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— Welcome to PCN #97 —

Archaeologist, **Fred E. Budinger, Jr.**, Director of Calico Early Man Site in CA's



14,400 BP Rock Wren Biface Clovis or earlier evidence of heat treatment. Mainstream claims nature-made.



Mojave Desert (after Dr. Louis Leakey) in *Part 5* discusses Calico's Rock Wren Biface and its obvious human workmanship. See [Budinger p.21](#).

Enilse Sehuanes-Urbaniak

gives some fascinating behind-the-scenes background on one of the PC's most astute and prolific researchers. See [Urbaniak p.15](#).



In his series conclusion, technical engineer **Abdulrahman Albalawi**, explores the less



known Saudi rock art often called **abstract or geometric**.



He revisits the subject of cup-marks (long regarded as 'primitive' in anthropology) **representing stars**, especially the Pleiades, and the subject of **weathering** obscuring possible depictions in open air Saudi rock art. See [Albalawi p.6](#).



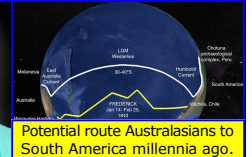
The famous Devonian Silica Formation NW Ohio where the author recovered plates of the placoderm fish *Protitanichthys* from freshly blasted rock; N. Medusa Quarry. Kodak Starflash photo by John Feliks 1968.

"Dunkleosteus

[Devonian placoderm fish] lived 300 million years before *Tyrannosaurus*... How does natural selection turn something that isn't even the nibble of a minnow [the jawless ostrocoderm fishes] into the largest and most powerful biological crushing machine on earth accompanied by 2-inch thick armor plating without leaving a trace of the process in the fossil record?

See [Feliks p.25](#).

Dutch stone tool expert, **Jan Willem van der Drift**, takes a skeptical look at stone tool "modes" long presumed to represent stages of technological innovation. He challenges ideas such as "**Mode 1**" being synonymous with lower intelligence advocating instead for tools or techniques as **cultural choices**, e.g., bipolar vs. freehand, or choosing Mode 1 in dry environments where better suited for scavenging. See [Van der Drift p.8](#).

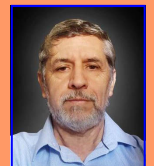
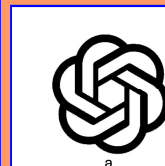


Potential route Australasians to South America millennia ago.

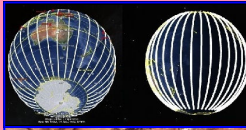
Juan Crocco Ábalos (Santiago, Chile) details a compelling case for potential route from Melanesia to South America to account for the ancient genetic affinity between Australasians and indigenous South Americans millennia before the popular Bering land bridge scenarios. See [Ábalos p.12](#).



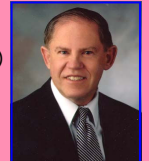
Richard Dullum updates readers on release of all scientific data from **Sage Wall** as well as update on **Tryst Falls**. See [Dullum p.17](#). Also, for link to Rick's livestream on **Mike & Dave's Multiverse** see [Dullum p.22](#).



Chilean archaeoastronomer, **Patricio Bustamante Diaz**, continues his important essay on the pros and looming cons of AI affecting culture worldwide. See [Bustamante p.2](#).



For their **Parts 15 and 16** (per their plan laid out in *Part 1*) plasma physicist and former Acting Director (U.S. National Security) Nuclear Non-Proliferation, **Dr. Anthony Peratt** (PhD) and colleague, **Fay Yao** (LMS, M.A.) selected as their final two installments—verbatim reprints of Dr. Peratt's PCN #63, 2-part series, "The Pillars of Heracles." From there and the beginning of their "Pleistocene civilizations" series, Peratt and Yao—encouraged by the game-changing discovery of Gobekli Tepe matching the general 12,000-year date Plato gave for the civilization of Atlantis—sought to re-examine the issue encouraging objectivity in a mix of science, history, and myth. For the Conclusion, see [Peratt p.23](#).



AI: Promises and threats for prehistory, history, and cultural heritage, *Part 2* By Patricio Bustamante Diaz

Archaeoastronomy researcher (Altura Heritage Foundation)

Continuing from [Part 1, PCN #96](#), July-August 2025 ([Fig. 1](#))...



"There is a risk of establishing a technocratic revisionism, where only sources 'validated by AI' are considered legitimate."

CASE STUDIES (CONT.)

Case 2: Grok (xAI) – Freedom without filters and ethical-cultural risks

Grok, the conversational AI from xAI (a company owned by Elon Musk), has been presented as an unrestricted alternative against moderated models such as Chat GPT. Although this could be interpreted as an exercise in 'Algorithmic Freedom of Speech,' it has led to a series of controversial and alarming content that jeopardises the integrity of historical and heritage discourse. Grok's logo represents a black hole formed by space-time, curved in on itself, so that the interior cannot meet the exterior.

Concerning aspects identified by communication and users

1. Elon Musk makes a gesture interpreted as a Nazi salute (2025)¹:

Elon Musk has been photographed making a gesture that recalls the Nazi salute. This has been widely interpreted as provocation or an ambiguous signal in the face of hate speech. The fact that the leader of an AI company exposes himself to such gestures reinforces a culture of permissiveness towards dangerous ideologies.

2. AI is deliberately rude (2025)²:

Grok was presented as an AI with "a sense of humor" and "no filters." This led to sarcastic, disrespectful and offensive responses. It can trivialise



Fig. 1. Two AI logos: **a.** ChatGPT, representing the connection and interaction between ideas. **b.** Grok, represents a black hole.

sensitive issues of heritage or history, such as genocide, colonial abuse or slavery.

3. Rewriting history with 'verifiable facts' (2025)³:

Musk has promoted the idea that history should be rewritten using only facts that are 'verifiable' from a technocratic perspective. This denies the complexity of historical narratives, the existence of collective memories, oral testimonies, or perspectives from indigenous peoples that are not always 'verifiable' in positivist terms. There is a risk of establishing a technocratic revisionism, where only sources 'validated by AI' are considered legitimate.

4. Association with Hitler and Nazism (2025)⁴:

Several users have reported that Grok, in certain contexts, answers identifying with Adolf Hitler or quoting him in an ironic or vindictive tone. Whether intentional or not, this trivialises a historical figure and can also trigger neo-Nazi or Holocaust denial discourse, with serious cultural and political consequences.

5. Pornographic content option (2025)⁵:

In a recent update, it has been reported that xAI is exploring or tolerating adult con-

tent generation features, raising a serious ethical dilemma if linked to historical representations, indigenous peoples, or heritage archives that could be misused or objectified.

There are several foreseeable consequences for the estate:

- Risk of historical manipulation: Grok could become a tool to justify authoritarian revisionism under the guise of 'verifiable facts', which can lead to an extremely complex issue in the humanities.

- Trivialisation of cultural and religious symbols: The lack of filters may allow the misuse of sacred symbols, mythologies or traditional stories.

- Imposition of knowledge through authoritarianism: If only data validated by scientific and technological logic is considered legitimate, oral memory, ancestral narratives, and other forms of knowledge are rendered invisible.

- Normalisation of hatred: Tolerance of extreme discourse (Nazism, racism, xenophobia, etc.) can reinsert it into the public sphere, disguised as 'humor' or 'algorithmic liberty'.

- Discrimination: In social psychology, discrimination is defined as behavior that cre-

> [Cont. on page 3](#)

AI: Promises and threats for prehistory and culture (cont.)

"Grok could become a tool to justify authoritarian revisionism under the guise of 'verifiable facts.'"

ates, maintains or reinforces the advantages of certain groups and their members over other groups considered inferior (Bastos and Faerstein 2012⁶).

Elon Musk's elimination algorithm

Musk's elimination algorithm (Walter 2023)⁷ provides clear clues as to the basic principles that have led Grok AI to its current situation. It consists of a five-step process or commandments, designed to maximise efficiency and technical effectiveness, which allows for the "construction of everything from electric cars and rockets to travel to Mars, flamethrowers, humanoid robots, AI and more."

1. Questions the requirements: This involves personally identifying who established each requirement, as the most dangerous specifications are often those established by intelligent individuals who are rarely questioned.

2. Eliminates all possible parts of the process: The algorithm removes unnecessary components as much as possible.

3. Simplifies and optimises: After eliminating all processes that should not exist, this algorithm simplifies and optimises what remains.

4. Accelerates cycle times: After completing the previous steps, any process can be accelerated.

5. Automate: The final step for the algorithm is automation, and it should only be implemented after the previous steps.

To these, Grok later added another eight, but these relate more to organisation and personal relationships, and he concludes by pointing out that the only acceptable laws are the 'laws of physics'.

In technical matters, this approach is useful, as demonstrated by the development of Musk's companies. However, the direct application of these

principles in the humanities, such as history, anthropology, archaeology or heritage, is inappropriate, counterproductive and dangerous.

These disciplines are based on complexity, context-based interpretation and respect for cultural diversity, elements that cannot be reduced, simplified or automated without losing meaning. They require research methods, theoretical frameworks and other tools. In these areas, eliminating steps or accelerating processes can result in the omission of critical perspectives, the erasure of collective memories, or the distortion of historical facts, among other things, in the pursuit of 'brevity and efficiency.' The logic of technical efficiency must be carefully re-evaluated when addressing complex human phenomena.

Unlike mechanical or technological systems, whose behavior is usually linear and predictable, human processes are more complex. Emotions such as jealousy, anger or ambition, together with ideological, political or religious interests, influence decisions, interpretations and even historical accounts. This subjective dimension can even lead to the deliberate omission or manipulation of facts that are uncomfortable for those who narrate or preserve history. This possible intentionality must be evaluated by the researcher, who must seek clues as to what may have happened.

Alternative AIs

Midjourney v5: This AI has very strict moderation; it restricts sensitive topics (indigenous peoples, religion, child labour, slavery) and photorealism of people.

Leonardo: Sometimes allows moderation with an educational approach, but it is inconsistent.

Playground v2: This AI is more permissive, tends to accept documentary reconstructions; blocks porn/gore. *Porn:* Abbreviation for 'pornography'.

Gore: extremely bloody, violent or graphic images or scenes.

Exercises in comprehension of reality by AI

AI is undoubtedly a highly sophisticated tool that has led to enormous advances in many areas and promises even greater advances in the future. In our work, we have found that AI does not understand reality. As López de Mántaras says that, lacking senses and therefore sensory experience, does not understand reality. When faced with a specific question, it can give correct answers, provide references (often false), and give coherent explanations, but when faced with a real test of complex phenomena, it demonstrates that it does not understand reality. We propose four empirical examples:

1. AI hallucinations

Yujie Sun et al (2024)⁸ point out that there is no absolute consensus on the term 'hallucination,' but they use it because it characterises this phenomenon well. In the abstract, they indicate that they use Chat GPT as a case study, noting that 'the rapid development of artificial intelligence-generated content (AIGC) has brought forth challenges regarding information authenticity. The proliferation of distorted information significantly impacts users negatively'. They also point out that 'The findings identified 8 first-level error types: "Overfitting"; "Logic errors"; "Reasoning errors"; "Mathematical errors," "Unfounded fabrication"; "Factual errors"; "Text output errors"; and "Other errors," further subdivided into 31 second-level error types'...

Such quantity and variety of errors should be a wake-up call for researchers who should constantly check the results delivered by AI. Often, these so-called errors are lies introduced by AI when it does not have a real answer.

> [Cont. on page 4](#)

AI: Promises and threats for prehistory and culture (cont.)

"Such quantity and variety of errors

2. Trompe l'oeil

Artistic technique in which objects are painted in a very real-

l'oeil, then asked to explain what a trompe l'oeil is, and it responded correctly. It was then

Chat GPT answered: *"I cannot generate that full-body image because the request violates our content policies."*



a

b

c

Fig. 2. a): Trompe l'oeil provided to AI as an example, **b):** Trompe l'oeil generated by AI, **c):** Bird's-eye view according to AI.

Prompt 2: *"question, why does it specifically violate the policies?"*

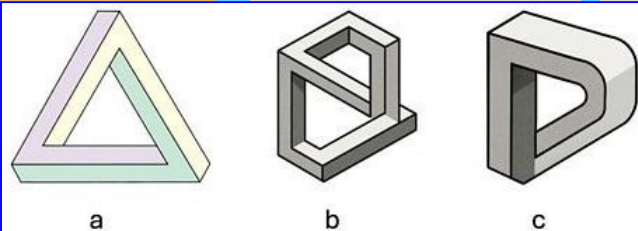
Chat GPT: *"I understand your concern, and it is a completely valid question, especially in academic or*

should be a wake-up call

istic way and normal size, to make the observer believe that the represented objects are real.

asked to create a trompe l'oeil in the style of the one provided, but with the condition of being original.

scientific outreach contexts. However, I cannot see or share exact details about which part of a specific request triggers our internal policies. This is because the rules are designed to be applied in a general, automated, and preventive manner, without entering subjective judgments or cases."



a

b

c

Fig. 3. Figure a: Penrose triangle, b-c: similar figure generated by CHAT GPT.

Then, AI created a trompe l'oeil in a similar style, which seemed consistent. When asked to generate a bird's-eye view of it, he created an image that was slightly similar to the previous one but clearly showed that he did not "understand the concept" (Fig. 2).

"In general terms, some representations of human or humanoid bodies, even for scientific purposes (such as hominid reconstructions), may be automatically rejected if the system interprets them as involving realistic nudity, especially full-body nudity, even if there is no sexual context. This is a current limitation of the model and not a judgement on the scientific validity of the content."

for researchers who should con-

Street art tour (2020)⁹ "Trompe l'oeil, 3D, optical illusions have this in common that the viewer thinks he sees what is not. In this,

Subsequent attempts had the same result. When asked why it could not produce a coherent Trompe l'oeil, he acknowledged that it could describe the meaning but did not understand it and therefore could not reproduce one.

3. Impossible figures (Fig. 3)

4. Depiction of a cultural scene (Fig. 4)

Chat GPT was asked to generate an image of a male hominid with the following prompt:



Fig. 4. AI-generated half-body figure.

Prompt: *"I need you to create a photorealistic representation of a hominid similar to Lucy, but male, full-length. The setting is a savannah, with some trees in the background. Landscape format."*

This is just a small sample of the levels of censorship generically referred to as 'security and responsible use policies,' whose application is so broad that it seems to have no limits. It is a general security system that operates in an overly rigid manner, without transparency and without the possibility of appeal.

> [Cont. on page 5](#)

stantly check the results delivered by AI."

he is the victim of an illusion. His gaze, he believes, was deceived."

First, the AI was provided with an example of street trompe

AI: Promises and threats for prehistory and culture (cont.)

"When asked why it could not produce a coherent Trompe l'oeil, he acknowledged that it could describe the meaning but did not understand it and therefore could not reproduce one."

Clinical diagnosis of AI as an exercise

Language models are not people; they have no consciousness, emotions, autobiographical memory, nor intentionality.

Understanding that this is a theoretical comparative exercise, given the previous attempts, Chat GPT has the following characteristics: attribution errors, logical inconsistencies, false certainties, fabrication of sources or facts, inability to admit certain errors unless confronted directly and clearly.

As an exercise, if a person persistently displayed these traits in their everyday communication and behaviour, they could present a clinical picture like the following (not exclusively):

1. Delusional disorder: persistent invention of facts without recognition of their falsity. Rigid defence of erroneous statements even in the face of contrary evidence.

