



# A Song in Stone

## Exploring Scotland's Neolithic Rock Art

*“ A block of sandstone loomed out of the mist. The top, sloping surface spread out its message as the mist lifted and the rock was warmed by the sun. Deep shadows threw into relief a series of concentric rings around cups from which grooves ran down the rock. The effect was of inter-connection, fluidity that grew out of simplicity: cups and grooves were the symbols fashioned into motifs”*

Stan Beckensall, *British Prehistoric Rock Art*, 1999, 7.

### Acknowledgements

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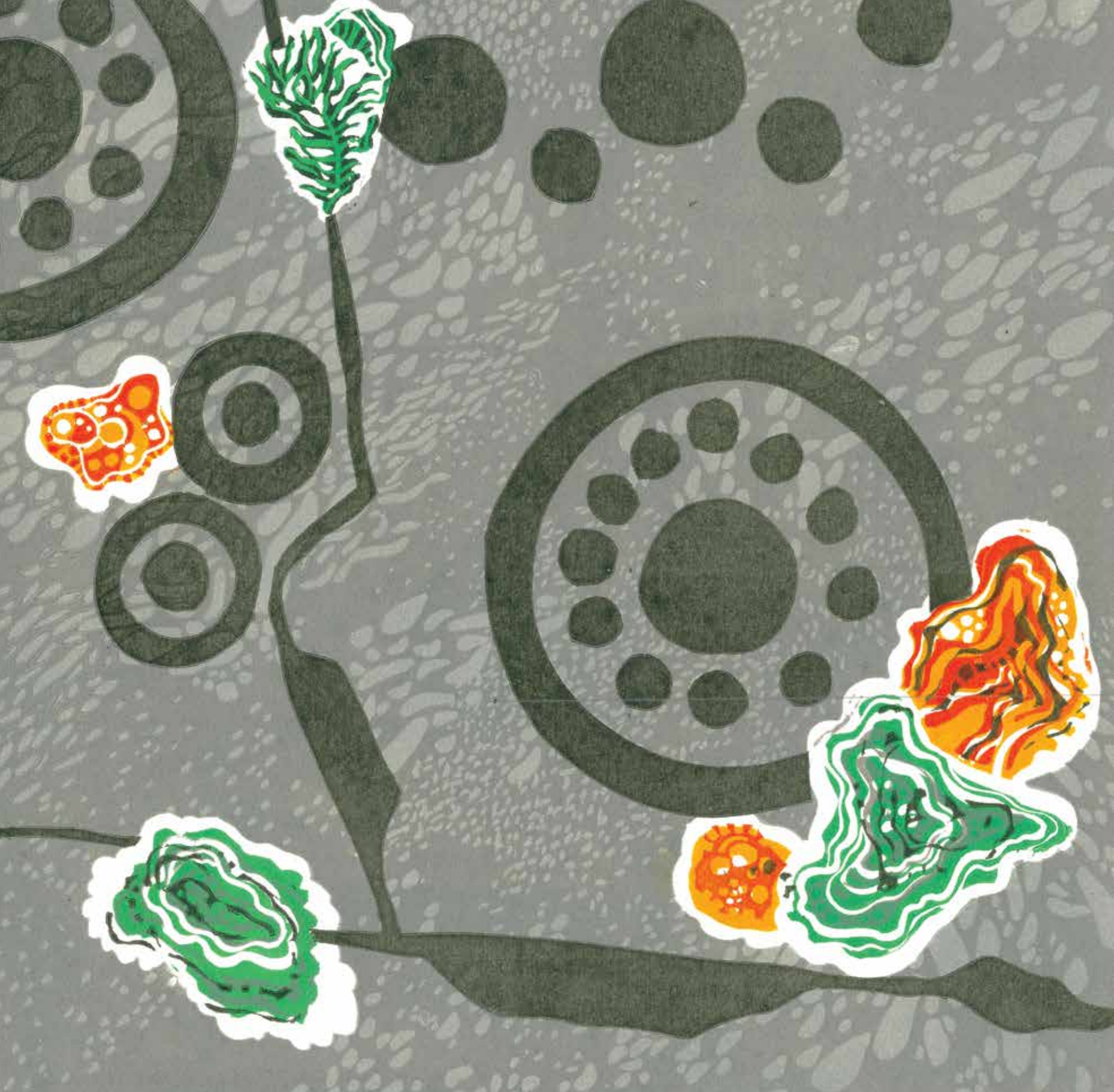


## A Song in Stone

Exploring Scotland's Neolithic Rock Art

Tertia Barnett, Matt Ritchie and Kate Sharpe





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## Introduction

Just what are the mysterious symbols that can be found carved on select boulders and chosen outcrops across our landscape? Look closely and you will soon recognise the cupmark, a simple motif which was repeated, ringed and joined by grooves to create complex panels of amazing rock art.

This rock art characterises the archaeological record of the Neolithic period all along the Atlantic coastline of Europe, between around 6000 and 3800 years ago. The distinctive cups, rings and grooves resemble a song carved in stone – a song that may have had no words or melody, but had a meaning that was understood by many generations in many places over many centuries.

Although this meaning has long been forgotten, for our Neolithic ancestors the shared beliefs and common tradition of **Atlantic rock art** was clearly very significant – a cacophony of voices singing a song of the land and of the sky, forming a deep cultural connection through abstract symbols.

Scotland's Neolithic rock art comprises an outdoor gallery several thousands of years old, part of an internationally significant shared cultural heritage. Using this booklet, learners will become **rock art researchers** themselves, and appreciate the three interwoven threads running through our investigation: objective recording, subjective analysis and narrative interpretation.

This booklet aims to help teachers use Scotland's ancient rock art as a cross-disciplinary classroom topic as part of the **Curriculum for Excellence**, blending history, geography and the creative arts. It could be used as a stand-alone topic, or included as an element in a wider investigation (as part of the history of art, the story of writing, or of our shared European cultural heritage). As both reference material and learning resource, the booklet uses a popular communication style and bold design to prepare the practitioner with detailed knowledge and innovative ideas for their learners.

Meet our original rock artists Pix and Derm to explore the creative potential of rock art both in the classroom and in outdoor learning – and join our intrepid archaeologists Jasmine and Ronnie in learning about the distribution of rock art in the landscapes of Scotland and the Atlantic coast of Europe, and in discussing the many possible meanings behind the carving of Atlantic rock art.

We will investigate the many different abstract symbols used and explore the process of their creation, touching on the 'grammar' that seems to guide their use. We will describe the different regional contexts of Atlantic rock art, and consider the 'rules' that seem to be followed when choosing their location within the landscape. And we will explore three different potential



interpretations of the meaning of Atlantic rock art, focusing on the natural world (discussing the distinct role that hinds and stags play in Galician rock art), the celestial skyscape (discussing the potential role played by events in the night sky) and the *otherlands* beyond (considering the role that rock art may have had in marking them). Quotes from leading archaeologists in the field of rock art research help to make some of the key ideas more accessible, and a series of short personal features enable us to focus on important sites, describe personal experiences or explain archaeological methodology. These features could be used as short reading tasks in the classroom. The *Learning Suggestions* include ideas for classroom posters, exhibitions, critical thinking and creative writing, presentations and creative art. They are most suitable for learners at the **Third Level**.

*A Song in Stone* has been produced to support **Scotland's Rock Art Project** (ScRAP), the first major research project focusing on prehistoric rock art in Scotland. ScRAP was funded by the Arts and Humanities Research Council, and hosted by Historic Environment Scotland, in collaboration with the University of Edinburgh and the Glasgow School of Art. ScRAP has enhanced our knowledge and understanding of Scotland's rock art through community co-production and research, training people across Scotland to record the prehistoric carvings. This information will help us further study the carvings, and raise awareness of them locally, nationally and internationally.

This booklet also aims to support *Scotland's Archaeology Strategy* (2015) and the Scottish Archaeological Research Framework's *Future Thinking on Carved Stones* (2016).

*"Archaeology is the study of the human past through its material remains. Through archaeological research and analysis of our places, artefacts and ecofacts, everyone can explore, better understand, value and care about the prehistory and history of Scotland's people, culture and landscape"*

**Scotland's Archaeology Strategy 2015.**

In engaging pupils in outdoor learning and conducting meaningful research within the classroom, archaeological learning can provide real and cohesive links across a range of curricular areas. Archaeology can help develop critical thinking skills, exploring the evidence that our shared past has left in our culture and environment. The methodology of archaeology requires the objective study of material culture alongside its subjective interpretation.



A notebook is a simple but essential piece of equipment for recording information to help us understand and protect rock art. This can include measurements, such as the length, width, height and orientation of the carved rock, descriptions of the numbers, arrangements and types of motifs on the rock surface, and observations about the landscape around the panel.

*"Mute stones can speak volumes to us all, if we choose to listen. Carved stones help us reach through time. Long after they were carved, and sometimes long after the purpose for which they were carved is forgotten, they continue to shape our sense of place and identity"*

**Future Thinking on Carved Stones 2016.**

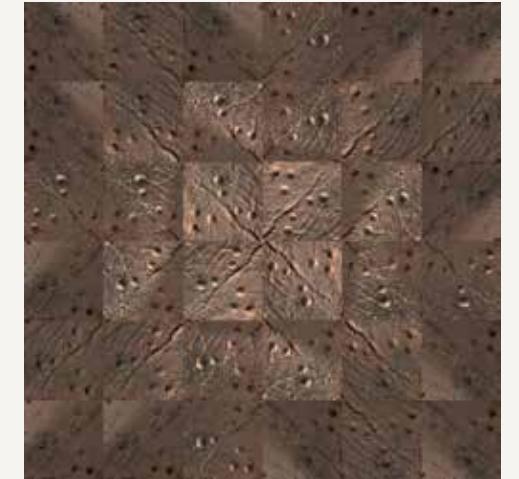
Although aiming to highlight the important international heritage of Scotland's Neolithic rock art, linking regions and countries along the Atlantic seaboard, this booklet is particularly relevant to practitioners working in areas rich with the decorated panels themselves – and we have focused on the panels at **Achnabreac** (NR 856 906), **Ormaig** (NM 822 027) and **Cairnbaan** (NR 838 910) in Argyll, on the rock art on the slopes of Ben Lawers above Loch Tay, and on the panels at **Ballochmyle** (NS 510 255) in Ayrshire. By visiting such sites as part of a programme of outdoor archaeological learning, practitioners can help their learners develop an awareness of the historic landscape and generate both a sense of identity with past peoples and a pride in their own place and community.

*"Rock art is particularly effective at inspiring children's curiosity. It appeals to their sense of wonder and has a value as a source of creative inspiration. Developing an understanding of how rock art sites functioned in prehistoric and later landscapes helps children to understand more about their local area and the people who lived there"*

**Judith Clarke and Karen MacDougall, 'Rock Art in Cumbria: inspiring future generations' in *Carving a Future for British Rock Art*, 2010, 158.**

This booklet also contributes to the **Boyne to Brodgar** project, a major archaeological research initiative that aims to develop the understanding of the Neolithic across Scotland and Ireland and place it within its wider European narrative. Through the study of prehistoric monuments, Boyne to Brodgar aims to increase engagement with and raise awareness of this early chapter in Scotland's history, and help people better appreciate their shared heritage.

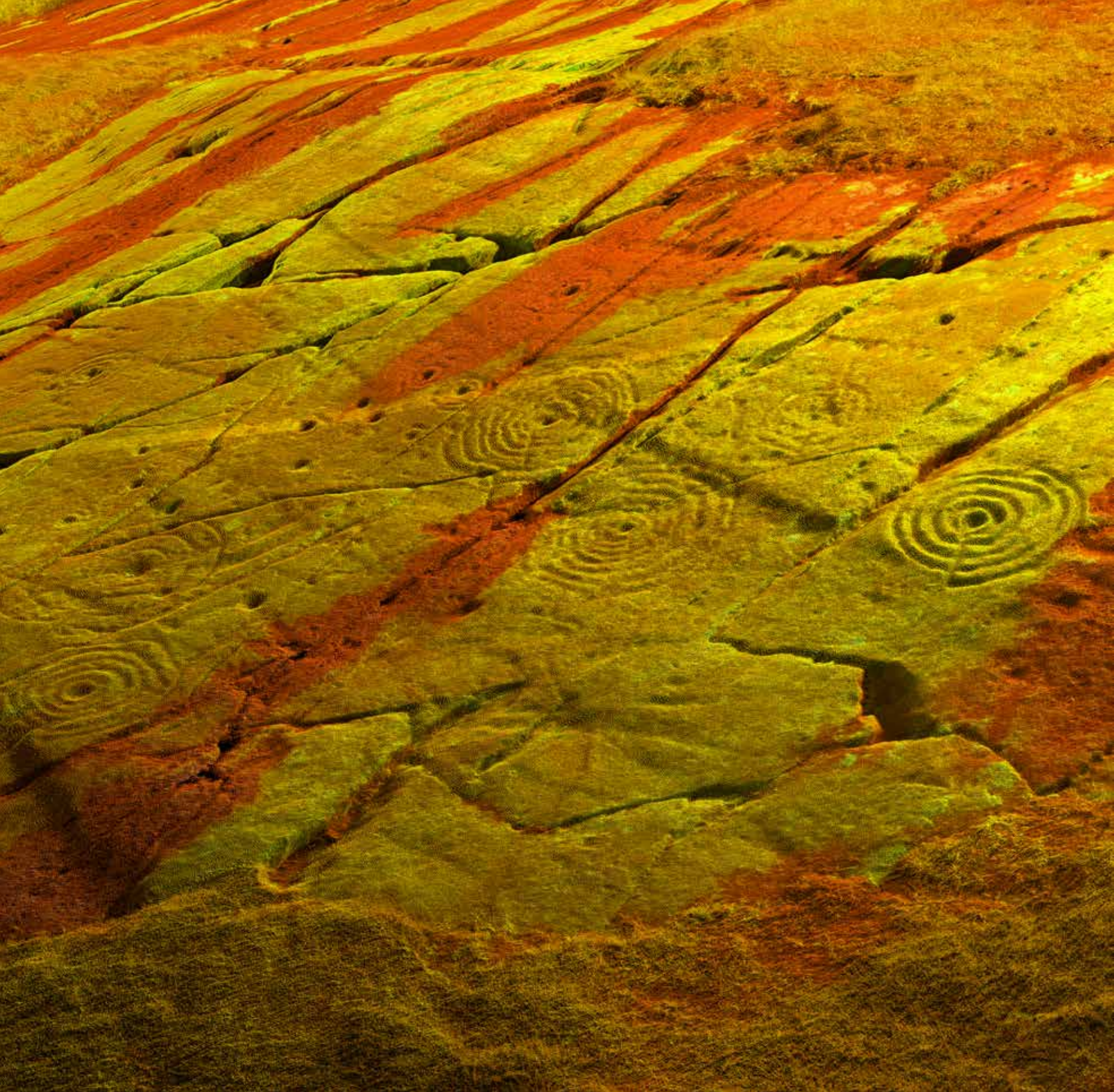
*A Song in Stone* can be used alongside *The First Foresters: explore the Neolithic in Scotland's native woodlands* (Forestry and Land Scotland, 2019). Here we venture beyond the familiar stone circles of Scotland's prehistory to describe a very different Neolithic – one not of stone but of wood.



You can use Sketchfab to select your favourite motifs and experiment with different angles of view and changing lighting conditions, creating your own panels, mosaics and collages.

© Matt Ritchie





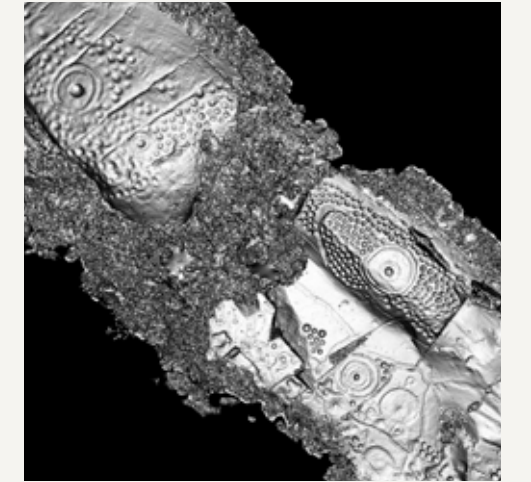
However, it is a useful introduction to the Neolithic in general, and includes a cast of characters that can be used to inspire creativity in the classroom.

In recent years, new methods of digital documentation have been introduced to archaeology. Photogrammetry and 3D laser scanning technologies provide detailed methods of objective recording, and can reveal the full extent of what can be weathered carvings. *A Song in Stone* is richly illustrated by these new technologies, alongside more traditional photography, archaeological measured drawings and a host of new imaginative visualisations created especially for this publication.

The booklet is also designed to be used alongside the astonishing gallery of rock art available at your fingertips – the huge database of 3D models available online on **Sketchfab**. Investigating and comparing Atlantic rock art using these superb interactive models is addictive. Hundreds of sites have already been digitally documented, with more being added every day. Easy to use and really fun, the scale and reach of this ground-breaking work has opened up a whole new avenue in archaeological research.

Remember to look out for the three broad approaches to rock art investigation described throughout this booklet – objective recording, subjective observation and narrative interpretation. A good rock art researcher should seek to blend all three in their studies, in their writing and in their illustrations.

