

Publications of the Hawaii Institute of Geophysics and Planetology
University of Hawaii
2017

1. **Acosta-Maeda, T. E., A. K. Misra, J. N. Porter, D. E. Bates, S. K. Sharma** (2017). Remote Raman efficiencies and cross-sections of organic and inorganic chemicals. *Appl. Spectrosc.* 71 1025–1038.
2. Agarwal, A., L. M. Alva-Valdivia, M. L. Rivas-Sanchez, **E. Herrero-Bervera, J. Urrutia-Fucugauchi**, and V. Espejel-Garcia (2017). Emplacement dynamics and hydrothermal alteration of the Atengo ignimbrite, southern Sierra Madre Occidental, northwestern Mexico. *J. South Amer. Earth Sci.* 80, 559 – 568. SOEST Contribution #10255 and HIGP Pub. # 2270.
3. **Bonny, E., and Wright, R.** (2017). Predicting the end of lava-flow-forming eruptions from space. *Bull. Volcanol.* 79, DOI: 10.1007/s00445-011-1134-8.
4. **Boyce, J. M., Giguere, T. A., Hawke, B. R., Mougini-Mark, P. J., Robinson, M. S., Lawrence, S. J., Trang, David,** and Clegg-Watkins, Ryan N. (2017). Hansteen Mons: An LROC Geological Perspective. *Icarus*, 283, 254 – 267.
5. **Boyce, J. M., T. Giguere, P. Mougini-Mark, T. Glotch and G. J. Taylor** (2017). Geology of Mairan middle dome: Its implication to silicic volcanism on the Moon. *Planetary Space Sci.*, <https://doi.org/10.1016/j.pss.2017.12.009>.
6. **Bruno, B.C., J. Engels, G. Ito, J. Gillis-Davis, H. Dulai, G. Carter, C. Fletcher, and D. Böttjer-Wilson** (2017). Two-stage exams: A powerful tool for reducing the achievement gap in undergraduate oceanography and geology classes. *Oceanography* 30(2), <https://doi.org/10.5670/oceanog.2017.241>.
7. **Butler R., D. Walsh,** and K. Richards (2017). Extreme tsunami inundation in Hawai'i from Aleutian–Alaska subduction zone earthquakes. *Natural Hazards*, DOI: Volume 85, Issue 3, February 2017, 1591-1619, 10.1007/s11069-016-2650-0.
8. **Butler, R., D. A. Burney, K. H. Rubin and D. Walsh** (2017). The orphan Sanriku tsunami of 1586: new evidence from coral dating on Kaua'i. *Natural Hazards*. Doi 10.1007/s11069-017-2902-7.
9. Corley, L. M. et al., including **G. J. Taylor** (2017). Olivine-bearing lithologies on the Moon: Constraints on origins and transport mechanisms from M3 spectroscopy, radiative transfer modeling, and GRAIL crustal thickness. *Icarus* **300**, 287-304.
10. Crandall, P.B., S. Gabil, **J. J. Gillis-Davis,** and R. I. Kaiser (2017). Can perchlorates be transformed to hydrogen peroxide (H₂O₂) products by cosmic rays on the Martian surface? *Journal of Geophysical Research Planets* 122, 1880 – 1892.
11. Egan, M. J., S. M. Angel and **S. K. Sharma** (2017). Standoff spatial heterodyne Raman spectrometer for mineralogical analysis, *J. Raman Spectrosc.*, published online, Mar 7, 2017. DOI: 10.1002/jrs.5121.
12. **Fitch, E.P., S.A. Fagents,** Th. Thordarson, and C.W. Hamilton (2017). Fragmentation mechanisms associated with lacustrine lava–water explosions. *Bull. Volcanol.*, 79(1), doi: 10.1007/s00445-016-1087-3.
13. Fisher E.A., **Lucey P.G., Lemelin M., Greenhagen B.T., Siegler M.A., Mazarico E., Aharonson O., Williams J.P., Hayne P.O., Neumann G.A., Paige D.A.** (2017). Evidence for surface water ice in the lunar polar regions using reflectance

- measurements from the Lunar Orbiter Laser Altimeter and temperature measurements from the Diviner Lunar Radiometer Experiment. *Icarus* 292, 74 - 85.
