What We Can Know About the Oldest Civilizations

Sahul, the Black Sea World, and the Stone Age Archive

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Preface: The Problem of Invisible History

Most of what humanity has been is invisible to us. The conventional timeline of civilization — Sumer, Egypt, the Indus Valley, beginning around 3500 BCE — represents not the dawn of organized human life, but simply the moment when the evidence happens to have survived well enough for modern archaeology to find it. Before that threshold lies a vast, mostly submerged territory: tens of thousands of years during which anatomically modern humans organized themselves, navigated oceans, encoded knowledge in stone and song, and built communities across landscapes that no longer exist because the sea swallowed them.

This essay surveys what we currently know, and can reasonably infer, about the oldest layers of human civilization. The focus falls on two regions that deserve far more attention than the textbooks give them: the continent of Sahul — the greater landmass that once encompassed Australia, New Guinea and Tasmania — and the Black Sea world, with particular attention to the Pontic-Caspian steppe, the Crimea, and the submerged coastal settlements of what is now Ukraine. A third thread runs through both: the megalithic tradition, beginning at Göbekli Tepe and radiating through Carahunge, Stonehenge and

Carnac. In each case, the argument is the same: sophisticated human civilization preceded the standard date by millennia, and the evidence is there if you know where — and how — to look.

Part I: Sahul — The Oldest Living Civilization on Earth

1.1 The Geography of Sahul

During the last Ice Age, when sea levels stood roughly 120 metres below their present position, the continent now called Australia was part of a much larger landmass. Geologists and archaeologists call this Sahul. At its maximum extent, Sahul covered approximately 10.6 million square kilometres, connecting mainland Australia to New Guinea in the north and Tasmania in the south via dry land. The Arafura Sea, the Torres Strait and the Timor Sea were simply river plains, grasslands and coastal flats — habitable, productive land.

This configuration persisted through repeated glacial cycles and in its most recent form lasted until roughly 18,000 years ago, when the climate began to warm and the ice sheets melted. New Guinea separated from mainland Australia about 8,000 years ago; Tasmania was severed approximately 6,000 years ago. By then, these had been occupied human landscapes for at least 55,000 to 65,000 years. The coast that the first inhabitants of Sahul knew — the beaches they fished, the rivers they drank from, the sacred sites they named — is now between 50 and 120 metres underwater across vast stretches of the continental shelf.

1.2 The Age and Sophistication of the First Arrivals

The date at which modern humans first reached Sahul is one of archaeology's most debated questions. Evidence from the Madjedbebe rock shelter in Arnhem Land pushes the occupation date to at least 65,000 years ago; other estimates range from 50,000 to 80,000 years. What is not in debate is that the crossing required genuine maritime technology. The Wallacean archipelago — the chain of islands between the Southeast Asian mainland (Sunda) and Sahul — presented open-water crossings that could not be made by accident or by drifting. The people who made this crossing were deliberate navigators. They were, in all likelihood, the world's first deep-water seafarers.

Their arrival on Sahul brought a sophisticated cultural package with them. The oldest known evidence of ritual burial in Sahul — the Lake Mungo remains, approximately 40,000 years old — shows ochre treatment of the body, indicating ceremony and symbolic thought on par with anything found in the Northern Hemisphere at equivalent dates. Rock art in Arnhem Land and the Kimberley region documents a continuous cultural tradition spanning tens of thousands of years. The record does not describe primitives scratching pictures; it describes people tracking, year after year and millennium after millennium, the changing world around them — including, critically, the rising sea.

1.3 Songlines: The Oldest Living Memory System on Earth

The most remarkable intellectual achievement of Sahul's peoples is a memory and navigation system — the Songlines, or Dreaming Tracks — that researchers are now recognising as the world's oldest continuous knowledge archive.

Songlines are not folklore. They are operational systems. A Songline is a path across the landscape encoded in a song cycle, in which the lyrics describe the sequence of landmarks, waterholes, directional

cues and sacred sites that a traveller will encounter. By singing the song correctly, a knowledgeable person can navigate hundreds or thousands of kilometres through terrain they have never personally visited. Some Songlines run 3,500 kilometres from the Central Desert to the eastern coast. Multiple Songlines can converge at a single node — Uluru is one such convergence point — making these nodes enormous concentrations of encoded knowledge that belong simultaneously to dozens of different language groups and cultural traditions.

The intellectual technology underlying Songlines is now understood by researchers in memory science to predate and surpass the Greek *loci* method by at least 50,000 years. Rather than using imaginary buildings as memory palaces, Aboriginal peoples use the actual landscape — the real distribution of rock formations, rivers, trees and astronomical features — as the structure in which knowledge is stored. Memory is not a brain process alone; it is a relationship between person, land, and cosmos.