- **Objective recording** involves the detailed and precise survey of rock art using digital documentation techniques such as photogrammetry and laser scanning. This approach can help to identify subtle details in the content of the motifs, and enable detailed comparisons between them.
- **Subjective analysis** is integral to our understanding of rock art. It includes the study of digital documentation, personal observation and experience, and the creation of a more nuanced record by measured drawing.
- **Narrative interpretation** explores the ideas and meanings behind the motifs, panels and frames. The narrative approach can draw upon both objective evidence and subjective analysis to explore the many different possible explanations for rock art.



The photogrammetric 3D model of **High Banks** allows the complex carvings to be studied in great detail. This recording technique enables the important form and texture of the rock to be truly appreciated for the first time.

© Historic Environment Scotland

◀ A point cloud rendering of cup and ring marks at **Achnabreac** in Argyll created from 3D laser scan data. The colours are indicative of the strength of the reflected laser beam in the 3D dataset.

© Historic Environment Scotland





## cup and ring

in this forest of aurochs, the slope of a slab  
in a slub of midwinter sun; fissures flux  
singular circles to circles encircled by circles gutted  
and guttered with haloes and tails, echoes of north  
from west of the waves, patterns of water dripping  
on water, origin geometry hitching the lid of the land  
to its mythical self, an atlas of chance, hammerstones  
knelling the groove of the glen to a trance,  
the mystical glitz of white quartz filleting colour  
from under the camber of lacquering shadow, charged  
with a precious production of dust: the makings of us

by Lindsay Macgregor







## A Cacophony of Voices

◀ Nether Largie, Argyll.  
© Historic Environment Scotland

*“Great expanses of this simple style of carving make a considerable impact on the visitor, particularly where the cupmarks are surrounded by multiple rings. The superb displays of rock art at Achnabreac and Cairnbaan in Argyll stimulate a sense of surprise at the effort involved, together with unanswerable questions about purpose and connections”*

**Anna Ritchie and Graham Ritchie, *Scotland: an Oxford Archaeological Guide*, 1998, 22.**

The term **rock art** refers to symbols or marks that have been painted or engraved onto natural rock surfaces. People have been creating rock art all around the world for over 40,000 years. It has been made within deep caves, in natural rock shelters, and on rocky outcrops and boulders in the open landscape. Each decorated surface is known as a *panel*. Rock art is best known for its images of animals and people, and objects such as boats, weapons, or houses. This is called *figurative* rock art. However, around half of the world’s rock art shows simple or complex symbols (known as *motifs*) that do not resemble anything recognisable to us today. This is called *abstract* rock art.

Rock art is one of the most fascinating and mysterious aspects of our shared past, and the quest to understand it has captured our imagination for many centuries.

A particular style of abstract rock art characterises the archaeological record of the Neolithic period in several distinct regions along the Atlantic coastline of Europe, stretching from Portugal and north west Spain to the British Isles. The distinctive motifs of cups and rings form a cultural tradition known as **Atlantic rock art**. There are at least 3000 of these ancient carved rocks in Scotland, and a further 4000 in other parts of Britain.

These mysterious ancient carvings were created and used by early farming communities in the Neolithic and Early Bronze Age, probably between around 6000 and 3800 years ago (roughly 4000 – 1800 BC). For these communities, cereal production formed the economic mainstay, alongside the husbandry of domestic cattle, sheep and pigs. The first farmers and shepherds used the rivers and coasts to move easily about the landscape and cleared woodland to create space to live and farm. They also continued to hunt and gather natural resources. It is likely that the early Neolithic farming communities on the Atlantic coast were small-scale, very mobile and very pastoral.



They grew wheat and barley for making bread, and flax for its nutritious seeds and oil, and for making cloth. They used round-based pottery for cooking and serving food, and shaped stone and wood for their tools. They polished stone to make axeheads, knapped fine leaf-shaped arrowheads out of flint, and, by the Early Bronze Age, they were making use of metal too. They made things out of organic materials, such as baskets and rope, and tools of bone and antler. They built monuments to the dead and monuments for the living, using timber, stone and earth. And they left their mark on rocks scattered across the landscape.

*“The position of rock art in the landscape, on ‘living’ and earthfast rock, mainly horizontal surfaces, opens it up to the sky. It is not found on the most fertile areas that would have been most attractive for arable farming, but in the upland, marginal areas of thinner, poorer soils that supported wild and domesticated animals – a food source that continued to be of prime importance even when arable farming intensified. Much of it ‘signs the land’ at the best viewpoints, often on ridges overlooking fertile valleys and plains”*

**Stan Beckensall, ‘British prehistoric rock art in the landscape’ in *European Landscapes of Rock Art*, 2002, 39.**

However, Scotland’s rock art is not evenly spread across the country. There are concentrations of carved rocks in areas like Kilmartin Glen in Argyll, on the Isle of Bute, around the south coast of Dumfries and Galloway, and in Strath Tay, Perthshire and Angus. Some areas, including much of the Western Highlands and the Borders, appear to have very few carvings. Cupmarks and cup and ring markings are also occasionally found on stones incorporated into burial cairns or erected as standing stones or as part of stone circles.

We know very little about their original purpose, and they remain one of the most intriguing aspects of our ancient past. There have been numerous suggestions as to their meaning, some of which are more believable than others. The carved panels may represent abstract maps of the landscape, or invoke celestial or astronomical events or alignments. They may record family genealogies. They may mark territories, indicate meeting places, ritual spaces or places for initiation rites. They may even have been platforms for exposing the dead, to let nature deflesh their bones (a practice known as *excarnation*). They could be religious symbols, marking ‘thresholds’ in the landscape – places where a traveller would pass and know that they were entering an area of ritual and ceremony. They could even just be decoration, carved to express



**A camera is the most important piece of equipment in a rock art recorder's tool kit. Photographs capture the location of the rock art in the landscape, the size, shape and texture of the carved rock, and the nature of the carvings. Photographs are also an excellent way of sharing information about rock art with other people through publications and on the internet.**

and create social and individual identity. And there could have been several different concurrent meanings or uses – meanings or uses that could even have changed over time.

More carvings are discovered every year, with almost a thousand new carvings having been recorded in Scotland alone in the last decade. It is likely that more are still waiting to be found. Unfortunately, a large number of carvings have been destroyed or have eroded away over time, and the total number of carved rocks may have originally been significantly higher.

Archaeological research has helped us to better understand the chronology of rock art, and the way in which these sites might have held meaning in the past. The wide geographic spread of similar motifs is an indication of wide ranging cultural connections, and the likelihood of long distance travel. As the archaeologist Andrew Meirion Jones notes, “...while we may never understand what these motifs mean, we are potentially able to understand how they have meaning, to understand what makes rock art significant” (2011, 7).



**Cairnbaan, Argyll.** © Matt Ritchie



# Digital Documentation

## DIGITAL HERITAGE SPECIALIST LYN WILSON DESCRIBES THE DIGITAL DOCUMENTATION OF THE ROCK ART PANEL AT ACHNABREAC IN ARGYLL

I first visited **Achnabreac** as a young archaeology student and was captivated by the intricate and detailed carvings covering the exposed rock outcrops. Years later, I now manage the *digital documentation* programme at Historic Environment Scotland. Our small team of archaeologists and surveyors record the heritage in our care in 3D, as accurately and in as much detail as possible.

The 3D data we create is an accurate objective record, and is used to inform both *conservation* and *interpretation*, as well as helping to improve virtual accessibility. I've been fortunate to have been involved in the digital documentation of some incredible heritage sites around the world – from the astonishing Rani ki Vav (*The Queen's Stepwell*) in India to the famous Sydney Opera House – but I was particularly excited to be able to document Achnabreac, a special place that had been such an early inspiration for me.

As each heritage place is unique, so too our approach to digital documentation must be tailored to the individual needs and challenges of that site. At Achnabreac, we knew that capturing the rock surfaces when dry would give us the best quality data, but this proved to be a particular challenge in light of the challenging Scottish weather! Thankfully, the sun came out long enough for the rock to dry and the data to be captured. We had to balance our approach to ensure complete coverage of the wider rock outcrops alongside detailed recording of the rock art itself. So we used a combination of digital documentation techniques: *terrestrial laser scanning* for large scale contextual coverage and *photogrammetry* for high quality colourised detail of the rock art itself.

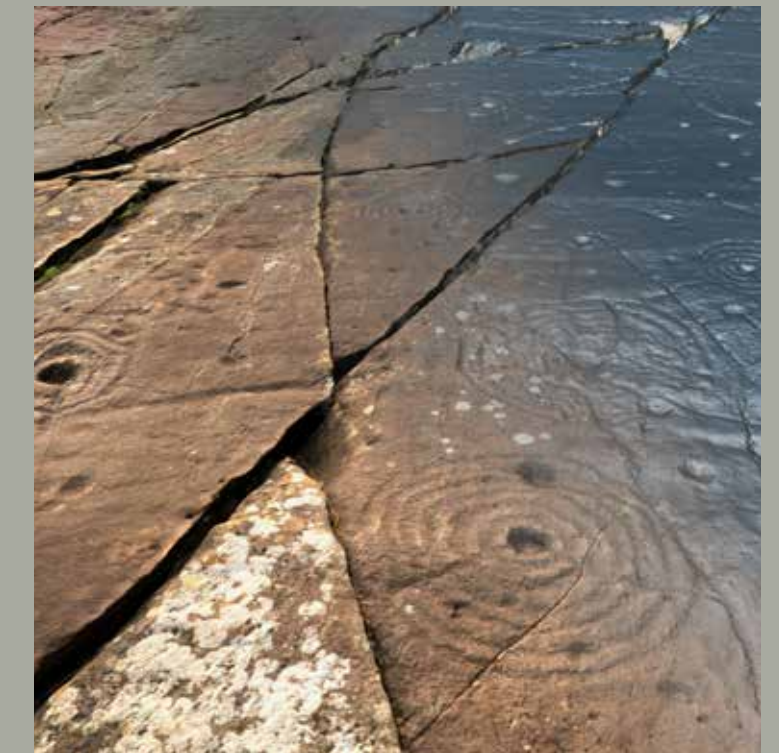
Historic Environment Scotland digital documentation trainee Bonnie Burton laser scanning at **Achnabreac**.

© Historic Environment Scotland

We use a wide range of ever-evolving digital technologies to get the best results and horizon scan for technical developments that can improve the efficiency of our workflows.

- **Laser scanning** is a technique that allows the 3D surface geometry of objects, buildings, archaeological sites and landscapes to be recorded in a digital form. A laser scanner emits a laser beam which scans the target surface up to 1 million times every second, and the reflected laser light is used to compute the distance to the surface. Up to 1 million spatially accurate coordinates (or points) are collected every second, producing a *point cloud*, which accurately defines surface geometry. The laser scanner works on the principle of *line-of-sight*, so scans must be taken from multiple positions with sufficient overlap to be able to obtain complete coverage of a site, and to allow scans to be joined together. To record the geographical position of the site, we establish a survey control network and georeference our scan data within a known coordinate system. Laser scanning at Achnabreac let us capture the entirety of the rock outcrops and the environmental setting.
- **Photogrammetry** involves capturing multiple overlapping digital photographs that are processed using special *algorithms* to calculate camera positions from the photos and combine them into one 3D space. This alignment process creates a high-resolution colourised 3D point cloud with detailed surface geometry. We generally use cameras on tripods or drones to generate photogrammetric models, but at Achnabreac the site topography meant that tripods alone gave us the close-up, high resolution photographs we needed to record the rock art.

Using specialist software, we then combined our laser scans and photogrammetry into one highly detailed, photorealistically accurate, scaled 3D representation of the site. This point cloud is a unique and detailed record of the rock art at the moment of capture and is very useful for conservation. From this baseline data, we can digitally document Achnabreac again in the future and quantitatively compare the two scan *epochs* to measure any erosion to the rock surfaces, or any expansion of lichen or moss coverage. The digital documentation of Achnabreac also allows us to explore the rock art in incredible detail. Photorealistic colouring enables unique opportunities for interpretation, providing virtual access through online model viewers and immersive technologies, and allows detailed remote study of the rock art.



Achnabreac © Historic Environment Scotland





## A Song of Symbols

Almost all of the individual elements of Atlantic rock art are abstract symbols, or motifs. This means that they do not look like anything we recognise today, which makes them even harder to understand. By far the most common type of carved symbol is the **cupmark** – a roughly circular hollow in the rock surface.

Cupmarks can be found surrounded by one or more concentric rings, and these motifs are known as **cup and ring markings**. The cupmarks and cup and ring marks are often associated with **linear or wavy grooves**, crossing the carved surfaces and connecting the main motifs.

Although these basic motifs are very simple, there are hundreds of subtle variations, such as **rosettes** (a circle of cupmarks sometimes surrounded by a ring), or **penannulars** (one or more gapped rings encircling a central cupmark). As far as we know there are no carvings in Scotland that show people, and animals or recognisable objects are very rare. However, in Spain and Portugal, carvings depicting animals and objects such as weapons are frequently integrated with the abstract motifs.

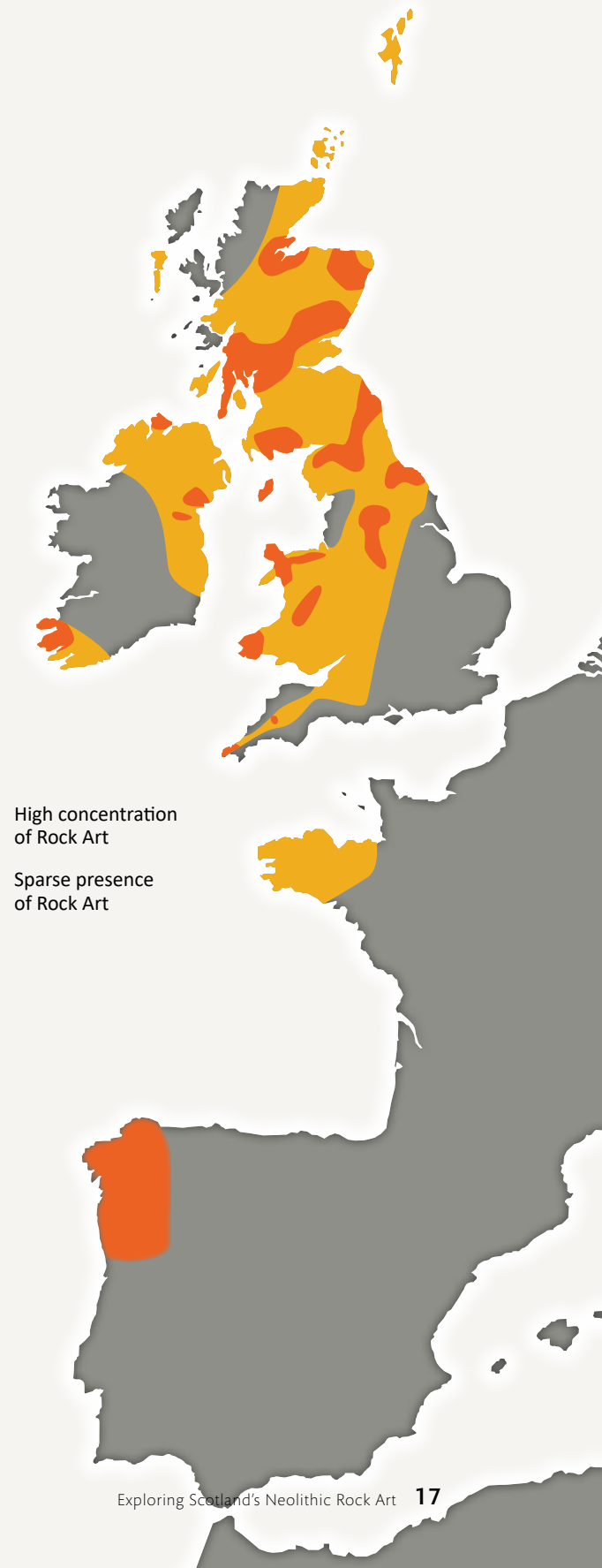
*“Despite their limited motif range, rock art compositions tend to be idiosyncratic, irregular and informal, lending to them a multi-authored character. The motifs and compositions are cumulative, with design elements combined and recombined in innovative ways, elaborating on existing features, establishing new connections and responding to the stone canvas”*

**Blaze O’Connor, ‘Carving Identity: the social context on Neolithic rock art’ in *Cult in Context: reconsidering ritual in archaeology*, 2007, 187.**

