Antiquity 2025 Vol. 99 (404): 337–353
https://doi.org/10.15184/aqy.2024.217

Research Article

Sun stones and the darkened sun: Neolithic miniature art from the island of Bornholm, Denmark

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The discovery of more than 600 whole and fragmentary engraved stone plaques in the early third millennium BC infill from the ditches of a causewayed enclosure at Vasagård, on the Danish island of Bornholm, represents a unique find in Neolithic miniature art. Termed 'sun stones' in reference to the rayed images that characterise many of the plaques, the stones were deposited en masse over a short period. This article offers a fundamental classification of the rich imagery captured in the engravings and examines its potential function at a time of possible climatic crisis that impacted not just Bornholm but the wider northern hemisphere.

Keywords: North-west Europe, Funnel Beaker, Neolithic art, typology, 'sun stones', volcanic eruptions, climate change

Background and recent excavations

While miniature art in the form of engraved plaques is abundant from the late fourth and third millennia BC in Iberia, comparable finds are rare in the north-west European Neolithic,

Received: 21 February 2024; Revised: 9 August 2024; Accepted: 13 September 2024

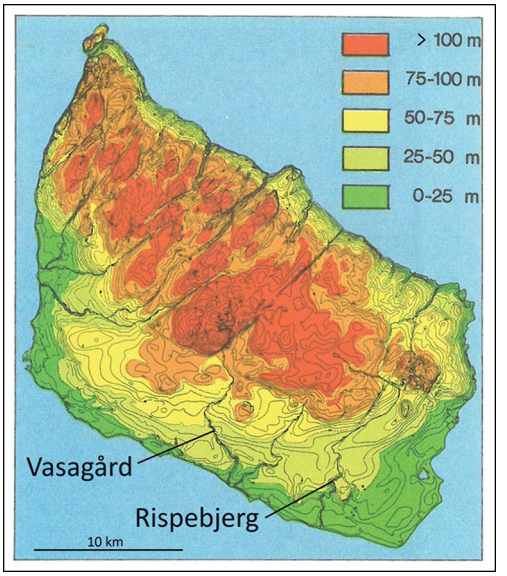

Figure 1. Bornholm with the location of the two sites mentioned in the text (after Meesenburg 1972: 5).

characterised by a few prominent examples from Orkney and southern England (Lillios 2008; Thomas 2016; Jones & Díaz-Guardamino 2019). However, substantial numbers of engraved stones, generally labelled 'sun stones' after the rayed images that characterise many of them, excavated from two locations on the Danish island of Bornholm in the Baltic Sea are expanding the north-west European record. Vasagård and Rispebjerg are the only two Neolithic enclosure sites identified on Bornholm (Figure 1). While causewayed enclosures are found only at Vasagård, both sites include extensive palisaded enclosures that can be dated to the penultimate phase of the Funnel Beaker culture on the island, the Vasagård phase, *c.* 2900–2800 BC (corresponding to the Store Valby phase or Middle Neolithic V in southern Scandinavia, Nielsen & Nielsen 2022: 124–28). In 1995 engraved stones started to appear during excavations at Rispebjerg, where more than 20 such specimens have now been found (Kaul *et al.* 2002, 2016). Fragments of similar engraved stone plaques also appeared in excavations at Vasagård between 2013 and 2018, which mainly focused on the ditches of the western causewayed enclosure. This article presents a fundamental classification of this rich and unique collection of Neolithic art and offers an interpretation of its function and a possible reason for its deposition during a cold climate event *c.* 2900 BC.

Vasagård is situated on the lower-lying southern part of Bornholm, which is composed of a till plain with pre-Quaternary sediments dominated by sandstone, shale and unconsolidated or poorly consolidated sediments (Frei & Frei 2013). As a so-called 'double enclosure site', Vasagård comprises two neighbouring late-fourth-millennium BC causewayed enclosures with opposite orientation, known as Vasagård East and West (Figure 2). The two enclosures have semi-circular double ditch circuits and are separated by the Læså river valley, which forms an abrupt vertical river cliff to the west that truncates Vasagård West. To the east, a steep slope rises to Vasagård East, located on a hill. Finds from the ditches suggest that both causewayed enclosures were established by people of the Funnel Beaker (Trichterbecher) culture in the Early Neolithic around 3400 BC. The stratigraphy and the finds clearly show long-term use of the enclosures as the ditches were recut and filled in during the succeeding Middle Neolithic phases, *c.* 3000–2900 BC, whereupon the ditches went out of use (Nielsen *et al.* 2024). Following the last major backfilling of the causewayed enclosure ditches, a series of palisades were erected to enclose most of the site, both East and West, and a series of circular post-build structures ('timber circles') was constructed. These features are probably contemporary with each other and date to 2900 BC or shortly thereafter (Nielsen *et al.* 2024).

