

## CHRONOLOGICAL FRAMEWORK FOR THE EARLY TALAYOTIC PERIOD IN MENORCA: THE SETTLEMENT OF CORNIA NOU

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**ABSTRACT.** The prehistoric site of Cornia Nou (Menorca) features a number of well-preserved architectural structures belonging to the Talayotic culture. Over the last 6 yr, a team linked to the Museum of Menorca has conducted an archaeological excavation project of a large rectangular building attached to the south side of a substantial and massive *talayot*, which is considered the western *talayot*. The main objective of this paper is to present the chronological framework of this building, specifying the period of use and the time of abandonment of the building, as well as the dating of the different phases of its construction. A total of 27 <sup>14</sup>C analyses were obtained from samples of the stratigraphic layers and architectonic structures inside the South Building (SB). This research has provided new insights concerning the early stages of the Talayotic culture. The <sup>14</sup>C dates allow us to place the first recorded occupation phase of the SB in an interval dated within 1100–900 BC (phase 4). A second phase in the occupation of the SB dates to ~900–800 BC (phase 5). A final occupation phase could be situated between 800–600 BC (phase 6). However, this record provides evidence to suggest that the construction of the west *talayot* may pertain to a time before the beginning of the 1st millennium cal BC.

### INTRODUCTION

The name given to a series of cultural events during recent Balearic prehistory is the “Talayotic culture,” which was generated by human communities who had lived on the Balearic Islands of Mallorca and Menorca. The denomination Talayotic is related to one of the most typical architectural elements of this culture, a monumental tower-like structure known as a *talayot*. Talayotic architecture is characterized by the construction of dry stone walls using the cyclopean technique of double-faced large blocks with an inner filling of smaller stones.

The chronology of the Talayotic culture emerges in Menorca (generally joining that of Mallorca), and was traditionally set in the second half of the 2nd millennium BC (e.g. Waldren 1986; Plantalamor 1991). Afterwards, different revisions of the reliability of the radiocarbon record associated to early Talayotic evidence led to the establishment of different proposals. Roughly, they can be divided in two groups; one of them proposes the beginning of the Talayotic period in the late 2nd millennium cal BC (e.g. Castro et al. 1996; Gornés et al. 2004). The second proposal is that of a cultural change in the early 1st millennium BC (e.g. Lull et al. 1999; Micó 2005; Calvo and Guerrero 2011), preceded by a so-called “Proto-Talayotic” phase in some cases. Although the societies on both islands, Mallorca and Menorca, have a common cultural background during the Talayotic period, each island evolved within its own particular conditions (Ramis 2010), resulting in a different cultural and social entity on each of the islands.

The settlement of Cornia Nou, located at the eastern end of the island of Menorca (Figure 1), features a number of well-preserved architectural structures belonging to the Talayotic culture. The site is formed by two isolated groups of archaeological structures, surrounded currently by farms. Most likely, the disappearance of an undetermined part of this site is due to contemporary agriculture exploitations.

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Figure 1 The Balearic Islands and the location of the Cornia Nou site on Menorca

During these last 6 yr, a team linked to the Museum of Menorca has conducted an archaeological excavation project in Cornia Nou. Their research has focused on two different areas of the settlement. One of these areas enhances the eastern sector, which includes a small *talayot* with a circular plant and an inner corridor, interpreted as a monumental gate with entrance to a walled hill, which may have been the early nucleus of the village.

The western sector comprises, among other features, a large *talayot*, one of the most monumental on the island, which has a conical shape and a gate with a significant stairway on the south side, allowing access to the top of the *talayot* (Figure 2). As noted, the *talayot* has two buildings attached; one of these is the South Building (SB), which has been entirely excavated in recent years. A series of structures attached to the east wall have also been excavated outside the SB. The monumental façade of the SB is slightly concave and its length is about 13 m long, with a central entrance. This area can be divided into two main parts:

- 1) Space 1 (Figure 3) comprises an inner corridor with a hearth paved with slate slabs, and a room on each side (West and East rooms).
- 2) Space 2 (Figure 3) is almost completely blocked with stone and contains a covered passage that allows access to the roof by means of a ramp. From the roof, one can climb up the stairway, previously mentioned.

On the whole, the archaeological excavation of the SB allowed to recover many artifacts related to industrial activities: hand mills, hammer stones, mortars, pestles, bone awls, and bone spatulas. All these items are related to the processing of agricultural and animal husbandry products. An important pottery assemblage was also found, with large storage containers, in the occupation layers.



