elkins-Tanton, L.T., S. Tikoo, S.M. Brown, Earth's Mantle as the Product of Magma Ocean Solidification, *INVITED*, American Geophysical Union Abstracts, San Francisco, December 2013.
174. Marchi S., M. C. De Sanctis, E. Ammannito, H. Y. McSween, L. A. McFadden, C. A. Raymond, L. T. Elkins-Tanton, W. F. Bottke and C. T. Russell, New insights on the differentiation of asteroid Vesta, Vesta in the Light of Dawn Workshop, Houston TX, Feb. 2014.
175. Elkins-Tanton, L.T., B. E. Mandler. R. R. Fu, Placing Vesta in the Range of Planetesimal Differentiation Models, *INVITED*, Vesta in the Light of Dawn Workshop, Houston TX, Feb. 2014.
176. Marchi, S., W.F. Bottke, L. Elkins-Tanton, A. Mobidelli, K. Wuennemann, D.A. Kring, M. Bierhaus, The bombardment of the Earth during the Hadean and Early Archean Eras: A new look at the late accretion. Terrestrial Planet Formation workshop, Nice France, May 2014.
177. Elkins-Tanton, L.T., D. Bercovici, Contraction or expansion of the Moon's crust during magma ocean freezing? Lunar and Planetary Science Conference, Houston TX, March 2014.
178. Fu, R.R., L.T. Elkins-Tanton, Partially differentiated planetesimals may retain primitive crusts. Lunar and Planetary Science Conference, Houston TX, March 2014.
179. Lammer, H., N. Erkaev, L.T. Elkins-Tanton, et al., Escape from catastrophically outgassed volatiles and initial water inventories from early Mars and Mars-like planetary embryos, European Geosciences Union 2014 General Assembly.
180. Furman, T., W. Nelson, L.T. Elkins-Tanton, Evolution of the East African Rift: Drip melting, lithospheric thinning and mafic volcanism, Geological Society of American Annual meeting, 2014.
181. Piskorz, D., S. Smrekar, L.T. Elkins-Tanton, Corona formation on Venus via extension and lithospheric instability, Geological Society of America Annual meeting, 2014.
182. Piskorz, D., S. Smrekar, L.T. Elkins-Tanton, Corona formation on Venus via extension and lithospheric instability, American Geophysical Union Fall Meeting, 2014.
183. Elkins-Tanton, L.T., On the Ways that Planetesimals Were Analogs to Terrestrial Planets, *INVITED*, American Geophysical Union Fall Meeting, 2014.
184. Elkins-Tanton, L.T., Drip Magmatism: Intra-Plate Volcanism and its Importance to the Early Earth and Other Terrestrial Planets, *INVITED*, American Geophysical Union Fall Meeting, 2014.
185. Black, B.A., J.-F. Lamarque, R. Neely, L.T. Elkins-Tanton, M. Mills, Trouble starts downstairs: Reconstructing Permian-Triassic climate during Siberian Traps magmatism, *INVITED*, American Geophysical Union Fall Meeting, 2014.
186. Roman, D., A. Behar, L.T. Elkins-Tanton, The BENTO Box: Development and field-testing of a new satellite-linked data collection system for multiparameter volcano monitoring, American Geophysical Union Fall Meeting, 2014.
187. Smrekar, S. and the VERITAS team including Elkins-Tanton, VERITAS: A mission to study the highest priority Decadal Survey questions for Venus, American Geophysical Union Fall Meeting, 2014.
188. Marchi, S., W.F. Bottke, L. Elkins-Tanton, K. Wuennemann, A. Mobidelli, D.A. Kring, M. Bierhaus, The bombardment of the Earth during the Hadean and Early Archean Eras. Workshop on Early Solar System Impact Bombardment III, Houston Texas, February 2015.
189. Elkins-Tanton, L.T., Lunar Crustal Formation and Evolution: Reference Events and Timeline, *INVITED*, Microsymposium 2015, Houston.
190. Fu, R.R., E.D. Young, R.C. Greenwood, L.T. Elkins-Tanton, Fluid migration in early-accreting planetesimals, Lunar and Planetary Science Conference, Houston, 2015.
191. Elkins-Tanton, L.T., E. Asphaug, J. Bell, D. Bercovici, B.G. Bills, R.P. Binzel, W.F. Bottke, J. Goldsten, R. Jaumann, I. Jun, D.J. Lawrence, S. Marchi, D. Oh, R. Park, P.N. Peplowski, C.A. Polanskey, T.H. Prettyman, C.A. Raymond, C.T. Russell, A. Scheinberg, B.P. Weiss, D.D. Wenkert, M. Wicczorek, M.T.

