

## Timescales of Archaean magmatism

NICHOLAS J GARDINER<sup>1</sup>, TIM E JOHNSON<sup>2</sup>,  
CHRISTOPHER L KIRKLAND<sup>2</sup>

<sup>1</sup>School of Earth, Atmosphere & the Environment, Monash  
University, Melbourne, Australia

<sup>2</sup>School of Earth and Planetary Sciences, Curtin University,  
Perth, Australia

Eo-to Palaeoarchaeoan Terranes (4.0–3.2 Ga) are the building blocks of the Archaean cratons, which themselves form the nuclei to modern continents. U–Pb and Hf isotopes measured in magmatic and detrital zircon are providing new datasets which, when allied with melt modelling, provide a holistic approach to critically interrogate the source and evolution of Earth's first stable continental crust, and the timescales of these processes.

We show how recent work on rocks from the East Pilbara Terrane of Western Australia, the North Atlantic Craton of West Greenland, and the Kaapvaal Craton of South Africa highlights the episodicity of crust production during the Archaean, and that Eoarchaeoan crust underpins the development of middle Archaean terranes. Such work also informs on the stabilization of these terranes and their assembly into the Archaean cratons.