

Project: Archaeology of Silk Roads' Highland Urban Hubs (SR-HUBs)

Report on Field activities, June 5-August 1, 2025

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Project Overview:

The “Silk Roads” Highland Urban Hubs (SR-HUBs) project focuses on high elevation regions of the Eurasian Silk Roads and aims to shed new light on the architectural innovations, infrastructural planning, and alternative expressions of political hegemony that emerged with the growth of urban centers in mountainous regions of Central Asia from the 6th-11th centuries CE.

The 2025 field season of the SR-HUBs project – supported in part by funding from the Society for the Exploration of Eurasia (EurAsia) – was dedicated to archaeological excavations of the westernmost mound feature in Sector A of Tugunbulak (TGB), a large urban center located at ~2000 m elevation in Southeastern Uzbekistan (**Fig. 1**, Frachetti et al. 2024). TGB was first discovered by our international team in 2015 and initial mapping and survey across the site documented archaeological remains spanning a minimum extent of more than 100 hectares. Preliminary fieldwork conducted in 2022 utilized the region’s first drone-based lidar scanning to document the topographic surface of the site in very high resolution, mapping the superficial layout of extensive architectural investment over an area of at least 120 hectares (Frachetti et al. 2024). This research revealed dense urban construction in the northwestern sector of the site (Sector A), with a minimum of five large archaeological mounds and the traces of over 300 individual buildings aligned across an area of roughly 40 hectares. Additional structures and wall fortifications were documented in other sectors of the city (B, C, and D), as well as a series of outer wall lines enclosing a large territory, presumably associated with the city (**Fig. 2**).



Fig. 1: Aerial view (east) overlooking 2025 excavations of mound A1.

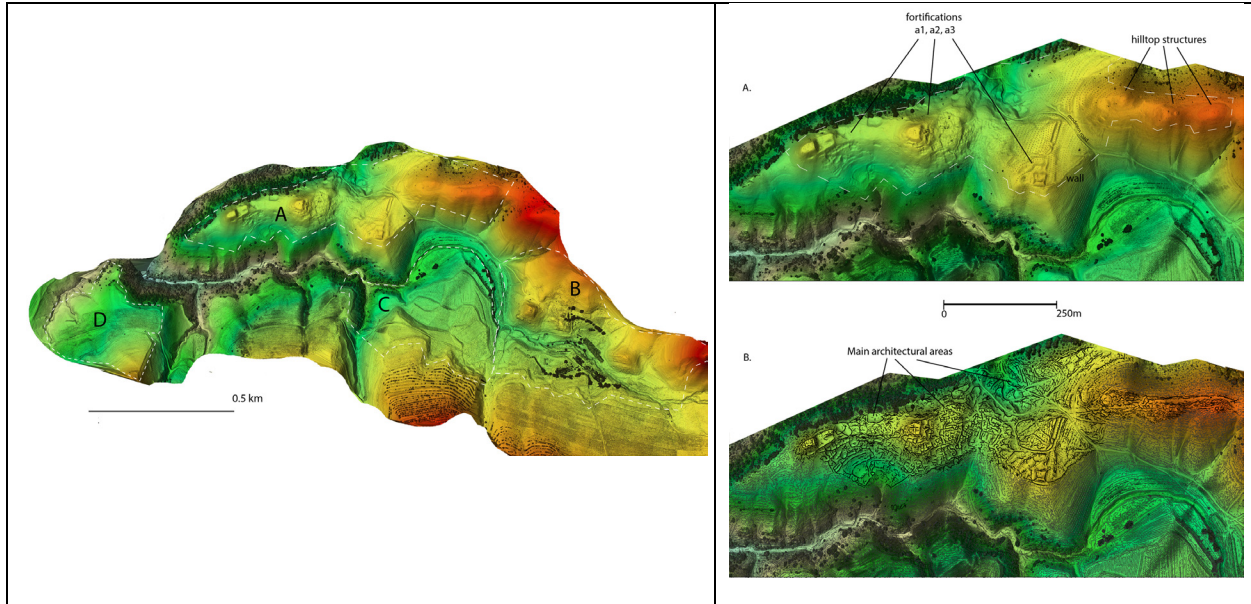


Fig. 2: Overview of the TGB's topography and features, with Sectors A, B, C, and D (Frachetti et al. 2024).

