

Interactive comment on “Extreme warming, photic zone euxinia and sea level rise during the Paleocene/Eocene Thermal Maximum on the Gulf of Mexico Coastal Plain; connecting marginal marine biotic signals, nutrient cycling and ocean deoxygenation” by A. Sluijs et al.

A. Sluijs et al.

a.sluijs@uu.nl

Received and published: 11 February 2014

Dear Dr. Huber, Thank you very much for your constructive comments on our manuscript. There are essentially two main points.

The first point regards the latitude and the paleolatitude of the drill site. The core was drilled 6 miles south-southwest of the Red Hot Truck Stop location, which is well described. We are currently in the process of finding out the exact coordinates to

C3443

include in the revised version. We have now updated to the most recent reference, as you suggested, changing the paleolatitude estimate to 32 °N.

The second point regards the model-data comparison. First of all, we misread the Huber and Caballero paper; indeed the model produces 30–35 °C for the 4480 run, rather than the >35 °C; we will change this in the revised version. This improves the comparison between data and model and we will adapt the manuscript accordingly. Our paper also touches on absolute temperature reconstructions based on proxies. As indicated in the paper (6469, line 12–14), the present dataset seriously questions TEX-L to be a reliable SST indicator in non-polar regions, therefore we prefer TEX-H, which is also more commonly applied for these types of settings. There are ideas developing on why the Peterse et al. (2012) calibration produces relatively low estimates of air temperature; this might well be due to a sampling bias towards mid-latitudes in the modern calibration, resulting in relatively low temperatures even when MBT-CBT values are high, which has significant implication for paleoreconstructions in past warm climates. The Weijers et al. (2007) calibration does not exhibit this bias.

Sincerely, Also on behalf of all authors, Appy Sluijs

Interactive comment on Clim. Past Discuss., 9, 6459, 2013.