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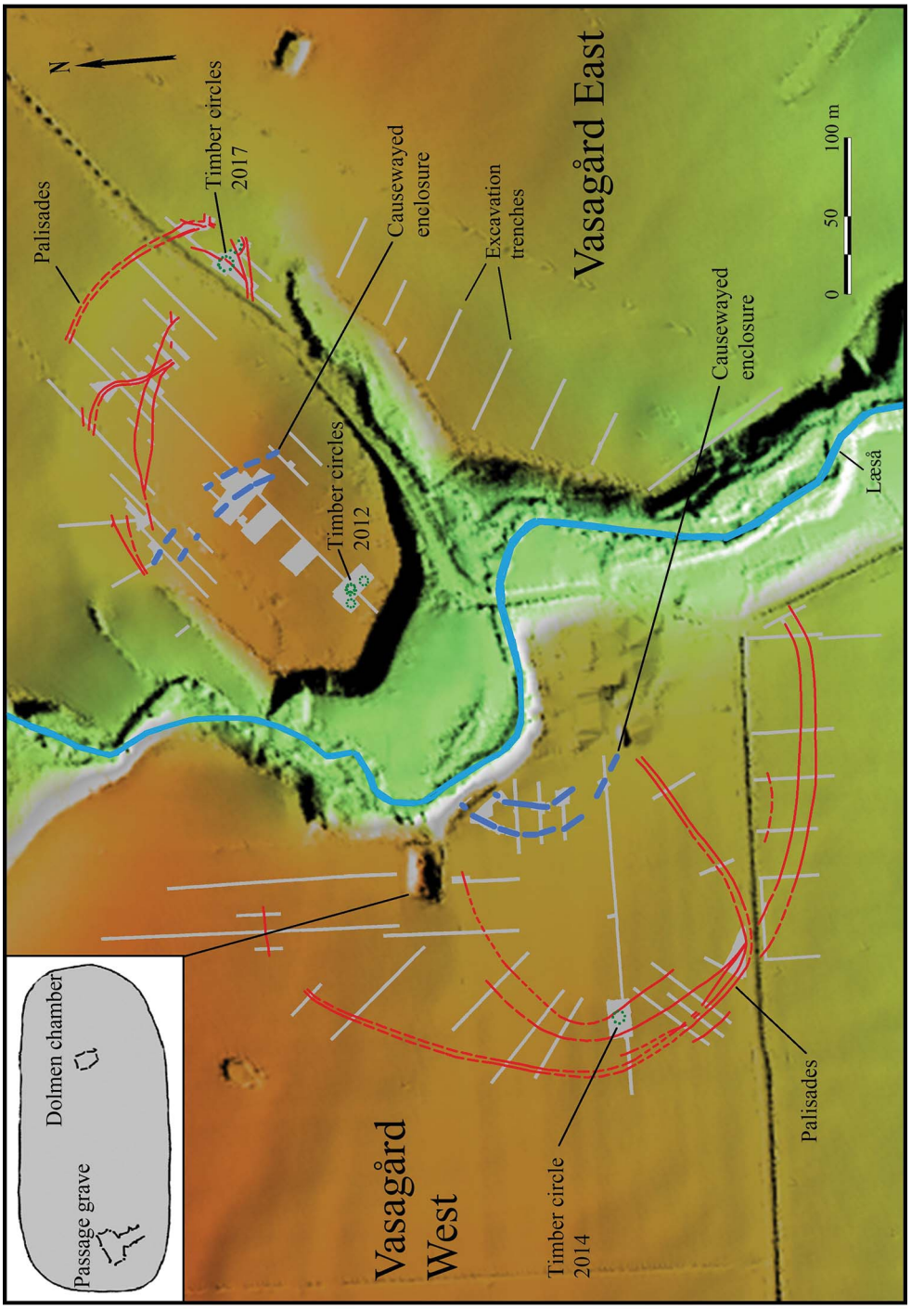

Figure 2. Survey map of Vasagård (basemap: lidar map from the Danish Geodata Agency; graphics by Michael S. Thorsen).

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Context, date and material

A total of 614 crafted plaques and plaque fragments carrying a variety of decorative motifs were found during excavations at Vasagård West between 2013 and 2018. The vast majority derive from the ditches of the causewayed enclosure, though a few were found in postholes belonging to one of the timber circles and some come from a cultural layer deposited in a shallow depression just next to the causewayed enclosure.

In the ditches, the engraved stones are delimited to a specific recurring layer (Figure 3). The stratigraphy, comparable between ditches, indicates a sealing of the lower layers of the ditches by a stone pavement dated by pottery inclusions to *c.* 3000–2900 BC. Most engraved stones were found in the lower section of the darker infilling layer that sits on top of the pavement (layer 2). This infill is dated by ceramic typology to the local Vasagård phase of the late Funnel Beaker culture, *c.* 2900–2800 BC.

That the engraved stones belong to a brief horizon around 2900 BC is confirmed by finds from the postholes of a circular post-build structure in trench XXIV, which contained engraved stones, pottery, charcoal and the remains of a decorated daub that likewise showed sun motifs (Figure 4). The circle of eight postholes in trench XXIV is 8m in diameter, surrounding a flat (altar?) stone that measures 1.00 × 0.75m and rests on a layer of crushed granite. The structure is interpreted as a cult building that functioned for a short time, after

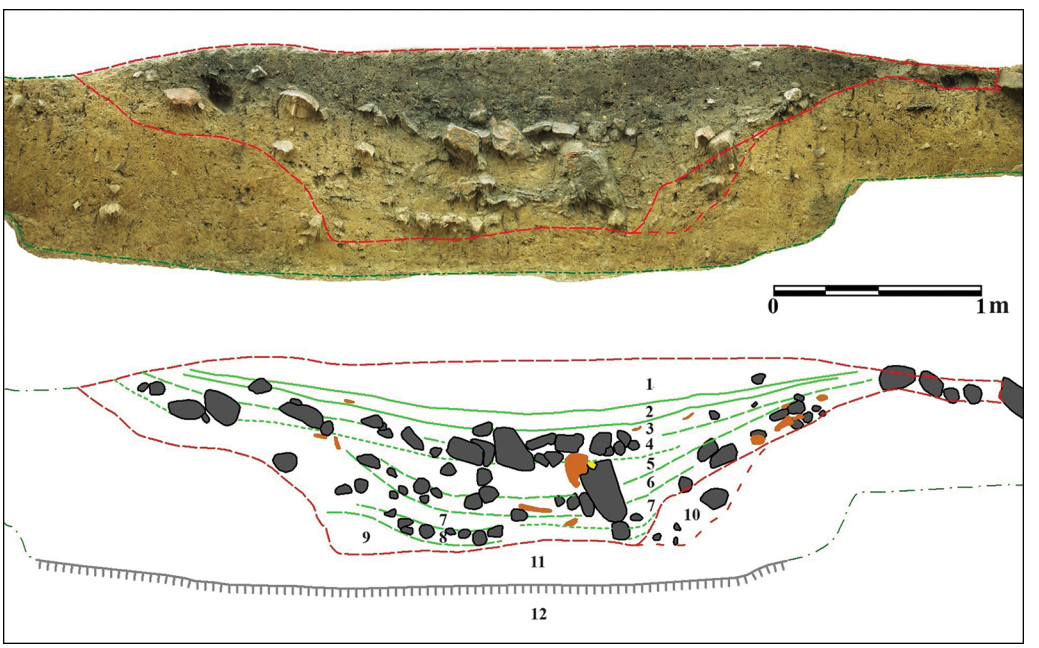

Figure 3. Section of ditch XIV of the causewayed enclosure at Vasagård West. The upper layer (1) with settlement debris from Middle Neolithic V, c. 2900–2800 BC, has a lower, more find-rich part (2), where most of the engraved stones have been found. Beneath this a stone layer (3–4) seals the lower deposits (5–10), which date from the Early Neolithic II to the Middle Neolithic III (c. 3400–2900 BC). At the bottom, redeposited morainic subsoils (9–10) consisting of clayey sand and gravel (11), rest upon solid bedrock of Upper Ordovician shale (12). The brown shapes represent pottery (photograph and graphics by Michael S. Thorsen).

