

## **Lanthanide tetrads in normalized rare element patterns of zircon from the Koktokay No. 3 granitic pegmatite, Altay, NW China**

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### **ABSTRACT**

Individual crystals of zircon, from the Koktokay No. 3 granitic pegmatite vein, are variably altered and consist of three types of domains distinguished on the basis of textures and compositions. The pristine domains possess normal chondrite-normalized rare earth element (REE) patterns. Domains affected by metamictization are enriched in U and Th. The presence of abundant fractures, dense pores, and the enrichments of non-formula elements imply that these metamict domains have been altered by a later hydrothermal fluid. Tetrads observed in these altered domains are likely to have been generated by this alteration event.

**Keywords:** Zircon, REE tetrads, alteration, pegmatite, Altay