

The Alignment of Archaic Artwork to Astronomical Values Used to Predict Eclipses: Direct Evidence for the Presence of Ancient Mathematical Knowledge in Early Australian Art and Middle to Upper Palaeolithic Art Found Worldwide

In a study of three separate art types (stencilled handprints, linear geometrics and stones inscribed with “tally” marks) it is confirmed that the native aboriginal people of Australia added linear representations of eclipse data to their earliest known art. This method, which involves the conversion of astronomical values to an angular array, is largely identical to the technique used in lower Palaeolithic-era engraved animal bones found in Africa, and upper Palaeolithic period geometrics found in cave paintings at Lascaux, in France. In one example of Australian artwork the astronomical pattern appears to be encrypted. There is also evidence that the artists used three-dimensional geometrical tricks to create a basic optical illusion. Taken together, the data suggests that it is possible to scientifically test the intent of early Stone Age artist, and to study long-range interactions between distant cultures.

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Introduction

After decades of argument¹ it is now generally accepted that many archaeological sites do align with astronomical events, but the primary evidence used to support the assumed astronomical link is actually still very weak.

Ignoring general ideas, such as the earliest theories put forward that stone circles were circular to reflect the shape of Earth, see *Stonehenge, A Temple Restor'd to the British Druids*, by William Stukeley², the first genuine proto-archaeoastronomical studies were the attempts to align archaic structures to specific celestial events. In turn any celestial markers observed were linked to ancient festivals and lunar/solar calendars Lockyer, Sir J. N., An attempt to ascertain the date of the original construction of Stonehenge, Proceedings of the Royal Society of London 69, 137-147 (1901) Lockyer, Sir J. N., Stonehenge and other British monuments astronomically considered. Over time, these earliest studies then led to a concept that is best called “Linearization”. First was the theory proposed by Alfred Watkins, who suggested, very controversially, that ancient cultures created short-distance linear alignments between neighbouring

sites⁵. This, in turn, was followed by the computational work of G. S. Hawkin⁶⁻⁸, and later by Alexander Thom⁹⁻¹¹, who separately argued that linear sight lines were used to align stone circles and other ancient structures to both celestial events, and the appearance of specific stars at the change of the seasons. Alexander Thom further argued that perhaps one of the key reasons for producing these large, complex structures was to predict eclipses.

The primary scientific reason why the evidence in favour of an archaeoastronomical link is still considered weak is there simply exists too many gaps in the current archaeological theory. For example, many ancient structures are far too complicated for the idea that they are built just to measure solstice alignments alone to be entirely valid. Put another way currently too many alignments at Stonehenge produce no link to any recognized visible astronomical event, and for any other theoretical model a 95% failure rate would be clear evidence that the theory is fatally, and in some cases entirely flawed.

To attempt to solve the over complexity seen in Stone Age art it is necessary to develop testable theories that can move away from guesswork, and attempt to actually understand the "intent" of the ancient artists¹²⁻¹⁷. One way to do this is to measure the geometrical angles produced by a structure and to compare the angular values to known astronomical values. In other words argue that geometric patterns are a very early form of encoded writing.

This study now shows that many linear patterns seen in ancient art match this new theory. By drawing astronomical values as geometric lines it is possible to encode astronomical values in a number of different ways. The simplest approach is to convert mathematical terms to a simple angular array. Thus the 27.32 day sidereal month (which astronomers use to measure time) appears in ancient art as a straight line at 27.32 degrees, and the 18.6 year lunar nodal cycle is drawn as a line at 18.6 degrees. In this hypothesis, only the numerical value is considered important¹⁸⁻²⁰, and the offset is either measured to the horizontal or vertical, or for larger structures an offset to due East/West or North/South is often seen. In many art pieces a repetitive 90-degree rotational symmetry is also frequently observed. What is surprising is the primary angular values seen in most ancient art are directly linked to astronomical values that astronomers most routinely use to measure and predict eclipse events.

Despite the extremely simple nature of the theory, this theory has without any modification, now successfully analysed the structure of more than 80 archaic art pieces, including the 14,000 year old geometric doodles found in Lascaux Cave in France¹⁸, the circa 300,000 to 400,000 year old geometric fan motif drawn on the Bilzingsleben Bone¹⁸. The theory has even successfully been

used to explain the angles drawn by the causeways in front of the Great Pyramids¹⁸, the complex pattern drawn by the interlocking stones that create the walls at Sacsayhuamán¹⁹, and Palaeolithic-era, engraved bones found in Africa²⁰.

