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Destruction of the North China Craton triggered by the Triassic Yangtze continental subduction/collision: A review

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Abstract:

The collision between the North China and Yangtze Cratons in the Middle Triassic (240–225 Ma) created the world's largest ultrahigh-pressure (UHP) metamorphic belt (the Dabie-Sulu Orogen). The peridotitic massifs in this belt, including those derived from a lithospheric mantle (M-type) and from previous cumulates in continental crust (C-type), and mantle xenoliths captured by the Xinyang (Henan Province) Jurassic (~160 Ma) volcanics at the southern edge of the North China Craton, are the ideal targets to investigate the crust-mantle interaction and the destruction of the North China Craton. The M-type peridotitic massifs, including those in the Zhimafang (CCSD-pp1), Xugou, Hujialing, Chijiadian and Yangkou areas in the Sulu belt and Raobazhai area in the Dabie belt, have high whole-rock Mg# (89–93) and high contents of hydrous minerals (e.g., phlogopite and Ti-clinohumite). Peridotitic xenoliths in the Xinyang volcanics have olivine Mg# (90–93) similar to the M-type peridotitic massifs, suggesting that the massifs have an affinity to the lithospheric mantle beneath the North China Craton. The peridotites of the Dabie-Sulu orogen and Xinyang may be affected by carbonate metasomatism while minor differences may be related to the complex UHP metamorphism. Both the xenoliths and the M-type peridotites have similar zircon U-Pb ages of Proterozoic and Phanerozoic. The Phanerozoic ages are mainly Early Mesozoic (~230 Ma), reflecting the major metasomatic effects from the

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