M-B boundary age constrained by high-precision U-Pb zircon dating of a widespread tephra in a sedimentary sequence

High-precision U-Pb zircon ages derived from a widespread tephra just below the M-B boundary in a forearc basin in Japan. Because the U-series dating is relatively free from issues about standardization and decay constants, this U-Pb zircon age coupled with a newly obtained oxygen isotope chronology yields a highly accurate M-B age of 770.2 ± 7.3 ka. Our M-B age is consistent with those based on the latest orbital-tuned marine sediments. We provide the first direct comparison between orbital tuning, U-Pb dating, and magnetostratigraphy for the MBB, fulfilling a key requirement for calibrating the geological timescales.