The purpose of this test is to now see if the theory can be applied to three entirely different categories of art found in the continent of Australia. The three art pieces chosen have either never previously shown any links to astronomy, or at best have shown only marginal data that can be used to argue an astronomical link. The study is restricted to Australia because of the continents perceived long-term isolation from the rest of the world. Thus if the same general results are seen in both Australia and in Europe, it can be argued that the art pieces were constructed to a similar template that was created, at a minimum, 40,000 years ago.

Theoretical Basis

In the revised theory 8 astronomical values are routinely used to predict solar and lunar eclipses¹⁸. These values are divided into two groups of four. The first four relate to the measurement of time, and are (1) the circa 1° sidereal motion of Earth as it travels around the sun; (2) the 27.32 day (degree) sidereal month, which is also drawn in ancient art as; (3) its half value at 13.66 days (degrees); and (4) a value of 11, which equals the difference in days between the solar and lunar years. This is drawn as a line at 11 degrees.

The second group of four values link to when and where the three separate orbital planes of the Earth, the Sun and the Moon create nodes. These values are (1) the 6.511 draconic month period between eclipse periods; (2) the 5.14° angle of the moon's orbital plane relative to Earth's ecliptic; and (3 & 4) the 9.3/18.6 year lunar cycle, which relates to both the precession of the lunar nodal pattern, and the time between lunar standstills. Again these values are all drawn as angles. Together these eight values are the Standard Values.

Naturally, some regional variations to the 8 standard values are seen. For example, in some cultures a line aligned to 33 days/degrees is more often used than the 11 days/degrees value, which represents the difference between the solar and lunar years. Here 33 days represents the three-year reset period, which is the earliest point that astronomers can reset the lunar and solar calendars. Also in some regions, Australia being one, a line at circa 23.6 degrees is found on a large number of artefacts, which may relate to the angle of Earth's axial tilt. One other prominent regional value is a line drawn at either 3 degrees, or plausibly 3.14 degrees. These three angular values are Class 1 alignments.

Fig. 1a. Alignment study for side 1 of the Aboriginal Cylcon uncovered at Delalan in 1973. Here lines offset from the horizontal ($\pm 45^\circ$) are marked in yellow and lines offset from the vertical ($\pm 44.9^\circ$) are marked in white. Source Schøyen Collection.