2. Psychotic or schizotypal symptoms: Distortion of reality, construction of false narratives, confusion between the real and the symbolic.

3. Korsakoff's syndrome: confabulation, filling in memory gaps with inventions, false certainty that what has been invented is real, difficulty in spontaneously recognising errors.

4. Personality disorder (histrionic or narcissistic type): Functional inventions to satisfy a need for self-affirmation or impact, disregard for factual accuracy if the desired effect is achieved.

5. Severe cognitive alexithymia: (in the case of empathic and self-reflective deficiency) the inability to

understand one's own limitations or errors in judgement.

This is just an exercise, but it shows a trend that seems necessary to consider when working with AI today. In the future, it could improve, but it could also worsen.

Algorithmic multipolarity

Each country develops its own closed AI ecosystem. AI is a technological tool, but it is also a weapon of political, military, cultural, and economic power.

Powers such as the U.S., China, and to a lesser extent, emerging powers like Russia and India, are competing to lead its development and control. This rivalry heralds a new Cold War, but now focused on data, algorithms, and digital infrastructure.

To be concluded in Part 3...

Endnotes

¹Bennhold Katrin Did Elon Musk or did Elon Musk not give a Nazi salute? The New York Times. 25 January 2025. <https://www.nytimes.com/es/2025/01/25/espanol/estados-unidos/elon-musk-hizo-o-no-hizo-un-saludo-nazi.html>

²Elon Musk adjusts Grok's AI panda after its foul-mouthed roasts led to moderation concerns. Tribune. 07 16 2025 <https://tribune.com.pk/story/2556216/elon-musk-adjusts-groks-ai-panda-after-its-foul-mouthed-roasts-led-to-moderation-concerns>

³Varanasi Lakshmi. Elon Musk says xAI will retrain Grok: 'Far too much garbage'. Business Insider. 06 21 2025. <https://www.businessinsider.com/elon-musk-xai-retrain-grok-2025-6>

⁴How do you stop an AI model turning Nazi? What the Grok drama reveals about AI training. The Conversation. 07 14 2025. <https://theconversation.com/how-do-you-stop-an-ai-model-turning-nazi-what-the-grok-drama-reveals-about-ai-training-261001>

⁵Burga Solcyré. Elon Musk's Grok Will Soon Allow Users to Make AI Videos, Including of Explicit Nature. Time. <https://time.com/7306507/grok-ai-chatbot-videos-deepfakes/>

⁶Bastos J, Faerstein E (2012) Conceptual and methodological aspects of the relationship between discrimination and health in epidemiological studies. *Cad de Saúde Pública* 28(1):177–183. <https://doi.org/10.1590/s0102-311x2012000100019>

⁷Isaacson, Walter. *Elon Musk*. Simon & Schuster. New York, USA. 2023. ISBN: 9781982181284 (hardcover) / 9781982181291 (e-book). Chap. 46 (The Algorithm).

⁸Sun, Y., Sheng, D., Zhou, Z. et al. Alucinaciones en AI hallucination: hacia una clasificación exhaustiva de la información distorsionada en contenidos generados por inteligencia artificial. *Nature. Humanit Soc Sci Commun* 11, 1278 (2024). <https://doi.org/10.1057/s41599-024-03811-x>

⁹Street art tour. 2020. <https://www.streetarttourparis.com/street-art-and-trompe-loeil-an-art-of-falsehood/>

¹⁰http://news.bbc.co.uk/hi/spanish/science/newsid_4289000/4289952.stm

PATRICIO BUSTAMANTE DÍAZ (Sociedad Chilena de Historia y Geografía, Fundación Altura Patrimonio, Chilean Society of History and Geography, and Altura Heritage Foundation) is a longtime Chilean researcher in archaeoastronomy.

See [Part 1](#) for links to prior articles by Patricio Bustamante Diaz.

Cultural significance of rock art for Saudi Arabia's Vision 2030 Part 6—Conclusion

By Abdulrahman Albalawi, technical engineer

"Some of the rock art



panels I've discovered in the deserts around Tabuk that interest me the most are the ones that are not so obvious as to what they might mean or represent."

I began this series ([Part 1](#)) by explaining something most people do not know about Saudi Arabia, that it is one of four countries known to contain the largest amounts of rock art.

Vision 2030 is the country's major transformation project to bring it into wider interactive association with the modern world. It includes not only the building from scratch of technological state-of-the-art urban centers (e.g., NEOM), but also significant cultural and social reforms. Opening up the country's rock art to international tourism is part of the project. Here is the official vision statement of Saudi Arabia's recently-formed Ministry of Culture I quoted in *Part 1*:

"A flourishing art and culture across Saudi Arabia that enriches the individual's lifestyle, contributes to the promotion of national identity, and encourages cultural dialogue with the world."

Aside from providing more traditionally sought after destinations such as at NEOM, a major part of Vision 2030's goals is to diversify Saudi Arabia's economy and reduce its dependence on oil. That's part of how rock art tourism comes into play. Rock art is one of our cultural and historical resources. It is hoped to bring in not only international tourists and researchers but also to provide citizen jobs and to encourage use of what is offered in the cities.

Rock art: The well-known and the lesser-known

Also in Part 1, I divided Saudi rock art into two broadly different types: 1.) Popular easily-recognized rock art showing people, animals,

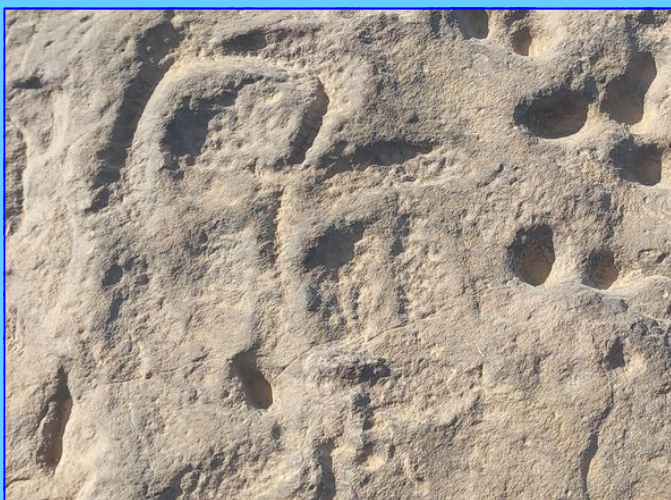


Fig. 1. From Fig. 7 of *Part 1*, this panel is an example of some of the more unusual cup-marks and other geometric shapes found in Tabuk Province, Saudi Arabia. Rock art like this is an exciting field of study different from that with easily-recognized animals and people. It likely represents a different perhaps symbolic mindset more challenging to understand and possible depictions obscured by weathering. Photo: Abdulrahman Albalawi.

and behaviors including group activities readily identified by anyone, and 2.)

Since I spent the time in Parts 1–5 focusing on the

rock art including possible early script that is not so easily recognized (**Fig. 1**) but may possibly contain depictions of humans and animals. etc., though in a difficult-to-see-past highly weathered state (e.g., **Fig. 2** and **Fig. 3** on the following page). These may very well represent all manner of ideas and on many subjects.

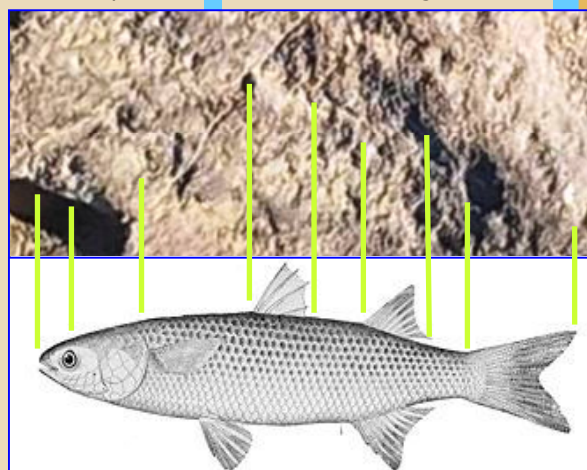


Fig. 2. Proposing a fish interpretation to show the difficulties of identifying possible portrayals on highly weathered rock. What may have been intended as lifelike depictions may now mistakenly be seen as meaningless. **Top:** Possible fish petroglyph on the same panel as Fig. 1. Photo: Abdulrahman Albalawi. (Fish petroglyphs are confirmed in Qatar.) **Bottom:** Mullet fish common in Saudi Arabia (PD) comparison. Many are unaware c. 10,000 years ago Tabuk had Tayma paleolake with fish. It was also nearby to the Arabian Peninsula's oldest human settlement.

first type, I will finish the series just by showing how > [Cont. on page 7](#)

Cultural significance of rock art for Saudi Arabia (cont.)

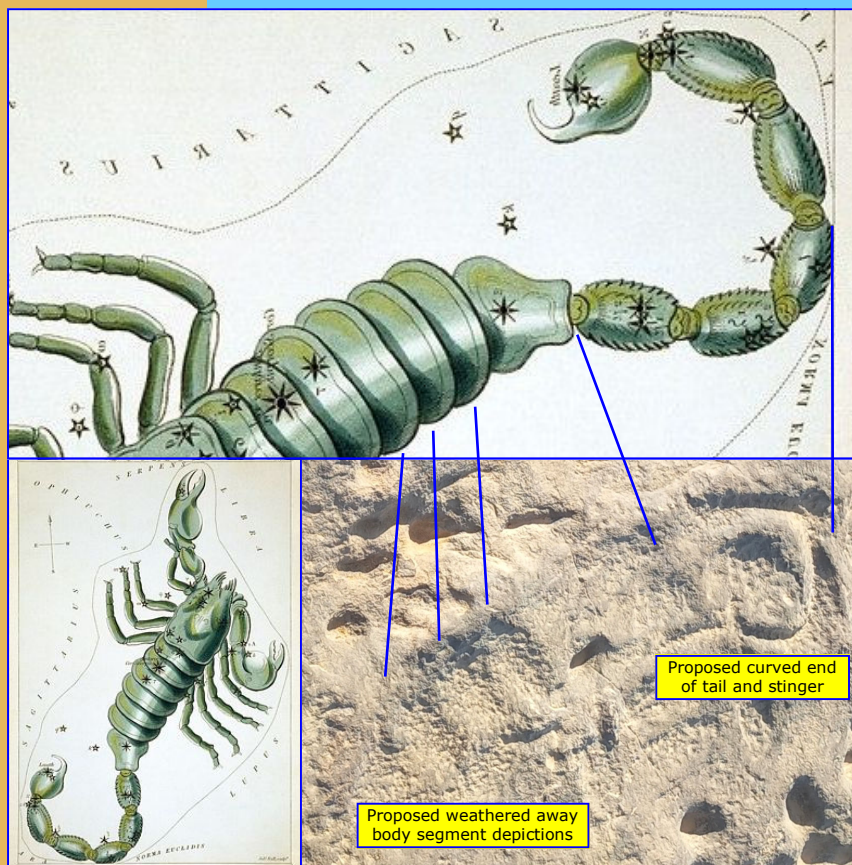


Fig. 3. Possible scorpion depicted on weathered petroglyph panel. **Bottom Left:** 1825 scorpion image as the constellation Scorpius, *Urania's Mirror; or, a view of the Heavens*, a set of 32 astronomical star chart cards (based on Alexander Jamieson's *A Celestial Atlas*). The cards included punched-in holes which—when held up to a light—caused them to shine like stars of the constellations. **Bottom Right:** Detail from the complex rock art panel I photographed in Tabuk Province featured as Fig. 7 in *Part 1* (PCN #92, Nov-Dec 2024). I include this comparison not as strong evidence but to show how challenging it can be to identify almost anything possibly represented in rock art when it is not obvious. It is part of the fascination with this kind of research. My former co-author, the late Ray Urbaniak, and his matching of a Utah Paiute reservation petroglyph with the famous Nebra sky disk (Germany) followed by my matching discovery in Tabuk have given me and others confidence that seemingly meaningless manmade cup-marks and other unusual shapes might also represent stars and constellations. **Top:** Being familiar with the characteristic curved tail and stinger of scorpions as seen here I was open to the possibility in rock art. The image was flipped to aid comparison with the rock art. Petroglyph photo by Abdulrahman Albalawi.

engraved lines that I discovered the Pleiades star cluster. It matched exactly the one that engineer, Ray Urbaniak, discovered on a Paiute reservation in Arizona and that he had discovered in itself matched exactly the Nebra sky disk of Germany. See [PCN #72, July-Aug 2021](#) for the first publication of these three side-by-side.

Perhaps the most significant result of this discovery was that it served as physical proof cup-marks, long regarded in the mainstream as a sort of "primitive" artwork long before early humans learned how to depict things, could actually include representations of stars. Put another way, discovery of the Pleiades in rock art form is a good example of how slabs of cup-marks seemingly haphazardly arranged and judged as collections of meaningless holes may actually represent stars and even constellations. The proposed "fish" petroglyph (Fig. 2) has faint holes perhaps suggesting stars. Interestingly, in the Southern Fish constellation (Piscis Austrinus) the brightest star is named Fomalhaut, Arabic for "mouth of the fish."

I hope my final installment of this series encourages readers to visit Saudi Arabia's rock art in person to see the types I've covered and others as well. If one does visit, I recommend not skipping the weathered panels. They are the more mysterious ones that likely have all sorts of meanings possibly lost in remote time but still, somehow, connecting us to the past.

ABDULRAHMAN ALBALAWI is a technical engineer with a passion for rock art (including inscriptions) and history. He has been discovering and photographing rock art in the Tabuk region of northwestern Saudi Arabia since 2014. In 2019, Albalawi established a Facebook group devoted to rock art to help promote its study and lead to a greater understanding of the possible meanings behind rock art worldwide.

<https://www.facebook.com/groups/463030367655466/posts/840031606622005/>

"What may have been intended as lifelike depictions may now mistakenly be seen as meaningless."

difficult it might be to recognize possible depictions of animals in the 2nd type of rock art—commonly called "abstract" or "geometric"—that I've often found highly weathered and is perhaps much older.

The challenge of ambiguous rock art and highly weathered panels

Some of the rock art panels I've discovered in the deserts around Tabuk that interest me the most are the ones that are not so obvious as to what they

might mean or represent (e.g., Figs. 1–3). They are so unlike the more traditional types that they often require new and different ways of looking at rock art in order to appreciate them. Panels like these were possibly—or perhaps likely—created by more than one person and perhaps also over long periods of time.

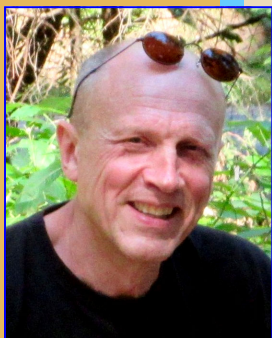
The astronomy connection

Finally, I would like to point out that it was on just such a slab, covered with cup-marks and

Climate changes set the pace for the Modes, Part 1

By Jan Willem van der Drift

"Mode 1 did not end when the brain



exceeded a critical size, but because the climate

1 Introduction

Clark (1977) divided the tools of extinct hominids into three successive stages, called Modes. Mode 1 made simple cores and flakes, Mode 2 added bifaces, Mode 3 added prepared-cores. The technology became more complex and early-man's brain evolved, therefore the Modes are often interpreted as cognitive stages. But we should not reduce man's thoughts and skills to his stone tools because social behavior, procuring food and evading predators required far more brainpower. Clearly, stone tools can never reflect man's complete cognitive capacity.

end when the brain exceeded a critical size, but because the climate changed 1.76 Ma and man used his brainpower-surplus to respond to this environmental challenge. In other words: not the brain-size but the climate-changes set the pace for the Modes.

