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THE STATUE-MENHIR OF NAVE 1 (MOIMENTA DA BEIRA, VISEU, CENTRAL PORTUGAL): PRELIMINARY RESULTS FROM THE 2023 ARCHAEOLOGICAL CAMPAIGN

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Abstract: Prehistoric statue-menhirs and stelae are amongst the most interesting and at the same time problematic monuments in Iberia. Almost none of these self-standing pieces of rock art have been found within an archaeological context, and chronologies are often based on iconography alone. The statue-menhir of Nave 1 appeared to be *in situ* and thus offered the unique possibility for the investigation of chronological, technological, and contextual issues. The monument has been excavated and its pit could be recorded; C14 samples were obtained from a stratigraphic unit cut by this pit and a nearby fireplace. This paper presents the strati-

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graphic sequence, illustrated with graphic materials from the excavation. It also addresses the protocol applied to the process of lichen removal from the granite slab. Following an analysis of the archaeological contexts and discussion of the data gathered in our fieldwork, it highlights the future perspectives for research on this notable site.

Keywords: Rock art; prehistoric statuary; anthropomorphic representation; excavation; chronology.

Resumo: As estelas e estátuas-menir constituem alguns dos testemunhos mais intrigantes e desafiantes da arqueologia pré e proto-histórica da Península Ibérica. São raros os exemplares de estatuária pré-histórica encontrados num contexto arqueológico preservado, sendo as cronologias propostas baseadas na sua iconografia. Considerando a forte possibilidade da estátua-menir de Nave 1 estar *in situ*, esta apresentava uma oportunidade singular para investigar questões de ordem cronológica, tecnológica e contextual. O monumento foi escavado e parte da sua vala de fundação registada; amostras de C14 foram recolhidas de uma unidade estratigráfica cortada por esta vala e de uma fogueira próxima. A estratigrafia e o espólio são apresentados, ilustrados pelo registo gráfico da escavação. O protocolo de limpeza de líquenes da estátua-menir é apresentado. Após uma contextualização arqueológica, os dados obtidos são discutidos e as perspetivas de trabalho neste importante sítio arqueológico são apresentadas.

Palavras-chave: Arte rupestre; estatuária pré-histórica; representação antropomórfica; escavação; cronologia.

THE STATUE-MENHIR OF NAVE 1 (MOIMENTA DA BEIRA, VISEU, CENTRAL PORTUGAL): PRELIMINARY RESULTS FROM THE 2023 ARCHAEOLOGICAL CAMPAIGN

1. Introduction: the statue-menhirs of the Serra da Nave

The statue-menhir of Nave 1 had first been recorded during archaeological studies within the research project "*O Alto Paiva: sociedade e estratégias de ocupação do território desde a Pré-história Recente à Alta Idade Média* / Alto Paiva: society and land occupation strategies from Recent Prehistory to the Early Middle Ages", coordinated by Domingos Cruz, that took place in this area between 1998 and 2002. It has been referred to in several publications (Cruz, 2001: 173-174; Est. 62; Díaz-Guardamino, 2010: 446, Cat. No. 153; Rodríguez Corral, 2018) and was first described in detail by Cruz and Santos (2011).

The statue-menhir of Nave 1 (Fig. 1) is located on the south-eastern fringe of Chã das Lameiras in the Serra da Nave / Serra de Leomil, in the União de Freguesias de Pera Velha, Aldeia de Nacomba and Ariz (Moimenta da Beira). The monument is made of fine-to-medium-grained granite and has been measured at 177 cm in height, of which only the 136 cm above the current surface level had been recorded in the first survey of the monument (Cruz and Santos, 2011: 124-125). The slab is up to 56 cm wide, and its thickness decreases from max. 31 on the bottom to below 10 cm on the top. The menhir's surface is considerably corroded and had been completely overgrown by lichens. The rock itself is flat and sub-rectangular with rounded top corners. It shows few signs of surface preparation except for the possible polishing of the front face, while the back seems to have been left in its natural state. The supposed front is facing East (cf. Cruz, 2001: 173 indicating ENE), designating a clear orientation of the monument.

The engraved lines are eroded and thus shallow, showing abstract symbols that are probably tantamount to an anthropomorphic representation: the front face displays an elongated, bi-concave trapezoidal figure, topped by a trapezoid rectangle and two dots, the possible representation of eyes. Six grooves are defined around the entire piece, associated with two others only shown on the reverse. They have been formerly interpreted as clothing applications ("ruffles"); however, this association remains hypothetical (cf. Cruz and Santos, 2011: 125; Huth, 2008). Two parallel lines surround the statue-menhir in the lower third, with a row of dots between them, a feature that is widespread on such monuments and is generally regarded as a belt representation. The interpretation as a statue-menhir is justified under the definition that the decorative elements designate the rock as representing an anthropomorphic entity, in contrast to true statuary where body features are fully worked three-dimensionally, or stelae, where the slab is a mere projection screen for symbols, including anthropomorphic representations (Araque Gonzalez, 2018: 18).

A second statue-menhir, Nave 2, has been discovered not far from the site. The slab had already been moved from its original location by local farmers and was turned upside down to be used as a landmark and fence-post; it has subsequently been excavated and removed from this position to be displayed in the nearby village of Alvite (Fig. 2) (Cruz, 2001: 171, Est. 63-65). Therefore, a direct connection between both monuments could not be reconstructed. As with other monuments of this type, the dating is thus far solely based on the represented iconography and they are attributed typologically to the Early / Middle Bronze Age (EBA, c. 2200-1700 BC; MBA, c. 1700-1300 BC; Cruz and Santos, 2011: 128). Nevertheless, both statue-menhirs pertain to divergent iconographies and have dissimilar shapes resulting from the different efforts in preparation of the granite slabs. Nave 2 shows a pronounced face with nose, eyes and mouth, a hat or headdress, earrings, necklaces, and a similar belt representation with dots and lines as Nave 1, however located in its upper half and above what could be interpreted as a belly button (Fig. 2). Contrary to its studied counterpart, the surface of Nave 2 was carefully worked into a clear-cut shape with a sub-rectangular cross-section and astonishingly regular, polished sides and front. The set of these two statue-menhirs has been the subject of a detailed study (Cruz and Santos, 2011), which presents the recording of the motifs identified and an approach to their context within the framework of the prehistoric occupation of the Beira Alta.

Nave 1 is typologically related to a characteristic group of monuments from the north-western Iberian Peninsula that display the same bi-concave trapezoidal figure (Comendador Rey *et al.*, 2011; Díaz-Guardamino, 2010: Chapter 7.1; Vilaça *et al.*, 2001). They do occasionally show hints on their chronology through the display of weapons that allow for an attribution conversely to the Middle and Late Bronze Age (LBA, c. 1300-750 BC), while other researchers attribute them to earlier periods on an iconographic basis (summary in Díaz-Guardamino, 2010: 172-180; Rodríguez Corral, 2018). Only one of this group (Cruz de Cepos, Montalegre) is likely to be found *in situ* (Alves and Reis, 2011: 200-201), while the others are generally not associated with datable archaeological contexts or materials (see Rodríguez Corral, 2018; Vilaça *et al.*, 2001; 2003). For example, the recently excavated statue-menhir of Pedrão / S. Bartolomeu do Mar (Esposende, Northwest Portugal) had been transposed in the 20th century (Bettencourt *et al.*, 2020). Similar symbols are displayed on the Daunian stelae from the Early Iron Age (EIA, 675-450 BC) in Italy (Herring, 2019; Tunzi, 2011) and have been interpreted as *kardiophylax* or as pectorals in this specific context. The latter interpretation has been forwarded by Almagro Gorbea (1993) for the Iberian examples. Noticeably related shapes can be observed on the pectorals of some Sardinian warrior figurines dated to the Final Bronze Age (FBA) to EIA transition (1050-850 BC; Araque Gonzalez, 2018; Lilliu, 1966), where the shape was interpreted as Cypriot ox-hide ingots (Gómez and Fundoni, 2010-2011: 42). This resemblance has also been noticed for the corresponding design on Iberian statue-menhirs (Vilaça *et al*., 2001: 76-78 and note 11).

On the other hand, Nave 2 could be attributed to a group of statue-menhirs that shares iconographic similarities to "*ídolos-guijarro*" (idols with anthropomorphic decoration engraved in rounded river rocks) with representations of faces, headdresses, necklaces and sometimes hands and belts (Bueno Ramírez, 1987; Díaz-Guardamino, 2010: Chapter 7.2; González Bornay and Domínguez García, 2021: 34-57; Rodríguez Corral, 2018: 52-54). The latter group has been found between northern Portugal, the Beira Interior and the Spanish Extremadura and was sometimes re-interpreted in the iconography of some LBA-EIA stelae (Araque Gonzalez, 2018: 245-246; Díaz-Guardamino, 2010: 225-292).