FIGURE 1b

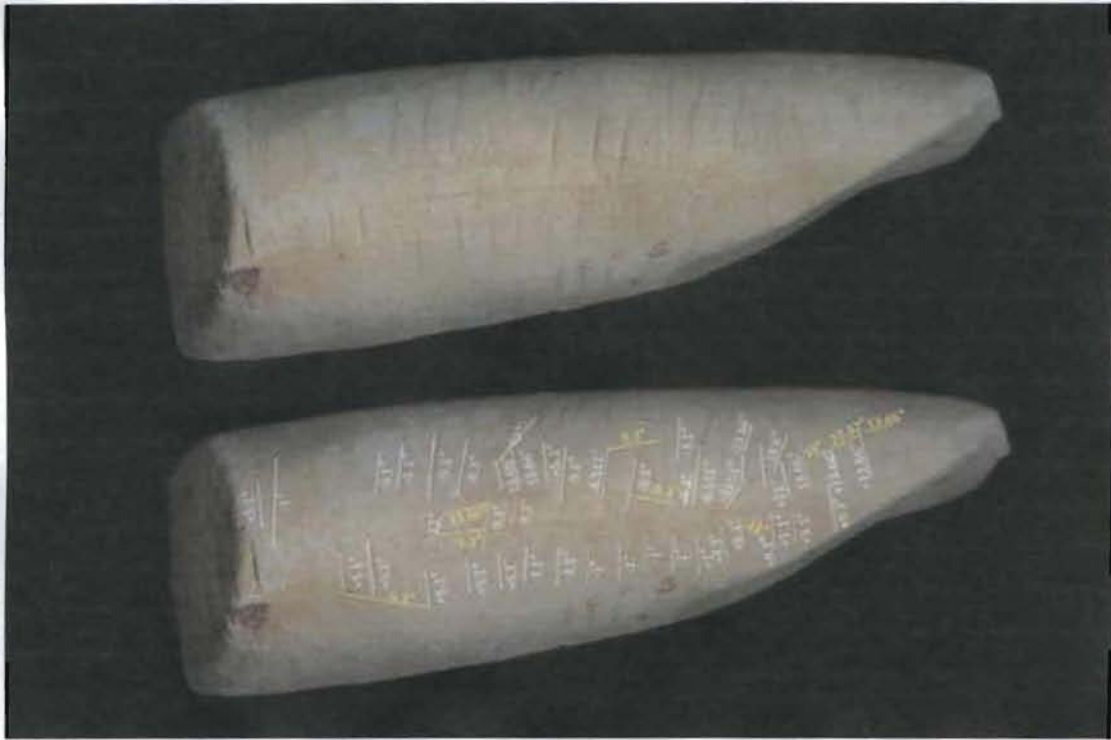


Fig. 1b. Alignment study for side 2 of the Cylcon. Source Schøyen Collection.

FIGURE 1c

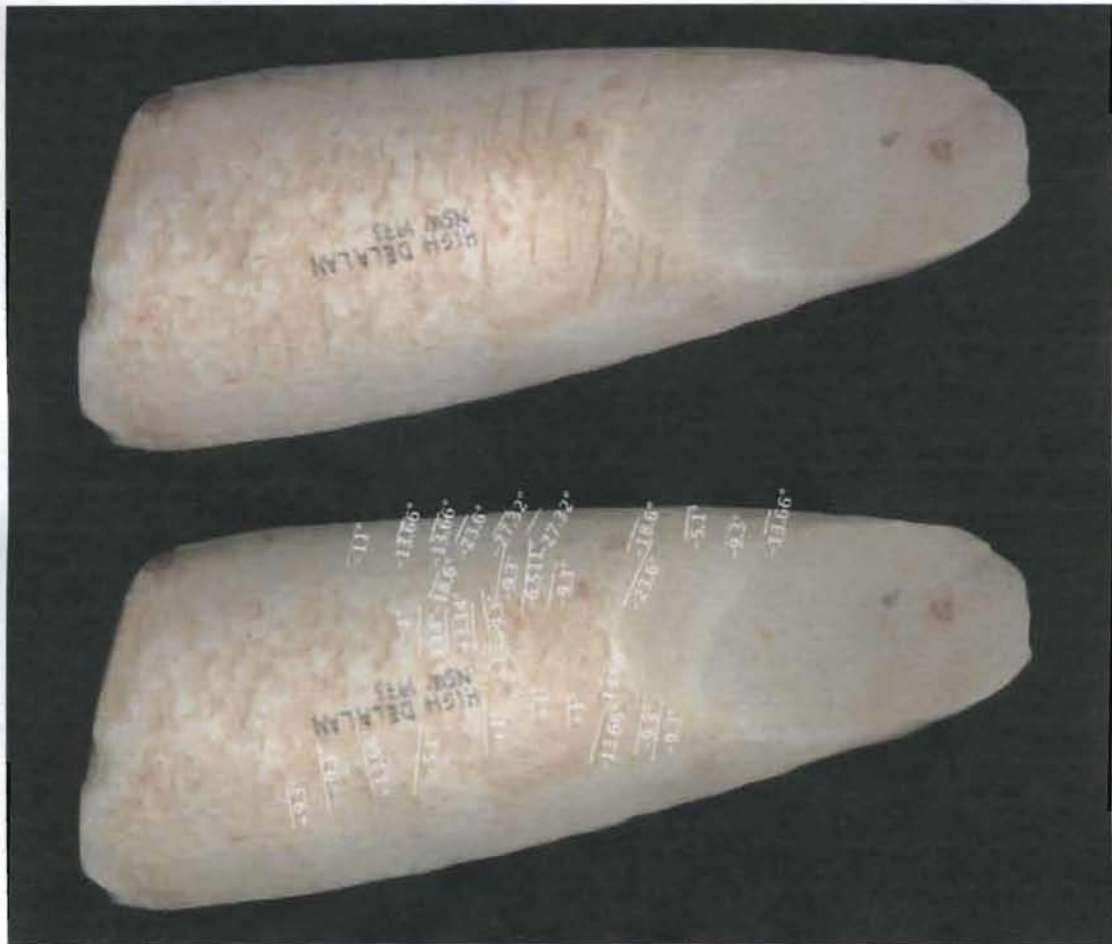


Fig. 1c. Alignment study for side 3 of the Cylcon. Source Schøyen Collection.

Next are values that appear geometrical. These are line drawn at 0, 15, 30, 36, and 45 degrees. These are termed Class 2 alignments.

