

Publications

- [52] Preece, K., van der Zwan, F., Hammer, J., Gertisser, R., (2023). A textural perspective on the magmatic system and eruptive behaviour of Merapi volcano, in: Cimarelli, C., Muller, S. (Eds.), *Merapi Volcano: Geology, Eruptive Activity, and Monitoring of a High-Risk Volcano*. Springer, Zurich. 265-289.
- [51] Mourey, A.J., Shea, T., Hammer, J.E., (2023). Preservation of magma recharge signatures in Kīlauea olivine during protracted storage. *J. Geophys. Res. Solid Earth* 128, e2022JB025523.
- [50] Nelson, W.S., J.E. Hammer, T. Shea, E. Hellebrand, G.J. Taylor, Chemical heterogeneities reveal early rapid cooling of Apollo Troctolite 76535, *Nat. Com.* 12 (2021). <https://doi.org/10.1038/s41467-021-26841-4>.
- [49] deGraffenreid, R., Hammer, J., Dietterich, H., Perroy, R., Patrick, M., and Shea, T., (2021). Evaluating lava flow propagation models with a case study from the 2018 eruption of Kīlauea Volcano, Hawai'i, *Bull. Volcanol.*, 83, 1-19.
- [48] First, E. C., J. E. Hammer, P. Ruprecht, and M. Rutherford (2021), Experimental constraints on dacite magma storage beneath Volcán Quizapu, Chile, *J. Petrol.*, 1–26, doi:10.1093/petrology/egab027.
- [47] Pineda, C., J. Hammer, E. First, and D. Morata (2021), Storage conditions of a caldera-forming volcanic eruption: Insights from the Pudahuel rhyolitic ignimbrite in central Chile (32° 10'S), *Lithos*, 400–401, doi:10.1016/j.lithos.2021.106382.
- [46] Iezzi, G., Hammer, J., A. Whittington, D. Neuville (2020) Editorial: Research Topic Crystal Nucleation and Growth in Magmatic Suspensions. *Frontiers in Earth Science*. Frontiers Media, 8, pp.607972. 10.3389/feart.2020.607972.
- [45] First, EC, TC Leonhardi, and JE Hammer (2020), Effects of superheating magnitude on olivine growth, *Contrib. to Mineral. Petrol.*, 175(2), 1–14, doi:10.1007/s00410-019-1638-7.
- [44] Shea, T, JE Hammer, E Hellebrand, A. J. Mourey, F. Costa, E. C. First, K. J. Lynn, and O. Melnik (2019), Phosphorus and aluminum zoning in olivine: contrasting behavior of two nominally incompatible trace elements, *Contrib. to Mineral. Petrol.*, 174(10), doi:10.1007/s00410-019-1618-y.
- [43] Zhang, D, Hu, Y, Xu, J, Downs, RT, Hammer, JE, Dera, PK. (2019) High-pressure behavior of liebenbergite: The most incompressible olivine-structured silicate. *Am Mineral.* 104, 580-587.
- [42] Mollo, S. and Hammer, J.E., (2017) Dynamic Crystallization in Magmas, in: *Mineral reaction kinetics: microstructures, textures, and chemical compositions*, EMU Notes in Mineralogy, v. 16, Abart, R., and Heinrich, W., Eds. 373-418.
- [41] Welsch, B., Hammer, J., Baronnet, A., Jacob, S., Hellebrand, E., and Sinton, J. (2016) Clinopyroxene in postshield Haleakala ankaramite: 2. Texture, compositional zoning and supersaturation in the magma. *Contrib. Mineral. Petrol.* 171:6, DOI 10.1007/s00410-015-1213-9
- [40] Hammer, J., Jacob, S., Welsch, B., Hellebrand, E., and Sinton, J. (2016) Clinopyroxene in postshield Haleakala ankaramite: 1. Efficacy of thermobarometry. *Contrib. Mineral. Petrol.* 171:7, DOI 10.1007/s00410-015-1212-x.
- [39] First. E., and Hammer, J. (2016) Igneous cooling history of olivine-phyric shergottite Yamato 980459 constrained by dynamic crystallization experiments. *Meteoritics. Planet. Sci.* 1-23, doi: 10.1111/maps.12659.
- [38] Shea, T., Costa, F., Krimer, D., Hammer, JE. (2015) Accuracy of timescales retrieved from diffusion modeling in olivine: A 3D perspective. *Am. Mineral.* 100, 2026-2042.