What makes the Songlines particularly significant for understanding deep human history is that they can be verified. In recent years, working collaborations between First Nations elders and marine geoscientists have produced extraordinary results. When marine geologist Mick O'Leary showed elders of the Murujuga people a digital model of two ancient watering holes he had located — now under 14 metres of ocean — one elder immediately recognised them as features described in a Songline he had known all his life. When LiDAR and acoustic survey technology maps the now-submerged continental shelf, the Songlines match. In the words of one elder: "Whether it was inland 100 kilometres or out 100 kilometres, we still lived here. And we still got the story to tell you."

Scientific American reported in 2024 that some 22 different Aboriginal cultural groups maintain Songlines that explicitly describe features of the coastline as it existed when sea levels were lower — more than 7,000 years ago in some cases, and potentially much older. This is not metaphor. This is an oral

archive of geological history, maintained in living memory across more than 200 generations. No other human knowledge tradition on Earth comes close to this temporal depth.

1.4 What Was Lost Under the Sahul Sea

The implications for our understanding of ancient civilization are profound. The areas now submerged off the northern and northwestern coast of Australia represent some of the most fertile, watered, and inhabitable land that ever existed in the Sahul landmass. River systems drained across these plains; estuaries and lagoons provided protein-rich coastal environments; the relatively flat continental shelf would have been productive farming or foraging land for the hundreds of thousands of people who likely populated Sahul at its peak.

Research published in Quaternary Science Reviews in 2023 estimated that up to half a million people may have lived in the Sahul landmass during the Last Glacial Maximum. The population was not a thin scatter of isolated bands; it was a continent-wide network of connected communities, linked by the Songline system, exchanging ochre, stone tools, ceremonial objects, and knowledge across thousands of kilometres. The "civilization" argument does not require writing, cities, or metallurgy. It requires organisation, accumulated knowledge, territorial complexity, and long-range communication — all of which Sahul demonstrably had.

The tragedy is that the richest evidence for all of this lies on the seafloor. Underwater archaeology in Australian waters is still in its infancy. Stone tools have already been retrieved from depths of several metres off the northwest coast. What remains to be found in the submerged river valleys and estuaries of the Arafura plain may, when excavated, fundamentally rewrite the timeline of complex human society.

Part II: The Black Sea World and the Pontic Civilizations

2.1 The Black Sea Before the Flood

The story of the Black Sea in the deep past runs parallel to Sahul in its essentials: a habitable, heavily populated region that was catastrophically altered by sea-level change, leaving its history buried under water and its memory encoded in myths.

During the last Ice Age, the Black Sea was not a sea at all. It was a large, relatively shallow freshwater lake — sometimes called the Neoeuxinian Lake — enclosed by the surrounding highlands and connected to the Caspian rather than the Mediterranean. Its shoreline lay far below the present coast, exposing vast fertile plains in what is now the underwater shelf of Ukraine, Romania, Bulgaria, and Turkey. These plains were among the most productive grasslands in Eurasia: well-watered by rivers including the Dnieper, the Dniester, the Southern Bug and the Danube, protected from the worst of the steppe climate by the Crimean mountains and the Caucasus, and rich in game.

The question of what happened next is one of the most contested in Quaternary science. In 1997, Columbia University oceanographers William Ryan and Walter Pitman proposed that rising Mediterranean sea levels, accumulated from the post-glacial melting of the great ice sheets, eventually topped the natural dam at the Bosporus Strait and poured catastrophically into the freshwater lake below. In their original model, the inundation was enormous — raising lake levels by 15–18 centimetres per day and advancing the shoreline inland at up to 2 kilometres daily. Ryan and Pitman connected this event to global flood myths, to the dispersal of early farming peoples into Europe, and to the story of Noah.

Subsequent research has complicated but not erased this picture. The speed and scale of the inundation remains debated: a 2009 study suggests the rise was considerably smaller than Ryan and Pitman

proposed, affecting roughly 2,000 rather than 70,000 square kilometres. A 2022 literature review found the evidence for catastrophic flooding inconclusive, favouring a more gradual rise. What is agreed upon by all parties is that the Black Sea did change from a freshwater lake to a saltwater sea, that significant areas of previously inhabited coastal land were drowned, and that this transition fell within the period of dense human settlement of the region.