14. **Gabrieli, A., Porter, J., Wright, R., and Lucey, P.** (2017). Validation studies of the accuracy of various SO₂ gas retrievals in the thermal infrared (8-14 μm). *Bull. Volcanol.* 79:80. <https://doi.org/10.1007/s00445-017-1163-3>.
 15. **Gillis-Davis J.J., Lucey P.G., Bradley J.P., Ishii H.A., Kaluna K.M., Misra A. Connolly Jr. H.C.** (2017). Incremental laser space weathering of Allende reveals non-lunar like space weathering effects. *Icarus* 286, 1-14.
 16. Goldstein J. I., **G. R. Huss** and **E. R. D. Scott** (2017). Ion microprobe analyses of carbon in Fe-Ni metal in iron meteorites and mesosiderites. *Geochim. Cosmochim. Acta* 200, 367-407.
 17. Hallis, L. J., **Huss, G. R., Nagashima, K., Taylor, G. J.,** Stoffler, D., Smith, C. L., and Lee, M. R. (2017). Effects of shock and Martian alteration on Tissint hydrogen isotope ratios and water content. *Geochim. Cosmochim. Acta* 200, 280-294. doi.org/10.1016/j.gca.2016.12.035.
 18. Hamilton, C.W., **E.P. Fitch, S.A. Fagents,** and Th. Thordarson (2017). Rootless tephra stratigraphy and emplacement processes. *Bull. Volcanol.*, 79(11), [doi:10.1007/s00445-016-1086-4](https://doi.org/10.1007/s00445-016-1086-4).
 19. Hardesty, B. D., J. Harari, A. Isobe, L. Lebreton, N. Maximenko, **J. T. Potemra,** E. van Sebille, D. Vethaak and C. Wilcox (2017). Using numerical model simulations to improve the understanding of micro-plastic distribution and pathways in the marine environment, *Frontiers in Mar. Sci.*, 4:30. [doi: 10.3389/fmars.2017.00030](https://doi.org/10.3389/fmars.2017.00030).
 20. Houghton, B.F., D.A. Swanson, S. Biass, **S.A. Fagents,** and T. Orr. Partitioning of pyroclasts between ballistic transport and a convective plume: Kilauea volcano, 19 March 2008. *J. Geophys. Res.*, [doi:10.1002/2017JB014040](https://doi.org/10.1002/2017JB014040).
 21. **Huss G. R.** (2017). Isotopic studies of planetary and nuclear materials: A scientific tribute to Ian Douglass Hutcheon (1947 – 2015) *Geochim Cosmochim. Acta* **201**, 1-5.
 22. Jansen, J. C., J.C. Andrews-Hanna, Y. Li, **P.G. Lucey, G.J. Taylor,** S. Goossens, F.G. Lemoine, E. Mazarico, J.W. Head, C. Milbury, W.S. Kiefer, J.M. Soderblom, M.T. Zuber (2017). Small-scale density variations in the lunar crust revealed by GRAIL. *Icarus* 291, 107-123. doi.org/10.1016/j.icarus.2017.03.017.
 23. Jilly-Rehak C. E., **G. R. Huss, K. Nagashima** and D. L. Schrader (2017). ⁵³Mn-⁵³Cr radiometric dating of secondary carbonates in CR chondrites: Timescales for parent body aqueous alteration. *Geochim. Cosmochim. Acta* **201**, 224-244.
 24. **Kaluna, H.M, Ishii, H.A., Bradley J.P., Gillis-Davis, J.J. and Lucey P.G.** (2017). Simulated Space Weathering of Fe- and Mg-rich Aqueously Altered Minerals Using Pulsed Laser Irradiation. *Icarus*, 292, 245-258.
 25. **Krot A. N., Nagashima K.,** van Kooten E. M. M., and Bizzarro M. (2017). Calcium-Aluminum-Rich Inclusions Recycled During Formation of Porphyritic Chondrules from CH Carbonaceous Chondrites. *Geochim. Cosmochim. Acta*, 201, 185-223.
 26. **Krot A. N., Nagashima K.,** van Kooten E. M. M., and Bizzarro M. (2017). High-temperature rims around calcium-aluminum-rich inclusions from the CR, CB and

- CH carbonaceous chondrites. *Geochim. Cosmochim. Acta*, 201, 155-184.
