

## **The Grove Mts, a segment of a Pan-African orogenic belt in East Antarctica**

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The Grove Mts.(GM), ca. 200 km east of the southern Prince Charles Mts.(PCM), East Antarctic, comprises more than 70 nunataks. CHINARE geologically surveyed the poorly visited G M during 1998/99 season. Rock outcrops in the southern and central region are highly metamorphosed and intensely deformed. They consist mainly of felsic gneisses, mafic gneisses and a gneissic two feldspar granite, a syntectonic intrusive with a  $S_3$  foliation form surface, which was emplaced into various host gneisses during a regional high-grade deformational event.

GM was traditionally regarded as a Grenville terrane, similar with the northern PCM. SHRIMP U-Pb zircon ages obtained for a fine-grained granodiorite dyke of GM, transecting the gneisses and the syntectonic granite, are at  $501 \pm 7$  Ma and  $528 \pm 5$  Ma, the latter can be interpreted as an inherited crystallization age. SHRIMP U-Pb dating for the syntectonic intrusive gives a  $^{206}\text{Pb}/^{238}\text{U}$  age of  $534 \pm 5$  Ma. SHRIMP U-Pb analyses yields crystallization ages of metamorphic rims at  $529 \pm 14$  Ma and of inherited cores scattered around 870, 906 and 953 Ma for zircon individuals from a felsic gneiss. The new SHRIMP U-Pb age data and evidence above demonstrate that the GM is a segment of a Pan-African orogenic belt, the southward continuation of that in Prydz Bay, East Antarctica, rather than a Grenville terrane. And Neoproterozoic events are probably significant for tectonic evolution of the East Antarctic craton from Rodinia to Gondwana.