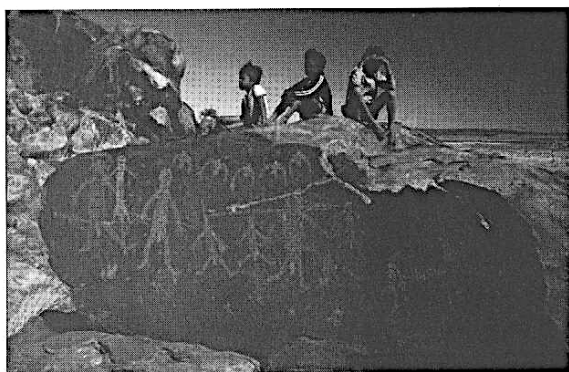


Pilbara petroglyphs on a granite boulder in north-western Australia and Aboriginal children.



BREAKTHROUGH IN DATING AUSTRALIAN ICE AGE ROCK ART

The Pilbara is a rugged and remote, semi-arid part of north-western Australia, and home to the world's greatest concentration of petroglyphs (prehistoric rock engravings). A spectacular and ecologically distinctive region covering an area greater than the United Kingdom, it contains thousands of rock art sites. One small area alone, the Burup Peninsula, boasts some hundreds of thousands of petroglyphs. The Pilbara rock art includes the most sacred in the country, and the graphically most complex and visually most dramatic petroglyphs of Australia.

An engraved date of 1771 and the apparent picture of a ship's wheel made partly with a metal tool occur at one of

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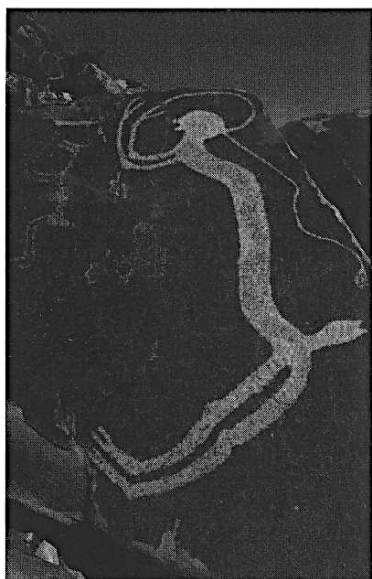
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Anthropomorph of a type now dated by microerosion analysis as less than 1000 years old. From the Pilbara, north-western Australia. About 1.2 m high.

the many sites. Perhaps a shipwrecked Dutch sailor had lived with the local Aboriginal tribe, becoming one of the first Europeans to see their sacred art. But sustained interest in its study only commenced in the 1960s. These studies were soon frustrated by a lack of information about the age of the petroglyphs, which rendered it virtually impossible to integrate the art into an archaeological chronology.

Pilbara rock art encompasses a great variety of traditions, clearly spanning a time interval of geological magnitude. This variety finds expression in numerous motifs of human-like appearance, animal figures, depictions of other objects and mysterious designs that are, for want of a better name, defined as geometric. But behind such simplistic definitions of outsiders lies an art of incredible spiritual power. Some individual rock art motifs in the Pilbara are believed to emanate such potency that an uninitiated beholder can be killed merely by viewing them. More than half of the art is highly sacred and images of it may not be published. In the 1960s it was still possible to interview the last surviving elders from the pre-European era, but almost none of the ethnographic knowledge then col-

Microerosion analysis of petroglyphs in the Pilbara of north-west Europe using field binocular microscopy.



lected has ever appeared in print. Nor can it: much is beyond the understanding of modern research, and what is within our range of comprehension must not be conveyed indiscriminately. It lies outside of what we choose to call science.

A project that was commenced in 1967 to find ways of determining the ages of these awesome figures, finally struck pay dirt last year. After 33 years it succeeded in applying a recently developed method of dating the surfaces of petroglyphs. More importantly, it presented a standardised procedure that should facilitate the future routine dating of the Pilbara petroglyphs. The method used is microerosion analysis, based on a microscopic weathering phenomenon that permits estimation of the time lapsed since a petroglyph was made. This involves calibration by surfaces of known ages and has so far only been used in regions richly endowed with historical stone monuments or glacial abrasions, especially in Eurasia. Such features are in short supply in Australia, and entirely lacking in the Pilbara. Consequently the project utilised eight historical inscriptions with dates to calibrate the microerosion process locally.

Once a calibration curve had been established for the Pilbara region, it was applied to seven randomly selected petroglyphs. The results broadly confirmed what had been suspected for some years: there is a significant component of Pleistocene rock art present. Numerical results ranged from about 350 years to almost 27,000 years. Still older material is certainly present. Specific motif types that are consistently deeply weathered or patinated occur in massive numbers, certainly in their tens of thousands at least. This body of Ice Age rock art is therefore significantly greater than the contemporary cave art of south-western Europe. But whereas the Franco-Cantabrian corpus is one of the most intensively studied archaeological phenomena in the world, the much greater and probably older body of Pilbara Ice Age art has remained almost entirely ignored until now.

Robert G. Bednarik, President, International Federation of Rock Art Organisations, Melbourne