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RADIOCARBON DATING OF THE NECROPOLIS OF THE EARLY CHRISTIAN SITE OF SON PERETÓ (MALLORCA, BALEARIC ISLANDS)

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ABSTRACT. Radiocarbon dates, obtained from different human bones found in several tombs of the site of Son Peretó, are presented and discussed together with the stratigraphical evidence and the study of the material culture. The calibrated dates show that the tombs were built earlier than the main phase of occupation of the West Sector, therefore belonging to a necropolis linked to the Christian building prior to the transformation of the area into a habitation nucleus. The necropolis is ¹⁴C dated mainly to the 6th century AD. This is in good agreement with the chronology provided by ceramic materials.

INTRODUCTION

Son Peretó (Manacor, Mallorca) is one of the most important sites for understanding early Christianity in the Balearic Islands. Archaeological research, carried out since the early 20th century, has helped uncover a Christian church with a baptistery on the western side and several associated rooms to the west and south of the religious buildings. A large necropolis has also been documented. A picture is gradually emerging of the West Sector with two main phases: Phase A, the earlier timeframe, consisting of the church and necropolis; and Phase B, dating to a later period, comprising the church and a variety of annexed rooms used for domestic and industrial purposes. The totality of the Son Peretó complex provides an excellent example of Early Christian ecclesiastical architecture in the Mediterranean.

The aim of this article is twofold: to present the ¹⁴C dates from different human remain samples obtained from several of the Son Peretó graves; and to discuss the stratigraphical evidence and the study of the material culture from the site's West Sector. The objective is not only to date the site's phases, but to also provide a first insight into the evolution and chronology of funerary practices.

THE SON PERETÓ SITE

The Son Peretó site is located in the municipality of Manacor, in the eastern part of the island of Mallorca, approximately 6 km along the road from Manacor to Sant Llorenç des Cardassar (Figure 1). Archaeological investigation of the site dates back to the early 20th century, when it was discovered in 1912 by Aguiló (1923), who excavated various parts of the site (Puig i Cadafalch 1915–1920). Later, in 1963, Iturgáiz (1963, 1970) investigated the baptistery, in particular the large baptismal font. The site drew the attention of Palol and colleagues, who investigated the area in the late 1960s, concentrating on the baptistery and the western part of the church (Palol 1967, 1994; Palol et al. 1967). It was not until the 1980s that many parts of the so-called West Sector were uncovered, during an extensive excavation directed by Rosselló, Palol, and Orfila. More recently, from 2005 onwards, the Museu d'Història de Manacor and the Universitat de Barcelona have been excavating and studying Son Peretó. The combined efforts of the aforementioned investigators have helped reveal an interesting example of ecclesiastical architecture: a Christian church with an attached western baptistery, and several associated rooms westwards and southwards of the religious buildings (Figure 2).

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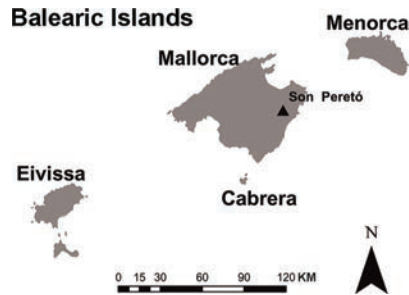


Figure 1 Location of Son Peretó (Mallorca, Balearic Islands)