27. **Lai, X., B. Chen**, J. Wang, Y. Kono, and F. Zhu. (2017). Polyamorphic transformation in Fe-Ni-C liquids: Implications for chemical evolution of terrestrial planets, *J. Geophys. Res.-Solid Earth*, 122, 9745–9754, doi:10.1002/2017JB014835.
 28. **Lautze N.C., Thomas D.**, Hinz N., Ito G., Frazer N. Waller D. (2017). Play Fairway Analysis of Geothermal Resources across the State of Hawaii: 1. Geological, geophysical, and geochemical datasets, *Geothermics*, <https://doi.org/10.1016/j.geothermics.2017.02.001>.
 29. **Lucey P. G.**, B. T. Greenhagen, E. Song, J. A. Arnold, **M. Lemelin**, K. D. Hanna, N. E. Bowles, T. D. Glotch and D. A. Paige. (2017). Space weathering effects in Diviner Lunar Radiometer multispectral infrared measurements of the lunar Christiansen feature: Characteristics and mitigation. *Icarus*, 283, 343 – 351.
 30. MacPherson G. J., **Nagashima K., Krot A. N.**, Doyle P. M., and Ivanova M. A. (2017). ⁵³Mn-⁵³Cr Chronology of Ca-Fe Silicates in CV3 Chondrites. *Geochim. Cosmochim. Acta*, 201, 260-274.
 31. **Martinez, F. and R. Hey** (2017). Propagating buoyant mantle upwelling on the Reykjanes Ridge, *Earth Planet. Sci. Lett.*, 457, 10-22, <http://dx.doi.org/10.1016/j.epsl.2016.09.057>.
 32. Melchiorre E. B., R. Bottrill, **G. R. Huss** and Amanda Lopez (2017). Conditions of stichtite (Mg₆Cr₂(OH)₁₆[CO₃]·4H₂O) formation and its geochemical and isotope record of early phanerozoic serpentinizing environments. *Geochim. Cosmochim. Acta* **197**, 43-61.
 33. Melosh, H. J., Kendall, J., Horgan, B., Johnson, B. C., Bowling, T., **Lucey, P. G., Taylor, G. J.** (2017). South Pole-Aitken basin ejecta reveal the Moon's upper mantle. *Geology* 45, doi: 10.1130/G39375.1.
 34. Mora, C., **B. Dousset**, and 16 others (2017). Global risk of deadly heat. *Nature Climate Change*, published on-line June 19th, 2017. Doi: 10.1038/NClimate322.
 35. **Mouginis-Mark, P. J.** (2017). Olympus Mons volcano, Mars: A photogeologic view and new insights. *Chemie der Erde*, <https://doi.org/10.1016/j.chemer.2017.11.006>, 35 pp.
 36. **Mouginis-Mark, P., J. Boyce**, V. L. Sharpton, and **H. Garbeil** (2017). Determination of Mars crater geometric data: Insights from high-resolution digital elevation models. *Meteoritics Plan. Sci.*, 1 – 15, doi: 10.1111/maps.12895.
 37. Mundy, B. C., M. E. Geringer, J. G. Nielsen, **P. Fryer**, and A. Leitner (2017). First in situ observation of an aphyonid fish (Teleostei, Ophidiiformes, Bythitidae). Deep-Sea Research Part II, doi: <http://dx.doi.org/10.1016/j.dsr2.2017.09.009>.
 38. **Nagashima K., Krot A. N.**, and Komatsu M. (2017). ²⁶Al-²⁶Mg systematics in chondrules from Kaba and Yamato 980145 CV3 carbonaceous chondrites. *Geochim. Cosmochim. Acta*, 201, 303-319.
 39. Park, C. K. Nagashima, **A. N. Krot, G. R. Huss**, A. M. Davis and M. Bizzarro (2017). Calcium-aluminum-rich inclusions with fractionation and unidentified nuclear effects (FUN CAIs): II. Heterogeneities of magnesium isotopes and ²⁶Al in the early solar system inferred from *in situ* high-precision magnesium-isotopic measurements. *Geochim. Cosmochim. Acta* 201, 6-24.
