



10.5281/zenodo.220935

ORIENTATION OF THE SARDINIAN NURAGIC "MEETINGS HUTS"

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Received: 29/02/2016

Accepted: 07/04/2016

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ABSTRACT

In the past decades, there have been a number of studies about the orientation of the Sardinian monuments (domus de janas, dolmen, tombe di giganti, nuraghes, megaron and sacred wells) (Zedda 2013, Gonzalez et al. 2014). These monuments characterized the landscape of prehistoric Sardinia.

Here we are presenting the results of a study of the orientation of the "capanne delle riunioni" ("meetings huts").

The "meetings huts" are particular buildings placed inside the nuragic villages dated between the Late Bronze Age and Iron Age (XIII – IX sec. a.C.) sometimes developed around preexisting nuraghes or sometimes in nuragic villages without any nuraghe.

These buildings are huts of considerable dimensions, characterized by specific furniture which distinguishes them from the other inhabited areas which constituted the villages.

Inside the "meetings huts" took place the meetings of the heads of the families and/or liturgical and religious meetings.

The orientation of the "meetings huts" confirms the astronomic target of the nuraghes.

KEYWORDS: Sardinia, nuraghes, archaeoastronomy, meetings huts, nuragic.

1. INTRODUCTION

Among the structures within the nuragic settlements, there are the so called "capanne delle riunioni" ("meetings huts"), built in the period between the Late Bronze Age and Iron Age (XIII -IX sec. a.C.).

These huts are of considerable dimensions, compared to the other huts in the village. Inside these buildings meetings of the family heads or religious celebrations were performed. Such structures were characterized by the presence of specific furniture that distinguished them from the huts used to live in. In particular, they were constituted by a stone bench seat all around the chamber, that was able to host 30-35 people. In the meetings huts, many votive objects, such as ritual vessels and presents like firstfruits from animal and vegetable kingdom were found, were located in the fireplaces.

While the nuraghes and the "tombe di giganti" are generally found overground and it is easy to determine orientation of entrance without excavation (Hoskin 2001, Zedda 2013), the "meetings huts" are normally underground so they are visible only after an archaeological excavation. Even if these buildings are likely present in every nuragic village, we can study the orientation only of the ones emerged after an archeological survey.

Very few scientific papers were written about these building, and the most interesting is Patrizia Fenu's paper (2008). In our survey we have measured the orientation of the axis of the entrance (from inside to outside) of the "meetings huts" mentioned by Patrizia Fenu (2008). These represent almost the totality of the "meetings huts" discovered so far.



Figure 1. Nuragic village at Palmavera, Alghero.



Figure 2. Meetings hut , Palmavera, Alghero

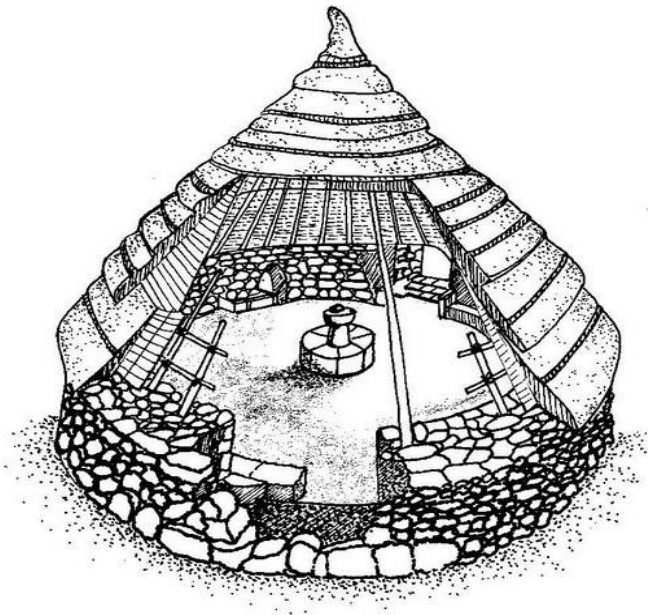


Figure 3. Ideal reconstruction of a "meetings huts"



Figure 4. Meetings hut, La Prisgiona, Arzachena



Figure 5. "Olla biansata" found on the central fireplace of the meetings hut La Prisgiona, Arzachena.

2. THE ORIENTATION

The analysis of this study is based on the orientation of 26 "meetings huts" (see table I).

In figure 6, we can observe the distribution of the orientations along the horizon circle. In table III it is possible to observe that there is an higher frequency of data (42.6%) in the IV octant, and 23.1% and the 19.2% respectively in the III and the V octant.

21 of the 26 "meetings huts" are oriented within the horizon included within the point from which the sun rises and it sets on the winter solstice.

So we have only 3 orientations (over 26) out of the range of azimuth 106° e 223° . We can argue that there is a clear distribution of alignments with 3 anomalies: Siseri B in Alghero, Santa Cristina in Paulilatino and Unossi in Florinas.