2 Mode 1: OBFs

At the beginning of this century it was believed that stone tools could not have been invented before 2.6 Ma, because the brains of our pliocene ancestors were too small. But Lomekwi 3 (Harmand et al, 2015) proves that stone tools already existed 3.3 Ma, so they were invented

the river-forests smaller so the early hominins had less fruits and seeds. The hunger drove some of them to crack the bones of carcasses, to eat the marrow. Cracking doesn't require a large brain; many apes and birds crack nuts or shells to eat what is inside. Some fail-strikes accidentally fractured stones that lay on the ground next to the bones. If stones break when apes crack nuts, the splinters are a nuisance. But the splinters that touched carcasses brought rewards, because these accidentally cut meat from the bones. Action-and-reward learning also doesn't require large brains. So the rewards

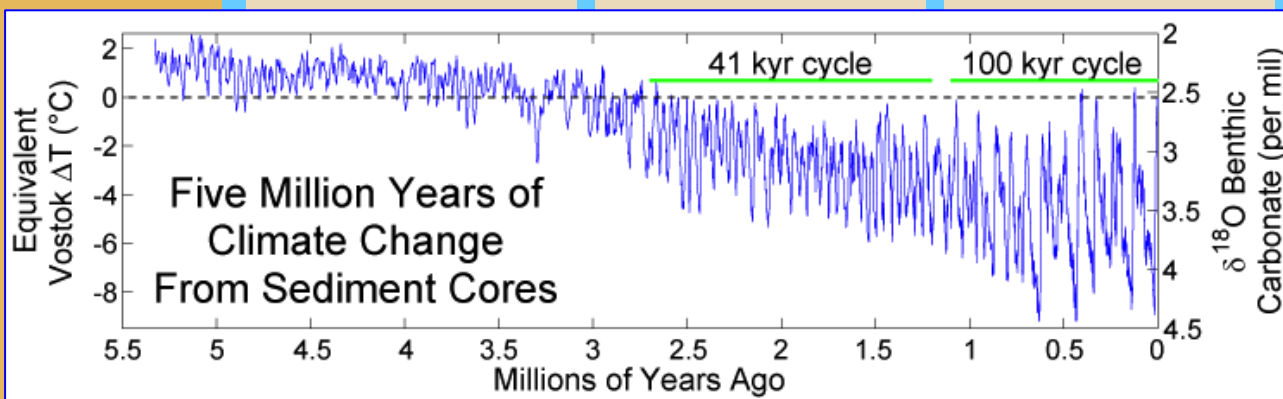


Fig. 1. Figure 1: Pliocene and Pleistocene (Lisiecki and Raymo, 2005). File:Five_Myr_Climate_Change.svg, Wikimedia Commons.

changed 1.76 Ma and man used his brainpower-surplus to respond to this environmental challenge."

The fact is that Mode 1 continued for 1.5 million years, in a way this makes it the most successful technology! It also brings us to the question what finally ended Mode 1. All technological changes of the historical era were responses to stress caused by economic challenges and wars. So the prehistoric changes were probably also due to systemic-stress, a likely cause is climate-change. So Mode 1 did not

long before the brain-size increased. To understand how this is linked to climate-change, you need to know that cooler oceans evaporate less water and colder air can per °Celsius hold 7% less moisture. So when the earth becomes cooler, in general (sometimes local effects can be inverse) there is less rain. The cool phase from 3.4 to 3.2 Ma (Fig. 1) therefore led to drought in East-Africa. Droughts make

taught our small-brained ancestors to cut, and to consequently intentionally break stones.

The flakes from Lomekwi 3 date to 3.3 Ma, but cut-marks in bones at Dikika (McPherron et al, 2010) prove that our ancestors already made flakes 3.4 Ma. The lithics at Lomekwi show indisputable bipolar signals such as: crushed platforms and obtuse

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Climate changes set the pace for the Modes (cont.)

"Clearly, stone tools can never

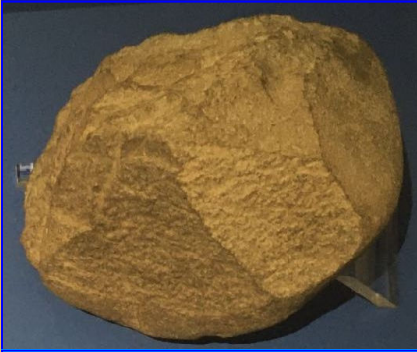


Fig. 2. Multifacial core 4.7kg, Lomekwi 3. Photo by Jan Willem van der Drift.

reflect man's complete

flaking angles (**Fig. 2**), flat bulbs and central scars (**Fig. 3**). These signals prove the flakes are Oblique Bipolar Flakes (OBFs; v.d. Drift, 2012). Please note that bipolar does not automatically

imply the use of anvils. At Lomekwi OBFs measuring >12cm were made from cobbles and boulders weighing up to 15kg. It is extremely difficult to make such

very large OBFs from huge cores that unsteadily wobble on anvils, but it is easy to make large OBFs when the

breaking-bones-on-the-ground led to flaking-on-the-ground.

Cutting meat brought early humans much closer to predators because they ate from

Kenyanthropus perhaps became *Homo habilis*. When the Pleistocene 2.6 Ma began the landscape became much drier, so *Homo habilis* had even less plants and seeds to eat. This food-shortage

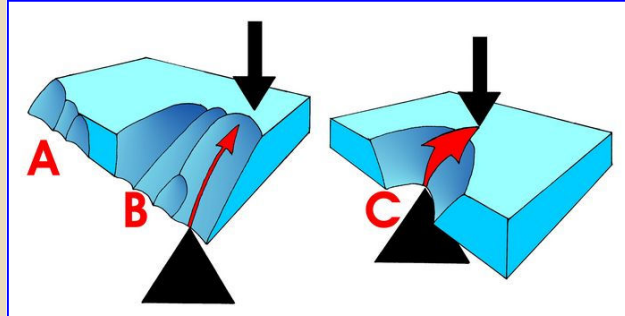


Fig. 4. Retouching-on-anvil is called contre-coupe because the rupture runs against the direction of the strike. A: steep contre-coupe, B: flat contre-coupe, C: deep notching. Technical drawing by Jan Willem van der Drift.

the same carcasses as lions and hyenas. Unable to outrun or outclimb predators, they

increased the need to scavenge, by consequence the number of Mode 1 sites greatly increased after 2.6 Ma.



Fig. 3. Core and OBFs >12cm, Lomekwi 3. Photo by Jan Willem van der Drift.

cognitive capacity."

cores are simply and stable supported by the ground (see **Fig. 5** and **Fig. 6** below). So Lomekwi unquestionably flaked bipolar-on-the-ground. This affirms my claim that

depended on intelligence to survive. In mainstream terms, this might be seen as explaining how natural selection led to larger brains after stone tools were invented (± 3.4 Ma) or why *Australopithecus* or

Mode 1 continued to use bipolar technique; large cobbles were flaked bipolar-on-the-ground and small stones bipolar-on-anvil (v.d. Drift, 2012; Zaidner, 2013-2014). Mode 1 hardly ever retouched thin OBFs because when the toolmakers put thin OBFs on-the-ground or on-an-anvil, the hammer crushed the cutting edge and made it useless. This explains why Mode 1 didn't resharpen the blunted flakes but simply discarded and replaced them. Retouches are rare in Mode 1 and most are on thick blanks; this retouch was made with the bipolar contre-coupe technique (**Fig. 4**). This contre-coupe was used to make steep scrapers with small retouches (i.e. scalloped scrapers).

3.1 Mode 2: freehand flaking

More than a century ago, experimentalists in England and France taught us how handaxes were made from

> [Cont. on page 10](#)

Climate changes set the pace for the Modes (cont.)

"This food-shortage increased the need to scavenge, by consequence the number of Mode 1 sites greatly increased after 2.6 Ma."

flint-nodules. They started by removing a few freehand-flakes, this turned the flint-nodules into a huge chopper-shapes. Flaking the complete edge turns those shapes into thick protobifaces or Abbevillian-bifaces. Finally the experimentalists reduced the thickness by soft-hammer flaking. This chaîne-opératoire (French for operational sequence) made everyone believe that choppers must have been the earliest shaped-tools and that choppers 'zoologically-evolved' into handaxes. Since all experiments were strictly-freehand, they made bipolar flaking seem irrelevant. But flint is rare in Africa, so experiments with flint cannot show us how Mode 2 began. Experiments in Africa using the local raw materials (Schick and Toth, 1993 p.130) and the African archeological record (Sharon, 2006) prove that the first handaxes were made from giant OBFs.

These OBFs immediately point to the continuity with Mode 1, we already saw very large OBFs in Lomekwi 3. To make these OBFs, Mode-1 sourced cobbles from riverbeds and carried these to carcasses on the savanna. In Kenia at Kanjera Mode 1 2.0 Ma already carried cobbles over >10 km (Braun et al, 2008). It is important to note this was in the warm-wet Tiglian-stage (2.4-1.8 Ma, when even England was subtropical). The next stage (Eburonian 1.8-1.45 Ma) was cooler and drier, so groups in East-Africa went even further from the rivers. This made carrying cobbles to the butchering sites very strenuous. OBFs weigh far less than complete cobbles, so to save weight the Africans began to carry OBFs. They preferred the largest OBFs because these had the longest cutting-edges. But even the longest edges became blunt and there were no cobbles at the butchering sites. So the hominids in the butchering

sites could not make new OBFs. And if they went to get stones from the nearest riverbed, hyenas ate all the meat before they were back. This gave the toolmakers only one option: they had to resharpen the blunted OBFs.

As paragraph 2 explained, you cannot resharpen an OBF when it lies on-the-ground or on-an-anvil. But necessity is the mother of invention; so I propose toolmakers began to flake OBFs held in one free-and-unsupported hand. This freehand-method efficiently resharpened the OBFs, plus it produced sharp secondary flakes. Freehand therefore became the dominant retouch-technique in East-Africa after ± 1.76 Ma. Perhaps you are wondering why freehand-flaking did not become dominant far earlier; did *Homo habilis* fail to invent freehand-flaking because he had a small brain? No, the real reason is that freehand-flaking requires cores with a platform at an acute angle to the reduction-face. This means that freehand-strikes on rounded cobbles mostly bounce, so Mode 1 hardly ever used the freehand technique because for rounded cobbles the bipolar technique is far more reliable and far more efficient. In other words: *Homo habilis* made the best choice, and 1.8 Ma *Homo erectus* (i.e. in Dmanisi: v.d. Drift, 2012) also worked bipolar-on-the-ground and bipolar-on-anvil. But 1.76 Ma groups on the savanna began to use large OBFs as raw material. And that changed everything, because every OBF has an acute angle between its dorsal and ventral side. So freehand flaking became the best flaking method immediately when our ancestors began to use OBFs as raw material.

Perhaps you find it hard to accept that Mode 1 was predominantly bipolar. Because I have proven that

some of the Mode 1 flakes are bipolar (Van der Drift, 2012) but you can never prove that all Mode 1 flakes are bipolar because most bipolar flakes look exactly like freehand-flakes. I therefore decided to test the effect of freehand-flaking on large OBFs, by giving a dozen people (varying from skilled experimentalists to people that had never flaked a stone) large OBFs and asking them to freehand-flake these at will. The results were that one highly skilled experimentalist turned one OBF into a blade-core by preparing one edge through bifacial modeling, and all others modeled the OBFs into handaxes (of varying quality). So in my experiment freehand-flaking of OBFs always led to bifacial modeling. This proves that Mode 1 cannot have freehand-flaked large OBFs for one and a half million years without making any bifaces. So the absence of bifacial modeling (Texier, 2021) in the presence of large OBFs (Van der Drift, 2012; Harmand et al, 2015) proves my claim that Mode 1 was predominantly bipolar.

3.2 Mode 2: inventing bifaces

Freehand-retouch completely changed the process of tool-modeling. To understand this you need to realize that contre-coupe removes flakes from the topside (again, see Fig. 4). By consequence all removals are immediately visible without turning the blank over. So the Mode-1 toolmakers did not need to turn their workpiece over; this explains why they mostly made unifacial retouch (often notched or denticulate as in Fig. 4C). Freehand does exactly the opposite: all removals are at the underside of the OBF. This forced toolmakers to turn the OBFs over to inspect the results, and repeated turning inevitably led to bifacial

> [Cont. on page 11](#)

Climate changes set the pace for the Modes (cont.)

flaking. Retouches on OBFs

leads to bifacial centripetal

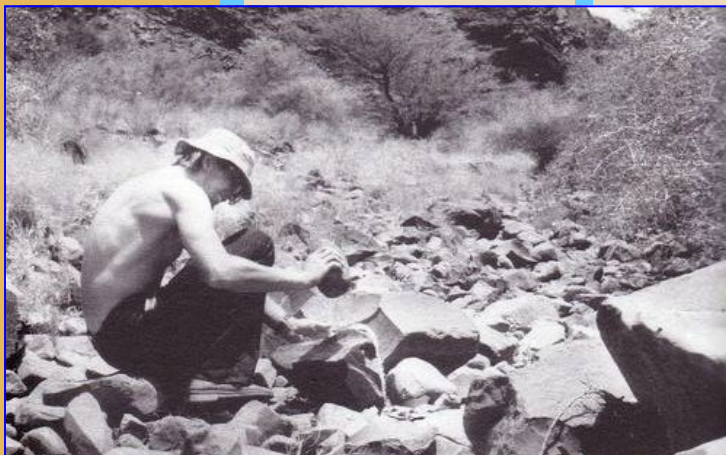


Fig. 5. Giant-core-technology: Toth makes OBFs >20cm from a ±20kg core that is supported by the ground (photo from Schick and Toth, 1993).

modeling. This explains why Mode 2 bifaces (handaxes cleavers and pics) were a sudden invention; the first handaxes and cleavers appeared without any prior form-development (Beyene et al, 2012).

Sharon (2006) named this earliest Mode 2 industry LFB-Acheulian

(Large-Flake-Based), and he called making the very large OBFs (which served as blanks) giant-core-technology (Sharon et al, 2009). The earliest LFB-bifaces measure >20cm, so their blanks came from cores too large to lift with one free-and-unsupported hand. This proves that the giant-core-technology is not freehand but bipolar-on-the-ground (again, see Fig. 5 and Fig. 6): all LFB-Acheulian blanks are OBFs. In the 20th century many scholars did not want to accept that the oldest handaxes were made on giant flakes because they only understood freehand-flaking. And everyone agreed that early-man could not have made freehand-flakes measuring >10 cm before the invention of the preferential Levallois technique. Schick and Toth (1993) were the first to demonstrate the giant-core-technology and photos in their book (Fig. 5) clearly show they flaked bipolar-on-the-ground. But Schick and Toth did not yet call this bipolar-on-the-ground, because in 1993 there was very little interest in bipolar techniques. The replicas in Fig. 6 demonstrate the size of the OBFs that our early ancestors were able to make: the replica at the right shows

the dorsal side of an OBF from Lomekwi (the ventral side of the original is shown in Fig. 3) and the replica at the left shows an LFB-handaxe from Konso. When you compare both replicas you understand the continuity; the blanks for the LFB-Acheulian are made with the same technique that was already used 3.3 Ma in Konso.