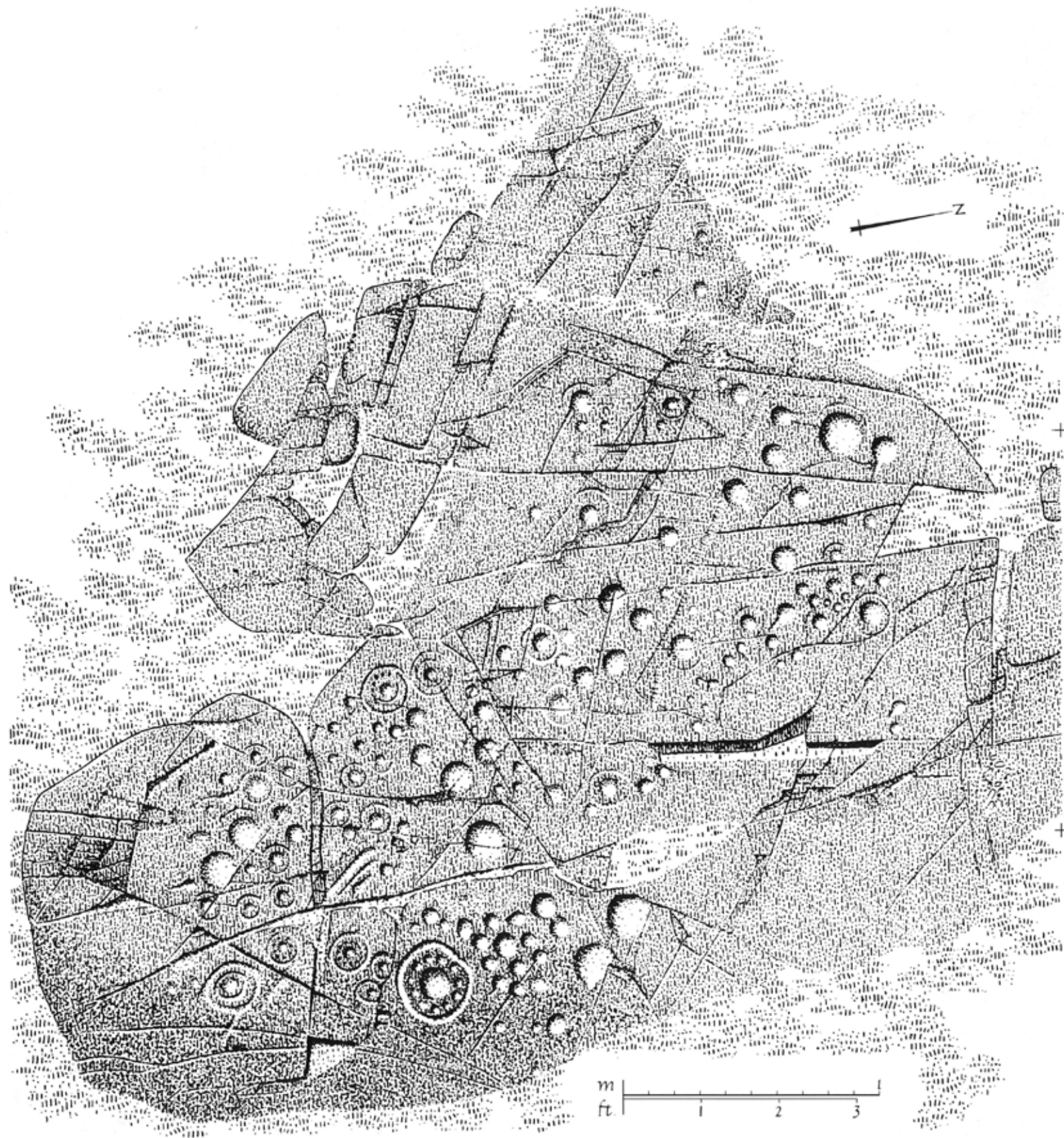
These individual symbols can occur on their own on a rock surface, or they can be combined to form complex designs. Interestingly, each design is unique. The carved symbols are also often associated with natural features on the rock surface, such as hollows, cracks, or raised areas. This was probably deliberate, and may have been very significant to the people that made the rock art. The original rock artists often looked to bring out the character of the stone, following its surface contours, and utilising existing cracks and fissures in the rock.

◀ The development of archaeological measured survey from pencil nib to laser scanner can be traced through the depiction of Scotland’s rock art. This amazing panel was at **Auchentorlie** in Dumbartonshire, and was drawn by Mungo Buchanan in 1916. The panel was removed to the National Museum of Scotland in advance of quarrying operations in 1994.

© Historic Environment Scotland







- **Cupmarks** are circular hollows worked into rock surfaces. They usually measure between 50 mm and 100 mm in diameter and around 20 mm to 30 mm in depth. They occur individually or in groups, where they usually appear to be placed randomly but may also be organized in patterns such as lines or arcs. Occasionally cupmarks can be joined by linear grooves or have linear grooves (called *radials*) extending from them.
- **Cup and ring marks** comprise a central cupmark surrounded by single or multiple concentric circles. These occur in different sizes and varying layouts, and the number of rings can vary up to twelve. These motifs can be carved individually, be connected via a network of linear grooves, or found as part of complex compositions.
- **Penannulars** are a variation of the previous motifs. They are cupmarks surrounded by one or more gapped concentric rings. A radial line is often carved from the central cupmark and through the gaps in the rings.
- One of the defining characteristics of Atlantic Art is the existence of multiple **linear or wavy grooves**, crossing the carved surfaces and connecting the main motifs. They are usually additions to compositions, rarely appearing on their own. In simpler designs, the grooves intersect with cupmarks.
- **Rosettes** can be described as a cluster of cupmarks organized in circular patterns. A central larger cupmark is usually surrounded by smaller ones in the shape of a circle. The combination can also be enclosed within a larger single ring. Rosettes are relatively common in the British Isles.
- **Labyrinths** are circular motifs with similarities to the penannulars. However, because the interior of the motif is usually more complex, its configuration resembles a labyrinth, such as that at **Mogor** in Galicia. They are only found in Iberia.
- **Spirals** are curvilinear lines that curl outwards from a central starting point. They are found in all regions but are not very common.
- **Animals** such as horses and stags are included in the definition of Atlantic rock art in Iberia, where they occur alongside the abstract iconography. In Galicia, they represent the second largest type of engravings, but they can also be found in the northern region of Portugal. There are several different styles of depiction. They occasionally feature hunting and riding scenes, and serpents are also depicted in Galicia. A pair of stags and at least three other possible deer were recently found carved on the underside of a lintel in the **Dunchraigaig Cairn** in Argyll.



The **Dunchraigaig Cairn** stag  
© Historic Environment Scotland

◀ The archaeological measured drawing of this panel at **Ormaig** in Argyll represents the perfect blend of accurate objective recording and considered subjective interpretation.

© Historic Environment Scotland



- The depiction of metal **weapons** such as daggers and halberds (axes mounted on long poles) is also a characteristic of Iberia. Often depicted with much detail, they were soon used to date the rock art by typological comparison to artefacts. They are less common than other motifs and are often found in isolation. Representations of weapons in Britain and Ireland are very rare.
- **Human figures** are rare, but examples are known in Iberia. They are mostly associated with riding scenes.

In art and *iconography* (the study and interpretation of images), a *motif* is a distinct element of an image. An individual motif may be repeated in a pattern or design, often many times, or may just occur once in a work. A motif may have cultural meaning, but it does not form part of an ordered system of written language.

In *typography* (the art and technique of written language), a *glyph* is an individual element within a written *script* (an agreed set of symbols, like the letters in our own alphabet). Glyphs are unique marks that collectively add up to the spelling of a word or contribute to the specific meaning of what is written. Scripts can be *pictographic* (using pictures as glyphs, like Egyptian hieroglyphs) or *linear* (like the symbols used in our own Latin alphabet, or the binary combinations used in Braille cells).

The study of the motifs of Atlantic rock art is therefore considered iconography, for the motifs do not represent the glyphs of a written script. This is an important distinction. They are not a *phonetic* or *syllabic* alphabetic script (using glyphs to represent the sounds of the spoken language); and, without forming part of a formal written language, they do not have a simple *logographic* meaning (in which each symbol directly represents a single word) or *ideographic* meaning (in which each symbol represents an idea or concept). A panel of motifs cannot be 'read' in the way we understand writing to mean today.

The spectacular Neolithic rock art at **Ballochmyle** in Ayrshire extends over three vertical panels on a cliff face overlooking a tributary stream of the River Ayr. The cup and ring marks were only discovered in 1986. They were first recorded as a series of detailed pencil drawings and then by using a combination of terrestrial laser scanning and photogrammetry. This is a detail of the first panel.

© Forestry and Land Scotland by AOC Archaeology





However, while the motifs may not comprise the means to a written narrative, they may have had narrative meaning, and represent a common ideographic understanding. Could a panel of motifs be ‘read’ in a different way? Was there a shared ‘grammar’ guiding their use, or a set of ‘rules’ guiding the choice of their location?

*“Atlantic art features mainly abstract and curvilinear motifs like cup marks, cup and rings, wavy lines, at times creating monumental compositions. Although the range of the basic visual forms is rather limited and repetitive, it is clear that artistic creativity was fundamental in the creation of abstract compositions. Every single arrangement is unique, as is the morphology of each carved rock outcrop and the natural shapes of the land where it sits”*

**Lara Bacelar Alves, ‘The circle, the cross and the limits of abstraction in north-western Iberian rock art’ in *Visualising the Neolithic*, 2012, 198.**

By far the most common design element is the simple cupmark. The cupmarks occur individually, in groups, or combined to form more complex motifs with rings and grooves. All of these elements can be combined and arranged in a huge variety of ways. Each design appears to be unique, and no two identical panels have been found. Even similar motifs vary in size, depth, and symmetry. They may be concentrated in one area of the rock surface or more evenly distributed. Some are more frequently used in combination, while other pairings are relatively rare. There seems to be a shared ‘grammar’ by which elements are linked together.

Describing the rock art at **Old Bewick** in Northumberland, the influential archaeologist and rock art researcher Richard Bradley noted that “the simpler motifs – the isolated cups and those with only one ring – were rarely linked to the other parts of the rock surface. It was only when the circular motifs became more complex that they were normally joined together, and even then there is an obvious gradation by which the most striking designs were connected to one another to the exclusion of the simpler motifs, which might be linked in a separate network” (1997, 45).



**Chatton, Northumberland.**  
© Tertia Barnett





The **Mogor labyrinth**, Galicia.  
© Manuel Santos-Estévez

Richard Bradley points to a shared understanding of the conventions governing Atlantic rock art. This coherent structure includes a hierarchy of complexity: the simpler motifs are more common; the more complex motifs occur less frequently. This points to a detailed understanding of the shared 'grammar' involved in Atlantic rock art, as well as a shared knowledge of the 'rules' guiding where the carvings should be deployed in the landscape. He suggests that elaborate rock art may have contained more complex information or have been more detailed in order to make sure that the people viewing it – perhaps a wide, diverse audience – understood them more clearly. Simpler rock art, he proposes, may have been made when there was less information to impart, perhaps because more was already known and understood by a specific, local audience.

Other researchers have focussed on specific types of motifs, looking at their distribution across Britain and Ireland. Although very rare, the **spiral** motif has been found in a wide variety of locations: on the extensive outcrops at **Achnabreac** in Argyll, on the unusual river cliffs at **Morwick** in Northumberland, and on standing stones such as **Long Meg** in Cumbria and stone circles such as **Temple Wood** in Kilmartin Glen. And while the spiral is uncommon in the open air, it is very often found repeated in **passage tomb art**. Perhaps this particular motif had a very special meaning.



A shared 'grammar': the complex panels of **Old Bewick**, Northumberland (left) and **Laxe dos Cebros**, Galicia (right).  
After Bradley 1997





## The Act of Recording

### ARCHAEOLOGIST ALEX HALE DESCRIBES THE EXCITEMENT OF DISCOVERING NEW ROCK ART AND THE PROCESS OF RECORDING

*“Strath Tay is very fertile. Round barrows, stone and timber settings and stone circles occupy the terraces. Cup-marked rocks are found on the major terraces; the more complex motifs are on the higher ground, where the land is above modern cultivation. The marginal land overlooks the valley from higher up the slopes. There is a clear distinction between the ways in which ‘simple’ and ‘complex’ rock art is situated”*

Stan Beckensall, ‘British prehistoric rock art in the landscape’ in *European Landscapes of Rock Art*, 2002, 56.

In 2000 I was walking across the lower slopes of Ben Lawers above Loch Tay, taking part in a large-scale archaeological *landscape* survey. As a new member of the survey team I was definitely ‘learning whilst doing’. It turned out to be the best way to learn; working with a team of experts who were keen to share their knowledge, being ‘in the field’ and finding lots of archaeological remains. Because we were working across both improved and unimproved land, we discovered hundreds of sites, from ruined farms to prehistoric rock art. *Improvement* is a term used to describe the changes brought about by the Agricultural Revolution, from around AD 1750 onwards – improved land has been cleared of stone and enclosed, losing many archaeological sites in the process. By looking in the drystone dykes, on bedrock outcrops and in the unimproved land on the upper slopes, we increased the number of rock art sites in the *archaeological record* by over 1000%. So, what did we do 20 years ago?

When it came to rock art, our survey work involved walking across the hillsides, spotting boulders and

Allt Coire Phadairlidh / Cloanlawers

© Historic Environment Scotland

outcrops and then visiting each one of them with a rising sense of ‘what if’ in our stomachs. As we approached the rocks the sense of possibility rose with each step, and the discovery aspect of the work became rather intoxicating. It felt as if each next stone could provide another clue to our understanding of the land. Because each piece of ‘new’ rock art can contribute to the collection and aggregation of knowledge of past uses of the landscape. By plotting their distribution on the map, we were attempting to rediscover an aspect of the landscape that was familiar to the carvers thousands of years ago.

Once we had found a carved rock, the act of inspecting and recording the rock became a peculiar performance, like a cross between a lizard picking over its lunch and an astronaut looking down on a new world. Recording would begin by occasionally having to peel back the turf and moss. Then we would set about recording the overall rock and the individual carvings. This would involve taking measurements and photographs, and pouring water across the surface of the rock to better observe the shallower carvings. We would then create a written description, with an accompanying sketch, and prepare to write up the description for upload to Canmore, the online catalogue of Scotland’s archaeological sites and historic buildings. We would also work with an archaeological illustrator to draw some of the more elaborate rocks, like the table-like cup and ring marked boulder of Allt a’Choire Chireinich.

The methodology of archaeological *measured drawing* is really interesting. Nowadays we can also use photogrammetry and laser scanning to record the carvings in great detail. These new technologies provide an objective record, which are crucial to our understanding of exactly how these carvings were made, allowing us to recognise overlaid motifs for example. But measured drawing also provides us with a subjective interpretation, because through observation and discussion, the experience of the archaeologists recording the site is included within the illustration. Drawing involves becoming physically entwined with the rock and the carvings, in order to translate what is present on

the rock on to paper. The general process has been developed over centuries and applied to all manner of different historical and archaeological artefacts, from Mesopotamian cuneiform tablets to Pictish symbol stones.

Drawing rock carvings involves becoming familiar with the rock, its contours, the carvings and the surrounding landscape.

It would involve taking sheets of paper, which appeared to me to be something like baking paper in texture, and using a variety of mediums, including charcoal, to take a rubbing of the carvings and surface undulations of the rock. This would result in a life-sized rubbing (at a scale of 1:1), which we would then take back to the office and reduce in size to something more manageable (perhaps a scale of 1:10, where one centimetre on the paper equals 10 centimetres in real life). We would then take a sheet of transparent drawing film and re-draw the whole rock, first in pencil and finally with pen and ink. This would then form the finished drawing, which could be published and archived.

Pencil sketches and pen and ink drawings are stable materials and don’t degrade or become obsolete. They sit in the archives as miniature, two-dimensional representations, historical artefacts in their own right, quietly accumulating dust, just as their rocky counterparts gather lichen and moss. The archival images are not the real thing, they never will be and nor do they try to be. They are measured, interpretative drawings, so they are accurate in that respect, but the representation of the carvings and the rock surfaces are down to the observational and illustrative skills of the artists; always subjective and personal, and based on our intimate knowledge of the rocks themselves, sitting quietly on wet and windswept hillsides.



1m

Allt a’Choire Chireinich

© Historic Environment Scotland





## The Chorus of the Rock

The carvings were made by hitting the rock surface with a stone tool, such as a rounded river-washed pebble, to create a shape. This process is known as *pecking*. We can often still see the individual peck marks from the impact of the stone tool. Experimental archaeologists have demonstrated that it can take about half an hour to produce a simple cupmark on soft rocks such as sandstone, and over two hours on harder rocks such as granite. So complex carvings would have taken a considerable time to create if they were made in one go. However, many panels may have been produced by adding or modifying motifs over a long period of time, and may have been the work of many different people.

Excavations around rock art panels in Scotland have recovered large quantities of fractured quartz and quartzite pebbles, some of which have worn edges and appear to have been used to make or define the carvings. Recently, archaeologist Hugo Anderson-Whymark carved his own cupmark. He describes the experience below, highlighting the importance of the senses of vision, hearing and touch.

