

COMPLEXITY OF THE FUPING COMPLEX AND ITS SIGNIFICANCE IN CRUSTAL EVOLUTION OF THE SINO-KOREAN CRATON

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The high grade metamorphic rocks in the Wutai and Taihangshan areas were named as Fuping Group, according to a conventional stratigraphic scheme, and envisaged as one of the old continental nuclei of the Sino-Korean Craton. This point of view was challenged by recent structural and isotopic studies. However, the stratigraphic scheme is still prevailing. Field investigation of this study divided the Fuping Group into the dominant biotite gneiss, minor hornblende gneiss, amphibolite, and metasedimentary rocks. The biotite and hornblende gneisses are actually intrusions with TTG compositions. Zircon U-Pb isotope analyses by SHRIMP and LP-ICPMS indicate that the minor hornblende gneiss formed about 2.7 Ga ago, the dominant biotite gneiss intruded about 2.5 Ga before present, and the metasediments were deposited in Paleoproterozoic. The above isotope geochronological results indicate that these metamorphic rocks were formed in different times and in different environments. Geological observations reveal that later tectonic movements are responsible for their present positions. Therefore, the term Fuping Group should be replaced by Fuping Complex. We propose that the majority of the Fuping Complex were emplaced as intrusions in an island arc environment. The previously thought younger Wutai greenstone was erupted about synchronously. At least some of the metasedimentary rocks in the area are actually later tectonic slices.