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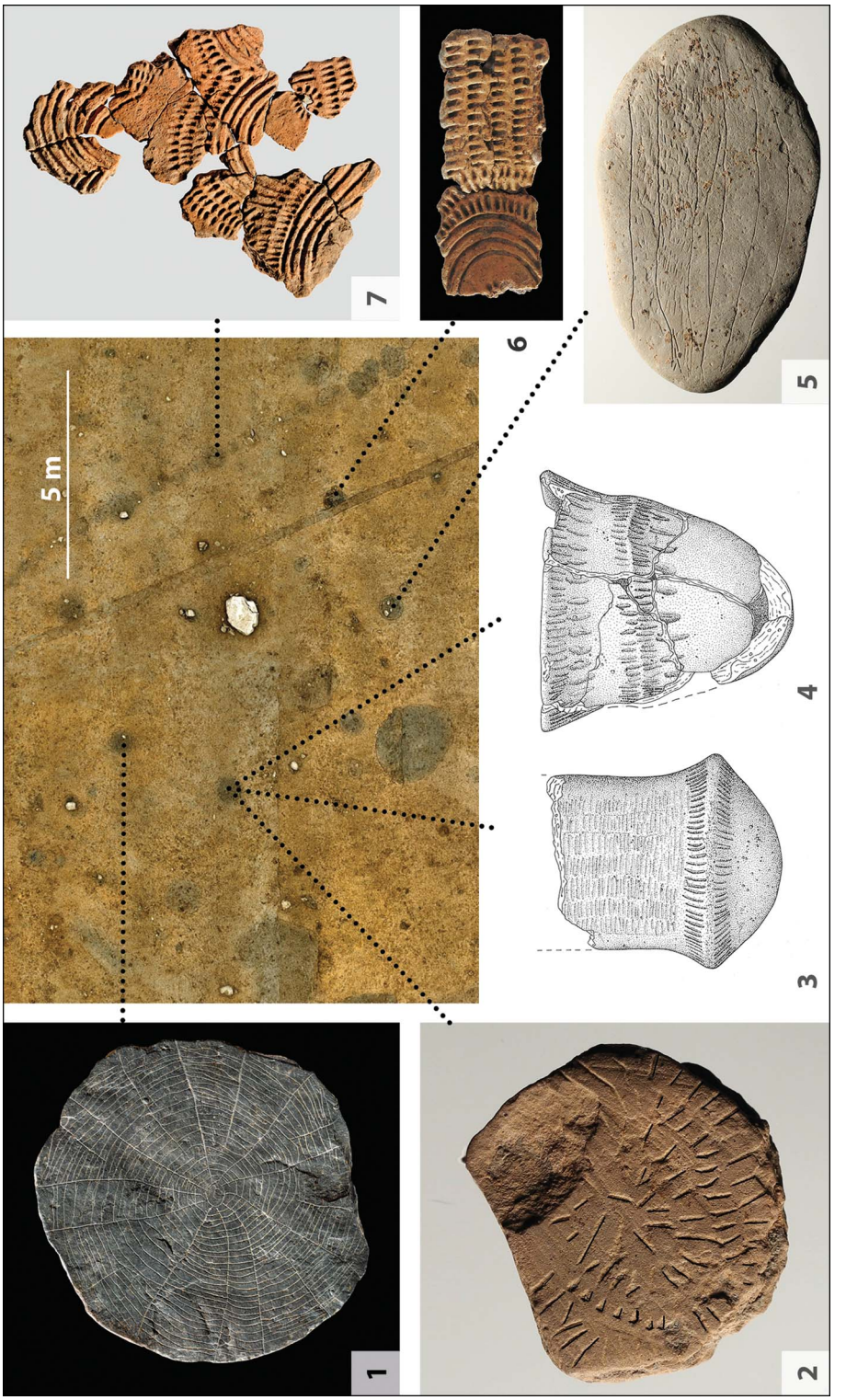

Figure 4. The circular structure in trench XXIV at Vasagård West and the objects found in the postholes: engraved stones (1, 2 & 5), pottery (3 & 4) and decorated burnt daub (6 & 7) (3 & 4 drawn by Freerk Oldenburger; photographs by John Lee, The National Museum of Denmark & René Laursen, Bornholms Museum).

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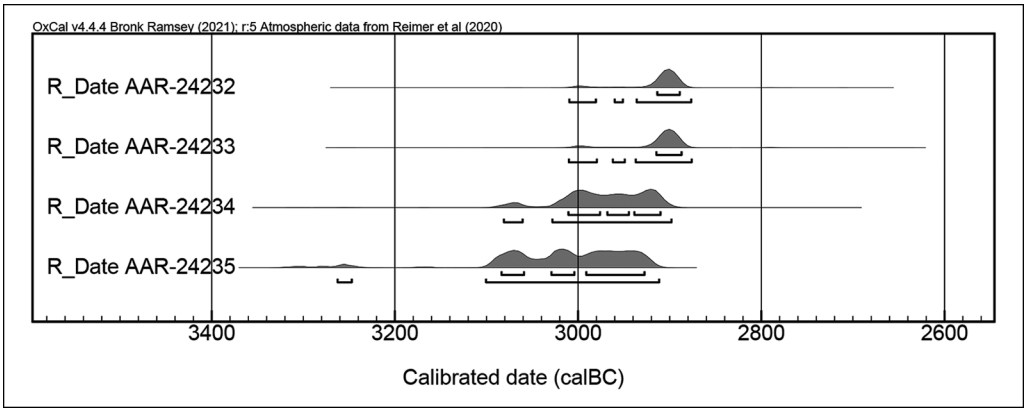

Figure 5. Calibrated radiocarbon dates for the circular structure in trench XXIV (figure by authors).

which objects and fragments of ornamented daub were deposited in the empty postholes. Eight such circular structures have been documented at Vasagård, while at least 24 are known from Rispebjerg (Nielsen *et al.* 2014, 110, fig. 5). The pottery from the circular structure in trench XXIV at Vasagård comprises vessels from two pottery traditions, one reminiscent of the finely decorated pottery known from Scanian passage graves (Figure 4, no. 3; e.g. Bagge & Kaelas 1950: pls. VI & VII), and the other from the more simply decorated Vasagård style (Figure 4, no. 4). The presence of both pottery traditions indicates that the engraved stones were deposited at the transition to the Vasagård phase of the late Funnel Beaker culture. A date *c.* 2900 BC is further supported by four radiocarbon dates on charcoal from the postholes (Figure 5).

