DATA REPOSITORY ITEM 2003165
APPENDIX 1 SAMPLING AND ANALYTICAL TECHNIQUES

Because Neogene reworking is weaker in the eastern half of the massif, that is where we sampled extensively (Fig. 1) to minimize the likelihood of perturbation of the isotope systems (particularly Rb-Sr). A range of rock types was selected for whole-rock Nd and Sr analysis; here we present data mainly from metapelites and a few orthogneisses. Standard digestion and chemical-separation procedures were followed, as described below. All Nd isotope analyses and two Sr analyses were performed on thermal-ionization mass spectrometers at the Open University. The rest of the Sr analyses were obtained by multicolonlector inductively coupled plasma–mass spectrometry at the Open University. Blank levels for each procedure were negligible.

Between 90 and 150 mg of rock powder were digested using standard HF-HNO₃, HNO₃ and HCl stages. Further chemical separation for Nd analysis performed at the Open University are as described in Cohen et al., (1988). ¹⁴³Nd/¹⁴⁴Nd ratios were collected on the Finnigan-MAT 261 mass spectrometer in static mode at the Open University and normalized to ¹⁴⁶Nd/¹⁴⁴Nd = 0.7219. Sr and Rb were separated from aliquots of the same samples at the NERC Isotope Geosciences Laboratory using standard ion exchange techniques. Repeat analyses of the Johnson-Matthey internal Nd standard gave ¹⁴³Nd/¹⁴⁴Nd = 0.511775 ± 0.000034 (2 s.d., n = 63) for a 12-month period during which most of the samples were analysed. Nd blanks for the procedure were ~15 pg, and can be considered negligible. For Sr, two samples (E103, E126) were analysed by TIMS on a Finnigan MAT 262 mass spectrometer at the Open University. For the remainder, Sr fractions from ion exchange columns were evaporated and dissolved in an appropriate volume of 2% HNO₃ prior to analysis on the Nu Plasma multi-collector ICP-MS in static mode at the Open University. Samples were bracketed by NBS 987 standards and the resulting data normalized to the bracketing standard data to correct for drift over the period of analysis. A thorough cleaning procedure was applied after each sample or standard run, typically 1 minute 10% HNO₃, followed by 2 minutes IPA (isopropyl alcohol) and then 5 to 10 minutes 2% HNO₃, to ensure complete flushing of previous material from the system. Background levels were monitored throughout this procedure, and in some cases, a longer washout was required to remove any traces of sample. On-
peak zeros were measured at intervals during the period of analysis to apply a correction for Kr in the Ar flow gas (Waight et al., 2002). Samples were analysed in three separate batches (i.e. different dates); repeat analyses of the NBS 987 Sr standard gave $^{87}\text{Sr}/^{86}\text{Sr}$ of $0.71032 \pm 0.00011$ (n = 11), $0.71033 \pm 0.00007$ (n = 16), and $0.71030 \pm 0.00007$ (n = 8) over the three periods respectively (2 s.d. errors in each case). Sm/Nd ratios were determined by isotope dilution, whereas Sr and Rb concentrations were obtained from XRF analysis to a precision better than ±1 % (1σ). $^{87}\text{Rb}/^{86}\text{Sr}$ ratios were then derived from the elemental concentrations ($^{87}\text{Rb}/^{86}\text{Sr} = 2.891 \times ([\text{Rb}]/[\text{Sr}])$).

References
## New isotopic data for gneisses and metapelites from the Nanga Parbat massif

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<th>143Nd/144Nd a</th>
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* All errors are quoted as ±2 s.d.

b calculated relative to chondritic uniform reservoir (CHUR) using present-day values
### DATA REPOSITORY ITEM: Table DR-2

Compiled Sr-Nd and Sr isotopic data for Himalayan metasediments

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NPM = Nanga Parbat massif
nd = no data
* assumes average crust
† 2s.d. < 0.00001