A possible explanation of the anomalies of Saint Cristina and Punta Unossi, in which the entrance of the "meetings huts" point to the sacred well located few tens of meters far. Which is different from the canonic range, is due to the choice of a rituality linked to the holy wells.

Siseri B "meetings hut", is located in an area with ruins of nuragic settlements, not yet excavated, so there is a possibility that the "anomalous" orientation could be explained in the same way of Saint Cristina and Punta Unossi.

Besides the three anomalies, the range shows a precise habitus of orientation with an higher frequency of data in the IV octant but with important presences in the III and V octant (see table III).

The IV octant represents the horizon preferred by the builders of the nuraghes who oriented the entrances of the simple nuraghes and of the central tower of the complex nuraghes (Zedda and Belmonte 2004; Zedda 2013), as shown in table III. We also think that the target of the orientation of the "meetings huts" could be the same of the nuraghes (Zedda and Belmonte 2004; Zedda 2004, 2009, 2013, 2014).

In summary, our data indicate one habitus of orientation towards the sunrise at the winter solstice, the moonrise at the major southern standstill and the rising and culmination of the Centaurus - South cross constellation. One habitus of orientation same of the nuraghes (Zedda and Belmonte 2004, Zedda 2013, 2014, Gonzalez et al. 2014).

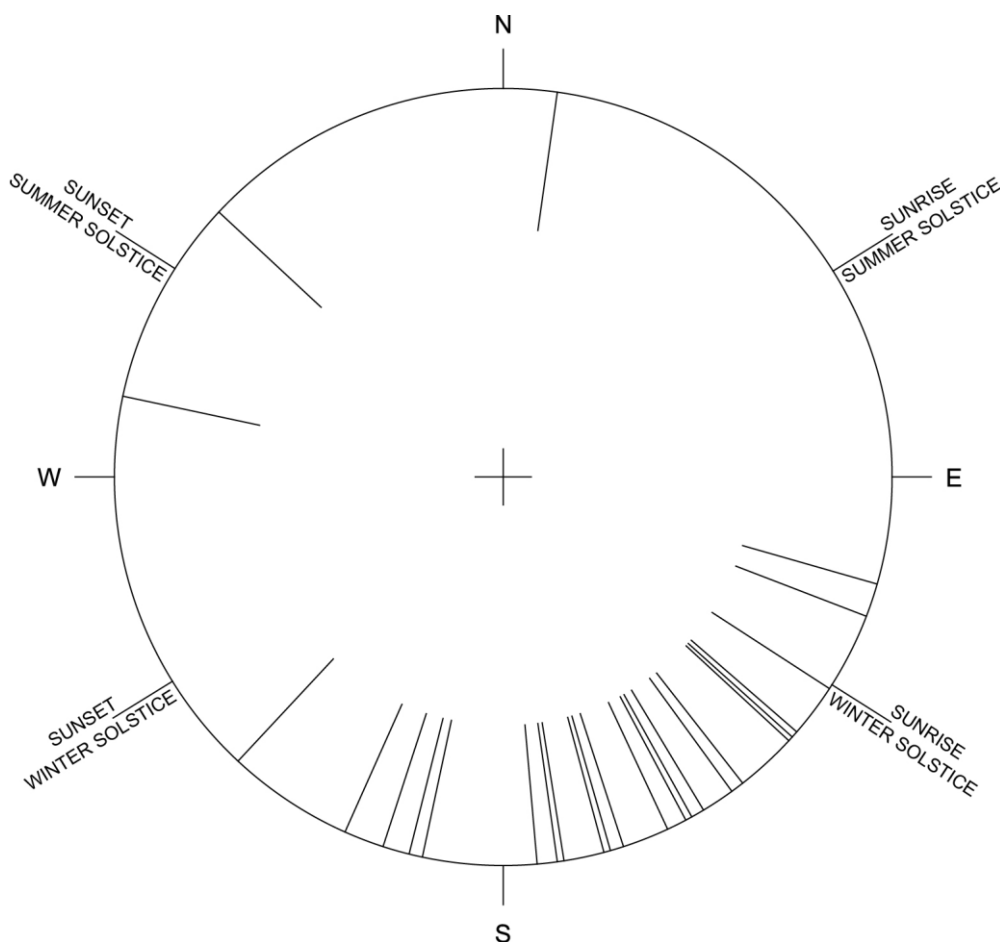


Figure 6. Graph on the orientation "meetings huts"

Table I. Orientations of 26 nuragic "meetings huts"

