

Kiel, 12 September 2021

## Response to Editor and Referee

Dear Dr. Donnadieu,

We are grateful for a last round of comments on our manuscript. Please find below the referee's comments in **blue font** and the authors' response in black font.

### **Referee #1**

Leutert et al. have thoroughly revised their manuscript, and in doing so have fully taken on board my comments as well as those of two other reviewers. The result is a much clearer manuscript with a fuller discussion of their interesting dataset. Reassessment of the Site 806 age model leads to a more robust comparison with the new record, and Figure 2 clearly shows a good correspondence between the new Site 747 isotope record and higher-resolution, orbitally-tuned records. Figure 1 as well as the paper organisation are much improved. All of my comments have been satisfactorily address, so I am happy to see the manuscript accepted. Small comment on Fig. 3 and 4, I suggest removing the “gradients” from the light green, purple and yellow vertical bars unless they signify something – but this is up to you.

Reply: We have removed the “gradients” from the yellow vertical bars in Fig. 4. However, we would prefer to keep the “gradients” in Fig. 3 to visualize that there is some uncertainty in the exact timing of the onset and termination of the two illustrated time periods.

Fig. 5: The Upper ocean T axis scales for the D47 and TEX<sub>86</sub> data need to be the same (9-16°C?) to allow comparison because they are plotted together.

Reply: We have adjusted Fig. 5 to make sure that the upper ocean temperature scales for  $\Delta_{47}$  and TEX<sub>86</sub> are the same (9-16°C). In any case, we note that here the focus is on highlighting mostly relative changes in temperature at Site 1171, similar to Leutert et al. (2020), as absolute temperatures reconstructed from  $\Delta_{47}$  and TEX<sub>86</sub> can be offset to some extent (e.g.,

depending on the temperature calibration for TEX<sub>86</sub>). We further note that we have corrected an error in the measuring unit of Mg/Ca in the caption of Fig. S9 in the supplement (“−0.21 mmol/mol” instead of “−0.21 ‰”).

Well done for a very interesting piece of work.

We would like to thank Referee #1 for the encouraging feedback and hope that we have addressed the comments to your satisfaction.

On behalf of all co-authors,

Dr. Thomas Jan Leutert

Corresponding author