 40. Pei, C., M. Feng, Z. Yang, M. Yao, Y. Yuan, X. Li, B. Hu, M. Shen, **B. Chen**, B.

- Sundqvist, and L. Wang (2017). Quasi 3D polymerization in C60 bilayers in a fullerene solvate. *Carbon* 124, 499-505, doi:10.1016/j.carbon.2017.09.010.
41. Ribeiro, J. M., Stern, R. J., **Martinez, F.**, Woodhead, J., Chen, M., and Ohara, Y. (2017). Asthenospheric outflow from the shrinking Philippine Sea Plate: Evidence from Hf–Nd isotopes of southern Mariana lavas, *Earth Planet. Sci. Ltrrs.* 478, 258-271, doi: 210.1016/j.epsl.2017.1008.1022.
 42. Ruzicka A. M., Haack H., Chabot N. L., and **Scott E. R. D.** (2017). Iron and stony-iron meteorites: Evidence for the formation, crystallization, and early impact histories of differentiated planetesimals. In “*Planetesimals: Early Differentiation and Consequences for Planets*” eds. L. T. Elkins-Tanton and B. P. Weiss. Cambridge University Press, 136-158.
 43. Schreder D. L., **Nagashima K.**, **Krot A. N.**, Ogliore R. C., Yin Q.-Z., Amelin Y., Stirling C. H., and Kaltenbach A. (2017). Distribution of ²⁶Al in the CR chondrite chondrule-forming region of the protoplanetary disk. *Geochim. Cosmochim. Acta* 201, 275-302.
 44. Smith, D. E. et al., including **P. G. Lucey** (2017). Summary of the results from the Lunar Orbiter Laser Altimeter after seven years in Lunar orbit. *Icarus*, 283, 70 - 91.
 45. Tema, E., **E. Herrero-Bervera**, and Ph. Lanos (2017). Geomagnetic field secular variation in Pacific Ocean: A Bayesian reference curve based on Holocene Hawaiian lava flows. *Earth Planet. Sci. Ltrrs.* 478, 58 – 65.
 46. **Trang, D.**, **J. J. Gillis-Davis**, **M. Lemelin**, J. T. S. Cahill, **B. R. Hawke**, and **T. A. Giguere** (2017). The compositional and physical properties of localized pyroclastic deposits. *Icarus*, 283, 232 - 253.
 47. van Kooten E. M. M. E., **Nagashima K.**, Kasama T., Wampfler S., Ramsey J., Firmann S., Balogh Z., Schiller M., Wielandt D., Franchi I., Jorgensen J., **Krot A. N.**, and Bizzarro M. (2017). A divergent heritage for complex organics in Isheyevo lithic clasts. *Geochim. Cosmochim. Acta*, 205, 119-148.
 48. Werheit, H., **M. H. Manghnani**, U. Kuhlmann, **A. Hushur**, and S. Shalamberidze (2017). Mode Gruneisen parameters of boron carbide. *Solid State Sciences*, 72 80 – 93.
 49. Westphal, A. J., Bridges, J. C., Brownlee, D. E., Butterworth, A. L., De Gregorio, B. T., Dominguez, Z., Flynn, G., Gainsforth, G. J., **Ishii, H. A.**, Joswiak, D., Nittler, L. R., Ogliore, R. C., Pepin, R. O., Palma, R., Stephan, T. and Zolensky, M. E. (2017). The Future of Stardust Science, *Meteoritics & Planetary Science*, accepted April 5, 2017. doi: 10.1111/maps.12893.
 50. Wooden D. H., **Ishii H. A.** and Zolensky M. E. (2017). Cometary Dust: The Diversity of Primitive Refractory Grains. *Royal Soc. Phil. Trans. A*, A375: 20160260. doi: 10.1098/rsta.2016.0260.
 51. Zinin, P. V., Liu, X. R., Jia, R., **Sharma, S. K.**, **Ming, L.-C.**, Kutuza, I., Troyan, I. (2017). Bonding, elastic and vibrational properties in low and high pressure synthesized diamond-like BC_x phases. *J. Phys. Conf. Series* 950, 042050/1-4. HIGP Pub. # 2274, SOEST # 10274.