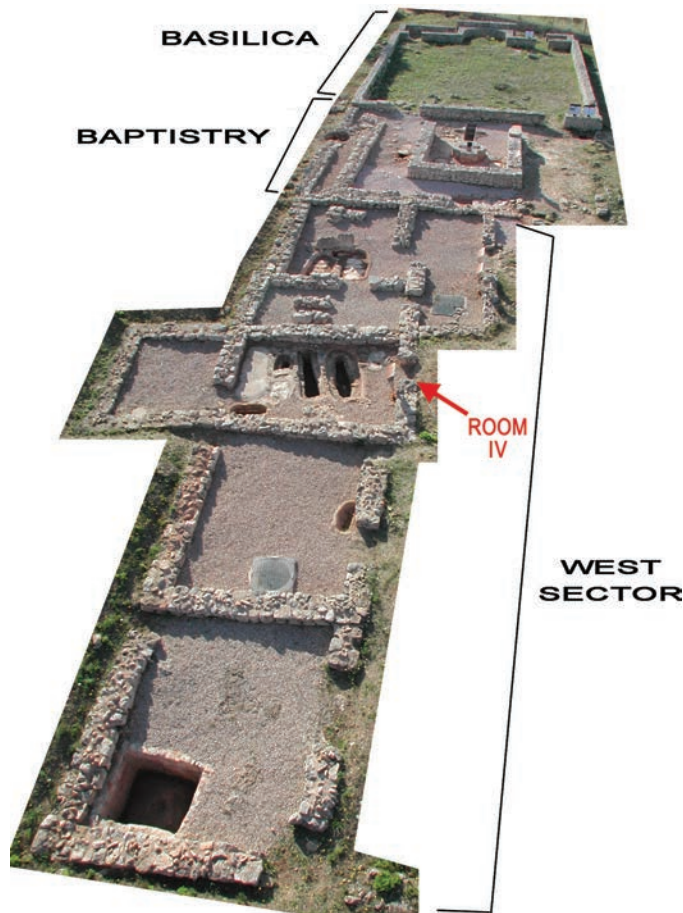


Figure 2 West Sector of the early Christian complex (author: Mateu Riera).

The basilica is a three-nave building with an apse that is semicircular on the inside, but square on the outside. Both sides of the *presbyterium* have attached rooms that seem to belong to a later building phase, forming a tripartite head. The building contains a *chorus* (choir) directly in front of the shrine, but separated by a chancel. In the opposite direction, at the foot of the basilica, a different liturgical space was located, known as a *contra-chorus*. The church was paved with mosaics in at least one, and probably more, of its phases. The altar is formed by a monolithic rock with a space for depositing relics. Some liturgical objects were found on site (Alcaide 2005, 2011), as well as epigraphy. Of particular note is Bassus' epitaph: he was a presbyter of the Sancta Eclessia Romana (Holy

Roman Church), buried in Son Peretó (Veny 1965). Some of the mosaics feature burial themes and were located on top of the tomb's cover (e.g. Baleria's inscription).

A baptistery was attached to the foot of the basilica on the western side. One of Son Peretó's particularities is the presence of two baptismal fonts in the baptistery: one deeper and the other smaller, probably related to a change in ritual from immersion to baptismal aspersion. These two fonts have generated much debate (for a discussion see Godoy 1989, 1995; Palol 1994; Duval 1994; Alcaide 2011). Another interesting aspect of this baptistery is that it contains some graves covered by flagstones where the bodies are orientated east-west with the head westwards.

The chronology of both the church and the baptistery and their respective constructive phases has been the subject of considerable debate (e.g. Palol 1967; Schlunk and Hauschild 1978; Godoy 1995; Alcaide 2011:102–6). Some authors are in favor of a Byzantine affiliation, while others tend to reduce the timeframe to the Vandal period (at the end of the 5th century or beginning of the 6th century). Palol's hypothesis, which posits the existence of several construction phases, is probably the most widely accepted theory. However, a precise chronology for the foundation and abandonment of the church has not yet been assembled.

During the 1980s excavations, a series of rooms attached to the baptistery building were uncovered, oriented towards the west and the south. Several graves were also found in these rooms. In the western sector, seven rooms were excavated down to the floor level (usually made of clayey material) (Figure 3). Earlier excavations had mainly investigated the abandonment layers of these rooms. A review of the material from this final phase resulted in dating the western section to the end of the 7th century or beginning of the 8th century (Riera Rullan 2009; Riera Rullan and Martínez 2009).

