

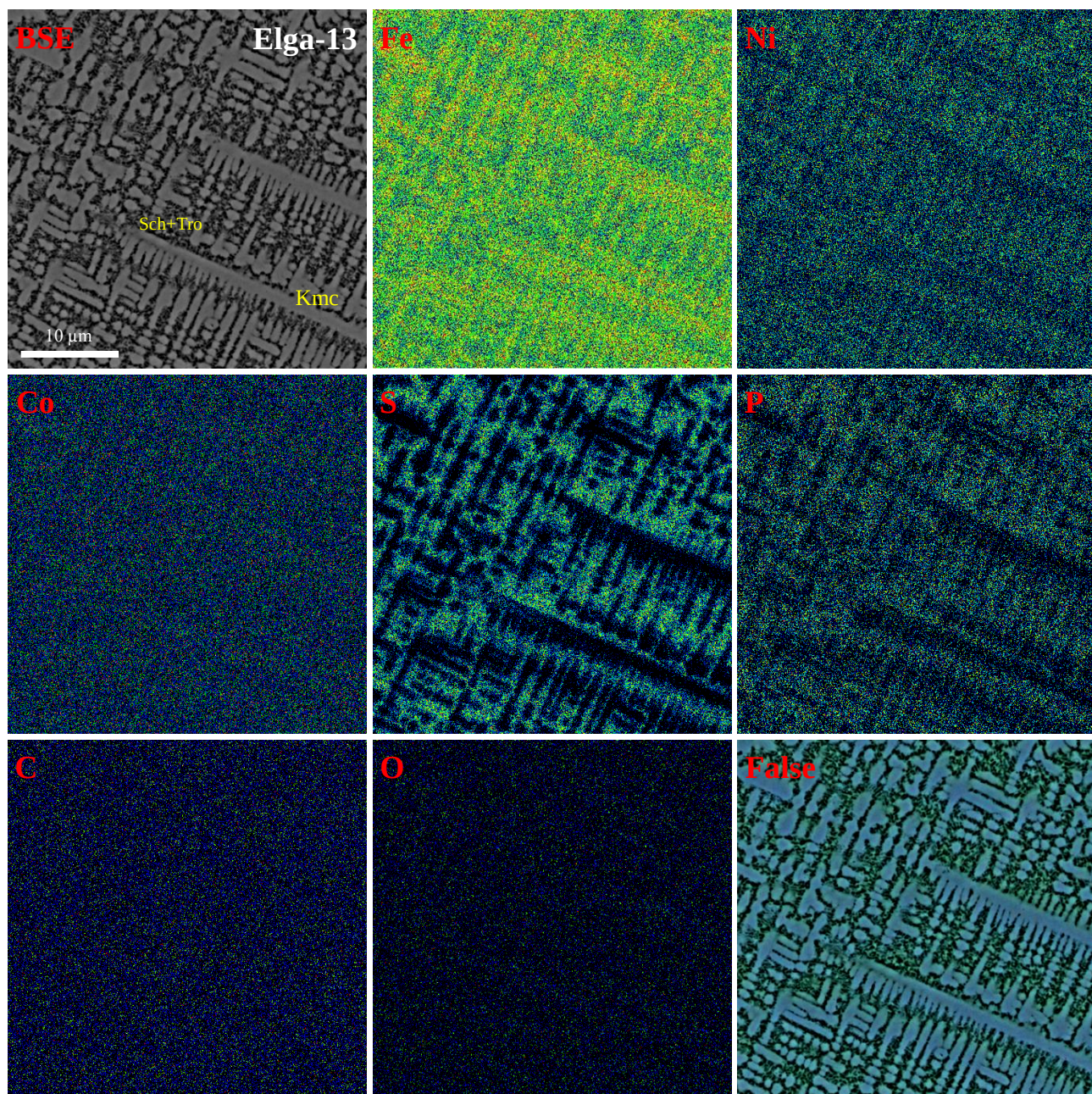


Figure S1. Elemental maps for the area of local impact melting and further quenching in the Elga metal (see also Figure 3). Sch – schreibersite; Tro – troilite; Kmc – kamacite.

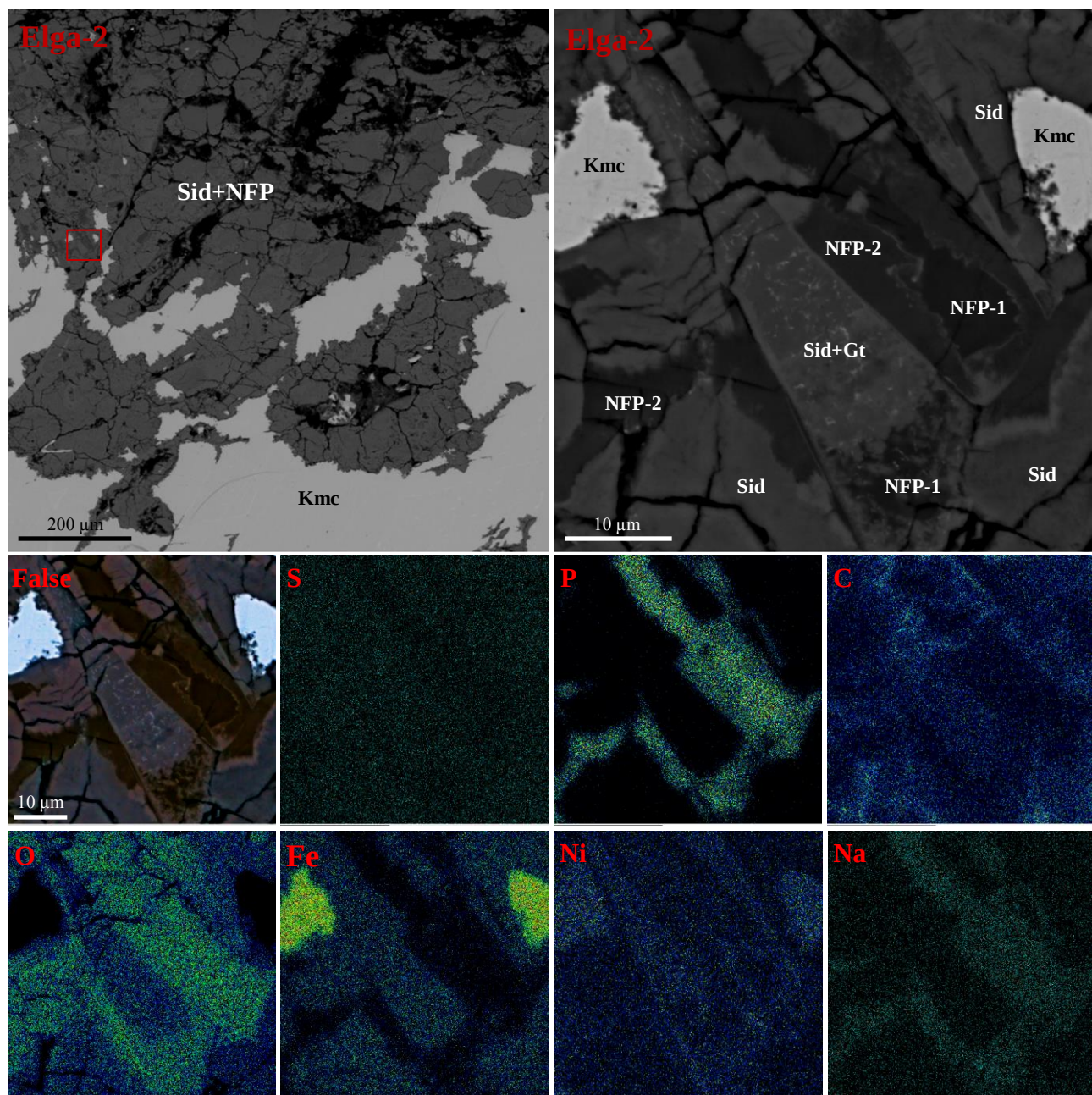


Figure S2. BSE images and elemental maps for the area of surface alteration, Elga meteorite (see position in Figure 2). Kmc – kamacite; Sid – siderite; Gt – goethite and other Fe-oxides or hydroxides; NFP-1,-2 - hydrated Na-rich Fe-phosphates (vivianite ?) of different composition.