Figure 2 View of the west *talayot* with the Cornia Nou South Building (SB)

The sediment underwent sieving and flotation that allowed the recovery of a great deal of carbonized cereal seeds, mainly near the hearth. Furthermore, the excavation of the SB revealed a large amount of faunal remains. Although they are still under study, the first results show a very limited range of species—goat, sheep, cattle, and pig—traditional domestic species with a clear predominance of the first two. Presence of red deer (*Cervus elaphus*) could be determined, and represents one of the earliest records of this species on the island. On the other hand, there is a complete absence of marine resources, which is characteristic in Menorcan prehistory (Van Strydonck et al. 2005).

From the recovered artifacts, it can be concluded that the SB functioned as a center for product processing, storage, and redistribution. In this sense, the analyzed data denote the existence of a community with a complex social organization. The material assemblage suggests a centralized production system that goes beyond the domestic sphere. Furthermore, the *talayot* and the monumentality of SB could be evidence of an emerging elite class. Additionally, the top of the *talayot*, which represents a dominant feature of the area, and has a restricting architectural access, could be interpreted as a representative space for the power of this social group. Thus, the monumental complex as a representative space, and the activities developed inside the SB, could be connected to the control of these products by some kind of elite group.

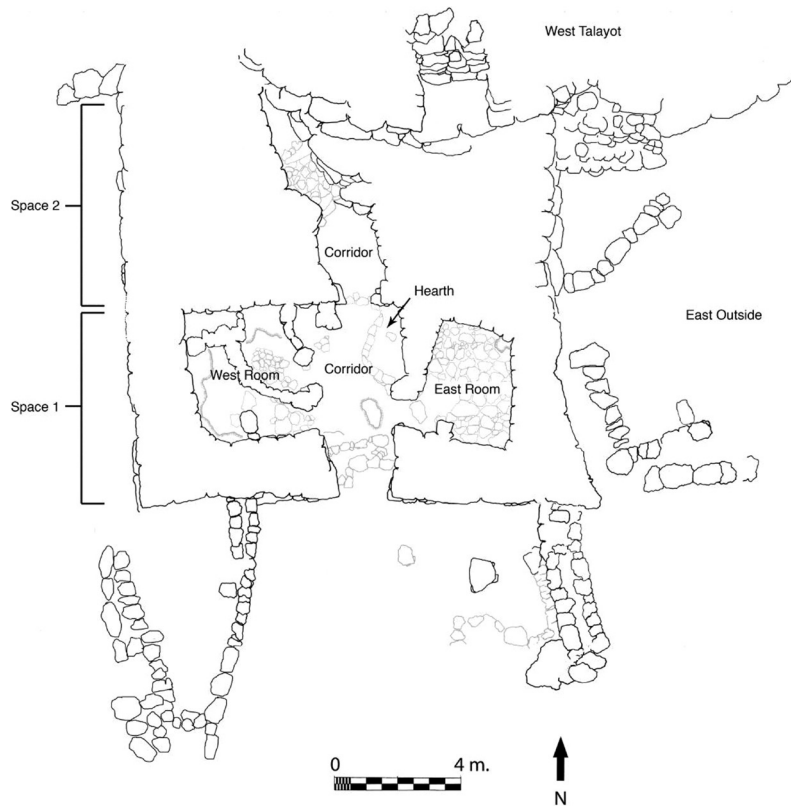


Figure 3 Planimetry of the Cornia Nou South Building (SB)

Therefore, the data of this excavation may suggest that at least some of the human communities that inhabited Menorca between the late 2nd and early 1st millennium cal BC were immersed in an incipient process of increasing complexity and maybe social inequality (Anglada et al. 2012). However, the general trend is to consider that the Talayotic society—both in Mallorca and Menorca—consisted of egalitarian communities (e.g. Gasull et al. 1984; Lull et al. 1999).

The main objective of this article is to establish a chronological sequence for the use of the SB, specifying the occupation intervals and abandonment time of the different areas, as well as the dates of construction for the different architectural areas. The aim proposed herein presents a series of difficulties. First, the SB is built directly on bedrock, without any archaeological layer under its walls. Additionally, it is a very complex area, divided into several rooms and spaces, with outer structures attached to it. In most cases, there is not a direct stratigraphic connection among the occupation or abandonment layers of these different spaces.

