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Wurdi Youang: Re-Thinking Myths about Landscape and Indigenous Science

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Abstract

Despite recent political attempts to re-write the terra nullius myth for Australia, additional Indigenous sub-myth layers about landscape stewardship and cultural knowledge have been substantially overlooked. Pre-contact Indigenous scientific knowledge, landscape architecture strategies, and land stewardship histories and practices have received little legitimate credibility or academic discourse in this rewriting. One sub-myth is that Indigenous Australians have no astronomical scientific expertise and knowledge and that there is no physical evidence of this expertise. Thus, Indigenous Australians possess no ability to translate Dreaming story to astrological configuration, nor explore astronomy. Such is increasingly becoming a myth as it belies a suite of landscape architectural installations and cosmological narratives now being documented and researched. This paper addresses this myth by bringing forth a review of Indigenous cosmological knowledge for south-eastern Australia, with a substantive discussion about archaeo-astronomical evidence. The paper explains the cultural importance of the Wurdi Youang landscape installation for the Wathaurong community, and its role in Australian landscape architectural histories and practice.

Landscape as Cultural Landscape

Landscape is a cultural object shaped, carved, manipulated and both unconsciously and consciously influenced by the action of humans. In these activities we craft landscape to tell narratives about our aspirations and values but also shape them to our gain and exploitation. Thus, we create cultural landscapes containing both tangible and intangible narratives, often called 'cultural landscapes' of which the places that we consciously manipulate are termed 'designed landscapes'.¹ In landscape architecture, and cultural landscape, theory and practice these terms are commonly applicable to Western-created landscapes but nomenclature and scientific credibility are exceedingly hazy when research ventures into Indigenous landscapes.



Figure 1. Oblique aerial image of the Wurdi Youang installation
(P Curnow, 2011, *Kaurna night skies*, www.emudrearing.com/literature/Curnow2006b.pdf;
accessed 2 April 2012.)

Potteiger observes that ‘we live within worlds of stories, and we use stories to shape these worlds.’² To landscape architecture theory, *Landscape Narratives* (1998) provides a treatise on the typological frameworks that landscape design, if not architectural practice, explores when place-making and place-designing. The text explores the nature of the narrative applied, not the act of designing itself, and sets forth a framework in which to consider the construction of a design. Narrative exists of story – the body of the discourse – and telling – the expression of the discourse. The former includes events, characters and settings, and the latter contains structure or manifestation realised in film, verbal, dance, landscape, building and artifact.³

In Potteiger’s argument, landscape and the stories and ‘dances’ that partake thereon are the tangible and intangible expressions of a narrative that more often is located in or explains place. Therefore, *genius loci*, as a theoretical construct, holds a legitimate position in this expression of landscape in the same manner in which Aboriginal landscapes exist. The latter are ‘landscapes of the mind’ where sacred and unsacred co-exist together as part of human activities, ritual and constructions.⁴

A second facet is that Aboriginal knowledge systems have a legitimate position in science. Australian anthropologists have long accepted that Aboriginal ecological knowledge exists under their rubric of scientific knowledge. It is science in its own right, held together by oral fact, moral code and practice, upon which a culture is assembled

and maintained. While it lacks the Western label of 'science', it exists without objective external criteria and internal revelation of which the former is the basis of Western scientific inquiry, and the indeed academia.⁵

Aboriginals believe that reality comprises two co-extensive domains. One is inhabited by living human beings and knowledge of it is gained through the senses; the other is inhabited by gods, ghosts and demons, or the equivalent Dreaming ancestral beings whereby entry into their domain may be achieved spontaneously through the act of 'dreaming'. Conversely, human entry into the domain of morals may be contrived through the act of ritual.

In Hiatt & Jones's (1998) definition, the first domain is analogous to our engagement with *genius loci* as we acquire knowledge of the sense of place through sensory experience and revelation. The second domain is the 'act of ritual' which exists in patterns expressed, constructed and undertaken whether specific to a time, place and events or generic to our daily lives and activities.

Integral to Australian Aboriginal culture is their theory of the creation of Earth and associated living beings including humans. These are all tied into a system predicated upon meaning that is past, present as well as future. This common relationship, irrespective of which Aboriginal nation across the continent, is interlinked over 260 'countries' irrespective of their different languages, moiety systems and ecological systems. Its precepts determine Aboriginal life as an unchanging code of behaviour that explains and encompasses social and environmental behaviour. This results in the *ulchurringa*, or Dreaming, as derived from the central Australian *Arrente* word of *altjerri* – to dream.

