Locating earliest records of orogenesis in the western Himalaya: Paleogene sediments in the Iranian Makran and Pakistan Katawaz basin

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A combination of sediment petrography, detrital zircon U-Pb and fission track dating are used to show that provenance of the Paleogene sedimentary rocks exposed in the Makran of southern Iran and Katawaz basin of Pakistan is consistent with a source from the nascent western Himalaya and associated magmatic arc and thus provide a new repository for studies into the early stages of Himalaya orogenic growth. Results from this study show that throughout the Oligocene exhumation rates were relatively high and that orogenic relief and erosion of both the arc and Indian plate was occurring in the western Himalaya.