

Interactive comment on “Palaeoclimate evolution across the Cretaceous–Palaeogene boundary in the Nanxiong Basin (SE China) recorded by red strata and its correlation with marine records” by Mingming Ma et al.

Anonymous Referee #2

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In this paper, Ma et al. proposed a new age model for this section and reviewed the paleoenvironment and paleoclimate changes during the K-Pg boundary interval. Overall, I commend the authors for applying new method on this topic and propose new ideas. However, the interpretations and conclusions need to be major modified before publication.

1. The authors claimed that the C30R and C31N was missing due to the covered strata. However, this is just the authors' speculation, and there is no further evidences. The authors also concluded that the age between the Zhenshui and Zhutian formations is

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~71.5 Ma according to their new age model. However, this age is inconsistent with the biostratigraphic data they cited, which suggests the Zhutian Formation is lower Santonian-Campanian in age.

2. The authors suggested that "the haematite was the dominant magnetic mineral in the red strata, and the variation trend of magnetic susceptibility was consistent with the oxygen isotope records from deep-sea sediments, which indicates that the pedogenic intensity was controlled by global climate". I can not understand the logic relationship in this sentence. Are their samples for magnetic susceptibility all collect from the palaeosols? Please clarify. In addition, if the age model is not valid, the consistency between the magnetic susceptibility and $\delta^{18}\text{O}$ would not exist.

3. The authors classified the climate evolution into three stages. But the proposed trend is similar to that established by other proxies and no substantial promotion, still qualitative.

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