The recent excavations carried out by the Museu d'Història de Manacor and University of Barcelona have focused on the western annex rooms (Figure 3), uncovering two significant phases at Son Peretó. During the more recent phase (Phase B), the aforementioned seven rooms, consisting of modest structures of different sizes varying between 12 and 24 m², were in use. The walls of these rooms consist of a foundation of medium-sized stones mixed with mud and a wall of either unfired clay or mudbrick. A white clayey pavement, perhaps mixed with a bit of lime, served as flooring. The majority of rooms were not covered with roof tiles but probably with perishable materials. All of these rooms were ground-floor rooms. Nonetheless, it is interesting to note that Room III contains two of what seem to be big rectangular platforms made of rocks mixed with mud. A variety of different sized jars were found *in situ* in front of these platforms. Though broken, the jars, which are pretty much complete, indicate the possibility of a loft. This implies Room III may have served as a warehouse.

Archaeological evidence shows that rooms VI and VII functioned as workshops. Room VII was used for manufacturing iron and Room VI was for working glass. In Room VII, there is a storage deposit dug into the bedrock floor, coated with *opus signinum*; analysis shows that wine and oil were produced and/or stored here. Each of the rooms I, V, and VI features a rock-dug silo, used for storing grains or vegetables. Phytolith analysis of one of the silo's lining indicates that it stored barley. The existence of various hearths, some of which contained a cooking pot still *in situ*, also indicates a domestic use of these rooms. Based on the recovered material (mainly pottery), it has been possible to determine that Phase B dates to the 7th century.

However, the main focus of this article is on Son Peretó's earlier material, Phase A. Excavations have revealed that underneath Phase B (domestic use, dating mainly to the 7th century), there is a necropolis (Phase A). More precisely, this article deals with the burials found in Room IV, three of which have been subjected to radiocarbon dating.

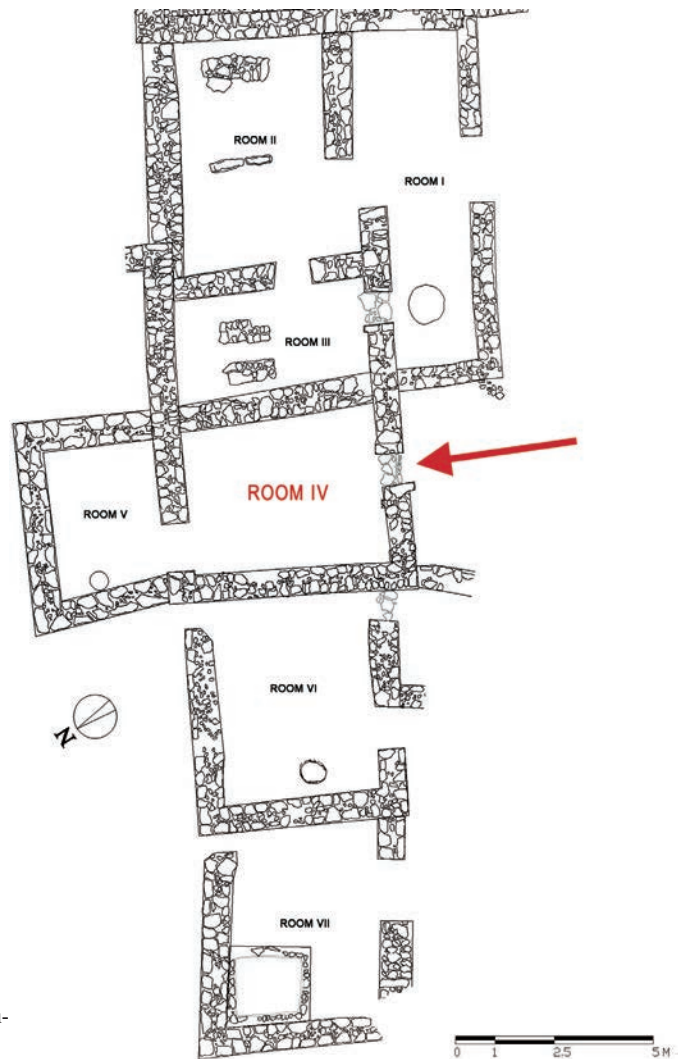


Figure 3 Plan of West Sector of Phase B (authors: Silvia Alcaide and Mateu Riera).

