SONDA 20 REPORT

Excavation during

Summer Camp 2010

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Introduction

The present report is intended to give a summary of the work conducted on Sonda 20, on the Pyramid of the Moon in the Bosnian Valley of the Pyramids.

It will overview the archaeological excavations that took place from the 1st of August until the 20th of September 2010.

The topic would be really vast to be placed all in one report, hence I will give a summary of the main and most relevant issues, which will be so divided:

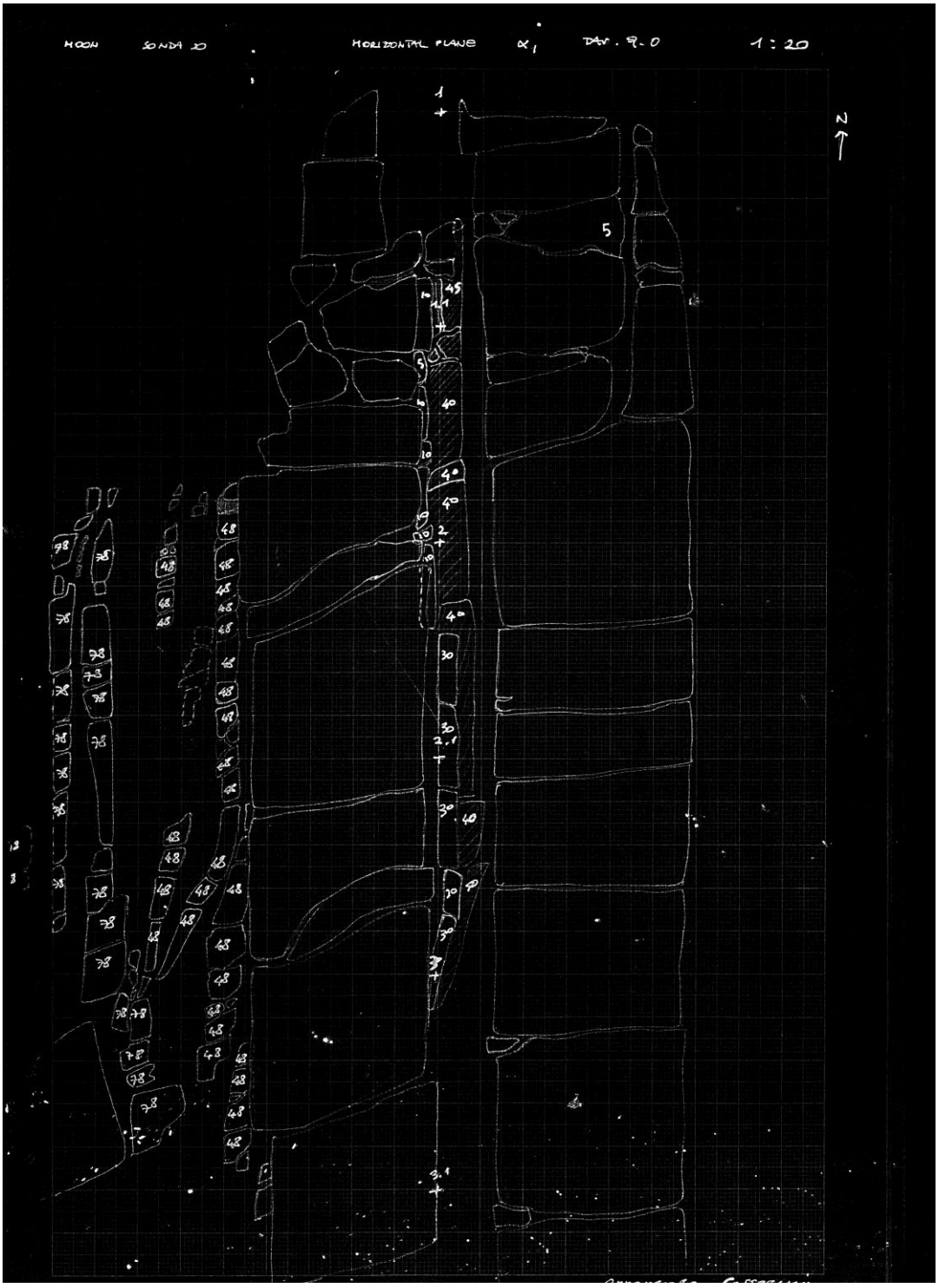
General overview and subdivision:

- Main path
- Galleries and Channels
- West gallery and wooden pavement
- East wall
- North collapsed area

Findings:

- Pottery
- Iron artifacts

The report will focus entirely on the work conducted during this period by myself with the collaboration of many volunteers that were present on the camp, divided into 6 shifts of 10 days each.



Plan view of Sonda 20, areas D1, D2, E1 and E2, by Annapaola Passerini, Aug. 2010.

General Overview and Subdivision

Sonda 20 is situated on the west side of the Pyramid of the Moon, on the smaller Northern Structure.

It is, undoubtedly, one of the most eye striking areas, as the presence of an ancient civilization's settlement is strongly evident.

From a very first look, one can see the craftwork of men who had knowledge about architecture, physics and social planning.

The Sonda has been divided into five longitudinal segments numbered from A to E from South to North, each one divided into 3 sections West to East. Each area is about 4m by 1,5m wide.

Subdivision of Sonda 20:

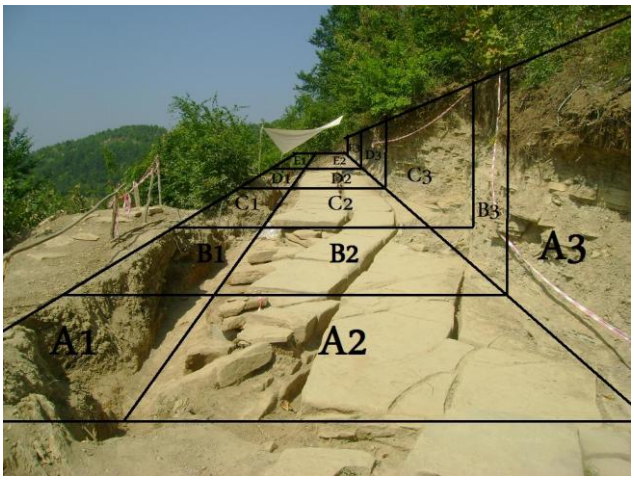
(North)

E1	E2	E3
D1	D2	D3
C1	C2	C3
B1	B2	B3
A1	A2	A3

(South)

The Area numbered from A1 to E1 refers to the Western lower gallery, the second section to the main path and the 3rd section to the Eastern wall.

Img. 1: View of Sonda 20 from South Side.



Img. 2 : View of Sonda 20 with Area division.

The hypothesis that I propose, through the analysis of Sonda 20, is that the Pyramid of the Moon is a structure meant to be a facility for water draining and storing. In a further report regarding the whole Pyramid, I will compare different areas and Sondas, but for now I will only take into account the excavation undertaken this year by myself and the teams that have worked on the site.

I will start from what I generally refer to as the Main path, which is all segment from A2 to E2.

We can start by pointing out that, although the appearance of this area is that of a path, this was not its original purpose. In fact, once completed, this part like the complete area of the Sonda, was covered by layers of clay, which are still perfectly visible on the eastern wall.

It is, therefore, possible to conclude that this was not a path: the bigger stone blocks were meant to be the final layer shaping the channels that pass under it.

Structurally speaking, the regularity of this segment is impressive.

