Supplementary Material: Bayesian multi-proxy reconstruction of early Eocene latitudinal temperature gradients

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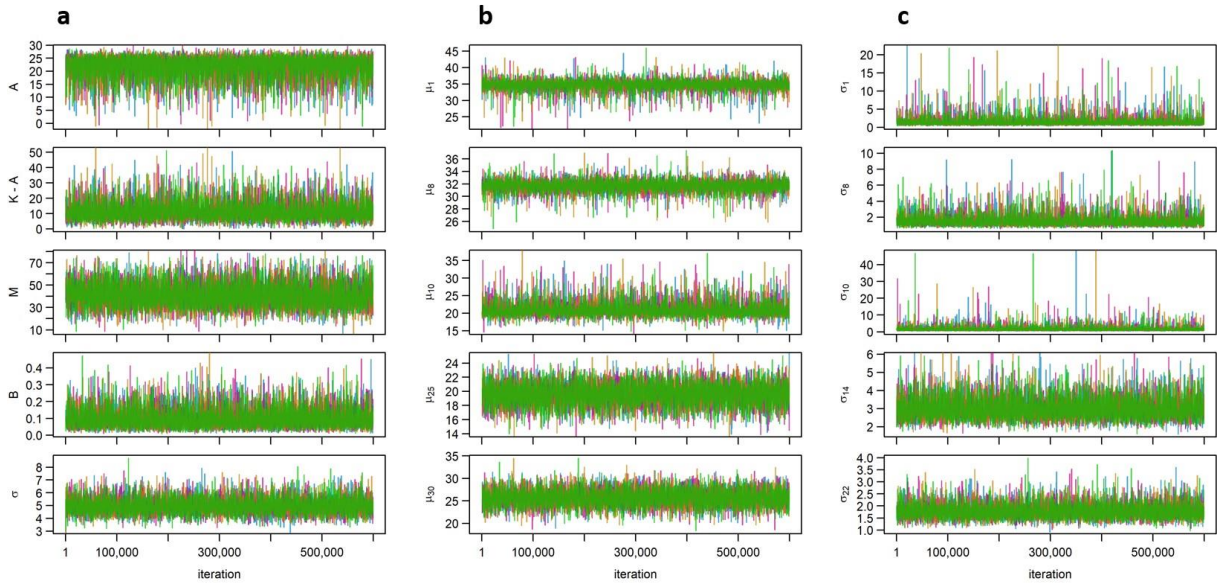**Corresponding author:** kilian.eichenseer@durham.ac.uk

Figure S1: Traceplots of a subset of the unknown model parameters. The four colours correspond to the four independent model runs. a) Traceplot of A, K-A, M, B and σ; b) Traceplot of five selected μ_j; c) Traceplot of five selected σ_j. All traceplots display mixing of the chains, and relatively quick convergence.
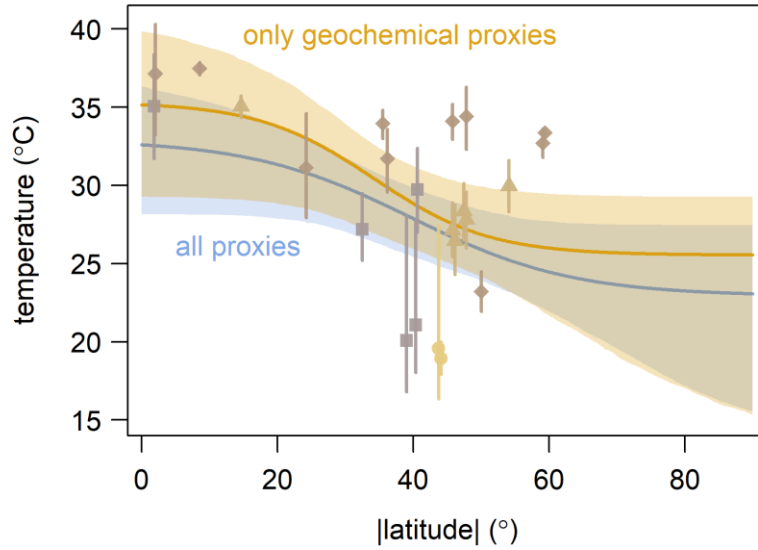
Figure S2: Estimated latitudinal temperature gradient using only the geochemical proxy data (orange), showing the median (line) and 95% credible interval (shading). Symbols with vertical lines show the median and 95% credible intervals of μ_j. The blue line and shading in the background show the latitudinal temperature gradient with the geochemical and ecological proxy data, as in Figure 4.
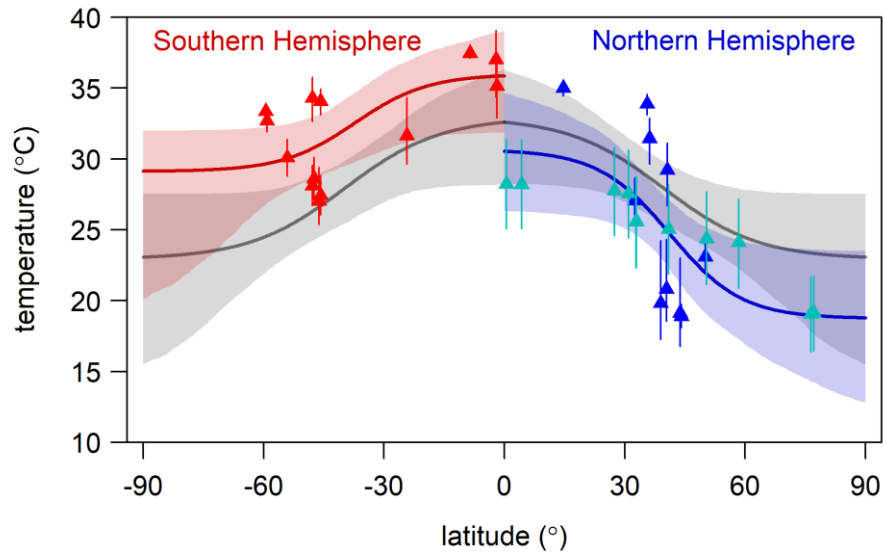
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Figure S3: Estimated latitudinal temperature gradients for each hemisphere, showing the medians (lines) and 95% credible intervals (shadings) in the Southern (red) and Northern Hemisphere (blue). Symbols with vertical lines show the median and 95% credible intervals of μ_j. Turquoise symbols in the Northern Hemisphere highlight the ecological proxy data. The grey line and shading in the background show the latitudinal temperature gradient with the data from both hemispheres combined, plotted in both hemispheres.

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