The engraved stones are made of different materials. Some are made of the hard, black shale from the Upper Ordovician bedrock at Vasagård, and which in some places is found less than 1m below the surface of the topsoil. Softer types of shale with a content of clay and fine sand, some in the shape of water-rolled pebbles, are also used, as well as naturally shaped pebbles of hard, fine-grained rock. Despite a natural tendency to delaminate, shale was clearly the preferred material for producing engraved stones as around 95 per cent are made of some kind of shale. Thin pieces of quartz (n = 4) and flint (n = 1), chipped into circular shapes without decoration, are also found at Vasagård.

Ornamentation and typology

Around 70 per cent of the engraved stone pieces from Vasagård West are fragments of which many are less than a centimetre in size with incised ornamentation. The more complete plaques are a variety of uneven shapes and sizes. To establish any meaningful categorisation of this diverse material, only the ornamentation provides a point of departure. The fact that most of the engraved stones are fragmented does, of course, make categorisation of small individual pieces difficult, which has resulted in a substantial residual group, but the limited range of recurring motifs allows us to establish a general typology based on a visual, qualitative identification of motifs (Figure 6, Table 1).

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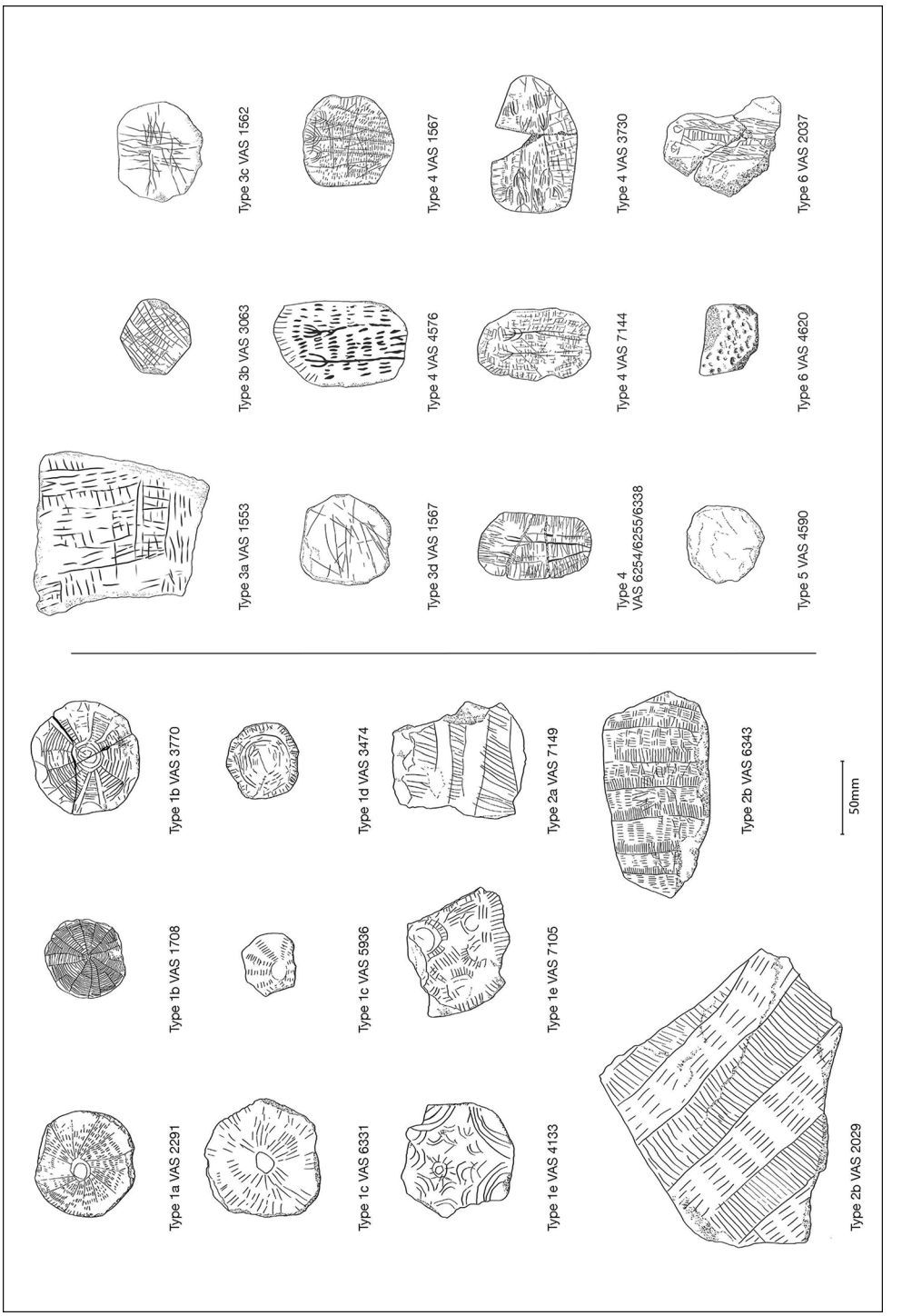

Figure 6. The engraved plaques divided into types. VAS 1567 has a double motif and is depicted from both sides (type 3d and type 4) (drawings by Bente Stensen Christensen).

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Table 1. The number of engraved stones and fragments divided by type, subtype and material (total: 388).