## MATERIALS AND METHODS

### Sample Selection

The layers within the SB represent a very complex stratigraphy (Figures 4 and 5). Samples have been selected in order to (a) date use or occupation levels of the different spaces (hearth and contexts immediately above the bedrock or floors) and (b) date the different construction events. To date the architectural features, samples were selected from pavement preparation and rubble layers. It must be noted that samples from a rubble level are informative of the construction moment and not of



Figure 4 Section of Corridor and East Room, illustration of the stratigraphic dynamics of the Cornia Nou SB



Figure 5 Diagram of the dated stratigraphic units and the related constructive stratigraphic units



the collapse time. In this sense, the collapse layers contain pottery fragments and faunal remains that can be interpreted as forming part of the walls and roofs, as part of the construction materials. It must be kept in mind that this sort of pottery debris is usually very fragmented. However, the intrusive material may cause a problem at Cornia Nou. This is well documented in this category of archaeological site, usually demonstrated by the presence of redeposited materials, typochronologically dated older than the formation of the context itself. In these cases, obviously, the period of context formation is always determined by the most recent materials.

### **Complexity of the Sample Strategy**

The stratigraphy thickness of the SB is variable but a sequence has been found up to 3 m deep at some points. In general, the stratigraphy can be divided into collapse layers (with materials coming from the roof and/or the walls), layers of use, and pavements (with preparation layers in some cases). In the case of the collapse layers, the remains of a roof can be identified by the presence of slate slabs and large concentrations of compacted clay. An interesting fact is that Cornia Nou is situated on what is considered the Miocene platform of the island, formed by limestone, but slate can be found on the north coast. On the other hand, the wall remnants are distinguished by an abundance of large stone blocks. An additional problem here has been caused because of these empty spaces among the large blocks and through which intrusive material has seeped.

The occupation layers are identified because they are usually found on a floor or a pavement, sometimes even directly lying on the bedrock. The material assemblage appears in a more or less horizontal distribution; the pottery is not as fragmented as in the collapse layers, as it is in a primary position. Also, the SB occupation layers are characterized by the presence of an important group of lithic and bone tools, which represent the material remains of the activities performed inside this structure.

The floors or pavements of the different spaces related to the SB were quite diverse. First of all, occasionally the floors were paved with stone slabs (some of them being reused hand mills). These stone slabs were on a preparatory sediment layer, deposited under them to level out the natural bedrock. Secondly, in other cases, the pavements were formed by a compacted clay layer. Finally, a third alternative was used, that of the bedrock directly as a floor.

### **<sup>14</sup>C Dating**

A total of 27 <sup>14</sup>C dates have been performed: 22 dates on bones from domestic mammals and microfauna, 2 dates on carbonized wood or charcoal fragments, 1 date on charred cereal grains, and 2 dates on perinatal human bones. All bone samples were pretreated using the Longin (1971) method supplemented with a NaOH wash to remove humic acids. All bones contained enough good quality collagen to perform the analysis. Charred plant materials were pretreated by the ABA method (60 min; 1%, hot). After pretreatment, samples were combusted and transformed into graphite (Van Strydonck and van der Borg 1990–1991) and dated by accelerator mass spectrometry (AMS) (Nadeau et al. 1998).

Unfortunately, during the excavation, it was not always possible to identify what was intrusive and what was not (see discussion below). Therefore, the rejection or acceptance of the dates is only possible after the dates were put in a stratigraphic model. In two cases (SU 5 and SU 108), the same stratigraphic unit (SU) was dated using two different types of material.

Table 1  $^{14}\text{C}$  dates and sample description.

