

Supplementary material

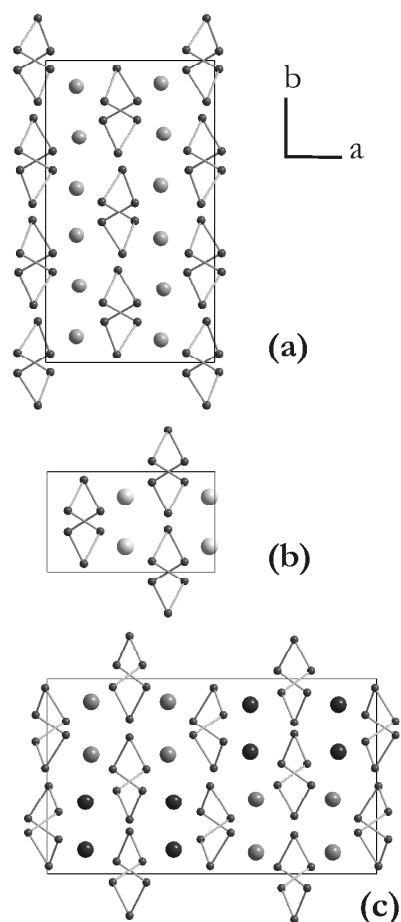


Fig. S1: Illustration of the superstructure of (a) $\text{Lu}(\text{PO}_3)_3$ and (c) $\text{Gd}(\text{PO}_3)_3$ relative to the basic structure unit cell of β -Y(PO_3)₃ (b); the oxygen atoms have been omitted for clarity and the phosphorus atoms have been connected by fictitious lines to visualise the connectivity of the tetrahedron centres (taken from H. A. Höppe, S. Sedlmaier, *Inorg. Chem.* **2007**, *46*, 3467–3474).