

S1 EPMA

Table S1.1: Analytical conditions for EPMA measurements of natural plagioclase crystals and synthetic glasses.

| Element | Standard material | Conditions | Beam size [μm] | Crystal | Peak time [s] | Background time [s] |
|----------------|--|--------------|-----------------------------|---------|---------------|---------------------|
| <i>crystal</i> | | | | | | |
| Si | PB-Albite | 15 nA, 15 kV | 5 | TAP | 20 | 10 |
| Al | CaAl ₂ Si ₂ O ₈ | 15 nA, 15 kV | 5 | TAP | 20 | 10 |
| Na | PB-Albite | 15 nA, 15 kV | 5 | TAPL | 10 | 5 |
| Mg | (Mg,Fe) ₂ SiO ₄ | 15 nA, 15 kV | 5 | TAPL | 40 | 20 |
| Ti | TiO ₂ | 15 nA, 15 kV | 5 | PETL | 20 | 10 |
| Cr | Chromite, NMNH117075 | 15 nA, 15 kV | 5 | PETL | 20 | 10 |
| Fe | Fe ₂ O ₃ | 15 nA, 15 kV | 5 | LIFH | 20 | 10 |
| Mn | MnO | 15 nA, 15 kV | 5 | LIFH | 20 | 10 |
| K | KAlSi ₃ O ₈ | 15 nA, 15 kV | 5 | PETH | 10 | 5 |
| Ca | CaAl ₂ Si ₂ O ₈ | 15 nA, 15 kV | 5 | PETH | 20 | 10 |
| <i>glass</i> | | | | | | |
| Si | SiFeMgCa_K411* | 10 nA, 15 kV | 12 | TAP | 20 | 10 |
| Al | Al_MORB1-3* | 10 nA, 15 kV | 12 | TAP | 20 | 10 |
| Na | NaCr_MORB6* | 10 nA, 15 kV | 12 | TAPL | 10 | 5 |
| Mg | SiFeMgCa_K411 | 10 nA, 15 kV | 12 | TAPL | 20 | 10 |
| Ti | TiO ₂ | 10 nA, 15 kV | 12 | PETL | 20 | 10 |
| Cr | Chromite, NMNH117075 | 10 nA, 15 kV | 12 | PETL | 20 | 10 |
| Fe | SiFeMgCa_K411 | 10 nA, 15 kV | 12 | LIFH | 20 | 10 |
| Mn | MnO | 10 nA, 15 kV | 12 | LIFH | 20 | 10 |
| K | K_mm3* | 10 nA, 15 kV | 12 | PETH | 20 | 10 |
| Ca | SiFeMgCa_K411 | 10 nA, 15 kV | 12 | PETH | 20 | 10 |

* In-house standard glasses