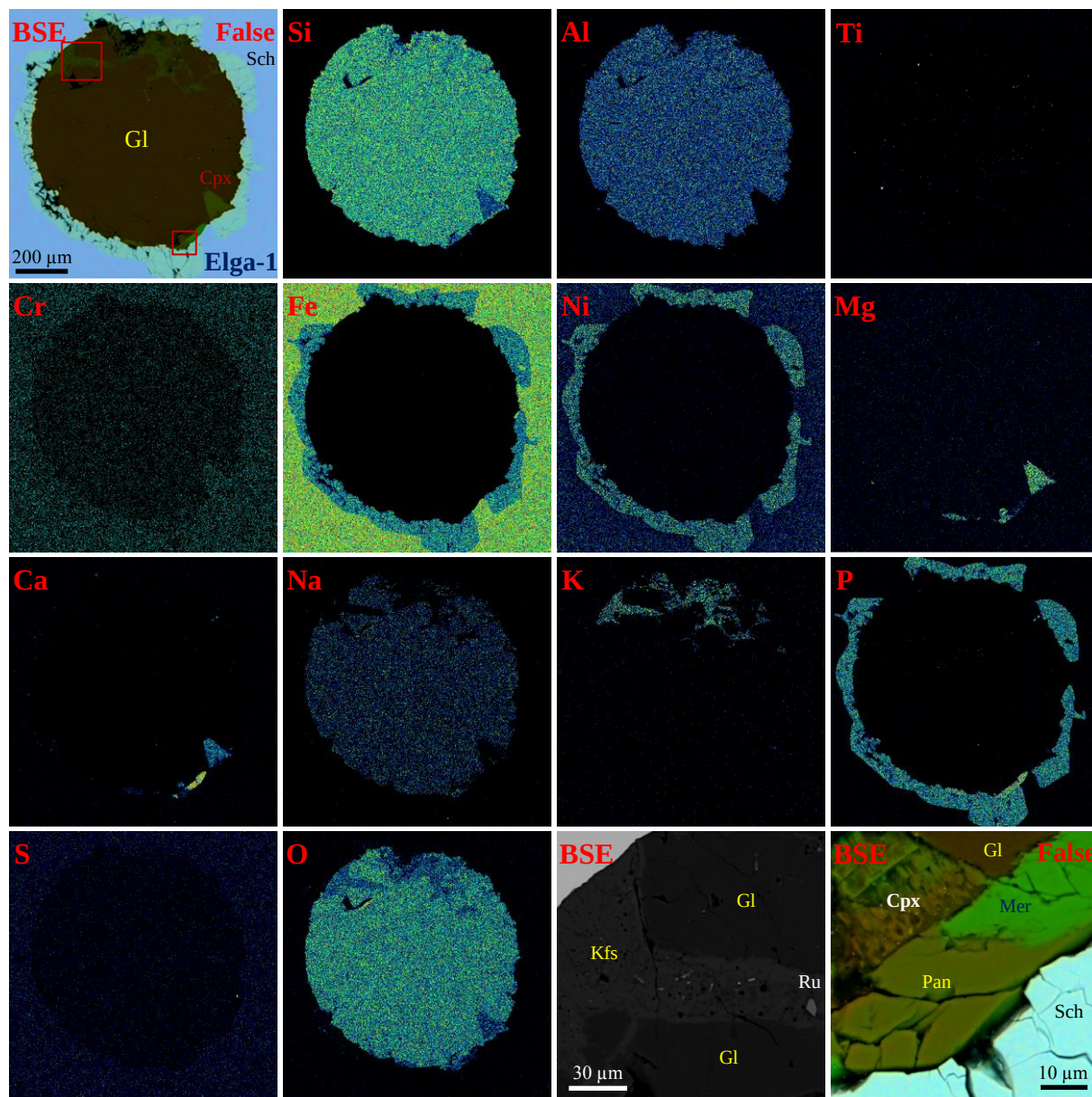


Figure S3. BSE images and elemental maps for silicate inclusion Elga-1 (see position in Figure 2). Gl – siliceous glass; Sch – schreibersite; Kfs – K-feldspar; Ru – rutile; Cpx – diopsidic clinopyroxene; Mer – merrillite; Pan – panethite.

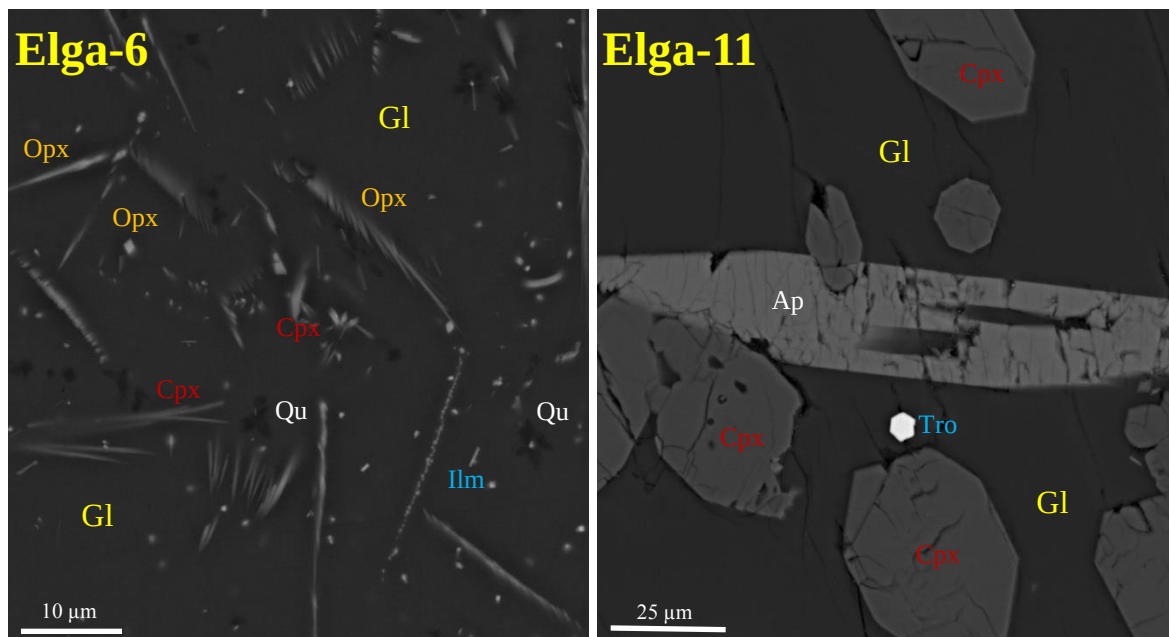


Figure S4. BSE images for areas in silicate inclusions Elga-6 and Elga-11 (see position in Figure 2). Gl – siliceous glass; Cpx – diopsidic clinopyroxene; Opx – enstatite; Qu – quartz; Ilm – ilmenite; Tro – troilite; Ap – fluorapatite.

