



Figure S5. Microphotographs of the studied rocks. Plane polarized transmitted light: (A). General image of perovskite-bearing melteigites-ijolites from Barranco del Agua Salada. (B). General picture of biotitic malignites from Playa del Águila. Pyroxenes with diopside cores and aegirine augite rims can be observed. (C). General image of biotitic malignites from Playa del Águila. Interstitial alkali-feldspar crystals include

idiomorphic nepheline crystals. (D). Fibrous aegirine crystals included in nepheline and alkali feldspar in late nepheline syenites network. (E). Calcite inclusions in aegirine-augite in Las Montañetas silicocarbonatites. Aeg: aegirine; Aeg-Au: Aegirine Augite; Dio: diopside; Fel: K-feldspar; Ne: nepheline; Prv: perovskite.