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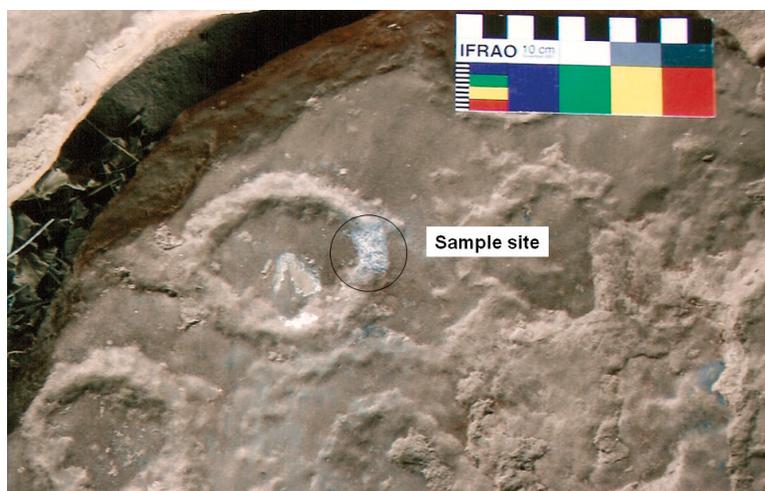


## TOWARDS A CHRONOLOGY OF ENGRAVED ROCK ART FROM THE CENTRAL AUSTRALIAN ARID ZONE

June ROSS

“Great antiquity” has long been claimed for the engraved rock art assemblage found in arid regions across Australia but it was not until more recently that a chronological measure was assigned to the phrase. A range of indirect evidence has led to claims that engraved assemblages may date from as early as 30 000 years ago although little direct dating of the petroglyphs has been undertaken to support such assertions. Ethnographic accounts document Indigenous informants assigning the origin and antiquity of engraved rock art to the *Alcheringa* (Dreaming or Creation Time) or remote past.

In an attempt to clarify the timing of the origins of engraved rock art assemblages in central Australia, a dating project was undertaken by Dr Mike Smith, Dr Alan Watchman and myself. In two widely separated rockshelters west of Alice Springs, calcium oxalate skins have formed over stylistically similar circles pecked into the upper surfaces of fallen rock slabs. These skins were dated using AMS  $^{14}\text{C}$ . Prior to sampling, excavation of deposits under each of the engraved slabs established the timing of the roof fall, thus providing a maximum age for the petroglyphs on the slabs (~9.3 ka cal BP at Wanga East and ~16 ka cal BP at Puritjarra). Oxalate crusts at Wanga East (figure) began forming in the circles at ~5 ka cal BP and at Puritjarra at ~3 ka cal BP, providing a minimum date for the production of the petroglyphs. It is evident then that this suite of petroglyphs was produced around the mid-Holocene. The reliability of the results is strengthened by the use of two different approaches to bracket the timing of the production of the petroglyphs, and by the repetition of the research at separate locations.



Engraved circle showing area that was sampled, Wanga East.

Before making claims about the antiquity of the engraved assemblage as a whole, it was necessary to develop a relative stylistic sequence for the entire corpus of rock art and establish the position of the dated circles within that sequence. Potential problems in formulating relative rock art sequences based on stylistic similarities have become evident since the more widespread use of direct dating techniques (e.g. Côa valley, Portugal). However, even with the considerable advances in dating techniques, the development of rock art chronologies still depends on stylistic analyses in order to link individual dated motifs to the broader assemblage. In central Australia, the continued use of the same core motif vocabulary through the entire period of rock art production compounds the difficulty of this task. Amongst the engraved assemblage, circles, circle variants and tracks predominate with lines, dots, arcs and fern motifs frequently recorded. Motifs with obvious iconic form other than tracks are less common.

I undertook a fine-grained study of more than 22 000 motifs from 310 sites across the region covering more than 300 000 km<sup>2</sup> in order to identify subtle temporal or spatial changes in rock art styles. Motifs were categorized into 110 subject classes with information about the technique, method of application, size, location within the site and orientation of the panel documented at a fine scale. The structuring principles of the rock art body and the social and physical contexts in which it was produced were also analyzed. The relationship between the results of these analyses and taphonomic processes such as weathering of the substrate, fracturing or slumping of rock surfaces or accessibility of motifs today were tested, providing broad-scale temporal parameters. Additional understanding of the relative ages of the engraved motifs was achieved by comparing the relative percentages of two stages of patination (“fresh” and “other”). An analysis of superimposition (2382 instances where the sequence could be established with confidence) of motif classes and techniques provided a means of establishing if techniques were restricted to particular temporal periods or were used contemporaneously. A review of subject matter across the entire assemblage identified a number of chronological markers especially amongst the more recent art.

Nine stylistic groups were identified; several span many thousands of years, some occur coevally, while others are confined to the last few hundred years. Several include many thousands of motifs while others incorporate relatively few. Analysis showed that what appeared on first appraisal to be a homogeneous rock art assemblage was in fact, much more complex with preferences shown for particular techniques at different times, alongside sitespecific chronological choices. While the same core motif vocabulary persisted through time, particular motifs from within the core vocabulary were more common at particular sites and at particular times. The introduction of distinctive motifs and varied techniques became more common in the recent past.

The oldest style included deeply weathered and patinated petroglyphs dominated by a simple suite of small, deeply pecked circles, circle and pits, and single or paired track motifs. Intaglio animal motifs were also associated with the older assemblage. The style and condition of the dated circles from the two rockshelter sites fit within the parameters of this group and suggests that they can be assigned to the oldest phase of petroglyphs in the region. Although it would be unwise to be too definitive about attributing dates to the assemblage based on a single direct dating project, it seems likely that a more recent early to mid-Holocene date may be more appropriately ascribed to the phrase “great antiquity” and the origins of the engraved assemblage in central Australia than has generally been held.





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