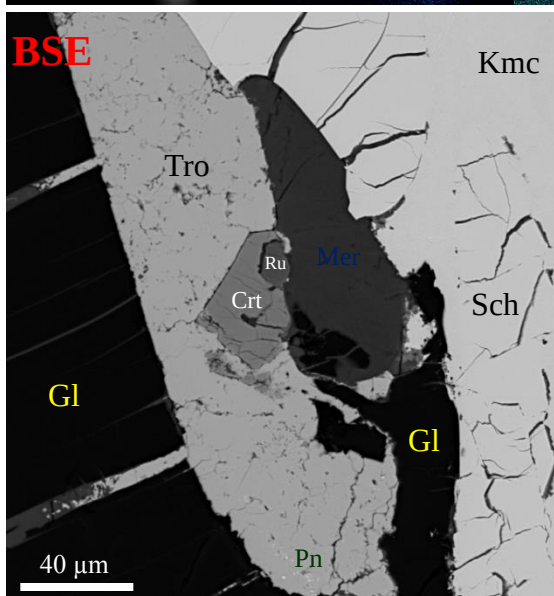
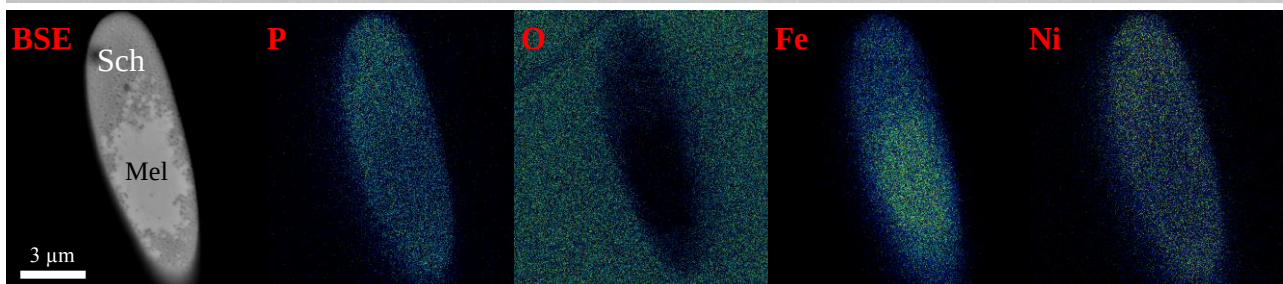
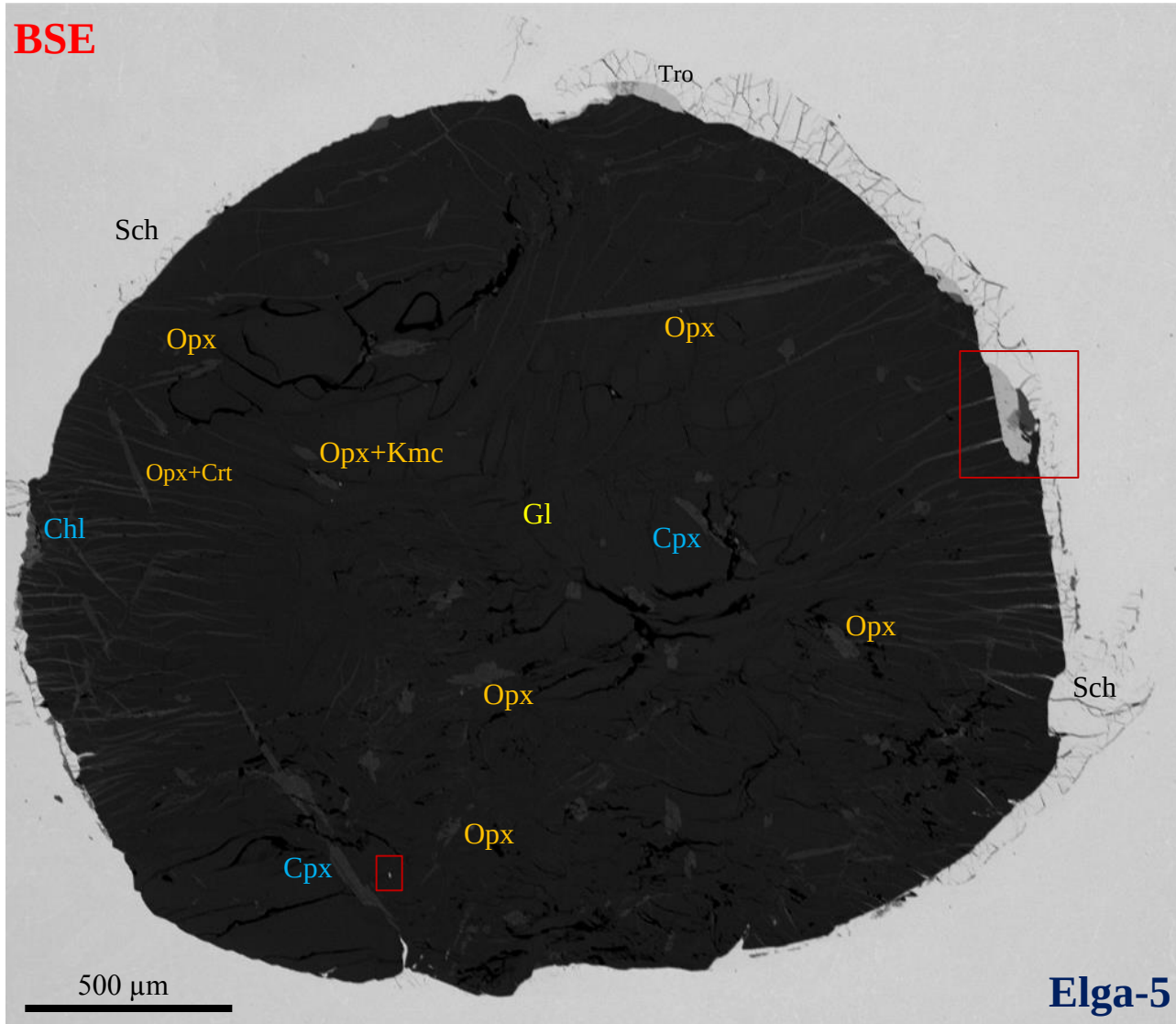
BSE

Figure S5. BSE images and elemental maps for silicate inclusion Elga-5 (see position in Figure 2). Gl – siliceous glass; Cpx – diopsidic clinopyroxene; Opx – enstatite; Sch – schreibersite; Mel – Fe-analog of mellinite; Mer – merrillite; Ru – rutile; Crt – chromite; Tro – troilite; Kmc – kamacite; Pn – pentlandite.