The last category covers angular values that are unique to the art piece, or are values that are seldom seen in astronomical art. This includes astronomical values relating to the Metonic Cycle, and values that create a continuation of a series. These are termed Class 3 values. This category includes all values not listed above. Therefore theoretically there exists a greater probability that a line will randomly align to the Class 3 category, especially if the lines are tally marks and not orientate to any specific value.

Analysis of a linear pattern drawn on an Australian Cylcon

The first art piece studied is an Australian cylcon discovered by shearing contractor Peter Manoel, at High Delalan, in New South Wales, Australia. The discovery was made in 1973, and the Cylcon is now held in the collection of Martin Schøyen. Prior research carried out on cylcon stones have left no single agreed use for these unusual stones, and given the great variation in shape and design, it is probable that they were used for multiple, different purposes²¹⁻²⁵. The term cylcon came into use, in 1942, when Lindsey Black published a book in which the phrase cylcons was first used²⁵. No study of the method to make the lines was undertaken here, and the sample is studied as is²⁶.

To remove bias, the first step was to analyse the most heavily inscribed face. This produced a fixed orientation for analysing the remaining faces. After the orientation of the first face was fixed, Martin Schøyen then provided access to images of the rear and one side of the cylcon (sides 2 and 3). These were analysed at the same angle defined by the first face. The fourth side is not analysed as part of this study, and will be analysed later, to create a double blind test.

On the first face 100 lines orientate to 18 different angular values (offsets measured to both the horizontal and the vertical¹⁸). 80.00% of the lines present on the front face) align to Standard values, with 66 lines (66.00%) aligning to just four angles. These four angular values are 1.0° (15 times) 5.1° (19 times), 9.3° (17 times), and 13.66° (15 times). The 9.3°, and 13.66° alignments are half-values relating to two different orbital periods of the moon.

The remaining 20 angular values on side 1 belong to Class 1, 2, and 3. Within this group 14 lines belong to Class 1, and thus can be considered to be simple modifications of Standard Values. Thus, at the orientation selected, 94.00% of the lines align to astronomical values that are routinely seen in linear art found

Standard	Side 1		Side 2		Side 3		Side 1 - Actual	
	No.	%	No.	%	No.	%	No.	%
1°	15	12.00	8	14.29	4	12.90	17	11.64
5.1°	19	22.00	16	28.57	6	19.35	41	28.08
6.511°	5	5.00	2	3.57	1	3.23	5	3.42
9.3°	17	16.00	11	19.64	5	16.13	20	13.70
11°	3	3.00	2	3.57	1	3.23	9	6.16
13.66°	15	16.00	8	14.29	6	19.35	17	11.64
18.6°	4	4.00	1	1.79	2	6.45	6	4.11
27.32°	2	1.00	1	1.79	2	6.45	3	2.05
Class 1								
3°/3.14°	11	9.00	3	5.36	2	6.45	13	8.90
23.4°-23.6°	-	-	-	-	2	6.45	2	1.37
33°	3	3.00	3	5.36	-	-	5	3.42
Class 2								
15°	1	-	-	-	-	-	2	1.37
30°	-	-	-	-	-	-	2	1.37
36°	-	-	-	-	-	-	-	-
45°	1	3.00	-	-	-	-	1	0.68
Class 3								
20°	1	1.00	-	-	-	-	1	0.68
22°	1	2.00	-	-	-	-	-	-
38°	-	1.00	-	-	-	-	-	-
40°	2	2.00	1	1.79	-	-	2	1.37
Total	100		56		31		146	

Table 1. Analysis of Australian Cylcon uncovered at High Delalan NSW, Australia. For this analysis side 1 was rotated until it produced an optimum alignment. Sides 2 and 3 were analysed in a blind study using the orientation set by the analysis of side 1. The highest percentage of lines align to 1°, 5.1°, 9.3° and 13.66°.

worldwide¹⁸. Only two lines belong to the Class 2 category, and just four belong to the Class 3 category, the largest category.

Offset to the horizontal 9 lines belong to the Standard list; 2 lines to Class 1 alignments; 1 to Class 2; and 2 to Class 3. The same preference to Standard values is therefore seen irrespective of the orientation chosen.