Unfortunately, the situation that Nave 2 was reused in a profane manner is characteristic for the greatest dilemma of statue-menhirs as

well as all Bronze Age/Iron Age stelae and statuary in Iberia, which were mostly re-interpreted and modified, moved or overturned, or re-used as construction materials (cf. Celestino Pérez, 2001; Díaz-Guardamino, 2010, 2015; Fábrega-álvarez *et al.,* 2011*;* García Sanjuán and Díaz-Guardamino, 2015; Vilaça, 2011). Thus far, the published data on stratigraphically excavated statue-menhirs that have possibly been found *in situ* is limited to the single example of Cruz de Cepos (Alves and Reis, 2011). A recent publication dates the implantation of the statue-menhir to the mid-third millennium BC, based on a coherent set of radiocarbon and OSL samples from the infill of the socket pit (Bailiff *et al.*, 2024).

Therefore, due to the exceptionality of preserved archaeological contexts, it is the desideratum of Iberian rock art studies to obtain absolute dates for the statue-menhirs and stelae, as well as information on related cultural activities, manufacturing and construction techniques, and tools for their making (e.g. García Sanjuán, 2011; Díaz-Guardamino *et al.*, 2019; Díaz-Guardamino *et al.*, 2020).

This being said, there have been reasons to consider the possibility that Nave 1 is *in situ* (Cruz and Santos, 2011: 123), since it remains embedded in the ground with no evidence whatsoever that it has been displaced in more recent times. Its slight inclination towards the South has been explained by a local resident as the result of a poke with a tractor "some years ago". Under the premise that this statue-menhir is amongst the only known remaining prehistoric statue-menhirs *in situ* in Western Iberia, its site has been chosen for excavation. Initially, the choice of this case study was part of one of the lines of research in the Career Plan of one of the authors (RV, 2018), falling within the problematic that addresses stelae and statue-menhirs as structuring spatial markers in the social construction of landscapes, including the aspect of the "mobility" of these archaeological entities (relationship between the provenance of the stone material as a construction element and the place of implantation, i.e. social appropriation) (Baptista, 2019; Vilaça and Baptista, 2020). This perspective also forms the basis of one of the authors' ongoing doctoral project centred on the LBA/EIA (PB). The results presented in this contribution were obtained within the multi-approach framework of the project "The Iberian stelae of the Final Bronze Age: Iconography, Technology and the Transfer of Knowledge between the Atlantic and the Mediterranean" funded by the German Research foundation (DFG) under general coordination by one of the authors (RAG).

2. The site

The statue-menhir Nave 1 stands on the southern side of a dirt road connecting the small village of Pera Velha and the hamlet of Quintela da Nave at 956 m above sea level (Fig. 3: 1) (WGS 84: 40.941282°; -7.671747°). Agricultural activities in the surrounding land have been abandoned and it is overgrown by mostly common broom shrubs (*Cytisus scoparius*). However, the exceptional fertility of this particular patch of land in the Serra da Nave is still remembered by residents, and it had been cultivated until a few decades ago. This is due to the loess soil that constitutes the characteristic distinguishing element to the surrounding, often uncultivable, rocky granite landscape (Fig. 4). With relevance for the excavation, the loess facilitated the identification of features and was found in the entire excavated area. The quality of the soil enabled a dense growth of shrubs and broom whose root networks in the relatively thick (15-20 cm) humus topsoil had to be removed before reaching the archaeological strata.

Palaeoenvironmental studies including the analyses of pollen profiles have revealed that human activity on the Chã das Lameiras intensified from the Neolithic onwards, based on indicators such as the regression of *quercus ilex*, the advance of cistaceous and ericaceous bushes, the frequent occurrence of fires and the depletion and erosion of the soil (Cruz, 2001: 203-207; Cruz and Santos, 2011: 121-122; López-Sáez *et al.*, 2017). It can be stated that the statue-menhir was set up on the fringe of the fertile loess area, facing eastwards towards the access from where the road to Pera Velha is now winding down through the magnificent granite landscape, passing by the active local quarry. It can be assumed that the slabs for the menhirs stem from this locality or its surroundings. However, no conclusive petrographic study could be conducted for two reasons: based on the completeness of the statue-menhir which forbids invasive sampling at the current stage of research, and on the commonality of the granite used for the menhirs, which makes an exact outcrop localization difficult (pers. comm. Rafael Ferreiro Mählmann).

The plateau where the statue-menhir Nave 1 is situated represents a geological contact zone between a sedimentary rock complex, which stretches from East to West in triangular shape (2-2.5 km for each side), and the surrounding granite plutons. The striking contrast between the fertile sedimentary bedrock area, covered by a thick loess layer, and the rocky surroundings can be clearly observed (Fig. 4). This patch of land

attracted farmers and shepherds from early times onwards and consequently revealed several archaeological sites, dating to the Neolithic and Chalcolithic periods until medieval times (Cruz, 2001: 203-204; Cruz and Santos, 2011: 122). It can be hypothesized that the liminal placing of the menhirs near its south-eastern access is intentional and directly related to the acknowledgment and veneration of the fertile soil between the inaccessible, massive granite dykes.

3. Archaeological contextualization

The first and so far only comprehensive approach to the pre- and proto-historic settlement of Chã de Lameiras and surrounding areas was developed by Domingos Cruz (2001). Subsequent works included the excavation of particular sites, such as the settlements of Canedotes (Canha, 2002), Castro de Muro (Loureiro *et al.*, 2006), Castro de Vila Cova-à-Coelheira (Mendes, 2009) and Santa Bárbara / São Jorge, while other studies have been limited to repeating known information or have remained unpublished. The fieldwork and surveys conducted within the scope of two environment impact assessments[5] allowed for the relocation or confirmation of some of the sites, however no new sites were recorded in the national archaeological database (*Portal do Arqueólogo*). Thus, apart from the discovery of some ceramic fragments collected in surveys around the Nave 1 statue-menhir (see subsection 4.2.4.), the available information on this area is limited to the major field study by Domingos Cruz and his other works, the vast majority of which were previously unpublished.

There are funerary contexts with *tumuli* dating back to earlier periods than the excavated site, around the 4th millennium B.C., one of which (Rapadouro 1) showing traces of re-use up until the LBA, as well as occupations from the historical period (Cruz, 2001: 57; Cruz and Santos, 2011: 122, with bibliographic references). It is noteworthy that most sites classified as settlements or isolated findings could generally be framed between the Chalcolithic and the LBA, although the chronology is often difficult to pinpoint (similar to the materials resulting from the excavation of the statue-menhir).

[5] EIA – Parque Eólico de Leomil – Moimenta da Beira, coordinated by Marcos Osório; and EIA – Parque Eólico do Douro Sul, coordinated by Alexandre Lima.

Among the former, we can mention the walled site of Castelo de Ariz (Moimenta da Beira), with evidence dating from the Chalcolithic/ Bronze Age and medieval periods, which provided plain and decorated ceramics, flint materials, and a quern (Cruz, 2001: 172, 390). Penedo da Pena (Moimenta da Beira) is another enclosed site, where the remaining walls are combined with the natural rock outcrops; despite the lack of artefacts collected on site, it has been attributed to the Chalcolithic period on typological grounds (Cruz, 2001: 57-58, 390). Both sites are located not far from the Nave 1 statue-menhir, approximately 2 km and 3.5 km away, with good conditions for visual control of the surrounding geographical areas.

There are a number of unfortified sites with prominent positions, including Surrinha, St.º Antão and Sta. Bárbara / S. Jorge, where mostly plain and decorated handmade ceramics with uncertain chronology (Bronze Age to Iron Age) have been found amongst other materials, for example a rim with incisions, similar to the one from this excavation (see subsection 4.2.4.) in S. Jorge (Cruz, 2001: 57-58, 393, fig. 57-14). On a regional scale, approximately 10-12 km southwest from Nave 1, Carvalhais (Vila Nova de Paiva), a site with traces of extended occupation, and especially Canedotes (Vila Nova de Paiva), an important non-fortified hilltop settlement, also yielded Bronze Age ceramics. The excavations conducted in the latter site resulted in C14 dates and materials from the 10th-9th centuries BC within excellent stratigraphic contexts (Canha, 2002; Cruz, 2001: 57, 391-392).

Cova do Sol is another possible settlement located on a low, flat platform, constituted by an open space and pit-dwellings, where ceramics, including a pot with plastic decoration (‘medallion’), and a quern have been collected; the site is considered to pertain to a MBA-LBA chronology (Cruz, 2001: 57, 173, 388, fig. 57-11).

Within the geologically circumscribed area of Chã das Lameiras (and with eponymous site identification), a hammerstone and plain as well as impressed decoration ceramics, which may testify to the existence of a Chalcolithic habitat, have been collected at approximately 300 m south from the Orca Grande megalithic monument (Cruz, 2001: 57, 388, figs. 56-6 to 8).

Finally, considering the finds of the aforementioned ceramic materials in the immediate surroundings of the Nave 1 statue-menhir, which unfortunately provide limited chrono-cultural information, together with another, although unpublished, decorated ceramic fragment found there

(Cruz, 2001: 57), we can see that the continuous / intermittent occupation / frequentation of Chã das Lameiras was a reality over several millennia, from Prehistory to recent times, as it had already been signposted earlier by Domingos Cruz (Cruz, 2001; Cruz and Santos, 2011: 122). This perspective could be confirmed by the work carried out within this archaeological campaign, although significant additional information could be contributed with regards to the statue-menhir's position.