From the bottom to the top, we find 7 different types of artificially placed layers:

Thin mixture of clay and organic material of about 0,5 / 1,00 cm
Top bigger stone blocks 10 / 15cm
Second clay section 5 / 10cm
Medium size Sandstone 10 cm
First clay section 20cm
Thin wooden layer of about 2cm
Lower paved stone layer

This pattern is repeated all through the horizontal section. Evidence of its artificial origin can be seen on a vertical perspective of the layers. (Img.3)

Richard Hoyle, the Geologist with whom I worked in this period, pointed out that, if these were natural formations, the vertical divisions between the stones would continue through all the layers, whereas it is evident that every layer has its own individuality in a horizontal placement only.

The type of layers that were chosen had several specific reasons to be organized in such a way:

1. The use of clay and stone created an earthquake-proof asset to the building.
2. The use of clay and organic material was used for its particular draining properties, so that the water would stream both down the channels and through the thin organic layers, slowly purifying itself before reaching the bottom of the structure. Similar systems are still used nowadays.
3. Moreover, this type of material appears to have a refrigerating effect: in a 30° Celsius climate, water stored in bottles would remain fresh all day if placed inside these channels, even outside the direct shadow of the structure.

Img.3: Structure's layers.

Every block was cut out of an originally natural segment, the quarry area has been identified less than a Kilometer away from the building site (Img.4/A and Img.4/B).

Img.4/A: The mining site where the stone blocks were cut off from.

Img.4/B: close up of the remaining original stratigraphic area from which the stone blocks were cut.

The blocks appear to be shaped in a particular way (Img.5): I have just mentioned the earthquake-proof effect of stone and clay in the layers: also the shape of every single component is relevant to the structure's stability. In fact, it is interesting to see how the area (A, B, C and D), which was built with bigger blocks, resisted better through the centuries, while instead area E, which was built with smaller blocks (probably because of their position near the corner of the Pyramid), collapsed because its final layout was not as resistant.

Img.5: The amazing shape of the stone blocks on a section of the Main path.

Another finding regarding the architectural plan of this structure: we noticed that at regular distances it is possible to find smaller insertions. As a matter of fact, it is possible to see insertions made of smaller triangular stones, fitted inside between the bigger blocks (Img.6). Each insertion is placed at a regular distance forming a regular pattern as follows: 50cm separate the first from the second and 1 mt the second from the third, the third insertion is then 50cm distant from the fourth and the fourth 1,50 mt from the fifth.


Img.6: Example of one of the insertions

.This particularity is very important and needs to be underlined.

The simple presence of this pattern, which is repeated twice in areas ABCD and appears to continue partially in the collapsed area E, grants us the possibility to declare that:

1. Whoever built this structure knew about math, architecture and engineering.
2. They also had a plan for a bigger structure: such a pattern would be used only in relation with a building that needs precise organization even in its smaller parts.

One more noticeable fact about these stone blocks, is that beneath 6 of them we found fossils (Img.7). Their presence, in separated areas of the Sonda, once more confirms the fact that these blocks come from another area, they were cut, shaped and then placed in the position where we found them.

Img.7: Fossil from area E1.

These fossils will be soon examined, at the present moment all I can say is that they appear to be parts of skeletons of different animals. We have junctions and parts of what could possibly resemble legs or arms of some probably really old mammals creature. Not to be excluded the possibility of them being bones from an even older period, probably between the Cretaceous and the Tertiary era.

Through the analysis of the thin top organic layer very soon it will also be possible to have a precise dating for this entire area. This organic layer was mixed with clay and directly placed over the stone blocks, probably to create a first cushion before the final covering. The artificial origin of this layer can be proved by the fact that the leaves (this is the main material used) did not have time to create sediment and instead mineralized immediately inside the clay, so that once uncovered, most of them where still perfectly preserved inside. (Img.8).

Img.8: An example of the thin organic layer placed on top of the blocks. The leaves are well visible and intact.

The Main path is also divided in galleries: so far we have uncovered two main parallel ones. Inside these galleries we found four Channels which pass through the Main path and under it, disappearing with a curve under the bigger blocks. (Img.9)

With no doubt, they were used for draining water, but we still do not know where they start and where they are supposed to end. Moreover, we are trying to figure out why the Galleries and the Channels do not run parallel but, instead, seem to maintain a 30° Angle of intersection.

