Additional Paragraph for “Depths in a Day” Fluid Inclusion paper:

Rapid-response quantification of magma source depths provides a key advancement for volcano observatories that utilize near-real-time geochemical monitoring to better understand eruptions as they unfold (see Re et al., 2021 overview; Hawai‘i–Gansecki et al., 2019; La Palma–Pankhurst et al., 2022; Fuego–Liu et al., 2020; Italy–Corsaro and Miraglia, 2022). The return of eruptive activity at Kīlauea in 2020 was accompanied by many questions about how the magmatic plumbing system had changed following the summit collapse in 2018 (Lynn et al., 2024) and FI barometry would have been a critical addition to understanding the eruption and the system. Utilizing a low-hazard eruption from a well-understood volcano (e.g., September 2023 Halema‘uma‘u eruption of Kīlauea) was a key component of testing our rapid-response application, as this scenario was not taxing on observatory staff or detracting from their primary response goals of keeping communities informed of any evolving hazards. Furthermore, this study is a clear example of identifying key science questions and pre-planning science activities to facilitate more rapid implementation across a broader scientific group, a specific recommendation made by the CONVERSE Hawai‘i Scientific Advisory Committee (Cooper et al., 2023) as a result of coordination experiences for Hawaiian eruptions.

Corsaro and Miraglia 2022

https://www.frontiersin.org/articles/10.3389/feart.2022.828026/full

Liu et al. 2020

<https://www.sciencedirect.com/science/article/pii/S0377027320302808?casa_token=8BkCJzsyDxEAAAAA:eVtz7fUyReT-X4iYkqBUVlS3mRBz2PRgVSKPdp0aQwIxXUiioLDUigOn2-ihMpn9gtwluX-Dq1A>

Pankhurst et al. 2022

<http://www.jvolcanica.org/ojs/index.php/volcanica/article/view/137>

Lynn, K.J., Nadeau, P., Ruth, D.C.S., Chang, J., Dotray, P.J., Johanson, I. (2024). Olivine diffusion constrains months-scale magma transport within Kīlauea Volcano’s summit reservoir system prior to the 2020 eruption. *Bulletin of Volcanology*, doi: 10.1007/s00445-024-01714-y