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# TRIAL TRENCHES AT KOJTEPA, SAMARKAND AREA (SOGDIANA) (*Fifth Interim Report 2013*)

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## *Introduction*

The Joint Uzbek-Italian archaeological activity of IAASU and UNO, in Samarkand region, started in 2008 on the sly, with partial financial budget, time and advices at disposal; originally it was aimed at detecting and investigating possible Achaemenid and post-Achaemenid cultural horizons in the area. After four campaigns, the project has become more organic and comprehensive and it is, now, basically, aimed at analyzing the differing aspects of the urban evolution in the Pastargom district, from the Achaemenid to the Hellenistic and later period.

The field work activities at Kojtepa after the campaign in May-June of 2008[1], that in June-July 2009[2], the study activities in September 2010[3],

[1] The choice to analyze the site was suggested by the Italian Archaeological Mission (IAM) of the Università degli Studi di Bologna *Alma Mater* (UNIBO) directed by Maurizio Tosi, which had identified different other sites of the period (Genito, Gricina 2009, 126-128).

[2] The second season of activity was aimed at recognizing the stratigraphic coordinates and as much as possible evidences of the fortification earthen wall, encircling the high citadel/*tepe* utilizing an irregular already present trench due to the modern agricultural activities (Genito, Gricina 2010).

[3] In 2010 a study of the materials (mostly pottery) was made by Drs Maria D'Angelo and Fabiana Raiano, who was preparing at that time her MA dissertation, held at UNO the 4th April 2011 with the co-supervisor-ship of Dr Bertylle Lyonnet (CNRS, Paris) and Dr

continued with a more ample third season in 2011 (June-July), a fourth in 2012 (August-September)[4], and a fifth in 2013[5] (August-September) through more extensive trial-trenches.

The site represents a rather important settlement, constituted by an almost central 9m high, truncated-cone shaped *tepa*, and a possibly encircling earthen wall and an external moat as well (Fig. 1).

According to the topographic results obtained by IAM of UNIBO, the city walls, though not still clearly identified, because partially cut through by modern agricultural activities[6], are very similar to a well known

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Serena Massa of the Università degli Studi di Milano, "La Cattolica". We want very much and deeply thank both for their precious help and support.

[4]For these first years is in preparation a volume jointly edited by Abdullaev and Genito (in press).

[5]For the fifth campaign I take the occasion here to express my deepest thanks to the Director of IAASU Dr A. Berdymuradov for his kind participation to all the stages of the activities, from the organizational to the scientific related aspects. The realization of the work has been possible from the Italian side, for the particular availability of the Rector Prof. Lida Viganoni and the staff of the International Relationships Office of UNO. The financial support has been also granted by the *Centro Interdipartimentale di Servizi per l'Archeologia* (CISA), UNO and for that, many thanks are devoted to the President Prof. Fabrizio Pesando, the colleagues Luigi Tartaglia, Drs Antonella Sannino, Andrea D'Andrea of the *Directive and Technical-Scientific Committee*, and Profs. Irene Bragantini, Rodolfo Francovich, Dr Rosario Valentini of the Drafting Committee. Thanks are also due to the Italian Archaeological Mission in Uzbekistan of UNIBO and in particular, to the Director Prof. M. Tosi, and his staff. A particular thank is also due to Dr Dmitry Khosthuskhin for his help as translator and for any other organizational type of support. For the scientific aspect special thanks are due to Sherzod Pardaev, PhD student of IAASU, the workmen, the driver Rahmatullo Rasulov and Mrs Shukurova Saodat for having rent to us a comfortable house within the compound of the Institute. Last but not least special gratitudes are also due to Fabiana Raiano (PhD student of UNO), Li Yusheng (PhD of Peking University), who devoted most part of the time to the excavation and to the material analyses, to Dr Enzo Cocca (PhD student, and Research Fellow of UNO) who dedicated much time to the excavations and the innovative topographic 3D survey of the site and to Dr Davide Lunelli, archaeologist, topographer and draftsman, who with his precious experience gave a further important contribution to the work. Last but not least special mention should also devoted to the MA Michele Maria Lamberti of UNO.

[6]Kojtepa (Sheep Tepa), or Kendyk tepa (*Umbelicus* Tepa) is an area 175m long × 150m wide (26.250mq = 2.62ha) and the difference in the level from the top to the bottom is 9.94m. The absolute quote is 697.30 a.s.l. The geographic coordinates of the site are 42N300099.77 m E, 4386573.90 m N (UTM); the geo-referencing system is WGS84 42N.

settlement pattern of an urban system in the ancient Samarkand and Ustrushana areas, in the historical and Hellenistic period.

The joint Uzbek/Italian team spent more than 3 weeks in the area (from 30th August to 25th September 2013), acting with the following new field operations[7].

*Field Activity (Summer 2013)*

Kojtepa[8], is located at less than 50km. to South-West from Samarkand and very close to the outskirts of the Chandyr village[9]. The fifth season of excavation amongst the others, had the following main objectives, all aiming at working and investigating:

1. Trench no 5; in order to find the continuation of the architectural network already evidenced, and a possible earlier architecture and material culture;
2. the area between the main *tepe* and the north-eastern corner of the encircling wall, named Trench no 9, with different successive extensions, Trench no 9.5, and Trench no 9.6;
3. a new trench, named no 11, contiguous to Trench no 5;
4. a new trench, named no 10 to east of Trench no 6 on the southern encircling wall of the *tepe*;
5. as much as dating material culture possible, in order to obtain a more detailed typological and possibly chronological stratigraphic differentiation;
6. a 3D reconstruction of the excavated area and of the whole site.

[7] The work has been possible thanks to the renewal of the official agreement between IAASU and UNO, signed first time in 2008 and 2009, and renewed in 2012 in September in Samarkand and in Autumn in Napoli.

[8] For the previous activity in the area and specially for the relationships between the Dargom and the other canals including Eski Ankhor, see Kabanov (1959, 154-174).

[9] On the basis of the materials and data collected from the surface, from sections nos 1 and 2 in 2008, from the trenches effected in 2009 and from the study activity in 2010, the site has presented traces related to post Achaemenid period (Genito, Gricina *et alii* 2009; Genito, Gricina *et alii* 2010; Abdullaev, Genito, 2010-2011; Abdullaev, Genito *et alii* 2011; Abdullaev, Genito *et alii* 2012) and an interesting pottery evidences under study and analyses (Genito, Raiano 2011; Raiano 2012; Raiano 2013 and Raiano *infra*).

*Preliminary Statements*

The work of 2013 has started checking the conditions of Trenches nos 5 and 9 completely covered by soil at the end of the excavation of last year which presented after one year large quantity of grass remains grown around and over the filling. Trench no 6 was not touched, because the excavation in the related area was already considered finished last year.

It has been decided, thus, to remove the grass and the filling soil from Trenches nos 5 and 9 and particular consideration and attention have been devoted to the first Trench, whose last levels were in fact remained untouched since 2011.The work there in 2012 was, as it is known, mostly related to the enlargement of the original smaller Trench (Fig. 2) and did not refer to the SUs 67, 68, 71, 72 representing the different floors or planes between walls SU41, and SU35 (Fig. 3a-b).

In the meantime new areas are open: Trench no 11 (5×5m) (Fig. 4), at East and contiguous to Trench no 5, with which it is perfectly aligned, with an unexcavated diaphragm 50cm wide[10]; Trench, no 10, on the top of the southern encircling wall, with the same dimensions (4×4m) of Trench no 6 with which it is perfectly aligned, 5 meters to East (Fig. 5).

Some photo tests for the 3D elaboration of the site, are also started to have been made from many different angles, all around the mound and from its top, with successive elaborations to be done at the laboratory with the collaboration of Dr E. Cocca expert of the matter (see below *infra*).

*Trench no 5*

Resuming the cleaning operations in Trench no 5, one may observe that the general conditions of the trenches after one year are pretty good, and one could easily recognize the structures and the layers put into the light during the past activities, and then recovered. Cleanings in Trench no 5 consist in the simple removal of the soil and grass and the level of SU63 in the eastern part of the trench and SUs 67, SU68, SU71, SU72 in the northern area have been reached, together with the area between walls SU41

[10]This small area between Trench no 5 and new Trench no 11, has been left mostly for practical reasons (because the excavation in Trench no 5 is still going on) and for leaving, in any case an internal section useful to read together the related SU. It has been removed later during the course of the work.

and SU35. A small quantity of potsherds came out, and just a couple of animal bones; the cleaning operation allows one to remove the remains of the soil, and the potsherds collected were classified as sporadic. Finally the cleaning operations were over and some photos were taken, both as a whole and in detail (Figs. 6, 7). The main preliminary task is to document and to understand better some new finds, in particular the mud structure composed by an elongated emerging part and two little depressions on the top of SU45 (Fig. 8) to North East; these structure could be functional because their shape and the presence of some potsherds there, give evidence of anthropic activities. Moreover, one has to remove soil in SU45 in order to clean it and eventually find what is located beneath; starting to take photos and topographic points, it has been taken into consideration the possibly nature of these new SU. The shape is trapezoidal: the dimensions are 1m circa on the northern side, 80cm on the eastern, 75cm on the southern, and 55cm on the western. It could be slightly later than SU45, because it lies over; one assigns, thus, a new SU87 (Fig. 9); the possibility that it is a functional structure is strengthened by the presence of different kind of potsherds. One takes photos, topographic points and the altitude for its documentation and the 3D elaboration. One starts to cut SU45 both in the northern and in the eastern sides of the trench, putting into the light a series of mud blocks: in the northern, where one finds also a small baked clay block (brick); they are smaller and more irregular than those in the eastern side suggesting the possibility of the presence of two different structures. Moreover, the mud blocks on the eastern side seem to be in line with wall SU35 in front of them. After that, one starts to cut SU45 also on the South, finding three stones together with a potsherd and an animal bone (SU85), just outside the easternmost part of the three holes which were recognized along the southern border of the trench in 2011 (Fig. 10). Then one takes into consideration the part of SU45 located under SU87 in the eastern border of old Trench no 5, which suggests the possibility that last year during the cleaning operation of the first days a portion of SU63, immediately to South-East, was a little bit cut away. In order to understand this one cleans the portion of SU45 in the eastern side, in front of SU87, under the large and regular blocks found; the situation remains still unclear, requiring the check of the different quotes and depths taken last year.

One starts to remove, thus, the emerging part of SU45 in the south-western corner of the trench, which was 25cm circa higher than the bottom

of the unit (1m circa deep): its hard consistency and the grayish color are very similar to those of the rest of the unit. One stops at circa 10cm higher than the bottom, when a big uniform portion of clay, grayish in color and slightly rectangular in form emerges, suggesting the presence of a big mud block (Fig. 11). In the process one finds potsherds, two millstones and two little pieces of charcoal, while cleaning the possible mud block other potsherds and some animal bones have been found too.

One takes into consideration also three stones, potsherds and a piece of animal bone found (Fig. 12): they are slightly higher and immediately South of the stone and the potsherd already found at the bottom of SU63, suggesting a possible collapse; one, thus, assigns new SU88 to the three stones under SU45 and new SU89 to the one found at the bottom of SU63 (Fig. 13). Finally, one considers the small group of regular blocks immediately located South of SU35, where the wall seems to collapse: in the light of new SU87, SU88 and SU89, which seem to be all more or less contemporary and related to SU45, it seems opportune to assign a new SU90 to the group of these blocks (bricks) (Fig. 14).

The cleaning and the removing operation of SU45 with a better identification process of SU88, SU89 and SU90 to South are continuing. Specially in the south-western corner of the trench a grayish colored flat small area with two alignments has been found just along the southern perimeter of wall SU35. This layer is partially covered by a very thin lens of brownish terrain with some bones and very few potsherds. The terrain still belongs to US45. The flat area is denominated US92 and contains small pebbles and pottery fragments *in situ*; it also presents a small depression and a difference in level toward (Fig. 15). It is also hard and compact light gray. Going down the gray part of SU92 is diminishing with regard to the brownish terrain originally very close only to SU35 (wall). The removal of SU92 which goes towards the area of SU88 and SU89, starts. The SU92 has continuously been removed and very fragmented animal teeth and bones are coming up. The grayish soil is still keeping a shape of a kind of a lens. Pottery fragments are coming as well! US91, instead, is constituted by an irregular triangular shaped area, just along SU35 (wall) apparently constituted at by three mud bricks or blocks (Fig. 16).

One starts to cut SU92: in the process, in the south-western corner of the trench, a little potsherd with cut sides is found, probably reused, which is peculiar for these regions. One finds that beneath SU92, in the south-

western corner of the trench, a depression which constitutes new SU100 is located. This is probably a functional unit, because of the presence of a series of stones, three of which seem to be large and leveled, a potsherd and an animal bone (Fig. 17). Immediately to East there is a very compact, grayish and leveled portion of soil, which seems to constitute a different SU96 (Fig.18). SU88 lies over; all around SU96 and SU100, however, there is a series of different situations (Fig. 19).

One starts to cut also SU88, under which traces of carbon, which are photographically documented are found (Figs. 20, 21). SU88 is immersed in a light gray and not so compact clay. On a more attentive analysis it extends a little more, 10cm circa, towards East and West over the stones, because one finds a little more reddish layer, probably due to the burning activities. One takes photos again and takes the limits with the total station. One cleans the south-eastern angle and all along the southern border. One starts to cut SU96; beneath SU100 is found again. One finds near the south-eastern angle a new SU103 (Fig. 22), which constitutes the limit of SU100. It is a light gray mud elongated element, semicircular in shape, 10cm wide. It is photographically documented and depths and limits are taken.

SU105 is documented and photographed (Fig. 23). It is located all along the southern border of the trench; it is covered by SUs 100 and 91, and connected to SU103. In particular one must understand if SU105 covers SU99 or it has to be identified with SU91. In this case SU100 would cover SU99. There is a little depression in the middle, in the south-western part, more plan towards South-East, and some potsherds in horizontal position are found on its head.

One starts to cut SU91 in order to understand the relationships between SU105 and SU99, realizing that it is composed by three regular and squared blocks, 24cm max of height, 30cm of length and 10cm of width. They cover SUs 109 and 99; only a potsherd is found.

