



Detrital Zircons U-Pb Geochronology of Bayan Obo Group, the North Margin of North China Craton: New Implications for the Position of NCC in Rodinia

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Abstract: The collision, assembly and break-up of continents represent special and critical periods in the evolving history of Earth. The configuration of supercontinents and dynamic background for supercontinent assembly have been hot topic among geologists in the past few decades. Furthermore, whether and how NCC was involved in the evolution of Rodinia are still unclear enough. In this paper, detrital zircons from Baiyinbaolage and Hujertu formation yield age peaks of 1580Ma, 1300Ma and 1180Ma, while the magmatism with the same age do not exist in NCC, which implies that these detrital zircons may come from outside of NCC. However, magmatism of 1.78-1.55Ga, 1.50-1.30Ga, 1.25-1.10Ga developed in Amazonia, making it the potential provenance for the upper part of Bayan Obo Group. Based on the paleomagnetic studies, this paper came to the conclusion that NCC was proximate to Amazonia when Baiyinbaolage and Hujertu formation deposited from 1200 to 900Ma. NCC and Amazonia were near neighbours in Rodinia.

Key words: North China Craton, Bayan Obo Group, Detrital zircons, Rodinia

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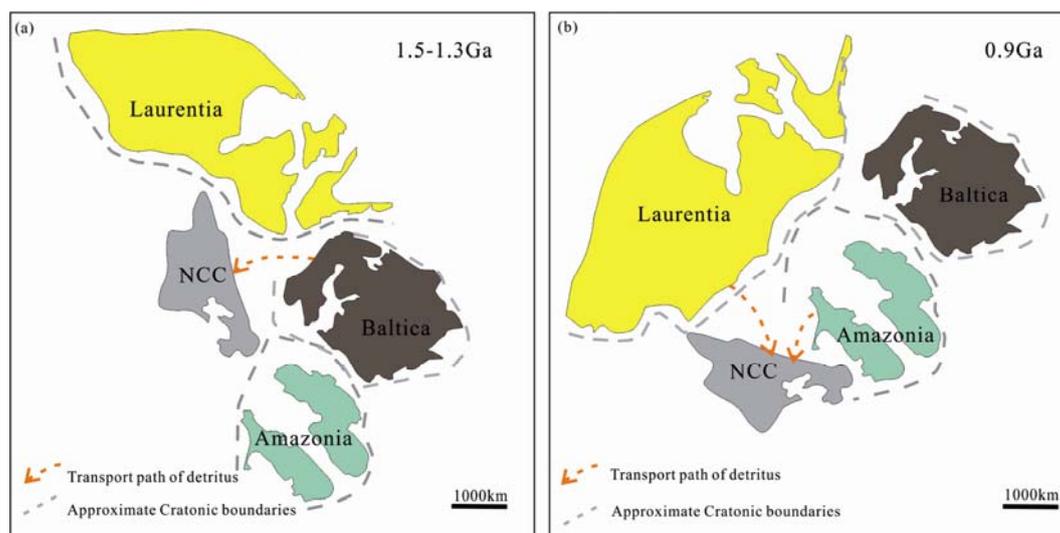


Fig. 1. The provisional connection among NCC, Baltica, Amazonia and Laurentia during 1.5-1.3Ga (a) and 0.9Ga (b) based on the SAMBA hypothesis (Johansson, 2009).

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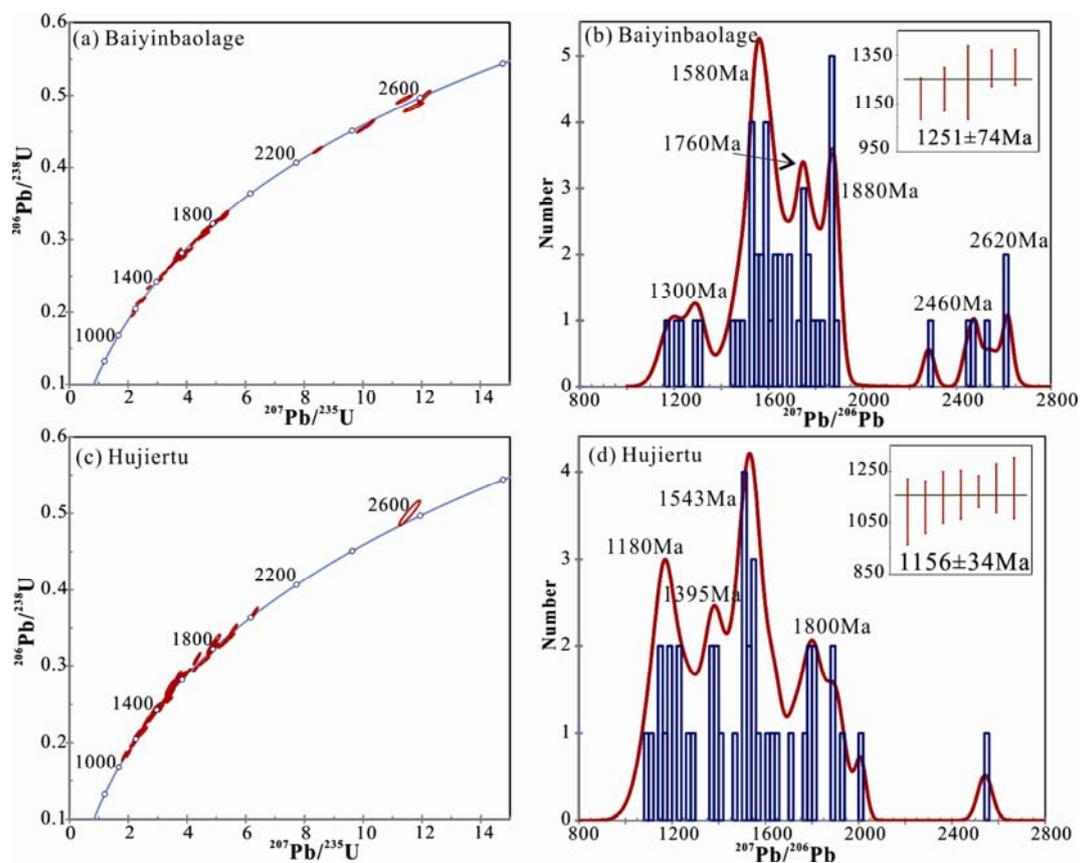


Fig. 2. Concordia diagram, weighted average age and binned frequency histograms of zircon ages for Baiyinbaolage (a, b) and Hujertu Formation (c, d)

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