

Annotation for Supplementary Material 1:

0-2s: The inspection loop passes over plagioclase with high LREE observed in the CI normalised REE pattern to the right of the screen, as well as a strong Eu anomaly.

2-6s: The inspection loop moves from plagioclase to olivine with a gradual transition seen in the resulting REE pattern both in terms of LREE enrichment and Eu anomaly until it reaches a minima at the centre of the olivine grain.

6-11s: The inspection loop moves from the core to the rim on the opposite side of the olivine, with a simultaneous increase in the LREE and Eu anomaly as the area under inspection nears the boundary with plagioclase.