| Sample code | Sample type         | $^{14}\text{C}$ (BP) | Calibrated date ( $2\sigma$ ) | SU | Description  |
|-------------|---------------------|----------------------|-------------------------------|----|--|
| KIA-38954   | <i>Ovis aries</i>   | 2510 $\pm$ 35 BP     | 800–580 BC                    | 2  | Sample from a collapse layer related to the second roof in the central corridor.   |
| KIA-38948   | <i>Capra hircus</i> | 2540 $\pm$ 35 BP     | 810–570 BC                    | 2  | Sample from a collapse layer related to the second roof in the central corridor.   |
| KIA-39429   | Caprine             | 2750 $\pm$ 30 BP     | 930–830 BC                    | 3  | Sample from a repair in the upper side of the covered corridor.  |
| KIA-38955   | Caprine             | 2710 $\pm$ 35 BP     | 920–815 BC                    | 3  | Sample from a repair in the upper side of the covered corridor.  |
| KIA-38061   | Charcoal            | 2780 $\pm$ 30 BP     | 1010–840 BC                   | 5  | Sample from a second roof in the central corridor, built after the collapse of the previous one (SU 33).   |
| KIA-38968   | Domestic mammal     | 2470 $\pm$ 30 BP     | 780–580 BC                    | 5  | Sample from a second roof in the central corridor, built after the collapse of the previous one (SU 33).   |
| KIA-38956   | Rodent bones        | 2150 $\pm$ 30 BP     | 360–50 BC                     | 5  | Intrusive microfauna in the SU 5.  |
| KIA-38940   | <i>Ovis aries</i>   | 2980 $\pm$ 30 BP     | 1380–1110 BC                  | 7  | An ash accumulation deposited on the SB collapse layers.   |
| KIA-41937   | <i>Ovis aries</i>   | 2510 $\pm$ 30 BP     | 690–420 BC                    | 25 | Lamb buried on the first abandonment layers of the East Room of the SB, interpreted as the beginning of the abandonment at least of this part of the monument. |
| KIA-41895   | Caprine             | 2835 $\pm$ 30 BP     | 1110–910 BC                   | 33 | Sample from the collapsed roof of the central corridor.  |
| KIA-41896   | <i>Capra hircus</i> | 2770 $\pm$ 30 BP     | 940–830 BC                    | 34 | Sample from the layer deposited directly on the cobbled pavement (SU 1019) in the in the East Room of the SB.  |
| KIA-41935   | <i>Ovis aries</i>   | 2520 $\pm$ 30 BP     | 800–570 BC                    | 44 | Sample from the late use layer in the central corridor.  |
| KIA-41936   | <i>Ovis aries</i>   | 2490 $\pm$ 45 BP     | 790–560 BC                    | 50 | Sample from the late use layer in the central corridor.  |
| KIA-45768   | Caprine             | 2455 $\pm$ 25 BP     | 770–570 BC                    | 56 | Sample from the preparatory layer under the cobbled pavement (SU 1021) in the West Room of the SB.   |
| KIA-45767   | <i>Bos taurus</i>   | 2740 $\pm$ 25 BP     | 920–830 BC                    | 60 | Sample from the preparatory layer under the cobbled pavement (SU 1019) in the East Room of the SB.   |

Table 1 (Continued)

| Sample code | Sample type           | <sup>14</sup> C (BP) | Calibrated date (2 $\sigma$ ) | SU  | Description   |
|-------------|-----------------------|----------------------|-------------------------------|-----|---|
| KIA-43045   | <i>Capra hircus</i>   | 2700 $\pm$ 40 BP     | 920–800 BC                    | 62  | Sample from a collapsed roof in the East Outside the SB.  |
| KIA-43043   | <i>Sus domesticus</i> | 2510 $\pm$ 30 BP     | 790–530 BC                    | 62  | Sample from a collapsed roof in the East Outside the SB.  |
| KIA-43044   | <i>Bos taurus</i>     | 2480 $\pm$ 30 BP     | 780–480 BC                    | 62  | Sample from a collapsed roof in the East Outside the SB.  |
| KIA-45766   | Caprine               | 2765 $\pm$ 25 BP     | 935–835 BC                    | 80  | Sample from the preparatory layer under the cobbled pavement (SU 1033) in the Corridor (Space 2) of the SB.   |
| KIA-45770   | Human                 | 2055 $\pm$ 25 BP     | 170 BC–10 AD                  | 89  | Burial reuse outside the SB.  |
| KIA-45769   | <i>Ovis aries</i>     | 2825 $\pm$ 30 BP     | 1090–910 BC                   | 95  | Sample from a layer (SU 1035) of the hearth in the central corridor, attached to a division wall (SU 1003).   |
| KIA-46805   | Human                 | 2350 $\pm$ 30 BP     | 520–370 BC                    | 102 | Burial reuse outside the SB.  |
| KIA-45765   | Charcoal              | 2980 $\pm$ 25 BP     | 1280–1120 BC                  | 108 | Sample from a collapsed roof in the East Outside the SB, attached to a column base (SU 1049). It belongs to the late enlargement of the existing structures attached to the SB. |
| KIA-45771   | Caprine               | 2480 $\pm$ 30 BP     | 780–570 BC                    | 108 | Sample from a collapsed roof in the East Outside, attached to a column base (SU 1049). It belongs to the late enlargement of the existing structures attached to the SB.        |
| KIA-45764   | 6 cereal seeds        | 2745 $\pm$ 30 BP     | 930–830 BC                    | 112 | Sample from a collapse layer (material construction) in the East Outside, deposited directly on the bedrock and attached to the walls SU 1047, SU 1044, SU 1032, and SU 1037.   |
| KIA-48792   | <i>Bos taurus</i>     | 2560 $\pm$ 35 BP     | 810–580 BC                    | 147 | Sample from the preparatory layer under a cobbled pavement (SU 1050) in the East Outside, belonging to the last enlargement of the existing structures attached to the SB.      |
| KIA-48793   | Caprine               | 2785 $\pm$ 35 BP     | 950–830 BC                    | 148 | Compacted pavement on the bedrock in the East Outside, belonging to the early constructive event of these structures attached to the SB. Under a column base (SU 1049).         |