- [37] Brachfeld, S., Shah, D., First, E., Hammer, JE, and Bowles, J. (2015) Influence of redox conditions on the intensity of Mars crustal magnetic anomalies. *Meteoritics and Planet. Sci.* 50, 1703-1717.
- [36] Brugger, CR, Hammer, JE. (2015) Prevalence of growth twins among anhedral plagioclase microlites. *Am. Mineral.* 100, 385-395.
- [35] Brachfeld, S, Cuomo, D, Tatsumi-Petrochilos, L, Bowles, J, Shah, D, and Hammer, J. (2014) Contribution of Multidomain Titanomagnetite to the Intensity and Stability of Mars Crustal Magnetic Anomalies. *Geophys. Res. Lett.*, 41, 7997–8005, doi:10.1002/ 2014GL062032.

- [34] Welsch, BT, Hammer, JE and Hellebrand, E (2014) Phosphorus zoning reveals dendritic architecture of olivine. *Geology* doi: 10.1130/G35691.1
- [33] Shea, T. and Hammer, J.E. (2013) Kinetics of cooling- and decompression-induced crystallization in hydrous mafic-intermediate magmas. *J. Volcanol. Geotherm. Res.* <http://dx.doi.org/10.1016/j.volgeores.2013.04.018>
- [32] Shea, T, Hammer, J, First, E. (2013) Magma balloons or bombs? *Nature Geoscience*. 6, 802-803.
- [31] Shea, T. and Hammer, J.E. (2013) Oxidation in CSPV experiments involving H₂O-bearing mafic magmas: Quantification and mitigation. *Am. Mineral.* 98, 1285-1296.
- [30] Bowles, J.A., Tatsumi-Petrochilos, L., Hammer, J.E., Brachfeld, S.A. (2012) Multicomponent cubic oxide exsolution in synthetic basalts: Temperature dependence and implications for magnetic properties. *J. Geophysical Res.–Solid Earth*. doi:10.1029/2011JB008867
- [29] Stovall, WK, Houghton, BF, Hammer, JE, Fagents, SA, Swanson, DA (2012) Vesiculation of high fountaining Hawaiian eruptions: episodes 15 and 16 of 1959 Kīlauea Iki. *Bull. Volcanol.* 74, 441-455.
- [28] Zinin, P, Tatsumi-Petrochilos L, Bonal, L, Acosta, T, Hammer, J, Gilder, S, Fuller, M. (2011) Raman spectroscopy of titanomagnetites: calibration of the intensity of Raman peaks as a sensitive indicator for their Ti content. *Am. Mineral.*, 96, 1537-1546.
- [27] Brugger, CR, Hammer, JE. (2010) Crystal size distribution analysis of plagioclase in experimentally decompressed hydrous rhyodacite magma. *Earth Planet. Sci. Lett.* 300, 246-254.
- [26] Brugger, CR, Hammer, JE. (2010) Crystallization kinetics in continuous decompression experiments; implications for interpreting natural magma ascent processes. *J. Petrology*, 51, 1941-1965.
- [25] Houghton, BF, Carey, RJ, Cashman, KV, Wilson, CJN, Hobden, BJ, and Hammer, JE. (2010) Diverse patterns of ascent, degassing, and eruption of rhyolite magma during the 1.8 ka Taupo eruption, New Zealand: Evidence from clast vesicularity. *J. Volcanol. Geotherm. Res.* 195, 31-47.
- [24] Hammer, JE, Sharp, TG, and Wessel, P. (2010) Heterogeneous nucleation and epitaxial crystal growth of magmatic minerals. *Geology*, 38, 367-370.
- [23] Neill, OK, Hammer, JE, Izbekov, PE, Belousov, MG, Belousov, AB, Clarke, AB, Voight, B. (2010) Influence of pre-eruptive degassing and crystallization on the juvenile products of laterally directed volcanic explosions. *J. Volcanol. Geotherm. Res.* 198, 264-274.
- [22] Shea, T, Gurioli, L, Larsen, JF, Houghton, BF, Hammer, JE, Cashman, KV. (2010) Linking experimental and natural vesicle textures in Vesuvius 79AD white pumice. *J. Volcanol. Geotherm. Res.*, 192, 69-84.
- [21] Shea, T., Houghton, B.F., Gurioli, L., Cashman, K.V., Hammer, J.E., Hobden, B.V. (2010), Textural studies of vesicles in volcanic rocks: An integrated methodology. *J. Volcanol. Geothermal Res.*, 190, 271-289.