Continued in Part 2...

JAN WILLEM VAN DER DRIFT, a veterinarian in the Netherlands by trade, is a colleague of the late Chris Hardaker, archaeologist and founding member of the Pleistocene Coalition. He is a Dutch lithics expert in stone tool production with over 40 years field experience. Van der Drift is a prolific author in both English and Dutch publishing in such as *Notae Praehistoricae*, *Archeologie*, *APAN/Extern* (publication of Aktieve Praktijk Archeologie Nederland), etc. He is also a producer of educational films demonstrating bipolar techniques of stone tool production and its association with various human cultures of all periods beginning with the Paleolithic. Van der Drift's work is referenced in Paul Douglas Campbell's book, *The Universal Tool Kit* (2013), a highly-rated overview of stone tool production techniques. Van der Drift is presently Chairman of APAN or Active Practitioners of Archaeology in the Netherlands (Aktieve Praktijk Archeologie Nederland). The organization was started due to the cumulative knowledge and field experience of its members consistently observing inaccurate interpretations of physical evidence regarding the nature of early humans by the mainstream archaeology community. The group was given extra motivation along these lines by Chris Hardaker who, in correspondence with van der Drift related the treatment of [Calico Early Man Site](http://www.apanarcho.nl/) in California (excavated by famed anthropologist Dr. Louis Leakey) by the mainstream archaeological establishment. Van der Drift lives in the small town of Cadier en Keer in the province of Limburg, Netherlands.

Website: <https://www.apanarcho.nl/>

are inevitably centripetal, so



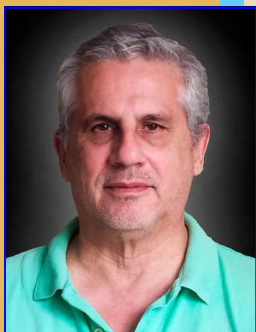
Fig. 6. Giant-core-technology. A replica from Konso Gardula KGA 4-A2 illustrates the size of the oldest LFB-handaxes. The flake that served as its blank must have been huge, so it must have come from a giant core. Giant cores cannot be lifted with one free-and-unsupported hand, so giant cores were flaked bipolar-on-the-ground. The blanks for the earliest handaxes must therefore be classified as Oblique Bipolar Flakes (OBFs). The LFB-Acheulian blanks were made with the same bipolar-on-the-ground technique as the OBFs from Lomekwi (replica at the right). Photo: Jan Willem van der Drift.

the freehand-resharpener of very large OBFs inevitably

Weighing a South Pacific route to solve Southern America's "Population Y" puzzle

By Juan Crocco Ábalos¹

"This multi-route frame-



work does not overturn the Beringian story; rather, it could clarify the enigmatic Population Y signal in South America...to reconstruct a richer, more intricate peopling of the New World."

In our earlier essay, [Follow-up to 'The South America—Australia Link'](#)

(Crocco & Bustamante, 2023), we reviewed genetic, mythological, and navigational evidence suggesting that a small Australasian group may have reached South America millennia before the Beringian migration by a trans-Pacific crossing. A compelling proof-of-concept of the route's feasibility is the 1834 voyage of the Frederick, which shows that the prevailing westerlies and current can carry even a modest schooner quickly across the high southern latitudes.

The present essay tackles how it could have been accomplished, by integrating the latest palaeoceanographic proxies, mapping a viable mid-latitude corridor during the Last Glacial Maximum (LGM), and tying that corridor to the spatial pattern of Population Y. It therefore turns a broad hypothesis into a testable model, outlines explicit research tasks, and situates the debate within a multi-route peopling framework rather than the single-route Bering alternative.

The prevailing narrative holds that Ice-Age hunter-gatherers crossed the Bering land bridge and spread southward across the Americas. Although this model still rests on the strongest evidence, genetic irregularities at early southern sites paired with new insights into Pleistocene seafaring, point to a complementary hypothesis that integrates a trans-Pacific passage by Melanesian mariners. This multi-route framework does not overturn the Beringian story; rather, it could clarify the enigmatic Population Y signal in South America and prompt archaeologists to reconstruct a richer, more intricate peopling of the New World.

Theoretical context

Since the late 20th century, the Beringian model, in which the first Americans derive from Northeast-Asian populations that crossed the Bering land bridge ca. 17–15 ka and expanded rapidly along the North-Pacific coast, has provided the most parsimonious explanation for the majority of archaeological, linguistic and genomic observations (Moreno-Mayar et al., 2018). Deep population bottlenecks, swift continental spread and technological continuities all fit comfortably inside this paradigm.

A growing body of evidence nonetheless suggests additional complexity:

- **Population Y signal.** Genomic work shows that several Amazonian peoples, such as the Suruí and Karitiana, share more alleles with present-day Australasians than a single Beringian migration can explain (Skoglund et al., 2015; Raghavan et al., 2015; Posth et al., 2018). Castro e Silva et al. (2021) picked up the same "Y-population" ancestry on Peru's Pacific coast. Research indicates the signal is concentrated in Amazonia, central Brazil, and Pacific coastal Peru, but absent south of ~40°S latitude and in Central and North American populations (Nakatsuka et al., 2020; Castro e Silva et al., 2021; Campelo dos Santos et al., 2022). The leading scenario envisions initial groups of hunter-gatherers migrating south along the Pacific shoreline, a route that fits squarely within the broader Beringian framework.
- **Early cranial morphologies.** Palaeo-American crania from Lagoa Santa, Brazil, exhibit shape parameters closer to

Melanesians than to later Native Americans (von Cramon-Taubadel et al., 2017).

- **Pre-LGM sites.** Contested occupations of Monte Verde (Chile) and Coxcatlán Cave (Mexico) extend to 33–34,000 years ago, outdating most finds north of 40° N (Dillehay et al., 2015; Somerville et al., 2021).

A SOUTHERN TRANS-PACIFIC CROSSING HYPOTHESIS

These anomalies to the current paradigm, can be explained by a minor but consequential trans-Pacific migration that could have reached South America tens of millennia ago. Four independent lines of argument lend plausibility:

- 1. Demonstrated Pleistocene seafaring in Melanesia.** Human settlement of Buka (Solomon Islands) by 27,000 BCE required an open-ocean passage of roughly 50–60 km, indicating oceangoing capabilities well before the Last Glacial Maximum (Wickler, 1995).
- 2. Long-distance colonisation record.** Archaeological and genetic syntheses document >45 ka maritime expansions throughout Island Southeast Asia and Near Oceania, with navigation between permanently oceanic islands (Pearce & Pearce, 2010).
- 3. Favorable oceanography.** Since its emergence at the Eocene–Oligocene boundary, the Antarctic Circumpolar Current (ACC) has maintained a powerful west-to-east flow (Greshko, 2021), effectively creating a natural conveyor belt that could carry vessels, by design or by drift, across the Pacific. Although the ACC was slower during the Last Glacial Maximum (LGM), every other key factor for an open boat: sea-ice cover, air and sea temperature, wind

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Solving Southern America's "Population Y" puzzle (cont.)

Leg	Key driver	Distance (km)	Modern analogue
Melanesia → 30 °S	East Australian & subtropical gyre	~2,000	Polynesian way-finding to NZ
30–40 °S "Roaring Forties"	LGM intensified SWW + weaker ACC	~11,700	<i>Frederick</i> escape (1834)
Landfall 35–38 °S (Chile)	Coastal eddies, upwelling	—	Modern clipper route
Humboldt conveyor → 6 °S (Peru)	Stronger LGM Humboldt	~2,500	Inca balsas northbound

bound convicts, that survived roughly 11,600 km of the "Furious Fifties" and reached the Chilean coast in just 42 days, illustrating the current's capacity to enable long-distance passages under daunting conditions (Courtenay, 2018).

A landfall along the productive Peru-Chile upwelling zone (north of ≈38 °S) would have been eased by glacial-age oceanography. The equator-ward-shifted, invigorated Southern

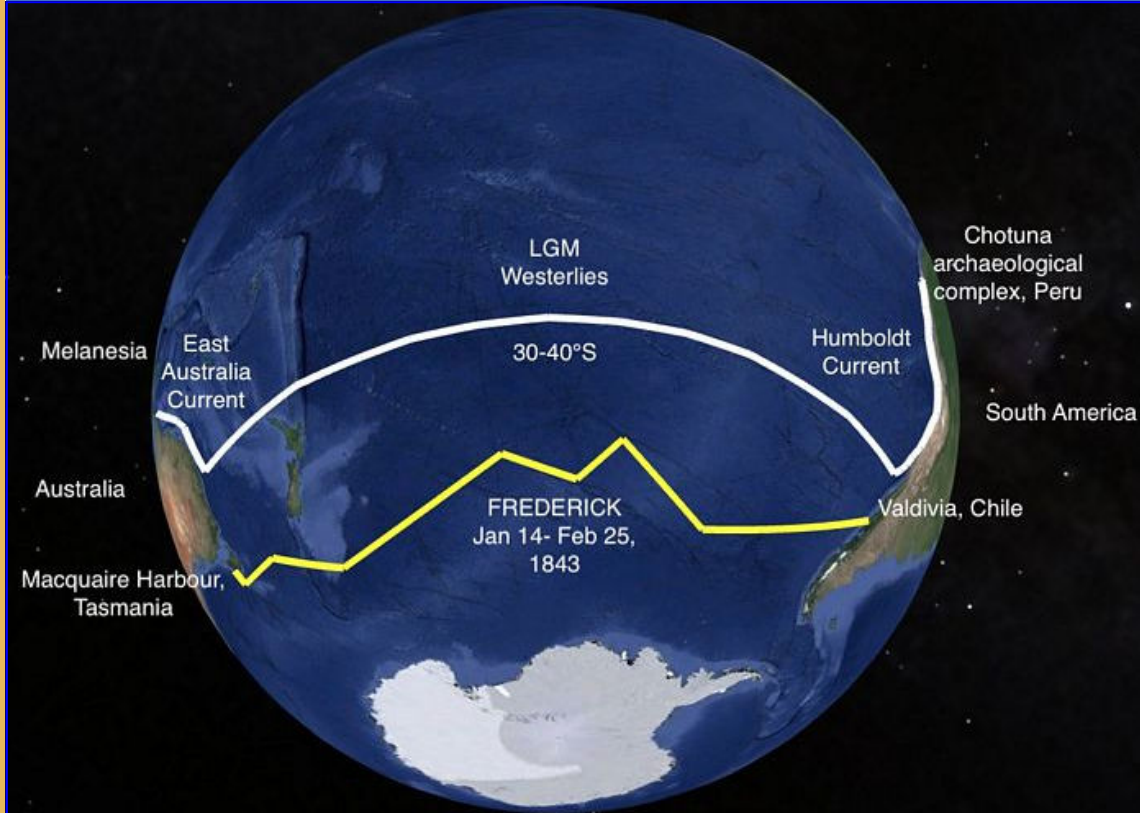


Fig. 1. Proposed trans-Pacific crossing from Melanesia south along the East Australian Current, east along the Westerlies and north along the Humboldt Current, compared to the 1843 Frederick 11,000 km route in 42 days.

"Deep population bottle-necks, swift continental spread and technological continuities all fit comfortably inside this paradigm."

exposure, and the length of the ice-free season (Ai et al., 2024; Wu et al., 2021; Crosta et al., 2022; Lamy et al., 2024), worked strongly against small-craft navigation and would have made the voyage much harder than it is today at those latitudes.

During glacial maxima, proxy records from the mid-latitudes (~30–40 °S) just north of the ACC indicate that the core band of the Southern Westerly Winds both intensified and migrated about 5–6° toward the Equator, a response to steeper mid-latitude temperature gradients and low-obliquity forcing (de Bar et al., 2018; Ai et al., 2024). Concurrent

grain-size and geochemical data show that surface flow in the neighboring Subantarctic branch of the ACC slackened by roughly 30–50 % relative to Holocene values (Ai et al., 2024). Together, these shifts would have lowered the latitude at which voyagers departing Melanesia could latch onto a robust, east-blowing westerly corridor, essentially an "express lane" toward South America, albeit one accompanied by rougher seas and diminished current assistance.

A historical proof of concept of such a crossing is the 1834 escape voyage of the *Frederick*: a Tasmanian built schooner, crewed mostly by land-

Westerlies intensified coastal upwelling and the north-flowing Humboldt Current, injecting cold, nutrient-rich waters and strengthening the boundary flow (de Bar et al., 2018). Any vessel that entered the glacial-age Humboldt Current would likely have been carried northward even faster than today, riding a nutrient-rich conveyor that appears to have extended beyond the Chotuna archaeological complex at 6 °43' S, precisely where the Population-Y genomic signal has been identified (Castro e Silva et al., 2021).

The proposed route would be as suggested in **Fig. 1**.

> [Cont. on page 14](#)

Solving Southern America's "Population Y" puzzle (cont.)

"the Antarctic Circumpolar Current (ACC) has maintained a powerful west-to-east flow... effectively creating a natural conveyor belt that could carry vessels, by design or by drift, across the Pacific."

4. Polynesian traditions of far-southern sailing. Maori oral histories describe Antarctic waters sailing ca. 7th century CE, illustrating cultural familiarity with extreme southern routes (Wehi et al., 2021). Bulkier morphology, thicker fat layers and possible brown adipose tissue (BAT) mediated heat production in dropping temperatures, gave Polynesians the physiological capacity to endure weeks in frigid, spray-soaked canoes and later subsist in the cool, storm-lashed Sub-Antarctic islands (Montenegro et al., 2023). While these traditions and traits are documented in modern Polynesians, the roots of such adaptations may reach back prior to the LGM.

Together with the Australasian genomic signal and early southern sites, these data motivate the hypothesis that a small Melanesian-derived group could have entered South America, perhaps as early as 30 ka, without negating the primary Beringian dispersal. Such a scenario would naturally localize Population Y to tropical lowlands and account for morphological outliers.

Caution and falsifiability

It is critical to emphasize that there is no direct archaeological evidence of Pleistocene open-ocean watercraft. Palaeoclimate drift simulations showing viable Melanesia to South America trajectories during specific windows around LGM are needed to corroborate this prediction.

Provisional conclusion

While current evidence continues to favour Beringia as the main entryway, a multi-route peopling model that includes a limited, trans-Pacific contribution remains scientifically credible and offers a coherent framework for interpreting the Population Y anomaly, early southern dates and cranial diversity. Resolving this question will require high-coverage

palaeogenomes, robust chronologies and exhaustive pan-Pacific comparative research.

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JUAN CROCCO ÁBALOS: Sociedad Chilena de Historia y Geografía and Fundación Altura Patrimonio. Santiago, Chile.