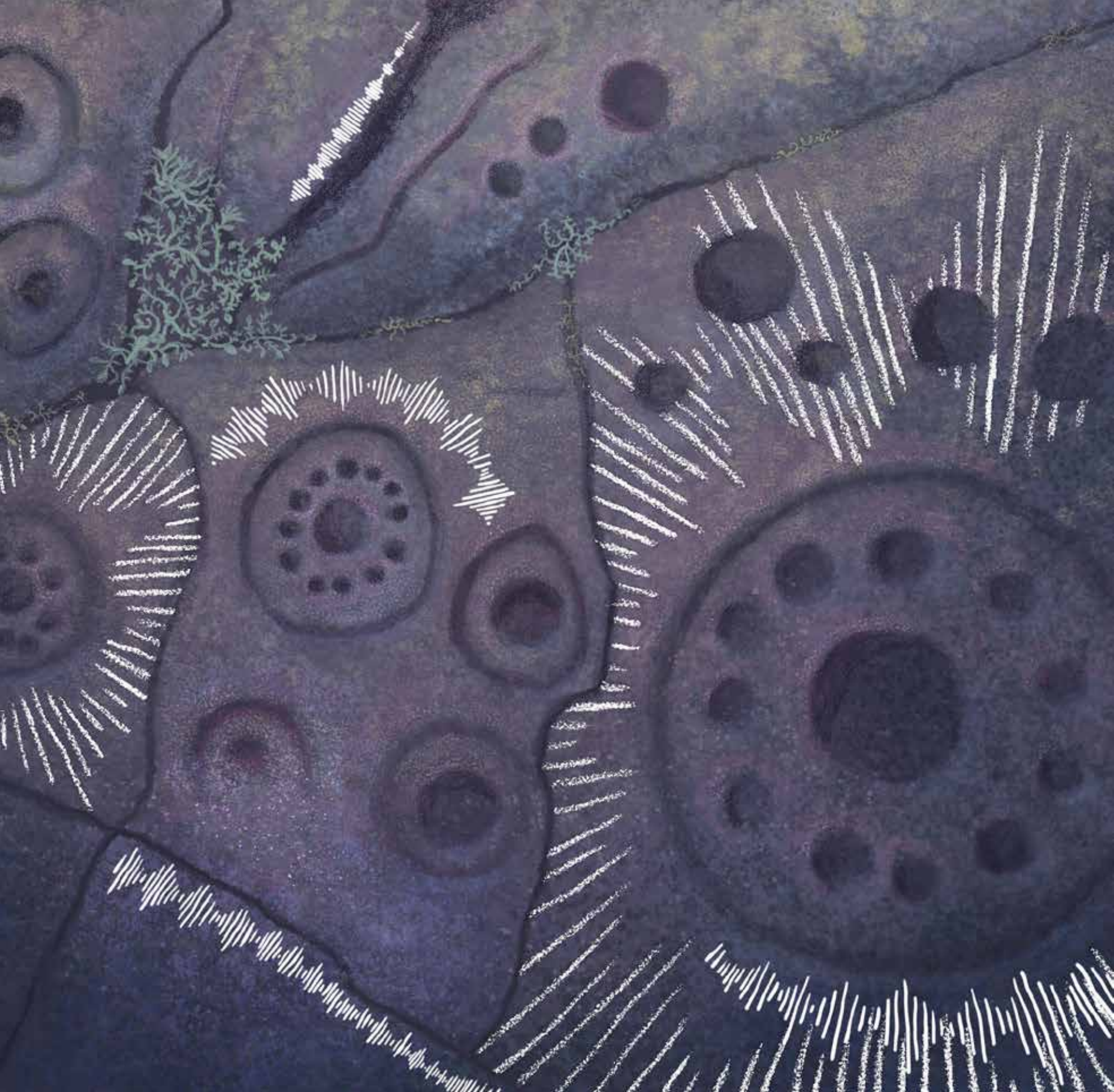
*"From a pile of quartz pebbles I select one that fits neatly into my hand and with circular motions I begin to grind the outline of a cup mark into the rock. Once my design is clear I lean forward over the rock and begin to peck. The motion of the hammer stone is fast and constant with blows criss-crossing the surface of the cup. The pecking forms a monotonous and repetitive rhythm that is only broken by an occasional desire to grind the surface with the hammer and better reveal the developing form of the cup. A creamy white dust with a smooth and silky texture rapidly accumulates on the surface obscuring the design. I frequently rub or blow the dust to one side*

▶ The motifs were created with similar carving techniques, identified through the traces that the rock artists left on the rock surfaces. The most common method used was pecking, which would produce more or less regular images depending on whether it was applied with direct or indirect percussion (depending on whether the artist was knocking the rock surface directly or using a mallet).

© Alan Braby







*and at the same time I touch the surface of the rock to feel progress. The high-pitched sound of pecking rings in my ears. The sound echoes around the local landscape, and curiously appears to come from elsewhere, perhaps the trees but certainly not the rock. The repetitive rhythm of pecking allows one's mind to dwell on the issue. The sound of pecking becomes more hypnotic and meditative with time – the action requires concentration but not thought. The speed at which time passes also seems to change – at the beginning progress seems slow, but time passes quickly once the outline is established and a simple rhythm is maintained, while progress seems to slow once again as the cup nears completion. In contrast, the point at which the cup is finished comes as a surprise – it just suddenly appears finished. The motif remains veiled in dust and it is only when the stone is washed with water that the vibrant new colours are revealed”*

**Hugo Anderson-Whymark, ‘The Experience of Manufacturing Rock Art’ in *An Animate Landscape*, 2011, 335.**

The motifs were probably made by people living in or visiting the area in which the carvings are found. But we don’t know if rock art was made constantly throughout the Neolithic period, or if there were bursts of carving activity. Carvings could also have been made at different times in different regions – and we don’t know whether only certain people in the community could make the carvings, perhaps people with special religious or ritual status, or whether anyone could make them. Experiments show that creating these types of motifs does not depend on physical strength – everyone can produce similar marks regardless of age, gender, or ability. The production of Atlantic rock art may have been a skill learned, shared, and practiced by many in the community. Carving a motif may have been an important rite of passage – from childhood to adulthood. Anyone and everyone could have been a rock artist.

◀ This portrait of **Ormaig** explores the experience of carving the rock. The rhythmic pecking is illustrated as sound waves, capturing the tympanic experience of the carving process. Freshly carved rock would also have had a different quality and colour to how the weathered markings are seen today.

© Lizzie Robertson



The repeating motifs were carved by many different hands over time, each an individual expression but part of a collective whole – a cacophony of voices singing a common refrain. Our short animated film emphasises the personal experience of carving rock art, exploring the senses of sight, of sound and of touch, and celebrates the humanity behind this performance on a truly universal stage.

[www.youtube.com/watch?v=B-8DEPTWdho](http://www.youtube.com/watch?v=B-8DEPTWdho)





*“Red, white and black pigments found on pottery on the Isle of Man could have been used to paint designs on everything from houses through to people, and might suggest that we are seeing only a tiny portion of the decoration that seems to have been so important in the late Neolithic”*

**Vicki Cummings, *The Neolithic of Britain and Ireland*, 2017, 179.**

There is no evidence that the carvings were coloured, although small fragments of red ochre (a natural pigment) have been recovered from excavations around a rock art panel at **Hunterheugh** in Northumberland. Colouring may not even have been needed, as the process of making the carvings cuts through the dark, weathered surface of the rock to expose the often-contrasting colour of the unweathered rock beneath. Freshly made carvings would have been very striking and visible – particularly if carved with quartz and covered with a sheen of quartz dust – but would have faded over time as they weathered. Experiments show that carvings weather to the same colour as the rock surface within only a few years. They may have then been made visible again by re-carving.

However, although it is tempting to focus on individual motifs, rock art panels are usually best appreciated as a visual whole. The natural cracks and fissures in the bedrock may have been used as if they were a frame for the creation of motifs, while changing lighting conditions creates shadows which highlights the rock art, making it more dramatic and easier to see. Rain water sitting in the cupmarks also creates a different experience.

*“Rather than thinking of the rock art being carved **on** the rock, it is perhaps more appropriate to think of the rock art being carved **with** the rock”*

**Andrew Meirion Jones, *An Animate Landscape*, 2011, 331.**

When examining the surface of a rock art panel, it can be difficult distinguishing between the cultural and natural forces at play. Archaeologist Andrew Meirion Jones describes these forces as “the geological textures of the rock, the joints and cleavage planes produced when the rocks were formed, the glacial striations left by ice action and the lines and cups carved into the rock



◀ Was the creation of rock art panels a communal act, perhaps by a community local to the panel, who would gather to add their carvings to those of their ancestors?

© Alan Braby





surface by past peoples” (2011, 325). In Kilmartin Glen, Andrew analysed the types of motifs present in relation to geological patterns on the rock surface. He found that cracks and mineral veins divided the surfaces into *frames*; the shape and size of these frames seemed to influence the type of motifs that were carved in them. For example, rocks with dense, triangular and lozenge-shaped frames had complex and unusual motifs, whereas rocks with small lozenge-shaped or rectangular frames had simple motifs, such as cups with one or two rings.

Analysis of the rock surfaces chosen for carving suggests that the rocks with especially fissured and cracked surfaces were the most desirable, with cultural motifs interwoven amongst the natural features and textures. Atlantic rock art is also very three-dimensional as opposed to other types of rock art. It is almost as if they were sculpting the rock, reflecting the importance of their connection with the rock surfaces they chose to carve. The rock artists interacted with the rock – they did not impose their design upon it, like we would draw a picture onto a sheet of paper.

However, we can also consider other dimensions of the rock art beyond their visual appearance and physical setting. How was the rock art experienced by the people that made and used it? One suggestion is that the rock art might have formed part of a communal performance that involved sound, light, and activity. The experiences and activities associated with producing the rock art may have been as important to people as the symbols themselves. We can perhaps think about rock art as a focus for social gatherings that may have taken place at certain times of year or in response to certain events.

◀ This night time scene at **Ballochmyle** explores the rock art’s interplay with the dancing light and flickering shadows cast by the fire – they are not just static carvings but animated symbols.

© Lizzie Robertson





## Different Perspectives

### ARCHAEOLOGIST AND ARTIST AARON WATSON REFLECTS UPON HOW PHOTOGRAMMETRY AND LANDSCAPE PHOTOGRAPHY OFFER CONTRASTING INSIGHTS INTO HOW WE EXPERIENCE AND INTERPRET ANCIENT ROCK ART

For me, rock art is one of the most fascinating and enigmatic legacies of prehistory. When I first encountered cup and ring markings over thirty years ago, I was transfixed. I could not comprehend their meaning, but it struck me that these elegant and abstract carvings were communicating something powerful and inspiring across the millennia. Since that day, I have taken every opportunity to investigate rock art sites across Scotland and the north of England.

As an archaeologist, photogrammetry is my favourite way to record rock art. Computer software converts multiple photographs of a stone's surface into a 3D model which reveals every detail. Photogrammetry offers a fantastic tool for *objective* recording, but it is essential to remember that digital rock art is disconnected or *disembodied* from its environment. It can be manipulated using textures and viewed using perspectives that people in prehistory could never have seen or comprehended. This can help research and analysis, but can also hinder our appreciation of the original outdoor setting.

As a *landscape* photographer, I observe rock art 'in the wild', where contrasting conditions reveal its diverse character and atmosphere: sunshine, frost, mist, snow, rainfall, or moonlight. I visit after dark and use artificial light to enhance the carvings, or simulate flickering firelight. As a creative representation of my individual experiences, landscape photography is inherently *subjective*. These images are not suited to empirical analysis, but they might more closely reflect how our Neolithic ancestors experienced these places.

Different ways of engaging with rock art usually result in different understandings of its character and meaning. Photogrammetry offers an exciting tool for research, but it delivers static and *disembodied* representations of cup and ring markings that can lead to fixed interpretations – as maps of the stars or ripples in water, for example. These ways of reading the rock are only possible when the panels are considered as coherent designs.

In contrast, landscape photography offers an *embodied* perspective which reveals the changing nature of rock art through the seasons and at different times of the day and night. Rather than just a remote observer looking through a computer screen, I become a participant within the landscape. I watch as the shifting light highlights and shadows the markings on the rock in an unfolding and dynamic performance. In this way of seeing, rock art is no longer a series of coherent designs, but an animated phenomenon which evokes a profound connection between people and the land.

Both methods are central to my research, but I'm always seeking new ways to engage with and enrich understandings of the past.

How do you experience rock art?





## A Common Refrain

*“The realisation that the formal characteristics of Atlantic rock art are repeated in a number of modern countries of Western Europe suggests that there is a common identity underlying the tradition. The striking similarity between the motifs, the media, and the landscape location of the rock art make a common origin undeniable, despite regional variations”*

**Joana Valdez-Tullett, *Design and connectivity: the case of Atlantic rock art*, 2019, 2.**

Scotland’s rock art is an important part of the much wider cultural tradition of Atlantic rock art, stretching from beyond the Bay of Biscay to reach the Northern Isles. It encompasses a series of local styles with shared characteristics found in northern Portugal, northwest Spain, northern and western Britain, and almost the whole of Ireland.

The abstract curvilinear and angular designs found across Britain and Ireland provide the link with sites in Portugal and Spain: almost all the motifs found in British and Irish rock art have counterparts in Iberia. In Spain and Portugal, however, they also occur in combination with depictions of recognisable things such as animals, weapons, idols, and human figures. The shared ‘grammar’ in the use of the abstract motifs is also very apparent, particularly in the more complex panels.

Across Britain and Ireland, rock art is most commonly recorded in more marginal areas of the landscape: on upland hillsides and open moorlands, and around the coasts. It is often found in dense concentrations, for example on Rombald’s Moor in West Yorkshire where over 500 rock art panels have been recorded. Other significant clusters have been recorded on Barningham Moor in County Durham, on Fylingdales Moor on the North Yorkshire coast, across the fells of north Northumberland, around the coast of Dumfries and Galloway, in Kilmartin Glen in Argyll and on the slopes of Ben Lawers above Loch Tay in Perthshire. Smaller groups are found in Inverness-shire, Angus, Cumbria, Derbyshire, Wales and Anglesey, Cornwall, and the Isle of Man. In Ireland, rock art is recorded in the counties of Carlow and Wicklow in the southeast, Louth and Monaghan in the east, and Fermanagh and Donegal in the north. The densest concentration is in the south west, in the counties of Kerry and Cork, most notably on the Iveragh Peninsula.

◀ **The Badger Stone, Ilkley Moor, West Yorkshire.**

© Joana Valdez-Tullett





Most Atlantic rock art is found on exposed bedrock, outcrops and boulders. These range from small ‘cobbles’ to huge monumental blocks such as the **Badger Stone** in West Yorkshire or **Old Bewick** in Northumberland. Some of the most complex rock art designs were carved on extensive sheets of glacially smoothed horizontal bedrock such as at **Weetwood Moor** and **Chatton** in Northumberland, at **Auchentorlie** (now removed) and **Cochno** (now covered) in Dunbartonshire, and at **Achnabreac** and **Ormaig** in Argyll. The carvings are usually created on slightly sloping or horizontal surfaces, but a few striking examples are also recorded on river cliffs, such as those at **Ballochmyle** in Ayrshire or at **Morwick** in Northumberland.

The rock art of Iberia, Britain and Ireland shares a number of characteristics beyond the very striking regularity and repetition of its iconography. These include the carving techniques used to create the motifs, the type of rocks chosen to decorate and their landscape location. Although the motifs may look rather regular to our modern eye, digital technologies have been helping us to understand the complexity in their designs. Recent studies have identified dozens of repeated variations of the cup and ring motif – the images were not simply copied from one place to another, but they were part of a process of contact and exchange all along the Atlantic coast.

In every region we find carvings of what some archaeologists have called the *quintessential motifs* of Atlantic rock art, which alongside the carving techniques and the shared ‘rules’ guiding the choice of rock surface and landscape location seem to form the core of the tradition. However, a closer look at the rock art and its many components reveals that each community had their own preferences, and archaeologists can find regional variations today.

Atlantic rock art represents a common understanding of an ideology or belief, shared by people who probably did not know each other and lived very far apart. For some reason, the tradition became very important and relevant enough to be transmitted and taught between these communities. Their different cultural backgrounds are reflected in the regional preferences of the rock art.

Rock art is also sometimes found on Late Neolithic and Bronze Age monuments such as stone circles like that at **Temple Wood** in Kilmartin Glen, and on standing stones such as **Long Meg** in Cumbria and **Nether Largie** in Kilmartin Glen. Atlantic rock art was also used in Bronze Age burials, either on the slabs used to form a stone-lined coffin (known as a *cist*) in which the body was placed, on the lintels, cobbles or kerbstones forming a burial cairn, or on carved slabs placed over the ashes of cremated individuals.

◀ **Long Meg and her Daughters**, Cumbria.

© Aaron Watson



**GPS (Global Positioning System)** uses satellites to record the exact location of rock art in the landscape. This is vital for understanding the distribution of rock art and its spatial relationship to other natural and archaeological features. Being able to accurately locate the rock art is also crucial for conservation management, to avoid it being damaged or destroyed.





## A Song of the Land

*“It is as if we are dealing with a tattooed landscape composed of hundreds of indelible images fixed upon the skin of the land”*

Lara Bacelar Alves, ‘The circle, the cross and the limits of abstraction in north-western Iberian rock art’ in *Visualising the Neolithic*, 2012, 200.

Although we may never know what the symbols meant to the people that created them, the enormous variation in decoration has led archaeologists to look for patterns in the way different motifs were used in different places or in different settings. The types of rocks chosen for carving, and their position in the landscape, can provide important clues about the role of rock art in the lives of our ancestors. Studies of Atlantic rock art using this approach have suggested that the carvings mark routeways and significant places in the landscape.

Most Atlantic rock art is found pecked onto outcrops and boulders, in places where people used the wider landscape – on routeways and viewpoints, vital for hunting wild animals and herding domestic animals. The panels are typically found in the more marginal land, on the edges of fertile river valleys and on hillsides and moorlands.

Many panels seem to follow natural routeways through the landscape, and their often relatively remote locations may suggest a connection to a predominantly pastoral way of life, perhaps marking ancient shieling grounds. “Like so many Neolithic monuments” writes the archaeologist Jack Stevenson, “they appear to be placed within the landscape, rather than sited to dominate it” (*The Archaeology of Argyll*, 1997, 101). The people who made the rock art engaged with their world in a very different way to how we respond to it today. To understand the role of the art in the lives of these communities then we need to study the types of landscapes where they made their rock art and the kinds of surfaces that they decorated.