The central thesis of the Dreaming is that in the beginning the world was a featureless landscape in a *terra nullius* of ownership and nomenclature. This world was uninhabited by human, animal and plant. Then Ancestral Beings descended and traversed the landscape along journey routes, stopping at various places to perform acts of creation. Their journeys and places, and the activities performed, shaped and formed the physical features and patterns of Earth as we know it today. And they continue to change the Earth in line with their activities that are explained and re-told in narratives. They made animals in their aspirations and representations but also made distinctive landscape and skyscape features, and created plants similarly. To the *Arrente*, these Ancestral Beings formed and entered the wells, the springs of life, which they named, as well as the core entities of hills or river beds, in which their power of spirit continues to exist. Change the

hill and you injure the spirit, and thereupon incur the environmental consequences. Thus there is a philosophical imperative in Aboriginal culture to 'heal the landscape' to remedy the injury (Sinatra & Murphy 1999) which parallels Frederick Law Olmsted's 'green lungs' aspiration in his winning Central Park (1858) competition entry, and is a little-written thought in generic landscape architecture theory today. To the *Arrente*, sets of sites or places across their 'country' are associative or directly linked to their spirits or culture, and to follow or journey along the sites and trails is a mark of cultural respect and a 'right of passage'.

Within this thesis humans were created. They were invested with languages, responsibilities, songs, dances, names and design-icons, which were parts or instruments of these Ancestral Beings and their stories and codes. People were therefore consciously placed on the landscape and endowed with a 'country'-specific regime of kinship relationships and narratives, often perpetuated by marriage rules, all of which were often draconically enforced.

Thus, 'Country is ... turned into a socially enduring object because its creators are outside the immediate social world.' Therefore a Dreaming landscape is a 'designed landscape' of an Ancestral Being, and an Aboriginal clan or group or individual is the land manager, curator and planner of their place or tract.⁶

Terra Nullius, Indigenous Cosmology & Indigenous Science

Australian perceptions of Indigenous are predicated on Eurocentric and post-mediaeval definitions of space and land settlement that run counter to many Indigenous systems of landscape knowledge. These differences cascaded into the Gurindji Strike (or Wave Hill Walk-Off) in 1966; the successful *Constitution Alteration (Aboriginal People) 1967* Commonwealth referendum in 1967; the *Milirrpum v Nabalco Pty Ltd, (1971) 17 FLR 141* (the 'Gove land rights case') or Gove land rights Australian High Court determination that legally legitimised *terra nullius* and that no concept of native title existed in Australian law; the *Mabo v Queensland (No 2)* (commonly known as 'Mabo decision') decision by the Australian High Court that declared *terra nullius* to be invalid and legitimised Indigenous 'ownership' of land and water based upon traditional custodianship practices and 'laws'; the *Wik Peoples v The State of Queensland* (commonly known as the 'Wik decision') of 1996; the *Motion of Reconciliation* by Prime Minister Howard in 1999; and, more recently the Apology to the Stolen Generations by Prime Minister Rudd in 2008.

Of these the Mabo decision is highly significant to Australian land-related histories as it clearly demonstrates that traditional custodianship practices and 'laws' constitute a system of conscious land management curatorship and thus an act of planning of lands, resources and patterns. 'Laws' embrace Indigenous myth, moral codes and their narratives linked to place, or a series of places.

The Mabo (1992) and Wik (2009) determinations, unfortunately, relied upon the demonstration of physical or tangible 'evidence', in contrast to intangible 'evidence', to be forthcoming. But, as a consequence they have proven that rich and continuing narratives and legacies have legitimacy in the Native Title discourse. Where 'evidence' is muddled by years of dispossession resulting in fragmentation of knowledge such evidence is much harder to document and prove within the Western legal system. Notwithstanding this barrier, cultural re-empowerment and re-definitions of 'ownership' have been forthcoming in Acts, land transfers and Title creation, re-naming or dual naming of places through Indigenous-informed or associative toponyms, direct involvement in consultation processes associated with national park management planning processes, but have been deceptively and tacitly woven into larger reconciliation strategies.

Thus, while land 'ownership' and traditional country, as a *terra nullius* reversal, is known and increasingly becoming respected in both general and planning debates, the legislation of planning process and perspectives in land management and landscape planning has been limited and superficial, and hampered by planning practitioner and academic naif and lack of depth of interrogation and appreciation.

Cosmology as Landscape and Narrative

In this cultural landscape, or 'designed landscape', cosmology as a Western discipline exists as a legitimate and major form of narration whether by word, story, dance or activity in its replication, repetition or celebration. But also, Ancestral Beings manifested themselves in atmospheric and cosmological phenomena, or as plants and vegetation, and not just as humans or animals, as assumed in contemporary Aboriginal 'cultural competency' activation literature today.⁷ Atmospheric and cosmological phenomena existed as both patterns and events, and occurrences or shifts or arrivals or disappearances signaled information, Dreaming stories, events or warnings. Therefore, to Aboriginal communities, the heavens are part of their landscape; they are connected to the Earth, and they are integral to their Ancestral Beings. Accordingly when 1780s

colonist David Collins asked Ben-nil-long (Bennelong) near Sydney Cove about the origins of his spirit or soul:

His answer was ... they came from the clouds (alluding perhaps to the aborigines of the country [but probably the Skyworld]); and when they died, they returned to the clouds (Boo-row-e). He wished to make me understand that they ascended in the shape of little children, first hovering in the tops and in the branches of trees: and mentioned something about their eating, in that state, their favourite food, little fishes.⁸

As an example the pock-marked smoky expanse of the Milky Way was more often a celestial expanse created by the activities of the dead:

In parts of Queensland and South Australia the natives believed the "Milky Way" to be a sort of celestial place for disembodied spirits. They said it was the smoke proceedings from celestial grass which had been set on fire by their departed women, the sign being intended to guide the ghosts of the deceased to the eternal camp fires of the tribe.⁹

These are celestial landscapes of spirits that were described in the same way by the *Ngarrindjeri* of The Coorong-Encounter Bay region in perceiving that the *Aurora Australis* was the campfires of spirits in the 'Land of the Dead.'¹⁰

Landscape as Spirit

In this context, Ancestral Beings created 'designed landscapes' on Earth and in the sky that were consciously formed with a deliberate logic for which an Aboriginal clan or set of clans looked after this multi-dimensional and temporal 'country'.

The 'sky world' was often envisaged in Dreaming stories as comprising landscapes of contemplation and death thereby possessing warning(s) and the manifestations of the Ancestral Beings looking down upon the Earth. Therefore, oral expressions of the 'Land of the Dead' or the 'land to the West' were common colonial translations of oral Indigenous discussions, of westward journey routes, with large birds perceived as carriers of the dead, and that these heavenly and earthly landscapes were directly connected thereby enabling the up-and-down passage of Ancestral Beings (and occasionally humans) between both landscapes. For example, amateur Victorian colonial anthropologist Mathews recorded this perception from the *Kara Kara* near Stawell

... an immense pine [Callitris species] tree growing out of the earth the topmost branches of which reached up to the sky. In the far away past, people used to climb up the trees and walk about and reside on the starry vault; and black-fellows who belonged to the sky occasionally descended by the trees to the earth to see their friends, and remained for a while. Visits were frequently made for the purposes of barter between the blacks who were located on the earth and those whose hunting grounds were away in the sky. In short, the tree was a regular highway between the earth and the upper regions, for a very long period. Old blackfellows have told me stories of similar trees which reached up into the sky in other parts of Victoria.¹¹

The notion that the 'skyworld' was a landscape is important. To the *Wurundjeri* (*Woiworrung*) of the Yarra Valley region, they:

Had a sky country, which they called Tharangalk-bek, the gum-tree country. It was described to me as a land where there were trees. The tribal legends also tell of it as the place to which Bunjil [Supreme Male Ancestor] ascended with all his people in a whirlwind.¹²

*Howitt concluded that this celebrated landscape was named after the "manna gums" (*Eucalyptus viminalis*), Tharangalk, and that it possessed a contoured and textured surface. The Gunditjmarra, of south-western Victoria, believed similarly and that many "smaller stars" together form "star earth."¹³*

The star world was therefore integral to the land world. In this theoretical construct, Aboriginal communities looked to the skies for signs of the spirits of their dead, of the passage of meteors or shooting stars as confirmation of passages, and as warnings foretelling a death or other events.

Like on land, Ancestral Beings had genealogical systems. Lutheran Reverend Teichelmann stated that, from the perspective of Kaurna of the Adelaide Plains, 'they personify the celestial bodies as having formerly lived upon earth and the metamorphosis of which is closely connected with that of their ancestors.'¹⁴ Mathews, in 1904, also wrote:

The blackfellow have not mapped out the sky into constellations in the same way as Europeans have done, but there is a certain amount of methods in their arrangement of the stars. For example, a man and his wives, his family,

*his weapons, his dogs, are not generally far apart. Brothers, uncles and other relationships are often separated by considerable distances.*¹⁵

These Ancestral relationships determined clan membership, thereby establishing a common kinship system and an order between Earth and Sky residents. Thus, when Aboriginal Protector George Robinson asked about examples from several of his Tasmanian Aboriginals: 'No 1 was large [and] is called the mother [,] No 2 the husband is of lesser magnitude and 3 the offspring is hardly visible' was a discussion about the two Pointers and the Southern Cross. To the *Gunditjmarra*, the Sun was perceived as female Ancestor *Tirng*, meaning 'light', while associated bright stars were called *Kahii Tirng*, meaning 'sisters of the sun.'¹⁶

Therefore to Aboriginals, Ancestral Beings could be constituted as both star arrangements and planets therefore humanising the heaven. Stars, planets, swaths of stars like in the Milky Way, and the 'black puddles' of night sky were both representations as well as extensions of creation or 'Dreaming' stories. For example, to the *Gunditjmarra*, *Ngindyal*, a large emu-like Ancestor journeyed to occupy the black path in the Southern Cross, chasing away *Waa* the Crow who is today Alpha Argus some distance from the Cross.¹⁷

Mathews concluded, to the Aboriginals:

*... conspicuous stars and star clusters all the way along the zodiacal belt, have well-known names and traditions. Moreover, each star figuring in the myths belongs to a phatry [moiety], section, clan or other subdivision, precisely the same as the people of the tribe among who the tale is current.*¹⁸

Thus, Aboriginal linguistic boundaries, or 'countries', often correlate to cosmic landscapes.