In the aforementioned Room IV, six graves with a total of seven burials were found, containing the bodies of three adult women, one adult man, and three infants (Figure 4) (Alapont et al. 2012; Prats and Malgosa 2013). The bodies' orientation was always the same, with the feet pointing towards the east and the head to the west. The only exception is Burial 2006-7: its head faced north and the feet were southwards, probably because the grave would not have fit into the space using canonical orientation. All the bodies were placed lying on their backs, with either the arms stretched at the sides of the body, or arms lightly crossed over the pelvis, or with an arm in either one of the two positions described. All the graves were roughly bathtub/trapezoidal-shaped, with edges varying between straight or curved. All of the graves have an interior recessed step for fitting the tomb cover into place. The covers were usually made of slabs of lightly worked limestone, except for Burial 2006-2, which was made with slabs of squared sandstone. The majority of the adult tombs and infant 2006-1 had an upper cover made of lime mortar leveled with the floor. In between the upper covers and the slabs, there was usually one or more layers of earth or clay mixed with stones or gravel. In some of the well-preserved upper covers (burials 2006-1, 2006-2, 2006-4), one or two holes—probably

man-made—of various shapes and sizes were found, usually situated in the central part of the tomb. These bring to mind the holes made for libations in the Classical Era. Libations were often part of the funeral rites in the ancient world, and consisted of a ritual pouring of liquid or food offering at the grave site. The fact that these holes tend to be filled with gray-colored sediment, indicating some sort of organic material, further supports the idea of libations. In the case of Burial 2006-4's cylindrical hole, a lid was found in its interior, placed flat, which fit perfectly. It is also noteworthy that beneath the aforementioned hole, at its base, a sheep phalanx was found.

Thanks to the observations made by the team's physical anthropologists, we know that the majority of skeletons show signs of having been carefully laid out, probably wrapped in a shroud, in tombs excavated into the bedrock. The position of the skeletons indicates that the individuals were buried in an empty space that did not contain any backfill. Indications include the jaw's disarticulation in relation to the craniofacial block; the opening of the hip bones; the lateral rotation of the femur bones; and the detachment of the kneecaps. The alignment of the deceased within the grave's interior suggests considerable care during the moment of burial: the individual was arranged in an intentional and predetermined position, ensuring that the corpse maintained a decorous posture (Alapont et al. 2012:155–6).