Archaeological evidence confirms that the Black Sea's coasts and now-submerged shelves were inhabited before the inundation. Robert Ballard's expeditions identified apparent shorelines, drowned river valleys, and what appear to be man-made structures at 100 metres depth off the Turkish coast. Off the Crimean coast, archaeologists have located the submerged port city of Acra, where domestic utensils were found suggesting rapid departure. In the wider Black Sea region, bronze-age settlements have been found beneath the water along its western and northern margins, and the anaerobic conditions of the deep Black Sea — which contains almost no oxygen below a certain depth — preserve organic materials that would have decayed long ago in any other environment.

2.2 The Varna Culture and the World's Oldest Gold

While the submerged Black Sea shore represents one layer of lost history, what has been found on land near its western coast is no less remarkable. The Varna Necropolis, discovered in Bulgaria in 1972 and dating to approximately 4,500 BCE, contains the earliest elaborate gold metallurgy yet found anywhere on Earth — predating Mesopotamian and Egyptian goldwork. More than 3,000 gold artefacts were recovered from roughly 300 graves, including sceptres, masks, weapons, and jewellery of extraordinary sophistication. The craftsmanship implies a society with substantial surplus, organised production, specialist artisans, and a complex social hierarchy.

The Varna culture was not an isolated phenomenon. It was part of a wider Chalcolithic (Copper Age) civilizational horizon that stretched around the Black Sea and deep into the Pontic-Caspian steppe — the vast grassland north of the Black Sea — roughly 6,000 to 7,000 years ago. This was the world of the Cucuteni-Trypillia culture (modern Ukraine and Moldova), which built the largest settlements in the world at that time, some housing up to 15,000 people, with planned street layouts, two-storey houses, and sophisticated pottery. These were not villages; they were proto-cities. And they appeared and disappeared with almost no trace in the standard narrative of early civilization, precisely because they predated writing and left no texts.

2.3 The Crimea: Bridge and Archive

The Crimean peninsula occupies a uniquely significant position in this world. Its high limestone plateau, the Crimean Mountains running along its southern coast, made it the one area of the northwestern Black Sea basin that remained continuously above water through all the post-glacial sea-level fluctuations. Whoever was living there when the coast drowned — whether the transition was fast or slow — would have found themselves on a peninsula that was formerly an interior highland, now surrounded by the expanding sea. They would have watched, over generations or decades, their former coastal lands disappear.

The archaeology of the Crimea confirms human presence throughout the Upper Palaeolithic and Neolithic, with Neanderthal sites deeper still. Its strategic location — at the junction of the steppe, the forest zone, and the Black Sea — made it a crossroads for every major cultural current in Eurasian prehistory. The Cimmerians, who appear in Greek and Near Eastern records as the oldest named people of the Pontic steppe, were centred here. Herodotus, writing in the 5th century BCE, described their territory and their sacred sites with precision, including features of the landscape around the modern city of

Mykolaiv (Nikolaev) at the confluence of the Ingul, the Southern Bug, and the Dnieper-Bug estuary — rivers that correspond closely to the mythological rivers of the Greek underworld. This parallel has been pursued seriously by the Ukrainian scholar Anatoliy Zolotukhin, whose analysis of the Odyssey as a Black Sea narrative situates Hades precisely at this peninsula.

What can be said with confidence is this: the Black Sea world, including the Crimea and the now-submerged Pontic shelf, was a crucible of human development reaching back to at least 40,000 years ago, densely inhabited for the entirety of the post-glacial period, and home to some of the most advanced early cultures in Eurasia — cultures that were drowned, dispersed, and largely forgotten because the evidence for them lies on the seafloor and in the oral traditions of peoples who were later conquered and silenced.

Part III: The Stone Archive — Göbekli Tepe and the Megalithic Network

3.1 Göbekli Tepe: The First Monument

If Sahul and the Black Sea world represent submerged civilizations recoverable mainly through paleography and underwater archaeology, the megalithic tradition represents a different kind of archive: knowledge carved in stone and left on high ground where it could not be drowned.

Göbekli Tepe, in southeastern Turkey, is the oldest known example of monumental architecture on Earth. Built approximately 11,500 to 9,500 years ago — millennia before farming was established, millennia before pottery, millennia before any of the "standard" civilizations — it consists of at least 20 large circular enclosures, each containing massive T-shaped stone pillars up to 6 metres tall and 20 tonnes in

weight, many of them carved with sophisticated animal reliefs. The site sits on a high plateau overlooking the Harran plain; it was built by hunter-gatherers without metal tools or draught animals.

