Supplementary Figure 1. SiO_2 (left column) and Al_2O_3 (right column) concentration-distance profiles obtained in the crucible to glass contact to constrain possible contamination from the alumina crucible in the pure shoshonite (SHO) and rhyolite (RHY) compositions. The red line is a fit of the data using the diffusion equation for a semi-infinite medium, in the form:

$$C(x,t) = C_1 + (C_0 - C_1) * erf\,(\frac{x}{2\sqrt{Dt}})$$

where C_0 is the initial concentration in the melt; C_1 is the concentration at the interface; x is distance in m, t is time in seconds, and D is the diffusion coefficient in m^2/s. Diffusion coefficients obtained from fitting are given in each panel. Least-squares fits were calculated using qtiPlot v. 1.0.0-rc7 software using the Levenberg-Marquadt algorithm.