Landscape as Artifact

To Potteiger, narration is a means of communicating stories.¹⁹ The abstraction of this narration is the physical manifestation of a story – a telling – that results in the attempted, conscious or celebratory explanation of the narrative.

To the Australian Aboriginals most of these stories were 'constructed' and conveyed in verbal and dance narratives, but occasionally in artistic abstractions such as rock art in northern Australia or the ephemeral sand drawings of central Australia. Thus art or

drawing was an avenue to support and visually scaffold a Dreaming. 'Maps', whether 'sky maps' or Dreaming journey lines, possessed artistic expressions and served to both reinforce and aid a story and its components.

In an Earth landscape devoid of artistic venues, it appears that the use of stone through hydraulic engineering initiatives offered avenues to action the wishes of Ancestral Beings but also to enable connections. There is now extensive archaeological and anthropological evidence documenting the unique hydraulic engineering and aquaculture expertise and artifacts of the *Ngemba* on the Darling River near Brewarrina and the *Gunditjmarra* in the wake of *Budj Bim* at Lake Condah resulting in their elevation to the National Heritage List under the *Environment Protection & Biodiversity Conservation Act 1999*.

At Brewarrina:

... traditional Aboriginal accounts [record that] the fish traps (ngunnhu) were built by Baiame and his two sons Booma-ooma-nowi and Ghinda-inda-mui during drought times when the Ngemba people faced famine as Gurrungga (the water hole at Brewarrina) dried up. Use of the fish traps was first documented by European settlers in the 1850's. Publications in the early 1900's were first to have detailed descriptions of the site and these descriptions are similar to the way the site looks today.

The fish traps are ... a rare example of Aboriginal fisheries which provide evidence of Aboriginal occupation and demonstrate a highly skilled fishing technique They represent a distinctive way of life, rarely practised today, although the fact that current generations of Aboriginal children in the region fish the traps and know the stories surrounding them demonstrates a continuity of traditional ways of life, customs and techniques. The fish traps are associated with important figures in Aboriginal culture and the stories surrounding their construction and use, together with art work depicting the traps, demonstrate the fish traps' association with and importance in Aboriginal culture and spirituality.²⁰

Brewarrina, like Lake Condah, possesses clear demonstrations of credible Indigenous technical competence in the use of stone, sandstone or scoria to achieve specific food harvesting and land management outcomes demonstrating knowledge of the hydraulic engineering and aquaculture sciences.

Such designation also clearly recognises that significant anthropological and ethnobotanical values are evident allied with growing scientific acknowledgement of the medical and dietary knowledge of Aboriginals. This acceptance is integral to legal documentation contained in applications for Land Title claims that acknowledge that traditional Aboriginal land and marine management adheres to contemporary principles of sustainability, and are successfully governed by complex social norms and cultural beliefs. Whilst limited in their technological application of land management tools, and equipment, according to Lewis their sophisticated environmental knowledge effectively comprehends

... animal distributions and wildlife habitats, the location of favoured plants, the preferences which animals have for plants at particular seasons and stages of ecological succession, the daily and seasonal movement of animals and within different kind of habitats, the reproductive cycles of preferred spaces, predator-prey relationships, breeding-reproductive patterns, the psychology and behavioral strategies of individual species, is a knowledge-base the Australian invaders never comprehended nor grappled with.²¹

This anthropological and ecological acceptance, that Aboriginals possess, and in part continue to possess, a rich ecological science appreciation and understanding of the Australian landscape is validated in its cultural inclusion in numerous land management plans and strategies for national parks in the Northern Territory and northern and central Australia where Indigenous knowledge and practice still co-exists. This knowledge includes celestial measurement of time – without clocks – and the replacement of the Gregorian calendar by an Australian ecologically-relevant and geographically-specific ‘seasons’ thesis that links atmospheric and environmental change to a multi-dimensional ‘calendar’ that determines land management, Dreaming journeys, and cultural rituals having regard to environmental cues.

Wurdi Youang

While the above discussion validates that Aboriginals possessed a particular system for explaining, interpreting, mapping and comprehending the night landscape, how this was expressed or used to celebrate their understandings is little researched.

