**Figure 6a, b.** 6a) V436B, photomicrograph a garnet porphyroblast from the graphitic garnet-muscovite schist from the Cram Hill Formation. Photomicrograph taken from vertical thin section striking 090°E. Inclusion trails in garnet cores are dominated by quartz and inclusions trails in the rims are dominated by graphite. The matrix contains a strongly developed cleavage comprised dominantly of muscovite that has been overgrown by late biotite and chlorite. Garnet rims also contain numerous euhedral bands of graphite 6b) Interpreted line diagram for the porphyroblast showing form lines representing inclusion trail geometry and matrix foliations for grain in figure 6a. Garnet core contains FIA set 3 and garnet rim contains FIA set 4.
Figure 7. V634A X-ray maps showing compositional zoning for Ca, Mg, Mn. Al compositional map most clearly shows change in mineralogy with oblique chloritoid grain in the core and staurolite at the rims. Chloritoid has Al content intermediate between garnet and staurolite and slightly higher than muscovite. Musc1 refers to an early muscovite preserved in a crenulation cleavage in the strain shadows around garnet porphyroblast and musc2 refers to a later muscovite that defines the differentiated crenulation cleavage in the matrix.
Figure 8. V240 X-ray maps showing compositional zoning for Ca, Mg, Mn and Al showing mineralogy for part of a garnet porphyroblast. Inclusions with highest Al (orange-red) are staurolite and the other high Al (yellow-green) inclusions are mostly chloritoid. Two important features to this set of X-ray maps are the sharp shift in chloritoid compositions towards the core and band of high Mn garnet at the core rim boundary.
Figure 9. V240, high-resolution compositional map for Ca, Mg, Mn and Al at the garnet core/rim interface. A zone of irregular high Mn content is apparent at the outer edges of the garnet core. Staurolite and chloritoid inclusion can readily be identified in the Al map as they have quite distinct Al contents. Also note the shift in chloritoid compositions to higher Mg in the Mg map.
Figure 10. V436B X-ray maps showing compositional zoning for Ca, Mg, Mn. Zoning patterns for Mn and Mg show patterns consistent with prograde growth. Ca maps indicate a complex growth history with several reversals in Ca content.