

Interactive comment on “Tracking the $^{26}\text{Al}/^{10}\text{Be}$ source-area signal in sediment-routing systems of arid central Australia” by Martin Struck et al.

Martin Struck et al.

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Short Comment #1 (Comments to the author):

Short comment - The paper indicates higher erosion rates in the lower parts of the catchment. Flat topped hills made of silcrete erode slower. Thus maybe the landscape 'starting state' was a flat peneplain currently carving at a slow rate. If this idea is correct, to what period the starting point could correspond? Is there any scenario for 'reactivation' of this landscape (I remember the area is the locus for Neogene marine terraces/deposits)?

Response - Based on ^{10}Be - ^{21}Ne measurements on gibbers derived from silcrete mesas in the Oodnadatta Tablelands, inheritance-corrected exposure ages suggest

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dissection started at ~2-4 Ma (Fujioka et al., 2005, *Geology* 33, 993-996). However, there is no evidence that the silcrete duricrust ever formed a continuous erosion surface (or 'peneplain'), as proposed by Woolnough (1927). That idea is now discredited. Some of the silcretes are pedogenic, suggesting near-surface genesis, and others are groundwater silcretes and therefore not directly associated with a former ground surface. For a Davisian perspective on the landscape evolution of the western Eyre Basin, see Simon-Coinçon et al. 1996, *J. Geol. Soc. Lond.* 153, 467-480. Silica-enrichment probably occurred at topographic low points and formation was very often time-transgressive. For an excellent review, see Taylor & Eggleton 2017, *Aust. J. Earth Sci.* 64, 987-1016.

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