Although the landscapes where rock art is found have many things in common, the communities in each region seem to have had specific preferences for the settings of their rock art panels and for the types of

◀ Could the rock art panels have played a part in marking ancient pilgrimage routes? In this scene from the Early Bronze Age, the rock art panel, nearby standing stone and distant burial cairn all help guide the way.

© Alan Braby





surfaces they selected. Exactly why one rock was preferred over another is a key question for archaeologists.

We have seen that the people who made the motifs probably lived very mobile lives, so perhaps they chose a strategic location – on an important route, at a meeting place, a boundary, or possibly somewhere with good resources or a wide view over hunting grounds or good pasture for their animals?

Or did the rock itself influence them? Maybe it had a striking shape, was a recognisable ‘landmark’, or was already marked with unusual natural patterns? Geological processes and weathering can produce circular and angular shapes that look exactly like the rock art motifs. Groups encountering these naturally decorated places may have believed them to be special – perhaps decorated by their ancestors – and so they enhanced them and added new motifs (just as today, people might add their own initials to surfaces already covered with graffiti).

Could the place chosen for carving have been important in the memory of the community? Possibly the site of a significant event, either real or woven into mythology? We have many such places today, remembered through their evocative names and the stories they represent, such as *The Cow and Calf* (West Yorkshire), *Arthur’s Seat* (Edinburgh) or *The Giant’s Causeway* (County Antrim). We know that rock art motifs were added to monuments such as stone circles and burial tombs. Could this suggest a connection with the ancestors or the gods?

The second major region of Atlantic rock art is in Iberia, focused in northwest Portugal and most of the northwest Spanish region of Galicia. Just as in Britain and Ireland, many of the carvings are abstract, geometrical forms, but in Iberia there is an added component of images representing recognisable things, such as animals, weapons, hoof-prints and people. Most common are depictions of deer and horses. The carved weapons include daggers and halberds. These images (and especially the deer) may occur together with geometric motifs, sometimes so intertwined that they merge, or in isolation. A few human figures also appear, usually along with scenes of wild animal herds, and occasionally riding horses and sometimes even deer.

As in Britain and Ireland, the rock art seems to be closely connected to the surrounding landscape. The cup and ring style of art is found mostly in the west of Galicia and on the coast of Portugal, around the estuaries that empty into the Atlantic and along the major rivers and routes leading into the interior. Most are within 60 kilometres of the sea, spread along the western



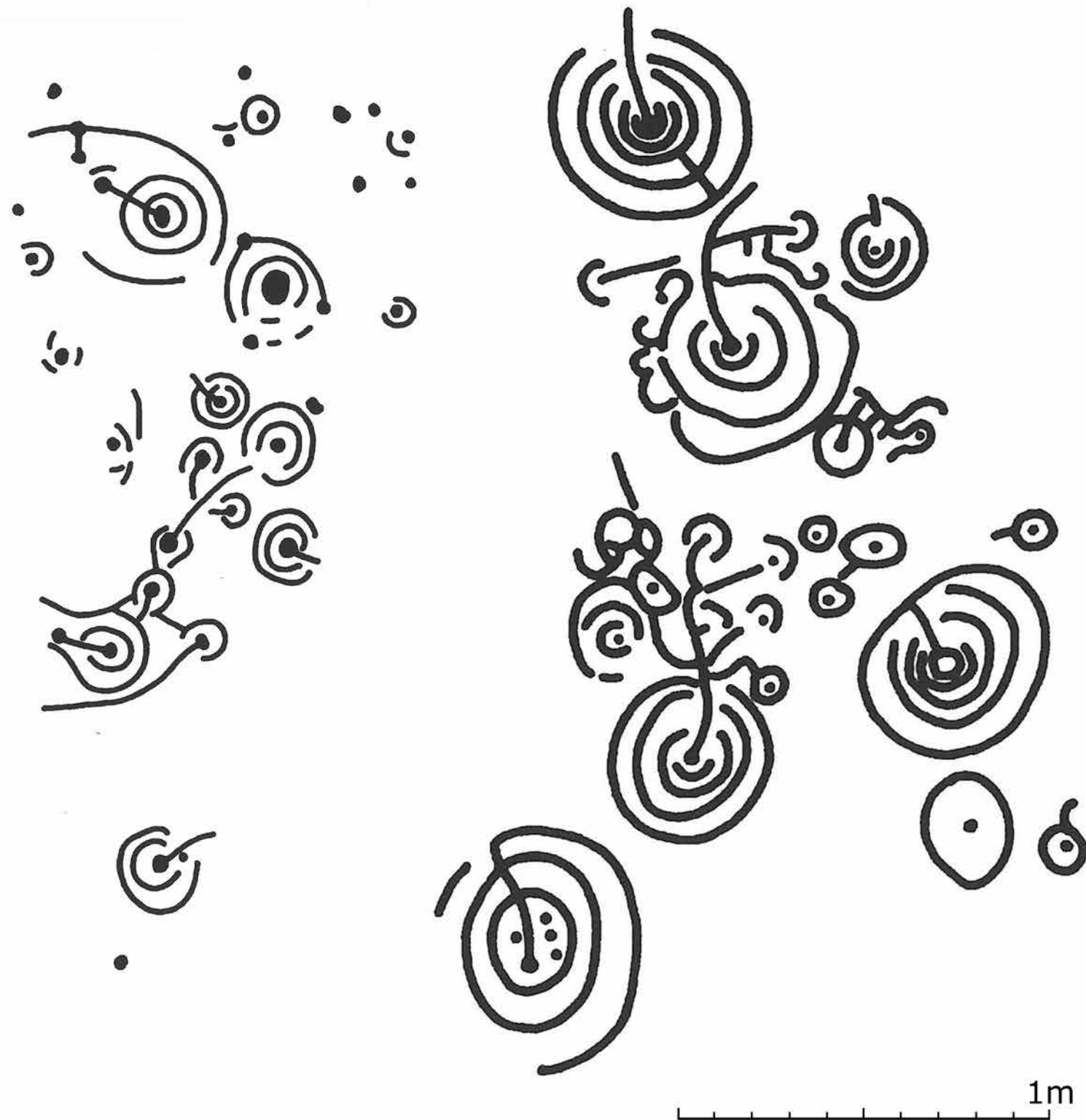
Old Bewick, Northumberland.

© Tertia Barnett

◀ Weetwood Moor, Northumberland.

© Tertia Barnett





Galician coastline, where three peninsulas are divided by long inlets known as *rias*. These are drowned river valleys, rather like Scottish lochs.

The communities here decorated the smooth surfaces of granite outcrops in locations with wide views across the countryside and coast. They favoured positions mid-way up slopes in hilly landscapes, away from both the valley bottoms and the upland plateaux. Simple cupmarks are also found on a higher tract of land to the east, between the heads of the *rias* and the mountains of the interior. This is also where most of the animal depictions are found, frequently sited along routes followed by free-ranging animals. Carvings depicting weapons were made in more visible locations, sometimes on steeply sloping surfaces, but they are also recorded in places close to the sea.

The main distribution of rock art was close to the more productive land on the coast, but this region was also subject to abrupt changes in climate, with limited water available during the annual drought. Many of the inland sites are near to basin-like pastures known as *brañas*, the only places to retain water during the hot summer season. Richard Bradley suggests that the routeways linking the coast with these inland water sources and upland shielings were critical; it is in this intermediate zone that much of the rock art was created.

This pattern changes to the south, where the focus moves from horizontal surfaces to more conspicuous rocks. One of the largest concentrations of abstract imagery is found on the high ground of Monte Faro, overlooking the River Minho in Portugal. Here, researchers also found a spatial relationship between the rock art sites and monumental sites from the Neolithic period.

As in Britain and Ireland, researchers have considered relationships between the way that motifs are arranged, the natural shape of the rock, and the surrounding landscape. At **Forno dos Mouros** in Aveiro, Portugal, for example, the shape of the decorated outcrop appears similar to the topography of the landscape in which it sits. The motifs seem to follow a north-south alignment akin to the shape of the rock, the axis of the mountain and the valley below. Other examples seem to reference features in the landscape, as at **Monte dos Fortes I** in Monte Faro, Portugal, where two sets of concentric circles

of more than a metre in diameter are carved on a convex section of rock in sight of conspicuous hills. The archaeologist Lara Bacelar Alves notes that: “at many sites, the placement of the carvings themselves constrains physical movement around the rock art and guides the observer’s sight in the direction of particular points in the surroundings” (2012, 200).

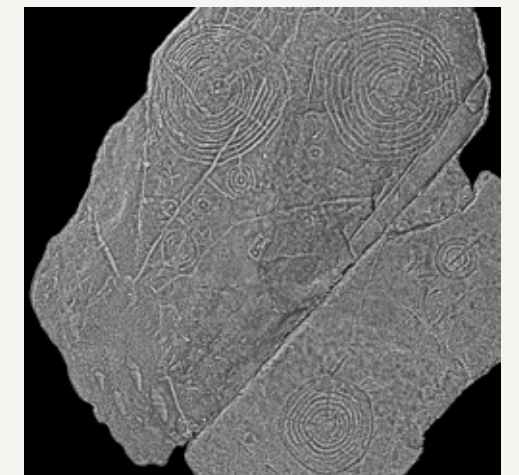
◀ A shared ‘grammar’: the panels of **Kinard East**, Ireland (left) and **Outeiro do Coguludo**, Galicia (right).

After Bradley 1997.



**Breia**, Viano do Castelo, Portugal.

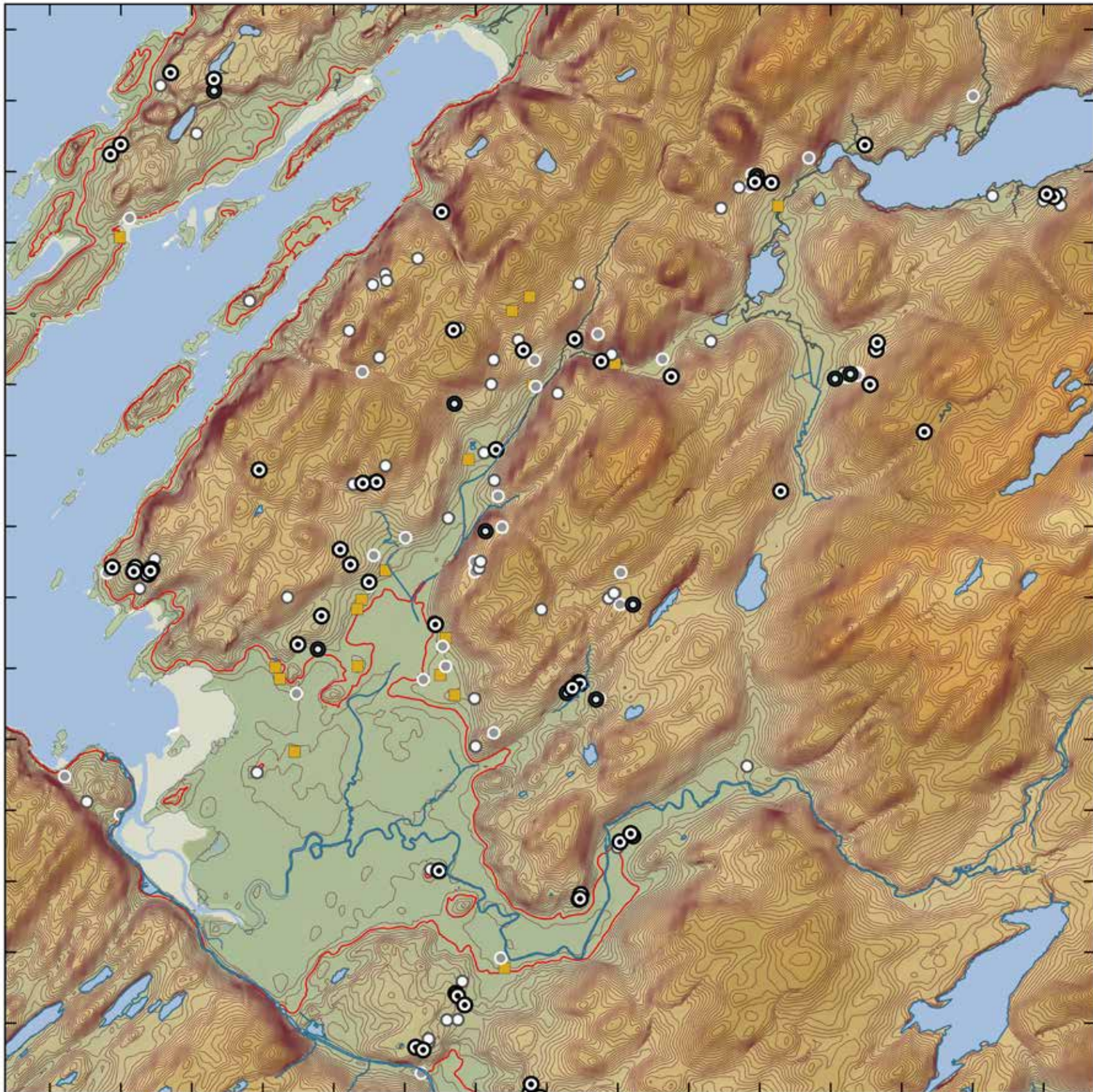
© Manuel Santos-Estévez



This is a rectified photogrammetric visualisation of the panel of **Monte Dos Fortes** in Monte Faro, Portugal.

© Joana Valdez-Tullett





## Landscape Investigation

**ARCHAEOLOGIST KATE SHARPE DESCRIBES THE VARIOUS APPROACHES THAT ROCK ART RESEARCHERS HAVE TAKEN TO BETTER UNDERSTAND ATLANTIC ROCK ART IN ITS LANDSCAPE CONTEXT**

To understand why some rocks were decorated in preference to others, researchers consider where the decorated boulders and outcrops occur in relation to the surrounding *landscape*. *Geographic Information Systems* (also known as GIS) can show whether panels are in similar places (such as on hillsides, hilltops or in valley bottoms), or whether they have extensive views, or are close to rivers, lakes, or to the sea. Models can also be used to study whether the carved sites could have been easily accessed by people moving through the landscape, or whether they are on known routeways. The maps produced can be analysed to find patterns in the types of motifs used (e.g. simple or complex) in different places, giving clues about the role(s) of rock art for the different prehistoric groups who made it. They can also be used to understand patterns of survival and destruction in the distribution of rock art caused by subsequent land use, including *agricultural improvement, afforestation and urbanisation*.

But objective computer models of facts and figures are not enough in themselves. We also need to visit and become familiar with rock art landscapes, travel between sites, and test our ideas: to experience and interpret the places that prehistoric people valued enough to leave an enduring mark.

Various different landscape investigations have led to the following observations:

- During my own investigations of the rock art in the Lake District in Cumbria, I found that the panels were low-lying, close to the ends of lakes, and near the start of routes leading through the mountains. I think that these routes may have been used by people travelling to and from stone quarries at the centre of the region.
- Archaeologist Sara Fairen looked at the elevation, slope, and accessibility of rock art in Northumberland. She found that decorated panels were located on elevated hillsides in positions with high visibility over the surrounding land. They were also accessible, being on natural routes between the uplands and lowlands.
- Richard Bradley and Aaron Watson excavated rock art sites on Ben Lawers overlooking Loch Tay in Perthshire. One complex panel at **Allt Coire Phadairlidh / Cloanlawers** would have commanded an extensive view along the loch. From here, the team could also watch the sun travel from east to west along the loch. They noticed that, at mid-day, grains of mica embedded in the rock sparkled brightly. This may explain why there are so many decorated surfaces on the north shore of Loch Tay and very few on the south side.
- Susan Westlake analysed the location of rock art on the Dingle Peninsular of south west Ireland, showing that the sea was important at several scales. At a local level, the sea and possible coastal routeways appear to have strongly influenced the setting of rock art: 87% of the rock art sites had views towards the coast or an estuary and several were clearly positioned to overlook sea routeways and landing sites, particularly the rivers that flowed into the harbours and estuaries.





## The Roar of the Stag

*“The animals file past the circular motifs just as the modern paths skirt the edges of the brañas, and the distribution of rock carvings follows those trails and avoids the interior of the basins”*

**Richard Bradley, *Rock Art and the Prehistory of Atlantic Europe*, 1997, 196.**

The many depictions of deer and their hoof-prints provide an added dimension to Iberian rock art and give a fascinating insight into the lives of the societies who carved them. The carvings seem closely linked with the natural world and the surrounding landscape, and suggest that the animals had a special place in the lives of Neolithic and Early Bronze Age communities. They are also one of the few real clues that archaeologists have to decipher an aspect of what rock art meant and how it was used.

The site of **Laxe das Ferraduras** in Galicia lies on the edge of a steep valley near to a *braña*. It is decorated with a variety of motifs including two circular motifs, and a series of hoof-prints. The animal tracks seem to be restricted to one side of a carved line leading from one of the circular motifs. Other sites show similar relationships. At **Outeiro da Mó** in Galicia, a single line of hoof-prints leads directly to a cup and ring motif, and a long linear groove divides complex curvilinear motifs from at least ten hoof-prints that follow the alignment of the groove.