Locality	Name	Lat °	Az °	Alt °	Dec °
Alghero	Siseri B	40.6	8	2	+50
Alghero	Palmavera	40.6	106	1	-11¾
San Giovanni Suergiu	Candelargiu	39.2	111	2	-15
Torralba	Santu Antine	40.5	123	2	-23¾
Sedilo	Iloi	40.3	131	3	-27¾
Arzachena	La Prisgiona	41.1	132	3	-28¾
Siligo	Sant'Antonio	40.6	132	2	-29½
Luogosanto	Monte Casteddu	41.1	142	8	-30
Orroli	Arrubiu	39.7	144	1	-37¾
Paulilatino	Lugherras	40.1	149	1	-40½
Bitti	Romanzesu A	40.5	151	3	-39¾
Bauladu	Santa Barbara	40.1	152	1	-42
Nuoro	Noddule	40.3	155	1	-43
Serri (Santa Vittoria)	sedile	39.8	162	1	-46¾
Serri (Santa Vittoria)	curia	39.8	164	1	-46¾
Bitti	Romanzesu B	40.5	165	3	-44½
Gonnesa	Serucci	39.3	171	2	-48¾
Serri (Santa Vittoria)	focolare	39.8	172	1	-48¾
Abbasanta	Losa	40.1	175	1	-49¾
Serri (Santa Vittoria)	fonderia	39.8	192	1	-48
Sardara	Santa Anastasia	39.6	194	3	-45¾
Alghero	Siseri A	40.6	198	4	-42¾
Barumini	Su Nuraxi	39.7	204	2	-42¾
Serri (Santa Vittoria)	doppia ascia	39.8	223	1	-33½
Paulilatino	Santa Cristina	40.1	282	1	+9½
Florinas	Punta Unossi	40.7	313	5	+34¾

Table II. Statistics data of orientation of pre-nuragic monuments (domus de Janas (DdJ), dolmen, allè couverts) and nuragic monuments: tombe di giganti (TdG), nuraghes, megaron) and "meetings huts"

	#	Mean °	Medium °	$\sigma(a)$ °	Range °	Range 95 %	Mode °
DdJ north	441	152.8	148	56.6	5-356	52-265	126
DdJ south	208	164.6	167	68.4	5-356	50°-315	204
DdJ	649	156.6	155	60.8	5-356	50-281	126
Dolmen	27	137.4	136	34.9	64-198	84.5-198	
Allè couverts north	15	123.5	128	36.9	38-166	86-166	
Allè couverts south	8	159.6	152.5	83.75	8.5-318.5	8.5-318.5	
Allè couverts	23	136	143	58.4	8.5-318.5	8,5-178	
TdG north	205	122.5	122.5	30.4	35-191.5	69.5-187	124
TdG south	126	152.4	145	64.4	34.5-353.5	37.5-292	134.5
TdG	331	133.7	127	48.6	34.5-353.5	44-265	124
nuraghes north	304	148.8	149.5	28.5	25-355	86-203	146
nuraghes south	236	166.2	168	38.1	10-356	105-232	180
nuraghes	540	156.4	154.5	34.1	10-356	86-234	148
megaron	15	156	156	27.8	94-180	98-180	
meetings huts	26	163.5	158.5	57	8-313	106-313	

Table. III. Frequency of the orientation, in an horizon divided in octant, of the DdJ, dolmen, allè couverts, TdG, nuraghes, megaron and "meetings huts"

	I	II	III	IV	V	VI	VII	VIII
	1-45	46-90	91-135	136-180	181-225	226-270	271-315	316-360
439 DdJ north	2%	11%	28%	31%	19%	6%	2%	1%
208 DdJ south	2%	12%	22%	24%	23%	12%	3%	2%
647 DdJ	2%	11%	26%	28%	20%	8%	2%	1%
27 north dolmen	0	11%	37%	41%	11%	0	0	0
15 north allè couv.	7%	7%	53%	33%	0	0	0	0
8 south allè couv.	12.5%	0	0	87.5%	0	0	0	0
23 allè couverts	4.3%	8.7%	34.8%	52.2%	0	0	0	0
205 north TdG	1%	10%	58%	26%	4%	0	0	0
126 south TdG	6%	10%	26%	30%	16%	7%	3%	2%
331 TdG	3%	10%	46%	27%	9%	3%	1%	1%
304 nuraghes North	0.7%	1.6%	24.6%	64.5%	7.6%	0.7%	0	0.3%
236 nuraghes South	1.3%	2.1%	11%	55.5%	27.3%	2.1%	0	0.8%
540 nuraghes	0.9%	1.8%	18.6%	60.5%	16.1%	1.3%	0	0.6%
15 megaron	0	0	40%	60%	0	0	0	0
26 meetings huts	3.8%	0	23.1%	46.2%	19.2%	0	7.7%	0

ACKNOWLEDGEMENTS

A special thanks to Delfina, Paolo Littarru, Donatello Orgiu, Dante Olianias, Roberta Fadda, Roberto Contini. Antonio Curreli and Mariano Boi.

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