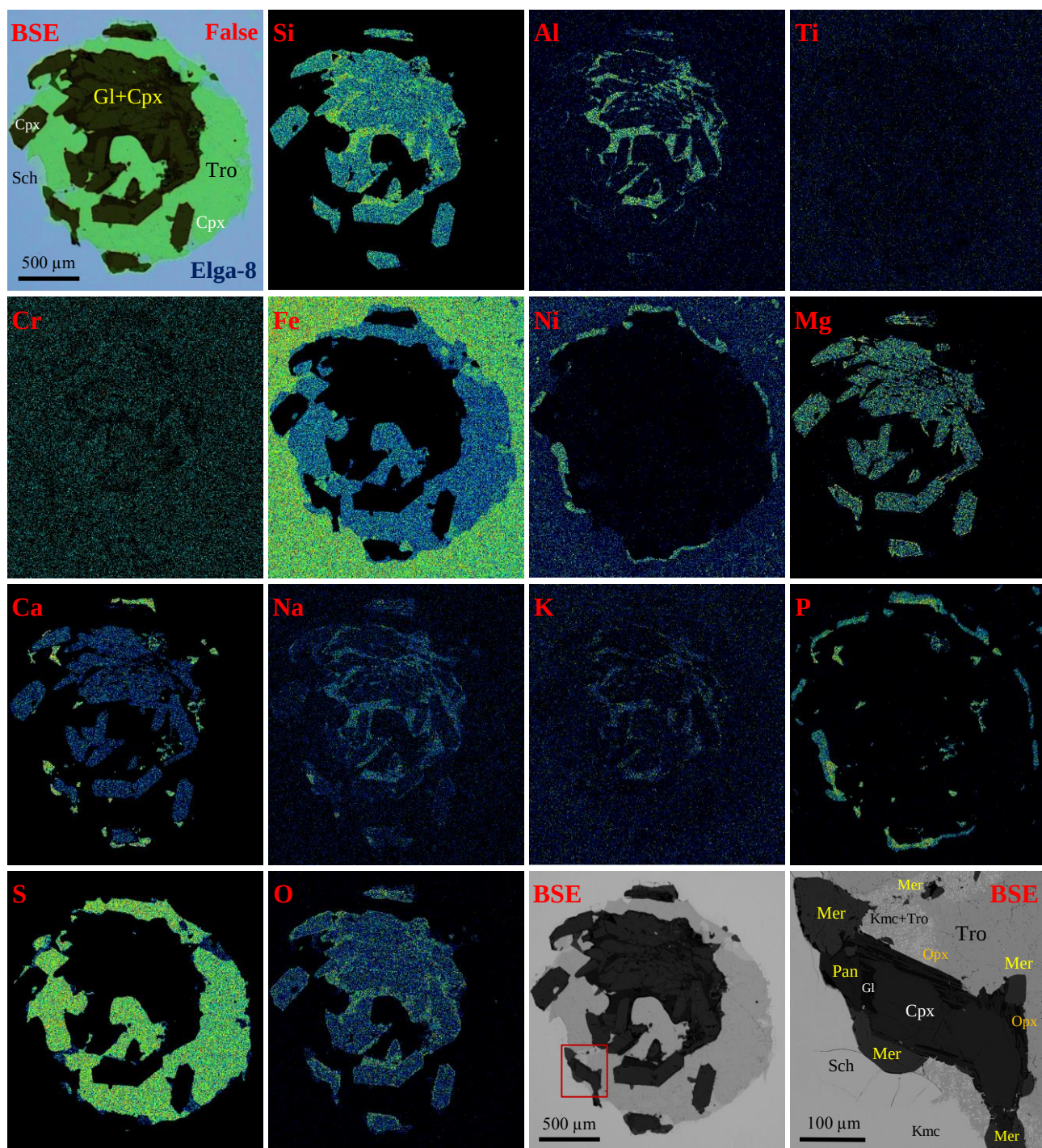


Figure S6. BSE images and elemental maps for silicate inclusion Elga-8 enriched in troilite (see position in Figure 2). Gl – siliceous glass; Sch – schreibersite; Cpx – diopsidic clinopyroxene; Opx – enstatite; Mer – merrillite; Pan – panethite; Tro – troilite; Kmc – kamacite..

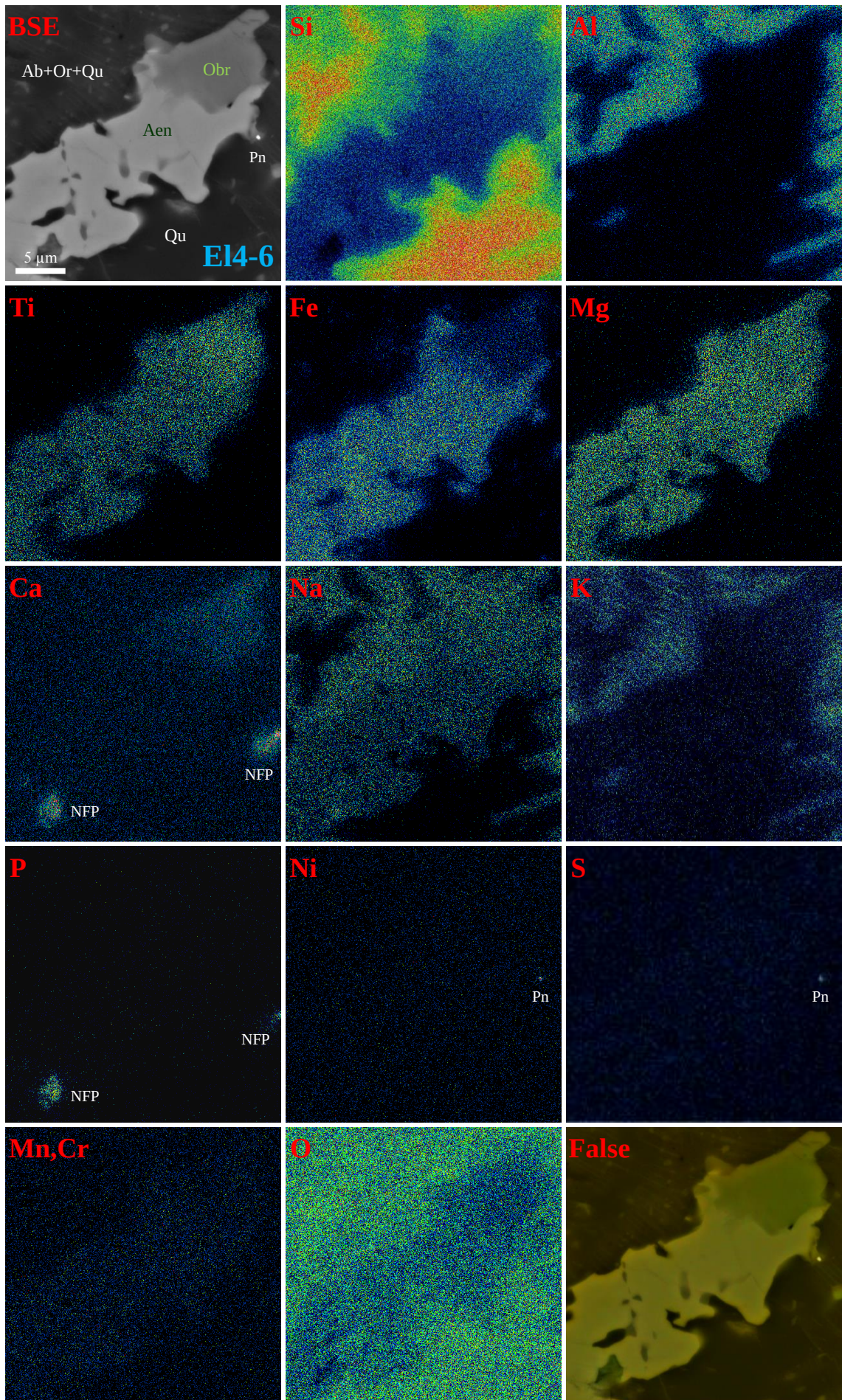


Figure S7. Relationships of the obertiite-group mineral and aenigmatite in silicate part of immiscible inclusion Elga-4 (BSE image and elemental maps, see position in Figures 4 and 6). Symbols: Ab – albite; Or – K-feldspar; Qu – quartz; Obr – mineral of the obertiite subgroup; Aen – mineral of the aenigmatite subgroup; NFP – hydrated Na-Fe-phosphate (vivianite ?); Pn – pentlandite.

