№ 08190

SAMARIUM/NEODYMIUM AND NEODYMIUM ISOTOPIC EVIDENCE FOR AN INSIGNIFICANT BASALTIC CONTRIBUTION TO SHALES IN THE MESOZOIC HARTFORD BASIN, U.S.A.

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Early Jurassic-age basalts preserved in deeply eroded basins in Eastern North America have recently been proposed to be remnants of a vast flood basalt province. This hypothesis, based on the wide geographic extent of feeder dikes, suggests that the basalt extended far beyond the present boundaries of the basins. If this were the case, we would expect to see a strong basaltic signature in the sedimentary rock within the basin. However, analyses of Nd and Sm/Nd isotope ratios of red shales between the basalts from the Hartford Basin show that the shales have a uniformly "continental"–not basaltic–signature, even from shales samples directly above (<1 m) from the basalt. This lack of evidence for a basalt contribution to the sedimentary record indicates that the basalt flows in the Hartford Basin were much smaller than recently proposed.