Img.9: One of the Galleries on Sonda 20, two of the parallel Channels are also visible.

Besides, one thing we can be sure of is that both Galleries and Channels were originally covered on top by thin layers of clay, which were meant to seal the water inside. This has been proved during the Excavation of Sonda 21, on the South side of

Sonda 20. Here the channels we found are still empty and clean inside, presenting only a small amount of lime deposit, due to the water that streamed through them.

One interesting question which arose during the work, was how could the builders operate any sort of maintenance on these channels if they were so well sealed. Perhaps the reason was that these channels did not need any special maintenance at all, as water was powerful enough to clean away any obstruction that could occur.

Anyhow, these Channels once again prove the importance of water in this structure and are quite evidently the proof of a project about which, at the moment, we only have a general idea.

On the West Gallery, parallel to the Main path, another interesting factor was analyzed. This Western Gallery seems to have been in the open air and quite probably it was more like an external pavement or a step path before the Main path.

The particularity is that on one of the clay layers (US 7.a and 7.b) that was over the gallery, we found evident traces of a sediment that quite likely appears to be deposited river weed, which would then mean that water was streaming also over this path in the past.

But the most interesting fact about this, is that, while uncovering the C1 area, we found an amazing layer of wood. (Img.10)

This layer, which runs under the path and is 10cm thick, is extremely well preserved. So well preserved that it is still possible to recognize the wood veins and, even more amazingly, the horizontally perpendicular wooden poles of the structure that passed through it (Img.11).

These poles, in number of three and equidistant 30cm from one another, not only are a really important proof of the non-natural placement in the stratigraphy of this wooden layer, but give us also the possibility to understand even better the way this structure was built. In fact, thanks to this first discovery, we then found evidence of a thinner layer of wood in the gallery in area D2 and then again, while uncovering area E3, we found another wide section of the same type.

This layer preserved itself so well thanks to the presence of stone and clay which froze the degenerating effect of time on it.

We can also assume that this was a planned effect: he who built this structure intended to create something that would survived centuries, and it did.

Moreover, although very ancient wood layers can be found all over the world, this wooden pavement could be one of the most ancient known in Archaeology.

Img.10: The wooden layer in area C1.

Img.11: One of the exposed wooden poles that pass perpendicular to the Main path.

Let us now speak about the Eastern wall. Again, this is just a name of reference, for it was not originally a wall as it appears now, but just a massive overlapping of clay layers over the structure of Sonda 20 (Img.12).

These clay layers are not of natural sediment. They might seem so at first but the following simple reasoning can prove they are not.

Img.12: The Eastern wall, area C3.

If they were natural, then the lower sediment would have to date back to some million years ago, in fact each layer is about 2cm large and there are more than 50 layers before the final recent soil over them.

But if, as we proved, Sonda 20 is undoubtedly artificial, then the Main path and the whole structure of galleries and channels that pass under it would be even older than this wall of clay layers, which is impossible.

From this starting point, we must assume that the clay layers were placed one over the other manually, covering, as a lid, the draining system and offering a perfect insulating effect.

So, although it seems impossible when looking at it, this wall of thin clay is definitively artificial.

The last part to be considered is the North collapsed area, E1, E2 and E3. (Img.13)

Img.13: North collapsed area, section E2.

This is the last part that was excavated this year. The whole area is evidently collapsed: stones are scattered over and downhill from the Main path, which continues with smaller stones and is in a really bad state of preservation.

Even the clay layers totally disappeared. Inside the soil, we also found smaller thin sandstone rocks which fell from an area higher than Sonda 20.

We created a connection between Sonda 20 and the lower Sonda 18 and apparently this area still presents the possibility of finding more steps of the structure.

