

Interactive comment on “Equatorward phytoplankton migration during a cold spell within the Late Cretaceous supergreenhouse” by Niels A.G.M. van Helmond et al.

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The article is suitable for publication in Biogeosciences. The authors are at the forefront of research applying dinocysts to palaeoenvironmental interpretation. The distribution pattern of the First Consistent Presence (FCP) of *Cyclonephelium compactum-membraniphorum* (Ccm) that they document is strong evidence for their interpretation of a phytoplankton response to a fall in sea surface temperatures, during the ‘Plenus Cold Event’. I have previously refereed the article for the journal ‘Geology’, when I recommended it for publication after minor revision. The authors have addressed all the points that I raised for their earlier drafts. I have found a few minor edits in the current draft but, in my professional opinion, the manuscript is otherwise acceptable in

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its current form.

Page 4, line 6. For clarity, it would be worth spelling out *Cyclonephelium compactum* at first mention, to avoid potential confusion with *Cauveridinium*. Page 4, line 26. Correct the spelling of *Cauverodinium*. Page 4, line 30. “. . .reporting of Ccm [at the other 15 localities].” Page 9, line 27. Correct the year from 1998 to 1988. Page 12, line 12. Correct the year from 2015 to 2005. Page 12. I can’t find Voigt et al. (2004) cited in the manuscript. It should be removed from the reference list if it is not cited. Figure 4 caption. Write out ‘mbs’ in full at first mention. Figure 6 caption, line 3. “, open symbols [are]. . .”

If a quantitative / semi-quantitative distribution chart of all palynomorphs at genera/species level is available for the Pratts Landing section, it could be added to the supplementary file, although this is not a requirement given the scope of the article.

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