

東ドロンイングモードランドの大陸衝突境界

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Continental collision boundary in Eastern Dronning Maud Land, East Antarctica

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Recently the Dronning Maud Land region including the Sør Rondane (SR) Mountains attracts attentions for their tectonic and metamorphic evolutions through the Gondwana Super continent evolution and construction. The region is considered as the main portion of the East-West Gondwana collision during the East Africa-Antarctica Orogen (EAAO: e.g. Jacobs and Thomas, 2004) or the Kuunga Orogen of the post East Africa Orogen (Meert, 2003).

Based on the style of metamorphic evolution, distribution of representative metamorphic minerals in regional scale, and the regional geomagnetic anomaly map of the Dronning Maud Land, the SR Mountains is divided into two terranes of NE-terrane and SW-terrane. The metamorphic evolution process of the NE-terrane shows a clockwise P-T path and indicates 650-600 Ma of metamorphic ages. On the other hand, those of the SW-terrane indicate counter clockwise P-T path and 900-1000 Ma of primary metamorphism. The collision metamorphism at the boundary between the NE- and SW-terranes took place at c.550 Ma. The Yamato (Y) and Belgica (B) Mountains are belonging to the SW-terrane. On the contrary, metamorphic complexes of the Lützw-Holm and Rayner in the more eastern part (eastern block) are identified as another metamorphic terrane, where rocks are exposed just along the coastline. The regional geomagnetic anomaly map covering the complexes shows a clear difference of the distribution of geomagnetic anomaly against to the western block including the SR, B, and Y Mountains. Metamorphic evolution processes of the western and eastern blocks are also different as reported previously. Therefore we suggest that the western and the eastern blocks would be belonging to the eastern-most part of EAAO and E-Gondwana continental crust, respectively (Fig. 1). The final collision boundary between them would have formed during the Pa-African orogenic time of 530-550 Ma.

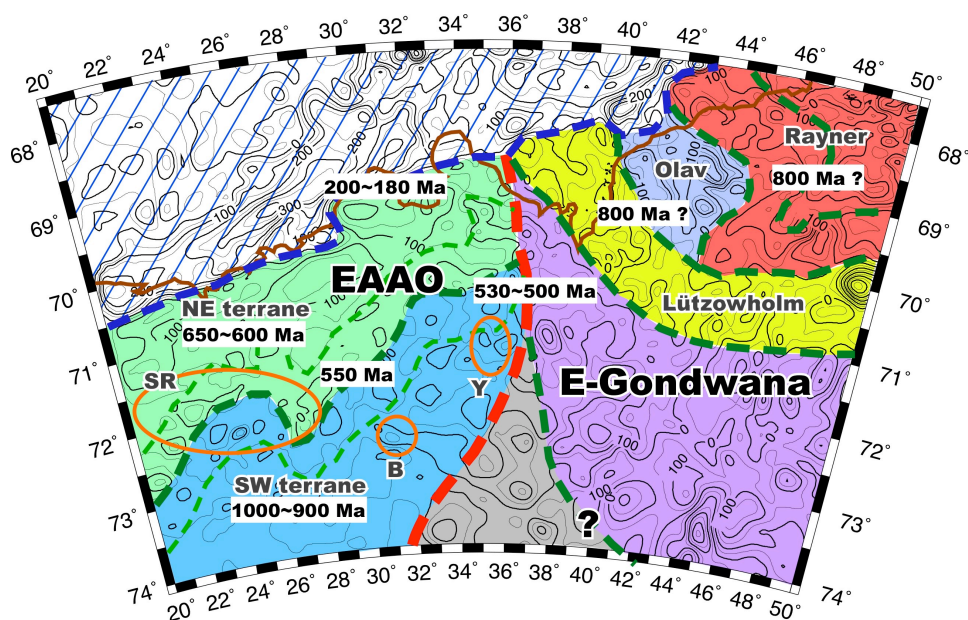


Fig. 1