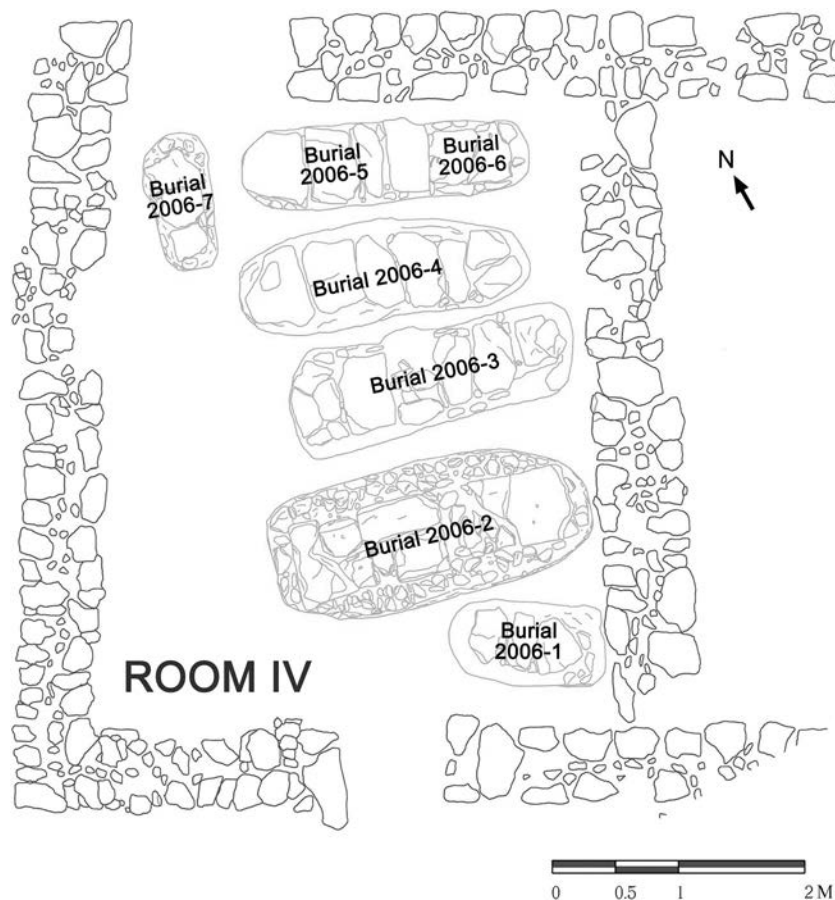


Figure 4 Tombs recovered in Room IV of the West Sector (authors: Sílvia Alcaide and Mateu Riera).

Son Pereto's necropolis also contains an example of a collective tomb (SP2006-5) (Figure 5). In this case, one skeleton was partially removed in order to make room for a second body. The inferior extremities of a female individual were removed, creating room for the burial of a 6-month-old baby. This type of collective family grave is typical of Late Antique burials: a grave was no longer seen as the individual and exclusive domain of a particular person (Alapont et al. 2012:156). However, a collective grave was not merely a matter of minimizing a skeleton and moving the bones; it was a meticulous undertaking. This custom of rearranging the skeletal remains was the result of a slow change in attitude regarding dead people. Previously, it had been believed that graves must remain inviolate because they were the permanent resting place of the soul. It was believed that the soul remained in the grave's interior, ready to defend the integrity of the deceased's last resting place. If the grave was disturbed, the soul would return to the world of the living to torment the disturbers, thus guaranteeing an undisturbed grave. However, gradually, a new attitude took over. This new conviction believed that once the deceased was placed in the grave, his bonds with the world of the living were broken. However, the living were still bound to the dead person, obliged to respect the grave space as a *locus religiosus*. Nonetheless, the opening of a grave was tolerated if it was to add the body of a family member. The custom of collective burial indicates an evolution in the progressive diminishment of a fear of the dead; the soul's presence in the grave ceases to be eternal and ends with the decomposition of the corpse. The reuse of graves bears witness to a new attitude with regards to graves; tombs evolve from being frightening and untouchable places to more a place of temporary transit for the soul (Alapont et al. 2012:156).

The location of the graves, as well as their stratigraphic relation to the walls that form Room IV, seem to suggest that this room was employed as a funerary chamber. This is the only room in the West Sector where the walls from both chronology phases have survived.



Figure 5 Burials 2006-5 adult female (35–45 yr old) and 2006-6 infant (author: Mateu Riera).

MATERIALS AND METHODS

A total of three bone samples from several tombs was selected. These were subjected to accelerator mass spectrometry (AMS) ¹⁴C dating in the Laboratoire de Datation par le Carbone 14, Institut Royal du Patrimoine Artistique, Bruxelles (lab code KIA-). Three ¹⁴C dates of bones from three of the skeletons from Phase A buried in Room IV have provided an absolute dating for the necropolis. The bones were taken from burials 2006-3 (KIA-36253), 2006-4 (KIA-36913), and 2006-5 (KIA-36914). The AMS ¹⁴C dates were obtained after processing the bones following the Longin (1971) method with an extra NaOH cleaning. Collagen quality was checked by C/N and % collagen.

Calendar ages were determined both using the CALIB 7.0 (Stuiver and Reimer 1993) and OxCal v 4.2 programs (Bronk Ramsey 2009) and the terrestrial calibration curve IntCal13 (Reimer et al. 2013) (Figure 6).