This is, undoubtedly, an area that during the next excavations must be deeply analyzed, in order to understand why the collapsed occurred and what lies between Sonda 18 and 20.

Findings:

During excavation of area B1 (US 8) and C1 (US 1), we found the presence of a great quantity of pottery, which the ceramic Expert Archaeologist Sara Acconci from Milan, proved to be manmade clay pottery.

The shape, size and material show that these are evidently artificially made (Img.14).

No dating is possible at the moment, but the material that was found together with the pottery in the US has been catalogued and will be analyzed in the hope of finding presence of seeds or organic material datable with the C14.

Img.14: Samples of the Clay pottery found in area B1 (US 8). On the piece on the high right and on the one on the low left the rimmed edge is clearly evident.

Another extremely important finding was the oxidized squares inside some hard clay sediments. (Img.15). Found in area C1, these oxidized materials could easily be made of iron or some metallic material. Artificial origin has to be proved with further analyses.

Img.15: Sample artifact, the circular shape made of clay includes inside an oxidized Iron surface. Many similar artifacts were found also on Sonda 1.

Conclusions

Sonda 20 is extremely important for many reasons, all analysis will soon give us further details about dating and manufacturing, meanwhile we can put forward the following statements:

1- Sonda 20 is an artificial structure.

2- It can be considered part of a major megalithic structure that develops on what is referred to as the Pyramid of the Moon.

3- This is quite evidently a structure related to water draining and storage.

4- The dating is not certain, but it appears to be connected, for its typology and building style, to other megalithic European features (for example, the Temple of Ta Hagartha in Malta).

5- The evidence of Human settlements are proved by the presence of pottery and other possible handmade artifacts (oxidized iron inclusive inside clay).

Finished Oct. 2010, written by Dr. Riccardo Brett.

ATTACHMENT 1

Names of the volunteers who have participated in the excavations of Sonda 20 between August and September 2010:

Sara Acconci, leader Archaeologist from University of Studies of Milan, Italy.

Richard Hoyle, Geologist, Leeds, UK.

Riccardo Brett, Archaeologist from Ca'Foscari University of Venice, Italy.

Annapaola Passerini, archaeology student from Univeristy of Venice, Italy.

Alfredo Bertan, Technician, professional for Ancient Structures, Venice, Italy.

Emanuele Fantin, Technical professional, Venice, Italy.

Anela Podrug, archaeology student from London University, UK.

Drago Mejdandzic, archaeology student from University of Rep. Of Croatia.

Brahim M'Barek, Archaeologist from Strasbourg, France.

Fernando Magdalena, Archaeologist from Madrid, Spain.

Valentina Figini, photographer, Italy

Carlos Mesa journalist, Spain

Olga Mateos, Spain

Tea Erdes, BiH

Martijn Jongens, Holland

Benyamin Mangupic, Rep. Croatia

Ajdin Ahmetspahic, BiH

Nathaniel Byrne, UK

Dave Immendorfer, USA

Dragana Indjic, BiH

Karolina Dworaczyk, Poland

Emesa Farkas, Hungary

Nathalia Zhuravska, Holland

Gàbor Kis, Rep. Croatia

Anita Barta, BiH

Milica Graovac, BiH

Andrea Venturini, Italy

Eric Mol, Holland

Justyna Gòrniak, Poland

Tomislav Koprivcevic, Rep. Croatia

Tomisz Ratajczak, Poland

Filippo Causero, Italy

Andrea Braida, Italy

Cristiano Toffoletti, Italy

Giovanni Muradore, Italy

Antonio Fulghieri, Italy

Felipe Moncaleano, Italy

Guido (Italy)

Camillo (Italy)

Nicolò (Italy)

Sinisa Vlacina, Rep. Serbia

Jelena Stajonovic, Poland

Daniel Hoffman, UK

Mirna Kovacevic Masa, Rep. Croatia

Valentina (Holland)

Ibrahim Sabanac, BiH

Jerneja Narat, BiH