4. Archaeological fieldwork

Archaeological fieldwork was conducted in September 2023 as a joint venture of the Universities of Freiburg (Germany) and Coimbra (Portugal), funded by the DFG, with logistic support from the municipality of Moimenta da Beira. The team consisted of Ralph Araque Gonzalez and Pedro Baptista directing the excavation with five students from the respective universities, under scientific coordination by Raquel Vilaça and with consultation by Domingos J. Cruz. It was anticipated that the scheduled study of the environs of the statue-menhir Nave 1 could reveal information on its chronology, hints on former uses of the site, possibly related structures, and ideally also on the techniques of working granite in prehistory. The photographic, graphic drawing, and descriptive documentation was prepared in accordance with the MoLAS field manual (Westman, 1994) and the context recording system. A structure-from-motion (SfM) model of the statue-menhir and its pit was elaborated[6]. Samples were obtained for AMS C14 dating and paleoenvironmental studies. Depending on the first findings and the density of archaeological features, the possibility to conduct follow-up campaigns has been postulated.

Three central objectives have been defined: firstly, to characterise the monument's cultural biography and chronology, especially the moment of its implantation, based on its stratigraphic context and, if applicable, C14 or thermoluminescence analyses. This objective also comprises the *chaine opératoire* of the monument making, from the selection and extraction of the rock to its transportation, preparation and engraving of the motifs. However, no information on the rock outcrop could be obtained within this campaign due to the ubiquity of this type of granite. Secondly, it is important to investigate the reasons behind

[6] Available at https://sketchfab.com/3d-models/nave-1-909e05dbbd89400eac8102b-17c651a2b The high-quality file with texture is available on request from the authors.

the choice of that specific location, with considerations on the possibility of the monument being *in situ*, seeking to identify traces of natural or anthropic elements that could explain the selection of the site for the statue-menhir as an unquestionably important landmark.

The third objective will be the contextualising of Nave 1 within its broader geographical and local cultural framework, made possible thanks to the prospection work and excavations carried out as part of the project "*O Alto Paiva: sociedade e estratégias de ocupação do território desde a Pré-história Recente à Alta Idade Média*", under the responsibility of Domingos J. Cruz. This last step, based on chronological evidence and excavation finds, will encompass the analyses of its position in relation to the surrounding settlements, other relevant anthropic testimonies (such as the statue-menhir of Nave 2), natural resources, and the mobility network that links them. Meanwhile, a third statue-menhir has been identified and is being studied by Domingos J. Cruz and André Tomás Santos (pers. comm.), so this last objective will have to be reassessed in the future.

The methodology and new findings from the first excavation campaign with its documented stratigraphy will be presented in the following subsections, and their relevance for the forementioned goals will be highlighted. First of all, the statue-menhir was found within an intact archaeological context and three related C14 dates could be obtained; three further dates pertain to two other features in the immediate vicinity of the monument. After a contextualization with the archaeological record, which will be centred around the comparison between the anticipated and the scientifically determined chronologies and their preliminary interpretation, hypotheses and possibilities for future fieldwork will be presented.

4.1. Cleaning of the statue-menhir

Prior to the excavation, the overgrown statue-menhir had to be cleared from the aggressive biological colonisation (lichens) present on all exposed faces of the monument, in order to be able to recognize and reveal the engraved motifs after years of abandonment (Fig. 5). This was done through the application of a biocide and manual cleaning.

Preventol Ri50, a biocide based on quaternary ammonium, free of heavy metals, was chosen both due to its effectiveness in eradicating and preventing biological growth in granitoids (Sanmartín *et al.*, 2020) and its applicability in painted surfaces (Rosado *et al.*, 2017).

According to its application recommendations and based on the extent of biological colonisation, it was applied by nebulization in two cycles spaced two weeks apart, with a concentration of 5% dissolved in 4 L of distilled water (each time). Four weeks after the first nebulization cycle, and accounting for the eventual presence of painting, the remaining lichens were removed through dry brushing, utilizing brushes of varying hardness, and wooden and plastic tools. In specific areas where the lichens were still too engrained, they were mildly sprayed with the biocide solution to facilitate its removal.

To prevent further biological colonisation, two more nebulization cycles were applied; one directly after the manual scrubbing (5% *Preventol Ri50* dissolved in 4 L of distilled water) and one two weeks after (2% *Preventol Ri50* dissolved in 4 L of distilled water). The treatment has proven efficient, and the application of this protocol can be generally recommended for the clearing of granitic monuments from overgrowth with lichen, fungi, and mosses.

4.2. Excavation and field survey data

A 16x8m excavation grid was defined along the West-East axis and parallel to the dirt road with the statue-menhir in a central position. Each of the 4x4 m grid squares was assigned a letter (A to H), rising from A in the West; each grid square was internally divided in 2x2 m section squares using numbering 1-4, starting with "1" in the NW, "2" in the NE, "3" in the SW, and "4" in the SE-corner. In the case of the statue-menhir in square B, the decision was taken to further divide section square B4 into smaller units of 1x1 m, defined by using additional minuscule letters a-d, starting with "a" in the NW, "b" in the NE, "c" in the SW, and "d" in the SE-corner (Fig. 6). During this campaign, excavation was conducted in squares A to C and E to G.

A total of 25 features were identified and are presented in square brackets throughout the text.

Following the manual clearing of the topsoil [001] in the western 12x8 m area (grid squares A -C and E-G), a series of contemporary features[7] was identified. Due to the thickness of the remaining humus de-

[7] These correspond to recent events such as the placement of gravel [005] around the statue-menhir, the sediment remobilization [006] from the digging of the side ditches of the dirt road, or from the agricultural activity practiced in the vicinity and that resulted in the deposition of fieldstones [003/004] next to the monument.

posit [018][8] and because of the first stratigraphic assessment that could now be made, the excavation area had to be significantly reduced for this fieldwork campaign. This decision was based on the humus which required machinery to remove as well as on the discovery of loess sediment that contained the archaeological features and represents another major geological layer. Therefore, the excavation was concentrated in grid squares B4, C3, F2, F4 and G3, in the immediate surroundings and to the East and South of the statue-menhir along straight trenches opening 2 or 1.5 grid-squares (Fig. 6).

The archaeological features have been detected mainly on the upper interface of the natural loess sediment [009] underneath the topsoil, which can be considered an ancient circulation level. Stratigraphic relations could not be directly established between features to the South of the statue-menhir [002] and the contexts in its immediate surroundings or with direct relations, which is apparent in the divergent dates that could be obtained. Eight charcoal and four soil samples were collected during the excavation and six samples were analysed by the Vilnius Radiocarbon Laboratory[9] for AMS-C14 dating and calibration (Table 1 and Fig. 6). It must be noted that no species identification was conducted at this stage, however backup samples for a comprehensive evaluation have been kept. In the following section, the relevant archaeological contexts (Fig. 7) will be described together with the finds and related data. Then, the excavated materials and those obtained from surveys will be presented before the final discussion of the excavation results.

4.2.1. The statue-menhir and its foundation pit

The statue-menhir [002] with its foundation pit [022] were identified and excavated in grid-square B4. The pit is of irregular-oval shape with rounded corners, oriented NNW-SSE and measures 80 x 100 cm in the plan (Fig. 6 and 8). On three sides (S, E, N), it is relatively tight-sitting on the monument, while at the western side, a wider area had been dug out and re-filled with counterweight stones that have been identified as a stabilizing sub-structure [023] to keep the statue-menhir standing straight and upright. On the East and North sides, elongated granite

[8] The first assessment of [018] potency was done through mechanical excavation in F4-G3 test pit, with the assistance of Mr. Armandino Sousa.

[9] https://vilniusradiocarbon.com/

Table 1 – C14 dates obtained from the excavation.

Lab. code	Field ref.	Type	Context	BP	Cal. for 2σ
FTMC -IP30-1	2023. NAVE1. S004. F4.[009]	Charcoal	Charcoal concentration in loess [009] *in situ*; associated with fireplace [010]	2945±28	1259-1243 BC (2.6%) 1232-1049 BC (92.9%)
FTMC -IP30-2	2023. NAVE1. S008. F4.[010]	Charcoal	Fireplace deposit [010] *in situ*	2908±29	1209-1011 BC (95.4%)
FTMC -IP30-3	2023. NAVE1. S009. C3.[028]	Charcoal	Red clay deposit [028] upper interface *in situ*; just below [019]	2149±27	352-289 BC (26.7%) 210-94 BC (64.0%) 75-55 BC (3.9%)
FTMC -IP30-4	2023. NAVE1. S010.B4d. [028]	Charcoal	Red clay deposit [028] dispersed in upper interface	2076±27	171-35 BC (89.3%) 16 BC-6 AD (6.1%)
FTMC -IP30-5	2023. NAVE1. S012.B4d. [030]	Soil	Linear feature [030] upper interface	1581±29	420-555 AD (95.4%)
FTMC -IP30-6	2023. NAVE1. S014.B4d. [028]	Charcoal	Red clay deposit [028] dispersed in lower interface	2127±27	343-321 BC (7.7%) 202-52 BC (87.8%)

slabs act as wedges, whereas on the western side, a larger concentration of rounded granite and quartzite pebbles were used to fill the pit.