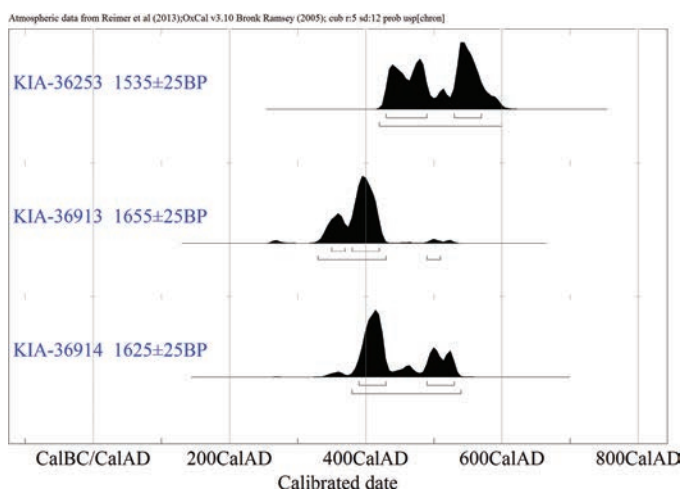


Figure 6 Calibrated dates (cal AD) from Son Peretó: KIA-36253 from Burial 2006-3; KIA-36913 from Burial 2006-4; and KIA-36914 from Burial 2006-5.

RESULTS AND DISCUSSION: DATING THE SON PERETÓ NECROPOLIS

Given that Phase A, the older phase detected in the West Sector of Son Peretó, and that it is located directly on top or even cuts into the bedrock, it was necessary to conduct a double task in order to obtain accurate dating: first, the study of ceramic and numismatic material associated with the excavated graves; then, ¹⁴C analysis. These two objectives were carried out in Room IV.

Concerning the dating of Room IV, the archaeological materials found mainly in the wall foundations, although not very abundant, provide some insight into the dating of Phase A of the West Sector. From their study, it has been possible to determine a *terminus post quem* (TPQ) of ~AD 400 for a cooking pot (Ca/Dau/3 or Cb/Dau/1) and an amphora (LRA1), ~AD 432 from a Vandal *nummus* (coin) from Carthage, and ~AD 450/475 provided by a bowl with spout in common ware produced in Ibiza (Ab/Eiv/1). Additionally, a bowl (type Hayes 99) and a patera (type Hayes 104) of African Red Slip Ware (ARS) have provided a TPQ of ~AD 500. Meanwhile, in one of the stratum below the walls of Room IV, a small rim fragment of ARS was found; it has not been possible to classify it precisely, but it probably corresponds to a patera that would also indicate a TPQ of ~AD 500. In general terms, it can be stated that the formation of Room IV should be dated probably not before the beginning of the 6th century AD.

Few ceramic materials were found associated with the tombs. Inside the mortar covering Burial 2006-5, a ceramic rim of Ebusitan common ware with polilinear decoration was found, suggesting

a TPQ of about AD 535. Inside the earth that covered the skeleton from Burial 2006-5 (placed there when Burial 2006-6 was cut or at least filtered before this second burial), the rim of a small ceramic African jar (possibly type Bonifay 62) could provide a TPQ of ~AD 500. Finally, it should also be noted that just under one of the cover slabs of Burial 2006-2 (not sampled for ^{14}C dating), another patera rim (type Hayes 99A in ARS) was found, providing a TPQ of ~AD 475/500.

Taking into account the stratigraphic relationships documented during the excavation of the rock cuts made for the different burials in Room IV and the few archaeological materials recovered, it could be concluded that the construction of the room and the oldest burials (e.g. Burial 2006-2) have to be later than about AD 500. Regarding the ^{14}C dates (Table 1), sample KIA-36253 from Burial 2006-3 provided a date of 1535 ± 25 BP; KIA-36193 from Burial 2006-4 a date of 1655 ± 25 BP; and KIA-36914 from Burial 2006-5 a date of 1625 ± 25 BP. Sample KIA-36913 from Burial 2006-4 and KIA-36914 from Burial 2006-5 seem older than KIA-36253 from Burial 2006-3, but relatively close to each other.