	Type 1					Type 2		Type 3							
	a	b	c	d	e	a	b	a	b	c	d	Type 4	Type 5	Type 6	Total
whole	16	8	13	5	1	7	2	0	4	2	50	17	35	0	160
fragments	56	7	21	3	1	48	17	5	23	13	5	21	3	5	228
shale	72	15	30	7	2	51	18	5	24	13	48	36	33	4	358
pebble	0	0	4	1	0	4	1	0	3	2	7	2	0	1	25
other	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5

A total of 388 plaques and plaque fragments from Vasagård West can be assigned to six motif types. All types vary in the skill in which engravings were executed, from seemingly quick, rough sketches to more time-consuming, meticulous specimens. In addition to the defined motifs, an ornamental edge is present on more than 40 per cent of the incised plaques that have preserved rims. Predominantly, these ornaments consist of short, radial strokes, here referred to as simple rim ornaments. In a few instances, semicircles are used instead (cf. Figure 6: VAS 3770). A correlation between shape and motif was already apparent at the time of excavation, indicating a division in two main categories: circular plaques with sun motifs (type 1) and oval or sub-rectangular plaques with plant motifs (type 4). Type 2 and 3 plaques are more heterogeneous in shape.

Type 1

Sun motifs (131 pieces). This type comes in many variants but usually comprises incised lines (rays), including concentric circles, emanating from a circular central motif. Five subtypes can be identified based on differences in the indication of the rays.

a. The rays are made up of radiating bands filled with transverse or longitudinal strokes, some of them separated by empty spaces (72 pieces, Figure 6: VAS 2291). Simple rim ornaments occur on 26 of 52 pieces with a preserved rim.
b. The rays are made up of radiating bands filled with transverse strokes in a type of 'ladder' pattern, some with empty spaces in between. Some of the meticulous specimens within this category bear resemblance to a spider's web (15 pieces, Figure 6: VAS 1708). Four of 10 pieces with a rim preserved have simple rim ornaments, while one piece has semicircles instead (Figure 6: VAS 3770).
c. The rays are indicated by multiple transverse or longitudinal long or short strokes (34 pieces, Figure 6: VAS 6331; VAS 5936). Three pieces show this pattern on both sides and of 32 pieces with rims preserved, 11 have simple rim ornaments.
d. A circle or concentric circles without indication of rays (eight pieces, Figure 6: VAS 3474). On four of the plaques the circle motif is irregular. In one instance the circle motif is incised on the rear side of a plaque with a type 1b motif (see Kaul *et al.* 2016: fig. 15a & b). Two of six pieces with their rims preserved carry simple rim ornaments.

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e. A sun motif surrounded by concentric semicircles (two pieces). One piece (Figure 6: VAS 4133) is nearly complete, but the rim is broken off on one side. The sun with rays is in the middle, and concentric semicircles ornament the rim in a manner comparable with contemporaneous clay discs (see below). Around the sun, there are more but smaller concentric semicircles. The other piece (Figure 6: VAS 7105) is a fragment showing the sun surrounded by concentric semicircles that are also acting as suns, sending their own rays towards the central sun. Here, there is a simple ornament along the rim. Two similar motifs have also been recorded at Rispebjerg (cf. Kaul *et al.* 2002: figs. 14d & 15c).

Type 2

Bands (74 pieces). This type corresponds to the rays defined in types 1a and 1b but the bands run parallel and thus do not emanate from a common centre. Empty spaces can appear between the bands. Based on the infilling, two sub-types can be defined.

a. Bands filled with transverse strokes in a type of 'ladder' pattern (55 pieces, Figure 6: VAS 7149). This type is observed at high frequency among fragments, which may be broken off stones with regular sun motifs such as types 1a and 1b. Of 11 pieces with the rim preserved, four have simple rim ornaments. Some of the stones with this motif are difficult to differentiate from stones with type 3b motifs.
b. Alternating bands filled with transverse and longitudinal strokes. Some of the most meticulously ornamented plaques belong to this type (19 pieces, Figure 6: VAS 2029; VAS 6343). Some of the fragments may be broken off plaques of type 4, where the same alternating bands with longitudinal and transverse strokes occur. Two of six pieces with the rim preserved show simple rim ornaments.

Type 3

Lines and line groups (102 pieces). Lines and strokes come in a variety of lengths and orientations and make the basic component of most motifs, yet they often constitute certain recurring geometric patterns that can be defined as follows.

a. Alternating groups of longitudinal and transverse strokes forming a 'patchwork' pattern (five pieces, Figure 6: VAS 1553). One of two pieces with the rim preserved has simple rim ornaments. This pattern also occurs on plaques of type 4 (Figure 6: VAS 7144).
b. Crossing lines forming chequered patterns (27 pieces, Figure 6: VAS 3063). One fragment has type 3a decoration on one side and type 3b decoration on the other, while two pieces have type 3b decoration on both sides. Three of 11 pieces have preserved rims showing simple rim ornaments, another has semicircles along the rim.
c. Central line with shorter, adjacent or crossing lines and rows of short, parallel lines or strokes (15 pieces, Figure 6: VAS 1562). Three of six pieces with the rim preserved have simple rim ornaments.

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d. Rounded plaques with seemingly random lines not forming any identifiable pattern (55 pieces, Figure 6: VAS 1567). No pieces carry rim ornaments. VAS 1567 has type 3d ornamentation on one side and type 4 decoration on the other.

Type 4

Plant motifs (38 pieces). Plaques with stylised plants or straw-like figures in the form of simple, straight lines ending in symmetrically curved, lateral extensions probably imitating leaves or the ears of cereals. In its simplest form, the motif is a trident-like figure made of a straight line and an arch, but more arcs are usually present making a more elaborate 'flower' or 'spike' motif. This motif can occur either at one end or at both ends of the straight line, which, according to this interpretation, forms the stem. Longitudinal or transverse strokes often fill the empty space between and around the plant motifs. In eight cases the background is filled with short strokes that run parallel to the central motif (Figure 6: VAS 4576; VAS 1567). In 15 cases there are transverse lines often forming a ladder pattern (Figure 6: VAS 6254/6255/6338), and in eight cases there are both parallel and transverse lines, some in separate registers, others combined and forming a chequered pattern (Figure 6: VAS 7144). One plaque with a chequered pattern has multiple motifs that may represent separate decorative acts (Figure 6: VAS 3730, cf. Kaul *et al.* 2016: 19). Other motifs may be hidden in this complex decoration, such as geometric renderings of fields (Kaul *et al.* 2016: 22). This interpretation may apply to other motifs as well. Twelve of the 32 pieces with the rim preserved have simple rim ornaments.

Type 5

Blank plaques (38 pieces). Rounded plaques that do not carry any recognisable incisions and are seemingly left blank (Figure 6: VAS 4590). The lack of incisions might in some cases be due to delamination of poor-quality shale, but it is also possible that the blank pieces were prepared for decoration (potential type 1) yet ultimately deposited without it. The lack of ornamentation itself could also have been significant and thus intentional from the beginning. This assumption is supported by the presence of four circular, chipped plaques made of quartz and a similar chipped plaque made of flint, none of which bear any incisions.