The stratigraphic relations between these units and their meanings are very difficult to correctly understand, so one thinks to stop digging for the moment and just to clean in order to have a better view of the trench. Other aspects important to note are the removal of SU105, the partial removal of SU91 and the finds near SU89: a couple of terracotta cylindrical shaped spindle-whorls which, in their shape, seem to be unique up to now in Kojtepa (Figs. 24, 25, 26).

After taking photos for the 3D elaboration, one starts to remove SU87, finding that SU106 extends beneath (Fig. 27). When the operation is done, one can take points, depths and photos of SU106, realizing also that probably SU105 and SU106 may constitute the same unit. Then, one starts to remove SU106 (Fig. 28) from the border with SU109. SU106 is composed of medium and big mud blocks which can be removed in one piece, while the smaller are looser. Few potsherds come out, among them a maybe painted piece on dark background, to be better analyzed. In the process of removing SU106, one also removes a part of SU107 which was still intact (Fig. 29).

The excavation in the Trench resumed removing SU106, whose identification is not always simple for any eventual re-pedogenesis. Concentrating on the northern half of the Trench direction East-West towards SU109, one always tries to remove the soft terrain until the southern border; the area of SU106 and SU105 are the same. The resumed cutting is cleaned and documented, getting closer to the level of the wall SU35; the terrain is of course harder. A strip of SU102 is evidenced and it is removed. At the early north-eastern corner of the trench along the present eastern border, a particular situation is coming up. The row of two large mud bricks are located just on a fragmented original corner of a wall, which probably goes in the direction of wall SU35.

One is starting to remove the filling of last year in the north-western area in the proximity of SU35 (wall). After having removed the remaining soil, SU113 (ex SU45 and SU48) and SU114 have been put into the light (Fig. 30). In the meantime SU116, coming up also last year (partially SU58), has been much more evidenced. SU116 connects to SU35 and it is defined as a wall structure too. The eastern and northern face of wall SU58 has been put, in fact, into light. SU116 seems to present an alignment in correspondence of SU115. The top of SU114 is constituted by 4 small mud blocks, having an alignment South-East/North-West and is covered by SU116. SU113 is a very compact clay level of which the connection to SU114. SU115 along the eastern border is constituted on the top by two big mud blocks delimitating a kind of structure (possibly wall of an entrance?) (Fig. 31).

Whilst one was evidencing SU116, removing part of SU106, pottery fragments have been found belonging to the same handled vessels still *in situ* (Fig. 32). The fragments, partially decorated by incised wavy lines and

partially painted with parallel narrow lines in red colored, can be fixed together for the 60% (Fig. 33). All SU have been documented by photos and their limits have been measured by Total Station.

One is starting to take photos for 3D in Trench nos 5 and 11. The southern section of the Trench is drawn in order to clarify the succession of the early SU (2011 and 2012) with the new SU identified now, under SU45. In the north-western quadrant of Trench the removal of residual terrain of the old filling of the excavation is finally finished in the proximity of SUs 114 and 106. In the north-eastern quadrant one is cleaning and evidencing better SU106 (3rd cutting) (Fig. 34). A new photographic documentation and 3D of SU106 is effected. The situation is complex and it is not easily to understand whether SU106 is continuing. However, mud clay lumps and sporadic pottery fragments in vertical position have been found. Removing circa 5/10cm of SU106, there is clear evidence of a friable layer which seems to slope down toward East-West. In the north-western quadrant the removal of SU106 is finished, putting in evidence SU118 (Fig. 35).

One is operating in finishing to remove SU106 in the north-western quadrant of Trench no 5. It has been stated that SU106, SU41 and SU113, are still residual terrain of the filling at the end of the 2011 season. It has been stated also that under SU41 different layers horizontally located sloping East-West are present; they will be necessarily named and described.

It has been noted, furthermore, that SU113 connects to SU41 and covers anthropic layers, composed by charcoal minute elements, ash, gypsum elements (?) (residual widespread points). New SU has been given as SU121 to a large mud block inserted in SU106, located in the proximity of the northern border in the north-eastern quadrant. Drawing of three sections in the north-western quadrant where SU63 had been identified, amongst which SU113, SU41 and SU118, have been executed (Figs. 36a-b, 37a-b, 38). At the moment after having removed the residual terrain one has reached the depth of -2,26m from the plain.

After the cleaning operations one starts to operate in the quadrant of the north-western corner in the proximity of the northern border of the trench up to SU121.

One may note that in this zone under SU106, SU124 has been identified and, thus, it has substituted by SU118 previously recognized. Now one is basically concentrating on this zone trying to identify the

different SU. Being SU124 extended beyond SU41 (wall), it seems to constitute the basis where SU41 was founded, meanwhile SU113 cuts such SU and would be successive to SU41.

One may note that SU124 in the north-western quadrant, above described, has been renamed as new SU157, which presents a loose clay matrix, grayish colored with reddish spots, and traces of roots.

Northern Section has been cropped and, thus, one may note that the outline of SU157 has been changed and a new denomination of different SU in northern section is done. New SUs are added, SU158 and SU159, whilst SU124 and SU128 in the northern section have been cancelled. After a further analysis it seems that SU41 (wall) up to SU129 is constituted by different mud rows interspersed with layers of minor thickness, gray colored (see description below).

After that SU157 has been removed and one may note that in its internal face there are lumps of clay, light brownish colored (as SU124) and ashy lenses. However as a unique body SU157 has been removed reaching SU158. One gives evidences of the floor SU158 of clay-sandy matrix, light grayish colored. A single pottery fragment (painted disc-shaped basis of goblet) has been found *in situ* on the top part of the floor (Fig. 39). There are no inclusions.

One starts with some photos in the north-eastern quadrant without blackboard (blackboard). With pump water SU on the western section are wet and more photos are taken. One notes that the row of the wall defined as SU124 goes on and, thus, one has the confirmation that the construction technique for SU41, actually, is mixed; a part build in *paxa* and then row by row of mud bricks. SU158, furthermore, defined as frequency floor is contemporary to the constructional phase of the wall SU41. SU 121 is removed and the one is cleaning the north-western quadrant and the documentation is taken once more. At the moment removed SU121 one gives evidence of SU118. A small test has been made in order to verify if SU148 is effectively a wall, removing 10cm from the northern section, giving evidence of SU158. Once established that SU158 continues beneath SU148, the drawing already done is corrected. This test did not bring any definite conclusion, and, thus, one is referring to the next season to verify. The excavation for this year is finished in trench no 5. To sum up SUs identified, in the north-western quadrant are from northern section: SUs 106/118, 124, 137, 148, 121, 129, 158, 160, 130, 159, 133, 161, 145, 152,

137, 153, 154, 63 (in 2011) 139, 149/150, 155) (Fig. 36a-b); southern section: SUs 35, 113, 140, 127, 128, 129, 137, 146, 133, 141/142, 132, 133, 135/136, 146, 143, 137, 147, 139, 144) (Fig. 37a-b); western section: SUs 122, 123, 124/157, 125, 127, 128, 129, 130, 131, 132, 133, 135/136, 143, 134, 137, 138, 139 (Fig. 38). One can consider that SU63 of 2011 was a unique block till SU68 at -184m from the plain. SU68 referred to the depth re-calculated this year would correspond to SU133, and SU72 (2011) at -2,20m which represent the present bottom, keeps its earlier denomination. One notes that SU72 presents pottery fragments located in situ and visible in the section and some charcoal fragments on the surface.

The depths of SU68 and SU72 have been taken again this year; SU72 corresponds to the one recognized in 2011 at - 2.20m in average, whilst SU68 (present SU133) had a depth of 1.84m, and SU133 at -1.99m. These 15cm circa of difference after more than one year could be explained by the rehash and the lowering of the layer, and by the different depth of the pointed extremity of the prism.

Some other photos for 3D have been made for western section of the north-western quadrant. All the depths are taken of the whole set of SU exposed. Documentation for the final 3D and benchmark are taken with the total station.

*Trench no 11*

As usual in this new Trench it has been started to remove the soil of humus SU0 (Fig. 40).The main task is to complete the removal of 2cm time by time of humus, using also horizontally the spade; the consistency of the soil is changing and getting harder; the number of potsherds since the first cut significantly diminishes. The interface shows 5 reddish blurs, mainly in the north-eastern sector of the trench, which could be traces of some burning activities. So one proceeds to make an additional cut with the spade (Fig. 41).

The continuation of removing SU1 in this trench goes on and in the southern part a large pottery wall fragment has been found *in situ* at -0.25cm (Fig. 42). A certain amount of pottery comes out and mill stones as well. The soil is still very hard and compact and lightly gray colored; after the regular cutting one has the necessity to use again horizontally the spade. For the moment a level at -18cm is reached in the western part, and -12cm in the

eastern. In the second cut in the north-eastern corner of the trench where a strong sloping edge of the *tepe* starts, some shadows of very hard and compact terrain in green and in reddish colored, look like structural elements. The second cut is finishing and the situation does not change very much. To the north-eastern still the grayish shadows are increasing. In the rest of the Trench there is no particular difference.

One starts to cut horizontally another 2 or 3cm with the spade from west (top of the *tepe*) to east. It is possible that one is reaching the bottom of SU1. In the eastern part of the trench one must be careful because the harder consistency, the height of the interface, the grayish color and the experience achieved with other Trenches in the site suggest the presence of a structure, maybe a large wall North-South oriented. Two big potsherds joint together found *in situ* in the western sector of the trench are collected (Fig. 43). At the center of the trench another potsherd, together with a bone, is found: their position suggests that one is already excavating SU2. The consistency of terrain seems to differ between the eastern and the western sector: the former seems harder, so one carefully proceeds with the trowel, putting into the light a little stone (it should be alluvial) in the very north-eastern corner of the trench. In the western part, excavated with the spade, one finds a number of potsherds, one of which is almost horizontal on the soil, but it should not be *in situ*. This kind of work does not arrive to the south-eastern corner, because in this corner a careful observation allows one to realize that it is better to remove earth with the spade horizontally.

After this operation, the trench is cleaned and washed out: one realizes that the situation is getting more complicated, with at least three different SU, now visible in plan. The structure, maybe a wall, seen earlier, which runs North-South all along the trench in its middle-eastern sector, is named SU94; SU95 is located west of the filling of a void area, judging by the softer consistency and the brownish color: it occupies all the western half of the trench. SU93, finally, runs from the eastern limit of SU94 to the eastern limit of the trench; it should be a void too, but here the situation is less clear than in SU95 (Fig. 44).

One proceeds to cut SU93 and SU95. In the latter, the head of a terracotta figurine comes out. It is situated in the southern sector of the unit, near the southern border of the trench; it is exactly at 9cm from the southern border, 4.91m from the northern, 1.92m from the eastern and 2.58m from the western. At a first glance it seems quite peculiar: it displays both

Hellenistic features (mainly the mouth and their vicinity to the nose) and Central Asian ones, as the elongated eyes and the strange hat which looks like both the "Scythian beret" as seen in the Achaemenid representation and an helmet (Fig. 45). After all the necessary documentation, it is carefully removed and put aside: it will be analyzed in the laboratory to check matches within the other figurines in the inventory of the site and to do confrontations.

One goes on with the cuttings, realizing that the consistency and color of SU94 can be seen also in other SU of the trench, precisely in the southern part, just removing few centimeters of soil: it could suggest the presence of a more enlarged wall or, possibly, another structural elements. At the end of the day one thing is left to consider: in the western portion of SU95, starting just from the middle of the trench section, there is a harder and grayer part which resembles the head of a wall (Fig. 46). It also nicely corresponds to SU35 in Trench no 5 on plan, while there are 70cm circa of difference in height, and nothing is still visible, as it should be if they were the same structure, in the western section of Trench no 5. Anyway, this part is left spared, and its excavation, relation with SU35 is still uncertain.

One starts to cut SU95 with the spade on the northern and southern sides, and with the trowel in the middle, where the possible structure seen is followed and cleared revealing the head of a wall which runs West-East and seem to go deep into the terrain. No materials seem to come out. When the cutting is complete, one realizes that SU95 is over because now the situation in completely different. No SU is assigned to the wall yet, because it could be, as seen, the prosecution, although interrupted, of SU35 in Trench no 5. To the North there is SU101, which displays a mixed situation both in thickness and color: it could be a mud collapse; to the South, instead, there is SU102, more uniform in softness and brownish in color. So one concentrates for the moment on SU102, which seems the only unit which is possible to cut with the spade. A first cut, 5cm circa deep, reveals some diagnostic pottery and some baked clay. The first cut is completed, and the unit is photographed.

A second cut starts thereafter: consistency remains soft, almost sandy, but color is changing, getting grayer in the southern and middle part of the unit, while remaining brownish on the sides. This suggests the presence of the filling of a hole, or pit, maybe with ash (Fig. 47). On the northern side instead one finds compacted blocks of mud, which could be

natural or anthropic, maybe the collapse of the wall which lies immediately north of the unit. Also, in this zone the soil seems wetter. One also finds three pieces of mud, or badly baked, pottery; it should be a first for Kojtepa, but one needs to check. Going on with the excavation, it seems clear that there is the need to assign a new SU to the concave lens, SU104 (Fig. 48). One starts to excavate with the trowel to find the limits of the lens. The soil is almost completely grayish, even blackish at times, and very dry, getting brownish and just a little wetter only at the limits of the lens. Small pieces of compacted mud come out too, some of them display almost regular holes, like the ones leaved by animals. One has not completed excavation of SU104, anyway, SU104 is documented and photographed, as well as SU101 in the north-eastern part of the trench.

The digging of SU104 is resumed, another cut horizontally with the spade of SU101 starts. In SU104, the terrain remains sandy and gray, one finds it slightly harder, wetter and more brownish only going towards the limits. The unit seems larger than what initially thought (Fig. 49). After completing the first cut of SU101, one starts to make a second cut but only in the eastern part of the unit, revealing a mixed situation of brownish terrain and irregular crude elements, similar to what was found all over the site in the past missions, classified as SUs5 and 8. One decides for the moment to assign new SU110 to this layer, while extending the cut towards West (Fig. 50). Mud elements are found everywhere in SU104 with another circular depression (Fig. 51). In SU101 the cut is extended again, even where it was initially thought to be the continuation of SU35 in Trench no 5. The terrain is compact and no materials seem to come out. One finds mud elements, maybe architectural, in the middle western part of SU104, and an over fired, probably residual of pottery making, in the southern part.

