

5.5 Gaussberg; Volcanology & Petrology

Supplementary information: photomicrographs of representative lamproite lavas and enclaves from Gaussberg

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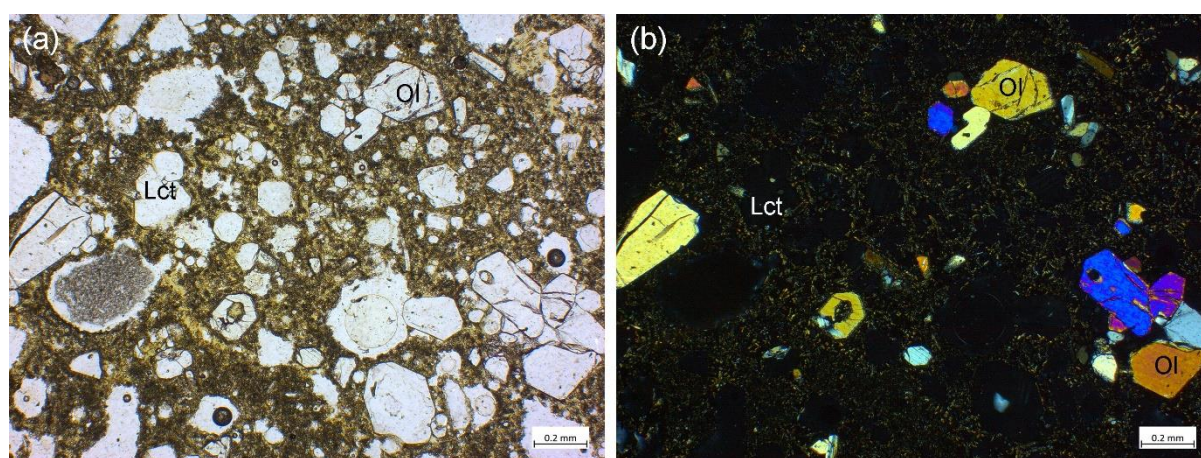


Figure 1: Vesicular olivine lamproite lava. (a) plane polarised light; (b) cross polarised light. The lamproite exhibits a vesicular vitrophyric texture defined by euhedral phenocrysts of olivine and leucite set in a glassy to aphanitic groundmass. The plane polarised light image shows round to ovoid vesicles up to 0.4 mm in diameter. Sample KDC-40.

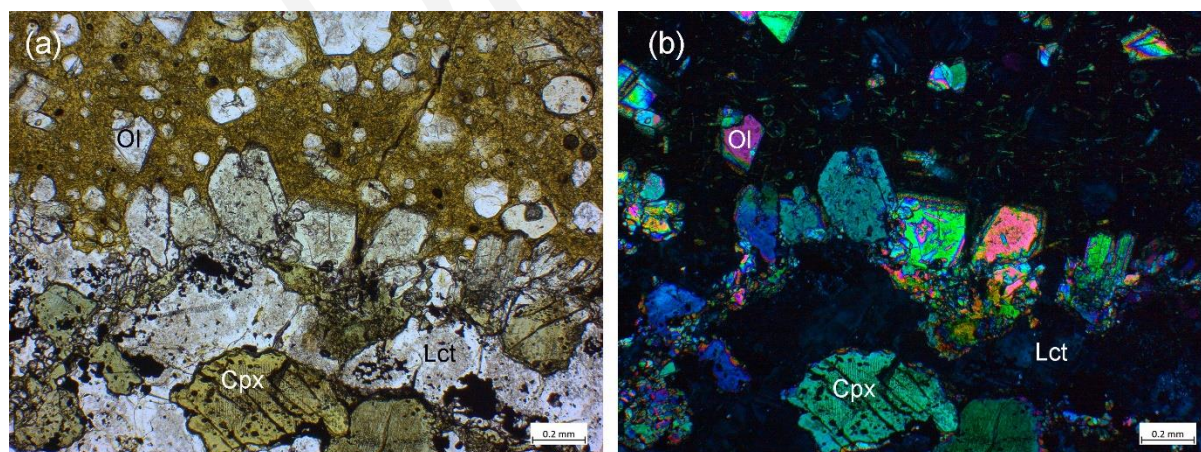


Figure 2: Coarse-grained cognate xenolith in glassy lamproite lava. (a) plane polarised light; (b) cross polarised light. The cognate xenolith (lower half of photograph) contains medium to coarse grained anhedral crystals of green to pale yellow aegirine augite, colourless leucite with low birefringence and minor small grains of high relief very pale green to colourless olivine. The lamproite host (upper part of photograph) has a vitrophyric texture with phenocrysts of olivine and leucite set in a glassy groundmass. Sample KDC-59.

