

## **NEW U/Pb SINGLE-CRYSTAL AGE DATA FOR THE PERMO-TRIASSIC TRANSITION**

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At the end of the Permian period one of the most severe extinctions of life in Earth's history occurred. It is still unclear which of the several competing hypotheses for the cause of the biotic crisis is to be preferred. New U/Pb zircon age data for the Permo-Triassic (P-T) transition from ashfalls of the Meishan sections (Zhejiang-Province, China) will be presented. In the course of our study, it has been found that subtle Pb-loss can cause significant and nearly unrecognizable age bias. Also, the presence within a single ashlayer of multiple generations of older xenocrysts from previous volcanic events makes the assignment of a statistically robust age in many cases impossible. These phenomena can bias individual zircon ages at the level of several permil to more than a percent and can only be recognized when single-crystal analyses are applied. If multi-crystal analyses are used the ages of multiple generations of zircon populations are averaged and can yield a geologically meaningless age result. From our U/Pb single-zircon data we can infer that the Changxingian stage lasted at least 3 to 4 m.y., in contrast to earlier estimates indicating a significantly shorter timespan. In addition our results allow the conclusion, that the P-T boundary is as old as ~253 Ma, which is distinctly older compared to previous estimates of ~251 Ma. These new dates require a re-evaluation of both the tempo of the mass extinction and hypotheses regarding its causes and also call for a redefinition of the time scale.