Another cut of SU110 is done, realizing that the presumed wall in the middle of the trench does not emerge, and that SU110 extends to middle and south of the trench. One realizes that terrain in SU104 is getting harder, at least in some areas, and also finds some mud blocks, regular at a first glance, in the S part, and a millstone. The digging of SU104 is now complete. The lens has now smaller and more definite borders in the north-eastern angle of the unit, so one decides it is better to assign a new SU111 (Fig. 52). One starts to dig, finding, as in SU104, that the terrain is sandy and gray in the middle of the lens, more compact and more brownish going towards the borders.

The process of digging SU111 goes on. Consistency and color remain the same. In the process, SU104 is cleaned again, with some softer terrain still present between the clay agglomerates. In the southern part, near the two millstones found in the past days, two big potsherds come out; they are left where they are. At 7.40m an almost uniform, harder plan is maybe reached, so the cutting is stopped and points, heights and photos are taken. Then, the digging resumes: the limits of the unit seems to get smaller, the proportion of gray terrain, maybe ash, grows. Very few potsherds, but some stones are found near the eastern border: these are similar with the ones found in SU45 in Trench no 5. Ash, stones and the shape of the lens may remember that of activity area, but the thing is to be better analyzed. One finds four potsherds maybe *in situ*: it could be the superior interface of new SU112 (Fig. 53). The eastern border seems to be very compact and linear, while the western is soft under the agglomerates of SU104; one decides, thus, to stop cutting documenting SU104, SU110, SU111 and SU112. One starts to remove with the spade the southern half of the diaphragm between Trench no 5 and Trench no 11; documenting it with photos when at a depth of 6cm circa (Fig. 54). The cutting goes on, when it reaches the depth of 10cm circa. The cutting will go on discovering if SU102 has to be found, after that, if the circumstances allow, SU102 and SU104 will be removed to check if SU111 extends beneath them.

Trench no 11 resumed going on cutting the diaphragm. One is continuing to remove SU102 and finally reaching a kind of a border of the concave lens called SU104 (Fig. 55). The succession of SU104 and SU111 is more or less topographically in sequence of levels. One sample of soil is taken for analysis, and for the moment one is still removing SU102. In the meantime an accurate observation of the very hard and compact soil in the middle of the Trench which originally divided SU101 and SU102 is most probably not a wall.

The removal of SU111 is continuing from its top level to West. Mixed soil with mixed soft grayish soil and mud black like SU104. SU111 contain few pottery fragments and the border of this empty space (lens) looks like a more harder soil running more or less parallel to the SU110, being itself a SU110. Many mud black lumps are coming out of large size of 10 or 15cm high. One, thus, is starting to remove again SU101 at deeper level. On the southern border one is removing the two mill-stones and some pottery fragments in large size. The removing of this level is still

complicated by the alternate of ash, grayish and brownish terrain with some charcoal and whitish hard clay. After the cleaning and making photos one starts to remove SU112 with the two pieces of pottery fragments. These, which were located in a sloping edge of the soil, find another correspondence in a series of other fragments distributed over the whole area of SU112. Under these three pot fragments, on the same SU112, fragments of horse teeth and painted pottery wall were coming up together (Fig. 56). In the same context a by-conical spindle-whorl in black pottery is coming up (Fig. 57).

SU112 has its central part more depressed because one has going around to clean. At the level of the bottom of SU111 a little bit higher there is a brownish compact soil with some reddish colored pieces of burnt clay (Fig. 58). In the north-western corner of the pit a more hard brownish colored soil is coming up and it is named SU117 (Fig. 59).

At the coming time along the south-northern half of the trench in the pit at the bottom of SU117one is founding something similar to some alignment of mud South-East/North-West direction to Trench no 5. One has decided to remove SU119 located mostly in the north-western corner of the area (Fig. 60). The removal has as a consequence the putting to the light another level of soft soil with other pottery fragments located *in situ*. A part form the brownish terrain in the corner the consistency is the same of before. Now one has reached the level of grayish terrain left untouched up to now. One is going on down and we still are on SU111. It is already the 4th or 5th cutting where the terrain is easily removed and finally something hard is coming up with pottery fragments photographed and removed. The level of this layer grayish ash seems to be that of SU45 which in Trench no 5 was not full of ash. Now it is removing the higher part of this structural element on SU110 which originally seemed to be brick of a wall (Fig. 61). SU, is thus, again 101. On the southern border of this structural element (pit), a good section is visible and contain a surface, SU2, SU95 level, SU102 and progressively SU104, SU111, SU117 and SU119 (Fig. 62). At the bottom there is also a structural element like SUs 99 and 98 in Trench no 5. A similar section is also visible on the western border (the external face of SU110).

The 3D documentation has been made in the trench in the morning. The northern half of the diaphragm between Trench no 5 and Trench no 11 has been removed. During this operation one finds a squared pottery piece,

with a hole in the middle and possible marks incised on one face (seal) (Fig. 63). It could be a spindle-whorl, but the identification is problematic due to the squared shape (used as amulet). At the same time, the southern and western sections of the south-western sector of the trench, where excavations have been focused during past days, are drawn.

Seven cm circa of the diaphragm are cut away, so one takes photos and resumes cutting. One starts to excavate the "concave lens" on the western border identified with SU104, SU111 and SU119, visible in section, under the head of the remaining diaphragm (southern half) between Trench no 5 and Trench no 11, which is harder and more compact (Fig. 64). It has been assigned to this lens a new SU126: terrain here is soft and ash-gray in color for the greatest part. In the process one finds a mud piece that could be an artifact, but the issue will be better evaluated in laboratory.

During the preparative processes for the photographic documentation, a little portion of the diaphragm which is still above the excavated SU126, collapses by accident, so it is impossible to correctly document it: therefore it is important to note that SU126 lies under a compact, hard and gray layer of clay (diaphragm Trench no 5 - Trench no 11, material of section).

It is important to note, moreover, that SU126 is more or less at the same height of SU104.

While the cutting of the northern half of the diaphragm goes on (2 or 3cm ca. for one cut), one starts to dig SU119, that presents the same features of SU104 and SU111: i.e. a soft terrain, very ash-like both in color and consistency. It seems deeper in the western part of SU119. Also one discovers that the more compact parts of SU119, which had been left the last days in order to better see if they were SU119 or not, are probably just harder agglomerates of the same terrain, caused by the exposition and the continued walking on by the workmen: directly under those agglomerates, in fact, the terrain is still soft and ash-gray in color.

The cutting of SU119 is not yet complete: one cleans and documents the Trench. The cutting will be resumed both of SU119 and of the diaphragm, and eventually one will proceed cutting SU110, at least in the northern part.

One starts to cut SU110. In north-eastern part of SU, towards SU94, near to the center of the trench (2.50m circa from the West and East borders) some spots of the terrain seems to be different both in color, lighter

gray, and in thickness: it is harder and one may break the mud agglomerates with more difficulty.

One resumes excavating SU119 in the south-western part of the trench where a pit-like filling unit came up: only one potsherd comes out. The bottom is reached in the northern half of the lens, while in the southern the softer, sandy, ash-like soil seems to go even deeper. In the northern half the soil is compact, very hard and gray. There is a series of holes in the north-eastern corner, which for the moment are left unexcavated.

The first cutting of SU110 (8-10cm ca.) in the northern part is complete (Fig. 65); it is related to the northern sector of the SU at the same level of the southern. SU is cleaned up and photographed. Very few materials came out, differently from the cuttings of the past days. Then, one proceeds with another cutting, this time only 2-3cm circa deep. In the western side the terrain is softer; in the north-eastern corner there are some lighter "blurs" which could give confirmation of the presence of the structural elements of SU94. In the process one also removes a portion of SU102 which was left in the northern section of the trench: it does not seem a structural element, as originally thought. A potsherd is found in the section and collected.

The second cutting is completed done horizontally in order to clarify better the mixed compact soil leveling the different consistencies in order to identify the empty and the "full" spaces. Then, after the break SU is cleaned up and photographed, and one proceeds to the third cutting of the day. The terrain now radically changes: it is still hard, but less compact; it is now brownish, and one may see the presence of charcoals and baked clay, clear indicators of anthropic activity. It is, thus, clear that a new SU has been reached, and it is named SU156 (Fig. 66). At the end of the day it is cleaned and photographed.

The work starts taking points of the "pit" in the south-western corner of the trench, i.e. SU119 and the six holes found (Fig. 67). Then also points for SU156 are taken, and one proceeds to a first cutting. The soil is mixed: compact, hard and gray mud agglomerates alternate with softer, granulated and brownish terrain. The quantity of materials seems to increase from SU110, located above SU156; one also finds some particles of baked clay.

The first cutting is complete, thus SU156 is cleaned up and photographed. In particular one realizes that there is an ample portion of softer and brownish terrain in the southern part of SU156, just north of the

possible structural element (east extension of SU35) found after the opening of the trench, and which remains quite hard and compact distinguishing itself more and more clearly: a line of a possible wall is starting to appear, in fact, between this possible structural element and SU156, line that is, moreover, in perfect correspondence with SU115 in Trench no 5, also a structural element (Fig. 68).

The second cutting begins with the removal of the mud blocks left on the western section of the trench, and then goes on as the first: the soil remains the same, mixed, but one also finds some mud blocks with some quartzite particles, that break with an irregular fracture. When the second cutting is complete, SU is cleaned up and photographed again, and the third cutting begins, this time with less deep cuts: removing the mud agglomerates left during the preceding cuttings, it seems that the softer and brownish terrain reappears under them. At the same time one starts to cut also SU110 in the south-western sector of the trench, where there was the old diaphragm between Trench no 5 and Trench no 11.

The process of emptying the holes in SU119 is undertaken. This clarifies some mistakes done last day: holes 1 and 6 are actually just depressions, and a new hole is found in the south-eastern part of SU.

Thus, holes are renumbered and documented, although of some of them, in particular no 3 and no 5, it is impossible for the moment to reach the bottom. No material, anyway, comes out from them.

Another cutting of SU156 is undertaken, but not completed in time: the unit is once again cleaned up and photographed.

The cutting of SU156 is not completed and it is resumed. When the work is done, SU is cleaned up and photographed. Then one starts to scrape that part of the trench which, at the beginning, seemed in correspondence with SU35 in Trench no 5, and for this reason it was not touched during the past days. Few materials come out, but it is clearly not a structural element. Consistency and color make it reasonable to recognize it as SU110.

This cutting is now complete, and the unit is cleaned up and photographed. Washing it makes one to realize that a reddish colored lens of soil is present in the south-western part, softer than the usual, compact and hard soil of SU110: one assigns SU162 (Fig. 69).

Also, one assigns SU163 (Fig. 70) to the burnt small area found the day before in the center of SU156. All around there is a reddish soil which looks like the same as in SU162.

One starts to remove SU162: the first impression of the soil, reddish and soft, is confirmed. Few materials come out, with a relative big presence of little alluvial pebbles. One must not forget that SU162 is in the proximity of SU126, the lens visible in section excavated days before. When the emptying of SU162 is done, one cleans up and takes photos.

One removes SU163, revealing a mud block with clear traces of burning, confirming the hypothesis of a burnt area. Then the cutting of SU110 around SU162 is resumed: the terrain is hard, compact and gray along the western border of the trench, brownish, softer and wetter in the middle and then gray and compact again in the northern part of SU, going towards SU156. In fact, one starts to find some potsherds only when SU156 is already reached by the cutting, which goes from South to North.

Everything is cleaned up and photographed, and one can clearly see the emergence of SU126 again, this time not in section but in plan. The ash-like soil of SU126 is encountered again in perfect correspondence its former documented location. Moreover, one realizes that the reddish soil of SU162 is still present, directly West of SU126.

One prefers to concentrate on another cutting of SU156, leaving the removal of SU126 for tomorrow; when the work is done the unit is cleaned up and photographed.

The removal of SU126 starts. The lens extends a little over what initially thought. Some material comes out. The ash-like soil extends also under SU110 going towards North, so for the moment one leaves it be. There are two big stones visible in section at the north-western corner of SU, they seem to be *in situ*, SU166 has been, thus, assigned and it is documented as well, both topographically and photographically (Fig. 71).

SU126 is cleaned up and photographed, then one concentrates on SU162, directly West: the soil is still reddish and softer as seen the day before, and there is a great quantity of small and middle size pebbles. The bottom of SU162 seems to be reached in little time, so one cleans SU up and takes photos. Thereafter, the removal of SU110 is resumed, cutting 3-4cm circa. Going towards North-East one encounters a harder soil; a mud block comes out, and its section let one to think that it is not anthropic. Also the quantity of potsherds seems to increase with regards to the past days.

The same operation of cutting is started for SU156, directly N of SU110. The context looks similar to that of SU110: mixed terrain, gray and hard in some parts, more brownish and softer in others, but without a

recognizable clear distinction. Also in SU156 the quantity of potsherds increases: are SU110 and SU156 the same thing? Last thing to note is that in the north-western corner of SU156 a big stone is found, with a potsherd nearby; they may be *in situ*.

When everything is cleaned up and photographed, the more favorable conditions of light and the water poured on the units for cleaning, make one to recognize the reddish soil of SU162 once again, which evidently was not emptied yet. Thus, after the break one concentrates on SU162: the terrain is still reddish and quite soft, and the quantity of pebbles does not diminish. SU extends over what initially thought; at the end of the day its removal cannot be completed; tomorrow, thus, it will be the first task of the day. Thereafter, possibly, one will concentrate on SU110 and SU156, and their relationship.

The little lens seen in the northern part of SU110 is emptied: its ash-like terrain and its contiguity to the already documented SU126 make it clear that it is the same SU. Then SU162 in the southern part of SU110 is emptied: no material, except for the usual little and middle size pebbles already seen in the past days; this time they seem a little bigger. SU126, SU162 and SU110 are then cleaned up and documented.

In this situation it is now possible to clearly see that SU110 in the south-western part of Trench no 11, and SU156 in the northern, present the same mixed situation of terrain now brownish and quite soft, now gray and harder, more compact, but for the moment without a clear topographical distinction. Thus it seems reasonable to unify these two parts of the trench in a new SU, SU168 (Fig. 72).

A first cutting of 3-4cm circa in SU168 starts, from the north-western corner (where a big stone was found the day before) going towards East. The mixed situation of the soil does not seem to change, but the quantity of archaeological materials increases. In particular, one medium size stone comes out in the center of the trench, and at a first look it seems to be at the same height as the one in the north-western corner. Around it, a series of potsherds, some of which in horizontal position come to the light. One also finds again the small burnt area seen some days before, SU163 and already documented.