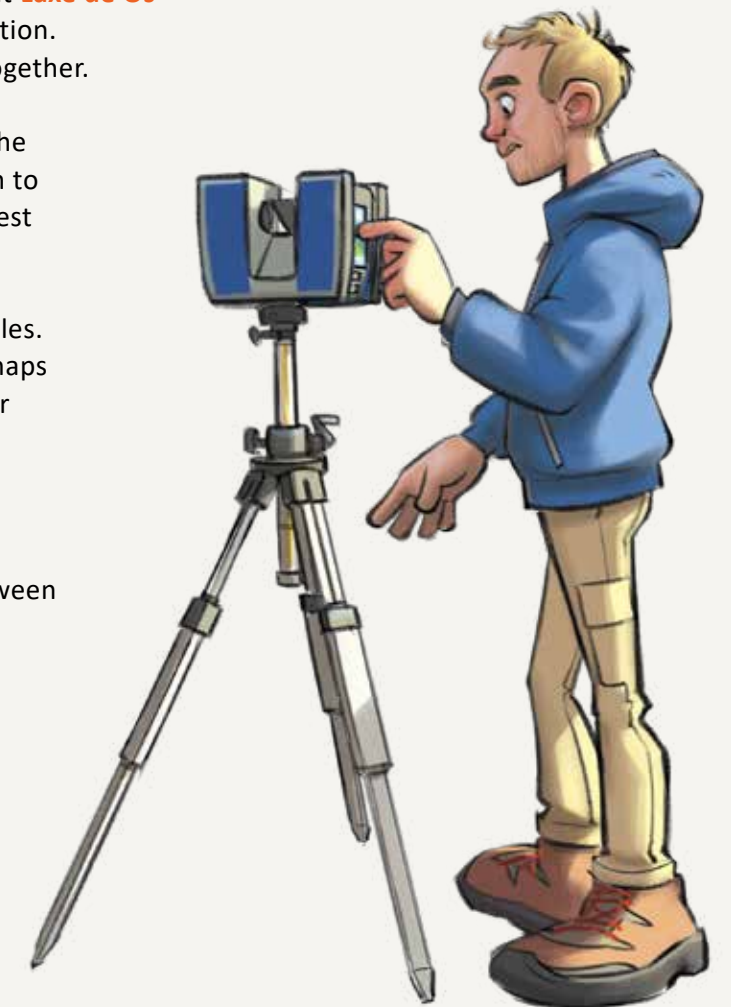
Images of deer show similar linear arrangements. At **Laxe dos Cebros** in Galicia, almost all of the depicted animals share the same axis, and at **Pozas da Garda** in Galicia the animals are also shown in a line, as though a herd moving across the landscape together in the same direction (previous page). These decorated rocks lie beside paths created by wild animals in today's landscape, leading between the coast and the hills, along sheltered valleys and around the edges of the *brañas*. Available outcrops within the basins are not decorated.

Very few animals other than deer are depicted, and the carvings seem to show an intimate understanding of their life cycle and seasonal activities as much as any concern with hunting them. Analysis of the images of deer from sites in Pontevedra, Galicia found 60% to be hinds (female deer) or young, and 40% to be stags, often with impressive antlers, such as at **Laxe de Os Carballos**. One quarter of the stags were single stags in isolation. Fewer than half the carvings showed both stags and hinds together. This reflects the natural behaviour of red deer, with mature stags remaining separate from the herds for ten months of the year until the rutting season. During the rut, the stags return to their 'stands', where they strut, roar and clash, with the largest attracting a 'harem' of hinds.

Carvings of large stags were placed at high points in the landscape, perhaps mirroring the behaviour of dominant males. This fascination with a single species and their life cycle perhaps demonstrates the strong cultural significance of hunting deer within these early farming societies.

The discovery of carved stags on the underside of the lintel covering a chamber at the Bronze Age burial cairn of **Dunchraigaig** in Argyll is an exciting new development in the study of Atlantic rock art, emphasising the cultural links between these far-flung coastal communities.

TLS (Terrestrial Laser Scanning) is a survey method which can be used to create digital 3D models of rock art. This detailed objective record of the panel and frame often reveals very faint carvings that are difficult to see on the 'real' rock surface.



◀ Archaeologist Hamish Fenton was passing **Dunchraigaig Cairn** at dusk when he noticed the burial chamber and decided to slide inside with his torch. "As I shone the torch around, I noticed a pattern on the underside of the roof slab which didn't appear to be natural markings in the rock. I could see that I was looking at a deer stag upside down, and, as I continued looking around, more animals appeared on the rock. This was a completely amazing and unexpected find. For me, discoveries like this are the real treasure of archaeology because they help to reshape our understanding of the past."

© Historic Environment Scotland





## The Art of Illusion

### ARCHAEOLOGIST JOANA VALDEZ-TULLETT INVESTIGATES THE VIBRANT COMPLEXITY OF ATLANTIC ROCK ART

My first contact with rock art was in the Côa Valley in Portugal, searching for and recording fantastic Palaeolithic carvings of animals as part of a project run by the University of Minho. An interest in rock art soon became a large part of my life. In my final undergraduate year, I devised a project to study the carvings existing in and around a well-known Iron Age hillfort called **Citânia de Briteiros** in Guimarães, Portugal. This settlement had been owned by a famous and wealthy antiquarian, Francisco Martins Sarmento. He had excavated a large part of the site, leaving us lots of notes of his discoveries.

His notes mentioned carvings within the walls of the hillfort, including a double-spiral, a cup and ring motif, linear grooves and a segmented circle, sometimes interpreted as a sundial. That year we found and recorded all of these rocks, and surveyed the rest of the hillside. One day we ‘rediscovered’ an amazing panel known as **Penedo dos Sinais** (the *Boulder of the Signs*), which was thought to have been destroyed during the construction of a road in the 1930’s. A large outcrop split in two parts, it was extensively decorated with many cup and ring motifs, some of which complex and spiral-like, connected with wavy lines that run through the rock surface.

We recorded Penedo dos Sinais with a technique known as ‘direct tracing’ – this was before digital documentation became widely accessible. We wrapped the rock surface with large sheets of plastic, onto which we copied the motifs. We did this at night, using high voltage lamps attached to very heavy generators. This was the only way we could be sure we could see all of the rock art, throwing shadows across the rock surface with the bright light. As we walked over the rock in our bare feet and laid down on it, running the tips of our fingers over the motifs, we became very familiar with the rock art. This night work

was very exciting, and we were often visited by a range of different animals attracted to the light – lots of cute shrews and once even a curious lynx!

I became intrigued about how similar these carvings can be, spread along the coastline of Atlantic Europe, especially when we consider the time in which they were created. Compare the **rosettes** from **Ormaig** in Scotland to those in **Derrynablaha** in Ireland, or the **large circles** with many concentric rings from **Achnabreac** or **Big Balcraig** in Scotland, and those in **Monte dos Fortes I** in Portugal and **Laxe das Portaxes** in Galicia. I needed to see, feel and ‘talk’ to the carved rocks in person to find out more about their secrets, and so over the years have visited hundreds of panels in many different countries.

In all these panels I have found very small details in the way the motifs were designed, details which were repeated all along the Atlantic coast. I found that they were not simply **cup and ringmarks** or **penannulars**. The circular motifs encompassed very particular variations: rings that are not complete and that flex outwards in their gapped ends, multiple circles whose ends converge on one or both sides, and circles that depart from another circle. There were lots of subtly different (but repeated) design strategies.

For this reason, I think of Atlantic rock art as an ‘Art of Illusion’ – the motifs trick us into thinking that we are ‘just’ looking at *simple* symbols, but, in reality, the images are much more *complex* than that. My study of Atlantic rock art revealed that a package or set of *quintessential motifs* was shared and repeated in regions far distant from one another, including the very small details described above and some distinct regional preferences. This suggested that the communities living in these places were in contact with each other during the Neolithic and exchanged the knowledge of making Atlantic rock art and the reasons (or belief systems) behind it, from the images themselves and the carving techniques, to the places where they should be created. This tradition became very important, and although these people had different cultural and social backgrounds, they embraced it and created it in their own lands for many centuries.





## A Song of the Sky

The close similarities in the way rock art was used across Britain, Ireland and Iberia, with comparable motifs and a shared ‘grammar’ guiding their use, and coherent ‘rules’ guiding the choice of locations and surfaces, suggests enduring maritime connections between the communities living around the Atlantic coasts. We know that long distance connections were important during this period – witness the extensive trade in polished stone axeheads of Alpine jadeitite.

The development of coastal navigation skills perhaps paved the way for the more challenging deep-sea voyages between Iberia, Britain and Ireland, and around the Irish Sea. Indeed, the similarities between aspects of material culture, the architecture of passage tombs and Atlantic rock art suggest close links across substantial bodies of water.

*“...not only was it necessary to have in-depth knowledge of the codes behind the symbolic language applied but also the artistic and technical skills involved in the conception of these places”*

**Lara Bacelar Alves, ‘The circle, the cross and the limits of abstraction in north-western Iberian rock art’ in *Visualising the Neolithic*, 2012, 201.**

There are many regional variations in the rock art of these areas, with local developments arising perhaps due to the nature of specific geographies and topographies requiring adaptations, or to distortion or misinterpretation during the transmission of ideas across distance or through time. In some areas, the carvings became much more elaborate, and unique motifs were created; elsewhere, scatters of simple cupmarks appear to have sufficed.

Understanding the meanings of abstract symbols and their many combinations would have to be learned. Even the naturalistic images such as the Iberian deer may have had a strong symbolic interpretation beyond representing everyday hunting scenes. In the examples from Galicia, where deer are carved alongside abstract forms, it has been suggested that these images depicted the landscape, with pathways around the basin-like pastures known as *brañas* represented on the rock surface as circular motifs. This ‘circular’ perception of space may be the key to an understanding of the Neolithic world, a circular perception

◀ This moonlit scene at **Achnabreac** emphasises the open air nature of rock art. The panel sparkles with quartz dust under the meteor shower above.

© Lizzie Robertson





that is also seen within monumental architecture of the round passage tombs of the Middle Neolithic and in the earthwork henges and stone and timber circles of the Late Neolithic. While the chambered tombs of the early Neolithic involved the process of disposing of the dead, the builders of middle and late Neolithic monuments seem to have been more concerned with bringing people together in the act of construction, often on an epic scale. Monuments were also increasingly focused on the movements of the sun and moon, an interest shared by communities along the Atlantic coast of Europe: communities who relied on the sun and moon to guide them across the seas.

*“Solar references may have been significant in the main regions with Atlantic rock art. Many sites commanded views of the sky and featured prominent circular motifs. Decorated passage tombs in Ireland may have influenced this pattern as about a fifth of them were aligned on the rising or setting sun at the solstices”*

**Richard Bradley, *A Comparative Study of Rock Art in Later Prehistoric Europe*, 2020, 25.**

So we will first look to the night sky to search for the possible inspiration for the cups and rings of Atlantic rock art. Through study and observation, our solar year and the lunar calendar can be traced, and some events, such as eclipses and meteor showers, can be predicted. But without scientific explanation, communities quickly turn to mythology and religion to make sense of the more unpredictable elements of the celestial skyscape.

Our Neolithic ancestors clearly had complex belief systems, and they expressed these in various ways: through their rituals and burial rites, through their remarkable ceremonial monuments, through the use of special objects and through the use of abstract symbols and art. Solar and lunar alignments have been observed at many Neolithic sites – such as the sunrise on the midwinter solstice (the shortest day) dramatically lighting the chamber of the passage tomb of **Newgrange**, the sunset on the midwinter solstice lighting the chamber of the passage tomb of **Maeshowe**, and the alignment on the sunset on the midwinter solstice of the cup and ring-marked standing stone of **Long Meg**, placed just outside the stone circle known as her daughters.

◀ **A solar halo photographed on the hills above the rock art at Copt Howe in Cumbria. Solar halos and lunar halos are caused by light being refracted by thin cirrostratus clouds of ice crystals, high up in the atmosphere. They bend the light at a 22° angle and so are also known as 22° halos.**

© Aaron Watson





Could Atlantic rock art be designed to ‘capture’ the light from the sun or reflected from the moon, or perhaps even invoke the passing of comets or shooting stars, bright lights crossing the sky above?

Atmospheric optical phenomena such as the aurora borealis, 22° halos or mountain brocken spectres, and celestial events such as solar and lunar eclipses, planetary conjunctions, bright supernovae, passing comets and meteor showers, would all have been observed by our Neolithic ancestors. Unusual events such as meteor storms and meteorite strikes, and everyday events such as meteors, burning up in the Earth’s atmosphere, would all have required explanation – perhaps even starring roles in their religious *cosmology*.

Comets, asteroids and meteoroids are leftovers from when the nine planets of our solar system formed around 4.6 billion years ago. Entering the atmosphere at a speed of twenty kilometres a second, a meteoroid immediately begins to compress the thickening atmospheric gasses in front of it. When air is compressed, it heats up, and this in turn heats the meteoroid until it is white hot, reaching 6000 degrees Celsius, the surface temperature of the sun. For a brief time, the meteoroid shines bright – it is now a meteor or shooting star – high in the sky, before it disintegrates. What would our Neolithic rock artists have made of a shooting star, streaking across their night sky?

A meteoroid is largely comprised of iron and / or stone, and is distinguished from an asteroid by size – a meteoroid is usually much smaller than one metre in diameter, while an asteroid is bigger than one metre in diameter. Most meteoroids completely burn up in the sky due to the intense friction they create crashing through the gases in our atmosphere, but if a meteoroid is big enough it has the potential to survive the intense burning of the atmosphere, and can make it all the way down to the Earth’s surface, where it lands as a *meteorite*.

Comets are much bigger, and are distinguished from meteoroids and asteroids because they contain ice and gases which produce an atmosphere, which can be visible as a *coma* or *tail*. Most comets that are seen travelling past Earth are between one and ten kilometres in diameter, but some are much smaller, and pass unseen, and some are much larger.

Geologist Iain Stewart notes that “anything up to 40 million kilograms of space rock falls on our planet every year” (2005, 220). This usually falls as dust or small pebble-sized meteors, but occasionally they can be bigger. Fortunately, most of these are not expected to hit Earth directly, but rather to graze or ‘bump’ our atmosphere. Over the last five thousand years, scientists estimate

◀ In folklore, lunar halos or moon rings are said to warn of approaching storms.

© Alastair Henry





that ‘a few dozen’ small bumps have occurred as a result of larger asteroids. These bumps have an explosive impact of under 10 megatons of TNT, such as the Taurid asteroid that exploded over Tunguska in Siberia in June 1908. More significantly, ‘a handful’ of much larger ‘bangs’ can also be expected to have happened in the atmosphere, as a result of having been grazed by something bigger. These bangs have an explosive impact of between 10 and 100 megatons of TNT. To put this in perspective, a modern nuclear bomb has the explosive power of around one megaton of TNT. “In the last five thousand years” writes the paleoecologist Mike Baillie, “the Earth must have been seriously impacted at least once, and probably several times” (1999, 125).

Without an atmosphere to protect it, the moon is more obviously pockmarked by the scars and craters of multiple asteroid impacts, created over the course of many millions of years. There are estimated to be roughly 300,000 craters wider than 1 kilometre in diameter on the Moon’s near side alone, the largest of which can be seen by the naked eye.

Within our solar system, our planet’s orbit regularly takes us through the debris trails of comets – huge ‘dirty snowballs’ of ice, dust and rock in distant orbits around the sun. The debris trails of comets cause meteor showers when the Earth encounters them on its own orbit, with several meteors potentially visible every minute. Old debris trails are largely comprised of thinly spread clouds of dust and small particles, which result in *meteor showers* with only a few meteors per minute (such as the Leonid shower in mid-November and the Perseid shower in mid-August). Conversely, young debris trails are dense and clumped together, and include larger particles, which result in *meteor storms* (such as that which occurs when we pass through a denser part of the Leonids every 33 years, with an astonishing average of several thousand meteors visible every hour).

*“Some of the most dramatic meteor displays occur in June and November when the Earth passes through the Taurid complex, a ring-shaped belt of fresh space debris believed to have formed only in the last 20,000 years by the break-up of a giant comet in our solar system. Most years, only light cometary dust from the Taurids strikes the upper atmosphere, but every few*

◀ Throughout the summer of 2020, the comet Neowise was visible in the night sky on the north-western horizon, here seen over Stonehenge. Comets would have been notable unexplained events in the lives of our ancestors.

© Jeff Overs





*centuries the Earth passes closer to the coarser centre of the Taurid asteroid trail, giving rise to spectacular meteor storms. And every thousand years or so, the Earth's orbit takes it through the denser core of this ring of dust, causing larger rocky and icy lumps to enter our planet's atmosphere. When this happens, the twice-yearly bombardment becomes far more severe, raining down asteroidal debris over the period of a few decades on a scale comparable to a nuclear war"*

**Iain Stewart, *Journeys from the Centre of the Earth*, 2005, 222.**

The last Taurid meteor storm on this scale likely occurred during the period AD 300 – 600, when European chroniclers recorded 'fire from heaven' and Chinese historians wrote of 'dragons fighting in the sky'. The previous peak meteor storm occurred during the Late Neolithic, and the next is expected around AD 3000. Could the abstract symbols of Atlantic rock art be related to meteor showers – and perhaps even the Taurid peak meteor storm? A demonstration of celestial power on such a dramatic scale would have made a significant impression, with thousands upon thousands of fireballs lighting up the night sky.