- Zuber, The discovery science of asteroid (16) Psyche, Lunar and Planetary Science Conference, Houston 2015.
192. Blackburn, T., C.M. O'D. Alexander, R.W. Carlson, L. Elkins-Tanton, The accretion and impact histories of the ordinary chondrite parent bodies: New phosphate  $^{207}\text{Pb}$ - $^{206}\text{Pb}$  dates, and joint thermal, Ni-metal, and  $^{207}\text{Pb}$ - $^{206}\text{Pb}$  modeling. Meteoritical Society Meeting 2015.
  193. Elkins-Tanton, L.T., Planetary Evolution: The Hypothesized, the Suspected, and the Unknown, *INVITED*, Comparative Tectonic and Geodynamics of Venus, Earth and Rocky Exoplanets, Pasadena, California, May 2015.
  194. Elkins-Tanton, L.T., Internal Sources of Water on Earth, *INVITED*, International Astronomical Union Meetings, Honolulu Hawaii, November 2015.
  195. Scheinberg, A., L.T. Elkins-Tanton, G. Schubert, D. Bercovici, Core Solidification and Dynamo Evolution in a Mantle-Stripped Planetesimal, #1625, Lunar and Planetary Science Conference, Houston TX, March 2016.
  196. Elkins-Tanton, L.T. and the Psyche team, Asteroid (16) Psyche: The Science of Visiting a Metal World, #1631, Lunar and Planetary Science Conference, Houston TX, March 2016.
  197. Weiss, B.P.... L.T. Elkins-Tanton, et al., A Core Dynamo on an Iron Meteorite Parent Body and the Magnetism of Metallic Asteroids, #1661, Lunar and Planetary Science Conference, Houston TX, March 2016.
  198. Peplowski, P...L.T. Elkins-Tanton et al., Gamma-Ray Spectroscopy of Asteroid 16 Psyche: Expected Performance of the Psyche Gamma-Ray Spectrometer, #1394, Lunar and Planetary Science Conference, Houston TX, March 2016.
  199. Lawrence, D....L.T. Elkins-Tanton et al., The Psyche Gamma-Ray and Neutron Spectrometer: Characterizing the Composition of a Metal-Rich Body Using Nuclear Spectroscopy, #1622, Lunar and Planetary Science Conference, Houston TX, March 2016.
  200. Bell, J...L.T. Elkins-Tanton et al., The Psyche Multispectral Imager Investigation: Characterizing the Geology, Topography, and Compositional Properties of a Metallic World, #1366, Lunar and Planetary Science Conference, Houston TX, March 2016.
  201. Anbar A.D., L.T. Elkins-Tanton, S. Klug Boonstra, Dror Ben-Naim, Education Through Exploration: Using Space Science to Teach and Enable Exploration of the Unknown, Lunar and Planetary Science Conference, Houston TX, March 2016.
  202. Oh, D., D. Goebel, L. Elkins-Tanton, C. Polanskey, P. Lord, S. Tilley, J. Snyder, G. Carr, S. Collins, G. Lantoine, D. Landau, Psyche: Journey to a Metal World, 52nd AIAA/SAE/ASEE Joint Propulsion Conference, AIAA Propulsion and Energy Forum and Exposition 2016, Salt Lake City, Utah, July 2016.
  203. Black, B. A., R. R. Neely, J. F. Lamarque, M. Mills, J. T. Kiehl, C. A. Shields, L. Elkins-Tanton, C. Bardeen, Siberian Traps sulfur and carbon degassing and end-Permian climate feedbacks, Geological Society of America meeting 2016.
  204. Blackburn, T., C.M. O'D. Alexander, R. Carlson, L.T. Elkins-Tanton, The disruption of H and L ordinary chondrite parent bodies at 60 Ma, American Geophysical Union Fall Meeting, 2016.
  205. Elkins-Tanton, L.T. *INVITED*, The Moon's slow solidification: Reference events and timeline. American Geophysical Union Fall Meeting, 2016.
  206. Marchi, S., B.A. Black, L.T. Elkins-Tanton, W.F. Bottke, Massive impact-induced release of carbon and sulfur gases in the early Earth's atmosphere, American Geophysical Union Fall Meeting, 2016.