The samples show some differences in calibrated AD dates (Table 1, Figure 6). Sample KIA-36913 from Burial 2006-4 is certainly the most problematic dating. This could be explained by several reasons, some of which include the following:

- There could be a problem with the ^{14}C dating. However, observing the data there are not apparent problems with the samples. The collagen/bone ratio is somewhat low, but the C/N ratio is optimum for the three samples. The stable isotopes $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ are very similar and do not show evidence of a reservoir effect.
- The skeleton in the grave was residual. This is something very unlikely due to the state of conservation and the evidence shown in the excavation process. In the case of bone dating, the date is linked to a moment slightly earlier than the death of the individual if it was an adult (Geyh 2001) and this is the case of the samples from Son Peretó that come from three adult females.

It is clear that sample KIA-36253 from Burial 2006-3 is the most recent and in good agreement with the TPQ provided by archaeological considerations. In particular, Burial 2006-3 cuts Burial 2006-2 in which a fragment of ARS Hayes 99 was found with a TPQ date of ~475/500.

The two other ^{14}C dates are older than the previous one. However, if we consider that KIA-36914 (Burial 2006-5) and KIA-36913 (Burial 2006-4) are close in terms of their cal BP dates, it could be accepted that even that there is a slight disagreement both were very close in time. The fact that Burial 2006-4 cuts in stratigraphical terms Burial 2006-5, in which an Ebusitan ceramic with polilinear decoration with a TPQ of ~AD 535, provides a further insight for the dating in purely archaeological terms but causes some problem when compared with the calibrated date, especially for sample KIA-36913.

So far, it seems plausible that the foundation of Room IV in the West Sector of Son Peretó has to be dated to the early 6th century AD. The archaeological materials recovered in the walls and in some layers below them suggest a TPQ of ~AD 500 for its construction. The tombs uncovered there seem to have been made when the room was already built. Burial 2006-7 was placed with the head faced north and the feet southwards, probably because it would not have fit into the room using the canonical west-east orientation. Another insight to suggest the synchrony of the room and the tombs is the fact that the majority of the adult tombs and the infant 2006-1 had an upper cover made of lime mortar leveled with the floor of the room. The location of the graves, as well as their stratigraphic relation to the walls that form Room IV, seem to suggest that this room was used as a

Table 1 Radiocarbon dates of the tombs from Room IV of the West Sector from Son Peretó (Mallorca, Balearic Islands), calibrated dates calculated with CALIB 7.0.

Context	Dated sample	Sex/age	Lab code	Calibrated date BP	Calibrated date AD 68.3, 1σ [Start-End]/relative area under probability distribution (Reimer et al. 2013)	Calibrated date AD 95.4 2σ [Start-End]/relative area under probability distribution (Reimer et al. 2013)	C/N ratio %	C/B ratio %	Stable isotopes ‰
West Sector Burial 2006-3	Collagen/human bone	Female/23–25	KIA-36253	1535 ± 25	[cal AD 433–457]/0.256 [cal AD 468–488]/0.243 [cal AD 533–567]/0.500	[cal AD 428–498]/0.474 [cal AD 505–591]/0.5261	3.2	5.17	δ ¹³ C = –18.87 δ ¹⁵ N = +9.42
West Sector Burial 2006-4	Collagen/human bone	Female/30–40	KIA-36913	1655 ± 25	[cal AD 357–364]/0.090 [cal AD 381–419]/0.910	[cal AD 332–429]/1.000	3.2	3.83%	δ ¹³ C = –19.12 δ ¹⁵ N = +9.63
West Sector Burial 2006-5	Collagen/human bone	Female/35–45	KIA-36914	1625 ± 25	[cal AD 392–429]/0.780 [cal AD 494–508]/0.151 [cal AD 520–527]/0.069	[cal AD 359–361]/0.004 [cal AD 382–475]/0.705 [cal AD 484–535]/0.290	3.2	5.30%	δ ¹³ C = –18.70 δ ¹⁵ N = +9.82



Figure 7 Burial 2006-3 (female, 23–25 yr old) (author: Mateu Riera)

Table 2 Summarizing the dating of the necropolis of the West Sector from Son Peretó (^{14}C dates and archaeological information).