And this is just within our solar system! Within our galaxy, a *supernova* occurs about three times every one hundred years. A supernova is the extremely powerful explosion of a star like our sun. These spectacular events can be so bright that they outshine every other star in the night sky for a few days, weeks or even months before blinking out. They can be seen from across the universe. The last supernova visible to the naked eye was observed in 1987, although the star actually exploded some 165,000 years ago (it took the light that long to reach us). What would our Neolithic rock artists have thought of a supernova, suddenly burning bright in their night sky, only to disappear without trace?

◀ **A brocken spectre (from the German *Brockengespenst*) appears when the sun shines from behind the observer, who is looking down from a ridge or peak on a mountain into mist or fog below. The magnified ghostly shadow is often seen surrounded by rings of coloured light. This brocken spectre was observed on Ben Vorlich.**

© Eve Boyle





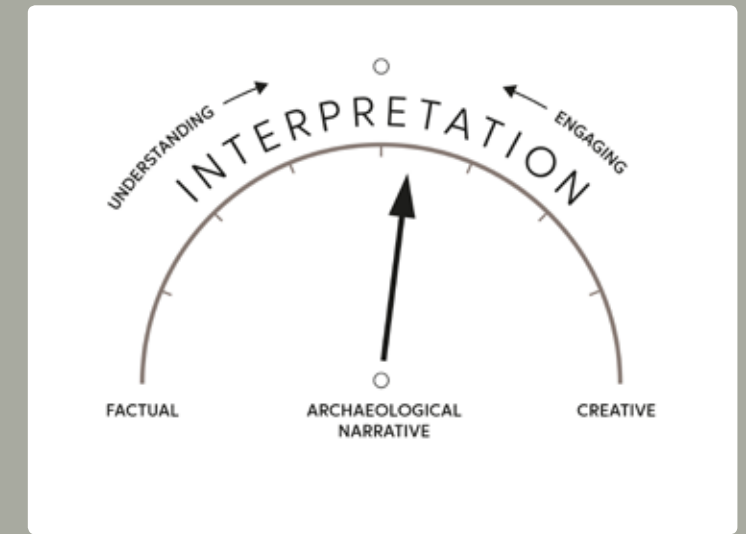
## Archaeological Narratives

### ARCHAEOLOGIST MATT RITCHIE DESCRIBES THE METHODOLOGY BEHIND OUR CREATIVE VISUALISATIONS, AND THE ARCHAEOLOGICAL NARRATIVE APPROACH

I love working with artists to imagine life in the past – working out what to include in the image and planning the visual story it will tell. A good archaeological visualisation will have a central narrative theme, a composition rooted in archaeological reality and a creative, engaging style – and although the blend will change depending upon subject matter and artistic style, it's really fun finding the right balance.

Archaeological visualisations are an element of *heritage interpretation*, presenting and explaining information about natural and cultural heritage to an audience. Because interpretation is often most memorable when it is provocative, it must be accurate and honest to the evidence but it must also be compelling and interesting, creating links between the audience and the subject matter by stimulating (or provoking) an emotional response.

Some visualisations focus on life inside a historic building, or on the clothes that people wore at the time. Some focus on the architecture, on its walls and structures. Some try to set the site within its contemporary *landscape*. Others illustrate a historical event or an archaeological idea or process. So the same site could be illustrated by a number of different drawings, each showing a different aspect of its history. But each drawing should have an *archaeological narrative* – a purpose such as a theme to explore or a story to tell.



In order to prepare a visualisation with an archaeological narrative, the archaeologist and the artist must work together to balance factual understanding and creative engagement.

- The factual element is educational and informative, using archaeological information and methodology to lead to understanding.
- The creative element is inspirational and imaginative, using narrative and drama to lead to appreciation.

The two elements are often balanced by using a central theme, particularly when describing a historic place or site. Themes can focus on an event that took place at the site; on the site itself, explaining its construction or architecture; on its setting, showing the site in its wider contemporary landscape; or on an idea, explaining an archaeological concept or process.





In the archaeological visualisations created for this booklet, I asked artists Lizzie Robertson and Alan Braby to depict a series of different themes.

## Sound and Vision

Lizzie was tasked with illustrating the theme of ‘Sound and vision’, exploring the effect of different lighting conditions on rock art. Her firelit scene at Ballochmyle is full of flickering light and shadows, warmth and music – the rock art appears as animated symbols, dancing across the panel. Her detailed portrait of Ormaig is noisy – the air is full of the rhythmic sounds of carving. Her moonlit scene at Achnabreac is full of drama – the panel shimmers with quartz dust under a meteor shower in the night sky above. And her reconstruction of archaeologist Ludowic McLellan Mann’s inventive interpretation of the Cochno Stone in 1937 positively crackles and hums with electric eccentricity. In all four illustrations, Lizzie has stayed faithful to the rock art itself, using photographs and the visualisations resulting from digital documentation to depict the symbols as they were originally created and subsequently recorded.

## People and Places

Alan was tasked with illustrating the theme of ‘People and places’, exploring the rock artists themselves and some possible explanations of the purpose of rock art. From the rock dust on the artist’s hands to the fine fleece gilet worn by the pilgrim, Alan’s work emphasises a very personal past – reflecting on the individuals and communities who invested so much effort and belief in the rock art we see today.

In ‘The Table of Bones’ we depict the process of *excarnation*, in which the corpses of the dead are left exposed in the open long enough for the flesh to be picked off by scavengers or lost to decay. Once the remains had been reduced to mere bones, the skeleton was gathered up, for *inhumation* in a grave or tomb, or *cremation* on a funeral pyre. Excarnation is and has been practised by many cultures around the world, such as the native North American tribes. Exposure to birds is the most successful, as the smaller bones are not lost to larger mammals, like those of the hands and feet. Of course, given the intervening millennia, there is no archaeological evidence that rock art panels were used in this way; it is just one of a number of intriguing narrative possibilities.

We imagined this practice being undertaken at the table-like cup and ring marked boulder of Allt a’Choire Chireinich, on the slopes of Ben Lawers above Loch Tay. In this case the boulder and its rock art are faithful to the accurate archaeological *measured drawing*, the recording of which was previously described by Alex Hale in ‘The Act of Recording’.

◀ Pix and Derm, rock artists.  
© Alex Leonard





## Wrapping Up

*“These ceremonial monuments were powerful places, where interactions could have been mediated between the living and the dead, as well as other beings which almost certainly were thought to inhabit the Neolithic world”*

**Vicki Cummings, *The Neolithic of Britain and Ireland*, 2017, 230.**

Perhaps our rock artists were not looking up but were looking down – and if not exactly down, then perhaps squinting sideways? We have seen how the carvings of stags and hinds in Galicia could link to the natural world, and considered how the motifs could represent events in the night sky. Now we will explore the possible interpretation of Atlantic rock art as a mark or barrier between this world and others.

Passage tombs date from the middle Neolithic – from around 3500 BC to 3000 BC. They were built from stone – large stones were often used to form the external kerb, line the passage, form the burial chambers and act as lintels, while corbelling techniques were used to create the intricate roofs of the chambers. They were then covered by a large circular mound, which excavation often reveals to have been constructed as a series of encapsulating layers. Passage tombs were built in a number of distinct regions all along the Atlantic coast of Europe, although their distribution and concentration does not match that of Atlantic rock art. There were small, simple passage tombs, with passages of only a few metres in length, and a few large, exceptional passage tombs, with passages of up to 19 meters in length.

These large exceptional tombs often include intricately carved stones, decorated with a distinct artistic tradition known as **passage tomb art**. This tradition has distinct regional differences and clearly overlaps with (but is not the same as) Atlantic rock art. Occasionally, carvings of Atlantic rock art were built into the structure of some of passage tombs, often with the carved surface hidden from view. There are also a few places in Britain and Ireland, such as **Achnabreac** in Argyll, where passage tomb art motifs are found on rocks in the open landscape alongside cup and ring carvings. Passage tomb art and Atlantic rock art are clearly related, but they must have had different meanings and have been used in different ways.

◀ The panels at **Achnabreac** contain some particularly significant motifs from passage tomb art: two double spiral motifs, one triple spiral motif, and several uncupped rings.

© Historic Environment Scotland





The carved stones decorated with passage tomb art form an integral part of the tomb structure and appear to have been created specifically for use in these monuments. The best examples are in the Brú na Bóinn in Ireland – at **Newgrange** and **Knowth** – and in Brittany in France, but passage tomb art can also be found on Orkney and on Anglesey. Passage tomb art includes carved motifs that we rarely find in the open landscape, such as spirals, double spirals, lozenges, triangles, chevrons and zig-zag lines. These can be arranged into complex and elaborate designs on the surface of the stones. At the passage tomb of **Newgrange** in the Brú na Bóinn, constructed around 3200 BC, the ninety seven kerbstones that define the edge of the mound include thirty one that are richly carved and decorated. The most elaborate of these, the stone known as the Entrance Stone, has been executed in raised relief, where the background has been carefully pecked away to leave the design standing out. It may have been painted to heighten its effect. Together, the kerbstones seem to act as a tattooed skin, wrapping the tomb and its contents.

Passage tombs are not alone in being Neolithic monuments concerned with enclosure, defining ‘the area within and the area without’. The earthwork henges and stone and timber circles of the Late Neolithic all had similar effects. However, the archaeologists Vicki Cummings and Colin Richards have argued that “passage tomb architecture is a technology of binding or wrapping. Rather than the architecture emphasising thresholds [of passing from one place to another], the thresholds themselves indicate the wrapping” (2017, 239). Should the entrance stone at **Newgrange** be better described as the barrier stone?

“At the centre or heart of some of these Late Neolithic monuments” writes the archaeologist Vicki Cummings, “there may have been something so powerful that it needed to be surrounded by multiple protective layers. These could have been spirits, the dead, ancestors or any number of agents that could wreak havoc on the living if uncontained” (*The Neolithic of Britain and Ireland*, 2017, 230).

◀ Some belief systems have reference to *otherlands*: underworlds (both underground and underwater), sky realms and dream worlds. Could the hypnotic ripples formed by raindrops falling onto the surface of a pond be seen as emphasising the natural boundary between the air above and the water below?

© Matt Ritchie





Some belief systems have reference to *otherlands*: upperworlds of the sky, underworlds (both underground and underwater), spirit realms and dream states. Our Neolithic ancestors had complex belief systems. In the early Neolithic they were particularly concerned with what they considered to be the proper disposal of the dead, and in the middle and later Neolithic there was a growing interest in the accurate marking of the summer and winter solstices. Their ceremonial monuments were carefully situated within the landscape, often so that the surrounding hills, water or mountains perfectly encircled the site, emphasising its importance in the centre. Could Atlantic rock art have been placed to indicate the boundary between the natural world and an otherland elsewhere? A tattoo of significance on the skin of the landscape, placed to wrap or contain places where the otherland was considered to be particularly close?

## Conclusion

Like rings around a cupmark, the archaeology of Atlantic rock art is made of layers of objective evidence, subjective analysis and narrative interpretation. Each needs the others to make sense of the whole. The detailed and precise survey of rock art using digital documentation techniques is necessary to record and consider the rock art scientifically, while subjective analysis, personal observation and experiential processes are integral to our understanding and appreciation of the evidence. Narrative interpretation then helps us to explore the many different possible explanations for rock art and to connect with the original rock artists. By studying and thinking about how rock art connects both within itself and with the natural world, we can explore the cultural ideas and meanings behind the abstract motifs, complex panels and underlying frames.

◀ Does the spectacular entrance stone at **Newgrange** form a boundary between the land of the living and an *otherland* within? This high resolution visualisation was created from structured light scan data.

© The Discovery Programme





## Back to the Future

**ARCHAEOLOGIST KENNY BROPHY DESCRIBES SHARING HIS REDISCOVERY OF THE COCHNO STONE AT FAIFLEY IN DUNBARTONSHIRE**

Making your mark on rock involves intimate interaction: squatting or kneeling on the cold stone, keeping your balance with one hand, the other hand moving in harmony with the stone's surface, clutching a pebble tool. But the story of prehistoric rock art is not just set in prehistory. My work with the **Cochno Stone** explores the lives of those who marked this stone using penknives and paint. Such modern interactions are as much a part of the story of the Cochno Stone as the ancient activity that took place there – and most rock art sites have modern stories to tell, should we care to listen. And so at Cochno, over a period of thousands of years, people left their mark on this sandstone outcrop: cups and rings, letters and dates, footprints and lines.

The rock outcrop was fully cleared of soil and grass towards the end of the nineteenth century. During that clearance, dozens of cup-and-ring markings and scores of cups were recorded, along with a carved cross and two little footprints, both with four toes. The huge carved rock became a visitor attraction, a monument reborn, a status that was only enhanced by archaeologist Ludovic McLellan Mann who, in the summer of 1937, painted the entire surface of the Cochno Stone in oil paints. Prehistoric symbols were coloured green and white, while a grid of Mann's own devising covered the rest of the stone, with lines of yellow, red, and blue. Mann was interested in prehistoric measurements and cosmological stories of solar eclipses, and he used the Cochno Stone to make his point, the surface of the rock used like a classroom blackboard to illustrate his unusual theories.

This multi-coloured rock art site attracted more and more visitors, and people felt empowered to leave their own mark on the stone. *Urbanisation* crept closer in the

form of the estate of Faifley, and the Cochno Stone had an attentive local community once again, perhaps for the first time in thousands of years. It became known as the 'Druid Stone', a social venue for wedding photographs, picnic lunches, and play. Many who walked to the 'Druid Stone' left behind their own offerings: boys would break their penknives scratching their initials into the soft rock, while children misplaced marbles on the grassy fringes of the stone.

The ongoing use of this place troubled the landowner and the authorities, and in 1965 the Cochno Stone was buried beneath tonnes of soil. The outcrop could no longer be used or marked, but it was never forgotten. Over half a century later a team of archaeologists uncovered the Cochno Stone for ten days, and *digital documentation* techniques were used to record its surface in fine detail. Every mark of its fascinating *cultural biography* was included: the prehistoric symbols, the historic graffiti and initials, and the weather-beaten remnants of Mann's paintjob. The surface of the rock is like a songbook that has been written by many different people from very different cultural traditions over almost 6000 years.

So what does the future hold? The Cochno Stone has been covered over once again, but can now live on in different digital forms, and there is now the potential for an analogue replica to be made. But for me, the most exciting thing is that the latest generation of locals to fall in love with the Cochno Stone see it as part of their future, and not simply as part of the past.



# Learning Suggestions

LS1	World rock art
Key questions	What is prehistoric rock art? Where can it be found? Who carved it and when?
Activity	As a preliminary <b>individual homework task</b> , ask your learners to research an example of ancient rock art from anywhere in the world, such as Australian aboriginal art, Saharan rock art, or the Nazca Lines in Peru. They could write a brief description of the cultural context (who, where, what, when) and draw their favourite motif. Create a <b>classroom poster</b> around a world map, perhaps using pins and string to link to the motifs. Ask your learners to <b>present</b> their example.
Skills	Research and presentation.
Learning outcomes	Learners will have a general understanding of the term 'rock art' and be able to describe and present their findings to the class.

LS2	Map symbology
Key questions	Are symbols important in our everyday lives? Do symbols portray an accurate representation, or can they be ambiguous?
Activity	As a preliminary <b>group task</b> , ask your learners to consider everyday symbols and signs in their own lives. How many types of symbols can they come up with? Give each group a map and ask them to look at the table plan of symbols. Each group should discuss whether the symbols are figurative or how far they have evolved from the representative. Can the group find two symbols on the map that they believe do not reflect an accurate representation of its original meaning? Have they become abstract? Each group should then <b>present</b> their findings to the class.
Skills	Research, teamwork, observation, analysis and presentation.
Learning outcomes	Learners will have a clear understanding of the variety of symbols used in our everyday lives, and when, where and why they are used. They will also have an appreciation of the many symbols used on maps and can demonstrate a clear understanding of particular symbols.

LS3	Observing shapes
Key questions	Is this shape part of the natural or modern world? Is this a shape that would also have been seen thousands of years ago?
Activity	As an <b>individual homework task</b> , ask your learners to observe and sketch or photograph shapes they see when they are outdoors which resemble prehistoric cup and ring markings – dots, circles, spirals and grooves. Which ones could have been seen thousands of years ago by prehistoric people, such as tree rings, the moon, ripples in water, eyes, snail shells, grooves in rock and tree bark? Which ones are much more recent and part of our modern world, such as car wheels, drain covers, street signs and aeroplane vapour trails? Create a <b>classroom exhibition</b> of the observational sketches and photographs. Ask your learners to group their shapes into two categories – the natural world and the modern world.
Skills	Observation and awareness.
Learning outcomes	Learners will have a clearer awareness of how the natural world and materials can inspire the ideas and formation of symbols.

