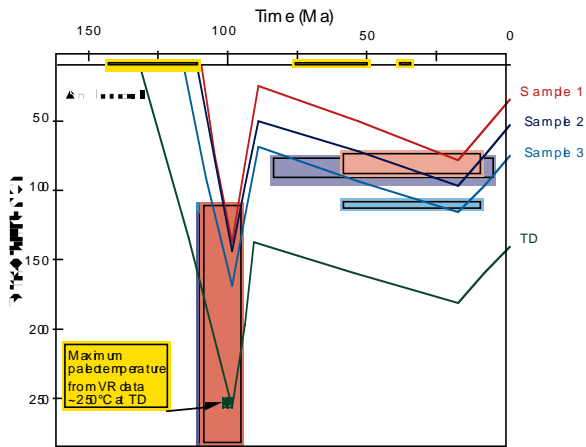




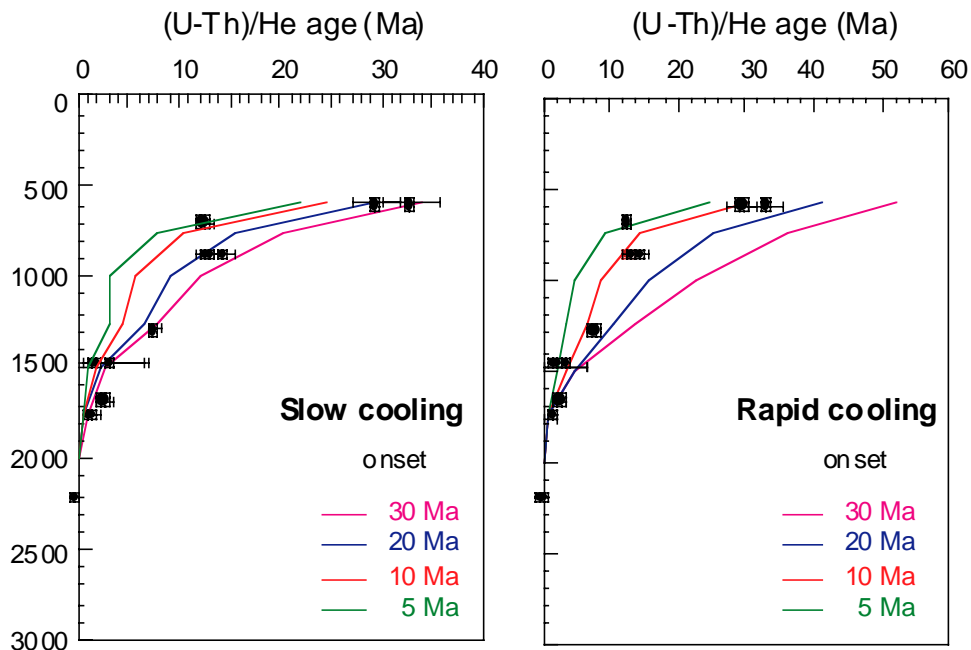
# ANGLESEA-1 apatite (U-Th)/He ages



AFTA and VR data in the Anglesea-1 well show two paleo-thermal episodes with cooling beginning from maximum paleotemperatures in the Early Cretaceous (110 to 95 Ma), and from a lower paleo-thermal peak in the Tertiary (beginning between 50 and 0 Ma). The Tertiary stratigraphy further constrains the most recent cooling episode to post-35 Ma.

(U-Th)/He ages in apatites from the Anglesea-1 well were published by House et al. (Earth and Planetary Science Letters, v170, 1999, pp463-474). Using the framework provided by AFTA (above), we have modelled (U-Th)/He ages in samples within the Early Cretaceous section, using various timings for the onset of cooling within the allowed range (assuming an average grain radius of 50  $\mu$ m).

We have modelled two scenarios, one involving slow linear cooling to the present day and one in which all cooling occurs within a 1 Ma interval (followed by residence at the present-day temperature). As shown by the Figures below, rapid cooling beginning at (or slightly prior to) 10 Ma gives the best fit to the He ages. This timing is consistent with the regional geology, characterised by a widely recognised Late Miocene unconformity.



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