

Electronic Supplementary Material – Bucholz et al. Amphibole versus Biotite Crystallization

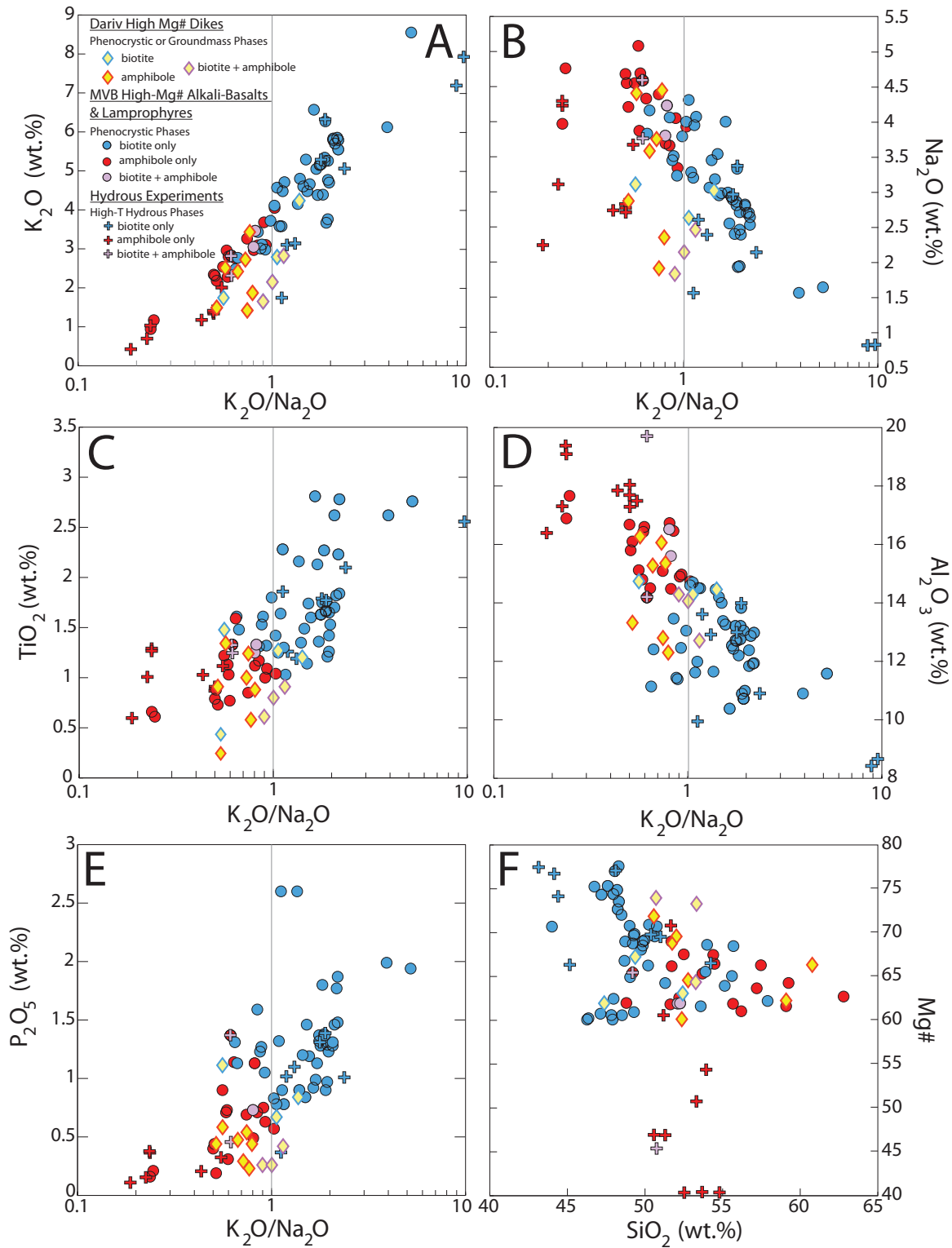


Fig. 1: Geochemistry of high-K basalts and hydrous experiments saturated with biotite and/or amphibole in comparison to the Dariv high Mg# (>60) dike compositions. (a) K_2O/Na_2O v. SiO_2 (note that x-axis is a logarithmic scale, for a-e), (b) Al_2O_3 v. SiO_2 , (c) TiO_2 v. SiO_2 , (d) $CaO-NaO-K_2O$. Mexican Volcanic Belt high Mg# alkali-basalts and lamprophyre data (colored circles) are from Allan and Carmichael (1984), Carmichael et al. (1996), Luhr et al. (1989), Luhr and Carmichael (1985), Maria and Luhr (2008), Ownby et al., (2008), Righter and Rosas-Elguera (2001), Vigouroux et al. (2008), Wallace and Carmichael (1989), and Wallace and Carmichael (1992). Amphibole-saturated experimental data (red crosses) are from Alonso-Perez et al. 2009, Di Carlo et al. 2006, Grove et al. 2003, Müntener et al. 2001, Sisson and Grove 1993, and Sisson et al. 2005. Biotite-saturated experimental data (blue crosses) are from Barton and Hamilton (1978), (1979), Edgar and Arima (1983), Edgar and Condliffe (1978), Edgar et al. (1976), Elkins-Tanton and Grove (2003), Esperança and Holloway (1987), Nicholls and Whitford (1983), and Righter and Carmichael (1996). The biotite- and amphibole-saturated experimental data (purple crosses) are from Barclay and Carmichael (2004) and Sisson et al. (2005).