

# **PGE abundance patterns for the Basement Sill and Dufek Intrusion, Ferrar Large Igneous Province, Antarctica**

S.B. MUKASA<sup>1</sup>, G. RAVIZZA<sup>2</sup>, J. BÉDARD<sup>3</sup>, T. FLEMING<sup>4</sup>, A. BOUDREAU<sup>5</sup>, B.D. MARSH<sup>6</sup> & S.H. CHOI<sup>1</sup>

(<sup>1</sup>Dept. Geological Sciences, University of Michigan, Ann Arbor, MI 48109; *mukasa@umich.edu*; <sup>2</sup>Dept. Geology & Geophysics, SOEST, University of Hawaii, Manoa, Honolulu, HI 96822; <sup>3</sup>Geological Survey of Canada, 490 de la Couronne, Québec, PQ, Canada G1K 9A9; <sup>4</sup>Dept. Earth Sciences, SCSU, New Haven, CT 06515; <sup>5</sup>Nicholas School of the Environment & Earth Sciences, Duke University, Durham, NC 27708; <sup>6</sup>Dept. Earth & Planetary Sciences, Johns Hopkins University, Baltimore, MD 21218)

The Basement Sill in the Dry Valleys of southern McMurdo Sound and the Dufek layered mafic intrusion in the Pensacola Mts. are part of the Ferrar large igneous province (FLIP), emplaced in a Paleozoic mobile belt developed adjacent to the East Antarctic Craton during the Mid Jurassic. Zircon, baddeleyite and rutile U-Pb dating shows that emplacement occurred in a short amount of time at  $184 \pm 1$  Ma [1, 2], contemporaneously with fragmentation of the supercontinent Gondwanaland.

Understanding the production of copious amounts of magma in a short time is fundamental to understanding LIPs in general. Mantle plumes provide an attractive mechanism for generating short-duration, voluminous magmas in LIPs while at the same time providing a mechanism for the often concurrent break-up of supercontinents. For the FLIP, however, we will present PGE and isotopic data that challenge the plume interpretation. Extreme depletions in Os and Ir compared to the Ru, Pt and Pd abundances are atypical of plume-derived magmas and are more consistent with the alternative view that FLIP resulted from the decompression of a fossil subduction zone along the Proto-Pacific margin of Gondwanaland, disaggregated by the rifting related to plate rearrangements during supercontinent break up.

## **References**

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