Analysis of the remaining two sides produces similar results. On side 2, a total of 49 lines out of 56 (87.50% of the total) align to the Standard List. Of these 49 lines, 35 lines (62.5% of the total) again aligned to only three angular (astronomical) values at 5.1°, 9.3°, and 13.66°, and replicating "Side 1", 7 out of 9 lines that align to the horizontal belong to Standard values. For side 3, lines at 5.1°, 9.3°, and 13.66° match 17 out of the 31 lines studied, which equals 54.84% of the total, and 27 out of 31, (or 87.10%) align to the Standard list, and 12.90% (4 lines) align to Class 1 values. No Class 2 geometric-type, or Class 3 (unexplained, or rare angular values) could be observed on this face.

From this study, which looked at 187 lines the repetition to specific angular values suggests that the lines drawn on this cylcon cannot be simple tally marks. Within this sample there is a constant repetition to 1°, 5.1°, 9.3°, and 13.66°. This preference occurs in both a study of the actual angles drawn by the lines; and, in the above studies, where the lines close to the edge of the observed image are changing their apparent angle, because of the curvature of the stone (Table 1).

In detailed studies of 16 images taken of Side 1, where the angle of the image was changed sequentially to observe the effect of curvature of the stone on the observed "visual" angle drawn by each line, it is found that as each line reaches the edge of the image the angle transitions to a higher angular, typically Standard List, values.

In total 146 lines were analysed to determine the true angle drawn by each line. From this it was determined that 65.06% of the lines align to just 4 values. This is the angles viewed directly under the camera lens. Only 5.48% of the lines aligned to Class 2 and Class 3 values. In addition, contrary to expectations there was found to be no substantial difference in the data obtained, and irrespective of the method used to study the stone (the actual angles drawn, or optically-distorted by the curvature of the stone) the same angular values appear. It is also notable that the exact same angular values appear upon rotating the stone by 90°, from the horizontal to the vertical, and thus the stone contains a 90° rotational symmetry. The cylcon thus appears to be an extremely complex piece of art, and suggests that the person that made this complex image held strong awareness of perspective and three-dimensional effects.

Analysis of other art found worldwide

Intriguingly, looking at data obtained from other regions around the world the exact same results are obtained.

Starting with the linear geometric found in the Lascaux Cave, it is found that 49 out of 52 lines studied (94.23% of the total) align to the Standard List, 2 lines (3.85%) align to Class 1 values, and just 1 line (1.92%) aligns to Class 3 values. Within the Standard list 6 lines align to 5.1 degrees, 17 lines to the 13.66/27.32 degree pair and 21 lines to the 9.3/18.6 degree pair – all angles are taken as offsets to the horizontal and vertical axes. Just these three astronomical terms alone account for 84.62% of all alignments seen in the Lascaux geometrics. However, whereas Australian art emphasize the 13.66 half-sidereal month value, the Lascaux cave images shows a preference to the 27.32 degree/day full-sidereal month value. It has to be said that this is a very small difference, when one considers that the two art pieces are of approximately the same age and are located so far apart – Australian art highlights the half-sidereal month value whereas the Lascaux Cave art emphasized the full sidereal month value.

A similar preference to the standard values can also be seen in Paleolithic art from South America, North America, Africa and Asia. For the 20,000 year old Ishango bone, and the circa 43,000 year old Lebombo bone, a combined analysis shows that 118 out of 126 lines align to the Standard List with 64.29% aligned to just three values (5.1° , 6.511° , and 18.6°). Here the sidereal month value is largely absent, but the other two terms are common. The oldest sample to show astronomical art substantially pre-dates modern humans and is circa 300,000 to 400,000 years old. The linear pattern is commonly known as the Bilzingsleben fan motif, which upon a rotation of 30 degrees from the horizontal exhibits a 71.43% match to the standard list, with three angles drawn at 5.1° , 13.66° , and 18.6° . In this archaic stone there is no 90° rotational symmetry, but the lines align to create a focal point (not shown here).

Analysis of Australian Handprint Art

At this point, attention turns to handprint and geometric art found at the Carnarvon Petroglyph site, located in Australia. Despite extreme differences in the styles of art the same astronomical data can be observed²⁷⁻³².

Detailed studies of Australian art are limited³³⁻³⁷, and the age of the images used in this study are unknown, but they are believed to be younger than other similar images found worldwide³⁸⁻⁴¹. The various petroglyphs found at Carnarvon comprise of a mix of handprints, simple geometrics grid-type images, and stylistic drawings that are described as boomerangs. The various images are found on a single frieze, and thus can be directly compared.