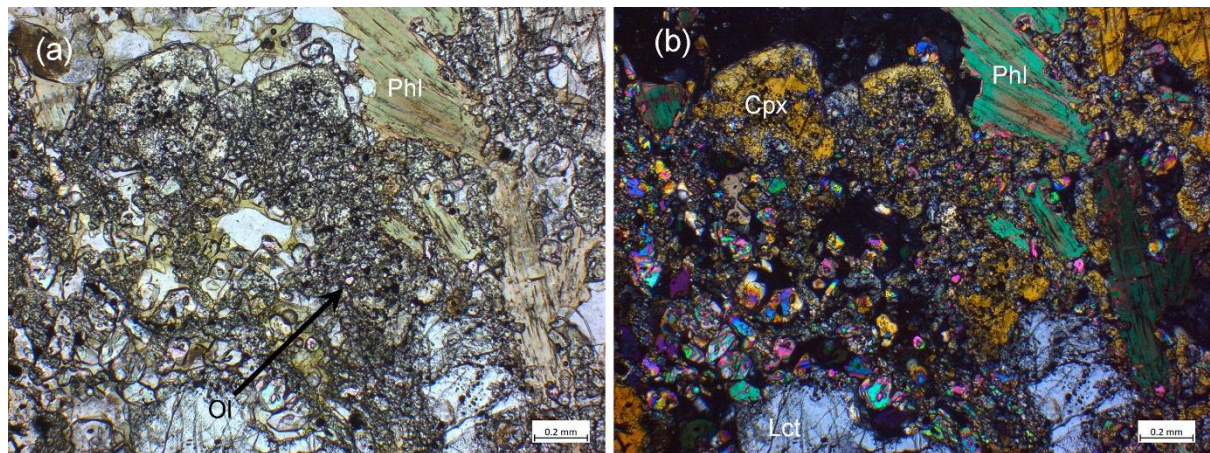


Figure 3: Coarse-grained cognate xenolith. (a) plane polarised light; (b) cross polarised light. The cognate xenolith contains large elongate flakes of pale green to pale brown phlogopite, medium to coarse grained anhedral crystals of pale green aegirine augite to aegirine, colourless leucite with anomalous birefringence, and minor small grains of high relief very pale green to colourless olivine. Sample KDC-68.

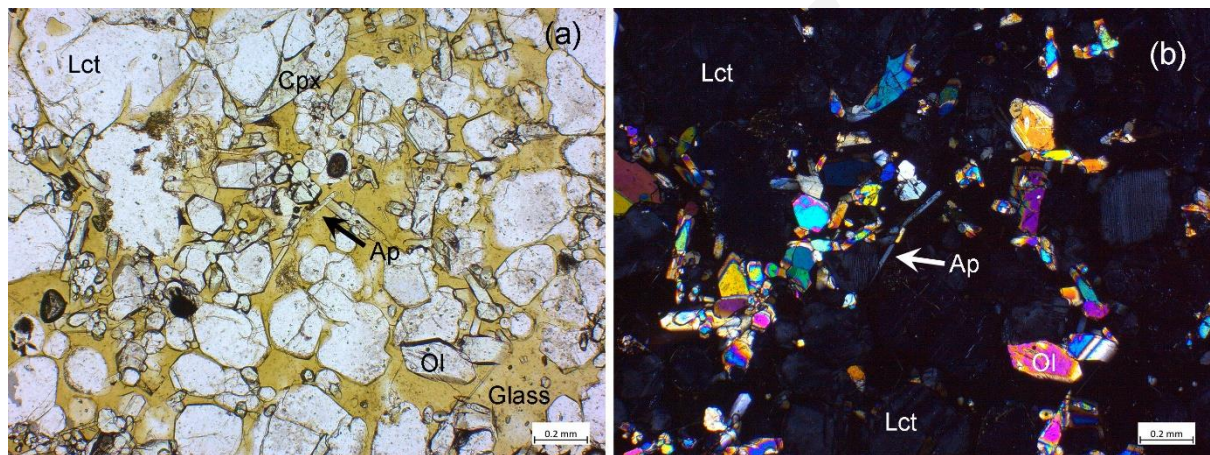


Figure 4: Coarse-grained cognate xenolith (a) plane polarised light (b) Cross polarised light. The glassy-matrixed cognate xenolith contains medium to coarse grained euhedral crystals of colourless leucite with low birefringence, small euhedral crystals of colourless olivine, lenticular needles of apatite, and pale green aegirine augite. Sample KDC-66.

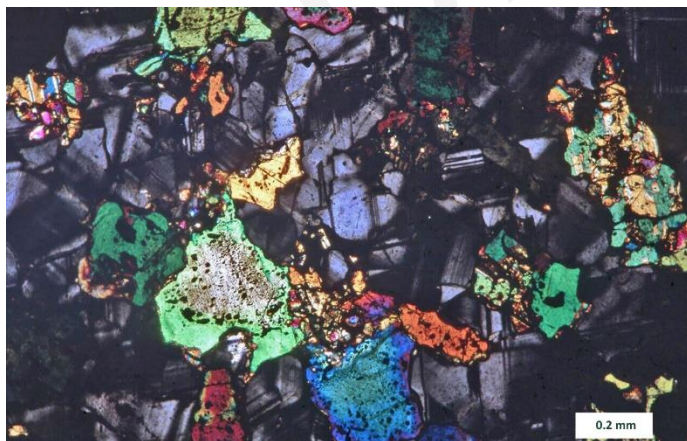


Figure 5. Photomicrograph of a cognate enclave in lamproite. The enclave is formed of abundant leucite (grey, with polysynthetic twinning) and clinopyroxene. Crossed polarised light. Sample KDC-59.