

## COSMOGENIC EROSION RATE ESTIMATES FOR GRANITE LANDFORMS; EYRE PENINSULA, SOUTH AUSTRALIA

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The granitic inselbergs of the Eyre Peninsula, south-central Australia, are domes of bare, crystalline rock rising tens of meters above an otherwise low-relief landscape. Previous workers have regarded this semi-arid landscape as one of the most stable in the world based on correlation with duricrusts or weathering horizons of varying ages. Twidale et al. (1985) have speculated that the crests of the highest Eyre Peninsula inselbergs may be of Mesozoic age. In order to test the supposed antiquity of this landscape, we collected, for analysis of  $^{26}\text{Al}$  and  $^{10}\text{Be}$ , 65 samples from seven inselbergs. On most inselbergs, samples were collected along a transect from the top to the base of the landform.

$^{26}\text{Al}$  is not saturated in the samples we have analyzed suggesting either that the sampled surfaces were exposed during the late Quaternary or that the inselbergs are actively eroding. Because of the granular disintegration, sheeting and exfoliation which are currently removing mass from the inselberg surfaces, it is reasonable to interpret isotope abundances as steady-state erosion rates. Using a model of steady erosion and the isotope production rates of Nishiizumi et al. (1989), we calculate model erosion rates of 2-4 m/My for four samples collected from Yarwondutta Rock and Mount Wudinna (second in size among Australian inselbergs only to Ayers Rock). These rates are slightly lower than but similar to rates we have measured on samples collected from granitic landforms in the southern United States (2-20 m/My) using  $^{21}\text{Ne}$  and  $^{36}\text{Cl}$ . Although erosion rates on the Eyre Peninsula appear to be rather low, they are an order of magnitude higher than those measured in Antarctica (Nishiizumi et al., 1991). The isotope abundances that we have measured so far, and the model erosion rates we have calculated, imply that sampled surfaces are not remnants of a Mesozoic landscape.