Similar, albeit more elaborate, engineering solutions were widespread in megalithic monuments from all chronologies, where the placement of counterweights on one side of the standing slabs, up until a third of their height, compensated for the pressure exerted on the external walls of its pit, preventing them from breaking (Caninas, 2020: 188). Several examples have been detected in the surrounding Alto Paiva region (Cruz, 2001: 187-190) and specifically in the Nave plateau, as is the case of the Orca de Seixas dolmen (Cruz, 2001: 146-147).

The excavation of the immediate surrounding grid square of the statue-menhir was carried out in small stages, by dividing the 2x2 m area into four smaller 1x1 m units, B4a-d (see subsection 4.2.). The first excavated section was grid B4d, southeast of the monument. The bioturbation caused by roots in this grid did not allow for the identification of the uppermost cut of the foundation pit [022], which only became clear in the upper interface of the reddish clay deposit [028] (Fig. 9).

Within this excavation, it was possible to expose an additional 50 cm of the statue-menhir in its lower southeast quadrant, which enabled the identification of traces of the lower line of the belt as well as of additional cup-marks (Fig. 10 and 11).

The identification of the foundation pit [022] and of the sub-structure [023] suggests that the statue-menhir [002] is *in situ*. The pit [022] was cut into a compact red clay deposit [028], possibly altered due to heat exposure, as suggested by its compactness, colour and charcoal inclusions. This deposit was only identified around the statue-menhir area within the boundaries of two linear features [019] / [030]. It yielded a single small decorated handmade ceramic sherd (see subsection 4.2.4.).

The linear features [019] / [030] were identified in B4 and C3, and are aligned along the East-West axis, c. 1.20 m parallel to each other (Fig. 12). The statue-menhir is situated between them, with [019] to the north and [030] to the south. While [019] is a positive feature, [030] is a fill, first covered by a dark brown looser sediment [024]. Both [019] and [030] are composed of very hard and compact dark grey silty sand with stone inclusions, as well as apparent very small ceramic and charcoals. In B4a, a small round cut [020], c. 16-20 cm wide and 12 cm deep was identified in [019], preliminarily interpreted as a post hole; it was filled by a very loose yellowish-brown sediment, suggesting the post was removed and did not decay in place. Fire setting practices might have

played a role in heat-related transformation of the red clay deposit [028] with the thin, very compact possible circulation level [025] on its upper interface, and for the consolidation of the linear features [019] / [030].

Parallels for the use of fire to prepare the ground can be drawn to several megalithic contexts in the Portuguese territory, namely in the Aboboreira Mountain Range (Baião, Northern Portugal) (Silva, 1985: 45 and 50, note 10, with further references), but also in other megalithic contexts of the Alto Paiva region, where it was employed not only for the foundational procedures, but also during the lifespan of the monuments and in their so-called "condemnation-ritual" (Cruz, 2001: 194-195). Furthermore, a series of possibly ritual bonfires has been excavated at the Orca de Seixas dolmen, a nearby monument on the Nave plateau (Cruz, 2001: 146-147).

Moreover, the mounds of the funerary monuments in the Beira Interior region, specifically at Vale do Alvito 1 and Cão do Ribeiro (Moitas cluster, Proença-a-Nova), exhibit similar traces and colour alterations to those identified in the red clay deposit [028]. At these sites, the yellow clay covering the *tumulus* overlies a reddish clay deposit, accompanied by well-sorted, small charcoals. This resemblance suggests that the ground in these areas had been prepared by using fire to clear vegetation, or for cleansing rituals, or for a combination of both practical and ritual aspects (cf. Caninas, 2020: 208). At Cabeço da Anta (Proença-a-Nova), another monument of this type in the Moitas cluster, this pyro-action seems to have been limited to the areas immediately around the stone circle that surrounds the monument, highlighting the importance of the definition of a space and its boundaries, as it might have been the case with the linear features [019] / [030] beneath Nave 1. It has to be noted that fire cleansing or related "condemnation" rituals have been observed to be commonplace at megalithic sites in France and throughout western Europe (Masset, 1993: 159-170).

Two features connected to the statue-menhir have been dated, with a focus on the context [028] because it is cut by the foundation pit of the monument. Therefore, four samples have been taken from this feature (so far three of them analysed) and an additional sample from a fill above the linear structure (also analysed). The sample analyses revealed the following chronologies:

IP30-3 corresponds to a charcoal sample collected *in situ* from the feature [028] on its top interface beneath [019]. It dates the formation of structure [019] between the 2nd and 1st century BC (202-52 cal. BC,

with 87.8% probability). Samples IP30-4 and IP30-6 were obtained from charcoals dispersed in the upper and lower interface of the same feature [028] and are consistent with the abovementioned chronology, both pertaining to the 2nd and 1st centuries BC. It has to be noted that three samples from this layer with congruent dates for the statue-menhir's foundation and erection in the current pit indicate that the margin of error is possibly low, although the chronology is not expected to be necessarily related to the actual making of the decorated slab (see section 5.). The foundation pit [022] of the statue-menhir unequivocally cuts the compact red clay deposit [028], hence the monument has been carefully placed within it and secured with counterweight stones between the 2nd and the 1st century BC. This was a period of transition and massive cultural changes at the dawn of Roman conquest in western Iberia.

Additionally, sample IP30-5 was obtained from the upper interface of another linear fill representing a feature with a very compact surface [030], which is the stratigraphic layer above the older feature [028]. The soil sample points to a late chronology in the 5th-6th century cal. AD, suggesting that its surface was still exposed at that time.

Finally, it is not possible to reconstruct direct stratigraphic relations between the features connected to the statue-menhir [002], such as its foundation pit [022], stabilizing sub-structure [023] and linear features [019] / [030] and the southern features, represented by the fireplace [027] and the pits [014] / [016] that will be described in the following paragraphs (Fig. 6 and Fig. 7).

4.2.2. The fireplace

At 2 m distance to the South of the statue-menhir [002], a fireplace [027] that appears to represent a campfire without detectable delimiting structures (e.g. stones, pit) could be identified (Fig. 13a and Fig. 14). It is made up by three heat impacted layers [010/011/012]. This complex of features is subcircular / irregular, c. 165 x 125 cm. It is characterized by a central charcoal concentration from which a heat gradient stems – from dark brown to reddish to yellow in colour; differences in compactness could also be noted.

Two charcoal samples from substantial charcoal concentrations within the excavated fireplace deposit [010] (IP30-2) and close to it in the section facing north in the loess [009] (IP30-1) were collected and dated using the C14-AMS method, pointing to an early LBA chronology. The

sample IP30-1 probably corresponds to charcoal that had been moved aside from the fireplace. Both dates suggest the context formation at the beginning of the LBA between the end of the 13th and the 11th century BC (IP30-1: 1232-1049 cal. BC, 92.9% probability and IP30-2: 1209-1011 cal. BC, 95.4% probability). Besides charcoal and small pebble inclusions, four ceramic sherds, one of which is decorated, and three quartzite flakes were discovered (see subsections 4.2.4. and 4.2.5.).

4.2.3. The two pits

Two pits were identified – [014] and [016], both cut into the loess [009]. The first one, pit [014], is curvilinear, c. 65 x 25 cm, located in F4 close to its South profile, and filled by [015]. While not excavated in this campaign, a small fragment of fired clay was recovered from it (see subsection 4.2.4.). The second one, pit [016], is irregular, somewhat oval, c. 140 x 172 cm, located in F2 (Fig. 12b and Fig. 15). The feature was sectioned along its E-W axis and the excavation was limited to its southern half. It was filled by two horizontal deposits: a soft dark brown humous clayey-silt sediment [017], and a loose fine grained brown sandy-silt sediment [031]. Both have small pebbles and charcoal flitters inclusions, but [031] also yielded a manual ceramic sherd (see subsection 4.2.4.).

4.2.4. Ceramics

Eight ceramic sherds have been found in the excavated contexts, two of them with possibly diagnostic decorations and one fragment of fired clay (Table 2 and Fig. 16). All the discovered ceramics represent handmade pottery and show different firing conditions, paste compositions, surface treatments, and some also decorations. A certain degree of homogeneity can be noted in the non-plastic elements with a tempering effect, exclusively mineral, predominantly angular, and corresponding to quartz, feldspar, and micas, easily found in soils derived from granitoid weathering, where all these elements are readily available in the surroundings (Fig. 4).

The two decorated sherds show three different decorative techniques: application of plastic elements, puncturing, and incision (with a blunt U-shaped object). Unfortunately, the excavated ceramic assemblage does not allow for elaborate chronological conclusions, because it

represents undiagnostic forms of widespread, common, and long-standing prehistoric shapes.

Ceramic fragment No. 1, which appears to show a vegetal imprint in its outer surface, has not been found within its archaeological context but in the topsoil (Fig. 16: 1).