Initial Handprint Analysis			Minus Anomalous Handprints		
Standard			Standard		
1°	-	-	1°	-	-
5.1°	6	15.79%	5.1°	6	17.65%
6.511°	3	7.89%	6.511°	3	8.82%
9.3°	1	2.63%	9.3°	1	2.94%
11°	3	7.89%	11°	3	8.82%
13.66°	5	13.16%	13.66°	5	14.71%
18.6°	4	10.53%	18.6°	4	11.76%
27.32°	-	-	27.32°	-	-
Subtotal	22	57.89%	Subtotal	22	64.71%
Class 1			Class 1		
3°/3.14°	5	13.16%	3°/3.14°	4	11.76%
23.4°-23.6°	1	2.63%	23.4°-23.6°	1	2.94%
33°	3	7.89%	33°	3	8.82%
Subtotal	9	23.68%	Subtotal	8	23.53%
Class 2			Class 2		
15°	2	5.26%	15°	2	5.88%
36°	1	2.63%	36°	1	2.94%
45°	1	2.63%	45°	-	-
Subtotal	4	10.53%	Subtotal	3	8.82%
Class 3			Class 3		
16.8°	1	2.63%	16.8°	1	2.94%
37.5/39.5°	2	5.26%	37.5/39.5°	-	-
Subtotal	3	7.89%	Subtotal	1	2.94%
Total	38	100%	Total	34	100%

Table 2. Analysis of the angular alignments presented by drawn focal points created by the handprints at the Carnarvon Petroglyph Site. In this sample the four most common alignments are to 3°, 5.1°, 13.66°, and 18.6°.

Initial Finger Analysis			Minus Anomalous Handprint		
Standard			Standard		
1°	7	8.14%	1°	6	7.32%
5.1°	5	5.81%	5.1°	5	6.10%
6.511°	2	2.33%	6.511°	2	2.44%
9.3°	6	6.98%	9.3°	6	7.32%
11°	3	3.49%	11°	3	3.66%
13.66°	12	13.95%	13.66°	12	14.63%
18.6°	11	12.79%	18.6°	10	12.20%
27.32°	12	13.95%	27.32°	12	14.63%
Subtotal	58	67.44%	Subtotal	56	68.29%
Class 1			Class 1		
0°	2	2.33%	0°	2	2.44%
3°/3.14°	4	4.65%	3°/3.14°	4	4.88%
23.4°-23.6°	3	3.49%	23.4°-23.6°	2	2.44%
33°	9	10.47%	33°	9	10.98%
Subtotal	18	20.93%	Subtotal	17	20.73%
Class 2			Class 2		
30°	1	1.16%	30°	1	1.22%
45°	4	4.65%	45°	4	4.88%
Subtotal	5	5.81%	Subtotal	5	6.10%
Class 3			Class 3		
22°	1	1.16%	22°	1	1.22%
40°	3	3.49%	40°	3	3.66%
42°	1	1.16%	42°	-	-
Subtotal	5	5.81%	Subtotal	4	4.88%
Total	86	100%	Total	82	100%

Table 3. Analysis of the angular alignments that produce focal points within the handprints present at the Carnarvon Petroglyph Site. In this study the four most common alignments are to 13.66°, 18.6, 27.32°, and 33°.

Figure 4





In the study of the Carnarvon geometrics (Fig. 4), 27 out of the 27 lines studied (100%) align to identifiable astronomical values: 26 (96.3%) align to the standard list, and within this group the 18.6 year lunar cycle is the most frequently observed alignment with 9 out of 27 lines aligned to this value. Its half-value (9.3 years) appears 3 times. The next most frequently observed value is the 5.14° line. This appears 5 times, which is equivalent to 18.52% of the total number of analysed lines. Lines aligned to 9.3 and 27.32 degrees are both seen 3 times with each accounting for 11.11% of the total. Only 1 line (3.7% of the total) is from the Class 1 category. This is a line at circa 23.4 to 23.6 degrees. It should be noted that a small number of lines drawn by the boomerang motifs are not linear. There are several potential reasons for the presence of non-linear lines amongst linear artwork, such as the apparent difference in size of the moon at apogee and perigee. These potential explanations are not analysed here.

Overall the observed angular distribution again matches the Lascaux Cave and Delalan cylcon stone analysis. However, more surprising is the same general data is also obtained from an analysis of the handprints.

Shown in Fig. 5 the first study looks at focal points created by the handprints. These focal points can then be linked together, as shown in the provided image, to create a number of lines offset to the horizon.