  207. Morbidelli, A., D. Nesvorny, V. Laurenz, S. Marchi, D. C. Rubie, L. Elkins-Tanton and S. A. Jacobson, The lunar late heavy bombardment as a tail-end of planet accretion, #2298, Lunar and Planetary Science Conference, Houston, March 2017.

208. Pahlevan K., L. Schaefer, L. Elkins-Tanton, S. Desch, S. Karato, Hydrogen isotopic fractionation in the terrestrial magma ocean, #2933, Lunar and Planetary Science Conference, Houston, March 2017.
209. Schlichting, H.E., L. T. Elkins-Tanton, B. Black and S. Marchi, Impact triggered atmospheric loss and outgassing during earth's late accretion, #2405, Lunar and Planetary Science Conference, Houston, March 2017.
210. Perera, V., A.P. Jackson, T.S.J. Gabriel, L.T. Elkins-Tanton, and E. Asphaug, Expedited cooling of the lunar magma ocean due to impacts, #2524, Lunar and Planetary Science Conference, Houston, March 2017.
211. Jackson, A.P., V. Perera, T.S.J. Gabriel, L.T. Elkins-Tanton, E. Asphaug, Impacts into thin crust overlying a magma ocean, #2664, Lunar and Planetary Science Conference, Houston, March 2017.
212. Elkins-Tanton, L.T., E. Asphaug, J.F. Bell III, D. Bercovici, B.G. Bills, R.P. Binzel, W.F. Bottke, M. Brown, J. Goldsten, R. Jaumann, I. Jun, D.J. Lawrence, P. Lord, S. Marchi, T. McCoy, D. Oh, R. Park, P.N. Peplowski, C.A. Polansky, D. Potter, T.H. Prettyman, C.A. Raymond, C.T. Russell, S. Scott, H. Stone, K.G. Sukhatme, N. Warner, B.P. Weiss, D.D. Wenkert, M. Wiczorek, D. Williams, M.T. Zuber, Asteroid (16) Psyche: visiting a metal world, #1718, Lunar and Planetary Science Conference, Houston, March 2017.
213. Tikoo, S.M., L. T. Elkins-Tanton, The fate of water within Earth-like planets and implications for the onset of plate tectonics, #1216, Lunar and Planetary Science Conference, Houston, March 2017.
214. West, S., S. Dibb, J. Noviello, L. Elkins-Tanton, E. Shock, The evolution of habitability in small rocky bodies, Astrobiology Science Conference April 2017, Mesa, AZ.
215. Schaefer, L. and L. T. Elkins-Tanton, The effects of accretionary impacts on the compositions of rocky planets, *Invited*, ACCRETE workshop, Nice, France, May 2017.
216. Elkins-Tanton, L.T. and B.P. Weiss, Planetesimals: Early differentiation and consequences for planets, *Invited*, Joint Japan Geophysical Union – European Geophysical Union Meetings, Chiba, Japan, May/June 2017.
217. Bell, J.F. III, Elkins-Tanton, L.T., E. Asphaug, D. Bercovici, B.G. Bills, R.P. Binzel, W.F. Bottke, M. Brown, J. Goldsten, R. Jaumann, I. Jun, D.J. Lawrence, P. Lord, S. Marchi, T. McCoy, D. Oh, R. Park, P.N. Peplowski, C.A. Polansky, D. Potter, T.H. Prettyman, C.A. Raymond, C.T. Russell, S. Scott, H. Stone, K.G. Sukhatme, N. Warner, B.P. Weiss, D.D. Wenkert, M. Wiczorek, D. Williams, M.T. Zuber, Asteroid (16) Psyche: visiting a metal world, *Invited*, Joint Japan Geophysical Union – European Geophysical Union Meetings, Chiba, Japan, May/June 2017.
218. Jackson, A.P., V. Perera, L.T. Elkins-Tanton, E. Asphaug, Impact generation of holes in the early lunar crust, Accretion: Building New Worlds, Lunar and Planetary Institute Workshop, Houston TX, August 2017.
219. Perera V., A.P. Jackson, L.T. Elkins-Tanton, and E. Asphaug, Effect of re-impacts on the lunar magma ocean, Accretion: Building New Worlds, Lunar and Planetary Institute Workshop, Houston TX, August 2017.
220. Schaefer L. & L. T. Elkins-Tanton. The effects of accretionary impacts on the compositions of rocky planets, ACCRETE workshop, May 2017, Nice, France. (*Invited talk*)
221. Elkins-Tanton L.T. and J.F. Bell III and the Psyche Science, Engineering, and Management Team, NASA's Discovery Mission to (16) Psyche: Visiting a Metal World, European Planetary Science Congress, September 2017.