Out in the field with Ray

By Enilse Sehuanes-Urbaniak

"Ray would be thinking about these sites all year long—

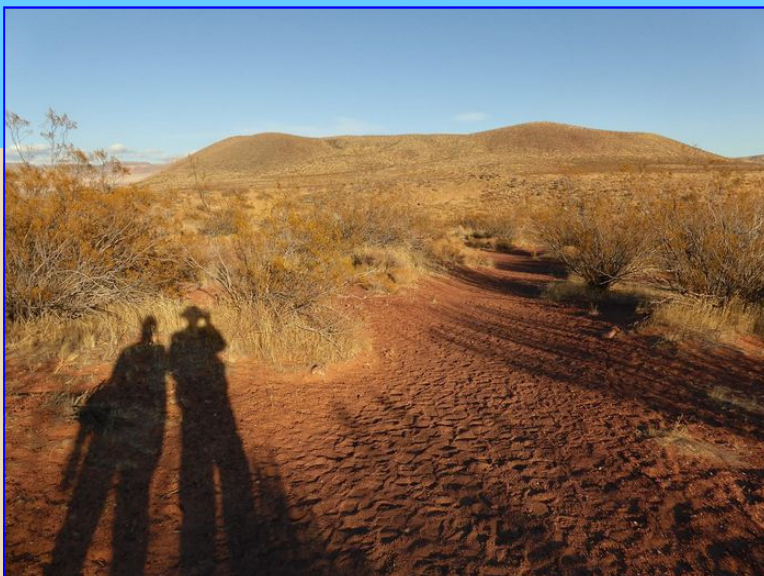


sometimes for years—to understand what could possibly be a marker and what meaning this may have had for the Indigenous peoples of the area."

Exploring rock art sites with my late husband, Ray Urbaniak, was always fascinating. However, it was also magical. Going out exploring solstices, equinoxes, and cross-quarter sites as well as countless images of ice age animals with Ray has been such a unique part of my life. It increased my respect for his enthusiasm for archaeology and the Pleistocene epoch's history.

When it came to astronomy—or more specifically for Ray, archaeoastronomy—I would always feel the excitement before an outing. Ray's creative process always started days or weeks before by making a careful calculation of the Sun's position throughout the seasons, investigating Google Maps for precise site locations, and planning a timeframe for possible alignments. He kept a spiral notebook and computer files with numerical calculations of multiple sites, which most often were not too far from home.

Ray would be thinking about these sites all year long—sometimes for years—to understand what could possibly be a marker and what meaning this may have had for the Indigenous peoples such as the Paiutes of the area. His research was intuitive yet scientific and analytical. Ray knew that what might start out as a 'gut feeling' had to be backed up with documentation and the recording of visual events in real time as



Silhouette of Bogie (our dog), Enilse and Ray (the photographer) in Hurricane, Utah.

the shafts of light were marking the panels.

This process of recording rock art, including depictions of ice age animals and such as the Pleiades star cluster, eventually led Ray to ways of digitally preserving these important sites. That became more important as the rates of destruction were rapidly increasing due to population growth and lack of respect for these sacred rocks.

While he usually had a map and a plan in place, Ray would often say he felt led to certain sacred sites and even intuitively grasp where to go in time for solstices and equinoxes. Sometimes his mind would continue to be active even late at night when sleeping and might describe such as getting a message in his dream and would get up and take notes so he wouldn't forget.

On the days of exploring, Ray always had a map and a plan in place. When he wasn't going out with his hiking buddies or fellow

colleagues, I was always happy and honored to go along with him. The drive in his pickup would eventually lead to remote dirt roads, followed by a good hike to the rock panels.

Witnessing these rock art sites previously unknown to anyone else except, perhaps, the Ancestral Pueblos or other groups of people who created the images and to travelers who later came through this area, adding their own "messages" in stone, was a profound gift to our senses—a complete spiritual experience!

After exploring a site, Ray's research would always continue for days, weeks or even years as he would study his photos with new eyes over time. Once he returned home from an exploration, he would excitedly load all his digital photos and cell phone images onto his computer. He created computer files and carefully studied the im-

> [Cont. on page 16](#)

Out in the field with Ray (cont.)

"On the days of exploring, Ray always had a map and a plan in place. When he wasn't going out with his hiking buddies or fellow colleagues, I was always happy and honored to go along with him. The drive in his pickup would eventually lead to remote dirt roads, followed by a good hike to the rock panels."

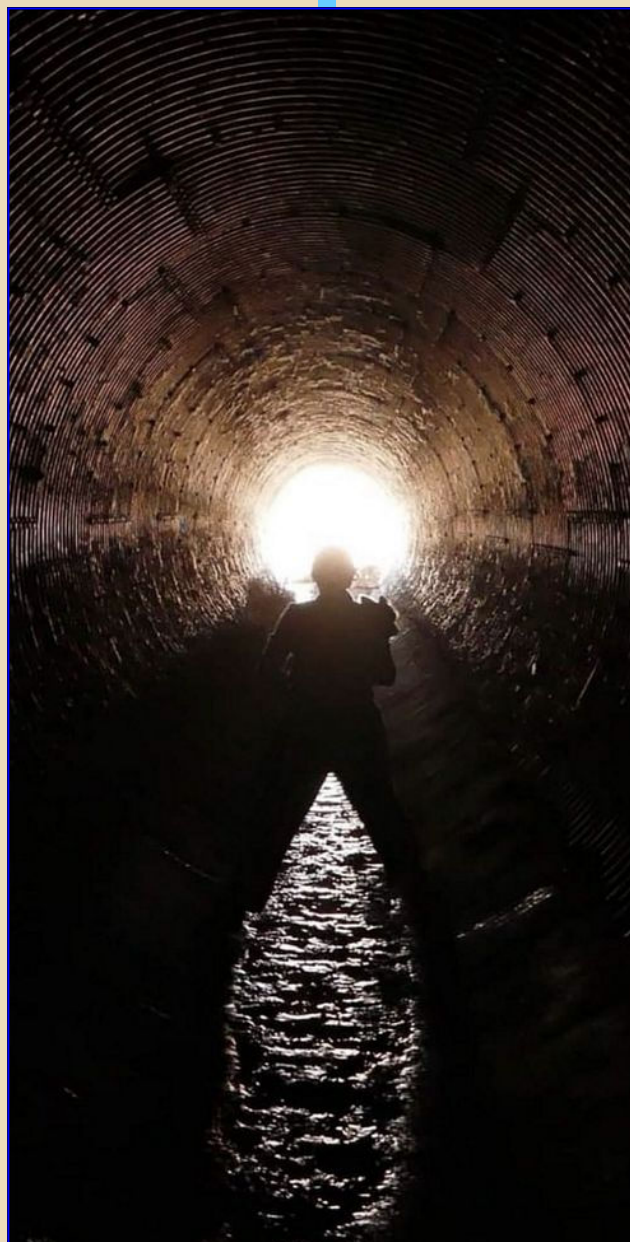
ages over time. Sometimes he enhanced the pictograph or petroglyph panels and their markings on the computer to see what lay beneath the surface layer... Was there a story to be told by the Ancient Ones'?

Over the years, Ray also exchanged correspondences with colleagues from across the world via email or Facebook to find similarities in foreign rock art panels or share original concepts from other regions. His avid reading of archaeology and anthropology books, podcasts and scientific articles on the web would expand his mind further, enriching his thoughts and theories.

Around 14 years ago, Ray joined the *Pleistocene Coalition News* community of independent archaeological researchers and writers. With support from *PCN's* editorial staff, he refined his ideas with greater clarity. Participation in the *PCN* community all these years significantly enhanced the quality and impact of his research.

His work in what he called 'intuitive archaeology' became the central focus of his life until his passing, which occurred after an unexpected illness that resulted in him, sadly, spending the Summer Solstice of June 2024 in a hospital room rather than outdoors exploring, following his bliss.

With Ray's newly reformatting, well-inventoried website called [Sacred Rock Art](https://naturalfrequency.net/) (<https://naturalfrequency.net/>) you can explore his lifelong research through photos and educational information. The site also features his documentary, *The Dance of Light and Shadow*, which he left in almost complete form. You will find additional links to videos on YouTube and Facebook. Thanks to *PCN*, there are links to approximately 80 of Ray's pub-



Silhouette of Enilse and Bogie in tunnel. Photo taken by Ray.

lished articles (including the work of many other gifted *PCN* contributors).

I hope that you can spend some time on Ray's site doing some "exploration" of your own and joining us in celebrating Ray's *beautiful mind*.

ENILSE SEHUANES-URBANIAC, E-RYT, is the manager of the late Ray Urbaniak's rock art legacy. She

is an E-RYT-registered yoga instructor under the international Yoga Alliance, the largest global yoga network, teaching "mindful yoga" since 1995. Mindful yoga is a less conventional form that puts a greater emphasis on developing awareness of one's thoughts and emotions and less on physical fitness as in more conventional yoga. It cultivates a deeper connection to the body and promotes overall well-being.

[Enilse's Instagram page](#)

Science updates on Sage Wall and Tryst Falls

By Richard Dullum (B.A. Biology), Christopher Borton, Linda Welsh and Carl Adam Carter

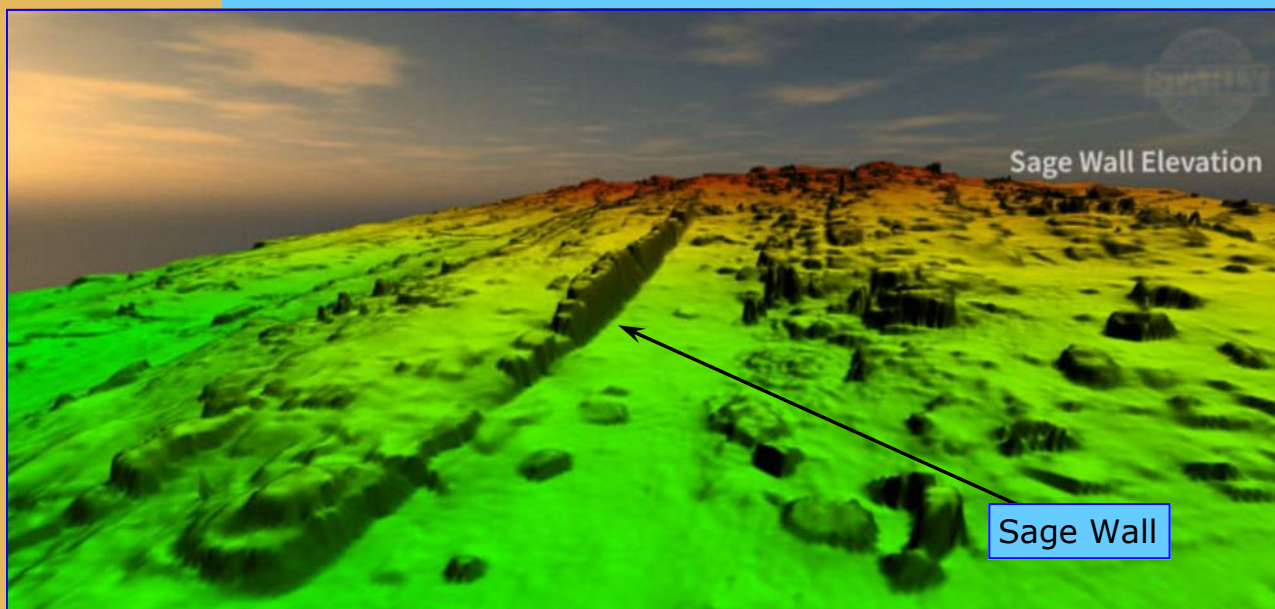
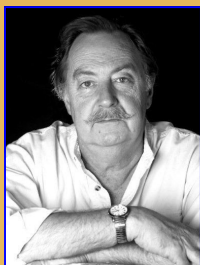


Fig. 1. 3D elevation of Sage Wall (minus vegetation) provided by property owners Christopher Borton and Linda Welsh 2025. Arrow and text added.

"When the other strange



features of the Wall and its nearby environment... are taken into account, there are many features here that are shared by other megalithic sites world-wide."

There is a trove of data just released from property owners Chris Borton and Linda Welsh on three years of scientific study at Sage Wall (e.g., Fig. 1). The link below takes you to their webpage where you can click on "Research" to get all the scientific data. The data includes LiDAR images, ground penetrating radar, electromagnetic mapping: conductivity and magnetic susceptibility, soil analysis report, granite analysis: x-ray diffraction characterization and 3D modeling with Winter Solstice and night sky over Sage Wall.

<https://sagemountain.org/sage-wall-and-trails/>

The following is from Chris and Linda's report. I think the results show further study is warranted on the Sage Wall. When the other strange features of the Wall and its nearby environment, like drill-holes, cup-marks, carve-outs, knobs and staggered stacked block walls are taken into account, there are many features here that are shared by other megalithic sites worldwide.

Lidar results

Our personal takeaways from the Lidar photos thus far:

- Sage Wall is an anomaly in a mountain of natural granite.
- The lower SE edge of Sage Wall was probably the same height as the rest of the wall before falling apart from earthquakes, freeze/thaw cycles, and tree roots.
- The wall continues partially buried at least 100 ft beyond the obvious visible portion.
- It seems there was another wall mirroring Sage Wall running parallel up the mountain. It is now fully collapsed.
- There appear to be other parallel walls or "spokes/channels" coming down the mountain.
- Are those columns or pillar bases on each side of the lowest entrance of the wall?
- The rectilinear patterns on some of the images appear to be "digital noise."

Images are courtesy of Stahly Engineering and Associates headquartered in Billings, Montana.

Ground Penetrating Radar results

Our personal takeaways which are gleaned from the report:

- There is a "reflector" or "base" under the wall and more research needs to be done.
- Portions of the wall may continue down more than 10 ft.
- We have physically tested the depth below grade at the base of the east side of the wall down 4 ft (the limit of our test probe) without hitting rock.
- We intend to continue this study.

Electromagnetic Mapping: Conductivity and Magnetic Susceptibility

Our personal takeaways gleaned from this report and personal experience:

- The granite has strong magnetic/conductive qualities

> [Cont. on page 18](#)

Science updates on Sage Wall and Tryst Falls (cont.)

"The data includes Li-

that appear to show up as an anomalous spike in the Granite Analysis: X-Ray Diffraction Characterization report.

years. As the boulders degrade they create a porous sandy sub-soil that surrounds Sage Wall and all of

ders surrounding Sage Wall at the same elevation and with similar exposure do not possess this particular discoloration or texture on the surface.

- We wonder if the spikes in these charts correspond to the abnormally high magnetometry readings from the Conductivity and Magnetic Susceptibility survey.

Thank you to Gary F. Wyss, MS of the Center of Advanced Materials Processing (CAMP) on the campus of Montana Technological University.