Context	Lab code	Calibrated date BP	Calibrated date AD 1σ [Start:End] relative area	Calibrated date AD 2σ [Start:End] relative area	Stratigraphical relationship	Archaeological materials dating
West Sector Burial 2006-3	KIA-36253	1535 \pm 25	[cal AD 433–457]/0.256 [cal AD 468–488]/0.243 [cal AD 533–567]/0.500	[cal AD 428–498]/0.474 [cal AD 505–591]/0.5261	Burial 2006-3 cuts burial 2006-4. So 2006-3 is later than 2006-4. Burial 2006-3 cuts also Burial 2006-2, not dated with ^{14}C .	In Burial 2006-2, ARS Hayes 99 TPQ ~AD 475/500. Burial 2006-3 cuts this burial; thus, it should be later.
West Sector Burial 2006-4	KIA-36913	1655 \pm 25	[cal AD 357–364]/0.090 [cal AD 381–419]/0.910	[cal AD 332–429]/1.000	Burial 2006-4 is cut by Burial 2006-3. Burial 2006-4 cuts Burial 2006-5. Therefore, Burial 2006-4 was built earlier than 2006-3 but later than 2006-5.	
West Sector Burial 2006-5	KIA-36914	1625 \pm 25	[cal AD 392–429]/0.780 [cal AD 494–508]/0.151 [cal AD 520–527]/0.069	[cal AD 359–361]/0.004 [cal AD 382–475]/0.705 [cal AD 484–535]/0.290	Burial 2006-5 is cut by Burial 2006-4. Thus, Burial 2006-5 should be older in stratigraphical terms. Burial 2006-5 is also cut by Burial 2006-6 placed in the same tomb.	Ebusitan polilinear decoration ~535. African jar possible type Bonifay 62? TPQ of ~AD 500 (contamination from burial 2006-6?).

funerary chamber. Burials 2006-4 and 5 were probably dug at similar dates but earlier than Burial 2006-3. In any case, it cannot be discarded that some tombs could have been already there as it has been observed in Room B of Sector B, where it is clear that some tombs are earlier than the room but others were built later.

CONCLUSIONS

The ¹⁴C calibrated dates show that the graves were cut into the bedrock before the main domestic occupation phase (Phase B of the 7th century) of Son Peretó's western sector. This indicates that the graves belong to a necropolis associated with Son Peretó's church prior to the transformation of the complex into a habitation nucleus. The archaeological work undertaken at Son Peretó demonstrates that Mallorca continued to practice libations until the 6th century, a holdover of pagan traditions in an already Christianized community. In contrast, all other aspects of funeral ritual at Son Peretó correspond to the established Christian canons of the era.

The archaeological materials found associated with the graves as well as the evidence from other ceramic materials associated to the construction of the walls of Room IV considered as a possible funerary chamber seem to suggest a TPQ date of ~AD 500. ¹⁴C dating provides, although with some doubts for sample KIA-36913 (Burial 2006-4), a timeframe corresponding to the passage between the 5th and 6th centuries, confirming the importance of Son Peretó as a funerary space at that time. On top of this necropolis, a series of rooms with inhabitation characteristics were built with a main occupation phase of the 7th century. These were likely abandoned by a violent episode at the very end of the 7th century or 8th century. However, for a more precise dating and to study the possible diachronical evolution, further work is needed, increasing the number of samples from other areas of the necropolis under study and from other parts of the site. ¹⁴C dating of historical periods in which ceramic studies have reached a high degree of precision is a challenging experiment that needs to be further increased in order to obtain an integrated and more precise dating of the sites and their evolution.

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