Type 6

Other (five pieces). This group is defined by single pieces showing unique motifs that do not fit into the five types outlined above. One piece (Figure 6: VAS 4620) is covered by what appear to be small cup-marks, which echo the marked concentration of cup-marked stones at Vasagård, some of which are securely dated to the early third millennium BC (Iversen *et al.* 2022). The motif on another piece (Figure 6: VAS 2037) may be interpreted as two anthropomorphic figures—composed of two circular head-like marks at the end of curved bodies made of lines and ladder patterns—or as a variant of the plant motif that depicts closed flowers.

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Residual group (226 pieces)

There remains a large, heterogeneous group of irregular pieces of shale too small or too fragmented to be attributed to any of the above types. Some are clearly fragments of larger plaques—there are, for example, at least 29 identifiable rim fragments—while others bear only a few incised strokes or lines, insufficient for a positive classification.

Discussion

Despite a degree of variety in ornamentation, suns and plants (type 1 and 4) are the motifs most frequently identified on the engraved stones. Not including the residual group, sun and plant imagery (Figures 7 & 8) constitute 44 per cent of the motifs, rising to 48 per cent if the blank plaques are also excluded. The choice of these motifs might not seem surprising given the date of the artefacts; Neolithic societies relied on the sun for the successful growth of their crops and thus for the continued prosperity of the families dependent upon each harvest. It does not, therefore, seem unreasonable to consider the engraved stones as fertility offerings, their deposition at Vasagård an invocation to secure the growth of crops. The virtual absence of figurative imagery in the archaeological record of the north-west European Neolithic highlights the exceptional nature of the stone plaques from Vasagård. Sun motifs also appear on contemporaneous clay discs from Vasagård East (Figure 9), and the small rosettes with burnt bone inserts on the decorated daub that once embellished one of the circular post-built structures at Vasagård arguably again represent suns (Figure 4, no. 7; Nielsen *et al.* 2015: fig. 14; Iversen *et al.* 2024).

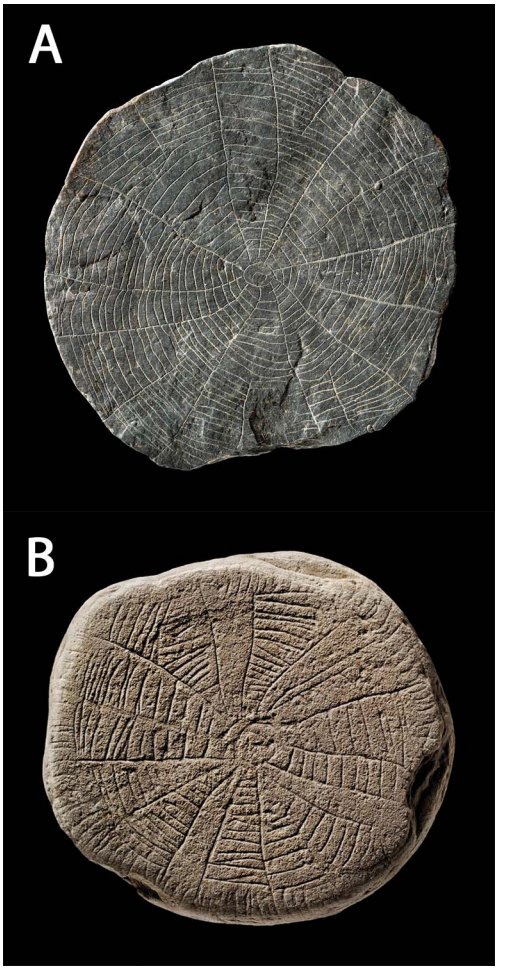

Figure 7. Plaques with sun motifs. A) VAS 1708: 57 × 53mm; B) VAS 437: 47 × 43mm (photographs by John Lee, The National Museum of Denmark).

Given the distribution of the engraved stones in the ditches at Vasagård West, it is likely that they were deposited on only a few successive occasions or even during a single event. Despite the brevity of the deposition event(s), the use of at least some of the plaques seems to have been more extensive. Extended biographies are indicated by wear; some plaques appear

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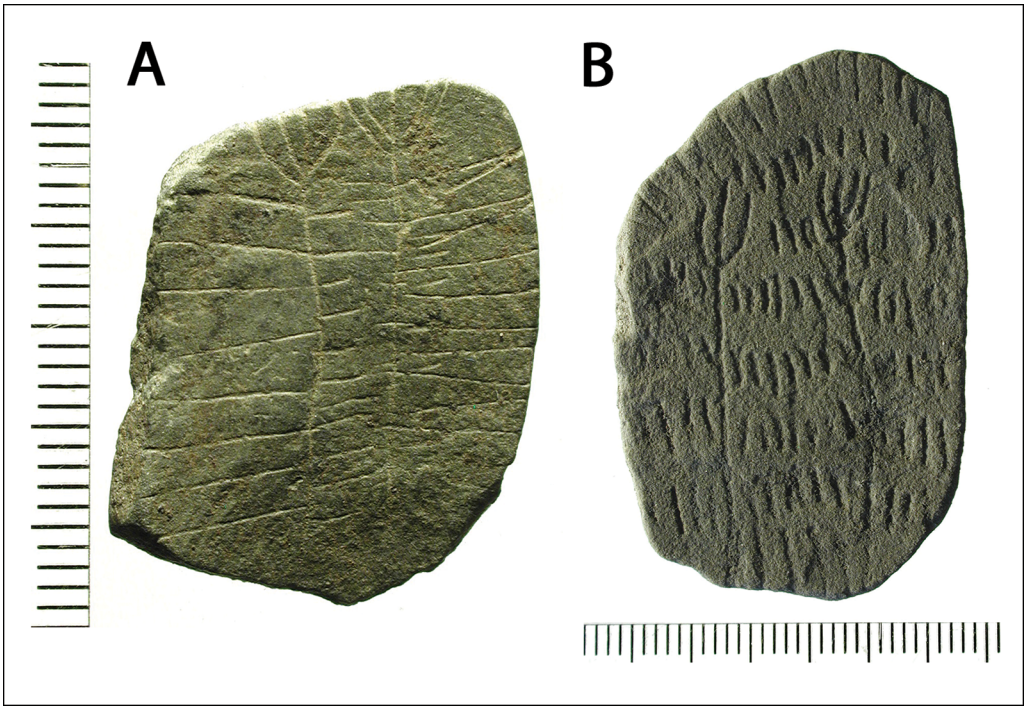

Figure 8. Plaques with field and plant motifs. A) VAS 3068: 26 × 21mm; B) VAS 4576: 46 × 29mm (photographs by René Laursen, Bornholms Museum).