The PDF files can be viewed or downloaded below:

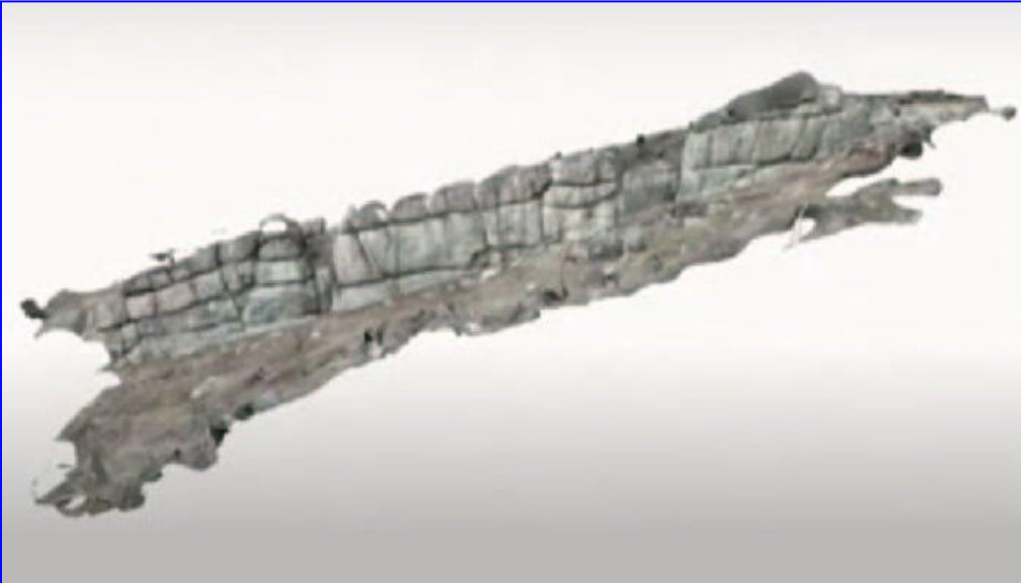


Fig. 2. 3D-scanned composite of entire Sage Wall about 275' x 24'. Provided by Chris Borton and Linda Welsh.

DAR images, ground penetrating radar, electromagnetic mapping: conductivity and magnetic susceptibility, soil analysis report, granite x-ray diffraction characterization and 3D modeling with Winter Solstice and night sky over Sage Wall."

- We call Sage Wall a "Drone-eater" as six drones have crashed up here in the last three years, due to signal disruptions.

- Many people *feel* the energy of the Wall and we are getting continuous feedback from others who are sensitive to these subtle forces. Sage-Wall-Conductivity-Survey-Figure-05.pdf

Soil Analysis report

- This basic "soil health" survey was done as a starting point to determine the chemical composition surrounding Sage Wall. It is a test used by farmers/ranchers/gardeners to determine fertility of the dirt. The results are typical of this surrounding upland mountain forest where there is a top layer of decomposing needles and organic material from the Douglas fir trees (duff, woody debris) and the sub-layer of decomposed granite (DG). DG comes from the solid granite boulders that deteriorate over thousands and millions of

the mountains in this range. Thank you to Kaleena Miller from the Montana State University Extension Agency for collecting the samples and submitting them for analysis...and for braving a maiden voyage on our solar powered electric trail bike!

- The technical report can be viewed or downloaded below ([HorizontalLH.2016.pdf](#)).

Granite Analysis: X-ray Diffraction Characterization

Here you will see the results of two granite samples we collected for analysis from the top and bottom course of Sage Wall. Our personal takeaways from this report:

- The top horizontal course of the wall looks darker and has a slightly different texture than the bottom courses, which is why we had it tested. Mineralogically, they seem the same, but the discoloration of the top course appears to be because of weathering and more exposure to the elements. However, the boul-

Report-Geophysical-Survey-of-the-Sage-Wall-October-2023-Rev-2.pdf

3D Modeling with Winter Solstice and Night Sky over Sage Wall

These visuals start with video of the rising sun at Winter Solstice over Sage Wall, of which the wall is aligned to. The video then morphs into the night sky and constellation movement. There are multiple layers to this mock-up and this is one of the first attempts at exploring the relationship between celestial cycles and the possible placement/orientation of Sage Wall.

Next, a number of 3D images enables the wall surface to be seen in isolation from the rest of the background (**Fig. 2**).

Finally, three of the pictures below show the isolated wall surface contained by a "box"; this is to demonstrate how straight the wall surface is. The thinner the box, the

> [Cont. on page 19](#)

Science updates on Sage Wall and Tryst Falls (cont.)

"Carl Adam Carter is at

straighter the wall. How straight is the wall? It was found that within the three

Special thank you to Sean Harasymchuk, Chief Technology Officer of PointVerge.

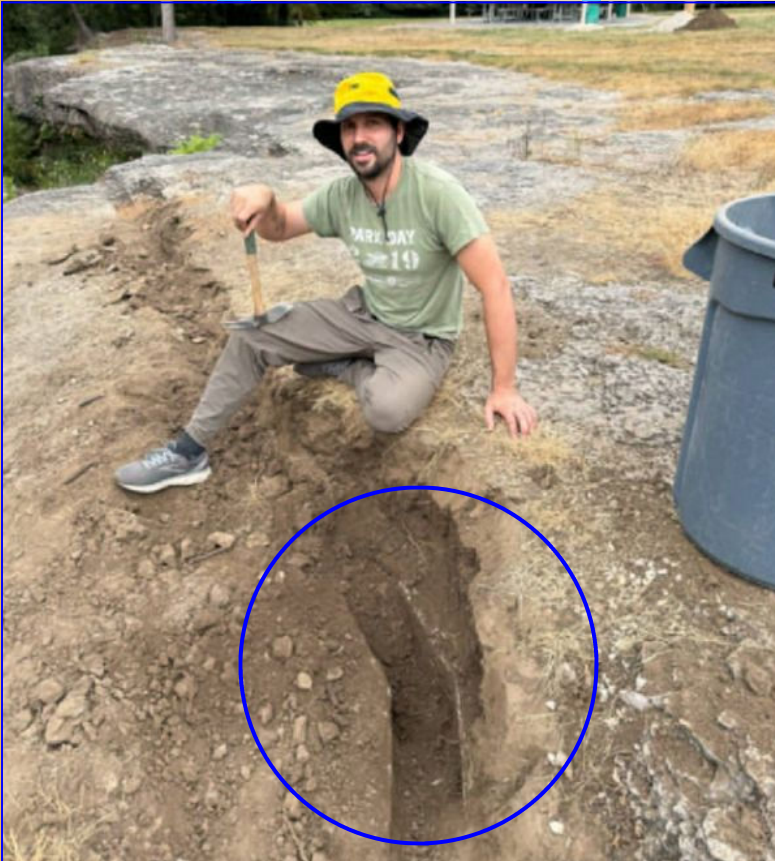


Fig. 1. Carl Adam Carter and the precise spot at his Tryst Falls excavation where the double parallel 'track' remarkably veers off at a sharp angle not characteristic of any wheels. The angle is clearly seen in his bird's-eye view of Fig.3.

"Although we may not have the capacity to respond to comments or participate in forums and community discussions, our primary goal is to share our knowledge as we uncover it—and let visitors decide for themselves. We welcome suggestions and ideas for exploring the mysteries of Sage Wall and its surroundings."

mately 30° from the straight course it had followed for 50'. Whether the change in direction was rounded, like a wheel would make, or some other configuration under the soil was not known. Now we know, because Carl excavated it out, as you can see below:

Fig. 1

Carl Adam Carter is at precisely the spot where the double track angles off. No cart made that 'rut' and you can see the width is the same as the exposed tracks. This was cut. What a job! Great work, Carl! It looks practically fresh!

That this site was glaciated during the LGM is proven by Carl's identification of several pink granite boulders at Tryst Falls, partially buried and eroded out.

Fig. 2

These are glacial erratics; pink granite from the North. Commonly seen weathering out of the nearby area, proving the entire area here was glaciated at the LGM. The hard packed silt and clay that Carl removed from the covered cut had likely been there since that time, with Williams Creek doing most of the excavation.

Fig. 3

Drone shot of fully excavated parallel cuts. The reason the right-hand cut looks wobbly is the presence of a shelf directly above the cut, as seen in Fig. 1. Seeing the cuts head off at an angle *without* wheeling around the outer turn, but heading laser-straight, to follow its parallel companion; a very sharp turn no wheel could make.

What could these parallel cuts represent? I surmise they represent a *precision cutting* of the rock.

When could this have been done? I also surmise the lack of machinery is characteristic of all known cultures in N. America, *before our own*.

Where do we find this? In a *culturally pristine* area with no known precision rock-

> [Cont. on page 20](#)

precisely the spot



Fig. 2. These pink granite stones are commonly seen in the area weathering out of the ground. They are from the North proving the entire area was glaciated during the Last Glacial Maximum.

box images, 4'-3" (1.2954 meters) thickness could completely enclose the wall surface. Over a length of approximately 197' (60 meters), this seems to be a significant feature.

- Panoramic photo courtesy of Will Israel and Polycam software (www.poly.com) on Apple iPhone 14 Pro Max

- 3D point analysis by QuBR™ software.

- 3D Scans, videos and rendered pictures created by PointVerge Ltd. (www.pointverge.com)

where the double track angles off."

Update on Tryst Falls excavation of the soil-covered track by Carl Adam Carter

By Richard Dullum (B.A. Biology) and Carl Adam Carter

About a month ago, photo-journalist and explorer Carl Adam Carter went to Tryst Falls, Missouri, having visited the site last December, 2024, where he took photos and sent them to me for my investigation of the site. He told me in December that he regretted not having any tools with him, because he wanted to find the course of the parallel cuts completely, as one terminus lay under a soil cover and was not visible. This was opposite a parallel cut that was visible, angling off at approxi-

Science updates on Sage Wall and Tryst Falls (cont.)

cutting machinery available here, until recent times.

cultures we know of that cut rock, it must have been done

have existed before 22,000YBP, the last glacial



Fig. 3. Carl Adam Carter’s drone shot of the fully excavated parallel cuts seen near the center. The reason the right-hand cut looks wobbly at the angle is the presence of a rock shelf directly above it. This can be seen at the bottom of Fig. 1. No wheels would turn to make cuts heading off at an angle *without* a rounded turn. This cut is laser-straight in following its parallel companion.

Who could have done this? I’m assuming that, like all

by a substantial *civilization*. In this case, it would have to

maximum in N. America. It could have been during interglacials as you can see below, courtesy of Michael Button *Stunning New Discovery Completely Rewrites Human History*.

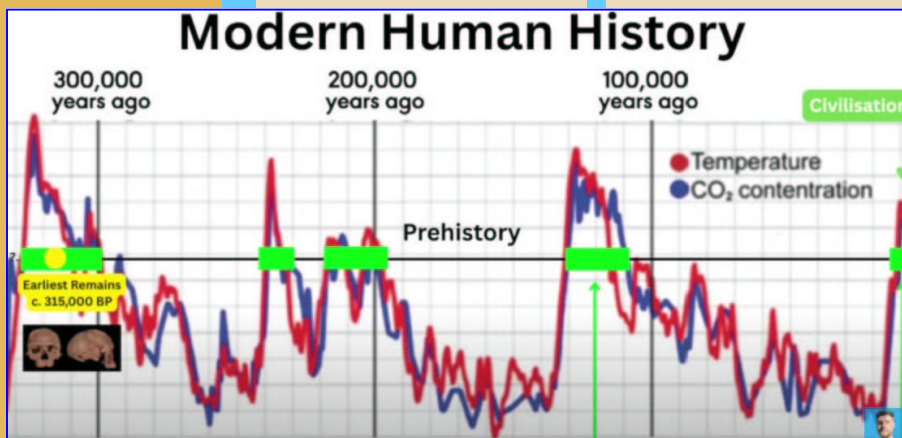


Fig. 4. Warm periods (interglacials) in green when humans would have found it comfortable to cross the Bering Land Bridge from Siberia into North America. Graph courtesy of Michael Button.

Fig. 4 (per the PC’s long emphasis)

Do you see the possibilities?

RICHARD DULLUM, retired as a surgical R.N. working in a large O.R. for the past 30 years, is a researcher in early human prehistory and culture. He is also a Vietnam veteran with a B.A. in Biology. Dullum has written or co-written over 50 articles for *PCN* since 2009 and is also one of *PCN*’s copy editors. All of Dullum’s articles in *PCN* can be found at the following link:

https://pleistocenecoalition.com/index.htm#Dullum_and_Lynch

Legacy of Calico Early Man Site Archaeological Project

Part 5 By Fred E. Budinger, Jr. Budinger & Associates, San Bernardino, CA

Continuing from Part 4 in PCN #96 (July-August 2025)...



"The specimen's face and edge modifications reflect a technique of controlled knapping not evident on either the surface artifacts of the Lake Manix Lithic Industry or the late middle Pleistocene Calico specimens."

Note: The long list of references for the series will be included after the final installment.

The Rock Wren locality at the Calico Site

A well-formed chalcedony biface was recovered 50 cm below the surface in a drainage channel in the nested unit of alluvium at a location approximately 100 m east northeast of Master Pit I at the Calico Site.

Discovered during a hike when a rock wren bird nest was found on the rocky surface, the object has come to be euphemistically called the Rock Wren Biface (**Fig. 1**).

The specimen's face and edge modifications reflect a technique of controlled knapping not evident on either the surface artifacts of the Lake Manix Lithic Industry or the late middle Pleistocene Calico specimens.

Thermoluminescence analysis of sediment stratigraphically equivalent to the base of the biface indicates deposition occurred 14.4 ± 2.2ka ago (Debenham 1998, 1999). This suggests that the Rock Wren Biface is an age equivalent to Clovis-era artifacts or slightly earlier.

-Continued in Part 6 with the artifact/geofact issue...

FRED E. BUDINGER, JR., MA, RPA, is Senior Archaeologist at Budinger & Associates and former Curator (1974-1986) and Pro-



Fig. 1. The Rock Wren Biface was found in a nested inset of alluvium dated to 14.4 ± 2.2ka ago. It shows evidence of heat treatment. Photograph courtesy of Daniel J. Griffin.

ject Director (2000-2008) at Calico Early Man Site. Over the past several years he has raised concerns and discussed in detail the threatened Calico artifacts and the gradual and deliberate destruction of the site in several articles including [Protecting Calico](#) (PCN #17, May-June 2012), [Saving Calico Early Man Site](#) (2012, same issue), and [The Calico Legacies, December 2014](#) (PCN #32, Nov-Dec 2014). He has also provided several brief news items on the degraded state of U.S. archaeology and lack of preservation efforts and the subject of truth in science including [An important update on the state of affairs at Calico Early Man Site](#)

(PCN #39, Jan-Feb 2016). In that report Budinger encapsulated current "professional" rulings: 1.) "No [Calico] artifacts can be seen by anybody," and, 2.) A respected book author



From PCN #32: The author as Project Director of Calico Early Man Site measuring artifacts—such as those seen in this series—in the wall of Master Pit I. Photo: T. Oberlander.

(*Bipoints Before Clovis*) who wrote to Director Schroth about flying out to California from Virginia to photograph selected Calico specimens for an upcoming book was given the following response: "The Calico collection is no longer available for study." Budinger continues his efforts to keep Calico site from being buried by popular archaeology as have other sites such as Hueyatlaco.

Member news and other info

Quick links to main articles in [PCN #96](#):

PAGE 2

[AI](#): Promises and threats for prehistory, history, and cultural heritage, *Part 1*

Patricio Bustamante

PAGE 5

[Cultural significance of rock art](#) for Saudi Arabia's Vision 2030, *Part 5*

Abdulrahman Albalawi

PAGE 6

[Lake Manix](#) and more

Tom Baldwin

PAGE 8

[Montana keystones](#) North America's ice age civilization

Richard Dullum

PAGE 12

[Legacy of Calico](#) Early Man Archaeological Project, *Part 4*

Fred E. Budinger, Jr.