## RESULTS AND DISCUSSION

### Results

All  $^{14}\text{C}$  dates are calibrated using OxCal v 3.10 (Bronk Ramsey 1995, 2001; atmospheric data from Reimer et al. 2013). Table 2 and Figure 7 represent the accepted data put in a stratigraphical model.

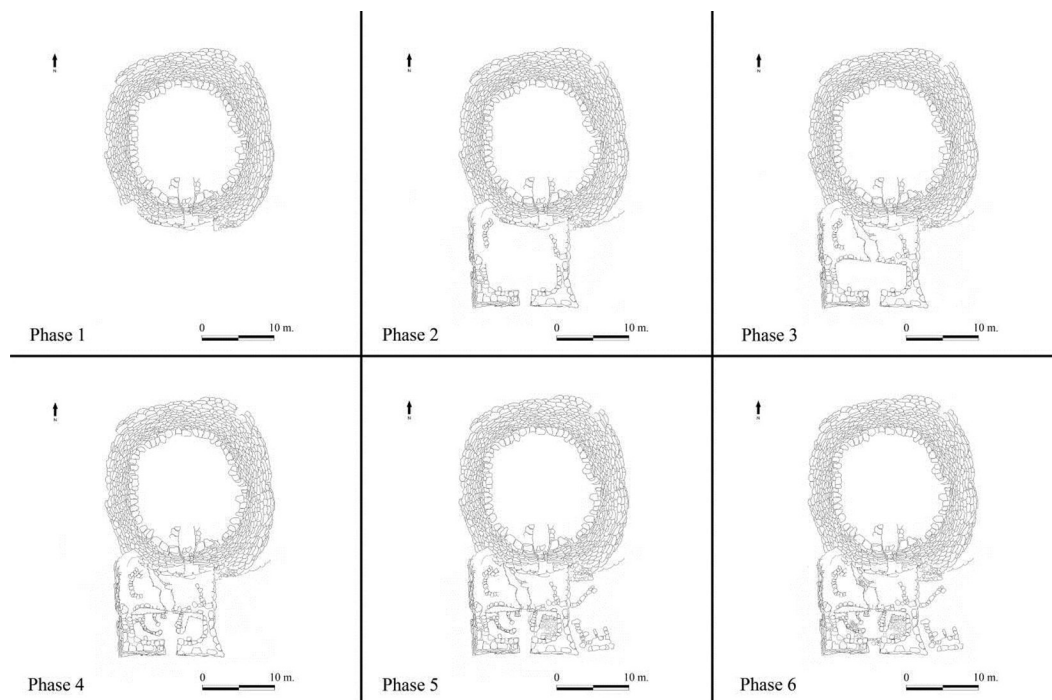


Figure 6 Architectural events of the different phases of the west *talayot* and the SB

### Assessment

The two dates from SU 108—KIA-45765 (charcoal) and KIA-45771 (bone)—show that redeposited material may negatively affect the accuracy for these SU from Cornia Nou. Knowing this, a small part of the pottery fragments coming from the collapse layers of the Talayotic structures belongs to Pre-Talayotic (Early and Middle Bronze Age) typologies (Anglada et al. 2011). However, especially in cases of layers of use, where an intrusion of soil from elsewhere has not taken place, the redeposited materials are considered a minority percentage (<5%) compared to the material contemporary to the formation time of those contexts. Not only charcoal but also animal remains found at any layer may have the same asynchrony problems due to the presence of redeposited materials, which can only be detected through  $^{14}\text{C}$  dating. This is clearly shown through three of the  $^{14}\text{C}$  results obtained on bones from SU62 (KIA-43043, KIA-43044, and KIA-43045).