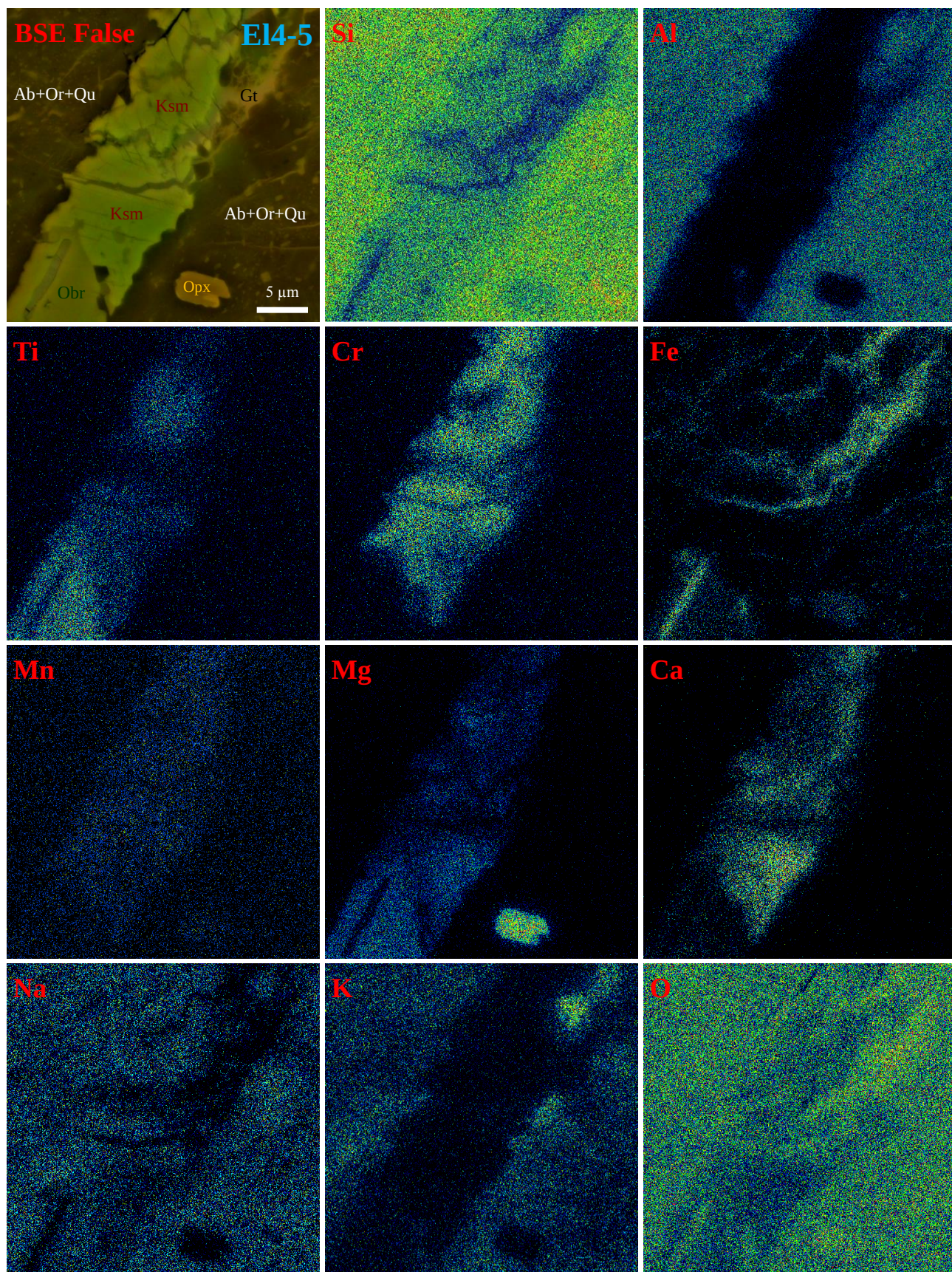


Figure S8. Relationships of minerals in silicate part of immiscible inclusion Elga-4 (BSE image and elemental maps, see position in Figures 4 and 6). Symbols: Ab – albite; Or – K-feldspar; Qu – quartz; Obr – mineral of the obertiite subgroup; Opx – enstatite; Gt – goethite; Ksm – clinopyroxene of the diopside $\text{Ca}(\text{Mg,Fe})\text{Si}_2\text{O}_6$ – kosmochlor $\text{NaCrSi}_2\text{O}_6$ - $\text{Na}(\text{Mg,Fe})_{0.5}\text{Ti}_{0.5}\text{Si}_2\text{O}_6$ series .

