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NATURE OF THE LATE CARBONIFEROUS TO TRIASSIC MAGMATISM ALONG THE NORTHERN MARGIN OF THE NORTH CHINA BLOCK: LINK WITH THE EVOLUTION OF THE CENTRAL ASIAN OROGEN

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There are two episodes of magmatism along the northern margin of the North China block during the Late Carboniferous to Late Triassic, one at 310–250 Ma (Late Carboniferous to Permian) and the other at 235–210 Ma (Late Triassic). The former group comprises plutonic rocks (gabbro-diorite-monzodiorite-monzogranite-granite), mafic to intermediate dykes (diorite to dolerite) and a few felsic volcanics (andesite to dacite). The granites are mainly ~280 Ma in age and are high in Sr/Y and La/Ybn. They are coeval with the anatexis event in the basement gneisses. However, zircons from gabbro to diorite plutons show two groups of ages, one at ~280 Ma; whereas the later

is ~260–250 Ma. This may indicate mantle-crust interaction during the magmatism. The Late Triassic rocks are mostly syenite to syenogranite, with a few gabbroic components. The whole-rock ϵ_{Ndt} values change from -8...-15 to 0...-24 from the Late Carboniferous to the Late Triassic. Both episodes of rocks constitute a more or less overlapping belt zone along the northern margin of the North China block, and the Late Triassic belt zone (also called as the north syenite zone) may be connected with the east syenite zone along the eastern margin of the block (mainly in Korea peninsula). However, rare Carboniferous to Permian plutonic rocks are identified along the eastern margin. During the magma-

tism of the Late Carboniferous to Triassic magmatism, there were sediments with a few volcanic associations adjacent to the magmatic zone, however, the Late Carboniferous and Triassic volcanism, as well as the Triassic sedimentary sequence were absent in the inland of the North China block, where there were coal-bearing Carboniferous to Permian sediments. We argue that the evolution of the two magmatic episodes along the

northern margin of the North China block was genetically related to the evolution of the Central Asian Orogenic Belt: the Late Carboniferous-Permian sequences were syn-collisional resulted from distinct mantle-crustal interaction; whereas the Triassic plutonic rocks were post-collisional generated during the delamination of the root of the orogen.