Pottery fragment no. 3 (Fig. 16 and Fig. 17), found in deposit [010] of the fireplace alongside three other ceramic sherds (Fig. 16: 4, 5 and 6), corresponds to a body fragment decorated with a nipple-shaped application that was obtained through modelling or pinching. This type of decoration has a widespread distribution, both chronologically and geographically, and has also been found in the nearby LBA settlement of Canedotes (Vila Nova de Paiva) (Canha, 2002: 224-225). Furthermore, a similar decoration was found in the nearby open settlement of Cova do Sol (Moimenta da Beira), which has been dated to the MBA-LBA, on the basis of surface finds (Cruz, 2001: 57, 173, 188, fig. 57-11).

Sherd no. 7 (Fig. 16 and Fig. 17), which has been found within the deposit [028], c. 50 cm east of the statue-menhir [002], is a border fragment from a small vessel (c. 8 cm diameter), with an everted rim, and showing irregular punctate decorations along the inner lip, as well as an incised U-profile line along the outer surface in the shoulder. There is a close parallel (in form and decoration) from the nearby São Jorge settlement (Moimenta da Beira) (Cruz, 2001: fig. 57-14), which was dated to the LBA / EIA based on surface finds alone. This same type of decoration, however lacking the incised line along the shoulder, is also known from larger pots in the settlement of Canedotes (Canha, 2002: 220). However, it should be emphasized that rims, decorated with incisions, impressions, and puncturing, are attributes that can be found on ceramic vessels over a long chronological period, from the EBA Cogeces phase until the LBA of Cogotas I (Rodríguez Marcos, 2012: 156).

Ceramic fragment no. 8 (Fig. 16) is an irregular piece of fired clay of indetermined function, with a regular base and a perpendicular perforation.

Additionally, five ceramic sherds were recovered in field surveys in the area around the excavation (Table 2: 9-13 and Fig. 16: 9-13), one approximately 10 m east of the statue-menhir, and the other four in a clearing of the vegetation between Chã das Lameiras and the monument (Fig. 3: 26). Two fragments are decorated (Fig. 16: 9 and 10). One of them (No. 9; Fig. 16) is a body-sherd adorned with a geometric incision probably made with a blunt object, along with a possible vegetal imprint. The

second fragment (No. 10) is a wheel-turned, decorated horizontal flange of an open vessel, whose surfaces display a black-toned engobe (Fig. 16: 10 and Fig. 17: 10). They are further adorned with two grooves framing repeated small semicircles, also achieved through incisions made with blunt instruments. The remaining three sherds from the survey are undecorated, unspecified handmade pottery fragments (Fig. 16: 11-13).

Table 2 – Sherds identified during the excavation and field surveys.

Sherd no.	Context	Type	Production method	Vessel part	Surface appearance
1	C1 – [001]	Potsherd	Handmade	Body	Plain
2	F2 – [031]	Potsherd	Handmade	Body	Plain
3	F4 – [010]	Potsherd	Handmade	Body	Plain
4	F4 – [010]	Potsherd	Handmade	Body	Plain
5	F4 – [010]	Potsherd	Handmade	Body	Plain
6	F4 – [010]	Potsherd	Handmade	Body	Plain
7	B4d – [028]	Potsherd	Handmade	Rim	Decorated
8	F4 – [015]	Fired clay	Handmade	N/A	Plain
9	c. 10m E of statue-menhir	Potsherd	Handmade	Body	Decorated
10	c. 100m SW of statue-menhir	Potsherd	Wheel-turned	Rim	Decorated
11	c. 100m SW of statue-menhir	Potsherd	Handmade	Body	Plain
12	c. 120m SW of statue-menhir	Potsherd	Handmade	Body	Plain
13	c. 120m SW of statue-menhir	Potsherd	Handmade	Body	Plain

4.2.5 Lithics

The lithic finds consist of one flint and three quartzite flakes (Table 3 and Fig. 18). The flint flake (Lithic no. 1) was found while excavating the topsoil [018] in the F2 square and not within an archaeological context. The three quartzite flakes (no. 2 to 4) were all found in deposit [010], within the fireplace area.

Lithic no. 1 corresponds to a partially cortical retouched flint flake. The retouching is identified along the entire right edge of the dorsal face and at the proximal end of the ventral face. Its platform is cortical and its bulb prominent.

Lithics no. 2 to 4 are all quartzite flakes. No. 2 is a scraper or flake with continuous, marginal retouch on the long edge, as well as significant polishing on one of the faces, probably resulting from frequent use; the surface is plain. No. 3 is a smaller, unworked flake, showing no signs of retouching and a plain surface. Lastly, no. 4 is an unworked, possible cortical flake, likely brought to this site with the objective of being used as a tool. This assemblage is not chronologically diagnostic, same as the ceramic material from this excavation.

Table 3 – Lithics identified during the excavation.

Lithic No.	Context	Material	Type	Dimensions (cm)
1	F2 - [018]	Flint	Scraper from flake (retouched)	5.652 x 5.052 x 2.386
2	F4 - [010]	Quartzite	Scraper from flake (retouched)	7.372 x 4.617 x 1.215
3	F4 - [010]	Quartzite	Flake	2.217 x 1.802 x 0.520
4	F4 - [010]	Quartzite	Flake (?)	4.324 x 2.974 x 1.052

Neither flint nor quartzite can be locally sourced in the Nave plateau. In the surrounding territory, no flint outcrops have been identified, even though the occurrence of smaller veins cannot be dismissed (see Canha, 2002: 243, footnote 296). On the other hand, quartzite, can be procured from the Paiva riverbanks along its passage through the geological schist-greywacke complex, ca. 10 km to the South (Meireles, 2020).

Despite the lack of in-depth studies of knapped stone in Bronze Age contexts in Portugal (Porfírio *et al.*, 2020: 193), these tools remain an important part of these communities' functional assemblages despite the introduction of metal implements. Flint is still one of the most sought-after raw materials, but other locally available fine-grained stones suitable for knapping and thus for creating cutting edges and blades (e.g. quartzite or jasper), were also used for lithic tools.

In Canedotes, quartzite pebbles were used for heating, polishing, grinding, and hammering (Canha, 2002: 118; 244-247). Knapped quartzite tools or choppers have also been found in other Bronze Age

settlements in the Middle Tagus region, where the material is easily accessible (Delfino *et al*., 2014: 155; Félix, 2014: 222).

5. Discussion and Perspectives

This context of a statue-menhir that is possibly still *in situ* or - at the very least - in a secondary archaeological position referencing its previous significance, the numerous stratigraphically related features, and the opportunities to investigate the traces of ancient construction techniques will justify the continued excavation in a second campaign. With regards to the cultural contextualization of Iberian rock art, the excavation of the statue-menhir in Nave 1 delivered intriguing results and expanded our knowledge of the long-standing local traditions of rock art. Traces of the construction processes, represented by the linear features that might be a sliding track [019] / [030] and the possible post hole [020], and activities between the LBA and the LIA have been discovered. Additionally, the protocol of the cleaning process that was applied on this granitic monument could be presented and recommended for similar cases, where lichen has to be removed from rock art. In this turn, the motives that had been published in the first drawing (Fig. 1b) could be confirmed after cleaning. The image of the designs could be further completed after this campaign with traces of the lower line of the belt as well as additional cup-marks, which could not be recognized in the first survey of the monument (cf. Cruz and Santos, 2011: 124).

An unexpected LIA chronology has been provided by three AMS C14 dates from the stratigraphic unit [028], which is cut by the monument's pit. However, the prevalent hypothesis remains that the statue-menhir itself must be significantly older, in agreement with the typological chronologies between the EBA/MBA and LBA (Díaz-Guardamino, 2010: 172-179; Rodriguez Corral, 2018; Vilaça, 2011; Vilaça *et al.*, 2001); its setting on the current location might have taken place afterwards, and the site was still frequented at later dates, as it is generally the case with the fertile grounds of Chã das Lameiras. In this case, it had been relocated during the second century BC, carefully and with respect for the old monument, without any discernible iconographic changes, in a meaningful place and with intentional eastward orientation. However, with a *caveat*, the hypothesis that the monument was actually made and set up in this more recent period cannot be excluded on scientific

grounds without further research. Nevertheless, its iconographic relation with similar monuments that could be attributed to the later stages of the Bronze Age by the depicted weapons, the most probable interpretation remains its reuse and replacement in the Iron Age.

We are fully aware that the C14 dates critically scrutinize traditional chronologies, therefore, two supplementary samples from the 2023 campaign will be sent to laboratories for further assessment of the intriguing dates. The importance of additional fieldwork at Nave 1, the publication of potentially available data from other Portuguese sites, and new discoveries of statue-menhirs with similar iconography is now more evident than ever.

Future fieldwork is fundamental and is planned to include a goal-oriented excavation and in-depth study of the linear features (the hypothetical sliding track) and their further course. Secondly, the possible existence of a nearby older pit must be scrutinized, in conjunction with providing additional samples for C14 dating. A 3D-scan of the statue-menhir including the excavated areas of the monument to confirm the motif composition and enable traceological analyses and re-drawing is planned in collaboration with the University of Extremadura Mérida (Spain).

