

Liang Qiu, Ruoyan Kong, Dan-Ping Yan, Hong-Xu Mu, Weihua Sun, Shouheng Sun, Yangguang Han, Chengming Li, Liangliang Zhang, Fude Cao, and Shahnawaz Ariser, 2021, Paleo–Pacific plate subduction on the eastern Asian margin: Insights from the Jurassic foreland system of the overriding plate: *GSA Bulletin*, <https://doi.org/10.1130/B36118.1>.

## Supplemental Material

**Supplement 1.** Analytical Methods

**Supplement 2.** REE pattern of the detrital zircon.

**Supplement 3.** Data Tables: Zircon U-Pb data table.

## Supplement 1: ANALYTICAL METHODS

Zircons were separated from the rock samples by conventional density and magnetic techniques. Crystals free of major fractures and visible inclusions were handpicked, mounted in epoxy resin, and polished to expose their centers. Cathodoluminescence (CL) images were obtained using an IT-500 with a DELMIC system to characterize the internal structures of zircon grains and select sites for analysis. Zircon U–Pb and trace element analyses were undertaken using LA–ICP–MS (Laser Ablation Inductively Coupled Plasma Mass Spectrometry) with an Agilent 7900 ICP–MS instrument coupled to a New Wave 193UC excimer laser ablation system at the Mineral Laser Microprobe Analysis Laboratory, China University of Geosciences, Beijing, China. The ICP–MS system was optimized by line scanning at a rate of 5  $\mu\text{m/s}$  and using a spot size of 35  $\mu\text{m}$  while also ensuring low ThO/Th ( $<0.2\%$ ) and  $\text{Ca}^{2+}/\text{Ca}^{+}$  ratios ( $<0.7\%$ ; Zhang et al., 2019). We used a 25  $\mu\text{m}$  diameter laser beam with an 8 Hz repetition rate and an energy density of 2 J/cm<sup>2</sup>. Helium was used as the carrier gas at a flow rate of 0.85 l/min. This gas carried ablated aerosols out of the sample chamber before mixing with Ar gas and being carried to the plasma torch. Time-dependent drifts of U–Th–Pb isotopic ratios were corrected using a linear interpolation (with time) for every five analyses according to the variations in the analyses of the standard zircon 91500, using the 91500 U–Th–Pb isotopic ratios reported by Wiedenbeck et al. (1995). The zircon standard 91500 and NIST 610 glass were used for external calibration for U–Pb ages and trace element concentrations, respectively, and the GJ-1 standard zircon was analyzed after every 10 unknowns for quality control. Each group of five unknowns was followed by the analysis of two standards, with each analysis beginning with a 20–25 s blank followed by a further 40 s of analysis time after the laser was switched on. Offline data processing was performed using ICPMSDataCal software (Liu Y. et al., 2008). Concordia diagrams and weighted mean calculations were made using Isoplot version 4.0 (Ludwig, 2003).

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**Supplement 2: REE pattern of the detrital zircon.**

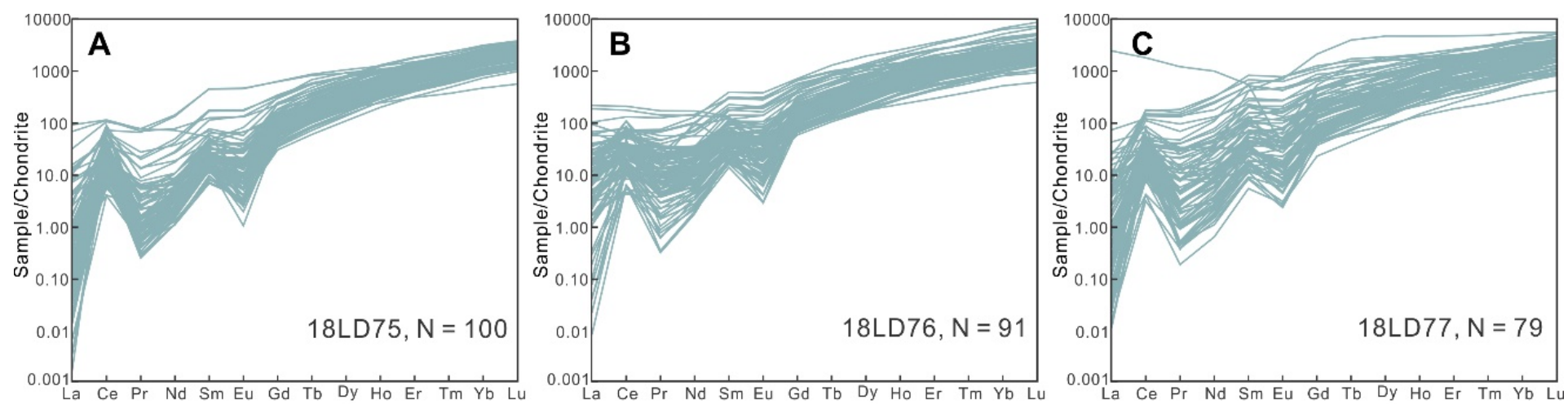


Figure DR1