What Göbekli Tepe tells us is uncomfortable for the conventional model of civilization-as-sequence. The site's builders were not on the road to civilization; they *were* a sophisticated civilization, one organized enough to coordinate the quarrying, transport, and erection of hundreds of massive stones over centuries, to maintain a site of obviously great symbolic and ceremonial importance, and to carve animals and abstract symbols with consistent iconographic vocabulary. Schmidt's excavation team concluded that the site functioned as a regional ceremonial centre, drawing hunter-gatherer communities from across a wide area. The construction process itself — requiring sustained collective effort — may have driven the development of agriculture, reversing the standard causal arrow.

Recent analysis by Martin Sweatman of the University of Edinburgh has argued that carvings on Pillar 43 at Göbekli Tepe encode the world's oldest known solar calendar — a 12-month lunisolar system that also recorded a major comet impact around 10,850 BCE — and that this encoding implies knowledge of the precession of the equinoxes at least 10,000 years before Hipparchus documented the phenomenon in 150 BCE. This interpretation remains debated; mainstream excavators at the site are cautious. But the broader principle it represents — that Ice Age and early Neolithic peoples possessed astronomical knowledge far exceeding what standard histories allow — is supported by evidence from multiple sites globally and cannot simply be dismissed.

3.2 Carahunge and the Armenian Observatory

While Göbekli Tepe commands the most attention, it is not alone. Carahunge (also called Zorats Qarer) in Armenia — sometimes called the "Armenian Stonehenge" — is a megalithic complex of 223 basalt stones on a high plateau overlooking the Vorotan River. Many of the stones have circular holes bored

through them at specific angles, and extensive study by Armenian astronomer Paris Herouni and others has concluded that the site functioned as an astronomical observatory with alignments tracking the rising and setting positions of specific stars across the precession cycle — that is, over a timescale of thousands of years. Radiocarbon dates from associated material suggest the site was in use as early as 7,500 to 5,500 years ago, though some researchers place its origins earlier.

The significance of Carahunge for understanding ancient metrology is that its builders were clearly engaged in long-term time-keeping of a kind that required multi-generational transmission of astronomical knowledge. The precession cycle — the slow wobble of Earth's axis that causes the position of the celestial pole to trace a circle over approximately 25,920 years — is not something you can observe in a single lifetime, or even several lifetimes. Tracking it requires a tradition of systematic observation passed down across centuries. If the Carahunge alignments are what Herouni and others claim, the builders possessed this tradition. They were not primitive. They were astronomers in the fullest sense.

3.3 Stonehenge, Carnac, and the European Network

The megalithic tradition is not limited to the Near East and Caucasus. Its most famous expressions are in western Europe: Stonehenge in England, Carnac in Brittany, Newgrange in Ireland. Each of these represents a multi-century building project requiring massive logistical organization, mathematical sophistication, and — in the case of Newgrange — astronomical precision. Newgrange's passage tomb is aligned with the winter solstice sunrise to within 0.1°, a precision achievable only through systematic, long-term celestial observation.

The researcher Howard Crowhurst has argued that the major megalithic sites of western Europe are connected by a geometric network based on Pythagorean 3-4-5 triangles, oriented on north-south and east-west axes — a claim that, if verified, would imply a shared geodetic tradition operating across the

entire Atlantic facade of Europe centuries or millennia before the supposed invention of geometry in the ancient Near East. Alexander Thom's meticulous surveys of British and Breton megalithic sites in the 1960s–1980s identified a common unit of measurement — the Megalithic Yard, approximately 2.72 feet — used consistently across hundreds of sites from Orkney to Brittany.

Whether or not every proposed alignment and connection holds up under scrutiny, the cumulative picture is clear: the megalithic builders of Europe, the Middle East, and the Caucasus were engaged in a coherent intellectual tradition — systematic astronomical observation, transmitted knowledge of long celestial cycles, and the encoding of that knowledge in stone structures designed to outlast any individual, any dynasty, any language.

Part IV: What Connects These Worlds?

4.1 The Universality of Observational Astronomy

One pattern runs through all these traditions without exception. Wherever we find the oldest evidence of organized human life — in Sahul, on the Pontic steppe, at Göbekli Tepe, in the megaliths of Europe — we find systematic attention to the sky. The Aboriginal astronomical tradition is now recognised as the world's oldest: a body of observational knowledge that includes tracking the positions of stars and constellations across the annual cycle for navigational, seasonal, and ceremonial purposes. Dark constellation astronomy — reading the shapes defined by dark patches in the Milky Way, not just the bright stars — is an Aboriginal Australian contribution to world astronomy that appears to have no parallel in the Northern Hemisphere.