Wurdi Youang exists as a physical contradiction to the notion that Aboriginal communities had neither astronomical knowledge nor the ability to map and scientifically measure this

information. It is but one of several stone installations located across the volcanic plains of Victoria's Western District, and perhaps the most unique in its composition and integrity. While many stone markers and patterns were noted by early settlers on the Plains, most were manipulated and re-created into the endless dry stone walls that litter parts of these Plains, constructed in *lieu* of post and wire fencing.²²



Figure 2. *Wurdi Youang* as surveyed by Lane & Fullager (*Records of the Victorian Archaeological Survey*, No 10, June 1980, 137)

Scoria and rubble basalt stone is a material that has littered the Western District plains for generations, and dates from volcanic eruptions 40,000 to 7,000 years ago. Aboriginals from different District clans used this stone in two approaches. The first was its use in engineering works allied to hydraulic manipulation of watercourses and swamps in south-western Victoria for aquaculture management and the harvesting of the protein-rich Short-finned Eels (*Anguilla australis*) and fish that is now well accepted by the

anthropological and archaeological academic communities. The Lake Condah complex, now included on the National Heritage List, was inscribed because of recognition of the unique use of stone to construct water races, dams, channels and fish and eel harvesting devices and poundings.²³

The intricate complexity of some of these systems confounded many of the early explorers, such as Aboriginal Protector Robinson (1841: July 7) who wrote in 1841:

At the confluence of this creek with the marsh [I] observed an immense piece of ground – trenches and banks resembling the work of civilised man but which on inspection [I] were found to be the work of the aboriginal natives – purpose consisted for catching eels – a specimen of art of the same extent I had not before seen ... These trenches are hundreds of yards in length – I measured in one place on one continuous triple line for the distance of 500 yards [0.45 km]. The triple water course led to other ramified and extensive trenches of a more tortuous form – an area of at least 15 acres [6 ha] was thus traced out. These works must have been executed at great cost of labour to these native people. The only artificial device being the lever ... a stick chisel sharpened at one end by which force they threw up clods of soil and thus formed the trenches ... with their hands, the soil displaced went to form the embankment ...

The plan of these ramifications were extremely perplexing ... At intervals small apertures [were] left and were placed there arabine or eel pots. These gaps were supported by pieces of the bark of trees and sticks ... there must have been some thousands of yards of this trenching and banking. The whole of the water from the mountain rivulets is made to pass through this trenching ere it reaches the marsh. It is hardly possible for a single fish to escape. I observed at some distance higher up minor trenches too, and one through which part of the water ran in its course to the more extensive works. Some of the more extensive works were 2 feet [61 cm] in height, most of them a foot [30 cm] and the hollow a foot deep by 10 or 11 [25-28 cm] inches wide. The main branches were wider.²⁴

The second was its use in more abstract ceremonial and artistic forms for which little cultural knowledge in the public domain formally exists today as to their purpose. But, clearly these places demonstrate an act of landscape art analogous to contemporary landscape art installations that convey narrative and engage with the place they are

situated within.²⁵ A review by Lane & Fullager (1980)²⁶ provides the only archaeological survey of these types of structures summarised as follows:

Site	Near to:	Characteristics	Environmental Context	Geology
Wurdi Youang	You Yangs hills; Werribee	Ovate	Basalt plains	Basalt
Lake Bolac 1	Lake Bolac, Western District	Semi-circular	Basalt plains	Basalt
Lake Bolac 2	Lake Bolac, Western District	Semi-circular	Basalt plains	Basalt
Carisbrook	Carisbrook, near Maryborough, north-central Victoria	Boomerang	Irregular, rocky sloping overlooking Tullaroop Creek	Basalt
Lake Wongan	Streatham, Western District	Maze	Basalt plains with hillocks and adjacent island in lake	Basalt

Table I: Classification of Victorian Aboriginal Stone Alignments (L Lane & RLK Fullager, *Records of the Victorian Archaeological Survey*, No 10, June 1980, 146)

Their typological analysis is summarized in Table II.

Type	Victorian example	Shape	Physiography	Function	Reference
Artificial dams, weirs, dykes across watercourses	Salt Creek	Straight	Basalt plain	Technological; food	Dawson 1881: 94 ²⁷
	Lake Condah	v-shaped & straight	Stony rises	Technological; food	Coutts et al 1978 ²⁸
	Moyne River	Straight	River valley	Technological; food	Presland 1977: 65 ²⁹
	Merri River	Straight	River valley	Technological; food	Presland 1977: 53 ³⁰
Fish Traps	Lake Condah	Low irregularly shaped walls	Stony rises	Technological; food	Coutts et al 1978 ³¹
	Moorabool River	Maze	River valley	Technological; food	(authors)
	Barwon River	Maze	River valley	Technological; food	(authors)
Hunting hides	Not known				
Direction indicators	Charlton	Standing stones	Granite outcrops	Near to rock well; Technological; food	(authors)
Tribal boundaries	Not known				
Hearth stones, threshing floors	Meredith (?)	Circle of stones	River valley	Technological; food	(authors)

