

First SHRIMP U-Pb zircon dating of granulites from the Kontum massif (Vietnam) and tectonothermal implications

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Abstract: The Kontum massif in Central Vietnam represents the largest continuous exposure of crystalline basement of the Indochina craton. The central Kontum massif is chiefly made of orthopyroxene granulites (enderbite, charnockite) and associated rocks of the Kannack complex. Mineral assemblages and geothermobarometric studies have shown that the Kannack complex has severely metamorphosed under granulite facies corresponding to P-T conditions of 800-850°C and 8 ± 1 kbars. Twenty-three SHRIMP II U-Pb analyses of eighteen zircon grains separated from a granulite sample of the Kannack complex yield ca 254 Ma, and one analysis gives ca 1400 Ma concordant age for a zoned zircon core. This result shows that granulites of the Kannack complex in the Kontum massif have formed from a high-grade granulite facies tectonothermal event of Indosinian age (Triassic). The cooling history and subsequent exhumation of the Kannack complex during Indosinian times ranged from ~850°C at ca 254 Ma to ~300°C at 242 Ma, with an average cooling rate of ~45°C/Ma. (C) 2000 Elsevier Science Ltd. All rights reserved.

Index Keywords: craton; granulite; tectonic setting; thermal evolution; Triassic; uranium series dating; Viet Nam

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