The Songlines themselves are frequently mirrored by sky-lines: the path across the landscape corresponds to a path across the night sky, and the two can be read simultaneously. Memory, land, and cosmos are not separate domains; they are one continuous system. This is not mysticism. It is, arguably, the most sophisticated cognitive achievement in human history: a unified framework in which the map of the earth, the map of the sky, and the map of knowledge are all the same map.

What we see at Göbekli Tepe, at Carahunge, at Stonehenge, and in the Songlines is not a set of isolated curiosities. It is evidence of a universal human impulse, expressed in radically different material forms but directed at the same object: the long cycles of the sky, and the relationship between those cycles and the life of people on the earth below.

4.2 The Problem of Sea Level and the Missing Evidence

The deepest obstacle to recovering this history is physical. During the Last Glacial Maximum, global sea levels were 120–130 metres lower than today. As the ice sheets melted between roughly 20,000 and 7,000 years ago, the sea rose — sometimes gradually, sometimes in rapid pulses — flooding the low-lying coastal areas that were precisely the most attractive locations for human settlement. River mouths, estuaries, coastal plains, lagoons: these are the richest environments for omnivorous hunters and early farmers, and they are exactly where the rising water went.

Conservative estimates suggest that roughly 25 million square kilometres of formerly habitable land are now underwater globally. The settlements, cemeteries, middens, and monuments on those landscapes — if they existed in numbers proportional to the density of occupation we know occurred in adjacent inland areas — represent an archaeological record larger than everything so far excavated in human history. It is on the seafloor.

Underwater archaeology is technically demanding and expensive, but it is not impossible. The discoveries already made — at Sahul, off the Black Sea coast, in the North Sea's Doggerland — are consistent and they point in the same direction: human civilization on the coastal margins of the Pleistocene was far older, far more dense, and far more sophisticated than the standard model acknowledges.

4.3 The Transmission Problem — and Its Solution

A natural objection arises: even if sophisticated knowledge existed in these deep-time coastal civilizations, how could it survive the catastrophic destructions caused by sea-level rise, climate change, and the social chaos that would follow?

The answer lies in precisely the mechanisms examined above. The Aboriginal Songline system shows that knowledge of specific physical locations — waterholes, coastlines, migration routes — can be transmitted orally with extraordinary fidelity across timescales of 7,000 to 10,000 years, and quite possibly longer. The test is empirical: the songlines match the geology. Knowledge encoded in this way does not require writing, institutions, or continuity of physical infrastructure. It requires only living people who know the songs, and a social structure in which knowing the songs is of survival importance.

The megalithic tradition offers a different but complementary answer: encode the knowledge in stone, at high altitude, in a form that does not depend on human memory at all. The alignments at Stonehenge, Newgrange and Carahunge do not need to be explained. They work regardless of whether any living person knows why they were built. A sunrise through a particular gap on a particular morning of the year is self-explanatory. The stones speak directly to anyone who is paying attention.

These two strategies — embodied oral transmission and physical inscription — are not alternatives. They are complementary. Used together, as the evidence suggests they were, they constitute a genuinely robust

long-distance communication system across deep time.

Conclusion: The Archaeology of What We Don't Know

The oldest civilizations are not the ones in the textbooks. The oldest are the ones in the water. Sahul — with its continent of drowned coastlines, its 65,000-year record of human occupation, and its living oral archive that accurately maps landscapes swallowed by the sea — represents the deepest documented example of continuous human civilization on Earth. The Black Sea world, with its Chalcolithic proto-cities, its drowned Neolithic shore, and its mythological echoes in Homer and Herodotus, represents a parallel catastrophe in the Northern Hemisphere. The megalithic tradition, from Göbekli Tepe to Stonehenge, represents the most enduring physical record left by peoples who were clearly sophisticated astronomers and builders long before the standard histories begin.

None of this requires lost continents in the romantic sense, or technologically advanced precursor civilizations, or extraterrestrial intervention. It requires only what the evidence actually shows: that modern humans have been behaviourally and cognitively sophisticated for at least 70,000 years; that for most of that period they lived on coastal landscapes now under the sea; that they possessed — in stone, in song, and in the sky — memory and knowledge systems of extraordinary depth; and that the catastrophic sea-level rise of the early Holocene destroyed the physical record of most of this without destroying the knowledge itself.

The task now is not speculation. It is excavation — literal and intellectual. The tools exist: underwater remote sensing, LiDAR mapping, collaborative work with living oral tradition holders, and a willingness to revise the timeline. The question is whether we are prepared to look.

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