Shelters	Macarthur	Semi-circular	Stony rises	Technological; shelter	Coutts et al 1978 ³²
	Mt Elephant	Semi-circular	Basalt plain	Technological; shelter	Smyth 1878: vol 1, 242 ³³
Petrographs	Not known				
Ceremonial	Carisbrook	Boomerang	Irregular, sloping	Demographic: initiation (?)	Massola 1965 ³⁴
	Lake Wongan	Maze	Island in lake	Demographic: bora	Casey 1938 ³⁵
	Wurdi Youang	Ovate	Basalt plain	Demographic: ceremonial	(authors)
	Mt Franklin	Cairn	Sloping, grassland	Demographic: (?)	Massola 1968 ³⁶
	Lake Bolac [1]	Semi-circular	Basalt plains	Demographic: ceremonial	(authors)

Table II: Classification of Victorian Aboriginal Stone Alignments (L Lane & RLK Fullager, *Records of the Victorian Archaeological Survey*, No 10, June 1980, 147.)³⁷

Lane & Fullager's typological analysis includes stone installations at Lake Bolac or Glenaber (two sites), Carisbrook and Lake Wongan in Victoria.³⁸ Site 1 at Lake Bolac exists of approximately 150 stones or boulders in two arcs creating an ellipse shape. Site 2 at Lake Bolac exists 10 km to the north of Site 1 and possesses a similar spatial configuration with colonial oral histories pointing to it as being a colonial-constructed 'sheep fold'.³⁹ The Carisbrook site consists of several stone installations including identifiable shapes analogous to a boomerang, three circles and a heap of rocks like an informal cairn.⁴⁰ The Lake Wongan site, near Streatham, comprises a sequence of stone arrangements near to Lake Wongan and watercourse with an unclear spatial configuration.⁴¹

To Lane & Fullager, the *Wurdi Youang* stone configuration was an intriguing landscape installation, possessing a unique spatial orientation, which was constructed prior to European colonisation. Constructed in *Wathaurong* 'country', in the shelter of the granitic You Yang hills that rise within the featureless Werribee volcanic plains, it is located some 15 km westwards from suburban Werribee to the west of Melbourne. The *Wathaurong* 'country' includes the Werribee Plains up to the Ballarat uplands and down to Geelong and the Bellarine Peninsula including most of the Moorabool and Barwon River catchments.

Lane & Fullager, analytically, describe the site as:

The alignment has an ovate ground plan (Fig 32 and Plate 5). It is approximately 150m in circumference and consists of 95 blocks of basalt stone, the tallest rising 75 cm above the ground. There has been no attempt

*to build up a wall, but 22 rocks are kept in position by smaller rocks used as wedges. Some of the rocks are seated on bare rock but most are embedded in the ground to a depth of about 5 cm. No rocks appear to have been deliberately placed within the ring. Three stone artefacts were recovered from within the ring.*⁴²

Their observations record the site as being 'relatively even, and the main area is well drained and has no hollows that could retain water.' By their estimations, some '23 tonnes [24000 kg] of [basalt] boulders have been arranged at the site. The largest rock in the alignment weighs about 500 kg, the smallest about 30 kg, and most weight nearer to 90 kg.' To Lane & Fullager, the site was composed of 'boulders of this size suggest that a considerable effort was required to move and arrange the stones.'⁴³

In short, here was a large rock installation with some deliberate artistic or ceremonial purpose that would have involved considerable and conscious effort to construct in this manner. Lane and Fullager's use of the word 'alignment' in their descriptions is also misleading as 'alignment' implies a line or linear feature whereas this shape and form was ovate or egg-shaped in its configuration. Further, their description and analysis fails to comprehend place and any orientation variables in their analysis. Their description includes mention of associated implements and debitage evidence found on the opposite side of the nearby Little River, and puts forward two substantive conclusions as to why they believe it to be an Aboriginal relic:

- *The alignment is on a property which has been owned by one family [Chirnside linked to 'Werribee Park'] since first settlement, and family traditions have been canvassed to rule out a European origin for the alignment.*
- *The alignment has no known counterpart among colonial structures. It is situated on sloping, rocky ground of no commercial or agricultural value and it would not have been suitable for defining the boundaries of a sheep dip, sheep pen, or cattle fence. Nor is there evidence that it ever formed part of any type of fence or building.*⁴⁴

Therefore, in their archaeological minds, it was a curious installation that 'in its construction required a certain architectural and engineering skill, and initially some mechanical device may have been used to mark out its boundary' pointing to scientific knowledge to formulate its layout, orientation, positioning and construction.⁴⁵ This concluding sentence, that implies some technical competence, was then matched with an

undocumented conclusion that the site served a 'ceremonial' role as categorised in their 'Classification of Victorian Aboriginal Stone Alignments' in the same discussion. The latter conclusion was not mentioned in their larger discussion of the installation and appears conclusionary as several of the other typological categories bear '(?)' indicating uncertainty about use or role.⁴⁶

In contrast the astroarchaeological and *Wathaurong* communities excitedly describe the place as a potential scientific precedent. This egg-shaped ring of stones, about 50m in diameter, has its major axis orientated almost exactly east-west in directions. Morieson, from electronic survey, has theorised the shape is more analogous to a sea-water mussel or abalone or pipi than an ovate shape as described by Lane & Fullager.⁴⁷

