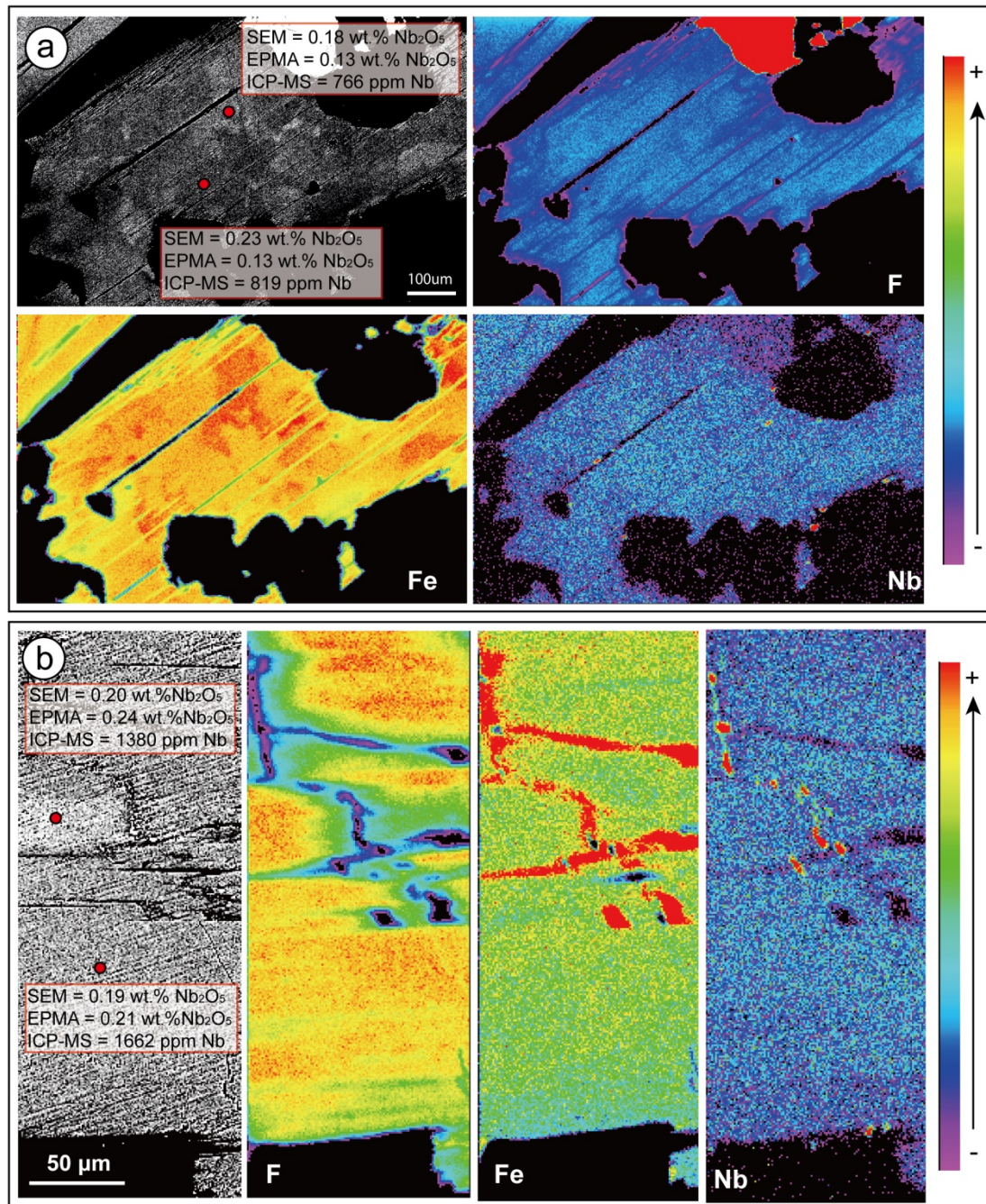


# SUPPLEMENTAL



**Supplemental Figure 1.** BSE images and X-ray compositional maps of F, Fe, Nb both in “protolithionite” from Huangshan MP granite (a) and lithian annite from MA granite (b). X-ray maps are qualitative and the content of each element increases with the color varying from purple to red. Nb contents measured by SEM, EPMA and LA-ICP-MS in micas from both granites are presented for comparison.