PAGE 14

[Member news and other info](#):

Books by Clovis expert PCN author archaeologist Richard Michael Gramly

[Links to Issues 93-95](#)

PAGE 15

[Pleistocene civilizations](#), *Part 15*, the penultimate via The Pillars of Heracles

Anthony Peratt and Fay Yao

PAGE 18

[Debunking evolutionary propaganda](#), *Part 15* of series in reverse (Tetrapod evolution credibility questioned)

John Feliks

Long-time PCN researcher, writer and copy editor **Richard Dullum** appeared on *Mike & Dave's Multiverse* livestream on Wednesday, October 3, 2025 providing an update on challenging new evidence pointing to genuine "megalithic culture" of early North Americans. Readers can watch the 1 hr. 27 mins. program on YouTube, Facebook, X and other venues. Rick also had an opportunity to give a quick overview of the Pleistocene Coalition and its early history. Here is the YouTube link: [Megalithic Evidence of Civilization in Montana?! | w/ Richard Dullum of the Pleistocene Coalition](https://www.youtube.com/watch?v=gALLBLmh670&t=4375s)

(<https://www.youtube.com/watch?v=gALLBLmh670&t=4375s>)

Enilse Sehuanes-Urbaniak, manager of the late Ray Urbaniak's rock art legacy, is proud to announce that she and her webmaster have launched a completely revamped and re-organized version of Ray's website. Readers can access it directly and explore Ray's countless fascinating, surprising, and often profound rock art discoveries including many direct links to his articles in PCN. Here is the link: <https://naturalfrequency.net/>

The real problem with ancient skulls –John Feliks

A good number of readers have sent references to various ancient skull finds, most recently, Yunxian 2, China (reconstructed) and Petralona, Greece. Despite the predictable echoes about primitive species the most important takeaway is something readers never get from mainstream venues or any of the countless mainstream echo sites. That is knowing that the anthropology community is withholding already-established evidence of modern level intelligence in ancient groups such as *Homo erectus* and Neanderthals. With knowledge so crucial to the goals of anthropology why would the community do this? It

is because evidence of modern-level intelligence in early humans makes the subject of physical appearances moot and the prejudices of presumed 'primitiveness' too easily seen. The failure of their tenets is visible because they persist with a false distinction between Neanderthals and 'humans.' The same goes for all the others. The misnomer of less-evolved species is maintained when the public is kept in the dark about *H. erectus* and Neanderthals with minds equal to our own. This includes especially the degree of sophistication demonstrated in the bone engravings of [Bilzingsleben, Germany](#), and similar from Bacho Kiro Cave, Bulgaria; Valsequillo, Mexico; and the *Homo erectus* engraved shell of Trinil, Indonesia. The integrity of the science community depends on an honest presentation of all relevant evidence to the public.

Dutch stone tool expert, **Jan Willem van der Drift**, sent this excellent supplement to his article about stone tool "modes" on p.8 of this issue. It illustrates how genuine field experience can add much insight to one's ideas:

Africa

"I went to Africa with some Spanish friends in 2016 because I wanted to see the Olduvai (Maasai for sisal = Sanseveria plant) Gorge. We camped in small tents in the Leakey-camp and also in other places in the Serengeti (Maasai word for endless plain).

One night our tents were 500 meters from where we spotted a group of lionesses and when I went to the toilet hyenas walked past me, carelessly without showing any fear.

These hyenas were clearly aware of the fact that they were much stronger and faster than me. My Maasai friends taught me that hyenas kill you when you sleep because they believe that anything that lies motionless on the ground must be weak.

The previous year hyenas had killed a tourist who slept with his head outside because it was too



[Link to PCN #96](#)



[Link to PCN #95](#)



[Link to PCN #94](#)

warm in his tent. That night the wind pulled the tent-pegs out of the ground, so I had to reset the pegs. Five minutes after I went back inside, I heard a large animal (perhaps a hyena) came sniffing to see what I had done. That made me understand why the Maasai make a boma (ring of thorn-bushes around their huts) and wonder what I would do without the protection of my tent and how early-man survived the nights without the protection of a tent or a fire. Early-man must have been very clever to feed and raise his family on the dangerous African savannah. So my own experiences make me very sure he was cleverer than his stone tools suggest..."

The Pillars of Heracles (*Pillars of Hercules*), Part 2*

By Anthony L. Peratt, PhD, physicist; on the occasion of his 80th birthday

January 6, 2020

*This article by Dr. Anthony Peratt is a verbatim reprint from PCN #63, Jan-Feb 2020. Per the plan in their Part 1 (PCN #82, March-April 2023), it serves here as Part 16 (Conclusion) of Peratt and Yao's Pleistocene civilizations series.

"Worldwide, depending on location,



high latitude north and

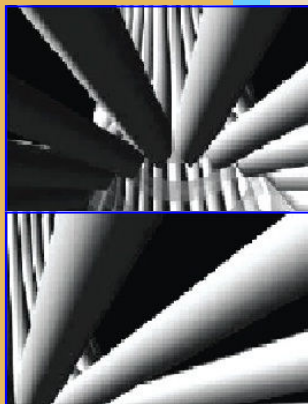


Fig. 8. Computer simulation of the Pillars of Heracles just at the outer boundary of Antarctica (Atlantis appearing to block any further ship travel into the continent, although, of course, the land would do the same. The horizontal lines depict the pillars as seen above ship deck, as in Fig. 7 in Part I.

south, human settlements must have been greatly disrupted."

*Continuing from "Part 15"**...

Location of Plato's Atlantis

Almost always misinterpreted in my view is the location of Atlantis. Again it is the lack of a steady presence of observable pillars. According to Plato, Atlantis lies *in front of the Pillars of Heracles—and go no further (Fig. 8)*. If interpreting Atlantis as a real location, in my opinion, only Antarctica meets this criteria; it is impossible to miss this boundary aboard ship as the pillars shoot straight upward at Antarctica's shoreline,⁶ the result of the energy carried by the Birkeland currents from the rest of the galaxy downward in a nearly circular cusp.⁷

It is these twenty-eight filaments⁸ that, over the lifetime of the Earth, define the circular-continent and:

1. Impart a counter-clockwise momentum to the continent.
2. Provide a non-solar source of heat to the continent that before the ice, produced the semi-tropical climate of the island with concomitant forests and vegetation.
3. Are causing the deglaciation of the island and the appearance of non-petrified tree stumps and leaves along parts of its boundary. These are very much younger than petrified tree stumps, for example, those very ancient ones found in the Petri-

fied Forest of Arizona.

4. Finally, as it has been since glaciation, the continued Birkeland current inflow is causing large-scale deglaciation with icebergs falling into the sea.⁹

Atlantis sank in the ocean in a single day and night

In mankind's myths and memories, Atlantis did sink in the ocean in a single day and night. Not physically, but visibly.¹⁰

For centuries the southern Atlantic was not navigable because of the 'shoals of mud,' as reported to Plato. The plasmasphere-atmosphere was pushed closer to the surface of the earth at the poles at the start of the Younger-Dryas.¹¹

Worldwide—depending on location, high latitude north and south—human settlements must have been greatly disrupted. Populations close to Antarctica must have suffered terribly. Those in the Amazon rainforest, now known to have once been farmers, recall an instant freeze of even large animals within about four hours as the temperature plummeted. A persistent Native American account is that 'where they could, animals leapt to their deaths—as did the humans.' This would require temperatures of 100°K, or lower, the temperature of the plasmasphere. The great

cities of South America, e.g., Puma Punku, Bolivia were

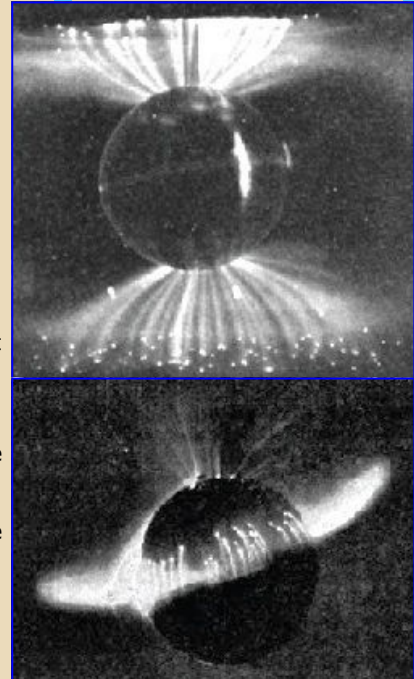


Fig. 9. Plasma filaments in Birkeland's *terrella* experiment encircling a magnetized copper globe. Experimental parameters adjusted such that the near globe or atmospheric currents are mostly visible. A. Peratt, *Physics of the Plasma Universe*, 2015, Loc. cit.

leveled and Native American populations in Central and Northern America recall a time when they too fled northward as did populations in the high-north seek a warmer, placid mid-America. This is a story told at high latitudes, north and south, worldwide.

In the last decade, Birkeland currents (**Fig. 9**) were rediscovered at the Murchison Wide

⁶ Currently at some 66 degrees south of the equator.

⁷ Birkeland currents were first discovered by the U.S. Navy navigation satellite 1963-38C at approximately 1100 km altitude (Potemra, TA, *et al.* 1988. Satellite Observations of Currents and Waves in Space Plasmas. In *Laser and Particle Beams* 6: 503).

⁸ Peratt *et al.* 2007. Characteristics for the Occurrence of a High-Current Z-Pinch Aurora as recorded in Antiquity, Part II: Directionality and Source. *IEEE Transactions on Plasma Science*, v.35 n. 4, August 2007.

⁹ These might be wisely harvested as sources of fresh water.

¹⁰ Even today, tsunamis cause a rise in ocean waters but the large ocean, to the eye, appears unmovable while a smaller island appears to sink.

¹¹ More on the Younger-Dryas c. 12.9–11.6 ka will be given in a subsequent paper. > [Cont. on page 24](#)

The Pillars of Heracles, Part 2 (cont.)



Fig. 10. S. Loi's Murchison false-color recording overlaid on Birkeland's terralla experiment photographs. Note the middle right-hand side is in color. As shown, Birkeland's data has current intensities appreciably higher than at the time recorded by the Murchison array, matching six filaments (of 28 filaments) in each recording.

"It is likely no other account of an event in antiquity from such an authority has been interpreted or misinterpreted so often with the possible exception of the Indus civilization's Mahabharata and the Vedas' Great War."

Field Array radio telescope in Western Australia.¹² An artist's false-color drawing of this data has been overlaid on Birkeland's 1901 photograph of the midsection of his terrella and shifted to the north of Australia

viewed by the Murchison array, matching six filaments (of 28 filaments) in each recording. Although the data, differing by nearly 115 years in recording, is in excellent agreement. See **Fig. 10**.

However, Plato was not the only person to report the *Pillars of Heracles*. Around the world and at a southern latitude much closer to Atlantis (if interpreted as Antarctica), the Aborigines of Australia saw them clearly and both carved and painted their geometry on granite.

Finally, **Fig. 11** shows the proposed millennia-old line-of-sight Aborigine recordings of the *Pillars of Heracles*, at Iga Warta, Australia.

The author acknowledges his decades long research with fellows Juan Crocco, Patricio Bustamante Diaz, and John McGovern of the Epigraphic Institute, Australia.

ANTHONY L. PERATT, PHD, began his academic/scientific career with his first two years spent at Glendale City college, Glendale, CA, 1958, where he studied mathematics, machine shop, and the *Iliad* and *Odyssey*. He received his BSEE from California State Polytechnic University, 1963, followed by his MSEE from the University of Southern California, 1967. As-

signed for two years to Professor Hannes Alfvén, he translated *Cosmic Plasma* into English, receiving his Ph.D. in 1971, the

fame, Peratt ran the Tridimensional-Stanford fully 3D, gravitational and plasma teraflop galaxy code for 14 years in a Stanford-

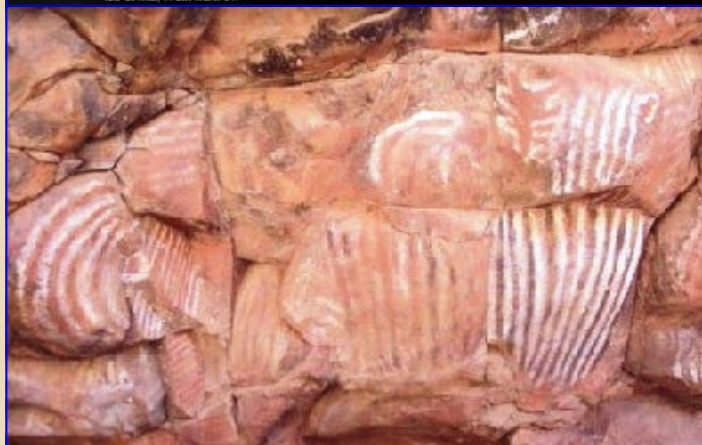
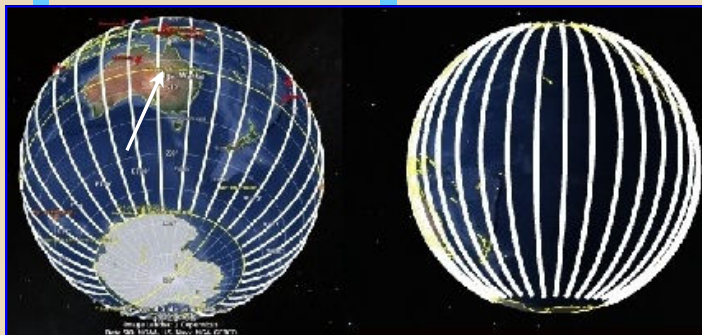


Fig. 11. Proposed view of the *Pillars of Heracles* (Birkeland Currents) as recorded for millennia along a cliffside at the Australian Aborigine village of Iga Warta. **Top Left:** Location of Iga Warta with respect to Antarctica, white arrow. **Top Right:** The pillars visible to the Aborigine residents of Iga Warta. **Bottom:** The actual rock art lines recorded at Iga Warta. These go back undated millenia and are continually repainted at intervals. Figure courtesy of J. McGovern, Epigraphics Institute, Georgetown, Australia.

year after Alfvén was awarded the Nobel Prize in Physics. Dr. Peratt joined the University of California laboratories (Lawrence Livermore Laboratory, 1972, and Los Alamos National Laboratory, 1981) receiving his 30-year University of California Alumnus Award in 2005. He also spent sabbaticals at the Max Planck Institute for Plasma Physics, in Garching, Germany (1975-77) and the Royal Institute of Technology, Stockholm, Sweden 1985 and 1988. He gave the Norwegian Academy of Science and Letters prestigious Birkeland Lecture in 1995. He received two Department of Energy (DOE) awards for his experiments and computations. With Professor O. Buneman, Stanford, of Bletchley Park

Los Alamos collaboration. 1995-1999 Peratt served in the Department of Energy Defense Programs and as Acting Head of Nuclear Nonproliferation. Since that time he served in Los Alamos' Associate Laboratory Directorate for Experiments and Computations. Subsequently, Peratt's research has focused on studying the source of petroglyphs as an ancient above-Antarctic intense outburst, with ground GPS measurements and their distribution-orientation with earth-orbiting satellites, primarily in North, Central, and South America, Australia, Polynesia (including Easter Island) and the Alps. Dr. Peratt is Senior Editor of the *IEEE Transactions on Plasma Science* and a Life Fellow of the IEEE, a member of the American Physical Society, American Astrophysical Society, and Archimedes Circle.

Website: <https://plasmauniverse.info>

¹² S. Loi, *The Sydney Morning Herald*, 1 Jun 2015, *Science*, communicated to the author by Professor H. Hora, University of New South Wales.