Author contributions

RAG, PB and RV were responsible for the conception and writing of this paper; RAG and PB were responsible for the direction of the excavation; RV was responsible for the scientific coordination; SD was responsible for the photographic recording of the excavation; ALP was responsible for the photographic recording of the finds; SD, ALP, YP and VR were responsible for the recording of the contexts; all authors agree with the findings presented here.

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[10] https://www.experimentalarchaeology.uni-freiburg.de/

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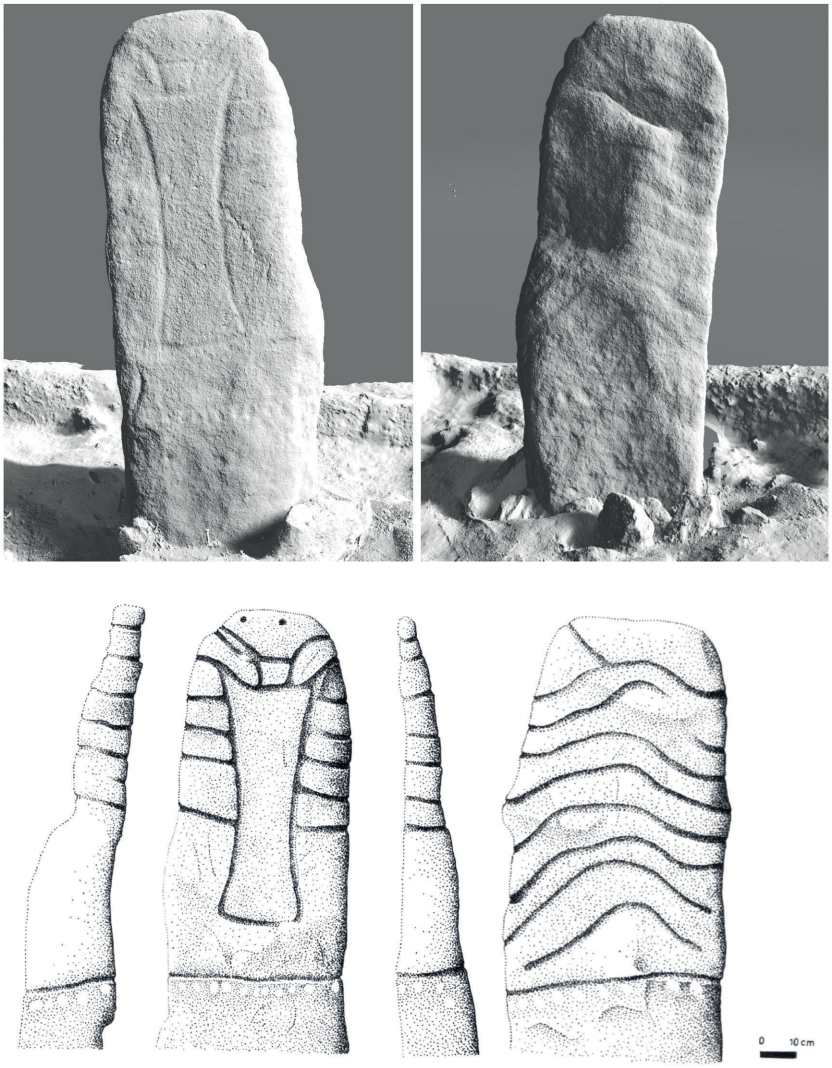

FIG. 1 - *The statue-menhir of Nave 1: 1. SfM model (photos: R. Araque Gonzalez; processing: Philipp Heidegger); 2. Interpretative drawing of engravings from 2011 (CRUZ and SANTOS, 2011,Est. 5; the original is mirror-inverted).*

FIG. 2 - *The statue-menhir of Nave 2: 1. Excavation picture with barbed wire (CRUZ, 2001, Est. 63); 2. Interpretative drawing of engravings from 2011 (CRUZ and SANTOS, 2011, Est. 6).*

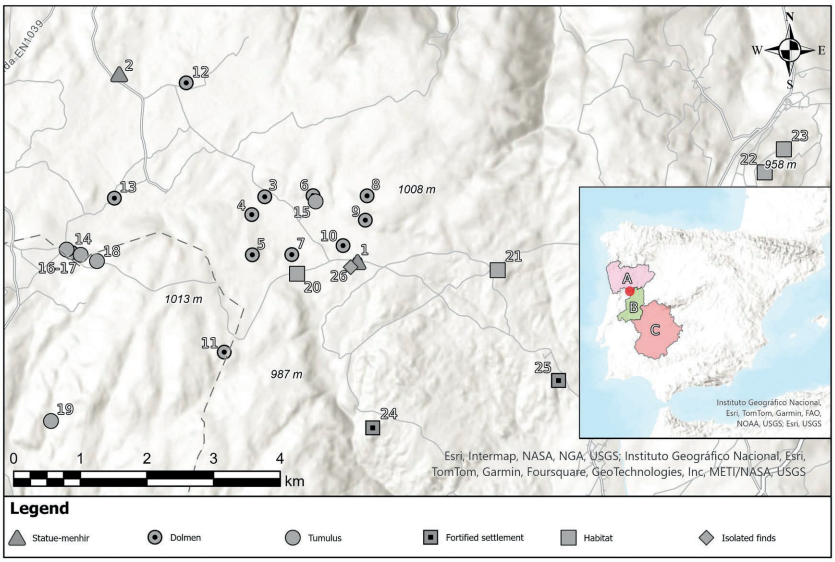

FIG. 3 - *Location of prehistoric archaeological sites identified in the Nave plateau (P. Baptista, based on* CRUZ, *2001). In the inset, location of the Nave plateau in the Iberian Peninsula and of the geographical areas mentioned in the text. 1. Nave 1 statue-menhir; 2. Nave 2 statue-menhir; 3. Fonte do Rato dolmen; 4. Orca de Seixas / Orca do Padrão; 5. Orca da Carqueja; 6. Bebedouro 1; 7. Orca Grande / Orca das Lameiras; 8. Cardenhos; 9. Lameira do Meio; 10. Requeixada; 11. Cartaixos; 12. Quinta do Ferronhe; 13. Quinta dos Caetanos; 14. Torrão 1; 15. Bebedouro 2; 16. Torrão 2; 17. Torrão 3; 18. Labiada das Touças; 19. Corga de Salafonso; 20. Chã das Lameiras; 21. Cova do Sol; 22. Surrinha; 23. Santa Bárbara / São Jorge; 24. Castelo de Ariz; 25. Povoado do Muro; 26. Chã das Lameiras 2; A. Northern Portugal; B. Beira Interior; C. Spanish Extremadura.*

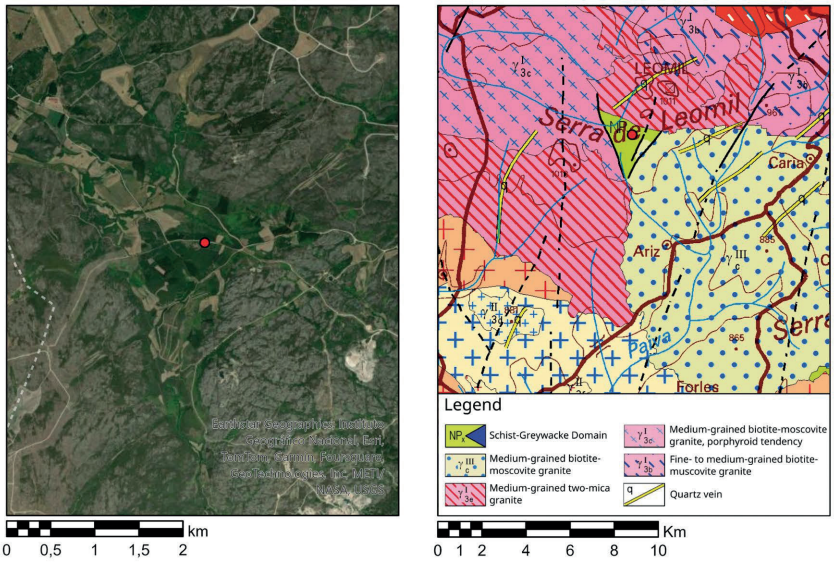

FIG. 4 - *The Nave plateau: 1. Orthophotograph; 2. Simplified geological map of the study area. Red dot: Nave 1 statue-menhir (P. Baptista, adapted from* MEIRELES, *2020).*

FIG. 5 - *The statue-menhir of Nave 1: before and after the application of the cleaning protocol (photos: R. Araque Gonzalez and P. Baptista).*

