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Intracontinental Evolution of Western Jiangnan Orogen in Neoproterozoic: Insight from Granite Gravel of Fanjingshan, South China

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The debate of assembly time between Yangtze and Cathaysia has aroused the disputation on the formation mechanism of Jiangnan Orogen, South China. Therefore widespread magmatism of 830-750 Ma in South China is interpreted as product of either plume or arc magmatism, which results in distinctive depositional background in Neoproterozoic. The granite gravel located at the unconformity between Banxi Group and Fanjingshan Group in the western Jiangnan Orogen is chosen, which gives a new age limit to the deposition of Banxi and Nanhua rift. The granite gravel crystallized in

Neoproterozoic with weighted mean $^{206}\text{Pb}/^{238}\text{U}$ age of 789 ± 11 Ma, which probably represents the end of the Sibao orogeny and marks the onset of Nanhua rift. The zircons have negative $\epsilon\text{Hf}(t)$ of -2.1 to -6.0, T_{DM} of 1.38-1.52 Ga and T_{crust} of 1.81-1.98 Ga. These negative $\epsilon\text{Hf}(t)$ values of zircons imply that they derived from continental crust, and an ancient orogen earlier than Sibao orogeny under the western Jiangnan Orogen is discussed.

Key words: Sibao orogeny; Nanhua rift; Rodinia supercontinent

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