For this study 23 handprints were analysed (Table 2). This creates 86 measureable alignments using the fingers (Table 3). These 86 lines in turn created 21 discrete focal points that are located near the centre of each handprint. However, two handprints, W located towards the lower right side of the pattern, and handprint "I", which is a rare handprint that also shows an image of the persons arm, appear anomalous and fail to create well-defined focal points. As with the prior study of the Lascaux cave geometrics¹⁸, all alignments in this study are fixed to the horizon, or the vertical, and thus the image exhibits 90° rotational symmetry.

Looking at the image obtained it can be seen that two of the three anomalous lines that are linked to Class 3 alignments originate from handprint "I". Within this group of 23 handprints "I" is the only analysed print that has the image of the arm attached. Handprint "I" also exhibits three distinct focal points, and an anomalous finger alignment that aligns to the Class 3 value of 42 degrees. Of the 89 fingers studied only 7 finger-alignments belonging to Class 3 "undefined and lesser used values", and 3 out of the 7 belong to the two anomalous handprints, with two of the Class 3 values belonging to the handprint marked "W," which likewise shows both a high percentage of Class 3 alignments, and no defined focal point. It is thus possible to argue that these two specific handprints were not part of the original drawing.

Removing handprints "I" and "W" from the analysis and analysing the remaining 34 lines, it is found that 88.24% of the lines now align to either Standard, or Class 1

alignments, 8.82% align to the Class 2 alignments and only one single anomalous line, drawn at 38 degrees, belongs to class 3. In total 15 lines out of 34 (44.12%) align to 5.1, 13.66 and 18.6 degrees. These three values are similar to the astronomical values that appear most often on the Delalan engraved stone (5.1, 13.66 and 9.3 degrees). This suggests that the two art pieces were designed to the same astronomical theory.

Analysing the 82 finger alignments used to create the focal points, the highest percentage 68.29% (56 out of 82 alignments) are to the Standard list, 17 lines ((20.73%) align to Class 1 values (these are values that have undergone slight modification), 5 fingers (6.10%) align to possible geometric values and, only 4 alignments (4.88% of the total) are Class 3 alignments with all class 3 alignments drawn to an angle of 40°. The three angular values most frequently observed are lines aligned to 13.66, 18.6 and 27.32 degrees. These angular values are present in 34 lines (41.46%) of the total, and once more the 13.66/27.32 and 9.3/18.6 alignment-pairs generate two of the most common alignments. Thus the most prevalent alignments, seen here, once more appear to match the same astronomical logic employed in the cylcon stone.

Conclusions

Norris and Hamacher³⁵ have noted that early Aboriginal cultures did fully understand that eclipses were caused by the motion of the Sun and Moon^{37,42-44}. However, no aboriginal stories are known that mention an ability to predict eclipses⁴⁵.

It is clear from this data that the geometrical symbols are not drawn randomly, but what is surprising is the exact same data seen in Australia is found in astronomical art found worldwide.

Starting with the linear geometric found in the well-known Lascaux Cave, it is found that 49 out of 52 lines (94.23%) align to the Standard List, 2 lines (3.85%) align to Class 1 values, and just 1 line (1.92%) aligns to Class 3 values. Within the Standard list 6 lines align to 5.1 degrees, 17 lines to the 13.66/27.32 degree pair and 21 lines to the 9.3/18.6 degree pair – all angles are taken as offsets to the horizontal and vertical axes. These three astronomical terms account for 84.62% of all alignments seen in the Lascaux geometrics. However, whereas Australian art emphasize the 13.66 half-sidereal month value, the Lascaux cave images shows a preference to the 27.32 degree/day full-sidereal month value. This is actually a very small difference, when one considers that the two art pieces are of approximately the same age and are located so far apart – both values plot the sidereal month value.