- [20] Hammer, JE (2009) Application of a textural geospeedometer to late-stage magmatic history of MIL03346. *Meteoritics Planet. Sci.* 44. 141-154.
- [19] Hammer, JE (2009) Capturing crystal growth, *Geology*, v. 37, p. 1055-1056, doi:10.1130/focus112009.1.
- [18] Shea, T, Larsen JF, Gurioli L, Hammer JE, Houghton BF, Cioni R. (2009) Leucite crystals: surviving witnesses of magmatic processes preceding the 79AD eruption at Vesuvius, Italy. *Earth and Planet. Sci. Lett.*, 281, 88-98.
- [17] Bowles, JA, Hammer, JE, Brachfeld, SA. (2009) Magnetic and petrologic characterization of synthetic Martian basalts and implications for the surface magnetization of Mars. *J. Geophys. Res. – Planets* 114, E10003, doi:10.1029/2009JE003378.
- [16] Hammer, JE (2008) Experimental Studies of the Kinetics and Energetics of Magma Crystallization. *Reviews in Mineralogy and Geochemistry*. v. 69. 9-59.
- [15] Vazquez, JA, Shamberger, PJ, and Hammer, JE. (2007) Plutonic xenoliths reveal timing of magma evolution at Hualalai and Mauna Kea, Hawai'i. *Geology*. 35. 695-698.

- [14] McCanta, MC, Rutherford, MJ, and Hammer, JE (2007) Pre-eruptive and syn-eruptive conditions in the Black Butte, California dacite: Insight into crystallization kinetics in a simplified silicic system. *J Volcanol. Geotherm. Res.* 160: 263-284.
- [13] Hammer, JE (2006) Influence of fO₂ and cooling rate on the kinetics and energetics of Fe-rich basalt crystallization. *Earth Planet. Sci. Lett.* 10.1016/j.epsl.2006.04.022.
- [12] Shamberger, PJ and Hammer, JE (2006) Leucocratic and Gabbroic Xenoliths from Hualalai Volcano, Hawai'i. *J. Petrology* 47: 1785-1808.
- [11] Brachfeld, SA and Hammer, JE (2006) Rock-magnetic and remanence properties of synthetic Fe-rich basalts: Implications for Mars crustal anomalies. *Earth Planet. Sci. Lett.* doi:10.1016/j.epsl.2006.04.015.
- [10] Hammer, JE, M Coombs, PJ Shamberger, J Kimura (2006) Submarine sliver in North Kona: A window into the early magmatic and growth history of Hualalai Volcano, Hawai'i. *J. Volcanol. Geotherm. Res.* 151, 157-188.
- [9] Hammer, JE (2006) Interpreting Inclusive Evidence. *Nature*. 439: 26-27.
- [8] Hammer, JE (2004) Crystal nucleation in hydrous rhyolite: Experimental data applied to classical theory. *Am. Mineral.* 89, 1673-1679.
- [7] Hammer, JE and Rutherford, MJ (2003) Petrologic Indicators of pre-eruption magma dynamics. *Geology*. 31, 79-82.
- [6] Hammer, JE, and Rutherford,MJ (2002) An experimental study of decompression-induced crystallization in silicic melt. *J. Geophys. Res. -Solid Earth*. 107(B1), 8-1 - 8-24.
- [5] Hammer, JE, MJ Rutherford, and W Hildreth (2002) Magma storage prior to the 1912 eruption at Novarupta, Alaska. *Contrib. Mineral. Petrol.* 144, 144-162.
- [4] Hammer, JE, Cashman, KV, Voight, B. (2000) Magmatic processes revealed by textural and compositional trends in Merapi dome lavas. *J. Volcanol. Geotherm. Res.* 100, 165-192.
- [3] Hammer, JE, Cashman, KV, Hoblitt, R.P., Newman, S. (1999) Degassing and microlite crystallization during pre-climactic events of the 1991 eruption of Mt. Pinatubo, Philippines *Bull. Volcanol.*, 60, 355-380.
- [2] Hammer, JE, Manga, M, Cashman, KV (1998) Non-equilibrium and unsteady fluid degassing during slow decompression. *Geophys. Res. Lett.* 25, 4565-4568.
- [1] Chamberlain, C.P., Zeitler, P.K., Barnett, D.E., Winslow, D., Poulsen, S.R., Leahy, T., Hammer, J.E., 1995. Active hydrothermal systems during the recent uplift of Nanga Parbat, Pakistan Himalaya. *J. Geophys. Res. Solid Earth* 100, 439–453.