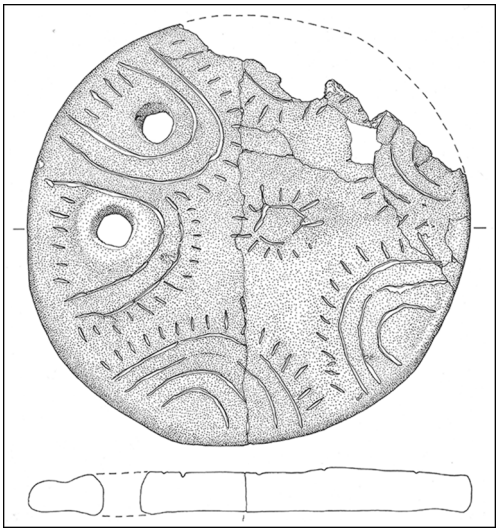

Figure 9. Clay disc with sun motifs from Vasagård East—diameter 180mm (drawing by Eva Koch).

almost polished, as if carried and rubbed over an extended period. Others show traces of being burnt. Close examination of the incisions on a type 4 stone (plant motifs, Figure 6: VAS 3730) reveals various carving phases, with incisions made by different tools, and the potential engagement of multiple persons in the creation of the final piece (Kaul *et al.* 2016: 19–20). Such reuse could also indicate that some of the engraved plaques were circulated for some time prior to their deposition, but more detailed analyses of reuse are needed.

Some of the blank plaques are made of quartz, which can split white light into a rainbow spectrum, and these could have functioned as transparent sun stones. The circular, blank flint plaque resembles the flint 'gaming pieces' found at several settlements dating to the final Funnel Beaker phase in southern Denmark (Davidsen 1976: 37; Kapel 1976). Yet extension of the

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interpretation as gaming pieces to the blank plaques in general seems unlikely, as they do not display any use-wear. Although made from a wider range of materials, the blank (type 5) plaques have a shape similar to the type 1 sun stones and the shared depositional context indicates further similarities in function and meaning.

Though the complexity of their biographies varies, almost all of the plaques were widely distributed in the top section of the enclosure ditches—as if randomly sown across them—indicating that they eventually, and ultimately, played an essential role in the closing of the causewayed enclosure. The ditches do not appear to have been recut following the formation of the 'sun stone horizon', marking this as a critical point in time for the Vasagård site as it was transformed from one form of enclosed site to another. From a modern perspective, this occurred precisely at the beginning of the Vasagård phase, *c.* 2900–2800 BC. Hundreds of metres of solid timber palisades were constructed to enclose the site, maybe as means of protection, and the building of circular post-built cult houses accompanied these transformations. But what could have prompted the deposition of hundreds of engraved stones and potentially the complete restructuring and transformation of the site?

The darkened sun

The stone plaques engraved with sun and plant motifs were produced and deposited at Vasagård during a short period of time around 2900 BC. More than 20 engraved stones have also been recovered from the nearby site of Rispebjerg (Kaul *et al.* 2002, 2016). At no point before or after this period do engraved stones appear in the archaeological record of either site. The scale and chronological restriction of this depositional event suggests that it was triggered by an incident, or the culmination of incidents, equally large in scale and acute in scope. Given the imagery carved into the stones, such an incident could be a natural disaster or climatic events that affected crop yields or the visibility of the sun.

No major solar eclipses were observed on Bornholm between 3000 and 2000 BC (NASA 2021), and it is unlikely that the brief disappearance of the sun would have been sufficiently impactful to provoke the mass production and deposition of engraved stones. However, a period of severe cooling before and after 2900 BC is independently corroborated by multiple sources (Figure 10). Studies of varves (annual sedimentation layers) from lakes in the Eifel region in Germany indicate an extreme reduction in sunlight during two periods, 2927–2892 BC and 2877–2872 BC (Sirocko 2015). The annual growth of tree rings in subfossil wood from the Main Valley, also in Germany, reveals wood-anatomical markers indicating spring and summer frost events for four years between 2932 and 2929 BC, and for five years between 2885 and 2880 BC (Land 2014; Land *et al.* 2015). Other observations confirm that cooling events occurred several times around 2900 BC and affected the wider northern hemisphere. In the western USA, tree rings of bristlecone pine, notoriously long-lived species, show width minima at 2951, 2911, 2906 and 2905 BC. Furthermore, a frost marker is detected in the rings corresponding to 2906 BC. Allowing a plus-or-minus five-year deviation, the four years with tree-ring minima widths correlate with years containing sulphate in the GISP2 Greenlandic ice core—an inclusion that signals volcanic eruptions (Salzer & Hughes 2007: tab. 2).

