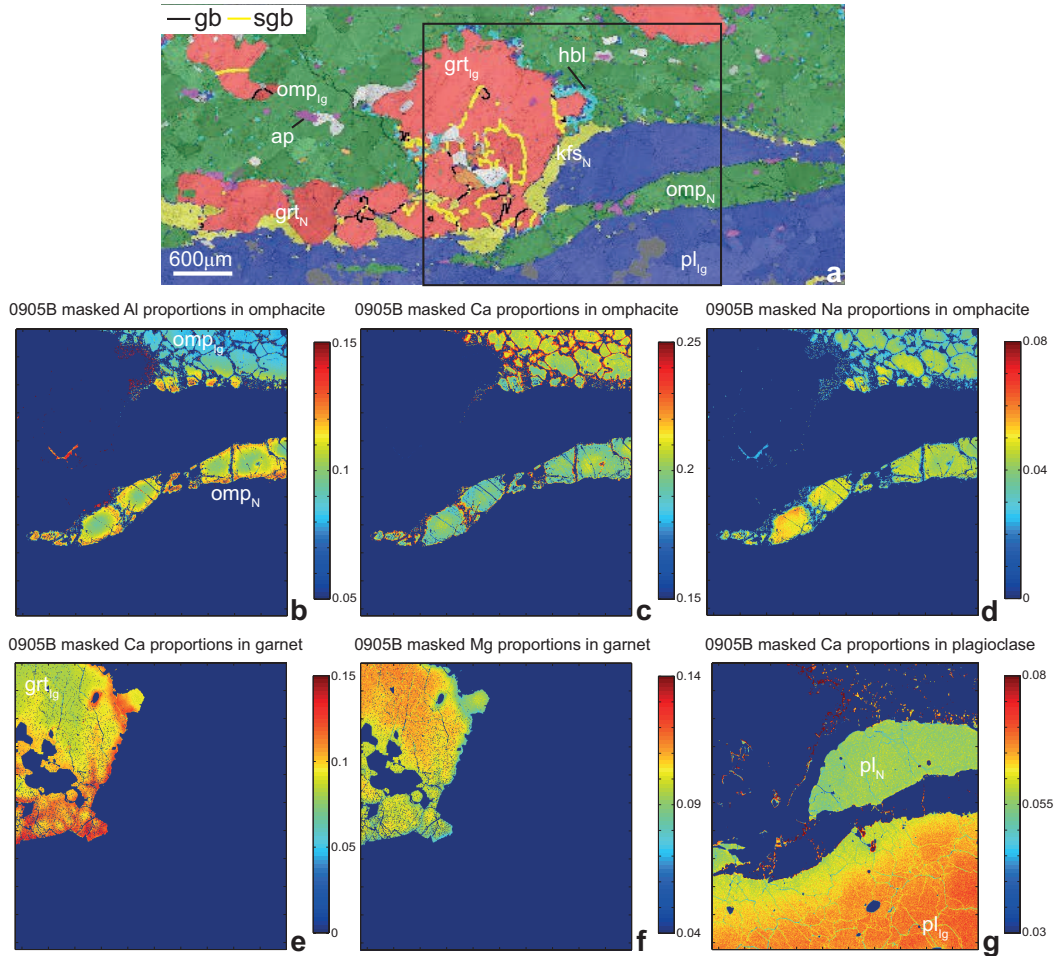


SUPPLEMENTARY FIGURE 1. Lower hemisphere pole figures displaying clinopyroxene CPO (one point per grain) for cumulate clinopyroxenite and eclogite in the Breaksea Orthogneiss. MUD refers to maximum mean uniform distribution values and n is the number of grains.



SUPPLEMENTARY FIGURE 2. WDS X-ray maps from intermediate-strain monzodioritic gneiss (0905B) (**a**) phase map with grain boundaries in black and subgrain boundaries in yellow of Al (**b**), Ca (**c**), and Na (**d**) proportions in omphacite, Ca (**e**) and Mg (**f**) proportions in garnet and Ca proportions in plagioclase (**g**). Zoning in omphacite overprints all grains. Garnet zoning is asymmetrical towards mineral boundaries with plagioclase. Plagioclase albite content is zoned towards omphacite. Image size is ca. 2 × 2 cm.