

Data and Supplementary Information

A basin in transition: ecological, environmental, and tectonic shifts across the Ediacaran–Cambrian boundary in the Nama Group, Kalahari Craton

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Table SI1. U-Pb isotopic data for zircon analyses from upper Swartkloofberg Formation ash bed E2107, Neint Nababeep Plateau, South Africa.

Table SI2. Carbon and oxygen isotope data of limestones from the upper Swartkloofberg Formation, Neint Nababeep Plateau, South Africa.

Figure SI1. Photographs of ash beds and dated zircons. A) Outcrop photograph of silicified ash bed in limestone of the Spitskop Member, upper Schwarzrand Subgroup, Neint Nababeep Plateau; example of the distinctive lithology of ash beds in this succession; 33 cm hammer for scale. B) Outcrop photograph of silicified ash bed (sample E2107) within stromatolite reef complex of upper Swartkloofberg Formation, Neint Nababeep Plateau; 33 cm hammer for scale. C-D) Photomicrographs of sharp euhedral zircon grains separated from sample E2107. The age of this volcanic ash bed was calculated at 537.64 ± 0.25 Ma based on the weighted mean of a statistically coherent cluster of $^{206}\text{Pb}/^{238}\text{U}$ dates from four of these zircon grains, after excluding a single older analysis interpreted to represent a detrital or xenocrystic zircon (fig. 12). (*following page*)