The presence of this burnt area SU163, of stones and potsherds could be all indicators of a moment in the life of this part of the site; so one documents them all both topographically and photographically. Moreover,

they could be related in some way to the three mud blocks now clearly visible along the south-eastern corner of SU168 nearby to SU110 "bordering" the concave lens to South; those mud blocks for the moment are still considered part of SU95, and then of the presumed wall: they are documented again, and will possibly be a focus of the next working days.

A new cutting of SU168 is started, this time from the south-western corner, going towards North. During the cutting some potsherds are taken out, but the big stones are left. SU163 is left too. Everything is cleaned up and photographed.

A cutting of SU168 is done, 3-4cm circa, from the south-western corner of trench, direction South-North. A big potsherd in horizontal position is found directly South-East of the big stone found yesterday in the NW corner of the trench, another one, in vertical position, a little to the South-West.

The cutting is completed, then everything is cleaned up and photographed. A second cutting starts immediately, and completed at 10.20 hrs., followed by the usual cleaning and documenting operations. Little changes in color of the terrain, especially in the northern part of SU168, are starting to appear, so one decides for the moment to cut, only the center and East part of SU168, which is a little bit higher.

In the meantime, while the stone found in the middle of SU168 is removed, one cleans around a big stone in the north-western corner of SU: the potsherd found earlier comes out, but the stone does not (Fig. 73). The plan on which it eventually lies is not reached yet. Another interesting thing to note is that the reddish soil, rich in little and middle size pebbles, in the south-western corner of SU168 extends up to the three stones of SU166: pebbles and stones could therefore be related to each other, in an activity unit of sort. It is clearer and clearer, moreover, that the portion of SU168 directly North of SU166, corresponding to SU35 in Trench no 5 and identified since the beginning of the excavation of Trench no 11 as a possible structural element, is different from the rest, gray, very compact and hard. Some lines, typical of anthropic mud blocks, are starting to appear, too; but after a scraping with the trowel it is decided to go a little deeper yet.

The third cutting of SU168 starts, with the usual modalities: the cuts are of 3-4cm circa, the starting point is the south-western corner of the trench and the direction is South-North. During the cuttings one realizes that

the big stone in the north-western corner of the trench still goes deeper in the soil, but another potsherd is found directly under it. SU163, the little burnt area in the center of the SU, is partially removed: it is, as seen days before, a partially burnt crude block.

Work continues in cutting the southern part of SU168. It is now clear, with favorable conditions of sunlight, that SU168 can be divided in three different areas. The southern is now completely occupied by the reddish and hard terrain of SU162, rich in small and medium size pebbles (Fig. 74); in the center one starts to see clearly the mud blocks, and their separating lines, that perfectly correspond to SU115 in Trench no 5; the northern part, finally, should correspond to SU45 in Trench no 5, but this hypothesis requests further examination.

The first and second cuttings of the southern part of SU168, which finds this SU practically at the same level of SU106 in Trench no 5, reinforce the idea that SU162 was not over yet; one has, thus, to reconsider the previous ideas. Moreover, the S section of Trench no 11 allows one to see the unusual shape of SU162, which at a certain point gets smaller and enlarges only soon afterward. Thus one chooses to use again SU162 into the documentation, and to make the necessary corrections of the last few days of work. The second cutting is completed, everything is cleaned up and documented, then one starts to remove the remaining part of SU162.

Meanwhile, the central part of SU168 is scraped with the trowel, starting from the western limit of the trench going towards East; almost immediately mud blocks and their separating lines clearly appear, and during the day an entire line of mud blocks, up to the center of the trench, is put into the light. It nicely corresponds to SU115 in Trench no 5, and, in turn, should correspond to SU35 in the same trench, although the entire structure does not seem to outline a straight line, turning a little towards North. It could be due to collapses and re-pedogenesis processes. It is too early to identify SU115 as a wall, because only a line has been brought to light, and in the eastern section in Trench no 5 there is no trace of mud blocks below the ones brought the light during the first days of work; one may, anyway, certainly it as a structural element.

A first cutting, in the northern part of SU168 is also started. After cleanings and documentation, a second cutting is started, but this time using the trowel, because one is almost at the level of SU106 in Trench no 5. Defining a situation that is now completely different. In the western part of

SU one may see the continuation of SU106 in Trench no 5, with big, medium and small irregular mud blocks which seem to be located over a plane. The big stone, surrounded by potsherds, in the north-western corner of former SU168 still goes down, deep in the terrain and it is impossible to remove (Fig. 75). In the eastern part of former SU168, instead, the terrain is brownish and soft, with some potsherds in vertical position: it constitutes a new SU, 173, covered by SU168, connected to SU115. The burnt area SU163 is still impossible to remove, going deep in the terrain: interestingly to note, it is located between SU106 and SU173.

This part of Trench no 11 is cleaned up, photographed and topographically documented, at the end of the working day. The same thing is done for SU162, although one must wait the next working day to verify if the reddish, pebble-filled soil still goes deep into the terrain. The relative section is cleaned too, and it has to be drawn in order to better understand the nature of SU162 and its relations with the surrounding units. This will be the first task of next working day.

On our arrival one finds SU166 partially removed, as well as the westernmost mud block of SU115 in Trench no 5; everything is photographically documented.

Morning activities start by cleaning and then drawing the southern section put into the light after the complete removal of the old diaphragm between Trench no 5 and Trench no 11; one also definitely removes SU166 as well as SU163, the small burnt area found some days before, and cleans around the mud block of SU115 partially removed. Then, a first cutting, with the trowel, of SU173 is started, also in order to verify if there is a second line of blocks under the one put into the light SU115. Some materials come out, among which a possible disc-shaped foot, similar to those found in Trench no 5, SUs 63-68 (see finds of Tal-i Barzu).

After the first cutting, everything is cleaned up and documented, and a second cutting is started. Another possible disc-shaped foot comes out. In the meanwhile, one cleans the western section of SU94 (wall), where a notable quantity of terrain has deposited during the last working days.

The second cutting of SU173 ends, followed as usual by cleanings and documentation. A third cutting starts soon afterward, and the bottom of SU is immediately reached: the new layer one finds is yellowish and wet, just like SU118 in Trench no 5. Waiting for further examination, one prefers for the moment to assign SU174 to it.

The final operation is to remove SU162 in the south-western corner of Trench no 11. The bottom is reached in the southern area of SU, and possibly it is the extension towards West of SU111; in the northern area the reddish terrain still remains. Anyway, the nature of this particular SU and its relations with the surrounding ones are still difficult to correctly understand, requiring further examinations and the complete removal of SU (Fig. 76). The final working day is closed with a general cleaning up operation, and then by taking photos for the 3D elaboration of Trench no 5 and Trench no 11 together.

*Trench no 10*

The trench is opened (4×4m), not very far from Trench no 6, excavated in two years (2011 and 2012). Removing humus some pottery fragments are coming up. A SU1 is also identified and somewhere a more whitish/brownish terrain is coming to the light (Fig. 77). A second cutting with the spade is done and one reaches -10cm. The terrain is the same with roots yellow-brownish and some pottery fragments

To South the terrain seems to be more soft and brownish colored and results full of material, specially pottery. To North the situation is quite different with more hard and compact soil, clear in color. Starting from south one can easily consider a SU2, where also a big iron slag in coming up (may be modern) (Fig. 78). One is also preparing two elongated North-South oriented (2×8m), named Trench 10 North-Extension and Trench no 10 South-Extension. They are only delimited and not yet excavated (Figs. 79, 80).

One is continuing to remove SU2 trying to level the whole area of the Trench. The southern part is still less hard and compact with regard to north. One pottery fragments is located in situ along the southern border of the Trench and removed.

One is going down everywhere in the whole trench by progressive cuttings made by vertical spade. The quantity of materials (pottery), still remains very high and still are not clear the limits of the soft and hard terrains. The general evaluation of the trench should also be related to a little bit depressed level of the wall. The level is still that of SU38, but here it achieves only a topographic and not structural meaning.

The whole situation starts radically to change, at -50cm to North and -30cm to South, where the terrain is more and more soft with lumps

brownish in color; the quantity of materials is not diminishing. Also some pottery slags reddish in color are coming up. A new SU120 is given to this 4th cutting and probably this SU should have been given to two days before. The quantity of materials is incredibly increasing (4 baskets). The terrain is more or less the same, to south there is a mostly soft terrain and to north more hard.

One is still excavating SU120, after having made photos. The situation appears more or less similar, and in the North Eastern corner there is a more hard terrain. The pottery fragments are everywhere still present. In the SE corner one finds a hard terrain grayish in color like SU44 in Trench no 6, two years ago, and also a shadow of a small hole of 15cm width of no any importance. A second cutting is done and the situation does not change. Large quantity of material and animal bones too are coming up. At the moment at North one is at -75cm from the plain and at south at -50cm. The consistency of terrain is the same. One goes more deeper and the situation changes a little bit; to West there is a burnt reddish area approximately wide 20/30cm. In the middle there are large pottery fragments and gray-brownish terrain; no alignment and no any other structural elements for the moment are visible. Along the western border close to the reddish burnt area a horn-like terracotta item is coming up. It is slipped and red painted on a grayish-green (glaze?) (Fig. 81). In the same level SU120 are coming one head's figurine in Hellenistic style (Fig. 82) and another terracotta frame with figurine in Hellenistic style too (Fig. 83).

One goes again down in SU120 and the situation does not change very much. In the four corners there is some areas harder; to South-East the soil is grayish colored, in the other mostly brownish. In the south-eastern corner an almost complete vessel, although fragmented is coming up. Also two wall gypsum coated and red painted, are coming. To West still some reddish soil remains.

Finally the cleaning of the trench allows one to detect better on the south border of the trench, in the middle, the remains of the lower part of a large jar, fragmented with most part of the soil inside. Most probably the vessel is inserted into the soil. SU is 134 (Fig. 84), the internal part is SU164 (Fig. 85). This SU is constituted by different degrees of hard soil, sometimes grayish, sometimes brown. Some pottery fragments are coming out and particles of charcoal and animal bones too. Around the vessel, for

the moment arbitrary framed by a rectangle, it is almost recognizable a plane SU165, where also pottery fragments are located in situ.

Photos for 3D have been taken for SUs134, 165, 167. The research for the plane is successfully and the situation generally speaking is rather encouraging. At South and in the south-eastern corner the depth is -60cm. To West - 82cm; to North - 80cm, to East a hard terrain along the border there strange alignments of mud (may be the lowest part of SU120). With pottery fragments too. The plane is more or less clear and the dislocation of the pottery fragments is more or less regular even if in different height. In the northern section the reddish line recognized seems to sign a level (the bottom of SU120). The plane is SU167 (Fig. 86). All the pottery fragments and stone, and some animal bones are grouped and numbered in 24 different groups. No 1 and no 22 are the disc base of goblet may be re-used as pottery disc (Figs. 87, 88).

After the cleaning operations one is taking photos. One is deciding to open a 3m long (South-North) and 1.38m wide area along the eastern border of the trench. The reason of this operation after having found a plane with a large amount of pottery fragments, bones and stones, is to try to understand the alignment of mud blocks North/East-South/West oriented, which from one side could be interpreted as the sign of the encircling fortification wall (SU38), from the other they can be considered as a small wall build by the people who were using vessel SU134as well. The cutting is defined as SU169, the wall alignment as SU170, and the second cut as SU171 (Figs, 89, 90, 91). One goes down and most probably the line of wall SU170 seems to go down as well, even at the north-eastern corner the line seems to disappear. A small rectangular area 60×35cm is extended just on the external southern border of the trench in front of vessel SU134, in order to remove completely the fragments. The work is done and also photos for 3D are also taken.

After having gone down another cutting in SU171 it is coming up the outline of a circular or oval pit, which is given the denomination SU172 (Fig. 92). In order to verify the real extension of this pit an enlargement of the sub-trench is planned to West, of 50cm along the line of the small trench opened yesterday in order to take out the vessel SU134. From this enlargement one goes in SU171, where many pottery fragments are coming out from. The pit lightly North-East-South-West oriented may have been started a little bit higher in a very yellow hard and compact terrain (Fig.93).

After the removal of this enlargement there is the confirmation that the pit goes to West, and the bottom is full of pottery fragments horizontally located.

First, one tries to identify the complete border of pit SU172 inside the Western enlargement. Its shape looks like a little bit oval, also because the borders, as usual, will be more clear after the removing of the filling of the structure. The west enlargement in SU171 contains more fragments than seen yesterday. Between the eastern border and the SU170, there is a small fragment of blackish polished pottery. One, them starts to excavate the pit and after 3 cuttings, different for quantity of material, one reaches almost the bottom, which is at -35/40cm from the top. The border and the bottom are more or less difficult to clearly to identify. One makes another enlargement to West also 50cm wide (West-East) × 5m long (North-South) (Fig. 94).

*Trench no 9*

The first step in this season in Trench no 9 is to remove the drift covered in 2012. After a whole year's exposure to different kinds of weather in the area, Trench no 9 is full of overgrowing weeds; in the meantime, the local men also dug a hole in the southern part of the trench. The hole, with a measurement of 80×70cm and maximal depth of 35cm, is located 190cm away from the southern side of Trench no 9, and 260cm away from the western (Fig. 95). During the removing, several pottery fragments, all in red color and considered as sporadic, were found. Most mud bricks on the top part were recognized, while the ones along the sloping edge were still not very clear.

The main task is still trying to recognize all the mud bricks covered last year; after continual identification, most of them have already been found; in the meantime 4 new mud bricks have been recognized too (marked as brick b, c, d, e) (Fig. 96), some of them were broken (e.g., brick b), and their borderlines are not very clear. To North of the 4 lines of the mud bricks discovered last year, more details were recognized, too. Most probably the bricks in this part should be set in lengthways, or in a much smaller scale, because all of them (about 20) are 10cm in width, and are about 3-5cm distant each other. The potsherds unearthed still have a red texture and with a clear cover. In Trench no 9 unfortunately the situation has much more

deteriorated since last year; this was maybe due to the little depth reached by the cuttings and to the proximity of the nearby road: in particular one has found two holes which were not present last year, and some lines between blocks, very visible at the end of last year excavation, are now much less clear. Anyway, cleaning operations went on in Trench no 9, which has also been extended towards South: a new rectangle 9×3.5m has been fixed on the ground and photographed, adjacent to the inferior line of the elongated "T" shape which Trench no 9 resembled. It is the 5th extension of Trench 9 since its realization, so it is now called Trench no 9.5 (just opened south of Trench 9.4 and wide 2.50×8m) (Fig. 97); about half of the next extension's surface soil has been removed, dark brownish colored with roots and few pottery fragments. The humus has been removed from the new rectangle, and the extension photographed again.