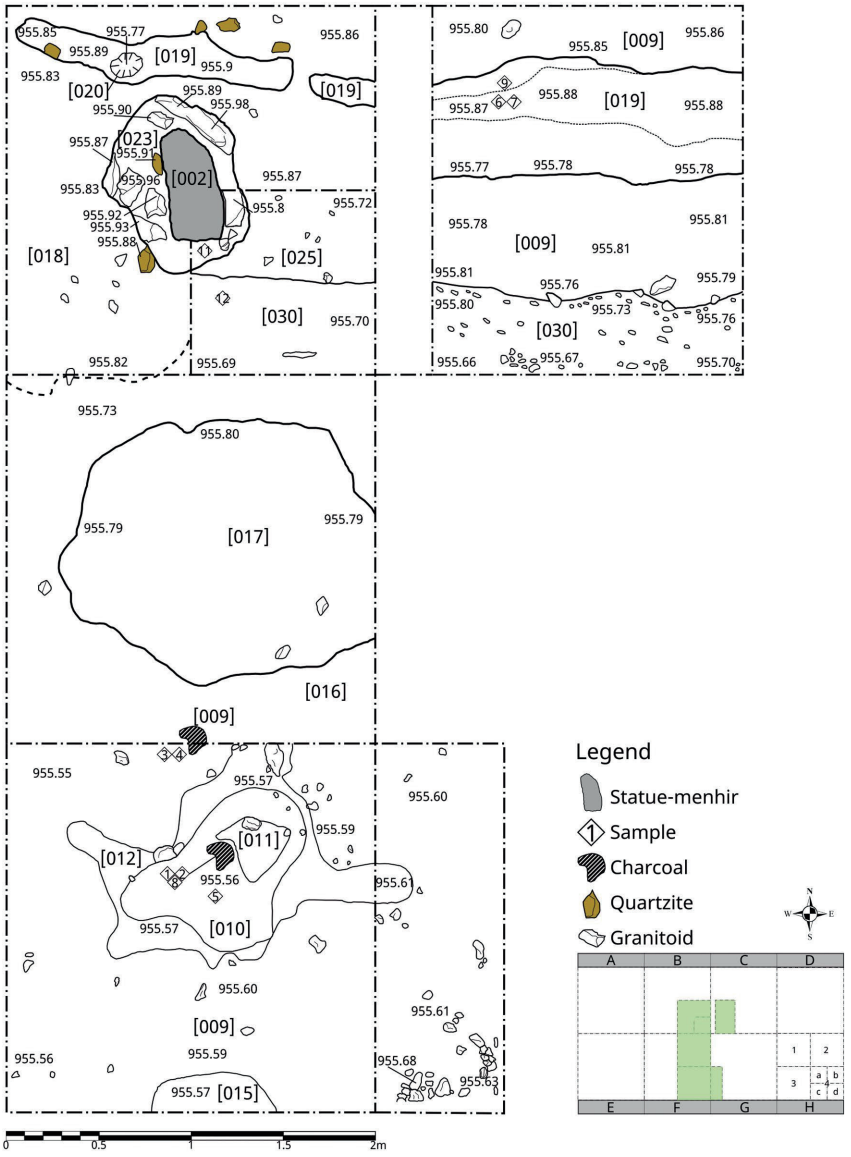

FIG. 6 - *Nave 1 excavation plan. (drawings: S. Drigoda; A. L. Pereira; Y. Puga; V. Rammelkammer; editing: P. Baptista).*

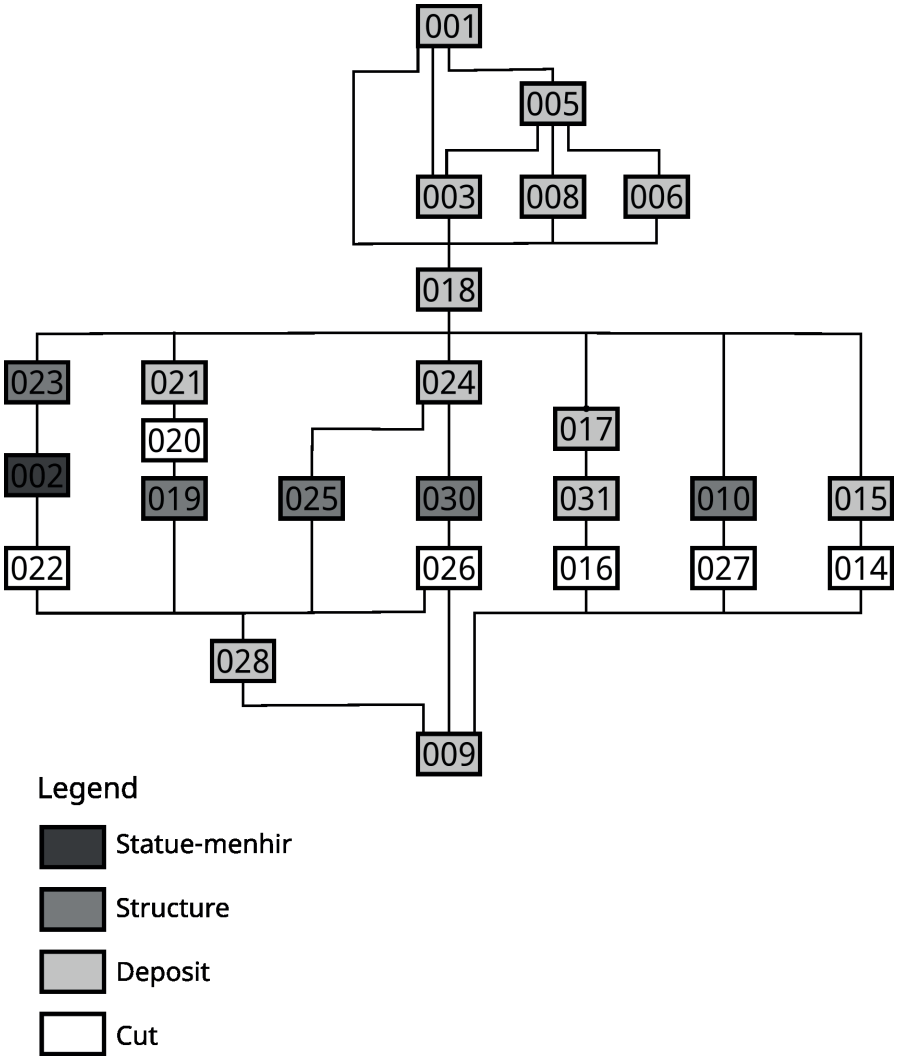

Fig. 7 - Nave 1 stratigraphic matrix. (P. Baptista)

FIG. 8 - *Stabilizing sub-structure [023] in plan (photo: S. Drigoda).*

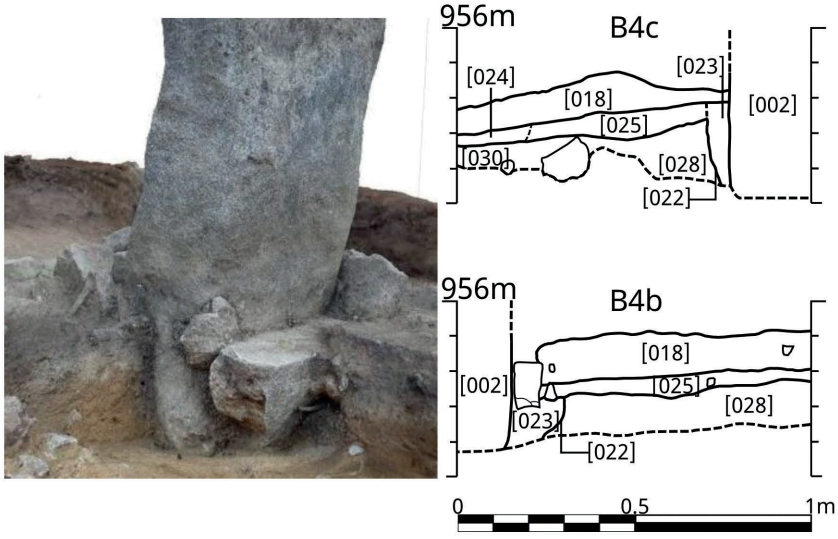

FIG. 9 - *B4d North and West sections: interpretative drawing and SfM model (drawings and editing: P. Baptista; photos: R. Araque Gonzalez; processing: Philipp Heidegger).*

FIG. 10 - *SfM detail of Nave 1 statue-menhir lower section - East and West faces (photos: R. Araque Gonzalez; processing: Philipp Heidegger).*