The problems involving sample selection and acceptance make it economically unfeasible to obtain enough dates per identified context to do any statistical evaluation on each context. In fact, it is only possible to date one or a few samples of each context. So, the question that arises is this: how can we determine that a single sample or a small sample set is representative of the formation time of the context from which it comes? In this sense, the research conducted in Cornia Nou follows the typical trend for this kind of site. Nevertheless, in SB the number of dated contexts is relatively high, amounting to 20  $^{14}\text{C}$  dates. Thus, the chronological coherence within the whole set of dates

coming from the inner space of this building (the age of the sample combined with the stratigraphic position of the context) allows us to conclude that most of the dated samples are representative of the moment of the context formation.

Table 2 Stratigraphical model of the accepted dates.

|                               |                               |
|-------------------------------|-------------------------------|
| <b>PHASE 4</b>                | <b>PHASE 6</b>                |
| KIA-41895 (SU 33): 2835 ± 30  | KIA-48792 (SU 147): 2560 ± 35 |
| 1110 BC (95.4%) 910 BC        | 810 BC (72.6%) 720 BC         |
| KIA-45769 (SU 95): 2825 ± 30  | 690 BC (10.0%) 660 BC         |
| 1090 BC (95.4%) 910 BC        | 650 BC (12.8%) 580 BC         |
| <b>BOUNDARY 4/5</b>           | KIA-38948 (SU 2): 2540 ± 35   |
| 990 BC (95.4%) 850 BC         | 810 BC (95.4%) 570 BC         |
| Maximum around 910 BC         | KIA-41935 (SU 44): 2520 ± 30  |
|                               | 800 BC (95.4%) 570 BC         |
| <b>PHASE 5</b>                | KIA-38954 (SU 2): 2510 ± 35   |
| KIA-48793 (SU 148): 2785 ± 35 | 800 BC (95.4%) 580 BC         |
| 950 BC (95.4%) 830 BC         | KIA-41936 (SU 50): 2490 ± 45  |
| KIA-41896 (SU 34): 2770 ± 30  | 790 BC (95.4%) 560 BC         |
| 940 BC (95.4%) 830 BC         | KIA-45771 (SU 108): 2480 ± 30 |
| KIA-45766 (SU 80): 2765 ± 25  | 780 BC (95.4%) 570 BC         |
| 935 BC (95.4%) 835 BC         | KIA-38968 (SU 5): 2470 ± 30   |
| KIA-39429 (SU 3): 2750 ± 30   | 780 BC (95.4%) 580 BC         |
| 930 BC (95.4%) 830 BC         | KIA-45768 (SU 56): 2455 ± 25  |
| KIA-45764 (SU 112): 2745 ± 30 | 770 BC (95.4%) 570 BC         |
| 930 BC (95.4%) 830 BC         | <b>BOUNDARY 6/ABANDONMENT</b> |
| KIA-45767 (SU 60): 2740 ± 25  | 660 BC (95.4%) 550 BC         |
| 920 BC (95.4%) 830 BC         | Maximum around 600 BC         |
| KIA-38955 (SU 3): 2710 ± 35   |                               |
| 920 BC (95.4%) 815 BC         | <b>ABANDONMENT</b>            |
| <b>BOUNDARY 5/6</b>           | KIA-41937 (SU 25): 2510 ± 30  |
| 910 BC (95.4%) 760 BC         | 690 BC (1.0%) 470 BC          |
| Maximum around 820 BC         | 450 BC (94.4%) 420 BC         |
|                               | Overall agreement 118.8%      |

### Chronology of the South Building

Figure 6 represents the different construction phases of the *talayot* and that of the SB. In this article, a phase is defined as a chronological interval that can be bounded from the archaeological record. This term includes, therefore, architectonic issues (understood as constructive processes), but also periods of occupation of the different spaces, detectable by the formation of the so-called occupation layers (as described previously in Materials and Methods); and abandonment periods, defined by the formation of collapse layers. The earliest construction phases (1, 2, and 3) are not <sup>14</sup>C dated due to the lack of datable material, but the relative chronology is based on architectural stratigraphy. The earlier phases for the monumental complex are as follows:

Phase 1. Construction of the *talayot*.

