



OVERVIEW

This study follows two previous investigations, in which the crystal chemistry (Lussier et al. 2011) and the variations of major chemical constituents (Lussier & Hawthorne 2011) were thoroughly characterized. Here, the variations of trace elements (TEs) are systematically investigated. A thorough survey of potential elements (48 in total) by LA-ICP-MS confirmed the occurrence of 26 elements with mean abundances above limits of detection.

STUDY SAMPLE AND PREVIOUS WORK





FIGURE 1: (a) LIDDICOATITE SLAB (001); OZs IN (b) PYRAMIDAL AND (c) PRISMATIC SECTORS.



The occupants of the *T*-, *B*-, and *Z*-sites remain invariant throughout the whole crystal.

OSCILLATORY ZONED LIDDICOATITE FROM ANJANABONOINA, **CENTRAL MADAGASCAR: TRACE ELEMENT PATTERNS**

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Two substitution mechanisms operate:

$$\begin{array}{l} \begin{bmatrix} 1 \end{bmatrix} X Na + Y Fe^* \leftrightarrow X Ca + Y Li \\ \hline \begin{bmatrix} 2 \end{bmatrix} Y Fe^* \leftrightarrow Y Li + Y AI \end{array}$$

ionic radii of TEs to aggregate radii of major elements (Table 2).



Lussier et al. (2011). Can. Min. 49 : 63-88; Lussier & Hawthorne (2011) Can. Min. 49, 89-104.