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Neoproterozoic to early Paleozoic Tectonic Evolution of Tarim Block

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Tarim is one of the major cratonic blocks in the Central Asia. Despite intensive petroleum exploration in the area, relatively little has been published about its Precambrian reconstruction of plate tectonics. In its long geological history, the tectonic evolution of the Tarim Block involves the assembly and the rifting and break-up of the Rodinia, Gondwana and Laurasia, with formation of the development and superimposition of the various stages of the basin prototypes. The Pan-Tarim Block joined Rodinia at ca. 870Ma, representing the late collisional events of assembly of the the Rodinia. It was situated near the northwestern margin of Australia within the Rodinia framework. An aulacogen formed on the northeastern margin of the Tarim block followed the initial breakup and dispersal of the Rodinia, characterized with the very extensive basaltic-rhyolitic volcanism from ca. 800 to 700 Ma. With the block was finally rifted away from the Gondwana in the early Cambrian, Tarim was entirely rimmed by passive margins from the Cambrian to the Ordovician, followed by the Caledonian intracontinental convergence that culminated at the middle Ordovician along the south edge of Tarim block.