Phase 2. Construction of the perimeter wall of the SB (SU 1001) attached to the *talayot*, adopting a quadrangular form. Originally, the interior could have had a very different, but unknown, orga-

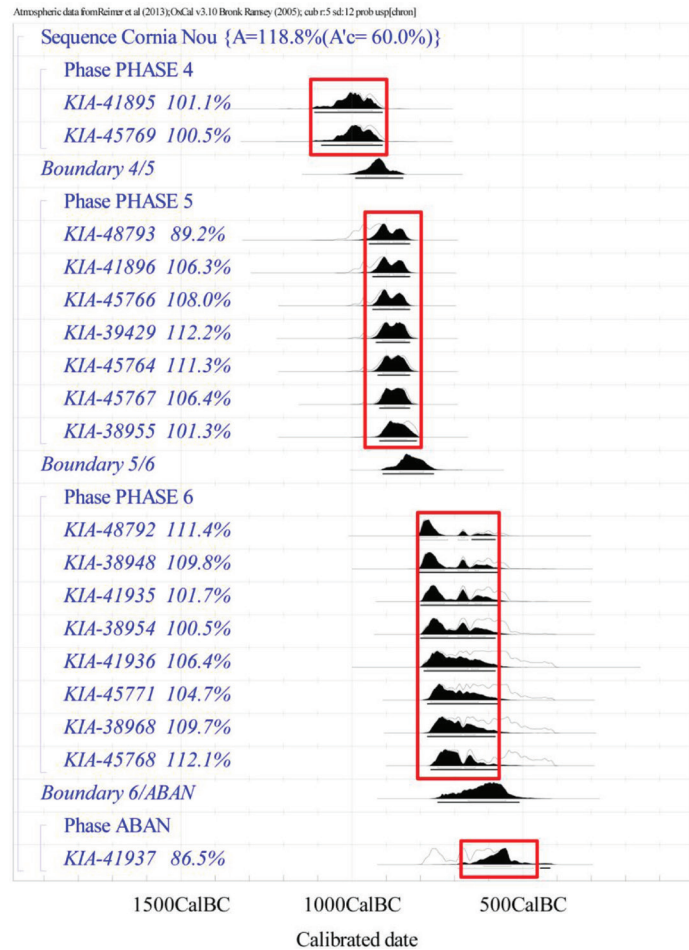


Figure 7 Bayesian analysis of the Cornia sequence

nization. No material has been found to date this phase.

**Phase 3.** This phase consists of a considerable transformation of the SB (see Figure 3) with a filling of the SU 1002, which has filled up most of the northern half of the building (Space 2), and just leaving a corridor that connects to the roof of the SB and also to the stairs of the *talayot*. The first stratigraphic contexts directly dated by  $^{14}\text{C}$  are from after the division of the SB into the Spaces 1 and 2. Three main dating groups can be stated regarding the last phases of construction, use, and abandonment of the SB (Table 2).

**Phase 4.** This phase is represented by the construction of the first division walls (SU 1003) inside Space 1, with a central hearth in the corridor. It is dated in the interval between ~1100–900 BC. This date is an important *terminus ante quem* for the chronological position of the monumental complex. The time phase is based on KIA-41895, derived from a level interpreted as the collapse layer of the roof of the central corridor (SU 33). A second sample submitted is that of KIA-45769, coming from SU 95, a level inside the hearth.

**Phase 5.** Almost simultaneously, or slightly later in time, some architectural reforms began inside and outside the SB. They are dated within an interval between ~900–800 BC. The construction

of a pavement in the East Room is dated by KIA-41896, recovered from the preparatory layer (SU 60) under the cobbled pavement (SU 1019). In the same room, an occupation layer was documented by a deposit directly on the cobbled pavement (SU 34) and dated in the same interval (KIA-45767). A series of repairs were performed in the covered area (Space 2) at the same time: a sample (KIA-45766) was recovered from a repair of the covered ramp (SU 80) and two (KIA-39429 and KIA-38955) from a building repair in the upper side of the covered corridor (SU 3). Finally, the construction of the first rooms attached to the East Outside of the monument—KIA-48793 (SU 148) and KIA-45764 (SU 112)—could be documented within this phase.

Phase 6. The final use phase, between ~800–600 BC, is represented by the last architectural reforms and the last evidence for use of the SB and the rooms attached to the East Outside. Based on the stratigraphy, the entrance to the SB was cleared and reused (SU 44: KIA-41935, SU 50: KIA-41936). It seems that a second one was then built (SU 2: KIA-38954 and KIA-38948, SU 5: KIA-38968), the first roof collapsed (SU 33), and the West Room was paved (SU 1021). Its preparation layer (SU 56) was dated (KIA-45768). Furthermore, the enlargement of existing rooms in the East Outside of the SB, have been dated and represented by an occupation layer (SU 147; KIA-48792) and a collapsed roof layer (SU 108; KIA-45771).