Main acquirement achieved, after times and times of tries in identifying, is finally confirming that the mud brick wall/floor/platform, named as SU75, spreads all over through Trench no 9 (East-West oriented), while last year, only few snatching tracks were found, especially to the eastern part. In spite of more details need to be affirmed, the newly found, which are in greenish color (baked?), were covered by a hard off-white layer of soil (1-3cm in thick). The other aspect one should understand, is the southern border of SU75; actually the border were full of collapsed mud bricks in broken irregular shape and order (Fig. 98). To North, the border is still not clear, and one piece of sinter stuff (over fired) and one small sinter in water-drop shape have been found (belong to SU8). For the new extension of Trenches no 9.5, new cuts were carried out and the surface layer has not been finished yet, red potsherds were discovered all the time.

The situation of SU75 in Trench no 9 became much more clear, along the collapsing mud bricks recognized, the 14 ones set in vertical shape were affirmed, while during the last year only the gaps between them were found. The width of the vertical ones is between 8 and 13cm, and the gap between them is about 2-5cm. To the North, the situation is a little bit same; mud bricks, the number of which should be approximately 20, were also recognized in vertical shape, while their length seems shorter (Fig. 99). Along the line of the vertical bricks, there were two new bricks recognized, too, and the width is about 23-25cm. For the excavation of Trench no 9 Extension 5, after 2 cuts, which lead to a depth of 10-15cm, the surface has

finally been removed, and except for the potsherds unearthed as usual, one piece of sinter was found, too.

During the days since new season started, the plan of excavating on SU75 was set in the following points: first of all, to find the border/edge both in southern and northern part, then follow its spreading along the slope in the western part, the position of which is Trench no 9 Extension 5 now. Also one needs to figure out the details of the layout of the mud bricks, especially in the eastern part. For the first target, as mentioned, collapsing bricks distributed along the southern border, and there are also vertical to the eastern, which seem finally disappearing, considering the fact that there were also other vertical bricks closely discovered to the southern side of Trench no 9; maybe after several cuts, the relationship between them will be much more clear. To North of SU75, although the existence of vertical bricks showed some analogous structure with the southern part, the border is still unclear. For Trench no 9 Extension 5, after 2 cuts, 2 mud bricks were recognized, distributing along the slope, and have more or less the same orientation with the ones on the top. For the bricks' layout in the eastern part of SU75, several cuts were carried out today, excepting for some tracks of greenish (baked) soil, more details need to be affirmed in the future. There is one hoof print recognized on the floor (SU75), too.

The work was focused on distinguishing the mud bricks from the other part in Trench no 9, Extension 5, as a result, about 6 line of bricks, abut on each other, were recognized. Although there is still gap between bricks on the top with the ones new found; their orientation could be all the same, and the new ones should be part of SU75. Like the situation on the top, bricks along the slope also have different size, which could basically be divided into two kinds, most are more or less square, while there are ones in sidelong rectangle shape, both of them have a close width, approximately 40cm (Fig. 100). For the texture of bricks, there are two kinds, too. One is off white, compact and sandy, and the other is greenish (baked) and fragile. More details, such as their spreading both along up and down the slope, should be focused, also their joining with the bricks in Trench no 9, Extension 3-4 should be considered. For them other part of the trench, some collapsing bricks were recognized, distributing along the northern border of SU75.

The work was mainly focused on two areas, first is the place close to east side of Trench no 9, where the situation is not clear yet. By recognizing

carefully, now one finds a hard block to east of the vertical bricks already recognized, and also some collapsing bricks with compact texture distributed between the two vertical-brick area. Then is the area in Trench no 9, Extension 5, along the bricks on the slope recognized yesterday. Eight mud bricks were found today, while 6 of them were formed in the same horizontal line. Not all of the bricks are in the same size, the biggest one, located in a lower level, is about 47×39cm (Fig. 101). According to the distribution of newly found ones, now it is quite sure that there are bricks to the southern part of Trench no 9, Extension 5, too.

Main accomplishment is finally affirming the primary situation of the area between the mud bricks found last year and new ones recognized days ago. Three lines were found, just stretching from the top (Fig.7, line a, b, c) and spreading to the newly recognized ones, which also prove that last season has cut a little bit more of the bricks. Judged from the section, it seems that bricks distributed along the slope were paved at least 2 layers, and the thickness of the upper brick should be about 8-10cm. Until the end of the excavation today, details among different lines were still not very clear, most of them show same orientation, while there is still someone different, just like some broken relationship from later period, but all of these need to be confirmed and primary measurements (Fig.102). About the eastern part of SU75, situation is much more clear, between the two vertical bricks area, collapsing bricks were recognized all the day.

It has been tried for several cuts to find new bricks in the end of the slope, the part close to the flat ground, in Trench no 9 Extension 5. As a result, situation of this area could be divided into probably two parts. For the southern, the texture, which is in off-white color, has always been very hard and compact since the beginning of the excavation, and there are fewer bug holes in it. For the northern, it has a brownish color, incompact texture and with more bug holes, also most potsherds were found in this area. After 3 cuts, several collapsing bricks were recognized along the ones found in line yesterday, distributing in irregular way. To the upper part along the slope, 2 cuts were carried out to find new bricks, but only 2 lines, which formed more or less a rectangular shape, were recognized. Its relationship with the area of Trench no 9 Extension 1-2 and newly find bricks of Extension 5 still needs careful observation.

Since the situation in the other area was more or less clear, aimed in knowing more details, most work was carried out in the eastern area of

Trench no 9 Extension 5. As a result, several bricks were recognized, comparing to the ones located to north, which were formed in lines, the newly found ones were quite different, both in orientation and size (Fig. 103). Although details of the bricks still need to be affirmed, the arrangement of them could not only be explained as common collapsing accumulation, especially considering the position of this area, which is between the two area both found bricks formed in order. Different size and orientation may indicate some reuse during the later period, and the breaking relationship between different bricks also support this.

The work was still focusing on the details of the area not clear in Trench no 9 Extension 5, especially the area close to bricks formed in order. After 2 cuts, two bricks were recognized, they have different sizes (Fig. 104), which are also different from the regular ones. For the other part along the regular line, no obvious tracks of bricks were found, and to the upper part along the slope, several bricks, were found in different size and orientation, some of them were so difficult to recognize, only one side could be confirmed. The soil among irregular bricks is brownish, and very soft, where most of the potsherds were also found. For some bricks recognized in the southern part, there is a thin layer of very hard and off-white cover on them, full of compact sand.

After having recognized carefully, the first step is to remove the soft soil from the hard; as a result, the situation of this area is much more clear, and during the process, in some special case, potsherds were found in the bricks, while most of the others were discovered among them. Another part of the work is to excavate in Trench 9 Extension 3-4, for which the situation is always not clear since the beginning of this season. On the basis of removing all the cover of last year, also cutting a little bit, Trench no 9 Extension 3-4 was also found full of irregular bricks, even in the lower part. Observing from the section, there are at least 5 layers of bricks from the top to the bottom (Fig.105).

The work is to finish the excavation of the lower part of Trench no 9 Extension 3-4. Although almost close to the flat surface of Kojtepa inside, there are still fragments of bricks in this area. As mentioned, there are at least 5 layers of bricks could be recognized now, and the surface for where the bottom layer distributed was found, too. It is off-white and very compact. Of all the objects (potsherds, stones, sinters) unearthed from this area, a fragment of pottery frame (Fig. 106) is particularly special. In the

meantime, another new cut was carried out in the lower part of Trench no 9 Extension 5, too. As a result, some tracks of bricks or block have been found, but the details still need to be confirmed. The thickness of 5 layers of bricks is about 48cm, and until now, the deepest part of Trench no 9 is along the northern side of Extension 3-4, about 50cm, while the most shallow part is along the western side of Extension 3-5, about 10cm.

In order to understand the details of the distribution of bricks along the slope, new excavation was still carried out in the lower part of Trench no 9 Extension 4-5. For Extension 4, according to depth and different texture, bricks found in the past were confirmed to be the covering soil of last year, the removing work in this area should be continued in the future. For Extension 5, two new cuts were carried out today, it was proved that, under the very compact, sandy surface, there is brownish, incompact soil existed, full of bug holes, which is also more or less the normal situation of different textures of soil along the slope. Fragments of big jar and bricks, plasters were found in this area. According to the obliquity of the slope, also considering the incompact texture, excavation in this area should be continued in the future, too.

New cuts were carried out in the lower part of Trench no 9 Extension 5 along the slope, as it has already been affirmed before, below the compact, sandy soil, there exists the brownish and more soft one. Fragments of bricks or blocks could be recognized, too. In the meantime, a new extend, named Trench 9 Extension 6 was set up, and started to remove the surface (Fig. 107). The size of the new extend, which is opened along the southern side of Extension 5, is about 2×5m, and 1.5m away from the western line of Extension 5. The surface, which is full of roots, has already been removed, but no potsherds were found, during the second cut, which should be supposed to be layer 1, pieces of potteries were found. After two cuts, tracks of bricks, which are in greenish color (baked), could be watched from the plane, with the same orientation of bricks of Extension 5.

Based on the tracks of bricks found yesterday, most of the work was focused on recognizing details of them, such as their distribution, size and orientation. The first one cut was carried out just to let the surface be flat along the slope, which makes it easy to observe the signs. Then after carefully cleaning, three lines of bricks were found, most of them were greenish, and all of them were arranged in the same orientation, more or less the same with the ones recognized in Extension 5. About their size, it is still

not very clear, especially for the one in rectangular. To the lower part, some greenish baked tracks were found, too. According to the slope, new cuts were still needed in this area.

On the basis of recognizing, same work was still carrying on in Trench no 9 Extension 6. As a result, approximately 8 rows of bricks were found, which spread almost over all the Extension 6 along the slope, only the area around three sides (west, east, south) was still not clear. Especially in the area around the east and west side, considering the situation in Extension 5, which has already been proved full of irregular collapsing bricks, it maybe have the same condition in Extension 6, too. Close to the west side, the same kind of texture, which is soft, brownish, full of bug holes, was extending, but finally stopped by the hard, off-white one. About the size, there seems to be a special kind, the big rectangular one, not only in Extension 6, but also found in Extension 5, too.

A very thin cut was carried out close to the east and south side of Tr.9 Extension 6, just in order to observe if there are any bricks. As a result, about three line of bricks, which were arranged in 8 rows, were recognized. Among all of them, four rows have already been proved to have a matching orientation with the ones in Extension 5, although because of this, the south line of bricks partly disappeared in the southern side of the Extension 6, which means the bricks were still spreading to the South along the slope. About the size, one is most regular another one about 41-44cm, in square. But there is still another kind, which has already been mentioned, three big rectangular ones. After trying for several times, it's very hard to find if there is line inside of them. To the lower part along the slope, after the off-white, compact soil was removed, tracks of bricks were recognized, which should be the second layer of bricks under the surface one.

*Ceramic Materials Report* (by F. Raiano)

The ceramic materials coming from the excavated areas (Trenches nos 5, 9, 10, 11) were preliminarily studied and analyzed during the 2013 excavation campaign. Following both the pottery study of fabric analysis and the typological methods (Genito, Raiano 2011, 103-177), all the potsherds (2960) were distinguished in significant potsherds (inventoried, 61 potsherds), diagnostic (211 potsherds) and un-diagnostics (2688

potsherds) ones (Tab. 1): after the assignment of each of them to a specific fabric on the bases of the macroscopic observation, all the diagnostic, un-diagnostic and significant potsherds were stored in a MS Access™ database with an accurate description of all feature (SU provenances, excavation date, fabric, quantity, decoration, dimensions). The significant potsherds were also drawn and photographed in order to create a collection useful to enlarge the typology made during last years (2010-2011-2012).

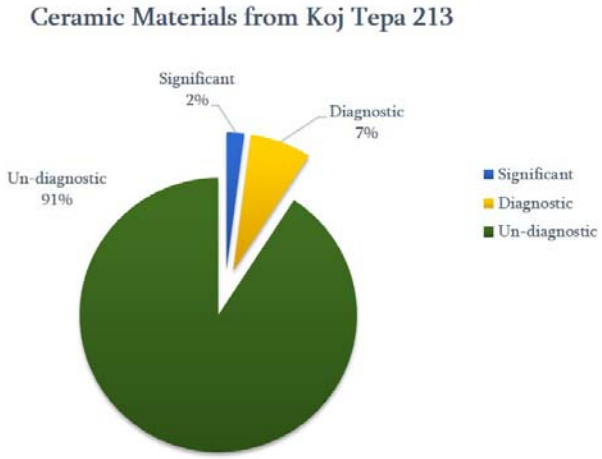


Table 1 - Total percentage of potsherds

The fabric distribution is similar with the incidence observed during the previous seasons of work: as shown in Table 2 within the significant potsherds, there are an high predominance of Fabric 4 (76%), followed by Fabric 6 (16%) and Fabric 6.1 (8%); within the diagnostic potsherds, the most represented fabric (Table 3) is the 4 (64%), followed by Fabric 6.1 (18%), Fabric 7.2 (9%), Fabric 2 (5%) and, lastly, by Fabric 6 (4%); within the un-diagnostic potsherds (Table 4), the Fabric 4 is again quantitatively the most widespread with the 35%, followed by Fabric 2 (14%), Fabrics 6.1 and 7.2 (both 11%), Fabric 14 (9%), Fabric 6 (6%), Fabric 1 (5%), Fabric 4.1 (4%), over-fired fabric (3%) and Fabric 3 (2%).