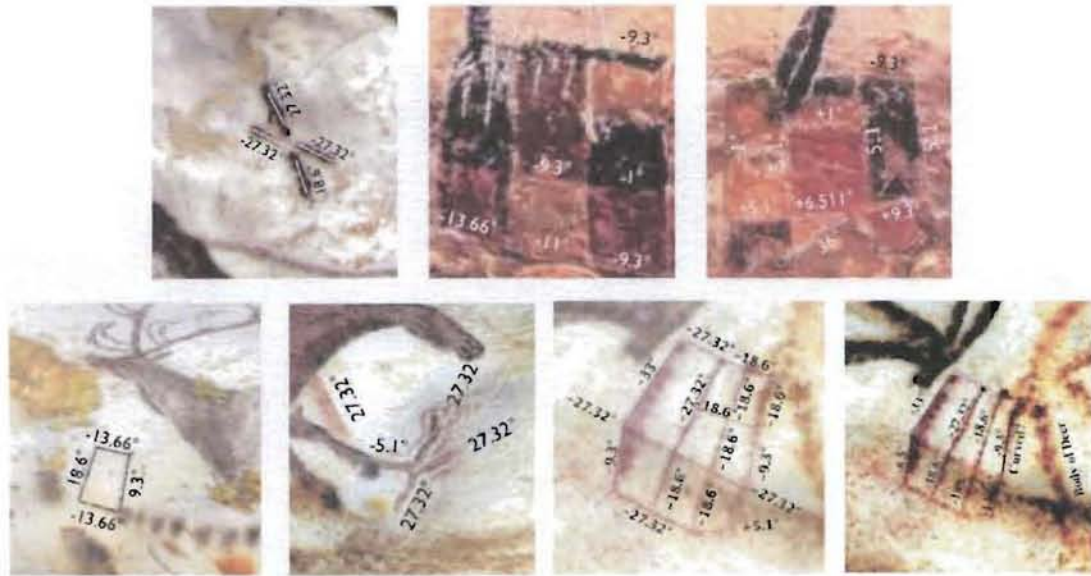


Fig. 2. Examples of Lascaux Cave geometrics. Overall the alignment distribution shows a remarkable similarity to the angular values drawn by Australian geometric images.

A similar preference to the standard values can also be seen in Paleolithic art from South America, North America, Africa and Asia. For the 20,000 year old Ishango bone and the circa 43,000 year old Lebombo bone, a combined analysis shows that 118 out of 126 lines align to the Standard List, with 64.29% aligned to just three values (5.1° , 6.511° , and 18.6°). Here the sidereal month value is largely absent, but the other two terms are common. The oldest sample to show astronomical art substantially pre-dates modern humans and is circa 300,000 to 400,000 years old. The linear pattern is commonly known as the Bilzingsleben fan motif, which upon a rotation of 30 degrees from the horizontal exhibits a 71.43% match to the standard list, with three angles drawn at 5.1° , 13.66° , and 18.6° . In this archaic stone there is no 90° rotational symmetry, but the lines align to create a distinct focal point (not shown here).

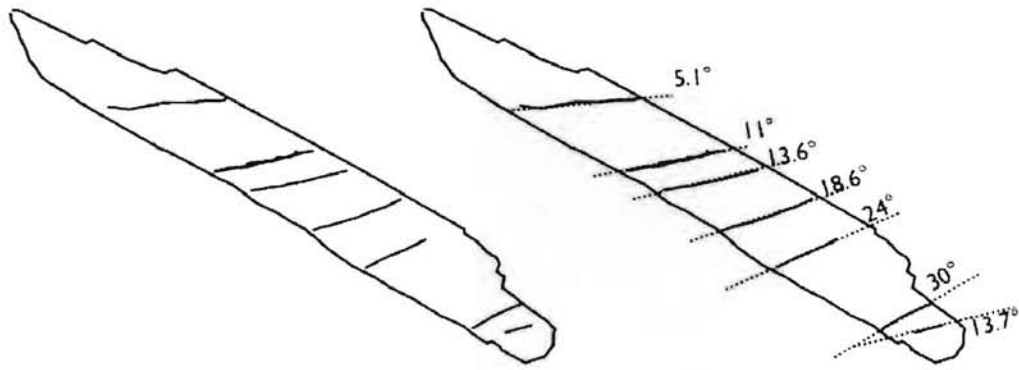


Fig. 3. Drawing of the circa 300,000 to 400,000 year old Bilzingsleben fan motif, so called because the lines from 5.1 to 24 degrees all draw to a common focal point located to the right of the drawn image. The lines are commonly thought to be a very early example of tally marks.

At the present, close to 100 different archaic geometric images have now been analyzed by the author, and the data currently shows good repetitive agreement¹⁸, with the indication being throughout the world ancient Stone Age people used the same geometric art to encode astronomical terms linked to the prediction of eclipse events.

From this work there are thus two primary results. The first is Australian art does show a geometric link to astronomy, and the second is that it is now possible for the first time ever to routinely test dissimilar art. This is important because it makes it possible to statistically migration patterns in the very deep Stone Age.

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