222. Black, B.A., R.R. Neely, J.-F. Lamarque, L. Elkins-Tanton, J.T. Kiehl, C.A. Shields, M. Mills, C. Bardeen, Systemic swings in end-Permian environments from Siberian Traps carbon and sulfur outgassing, American Geophysical Union Fall Meeting, New Orleans, 2017.



223. Tamer, J., Mead, C., S. K. Boonstra, A. Anbar, D. Hunsley, J. Swann, L. Elkins-Tanton, Eyes on Infiniscope: Bringing cutting edge visualizations to more teachers through education through exploration, American Geophysical Union Fall Meeting, New Orleans, 2017.
224. Swann, J, L. Elkins-Tanton, A. Anbar, S.K. Boonstra, J. Tamer, C. Mead, Sharing the stories of small worlds, American Geophysical Union Fall Meeting, New Orleans, 2017.
225. Becker, T. M., K. D. Retherford, L. Roth, A. R. Hendrix, M. A. McGrath, N. J. Cunningham, L. M. Feaga, J. Saur, J.-E. Walhund, L. T. Elkins-Tanton, P. Molyneux, UV Observations and Theory of the moon Europa and asteroid (16) Psyche, American Geophysical Union Fall Meeting, New Orleans, 2017.
226. Pahlevan, K., L. K. Schaefer, S.J. Desch and L.T. Elkins-Tanton, A massive hydrogen-rich Martian greenhouse recorded in D/H, American Geophysical Union Fall Meeting, New Orleans, 2017.
227. Schaefer, L., L. Elkins-Tanton, S. Desch, K. Pahlevan, Redox evolution in magma oceans due to ferric/ferrous iron partitioning, American Geophysical Union Fall Meeting, New Orleans, 2017.
228. Polanskey, C., L.T. Elkins-Tanton, and the Psyche science team, Psyche Mission: Scientific models and instrument selection, American Geophysical Union Fall Meeting, New Orleans, 2017.
229. Perera, V., A. Jackson, E. Asphaug, L.T. Elkins-Tanton, Re-impacting Debris Facilitated Cooling of the Lunar Magma Ocean, *Division of Planetary Science* of the American Astronomical Association meeting, 2017.
230. Polanskey, C.A., Linda Elkins-Tanton, Ralf Jaumann, David Lawrence, Robert Moore, Ryan Park, Maria De Soria-Santacruz Pich, Christopher Russell, Daniel Wenkert, David Williams, and the Psyche Team, Psyche Science Operations: Maximize Reuse to Minimize Risk, *SpaceOps* 2018.
231. Hart, W., L.T. Elkins-Tanton and the Psyche Science, Engineering, and Management Team, Overview of the Spacecraft Design for the Psyche Mission, *IEEE Aerospace Conference*, Big Sky, Montana, March 2018.
232. Jun I., D. J. Lawrence, P. N. Peplowski, L. T. Elkins-Tanton, J. Goldsten, S. Marchi, T. McCoy, T. H. Prettyman, C. A. Polanskey, C.T. Russell, and the Psyche Science Team, Surface Compositional Information Derived From Simulated High-Energy Gamma Rays For The Psyche Gamma-Ray And Neutron Spectrometer, *49th Lunar and Planetary Science Conference*, Abstract #2200, 2018.
233. Reddy V., David J. Lawrence, L. T. Elkins-Tanton, Constraining Hydrogen Abundance on Asteroid (16) Psyche, *49th Lunar and Planetary Science Conference*, 2018.
234. Prettyman, T.H., L.T. Elkins-Tanton, C.A. Polanskey, and the Psyche Science Team, Psyche mission to provide new insights into the formation, evolution, and inner workings of the cores of terrestrial planets. *2018 COMPRES Annual Meeting*, Albuquerque, 2018.
235. Oran, R., B. P. Weiss, L. T. Elkins-Tanton, I. Jun, C. A. Polanskey, J. B. Ream, C. T. Russell, and the Psyche Team, 3D Hybrid modeling of asteroid magnetospheres, *ASTRONUM 2018*, Florida.
236. Black, B., Andres Hernandez-Nava, Ellen Gales, Sally Gibson, Robert Bodnar, Linda T. Elkins-Tanton, The carbon budget and carbon isotope composition of flood basalt magmas, American Geophysical Union Fall Meeting, Washington DC, 2018.