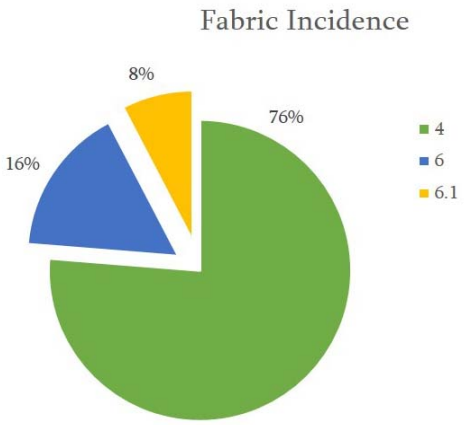


Table 2 - Fabric incidence percentage within significant potsherds

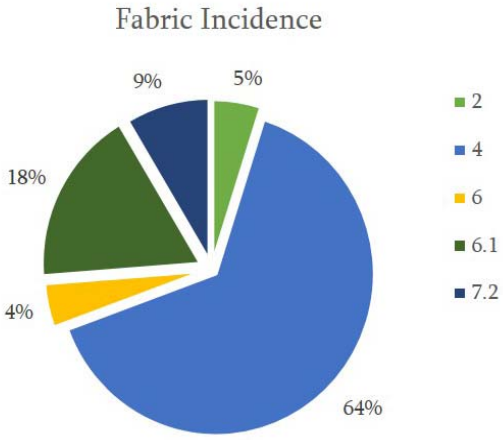


Table 3 - Fabric incidence percentage within diagnostic potsherds

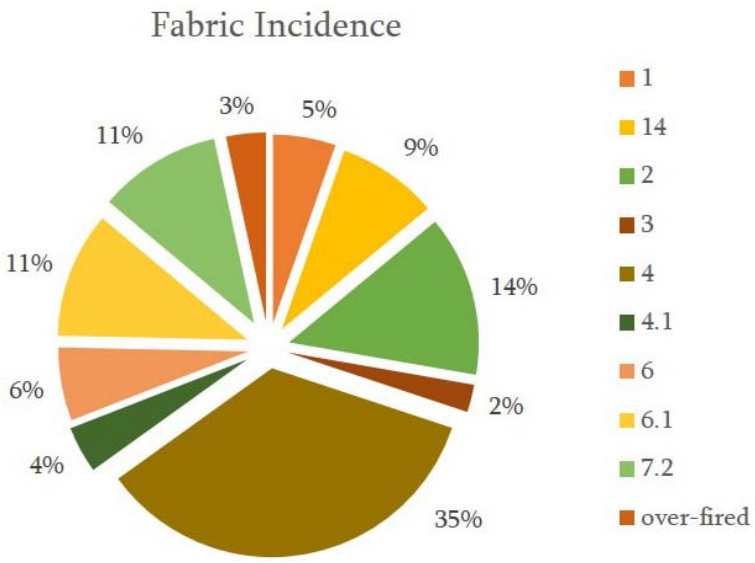


Table 4 - Fabric incidence percentage within un-diagnostic potsherds

The shapes repertory consists of:

- necked and un-necked jars (Inv. 0324, 0327), all pertinent to Fabric 4 (Fig. 108);
- cups on disc-shaped foot (Inv. 0323, 0329, 0331, 0335) pertinent to Fabric 4 and Inv. 0325 pertinent to Fabric 6.1 (Fig. 109);
- goblets with disc-shaped foot (Inv. 0312, 0336, 0338, 0341, 0346) belonging to Fabric 4 and Inv. 0330 to Fabric 6; goblets on stem (Inv. 0326, 0344) belonging to Fabric 4 (Fig. 110);
- jugs (Inv. 0322, 0345) pertinent to Fabric 4 (Fig. 111);
- flattened (Inv. 0340), rounded (Inv. 0334) and truncated-cone lids (Inv. 0339, 0347) all belonging to Fabric 4 (Fig. 112);
- miniature pot (Inv. 0328) belonging to Fabric 6.1 (Fig. 113);
- pots (Inv. 0320, 0332, 0342, 0343) all pertinent to Fabric 4 (Fig. 114);
- a potsherd of a possible bottle spout (Inv. 0337) belonging to Fabric 6.1 (Fig. 115);
- a dish (Inv. 0333) belonging to Fabric 6.1 (Fig. 116).

After a preliminary analysis, the goblets on foot (with disc-shaped base) are datable to the post-Hellenistic period, from the 2nd to 1st BC. All the other shapes, during the first stage of our study, could be datable to the 2nd BC-2nd AD chronological span, except for a mostly completed jug with a single handle (Inv. 0345) decorated with wavy incised lines just beneath the neck in addition to red splashes (Fig. 8), datable, probably, to a later period, around the 6th AD. All these data needed to be analyzed deeper, also on the basis of comparisons with pottery coming from other sites of the area.

*Integrated 3d into the Excavation of Kojtepa 2013* (by E.COCCA)

During the 2013 field season at Kojtepa archaeological drawings have been produced using a methodological approach different from the traditional methods of investigation and recording. Considering the shortage of time available for the excavation - only one month - the team decided to use 3D techniques based on SMF (Structure From Motion) and image-based for recording the stratigraphic units of the excavated areas.

This method consisted in capturing images using a digital camera Canon 1000D. The images have, then, been processed once at home to obtained high-resolution orthophotos which served as the basis for the excavation drawings made, using a cad program.

Each 3D series has been developed with the open source software "Photogrammetry toolbox" for the reconstruction of the point cloud (Fig. 117), while with the software "MeshLab", meshes were built and textured (Fig. 118) and with the software "Cloudcompare", meshes were aligned and scaled (Fig. 119). All 3D series were correlated to points taken using a Trimble M3 Total Station for the alignment and the geo-referencing.

All the excavation areas and levels were recorded using this methodology.

In addition, the reconstruction of the whole *tepe* has also been experienced using this same technique but with poor results because problems due to the natural light and because of the size of the area to record. In fact, the wideness of the area did not allow proper processing of the frames.

A list of the work carried out in each trench follows below (Table 5).

| N.Trench | 3D series | N. photo |
|---|---|---|
| 5 | 1 | 45 |
| 5 | 2 | 50 |
| 5 | 3 | 75 |
| 5 | 4 | 70 |
| 5 | 5 | 71 |
| 5 | 6 | 53 |
| 5 | 7 | 75 |
| 9 | 1 | 135 |
| 10 | 1 | 63 |
| 10 | 2 | 58 |
| 11 | 1 | 67 |
| 11 | 2 | 23 |
| 11 | 3 | 65 |
| 11 | 4 | 70 |

Table 5

Trench 5. This trench has been recorded with seven 3D series, 439 digital frames in total with a resolution of 10 megapixels each. The first three 3D series were taken only on the south side of the trench (Fig. 120), while the remaining 4 3D series were taken over the whole trench for a complete reconstruction (Fig. 121).

Trench 9. This trench was covered by a single 3D series, consisting of 135 digital frames with a resolution of 10 megapixels each. In fact, exposed SUs from the previous year, were covered only by SU0 (Fig. 122).

Trench 10. In this trench two 3D series have been taken, consisting in 121 digital frames in total. These 3D series were intended to document a large jar and a floor with many pottery fragments (Fig. 123).

Trench 11. Four 3D series were taken in this trench, consisting in 225 digital frames in total. Being adjacent to trench 5, it was possible to correlate the various stages of excavation (Figs. 124-125-126).

The acquisition of images was very fast and time saving considering that the data have been processed after the excavation season. This method has allowed the team to avoid long interruption of the excavation activities and to devote more time for the archaeological investigation.

During the 2012 field season at Kojtepa a survey has been conducted with the aim to reconstruct the topography of the site. The survey has been conducted by the archaeologist and topographer Davide Lunelli using a total station Trimble M3. During the survey more than 1000 point have been taken and then used for the reconstruction of the TIN (triangular irregular network) that has permitted the realization of the 3D model of the site (Figs. 127-128).

## REFERENCES

Sources:

al-Tabari, Ibn Jarir (1988-2007) *Tarikh al-Rusul wa al-Muluk (Tarikh al-Tabari)*, ser. II, 1590. New York.

Ibn al-Fakih, al-Hamadani, (1967) *Compendium libri Kitab al-Boldan*, ed. M.J. de Goeje, BGA, 19. EJ. Brill.

Ibn Khordadbeh, Abu'l Qasim Ubaid'Allah, (1889) *Kitāb al Masālik w'al Mamālik*, de Goeje (with Fr. tr., 2nd ed., 1967), 33. Leiden.

**********

AA.VV.(1969-1975) *Afrasiaba* (Sborniki I-IV), Taškent.

AA. VV.(1992-1996-1999) *History of Civilizations of Central Asia (Vol. 1 - The Dawn of Civilization: Earliest Times to 700 B.C.; Vol. 2 - The Development of Sedentary and Nomadic Civilizations: 700 B.C. to A.D. 250; Vol. 3 - The Crossroads of Civilizations: A.D. 250 to 750)*.UNESCO Publishing, Paris.

Abdullaev, K., Genito, B. (2010-2011) Arheologičeskie raboty na Kojtepa (Pastdargomskij rajon, Samarkandskoj oblasti, ijun.ijul' 2011) *Arheologičeskie Issledovanijav Uzbekistane*, Vypusk 8, 9-22. Samarkand.

Abdullaev, K., Genito, B. (2011) Trial Trenches at Kojtepa, Samarkand Area (Sogdiana) (Third Interim Report 2011), *Newsletter di Archeologia (CISA)* - Volume 2, 7-72. ISSN2036-6353. http://www.unior.it/index2.php?content_id=6572&content_id_start=1

Barthold, W. (1997) s.v. "al-Sughd", C.E. Bosworth *et alii* (eds.) *The Encyclopaedia of Islam,* vol. IX, 772-773, Leiden.

Bernard, P. (1987) Les Nomades conquérants de l'Empire Gréco-Bactrien. Réflexion sur le uridentité ethnique et culturelle, *CRAI*, 758-768, Paris.

Cattani, M. and Genito, B. (1998) The Pottery Chronological Seriation of the Murghab Delta from the End of the Bronze Age to the Achaemenid Period: A Preliminary Note. (Gubaev, A., Koshelenko, G. e Tosi, M., eds.) *The Archaeological Map of the Murghab Delta. Preliminary Reports 1990-95*, 75-88. Roma.

Francfort, H.P. (1988) Central Asia and Eastern Iran, Boardman, J., Hammond, N., Lewis, D. e Ostwald, M., (eds.) *The Cambridge Ancient History*, vol. IV, 165-193. Cambridge.

Francfort, H.P. (2005) Asie Centrale, *L'archéologie de l'empire achéménide. Nouvelle Recherches, Actes du Colloque organisé au Collège de France par le "Reseau International d'études et des recherches achéménides*, 21-22 novembre 2003, *Persika,* 6, 313-352. Paris.

Frumkin, G. (1970) *Archaeology in Soviet Central Asia*. *Handbuch der Orientalistik*, vol. III, 1. Leiden-Köln.

Genito, B. (1996) The Iranian Empires and Central Asia: an Archaeological Perspective, *Accademia Nazionale dei Lincei Atti dei Convegni Lincei, 127, La Persia e l'Asia Centrale da Alessandro al X secolo, in collaborazione con l'Istituto Italiano per il Medio ed Estremo Oriente*, Rome 9-12 November 1994, 401-421, Rome.

Genito, B. (1998) Trial-Trench at Site no 215. (Gubaev, A., Koshelenko, G. e Tosi, M., edd.) *The Archaeological Map of the Murghab Delta. Preliminary Reports 1990-95*, 125-35. Roma.

Genito, B. (1998) The Achaemenids in the History of Central Asia, Gubaev, A., Koselenko, G., Tosi, M. (eds.) *The Archaeological Map of the Murghab Delta. Preliminary Reports 1990-95, Reports and Memoirs Series Minor*, III, 149-158, Rome.

Genito, B. (2002) The Elusive Frontiers of the Eurasian Steppes, Molinas, S. e Zifferero, A. (a cura di) *I Primi Popoli d'Europa, Proposte e riflessioni sulle origini della civiltà nell'Europa mediterranea*, 49-70, Firenze.

Genito, B. (2006) From the Scythians to the Achaemenids: A Nomadic Alternative, Panaino, A., & Piras, A. (eds.) *Societas Iranologica Europæa, Istituto Italiano per l'Africa e l'Oriente, Alma Mater Studiorum-University of Bologna, Branch of Ravenna, Proceedings of the 5th Conference of the Societas Iranologica Europæa held in Ravenna, 6-11 October 2003*, *Vol. I, Ancient & Middle Iranian Studies,* 71-100, Milano.

Genito, B., Gricina, A. *et alii* (2009) The Achaemenid Period in the Samarkand Area (Sogdiana): with contributions by: Luciano Rendina, Maria D'Angelo*, Newsletter Archeologia (CISA)* - Volume 0, 122-141, Naples http://www.iuo.it/userfiles/workarea_231/file/Articoli/Genito,%20Gricina%20et%20alii,%20UZB%20122-141.pdf ISSN2036-6353

Genito, B., Gricina, A., *et alii* (2010)The Achaemenid Period in the Samarkand Area (Sogdiana): Trial Trenches at Koj Tepa 2009 Campaign, *Newsletter di Archeologia (CISA)* - Volume 1,113-161, Naples http://www.iuo.it/userfiles/workarea_231/Genito%286%29.pdf ISSN2036-6353

Genito, B., Raiano, F. (2011) Ceramics from Koj Tepa (Samarkand Area Uzbekistan): *A Preliminary Study Report (2009-10*), *Newsletter di Archeologia (CISA)* - Volume 2, 103-177. http://www.unior.it/index2.php?content_id=6572&content_id_start=1. ISSN2036-6353.

Gubaev, A., Koshelenko, G.A. e Tosi, M. (eds.) (1998) *The Archaeological Map of the Murghab Delta. Preliminary Reports 1990-95*. Roma.

Gumbah, G. (1974-1975) Ptolemy and the Middle Asia in Kushan epoch, *Middle Asia in Kushan Epoch. Works of the International Conference on a History, Archaeology and Culture of the Middle Asia in Kushan Epoch* (Dushanbe, 1968). 2 tom. Moskva.

Inevatkina, O.N. (1983) Citadel' Afrasiaba, *Istituta Material'naja Kul'tura Uzbekistana*, 18. Tashkent.

Inevatkina, O.N. (1995) Akropol' drevnego Samarkanda v structure goroda (VI do n.e.-V n.e.). *Avtoreferat kandidackoj dissertacii*. Moskva.