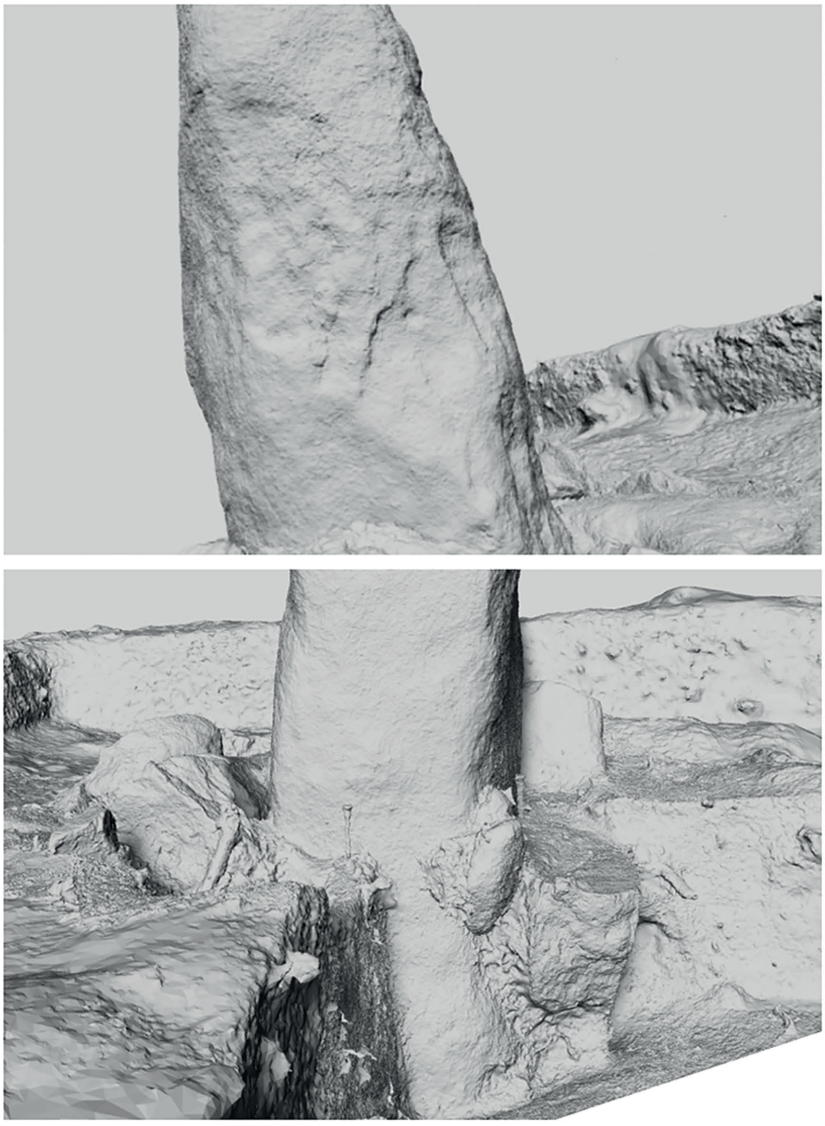

Fig. 11 - *SfM detail of Nave 1 statue-menhir lower section - North and South faces (photos: R. Araque Gonzalez; processing: Philipp Heidegger).*

FIG. 12 - *Linear features [019] and [030] in plan (photo: S. Drigoda).*

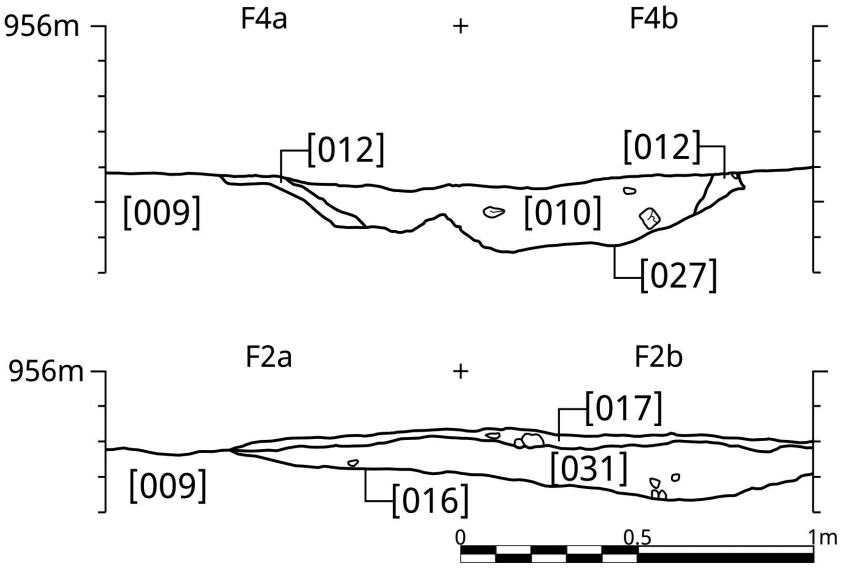

FIG. 13 - *Fireplace and pit E-W sections, facing North (drawings: S. Drigoda; A. L. Pereira; Y. Puga; V. Rammelkammer; editing: P. Baptista).*

FIG. 14 - *Fireplace [010] in plan (photo: S. Drigoda).*

FIG. 15 - *Pit fill [017] in plan (photo: S. Drigoda).*

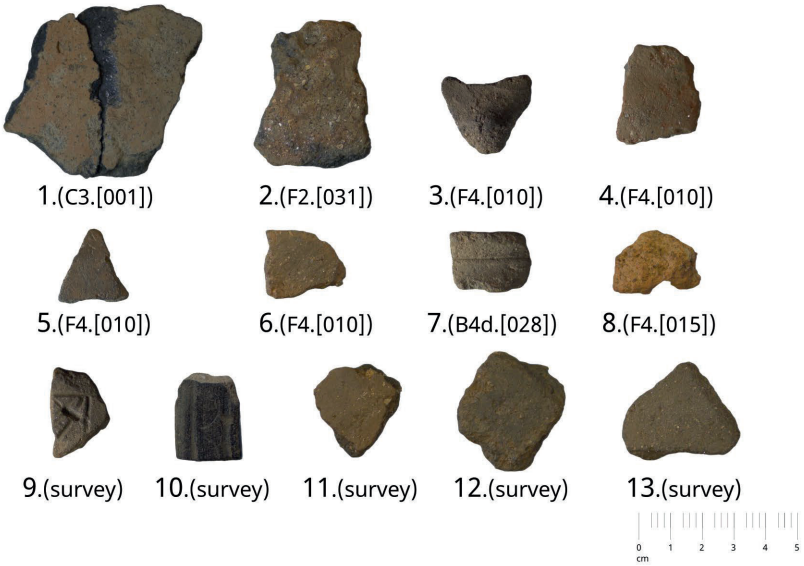

FIG. 16 - *Sherds identified during the excavation and field surveys (photos: A. L. Pereira, editing: P. Baptista).*

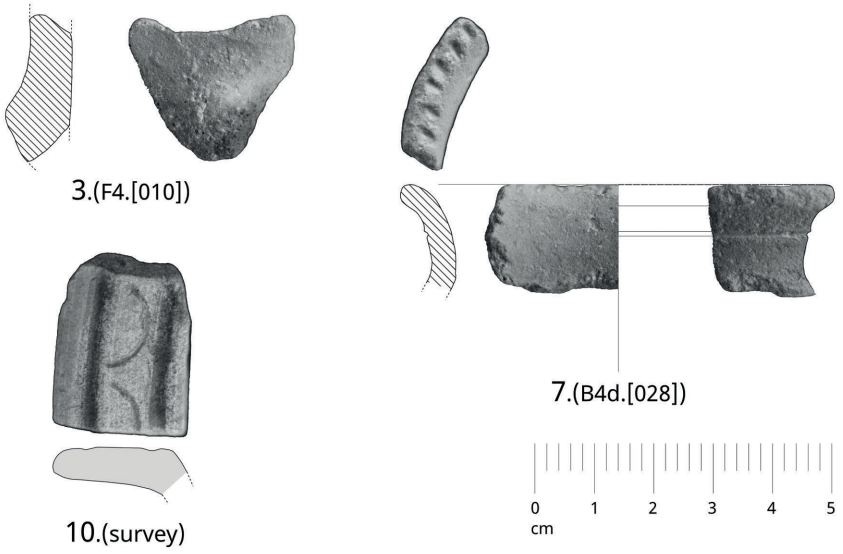

FIG. 17 - *Diagnostic sherds (drawing: P. Baptista).*

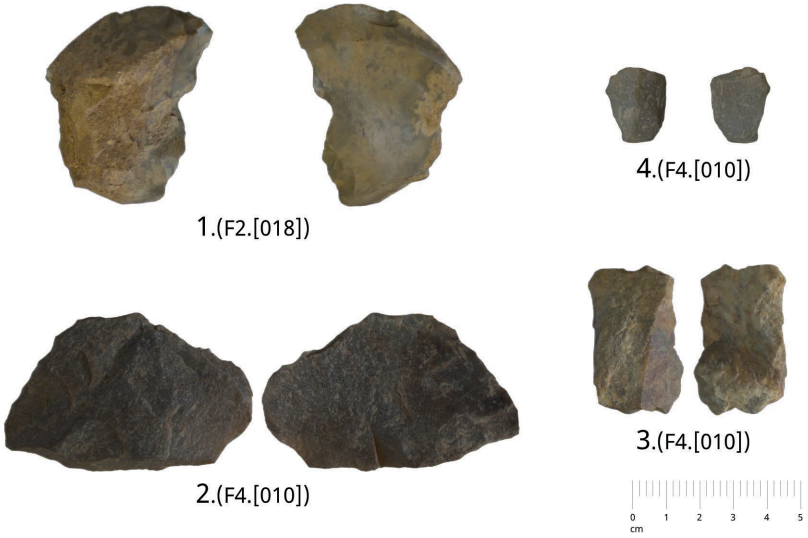

FIG. 18 - *Lithics identified during the excavation (photos: A. L. Pereira, editing: P. Baptista).*