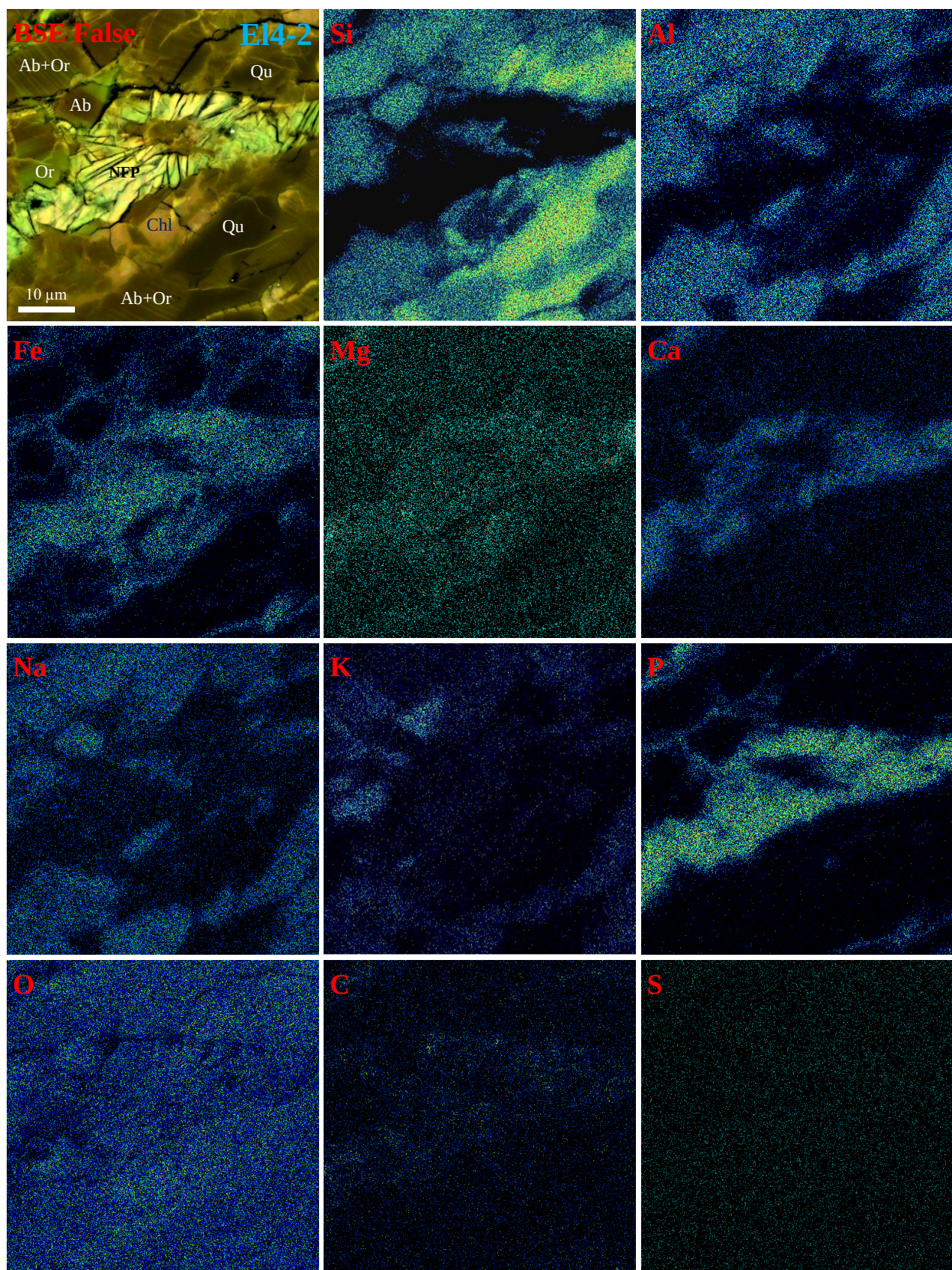


Figure S9. BSE image and elemental maps for secondary phases from immiscible inclusion Elga-4 (see position in Figure 4). Symbols: Ab – albite; Or – K-feldspar; Qu – quartz; NFP – hydrated Na-Fe-phosphate (vivianite ?); Chl – Fe-rich chlorite.

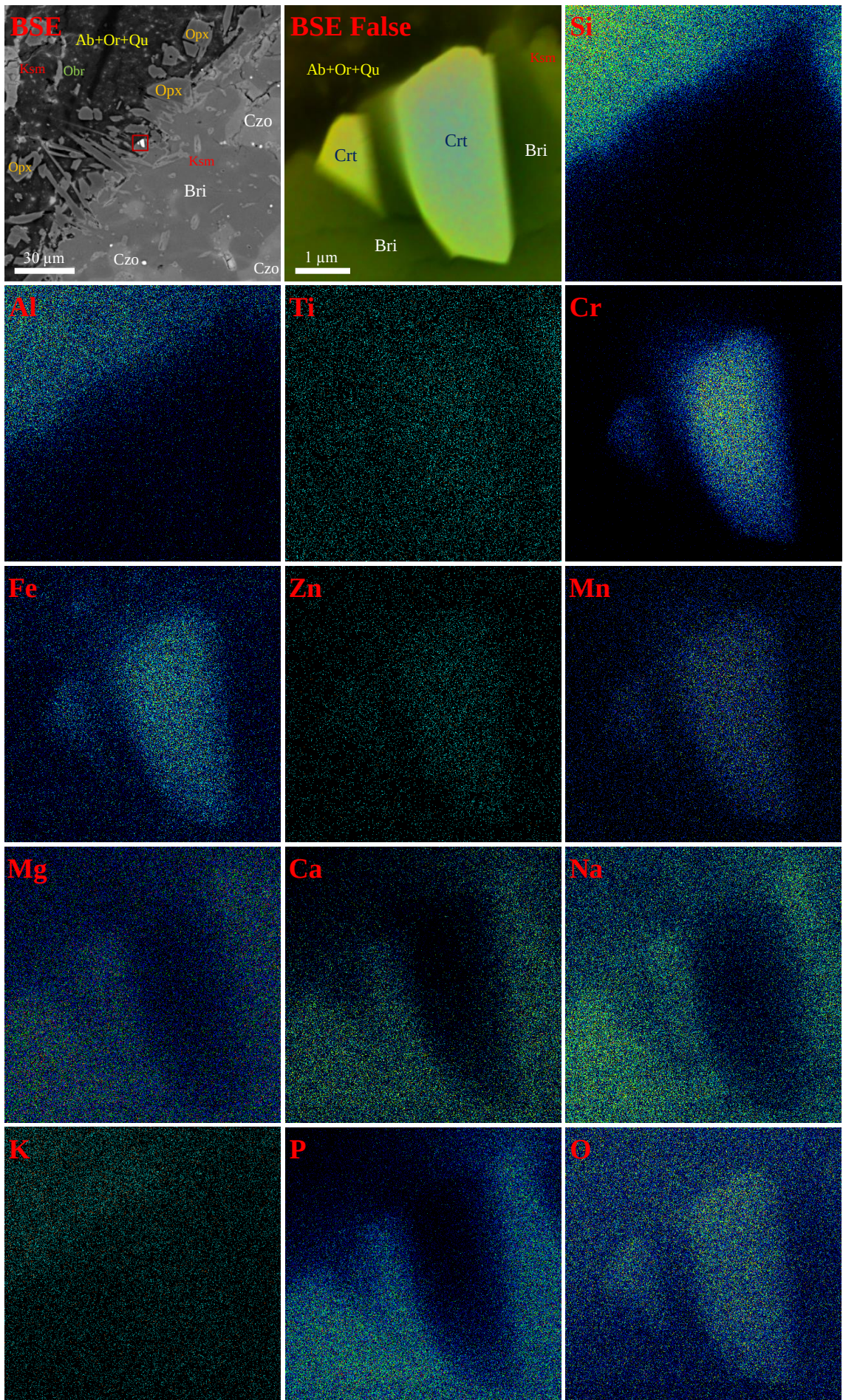


Figure S10. BSE images and elemental maps for chromite and related minerals on the contact between silicate and natrophosphate parts of immiscible inclusion Elga-4 (see position in Figures 4 and 9). Symbols: Ab – albite; Or – K-feldspar; Qu – quartz; Obr – mineral of the obertiite subgroup; Opx – enstatite; Ksm – clinopyroxene of the diopside – kosmochlor - $\text{Na}(\text{Mg,Fe})_{0.5}\text{Ti}_{0.5}\text{Si}_2\text{O}_6$ series; Bri – brianite; Czo – czocharlskiite; Crt – chromite.