Isamiddinov, M.Kh., (2002) *Istoki gorodskoj kul'tury Samarkandskogo Sogda*, Tashkent.

Lazard, G., Grenet, F. and de Lamberterie, C., (1984) Notes bactriennes, *StudiaIranica,* 13, 199-239.

Kabanov, S.K. (1959) Arheologičeskaja Nabljudenija nastroitel'stveiski-angarskogo kanala, *Istorija Material'noj Kul'tury Uzbekistana*, 1, 154, 174. Taškent.

Koshelenko, G.A., ed. (1985) *Drevnejšie Gosudarstva Kavkaza i Srednej Azii*. Moskva.

Lyonnet, B. (1997) *Prospections archéologiques en Bactriane orientale (1974-1978) Sous la direction de Jean-Claude Gardin. Volume 2. Céramiques et peuplement du Chalcolithique à la conquête arabe*. *Mémoires de la Mission Archéologique Française en Asie Centrale*. Tome8. ERC. Paris.

Mantellini, S. (2001) The Dargom Canal and the Early Settlement of the Middle Zeravshan Valley, S. Pagani (ed.), *Italo-Uzbek Scientific Cooperation in Archaeology and Islamic Studies: An Overview (Rome, January 30, 2001)*, 41-48, Rome.

Mantellini, S. (2009) Alma Mater Studiorum - Università di Bologna DOTTORATO DI RICERCA ARCHEOLOGIA Ciclo XXI Settore/i scientifico disciplinari di afferenza: AREA 10, L-ANT/*10 La gestione dell'acqua come oggetto d'indagine per la ricostruzione delle dinamiche insediamentali e delle trasformazioni del territorio. Il caso di Samarcanda nella Media Valle dello Zeravshan (Uzbekistan) Settlement Dynamics and Water Management for the Reconstruction of the Landscape Transformations: A Case Study form the Middle Zeravshan Valley (Samarkand, Uzbekistan).* Ravenna.

Mantellini, S., Rondelli, B. (2003) (in corso di stampa) Strategie e metodi per la storia del popolamento nella Media Valle dello Zeravshan (Uzbekistan). La ricostruzione in ambiente GIS attraverso survey, cartografia storica, telerilevamento e modellazione tridimensionale, Teoria e Pratica nell'analisi e interpretazione della cultura materiale antica, *I Convegno degli Studenti di Archeologia*, 26-28 maggio 2003, Napoli.

Massa, S. (2011) The Analysis of the Un-Glazed Pottery: Methodological Problems and Preliminary Results, Bruno Genito and Faribah Saiedi Anaraki (eds.), *Adamji Project, From the Excavation (1972-1978) to the Archive (2002-2010), in the Masjed-e Jom'e, Isfahan*, Italian Embassy, Teheran, Iranian Cultural, Handicraft and Tourism Heritage Organization, Teheran, Istituto Italiano per l'Africa e L'Oriente, 171-185, Tehran.

Masson, V.M. e Sarianidi, V., (1972) *Central Asia before the Achaemenids*. London.

Pugačenkova, G.A. and Rtveladze, È.V., (1985) s.v. Afrasiab, Ehsan Yarshater (ed.), *Encyclopaedia Iranica*, I, 576-578. London, Boston and Henley.

Raiano, F. (2011) Unpublished MA Thesis, *L'attività Archeologica Italiana nell'Antica Sogdiana (Area di Samarkanda). Scavi e Produzione Ceramica a Koj tepa nel Contesto Storico-archeologico dell'Asia Centrale*. Università degli Studi di Napoli, L'Orientale, Napoli.

Rapin C., Isamiddinov M., Hasanov M. (2001) La tombe d'une princesse nomade à Koktepeprès de Samarkand, *CRAI*, 33-92, Paris.

Rondelli, B., Mantellini, S., Bonora, G.L. e Franceschini, F. (2003) Carta Archeologica della Media Valle dello Zeravshan: aspetti diversificati per una comprensione diacronica del popolamento antico - Missione Archeologica italo-uzbeka a Samarcanda: campagna 2002, *Ocnus*, *Quaderni della Scuola di Specializzazione in Archeologia - Università di Bologna*, 11, Bologna, 35-63.

Rostovcev O.M. and Ivanickij, I.D. (1976) Raboty v Samarkandskoj oblasti, *Arheologičeskie otkrytiya*. Moskva.

Rtveladze, E.V. (1981) Ksenippa-Paretaka, Litvinskij, B.A., (ed.) *Kavkaz i SrednjajaAzija v drevnosti i srednevekovye (istorija i kul'tura)*, 95-101.Moscou.

Sagdullaev, A.S. (1987) Osobennosti osedlo gorasselenija v južnom Sogde v epohu antičnosti, Pugachenkova, G.A. e Askarov, A., (eds.) *Gorodskaja kul'tura Baktrii-Tokharistana i Sogda*, 131-134. Taškent.

Schaeder, H.H. and Bosworth, C.E. (1995) s.v. Samarkand, *The Encyclopaedia of Islam - new edition*, English version, VIII, 1031-1034. Leiden.

Shirinov, T. and Tosi, M. (2001) Land behind Samarkand. The Archaeological Map of the Middle Zeravshan Valley: Perspectives and Geographical Repartitions, Pagani, S. (ed.), *Italo-Uzbek Scientific Cooperation in Archaeology and Islamic Studies: An Overview (Rome, January 30, 2001)*, Rome, 13-40. Rome

Stride, S. (2001) Le programme de prospection de la MAFOuz B dans la région du Sourkhan Darya. Leriche, P., Pidaev, C., Gelin, M., Abdoullaev, K. e Fourniau, V, (eds.), *La Bactriane au carrefour des routes et des civilisations de l'Asie centrale. Termez et les villes de Bactriane-Tokharestan. Actes du colloque de Termez 1997*, 173-183. Paris.

Sulejmanov, R.K. (2000) *Drevnij Nahšab. Problemy civilizacii Uzbekistana VII v. do n. e. - VII v. n. e.* Samarkand-Taškent.

Tosi, M., Rondelli, B., Menghi, E. e Mantellini, S. (2002) Interventi archeologici in Uzbekistan, *Ocnus*, *Quaderni della Scuola di Specializzazione in Archeologia - Università di Bologna*, 9-10, 343-351. Bologna.

Tosi, M. *et alii* (2007) *La Carta Archeologica della Media valle dello Zeravshan: strategie e metodi per la storia del popolamento nella regione di Samarcanda*, in «The Role of Samarkand in the History of World Civilization (Material of the International Scientific Symposium devoted to the 2750th Anniversary of the City of Samarkand, Samarkand, 24-26 May2007)», Tashkent 2007, 68-73.

Vafaev G., Ivanickij, I.D. (1992) Laylakuytepe - ranne antičnoesel'skoe poselenie Samarkandskogo Sogda, *Uzbekistan v drevnosti i srednevekov'e. Tezisy dokladov respublikanskoj konferencii molody historikov*. Samarkand.

Vogelsang, W. (1992) *The Rise and Organization of the Achaemenid Empire. The Eastern Iranian Evidence.*

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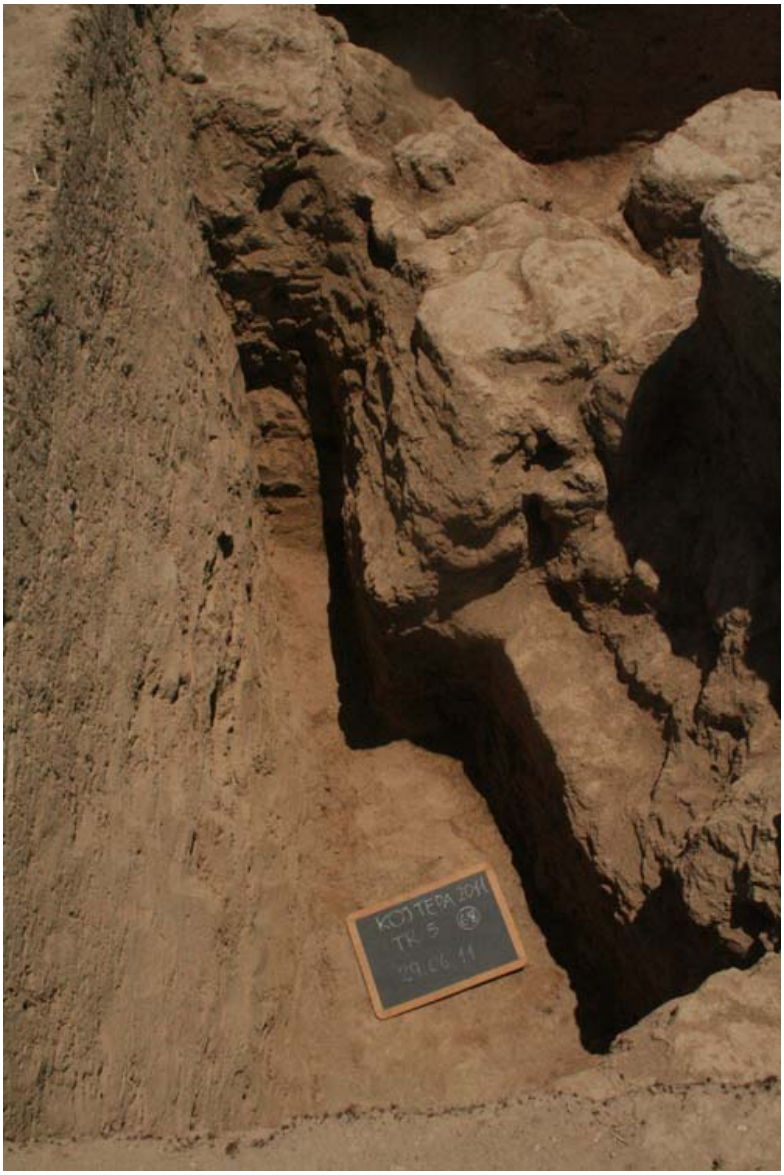
Fig. 3a - Trench no 5, SU67 identified in 2012 in north-western quadrant, after MAI

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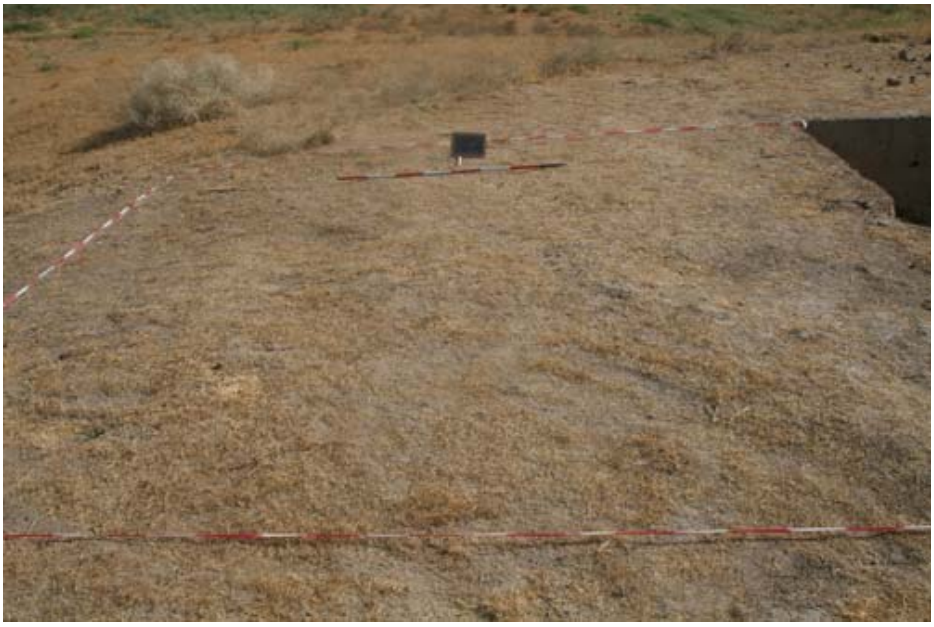

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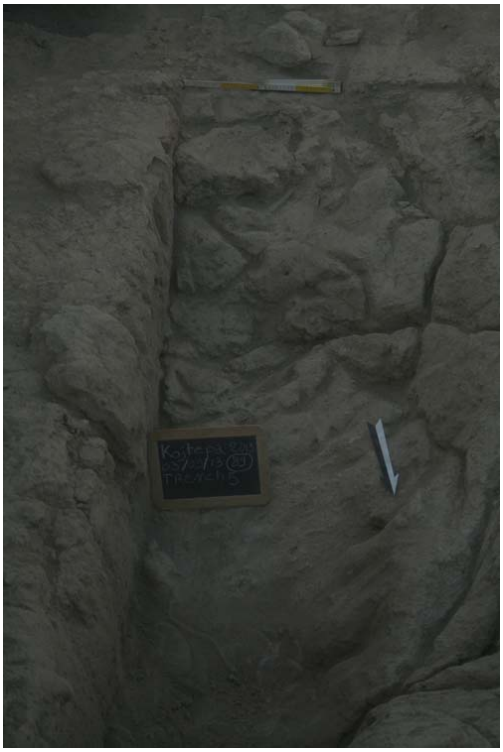

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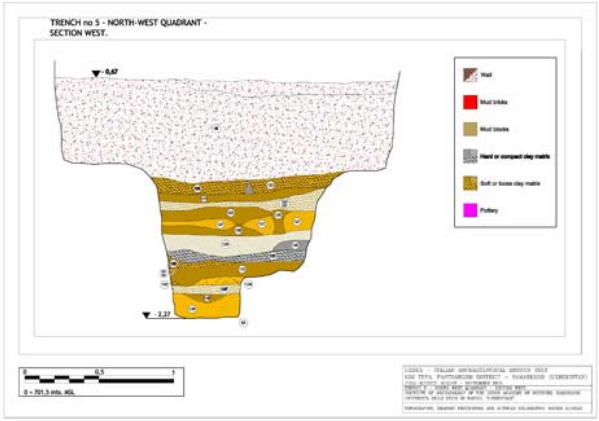