Two samples on carbonized wood (KIA-45765, KIA-38061) came from two of the stratigraphic layers (SU 108 and SU 5, respectively) that have provided the  $^{14}\text{C}$  dates for this phase. It can be deduced that these samples are older material redeposited in this layer or/and affected by the old-wood effect, because much more recent results were obtained on short-lived samples from the same layers. Sample KIA-38956 (microfauna) possibly is an intrusion after the formation of the SU 5, a collapse layer from the corridor. The problem of intrusive microfauna is well documented in other contexts (e.g. Cucchi et al. 2005). For these reasons, these three  $^{14}\text{C}$  dates are not considered in the construction of our model.

Sample KIA-38940 came from SU 7, interpreted as an ash accumulation deposited under the SB collapse layers of the last building phase, a layer that was expected, based on the stratigraphy, to correspond to the last use interval of the SB. However, this sample produced the oldest date of the monumental complex. Therefore, it can be deduced that the sample was older redeposited material. For this reason, it has not been used for this analysis.

Finally, the beginning of the abandonment of the SB could be detected, dated by a sample (KIA-41937) from an *Ovis aries* juvenile specimen that was buried in the first collapse layer (SU 25) in the East Room. There is no accurate chronological evidence for the abandonment of the remaining spaces of the monument. It could be suggested that the date of the lamb buried in the East Room has the probability of being representative of the rest of the monument. Nevertheless, the stratigraphic connections are lacking. In accordance with this proposal, there is a human body buried outside the SB and dated between 520–370 cal BC (KIA-46805). This feature cannot be related stratigraphically to the building, but it is an indicator that the monument and its surrounding area had lost its original function.

Sample KIA-45770, from another skeletal remain of a perinatal individual, does not contribute to the discussion of the chronology of the SB because it comes from the reuse layers outside the main buildings. On the other hand, it demonstrates the latest use of the site. Three samples (KIA-43043, KIA-43044, KIA-43045) came from SU 62, a collapse layer from the East Outside, an event that was expected, based on the ceramic types, to correspond to after the abandonment interval of the SB. Here, stable isotope analyses for each of the three domestic species were represented (cattle,

pig, sheep, or goat). The  $t$  test failed on the results, so they cannot belong to the same event. Therefore, these three  $^{14}\text{C}$  dates are not considered in the construction of our model.

## CONCLUSION

A long and complex occupation sequence was documented in the South Building (SB) of Cornia Nou. A combination of  $^{14}\text{C}$  dating and stratigraphic interpretation has been followed to obtain a precise chronology of the occupation dynamics of this monument. Occupation layers of the different spaces and architectural features were the contexts selected to be dated.

It must be noted that there is no chronometric evidence for the early architectural stages of the monumental complex. These main stages are thus the construction of the *talayot* (phase 1), construction of the SB perimeter wall (phase 2), and the great transformation of SB and the filling of most of its north half (phase 3). The existence of these phases and their relative chronology rely exclusively on the stratigraphic associations.

The  $^{14}\text{C}$  dates allow us to define three phases of use in the SB of Cornia Nou. The earliest of them (phase 4) is defined by a series of  $^{14}\text{C}$  dates with two results placed in the interval 1100–900 cal BC. It is followed by phase 5, dated to 900–800 cal BC. The final occupation (phase 6) is dated to ~800–600 cal BC. The process of abandonment of the SB of Cornia Nou would thus begin in an interval between ~600–500 cal BC.

The  $^{14}\text{C}$  series from the SB of Cornia Nou have allowed a new insight to the early stages of the Talayotic culture. This chronological record provides direct evidence to put forward that the construction of the west *talayot* of Cornia Nou took place prior to the beginning of the 1st millennium cal BC. It supports the early chronology proposals for the origin of the Talayotic culture of Menorca sometime in the late 2nd millennium cal BC. Moreover, the long occupation of the SB at Cornia Nou, covering the entire first half of the 1st millennium cal BC, suggests the continuity of the Talayotic society along this chronological period.

The results obtained in the SB of Cornia Nou highlight the need for dating materials from a significant number of different types of contexts. This is required for a clear interpretation when trying to date the various phases of construction and use of a complex building. On the other hand, this study proves the importance of a joint analysis of  $^{14}\text{C}$  and stratigraphic relationships in order to understand the dynamics of the site formation, and to properly apply Bayesian statistics.

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