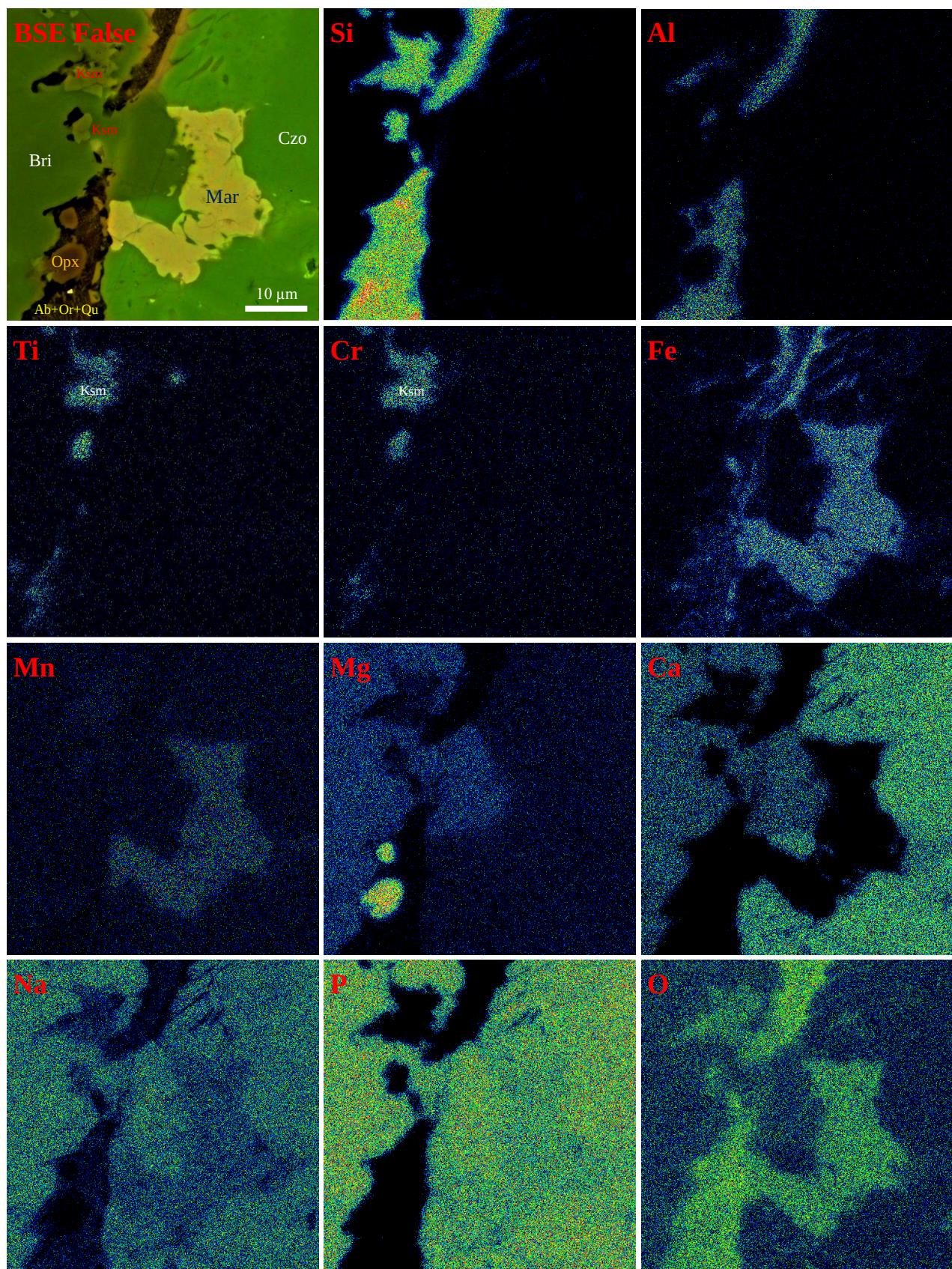


Figure S11. Relationships of minerals in natrophosphate globule of immiscible inclusion Elga-4 (BSE image and elemental maps, see position in Figures 4 and 9). Symbols: Ab – albite; Or – K-feldspar; Qu – quartz; Opx – enstatite; Ksm – clinopyroxene of the diopside – kosmochlor - $\text{Na}(\text{Mg,Fe})_{0.5}\text{Ti}_{0.5}\text{Si}_2\text{O}_6$ series; Bri – brianite; Czo – zochralskiite; Mar – maricite.

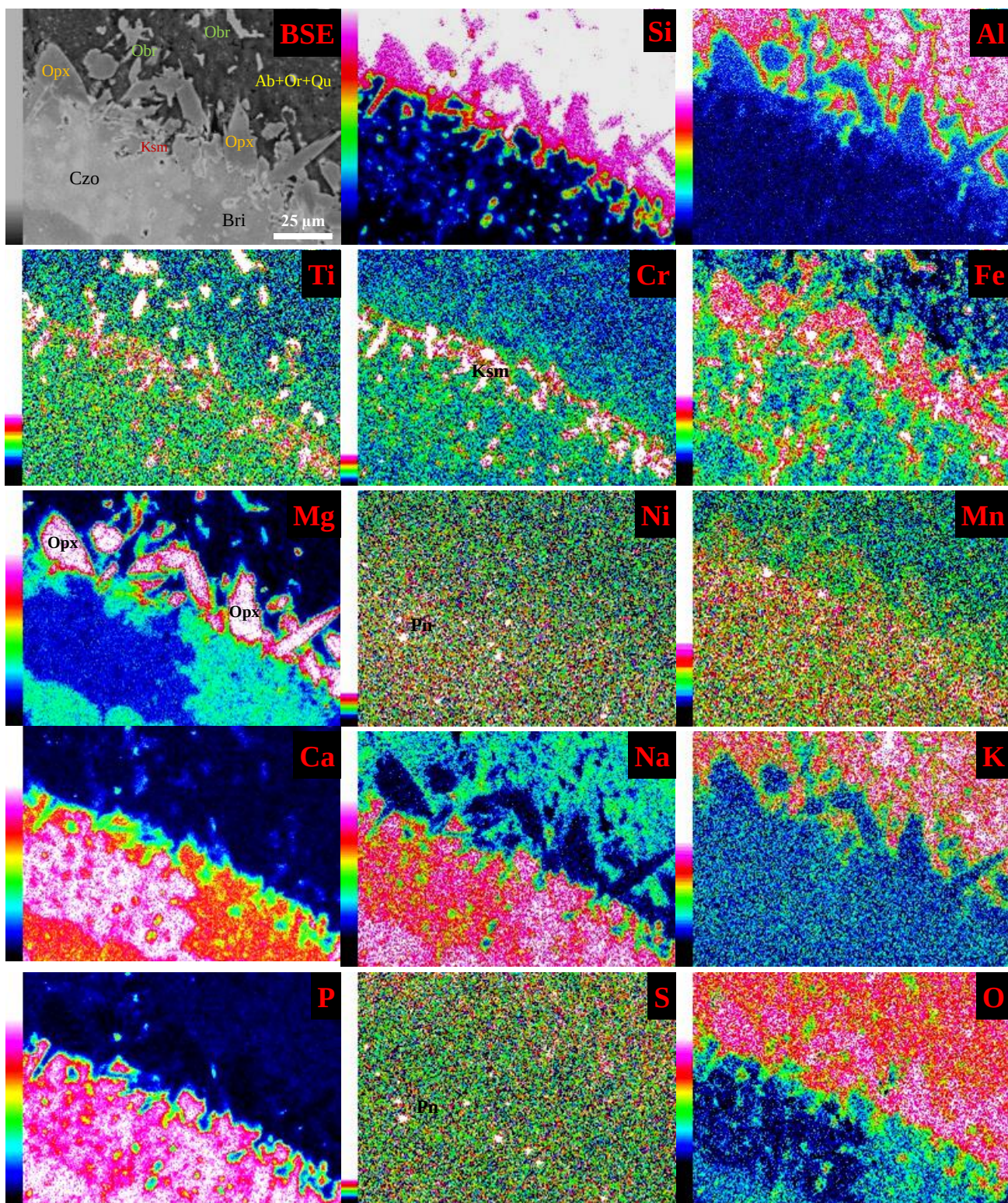


Figure S12. BSE image and elemental maps for the silicate-natrophosphate contact in the immiscible inclusion Elga-4 (see position in Figures 5 and 7). Symbols: Ab – albite; Or – K-feldspar; Qu – quartz; Opx – enstatite; Ksm – clinopyroxene of the diopside – kosmochlor - $\text{Na}(\text{Mg,Fe})_{0.5}\text{Ti}_{0.5}\text{Si}_2\text{O}_6$ series; Obr – mineral of the obertiite subgroup; Bri – brianite; Czo – czocharalskiite; Pn – pentlandite.