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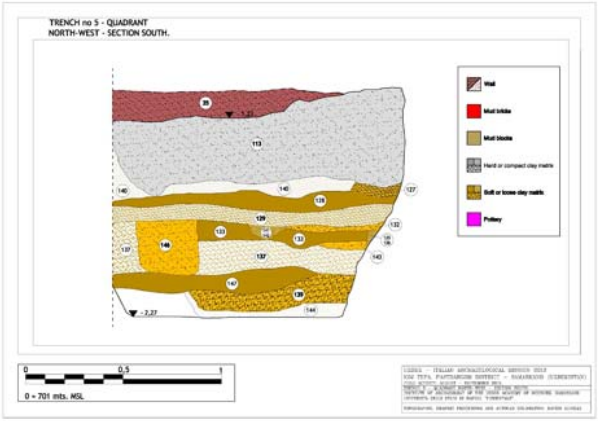


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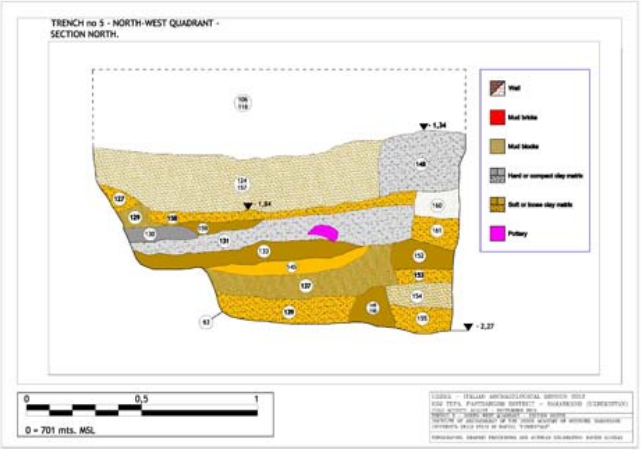


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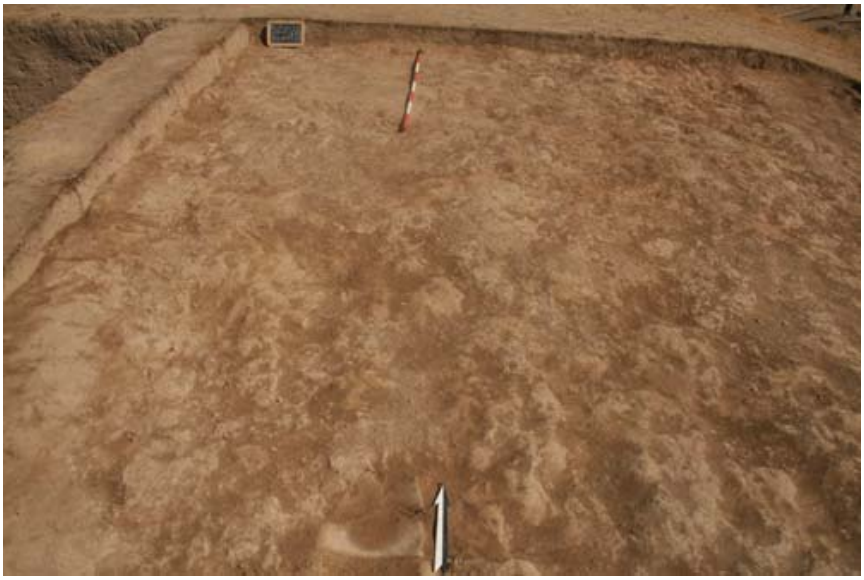

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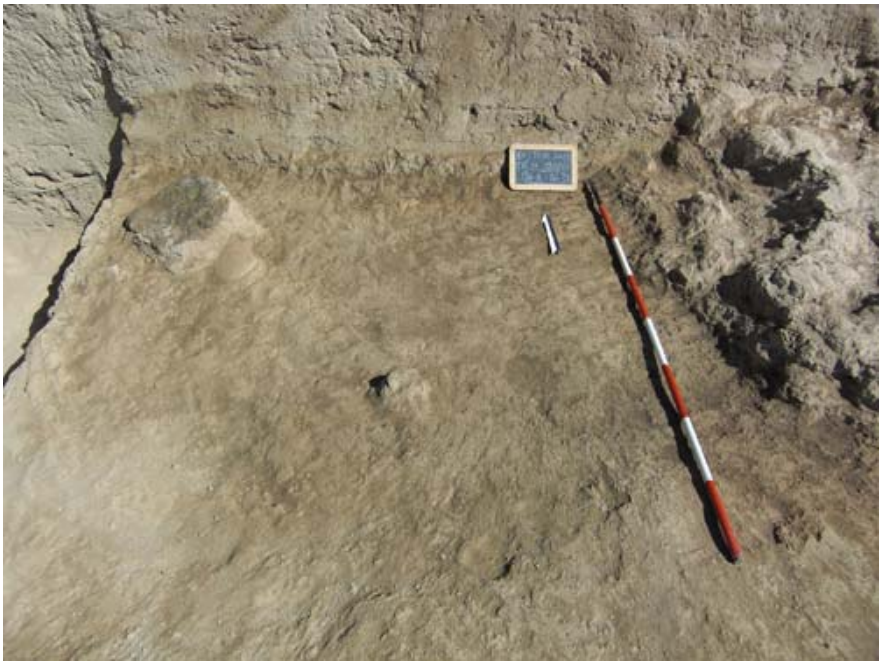

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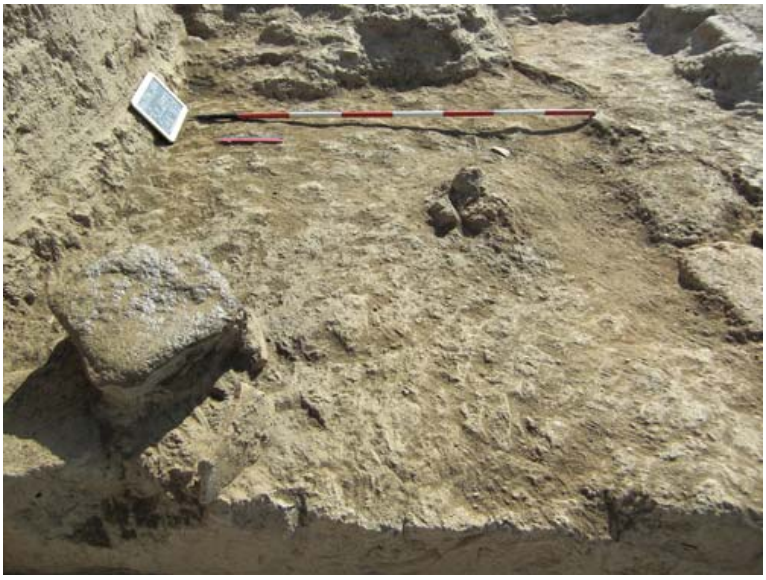

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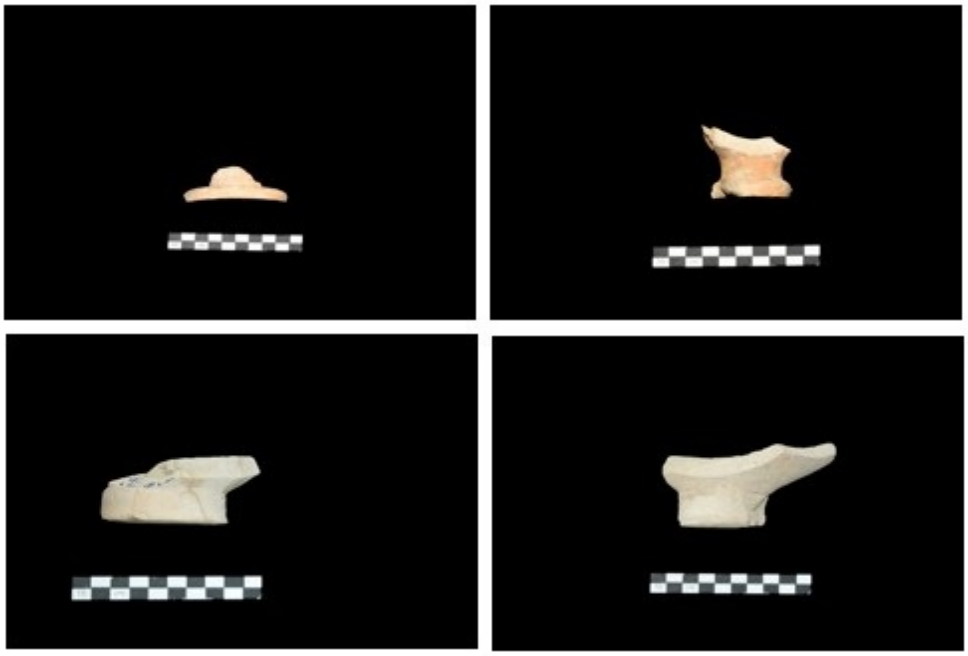


Fig. 109 - Cups: Inv. 0323, 0329, 0331, 0335

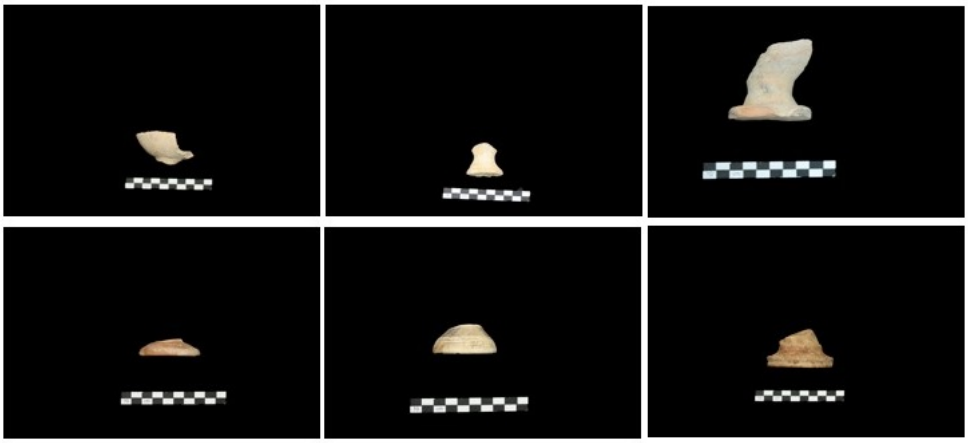
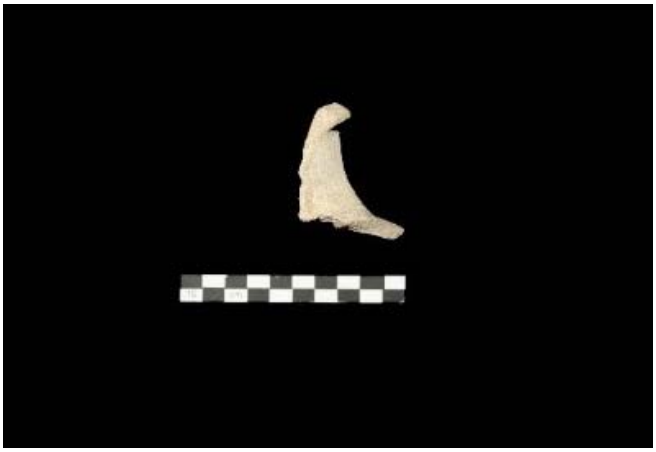


Fig. 110 - Goblets: Inv. 0321, 0330, 0336, 0338, 0341, 0346



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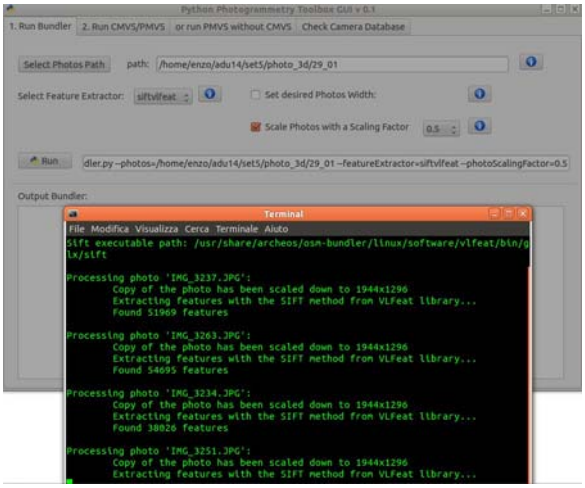


Fig. 117- Photogrammetry tool box: extraction features from image

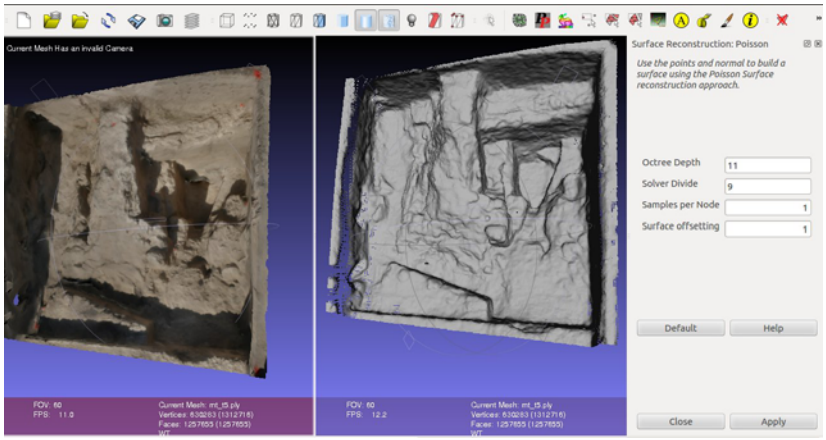


Fig. 118- Meshlab: building mesh

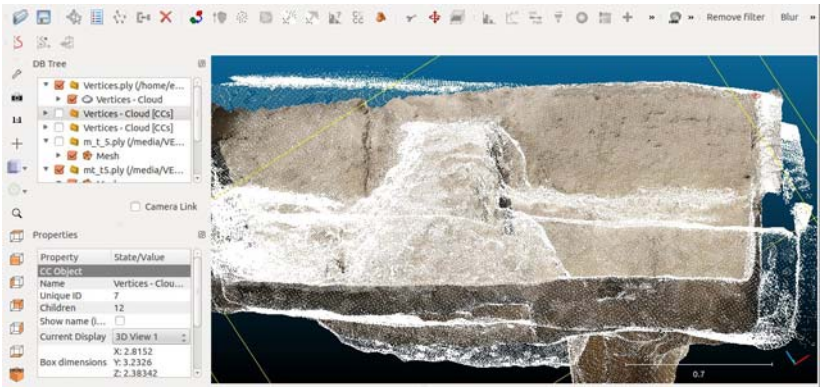


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Fig. 121 - Trench 5: orthophoto result from 3D series

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