

The North China craton – a Paleoproterozoic assembled continent

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Traditionally, the mid- to high-grade basement of the North China craton has been regarded as an Archean unified one. However, all the khondalites, whether in the basement or in the rift, have been identified to be the Paleoproterozoic sediments in the continental margin or back-arc setting, implicating a Paleo-proterozoic collision which assembled the Archean blocks and massifs into a unified North China craton.

The North China craton can be divided into two bigger Archean blocks (Ordos in the west and Eastern Hebei in the east) and a wide orogenic belt between them, which extends about 600-700km long from Inner Mongolia south into southern Shanxi Province. This belt comprises Paleoproterozoic khondalites, some remnants of Archean ocean-arc volcanics and wreckages of the blocks. The data of clockwise PTt paths and mineral lineation and sheath folds in the whole belt suggest the collision of Ordos with Eastern Hebei from SW towards NE.

As to the khondalites on the east of Tan-Lu Fault , the Liaohe Group has also been proved to be a Paleoproterozoic collisional belt between the Archean Longgang and Rangrim massifs, rather than a rift in the craton. The structural and metamorphic features of the belt indicate the collision of the massifs with the Eastern Hebei block from SE towards NW.

It seems that some blocks and massifs assembled first into a unified North China craton during Paleoproterozoic, and then it collided with the Yangtze craton into the Rodinia supercontinent during or after the Neoproterozoic.