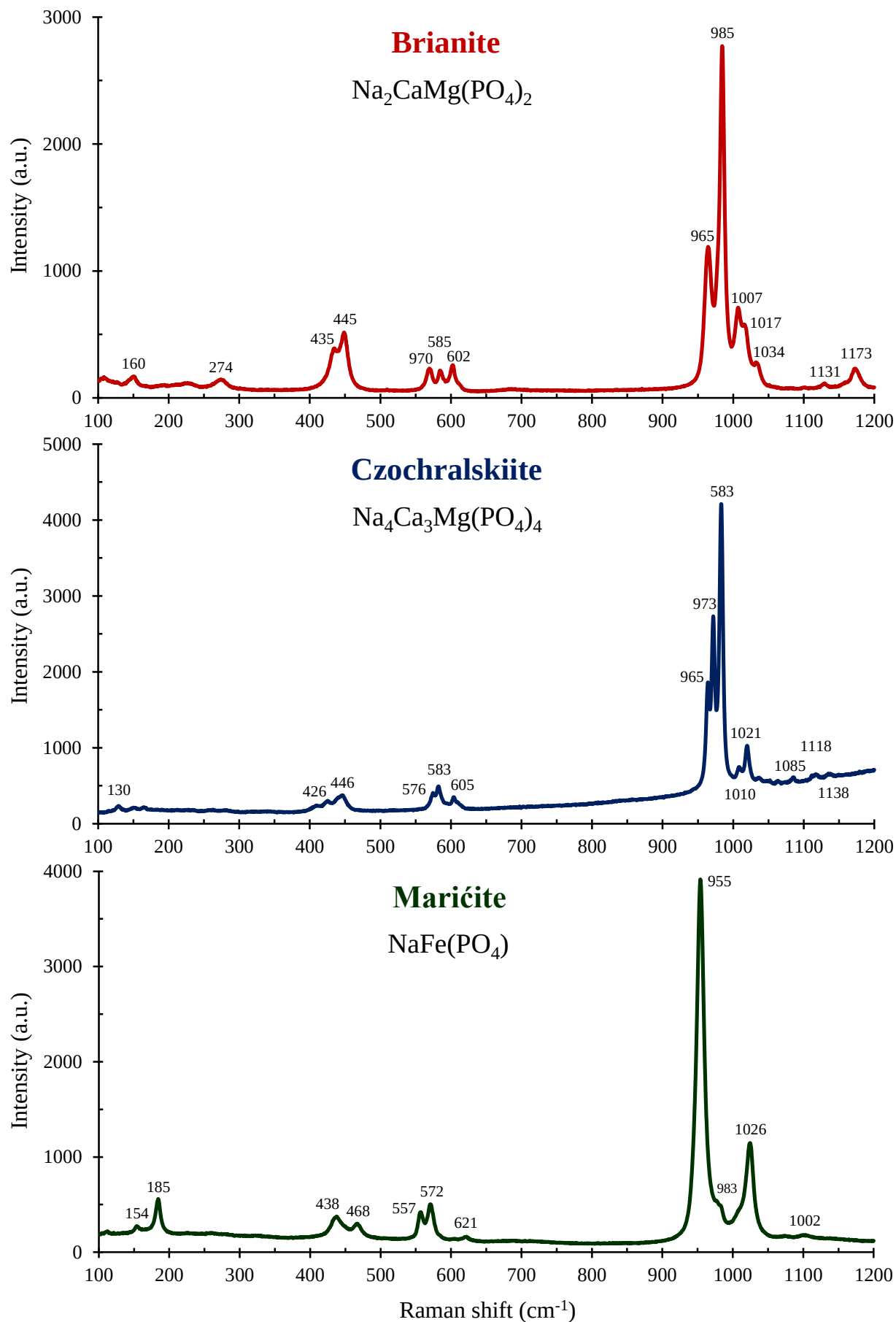


Figure S13. Raman spectra of Na-rich orthophosphates from natrophosphate globule in the Elga-4 immiscible inclusion (see position in Figures 9).

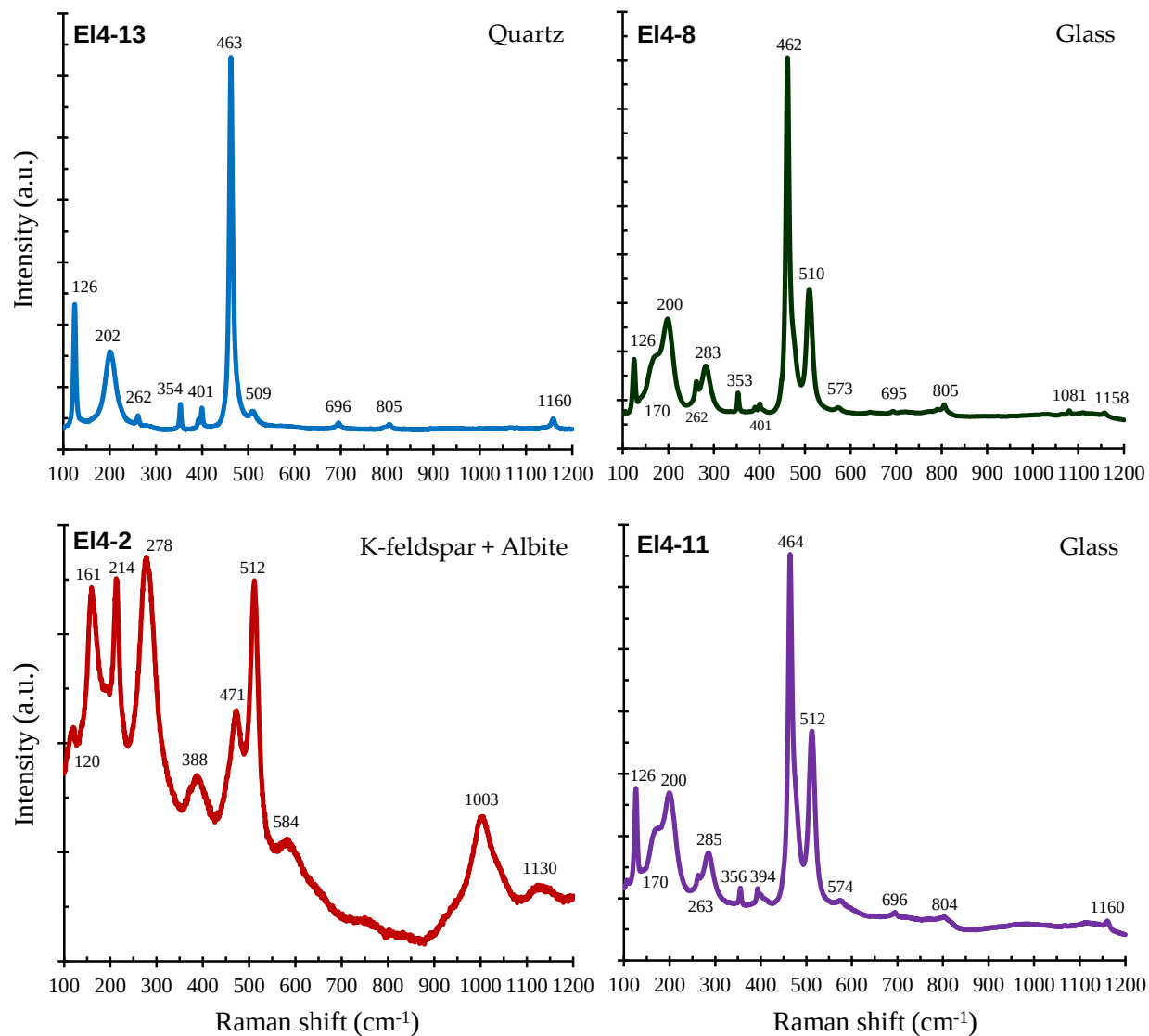


Figure S14. Raman spectra of quartz, glasses and feldspars from the Elga-4 immiscible inclusion.