

Interactive comment on “The early Eocene equable climate problem revisited” by M. Huber and R. Caballero

G. Dickens

jerry@rice.edu

Received and published: 21 March 2011

My latter comment 2.5 is probably inappropriate without an apology and brief explanation. I meant no disrespect to Dana.

My intention, and what I should have stated is the following:

- (1) There is no data in either of the papers; neither is proxy-based.
- (2) Both papers recognize there was a $\sim 6^{\circ}\text{C}$ temperature rise and a large mass of carbon entered the system during the PETM (as have numerous other papers written before and after).
- (3) Both papers begin with the premise that the carbon input as defined by the promi-

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



ment negative carbon isotope excursion across the PETM drove all the warming during the PETM. This is opposite to all data presented so far in the literature. In fact, both papers begin with a carbon/temperature relationship to reject ideas that warming drove the carbon input as defined by the CIE.

(4) Both papers, while fun to read, fail to derive a satisfactory explanation for the carbon input. The idea that massive amounts of organic carbon were oxidized in epi-continental seas upon sub-aerial exposure and a lowering of sea-level (Higgins and Schrag, 2006) is interesting but unlikely given that multiple records show that sea-level rose immediately before the CIE, including in epi-continental seas (e.g., most recently, Harding et al., EPSL, 2011).

(5) These papers should not be used to argue for high climate sensitivity because this is not demonstrated. However, the paper by Pagani et al. (2006) is a good one to set the problem (especially the figure at the end). They suggest we have a range of possible climate sensitivities to a geologically brief and massive carbon input that depends on the mass of the carbon input and baseline conditions (and the assumption that the two, in fact, are directly related).

Most of this is probably of little relevance to the Huber and Caballero paper and I probably should have just written Dana personally.

Apologies to Dana, Matt, and all others concerned.

Jerry

Interactive comment on Clim. Past Discuss., 7, 241, 2011.

[Full Screen / Esc](#)[Printer-friendly Version](#)[Interactive Discussion](#)[Discussion Paper](#)