

N-S compressional and NE-SW extensional tectonics in the central Sor Rondane Mountains, Dronning Maud Land, East Antarctica

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The Sor Rondane Mountains, eastern Dronning Maud Land, East Antarctica, is the key area for understanding the Pan-African tectonothermal event and the collision of east and west Gondwana. We report E-W trending upright folds and NW-SE trending parallel pegmatite dykes in the central part of the Sor Rondane Mountains. The upright folds with subhorizontal axis have been attributed to N-S compression. It is possible that the compression have resulted from Neoproterozoic collision tectonics in the Sor Rondane Mountains.

Thin mylonite zones associated with pseudotachylytes usually occur along the pegmatite dikes having intruded after the N-S compression. Parent rocks of the fault rocks are the pegmatite dykes and their surrounding metamorphic rocks. The foliation of the metamorphic rocks is dragged along the dykes. Asymmetry of the mylonitic microstructures and drag folds shows normal faulting along the dykes during their intrusion. The shear sense and attitudes of the dykes indicate NE-SW extensional tectonics during the pegmatite intrusion.