

Geological Magazine

Mixed local and ultra-distal volcanic ash deposition within the Late Cretaceous Kanguk Formation, Sverdrup Basin, Canadian Arctic

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Supplementary Material

Figure S1. Age versus stratigraphic height interpolation model for section from the Hoodoo Dome on Ellef Ringnes Island calculated using the U–Pb zircon CA-ID-TIMS dates from Davis *et al.* (2016). The sedimentary log is redrawn from Davis *et al.* (2016). Interpolation between bentonite horizons was done using the P_Sequence routine of the OXCAL program (Bronk Ramsey, 2008; Bronk Ramsey & Lee, 2013). The thick purple line denotes the modelled line of interpolation between age and section height; the pale blue band surrounding the line denotes the 95 % credible interval of the interpolation model. In addition to the U–Pb zircon CA-ID-TIMS dates, the published age for the end of oceanic anoxic event two (OAE2; Cenomanian-Turonian boundary; 93.9 ± 0.15 Ma; Sageman *et al.*, 2006; Meyers *et al.*, 2012) is also included in the interpolation model. Numerical ages for the stage boundaries are from Cohen *et al.* (2013). Uncertainties in the positions of stage boundaries are represented by grey vertical lines.

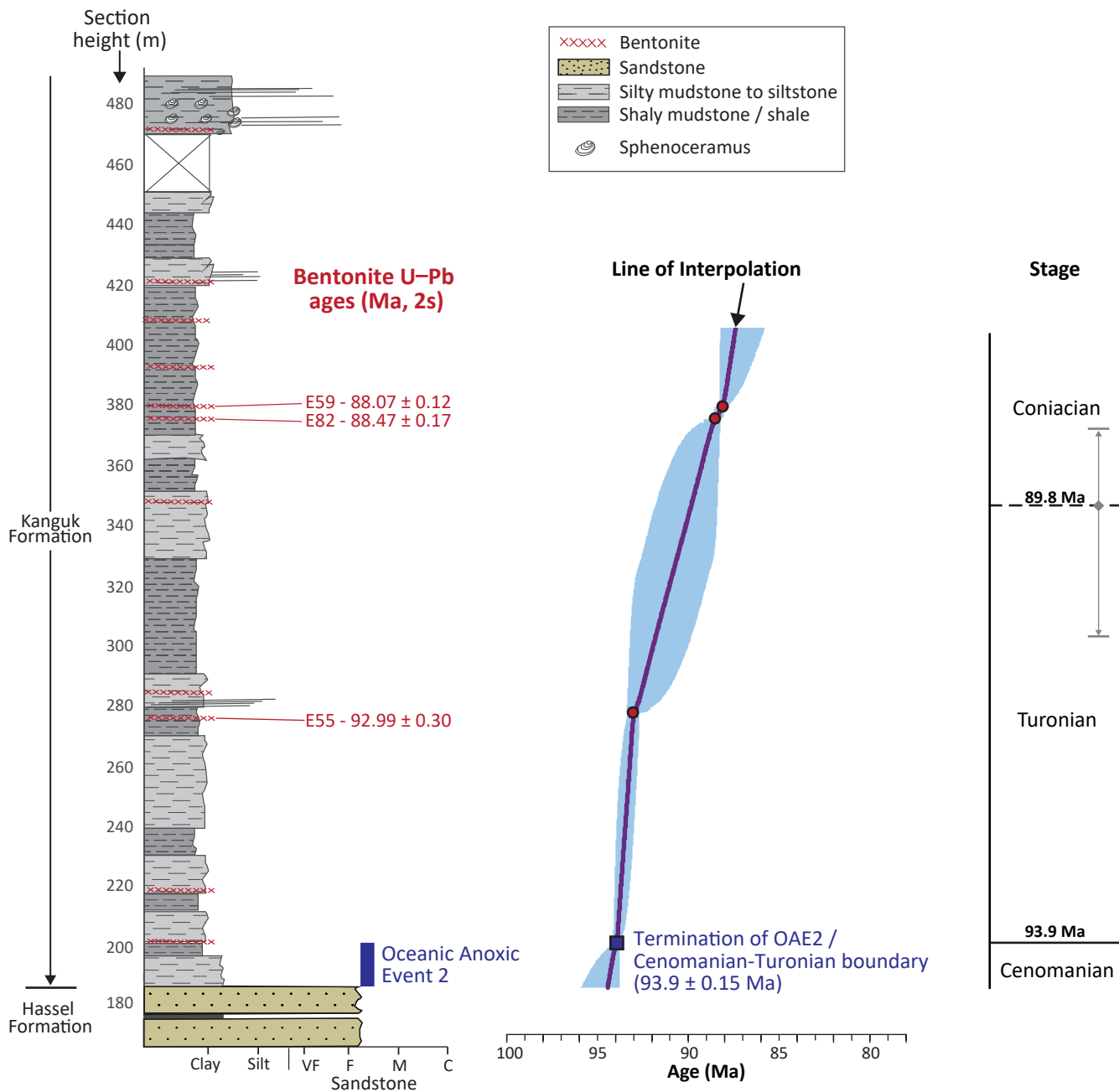
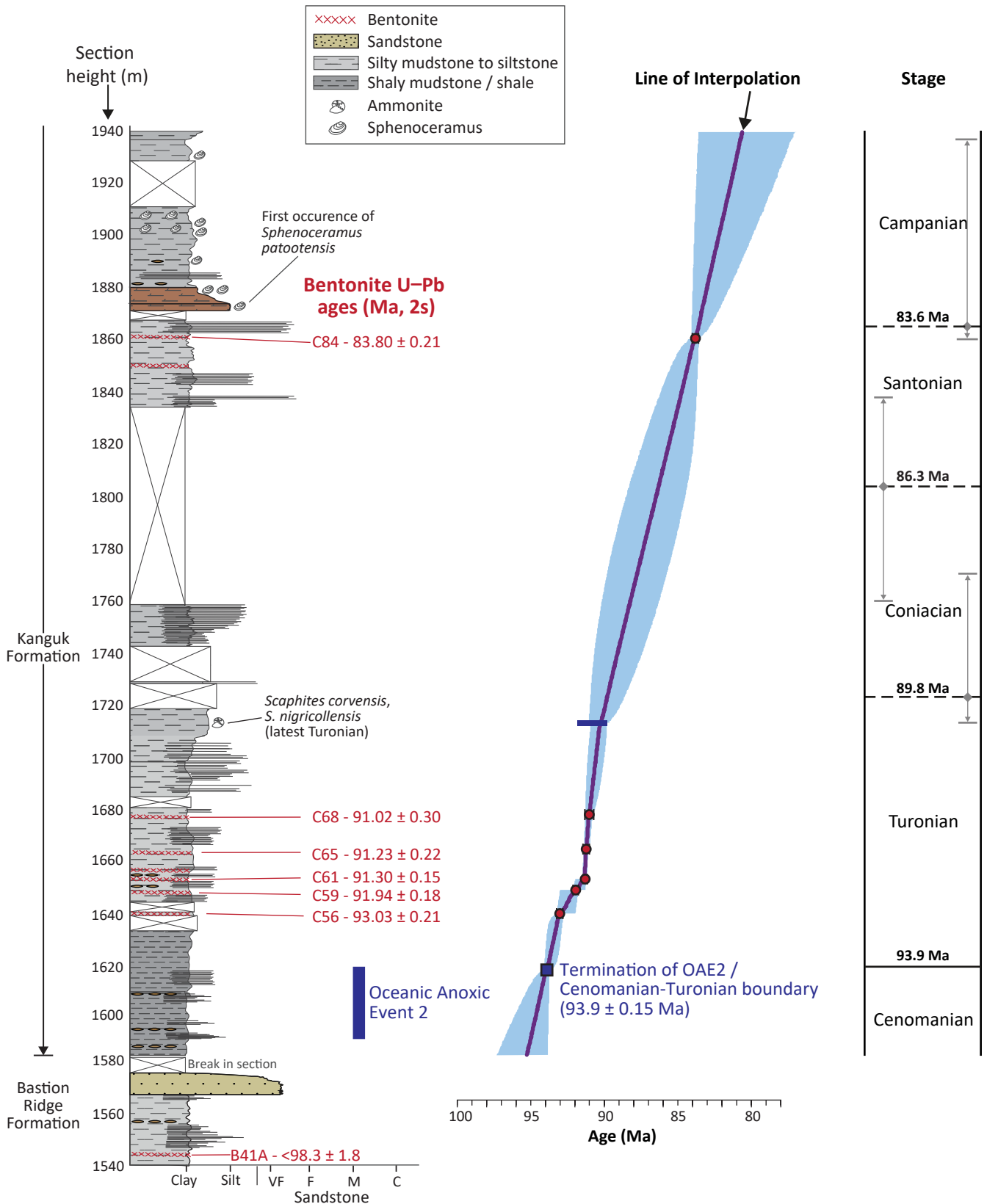


Figure S2. Age versus stratigraphic height interpolation model for section from the Glacier Fiord, Axel Heiberg Island calculated using the U–Pb zircon CA-ID-TIMS dates from Davis *et al.* (2016). The sedimentary log is redrawn from Schröder-Adams *et al.* (2014). Interpolation between bentonite horizons was done using the P_Sequence routine of the OXCAL program (Bronk Ramsey, 2008; Bronk Ramsey & Lee, 2013). The thick purple line denotes the modelled line of interpolation between age and section height; the pale blue band surrounding the line denotes the 95 % credible interval of the model. In addition to the U–Pb zircon CA-ID-TIMS dates, age constraints from the late Turonian ammonites at c. 1710 m and the published age for the end of oceanic anoxic event two (OAE2; Cenomanian-Turonian boundary; 93.9 ± 0.15 Ma; Sageman *et al.*, 2006; Meyers *et al.*, 2012) are also included in the interpolation model. Numerical ages for the stage boundaries are from Cohen *et al.* (2013). Uncertainties in the positions of stage boundaries are represented by grey vertical lines.



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