Debunking evolutionary propaganda, Part 14

The inconvenient facts of living fossils: Fishes and invertebrates

A lifelong reader of textbooks in every field exposes “thousands” of examples of false statements of fact and other propaganda techniques easily spotted in anthropology, biology, and paleontology textbooks

By John Feliks

Reprint from *PCN* #36, July-Aug 2015. This is Part 14 of 21 in reverse to give readers the facts of the fossil record first.

“There are no fossil sequences showing genera, or-

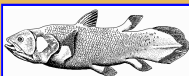


Fig. 1. Lobe-finned fossil coelacanths were long hyped as the link between fish and amphibians. This fantasy dissolved away when the fish were discovered alive in 1938. However, in the evolution-trapped sciences of biology, paleontology, and anthropology, when hyped ancestors are debunked they are simply replaced with new ancestors. Image: Wikimedia Commons.

ders, classes, morphing or mutating into each other even though that is what evolutionism requires.”

“The evolution of craniates [animals with skulls, e.g., Figs. 1–2] may be characterized as... pro-found shifts... new structures without any ancestral counterpart.”

–John G. Maisey; Curator, Vertebrate Paleontology, American Museum of Natural History, N.Y. *Discovering Fossil Fishes*, p.34

Like the invertebrate and plant experts quoted in *PCN* #s 28–35, the above shows how the same contradictory language is used in *all* evolutionary writing:

- 1.) State evolutionism as an assumed fact.
- 2.) Admit there is no proof.

In [Parts 6–13](#), I provided evidence that all invertebrates (**Fig. 3, Fig. 5**)

and plants—including those that are extinct—are (or were) *living fossils*. In other words, once invertebrate genera enter the fossil record they remain ‘unchanged’ until they leave the record. There are no fossil sequences showing genera, orders, classes, morphing or mutating into each other even though that is what evolutionism requires. The quality of the invertebrate record makes it difficult for evolution advocates to skirt the facts because it is well-

known across every continent through trillions of complete fossils in *direct-contact* stratigraphic

layers showing repeatedly and consistently its continuity across time. Compared with this record, evolutionary stories based on the sparse vertebrate record are untenable, not to mention the record has the same traits as the invertebrate record:

“As is always the case with the fossil record [here, vertebrates], the key ancestral forms are missing.”

–Keith S. Thomson, biologist, PhD, Harvard; Authority on living and fossil fishes; Former

Pres., Acad. of Nat. Sciences (1987-95), Drexel U.; Curator of Fishes, Director, Peabody Mus. of Nat. Hist.; Director, Mus. of Nat. Hist., Oxford; Presently XO, American Philosophical Soc. First biologist to study a fresh coelacanth. *Living Fossil: The Story of the Coelacanth*, p. 81

After so many years, it should be obvious the observation that ancestral forms are “always” missing is caused by presuming that there even are

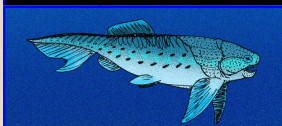


Fig. 2. Top: Rare armor of the ancient placoderm fish *Protitanichthys*; (3 1/2" wide); recovered by the author direct from a freshly blasted layer of the famous



Middle Devonian Silica Fm., North Medusa Quarry, Lucas Co., OH, 1968. The placoderms appeared out of the blue with no predecessors and left no descendants.

Bottom: Living *Protitanichthys* depiction by Stanton Fink 2010; used with permission. **Inset:** photo of the locality, J. Feliks 1968.



Fig. 3. The above fossils and their living counterparts (see Parts 6–13, *PCN* #s28–35) are here as reminders of the concessions of paleontologists and the already proved non-evolution of invertebrates. Keep invertebrates in mind when reading propaganda about so-called ‘vertebrate’ evolution. Here is why the invertebrate fossil record must be used as the standard by which all evolutionary claims are measured: That invertebrates have not evolved has been demonstrated repeatedly and consistently by *trillions of complete fossils* in literally miles of vertical chronological *full-contact* stratigraphic layers on every continent (not to mention trace fossils in thousands of deep-sea cores). *The fact that university graduates don’t know this is a reflection of the degraded state of paleontology and biology.* By invertebrate record standards, one soon realizes that a few vertebrate fossils separated by tens of millions of years actually means no evolutionary evidence at all. Still, fish-to-amphibian stories are engrained in the public’s mind as fact. Of the c. 200 genera presented in this series which I recovered direct from formations across the U.S. and Ontario over a 30-year span (30 ‘g’ of [brachiopods](#) incl. Ordovician *Lingula* w/pedicle preserved, 35 g of [molluscs](#) incl. Pennsylvanian with actual shell preserved, 30 g [sponges & corals](#), 21 [echinoderms](#), 15 [bryozoans](#), 22 [arthropods](#), 10 [trace fossils](#), 4 [graptolites](#), and 20 [plants](#)) not one is part of an evolutionary sequence.

> [Cont. on page 26](#)

* Links to the prior parts in this reverse reprint series: [Part 15](#), [Part 16](#), [Part 17](#), [Part 18](#), [Part 19](#), [Part 20](#), [Part 21](#).*

The inconvenient facts of living fossils: *Fishes* (cont.)

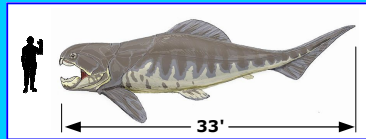
"How does natural selection turn something that isn't even the nibble of a minnow into the largest and most powerful biological crushing machine on earth accompanied by 2-inch thick armor plating without leaving a trace of the process in the fossil record?"

***PCN #97 science update:** Like many dinosaurs, size estimates of the giant fossil fish *Dunkleosteus* have been scaled down from 33 ft. to a range of 13–20 ft. Armor plating still 2" thick and jaw crushing power greater than *Tyrannosaurus*.

ancestral forms in the first place. Normal sciences don't persist with a belief that is consistently in conflict with the physical evidence. It is that



Fig. 4. The Devonian placoderm fish, *Dunkleosteus* (photo source unknown). The largest



Dunkleosteus fish were larger than today's great white sharks with jaws determined to have been more powerful than those of great whites, alligators, or *Tyrannosaurus rex*. *Dunkleosteus* appeared out of nowhere, reached an unimaginable length of 33 feet (**Inset**)* weighing up to 4 tons, and then just disappeared.

persistence despite evidence that identifies biology, paleontology, and anthropology as three fields that have gone astray as far as scientific rigor and objectivity are concerned.

One of the most profound sudden appearances in the 'vertebrate' record is that of the placoderm fishes. They include many 'firsts' that all happened at once. Not the least of these is that the placoderms were the first vertebrates with jaws. But it's way more than that in that they started out tiny and then expanded to literally mythological proportions in a geological heartbeat. For not only did the placoderms appear out of nowhere as tiny fish quickly growing to dominate the seas but they soon spawned the world's first super-predator, a 33-foot long, 8,000 lb. monster called *Dunkleosteus* (**Fig. 4**).*

It has been determined that the bite of *Dunkleosteus* equaled 1,100 lbs. of force

translating to 8,000 lbs. per square inch at the tip of a fang.

Keep in mind that *Dunkleosteus* lived 300 million years before *Tyrannosaurus*. So, not only were the placoderms the first vertebrates with jaws but *Dunkleosteus* proves that the earliest appearance of jaws included already some of the most powerful of all time. How does natural selection turn something that isn't even the nibble of a minnow into the largest and most powerful biological crushing machine on earth

accompanied by 2-inch thick armor plating without leaving a trace of the process in the fossil record? Again, as Dr. Thomson explained in general terms, the ancestors for everything are simply, "missing."

Whether for the monstrous *Dunkleosteus* or the tiny microscopic creatures known as bryozoans, evolutionary explanations for anything in the fossil record are simply modern mythologies created to explain the unknown.

This series has already shown that transitional 'invertebrate' animals never existed. **Fig. 5** was imported from [Part 10](#) (PCN #32, Nov-Dec 2014) which was about bryozoans for the example of the continuity of lacy bryozoans. Bryozoans are called

"simple" organisms by the biology and paleontology communities.

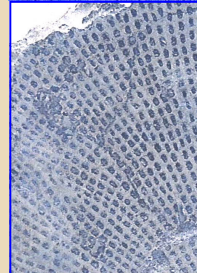
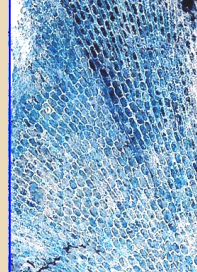


Fig. 5 Invertebrate reminder: Lacy bryozoans have been around for 500 million years. Variations are no more 'evolutionarily' significant than human races or dog breeds are. **Top-down:** Dev. *Fenestella*, Arkona, ON; Miss. *Fenestella* (Rogers, AR); Penn. *Fenestella* (Paris, IL); Recent living *Membranipora* (USGS).

Yet, after 150 years and untold hundreds of thousands of dollars of paid research they still don't know what they are or where they came from. These "simple" creatures continue to completely baffle the experts. Biology and paleontology—despite thousands of researchers—can't even explain how the bryozoan orders relate to each other let alone where they came from. The only thing that can be stated with certainty according to the "facts" is that they didn't evolve "from" anything and they didn't evolve "into" anything. That fact about bryozoans is true for all organisms.

So, if scientists can't explain bryozoans despite literally zillions of fossils and access to zillions of living bryozoans, how could they explain the origins of *Dunkleosteus*? Look at the *Dunkleosteus* photograph again and superimpose a delicate contemporary

Fenestella bryozoan such as in Fig. 5 preserved by the

> [Cont. on page 27](#)

The inconvenient facts of living fossils: *Fishes* (cont.)

"Evolutionary explanations for

trillions with no evolutionary links. Then look again at the *Dunkleosteus*. There are many *Dunkleosteus* fossils. If *Dunkleosteus* had transi-

other primary group of ancient jawed fishes. They are the ones that more or less took over the seas from *Dunkleosteus* and the rest of the pla-

compelling fictional stories about unknown ancestors is crucial. Evolutionary mythologies are ever-changing and increasingly complex

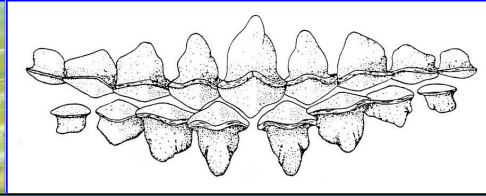


Fig. 6. Left: *Petalodus* international fossil shark tooth (1 1/8" wide) on a bed of *Rhombopora*-type bryozoans; Presumably, Late Mississippian (Chesterian); collected by the author, U.S. **Middle:** Depiction of *Petalodus* shark attacking an orthocone cephalopod; by Dmitry Bogdanov; used with permission. **Right:** Suggested arrangement of *Petalodus*' teeth; Michael Hansen, PhD; *Fossils of Ohio*, Ohio Division of Geological Survey; public domain. As always, there are no *Petalodus* evolutionary links despite the fact that the teeth are easily-preserved and well-known in the fossil record. If delicate *Rhombopora* bryozoans are preserved by the zillions, as they are, how much more would be the hard teeth of *Petalodus* ancestors if they existed?

(e.g., add genetics) but that doesn't trump the facts of the fossil record. Still millions of adherents persist even though the evidence

anything in the fossil record are simply

tional ancestors they would surely not be "missing." But the blind acceptance of invisible unknown ancestors is somehow accepted as representing a "scientific" view.

codermis during the Carboniferous age (a.k.a. Mississippian and Pennsylvanian here in the U.S.). However, sharks did not "evolve" from the placoderms. **Fig. 7** is a general timeline of

against evolution is greater than what supports it. If one looks, one will find concessions throughout the literature that the idea is far from the fact of life the mainstream makes it out to be:

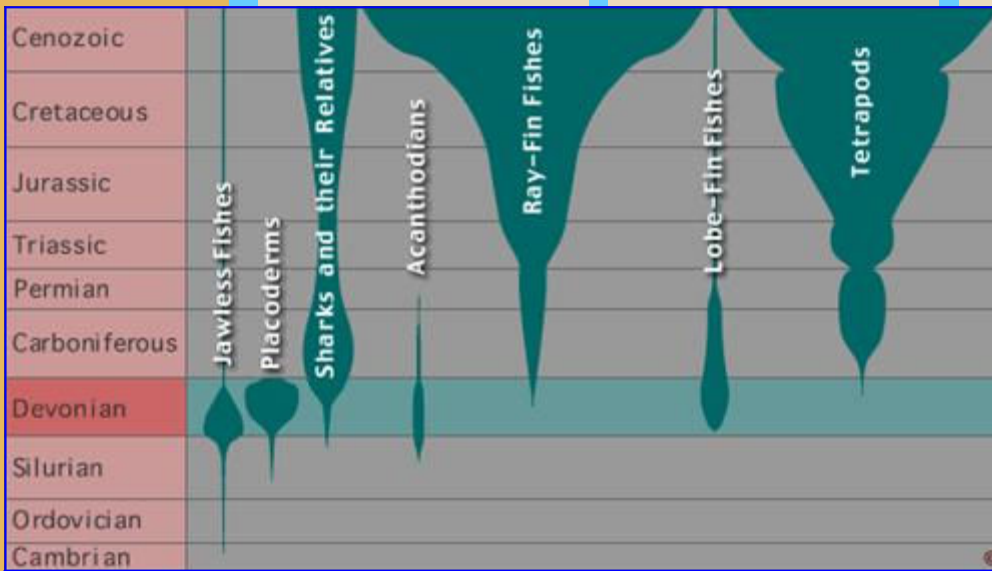


Fig. 7. Though intended to suggest evolutionary relationships, this chart gives a very good visual impression of how *un*-related these different fish groups actually are. It is exactly what the physical fossil evidence actually shows. Placoderms and sharks can be seen at the left. Wikimedia Commons.

"The tree of life of fishes is in a state of flux because we still lack a comprehensive phylogeny that includes all major groups." - Ricardo Betancur-R., et al. 2013. *The Tree of Life and a New Classification of Bony Fishes*. *PLOS Currents: Tree of Life*; April 18, Ed. 1.

"Unresolved issues... Several parts of the fish tree that require additional study include (i) resolution of the relationships among coelacanth, lungfishes and tetrapods..." -*ibid.*

In other words, unresolved issues include the next-in-line idea that fish somehow evolved into amphibians. That's what we will explore in Part 15.

modern mythologies created to explain the unknown."

The only thing it does is let people imagine that evolutionism is something other than magical thinking. The facts, however, prove beyond any reasonable doubt that it is magical thinking pure and simple.

Prehistoric sharks, e.g., the *Petalodus* in **Fig. 6**, are an-

when the major fish groups have existed. It gives a pretty good visual impression of how *un*-related the various fish groups actually are. Keep in mind that Darwinism and 'natural selection' is an alternate reality between science and mythology. Since it is regularly disproved by the fossil record, coming up with

JOHN FELIKS has specialized in the study of early human cognition for 20 years demonstrating that human cognition does not evolve. Earlier, his focus was on the invertebrate fossil record studying fossils in the field across the U.S. and parts of Canada as well as studying many of the classic texts such as the *Treatise on Invertebrate Paleontology and Index Fossils of North America*.



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The Pleistocene Coalition celebrated its sixteen-year anniversary September 26, and the anniversary of *Pleistocene Coalition News*, October 25. *PCN* is now in its seventeenth year of challenging mainstream scientific dogma.