

FIGURE 1. Crystal structure of the CaAl $_4$ Si $_2$ O $_{11}$ (CAS) phase (a), and the spinel-like sheet of edge-sharing octahedra in the structure (Gautron et al. 1999). The two types of octahedral sites are labeled as M1 and M2, and the face-sharing tetrahedral site is labeled as T. Large spheres represent Ca atoms, small spheres represent oxygen atoms, and the others are Si and/or Al atoms. Boxes delineate the unit-cell dimension. Drawings have been produced with VESTA (Momma and Izumi 2008).