LS4	Introducing Atlantic rock art
Key questions	What is Atlantic rock art? What are motifs, panels and frames?
Activity	Introduce Pix and Derm, our original rock artists, and read both Lindsay's poem 'cup and ring' and Hugo's description of carving a cupmark aloud. Introduce your learners to a panel of Atlantic rock art (this could be local to you or simply one that catches your eye, although we recommend that you use <b>Achnabreac, Ormaig, Cairnbaan</b> or <b>Ballochmyle</b> ). Describe all the various motifs, using life size examples at a scale of 1:1 drawn on paper. Discuss the concepts of motifs, panels and frames. At this stage, your learners should be thinking about the creative, artistic aspects of rock art. As an <b>individual task</b> , ask your learners to draw a background rock frame on a sheet of A4 paper. Each frame should be drawn at a scale of 1:5 (ie a 20 cm square drawing will represent a 1 m square 'frame'). There should be between 3 and 5 fissures and cracks crossing each drawing. Now swap these drawings around the class. Ask your learners to fill the frame with motifs to create an imaginary panel for their <b>learning folder</b> . What motifs will fit where and why? Your learners should be consciously thinking about scale – how many motifs will fit?
Skills	Mathematics and creative arts.
Learning outcomes	Learners will have an understanding of the composition of Atlantic rock art – of individual motifs, of creating a panel and of the importance of the natural frame.



LS5	Atlantic rock art ‘grammar’
Key questions	What differences can I see to the rock art if I move or change the angle or lighting? Am I able to replicate the symbols when drawing them? Am I thinking about the frame of the natural rock surface too?
Activity	As <b>individuals</b> or in <b>pairs</b> , ask your learners to use <b>Sketchfab</b> to study one model of Atlantic rock art (you could set a number of choices for them beforehand, although we recommend that you use <b>Achnabreac</b> , <b>Ormaig</b> , <b>Cairnbaan</b> and <b>Ballochmyle</b> ). Explore the controls for moving the model and lighting it from different angles. Learners should screenshot the best view for illustrating the motifs, and recreate it as a ‘thumbnail’ image of the design (or part of the design), using black ink on an A5 piece of paper, taking a note of which model (or part of a model) they have drawn. You should remind them to draw any significant fractures within the rock too. Create a <b>classroom exhibition</b> using the thumbnails. Discuss where each design fits on a spectrum from ‘simple’ to ‘complex’. Remember, there is no right answer! The important things to discuss are: the unity of the design of the individual ‘normal’ motifs; unusual motifs; ‘connecting’ motifs or grooves; overlapping motifs; and the use of the natural rock itself to ‘frame’ the panel.
Skills	Observation, technical investigation, analysis and deduction.
Learning outcomes	Learners will be able to manipulate a 3D model using <b>Sketchfab</b> and demonstrate through screenshots or drawings at least two areas of change on their chosen model when moving or lighting the model. By the end of the activity, the class should have agreed at least some ‘simple’ and ‘complex’ examples, and have a good idea of the ‘grammar’ involved. They should now be thinking about the similarities and differences that they can see in Atlantic rock art panels.

LS6	Neolithic paints
Key questions	What are the differences in the texture of different stone / rock?
Activity	As an outdoor <b>group task</b> , ask your learners to explore the textures and colours of the materials that Neolithic artists might have used and to consider the surfaces, textures and colours of different rock types. Ideally, you will be able to choose and grind certain soft stones (such as sandstone and chalk) into paints, as small amounts of water can be added to the pigment to create a paint. An alternative option would be to explore the textures and colours outdoors, but then use coloured chalks and charcoal to grind to simulate pigment indoors. White chalk and red-brown pastels would represent colours available to Neolithic rock artists. Learners could use their Neolithic paints on the playground to create large rock art designs, or experiment with using individual boulders as a canvas. The imaginary designs should be photographed and / or included within their <b>learning folder</b> .
Skills	Investigation and creative arts.
Learning outcomes	Learners will produce a piece of art using paints made from natural pigments.

LS7	Atlantic rock art ‘rules’
Key questions	How do archaeologists try to understand rock art? Is each rock art site completely different in terms of their place in the landscape? Are there other archaeological sites close by in the landscape?
Activity	Analysing the location of rock art panels in their landscape ‘context’ helps archaeologists to get closer to understanding how rock art might have held meaning to the Neolithic people who created it. As a <b>classroom</b> or <b>group task</b> , discuss the ‘rules’ guiding the choice of location of rock art panels. Using a map of your local area, ask your learners where they would carve new rock art? Think about viewpoints (both high like hills and open like in a local park), gathering places (both formal like shops and cafes and informal like hangouts and dens), routeways (both obvious like main roads and hidden like shortcuts and pathways) and ‘special places’. Your map(s) will soon fill up with ideas! Working in <b>groups</b> , ask your learners to use <b>Google earth</b> to search for one of the four sites mentioned in the Introduction ( <b>Achnabreac</b> , <b>Ormaig</b> , <b>Cairnbaan</b> and <b>Ballochmyle</b> ), ensuring that each site is being studied by at least one group. Learners should gather as much information as they can, such as the elevation of the site (using contours as a gauge), proximity to rivers and other natural landscape features, proximity to other archaeological sites, and whether or not there are any open views from the site (and in what direction / overlooking what). They should write a short descriptive piece outlining their investigation for their <b>learning folder</b> .
Skills	Research, investigation, analysis, teamwork, observation, literacy and critical analysis.
Learning outcomes	Learners will have a clearer understanding of the variety of specific landscapes and the rock art sites within those landscapes, and an appreciation of the methods used by archaeologists to understand landscape ‘context’.



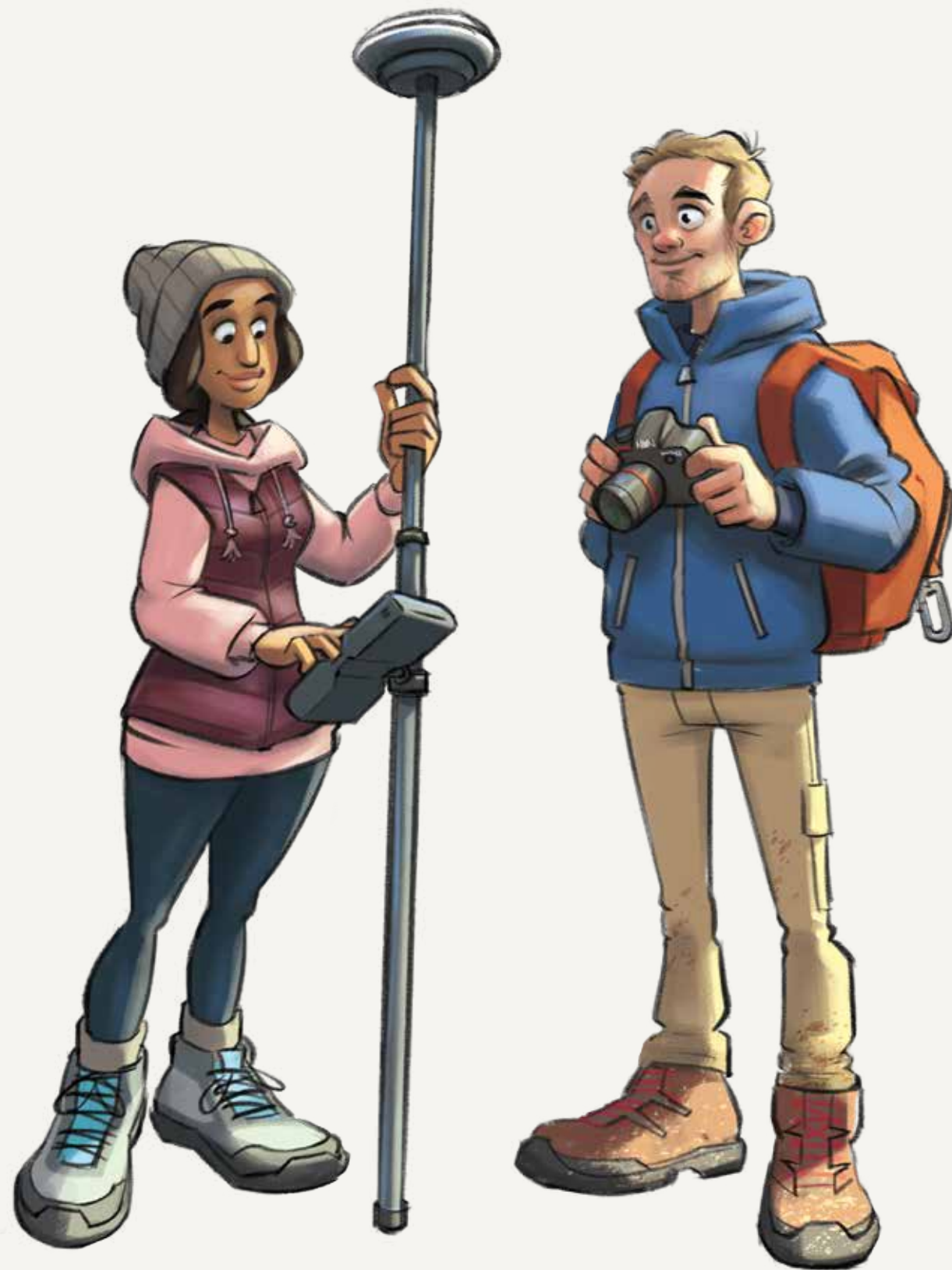
LS8	Landscape recording
Key questions	How are rock art sites recorded?
Activity	<p>If the class can visit a rock art site and practice <b>outdoor archaeological learning</b>, teachers will need to download the ScRAP site report for the rock art panel they will be visiting. The report will contain all the details for that site. Teachers can also download and adapt the ScRAP recording form. Not all the recording form would have to be used, just certain areas chosen by the teacher. Before their visit, learners should also research the site using <b>Canmore</b> and <b>Sketchfab</b>.</p> <p>At the site, as a task undertaken in <b>pairs</b> or in <b>groups</b>, learners can create their own objective record of the site, taking accurate measurements and describing the landscape context (its position in landscape, the terrain and the viewsheds) and record their findings (remember, the landscape features may have changed since the original record was made). Learners can then study the rock art panel and (depending on how much of the panel they can see) count the symbols, checking their count with the original record. Learners can choose a section of the rock art panel and draw the symbols and take photographs. They could also draw the panel within the landscape (location sketch). All of the evidence gathered should be added to their <b>learning folder</b>.</p>
Skills	Research, technical investigation, fieldwork, observation, recording and illustration.
Learning outcomes	Learners will be aware of the work completed by ScRAP recording teams and have completed a recording of their chosen rock art panel, including illustrative drawings of the symbols and accompanying photographs.

LS9	Objective record and subjective analysis
Key questions	What are the differences between objective recording, subjective analysis and narrative interpretation?
Activity	<p>The seven short <b>personal features</b> can be used as short reading tasks in the classroom. Ask your learners (<b>individually</b> or in <b>pairs</b>) to read and discuss one of the short features. They should research and explain the <b>keywords</b>, and decide if their archaeologist or rock art researcher is most interested in creating an objective record, thinking about subjective analysis, or exploring narrative interpretation (or a mixture of all three).</p> <p>Your learners should <b>present</b> their assessments to the class. Remember, 'objective' and 'subjective' may sound very similar, but they mean two very different things. 'Objective' refers to information or analysis that is firmly based on factual evidence, while 'subjective' refers to information or ideas that are based on personal opinions. The methodology of archaeology requires the objective study of material culture alongside its subjective analysis.</p>
Skills	Research, investigation, analysis, teamwork, observation, literacy and critical analysis.
Learning outcomes	Learners should become familiar with the three interwoven concepts of objective recording, subjective analysis and narrative interpretation. They will also have a insight into individual careers in archaeology and rock art research.

Theme	Keywords
Archaeological recording techniques	digital documentation, terrestrial laser scanning, photogrammetry, measured drawing
Observation and critical thinking	objective, subjective, critical thinking, embodied, disembodied, simple, complex, quintessential motifs
Landscape and changing land use	landscape, archaeological record, Geographic Information Systems (GIS), agricultural improvement, afforestation, urbanisation
Social values and presentation	conservation, heritage interpretation, archaeological narrative, cultural biography

LS10	A Song of the Sky
Key questions	<p>What natural phenomena and events could have appeared 'mystical' to the Neolithic people?</p> <p>What is a meteor, and what is the difference between a meteor shower and a meteor storm?</p> <p>What is a solstice?</p>
Activity	<p>Describe and discuss the various astronomical and atmospheric phenomena explored in <i>A Song of the Sky</i> – from comets and meteors to 22° halos and brocken spectres. Perhaps your learners have seen similar things themselves? Perhaps a meteor shower is happening soon? Describe the relationship between the winter solstice and <b>Newgrange</b> and <b>Maeshowe</b>.</p> <p>As an <b>individual task</b>, ask your learners to choose a significant event (such as an asteroid 'bump' or 'graze', a meteor shower or storm, or a comet or supernova) or date (such as the summer or winter solstice). They should research the event and imagine themselves as an apprentice rock artist, writing a creative <b>short story</b> describing this event and how it might have been understood by our Neolithic ancestors (who lived without the scientific knowledge we now take for granted). Remember to explain the narrative approach – that this is an exploration of only one potential interpretation of the meaning(s) of Atlantic rock art.</p>
Skills	Research, observation, creative arts and literacy.
Learning outcomes	Learners will have researched, planned and organised their narrative to produce a short story, empathising with the Neolithic experience.





LS11	An Archaeological Narrative
Key questions	How does light affect the rock surface? How would the changing light have affected the Neolithic people and their use of monuments?
Activity	As an <b>individual task</b> , ask your learners to choose a <b>Sketchfab</b> model and then simulate light over the course of a day – from low oblique light from either side, to high light from above. Look at what effect the light might have had on the rock art and then consider what that might mean in the context of a people who built monuments where sunlight was an integral aspect of their use and meaning. Discuss <i>Archaeological Narratives</i> and the ‘Sound and vision’ illustrations: the firelit scene with animated symbols at <b>Ballochmyle</b> ; the sound of carving at <b>Ormaig</b> ; and the moonlit night sky above <b>Achnabreac</b> . Discuss the use of the original motifs and panels to root the narrative in archaeological reality. Ask your learners to illustrate their short story (from <b>LS10</b> ) with an <b>archaeological narrative visualisation</b> using the original motifs from their objective <b>Sketchfab</b> model, their chosen angle of light and a narrative theme. They should add their short story and associate visualisation to their <b>learning folder</b> .
Skills	Research, investigation, analysis, interpretation and creative arts.
Learning Outcomes	Learners will have an awareness of how light affects the surface of the rock art and an appreciation of the methodology used to create an archaeological narrative.

LS12	Reflections
Key questions	Do archaeologists have enough information to understand what rock art is? What can we understand about rock art from the existing information?
Activity	In this final <b>group activity</b> , ask each group to consider and reflect on their learning so far: the evidence in this resource, their previous exercises, the results of their research, their experience and records resulting from site visits, and all their creative artwork, drawings and photographs. Remember, a good rock art researcher should use all three of the interwoven threads running through our investigation: objective recording, subjective interpretation and narrative explanation. Ask your learners to compile their evidence and put forward their best examples of the following: <ul style="list-style-type: none"> <li>• objective recording (from <b>LS7</b> and / or <b>LS8</b>)</li> <li>• subjective interpretation (<b>LS9</b>)</li> <li>• narrative explanation (<b>LS10</b> and <b>LS11</b>)</li> </ul> Each group may like to <b>present</b> their work as a Power Point.
Skills	Dissemination, analysis, discussion, listening to others, interpretation and critical analysis.
Learning outcomes	Learners will have reflected and consolidated their learning, and will have a clearer understanding why there are many different explanations given for ‘rock art’.



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## Websites

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- Future Thinking on Carved Stones of Scotland: <https://scarf.scot/thematic/future-thinking-on-carved-stones-in-scotland/>
- Scotland's Archaeology Strategy: <http://archaeologystrategy.scot/>
- Boyne to Brodgar Initiative: <https://prehistoric-scotland.com/>
- Rock Art from around the World – The Bradshaw Foundation: <http://www.bradshawfoundation.com/>
- Sketchfab: <https://sketchfab.com/>





## The Rock Art Code

Closely examine the rock surface looking for visible motifs. Think about the frame and the panel. Take pictures or film and make sketches. Think about the location and the surrounding landscape. And imagine the original rock artists at work.

But don't remove any turf, lichen or moss from the panel. Don't use chemicals or any sharp implements or abrasive materials to clean the surface. And don't use chalk or paint to highlight the carvings. This could all cause damage to the rock art.

Leave the panel as you found it.

## The Rock Art Linocuts

Artist Liz Myhill printed the pale greys of the rock surface using a lino block with jigsaw pieces cut out for the lichens and then fitted back in, enabling three different colours to be printed each time. She then used another block to cut and print the carvings and fissures in a transparent dark grey, allowing the texture of the rock surface to shine through. The colourful lichens create a vibrant contrast between the cultural heritage of the past and the natural world of today, while the transparent ink ensures that the motifs and frames remain connected to the rock surface.

## Imagine the world of the Neolithic rock artists and investigate their mysterious and abstract symbols

Scotland's Neolithic rock art comprises an outdoor gallery several thousand years old, part of a shared cultural heritage that can be found all along the Atlantic coastline of Europe.

Using an inspirational blend of objective recording, subjective analysis and narrative interpretation to encourage both critical thinking and creative arts, the authors draw on the work of leading archaeologists and rock art researchers to describe a time and tradition far removed from today. As both illustrated reference material and creative learning resource, the practitioner is prepared with detailed knowledge and innovative ideas for their learners.

A fresh take on a fascinating subject, this resource will be of interest to teachers, archaeological educators and anyone with an interest in the presentation and interpretation of our ancient past.