At its westernmost end, at the highest point of the circle, are three prominent waist-high stones. Morieson has concluded that some outlying stones to the west of the circle, as viewed from these stones, indicate the setting positions of the Sun at the equinoxes and solstices.⁴⁸ Norris *et al* have confirmed these alignments and have shown that the straight sides of the circle also indicate and coincide exactly with the solstice angles.⁴⁹

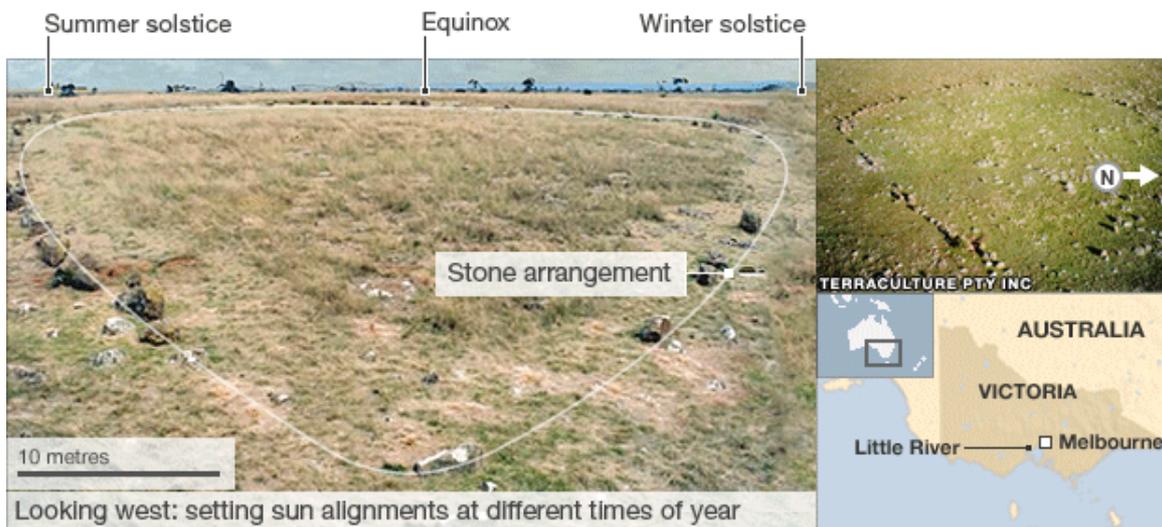


Figure 3. Astro-archaeological analysis of the *Wurdi Youang* installation.
(P Curnow, 2011, *Kaurna night skies*,
www.emudreaming.com/literature/Curnow2006b.pdf; accessed 2 April 2012.)

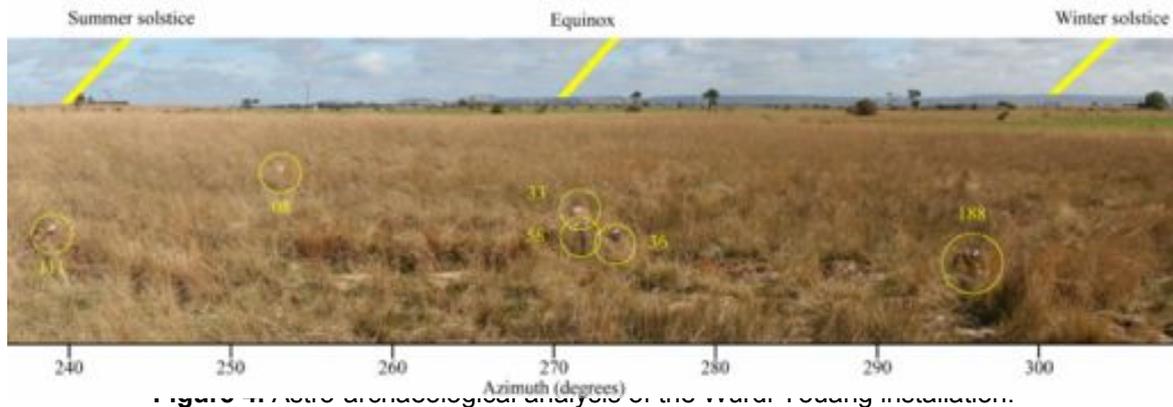


Figure 4. Astro-archaeological analysis of the Wurdi Youang installation.
(P Curnow, 2011, Kaurna night skies, www.emudreaming.com/literature/Curnow2006b.pdf;
accessed 2 April 2012.)