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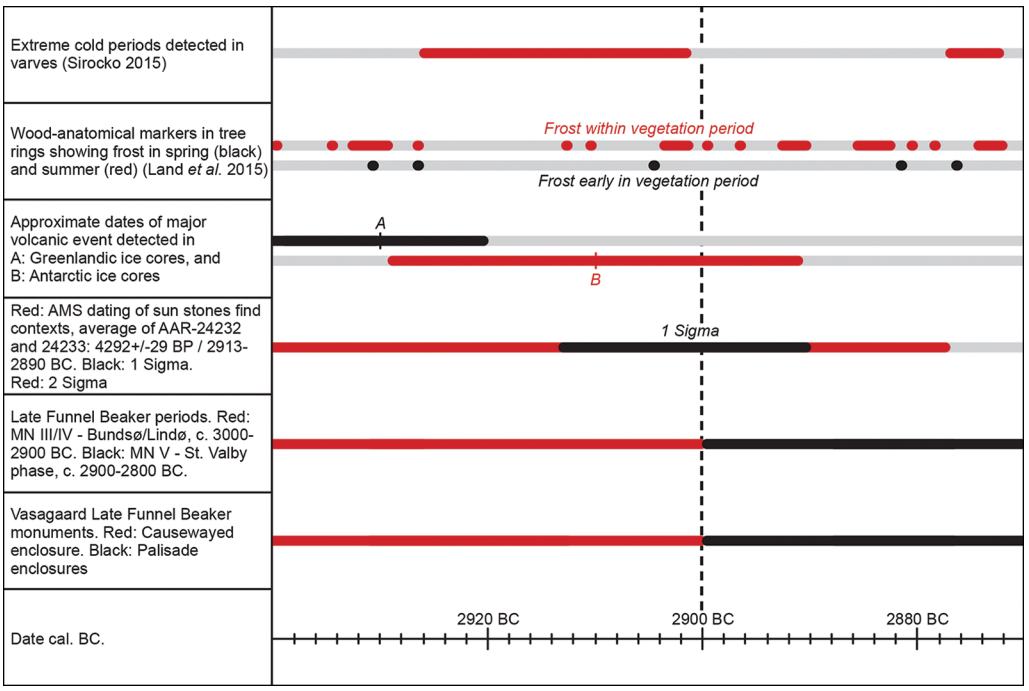

Figure 10. Synchronisation of archaeological and climatic events close to 2900 BC (graphics by Mads Lou Bendtsen, The National Museum of Denmark).

Volcanic eruptions inject sulphate aerosols into the stratosphere. This creates a haze, which reflects solar radiation back into space. Hence, the increase of sulphate aerosols impacts climate and causes global cooling. It is therefore notable that a major volcanic eruption has been identified at 2931 ± 11 BC in Greenlandic ice cores (Vinther *et al.* 2006) and at 2910 ± 19 BC in ice cores in Antarctica (Cole-Dai *et al.* 2021). The Greenlandic and Antarctic ice cores are synchronised, but follow different, absolute time scales: GICC05 and WD2014, respectively (Vinther *et al.* 2006; Sigl *et al.* 2016; see Sigl *et al.* 2022 for discussion). Nevertheless, there is an overlap between the uncertainty estimates of the two dates of the volcanic event as indicated in Figure 10. Furthermore, these dates correspond with the frost events identified in tree rings and the extreme reduction in sunlight detected in lake varves. A connection between volcanic eruption and frost markers in tree rings is also observed in AD 1912/13, when the Novarupta-Katmai eruption in Alaska (June 1912) caused spring frosts in 1913 that are recorded as wood-anatomical markers in oak tree rings for that year (Land 2014). The Novarupta-Katmai eruption is ranked as the largest of the twentieth century (volcanic eruption index six).

The *c.* 2910 BC volcanic eruption is likely to have affected weather and harvest across the northern hemisphere. The eruption of Mount Tambora in Indonesia in AD 1815 released enough ash and aerosols into the atmosphere to substantially inhibit sunlight and reduce global temperatures by nearly 3°C, precipitating crop failures across the world in the following year (Wood 2015). On a list of the most powerful eruptions of the Holocene, the 2910 BC

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eruption is ranked as number 15 and the AD 1815 Tambora eruption ranks as number 26 (Sigl *et al.* 2022). Estimations suggest that the magnitude of the 2910 BC eruption was comparable to the Okmok II volcanic eruption in Alaska in 43 BC, also known as 'the Caesar volcano' mentioned by Plutarch and Pliny the Elder (McConnell *et al.* 2020). This eruption resulted in unusually cold, inclement weather, crop failures, famine and disease in the Mediterranean for more than two years.

We can assume, therefore, that a cooling event comparable to the one caused by the 43 BC eruption took place a few years before or after 2900 BC and coincided with the ritual deposition of the engraved stones. It is possible that this 2900 BC cooling event also had wider economic and social consequences for the people living in southern Scandinavia at the time, as it coincides with the beginning of the final Funnel Beaker phase. This phase is characterised by substantial changes in material culture, a break with the classic Funnel Beaker tradition, the cessation of megalithic tomb building and the formation of new networks and influences from the marine oriented Scandinavian Pitted Ware culture, which also affected Bornholm (Iversen 2010, 2020; Brozio *et al.* 2019; Nielsen & Nielsen 2022: 141). Population decline, plague and widespread reforestation also indicate a general 'Neolithic decline' around this time (Allentoft *et al.* 2024a and references therein; Seersholm *et al.* 2024). This was followed by profound cultural and populational change as Corded Ware societies appeared with the influx of people from the Steppe north of the Black Sea into eastern, central and northern Europe. These events also affected Bornholm as we see the appearance of the Swedish-Norwegian Battle Axe culture from *c.* 2600 BC (Nielsen & Nielsen 2022: 150–57; Allentoft *et al.* 2024b). The turbulence of this period renders the long-lasting impacts of the 2900 BC cooling event on Neolithic societies difficult to isolate even if sporadic sun images on contemporary pottery and clay discs (cf. Kaul *et al.* 2016: 29–32; Iversen *et al.* 2024) might reflect this event. Furthermore, the crisis might have increased competition and conflicts, which could have encouraged the construction of palisade enclosures to defend special sites, where congregations and sacred rituals took place—not only on Bornholm but also elsewhere in southern Scandinavia where palisade enclosures were constructed (Brink 2014). Yet at Vasagård and Rispebjerg we see evidence of a community gathering in a joint effort to enact change, engaging in the use of symbolism that was arguably directed toward the banishment of the darkened sun and the restoration of the harvest.

Conclusion

The Vasagård engraved stones present miniature art with motifs connected to the sun and to the growth of cultivated plants. Deposition occurred on a single or a few successive occasions, potentially in response to one or more climatic cooling events around 2900 BC precipitated by a volcanic eruption. These depositions could have been made during a time of stress with the purpose of bringing back the sun and re-establishing agricultural production. They could also have been made when the climate crisis was over, as an act of celebration for the return of the sun. At Vasagård the deposition of the engraved stones correlates with a change from activities centred on the causewayed enclosure to new rituals taking place in small, circular cult houses inside wooden palisades. The effects of the climate crisis may have resulted in

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increased competition and conflicts at a time when the classical Funnel Beaker tradition was dissolving and was soon to be followed by new cultural changes resulting from migrations impacting eastern, central and northern Europe and beyond.

Funding statement

This research received no specific grant from any funding agency or from commercial and not-for-profit sectors.

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