

Supplementary Dataset E - Log-plot of crystal and population number density of plagioclase ( $N_A^{\text{plag}}$ ) and pyroxene ( $N_A^{\text{pyr}}$ ) vs. the square root of the mineral surface area for Ex14 and Ex13. (A) Plagioclase is larger in Ex14 (pre-hydrated) than in Ex13. Ex14, which was performed with dry glass, exhibits a higher crystal number density of smaller plagioclase crystal than Ex13. (B) For pyroxene, pre-hydrated starting material also shows a positive correlation with crystal growth but Ex13 (pre-hydrated) exhibits a slightly higher crystal number density of small pyroxene crystals ( $\leq 3 \mu\text{m}^2$ ) than Ex14 (dry glass). Circles represent area number density ( $N_A, \text{mm}^{-2}$ ) and squares represent population number density ( $N_v, \text{mm}^{-3}$ ).