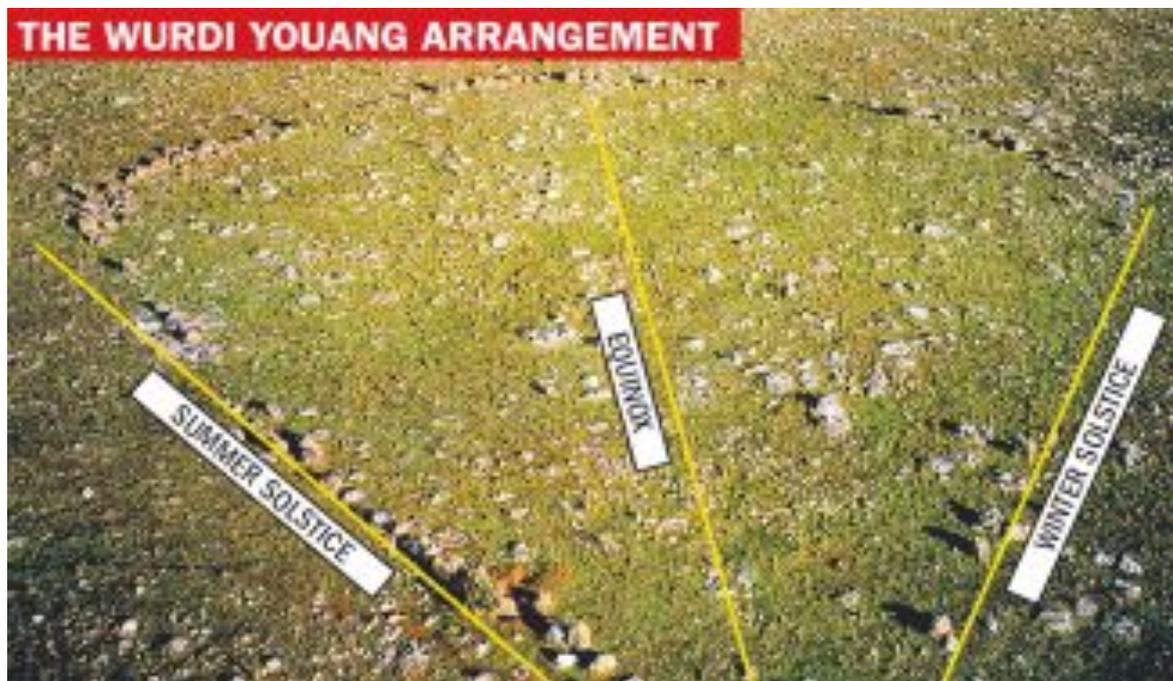


Figure 5. Astroarchaeological analysis of the Wurdi Youang installation.
(P Curnow, 2011, Kaurna night skies, www.emudreaming.com/literature/Curnow2006b.pdf; accessed 2 April 2012.)



Figure 5. Ground plain photograph, of the Wurdi Youang installation, of the orientation stones with the distant three hills of Anakie in the backdrop.

(P Curnow, 2011, Kaurna night skies, www.emudreaming.com/literature/Curnow2006b.pdf; accessed 2 April 2012.)

In one sense, in contemporary landscape architecture practice, the installation would be deemed a significant landscape art installation analogous to Stonehenge and interpreted as possessing and having been inspired by astronomy. In the archaeological perspective it is a unique assembly of stone in an ovate spatial configuration for some as yet unknown purpose presumably being ceremonial. In the context of this discussion, the ethnoarchaeological and Indigenous lens' view is that Wurdi Youang is an astronomical installation for the measurement and associated ceremony integral to Indigenous cosmological science.

Collapse of the Cosmos

Colonial invasions, physical and medical, of the Australian continent have severally impacted upon if not erased much of the cosmological relationships and scientific translation of Australia's ecosystems within their cultural constructs. The 'wooden props', that held up the furthest reaches of this Earthly landscape strained, withered, and in the eastern coastline most of these fringes rotted with British expansion. Death, metaphorically, traversed the landscape from the east recalling 'the ghosts or reincarnations of all the blackfellows who ever lived had broken through from the spirit

world to swarm over the land' and deceased and diseased relatives had come back from the 'Land of the Dead'.⁵⁰ The rapid dispersal of the European-introduced small pox was explained this way by many Indigenous communities, and coupled with unusual celestial events both were interpreted as warnings of future misfortune and grief.

This was a rapid period of colonisation that withered Indigenous knowledge systems, and comprehension of these systems, as well as the 'science. This change dramatically impeded their continued use, application and narration. A 1843 comet that traversed a large part of the Australian heavens, for example, and the frequency of *Aurora Australia* apparitions to the Ngarrindjeri, were portent death signals made by a 'wild blackfellow' that foretold the arrival of dangerous human/spirit beings.

Such cosmic signals and their translations are readily accepted as evidence of Aboriginal environmental and astronomical knowledge, as they are for most First Nation communities around the world, and they are woven into their respective myths and narratives. But, where the construction of physical installations occur, whether linked to Druid thought in England, Indian communities in North America and Australian Aboriginals, it confounds traditional Western scientific thought. *Wurdi Youang* exists as an enigma in this discussion, opening up major questions as to scientific thought but also questioning the possible existence of more such installations around Australia that have gone unknown and unforeseen because of the subtlety of their construction and that were quickly laid waste by colonial pastoral expansion.

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Endnotes

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