A) Hillshaded representation of the central urban area of TGB (Sector A), created from a 2022 drone-Lidar scan.

B) Automated delineation of archaeological and architectural features derived from the high-resolution Lidar data.

Goals/Aims of the 2025 season:

The vast scale and apparent architectural complexity of TGB define it as one of the most unique high-altitude cities in medieval Central Asia. As such, the site can only be properly studied through a systematic and sustained (multi-year) archaeological approach that relies on modern technological advancements in excavation and mapping methods, as well as sound material and bio-archaeological analysis.

The main questions of the project include:

Q1: What is the scale and structure of architectural planning at TGB, and how were major architectural investments (such as its monumental structures, productive facilities, water management, etc.) implemented and engineered through the life of the site?

Q2: How were high-altitude cities like TGB provisioned in relation to both the limits of their local (high-altitude) environment and the available circuits of regional trade and exchange across medieval Central Asia?

Q3: How do the architecture and material signatures of a heavily fortified highland city like TGB reflect the political identity and sources of power on the part of various sectors of its population?

To address these broad questions, the **2025 season** focused on open area excavations of mound A1 in Sector A, with the following specific goals:

- 1) Document the construction methods, infrastructure, and occupational phases of the mound A1's architectural features.

- 2) Refine the chronology of construction, occupation, and abandonment of the city, as reflected in mound A1.
- 3) Define the spatial and functional relationships between mound A1 and previous excavated structures at TGB.

Results of 2025 excavations in mound A1, Sector A

Excavation areas:

In 2025, we implemented wide-area, stratigraphic excavations to document the architectural features of mound A1 in Sector A. The 2025 excavation trenches were oriented in cardinal alignment with the slopes of the mound, with a 10 x 5 m trench cut perpendicular to the eastern face of the mound, thereby intercepting any potential structural walls and providing a supportive buttress to prevent potential collapse. The trench continued across roughly $\frac{1}{4}$ of the upper platform of the mound, spanning a total area of ~255 sq. m, within grid cells Alpha A-D, Beta B, Tango A, and Zulu A-D (**Fig. 3**).



Fig. 3: A) Location of 2025 excavations within Sector A. B) Detail of trenches on mound A1. (North is oriented upward)

Overview of methods

The A1 mound has an upper platform with an area of roughly 900 sq. m, and our trenches were positioned to intersect linear wall features visible in the Lidar model. All archaeological operations followed contemporary excavation and material recording standards, including stratigraphic and horizontal documentation of all excavated areas using a Topcon Total Station, as well as a Trimble G2 GNSS positioning system, with accuracy to ~1 cm. Archaeological sampling

included the systematic recovery of organic materials for radiocarbon dating (CB) and comprehensive soil samples (SS) taken from burn features, floors, walls, and fill levels for botanical analysis and micro-artifact screening. All artifacts, such as stone, bone, and ceramic implements, pottery, etc., were hand recovered throughout the excavation process and immediately bagged according to a unique 1 m grid location and stratigraphic context. Grid units were designated using alphabetical labels along the north-south axis and numerical labels along the west-east axis. Wet sieving and screening of soil samples was carried out for a portion of all stratigraphic contexts, ranging from a minimum of 15 L samples to as many as 45 L (for larger contexts).

Preliminary Results:

Based on the stratigraphic evidence (**Fig. 4, 5**), mound A1 had no fewer than 3 occupational phases. Phase 1a correlates with the initial construction of a large rectangular structure fortified by a battered wall measuring 2.6 m in width, built with stone foundations and multiple courses of sun-dried mudbrick. Evidence of production activities was identified within the structure, including furnaces and associated remnants of metal slags and ores. Phase 1b·c architecture featured new mudbrick walls, double-rowed stone foundations, and fire-related structures. Phase 2 construction represents a novel architectural technology, where multi-coursed stone walls were used to define newly oriented buildings on top of leveled and collapsed walls and features of Phase 1.

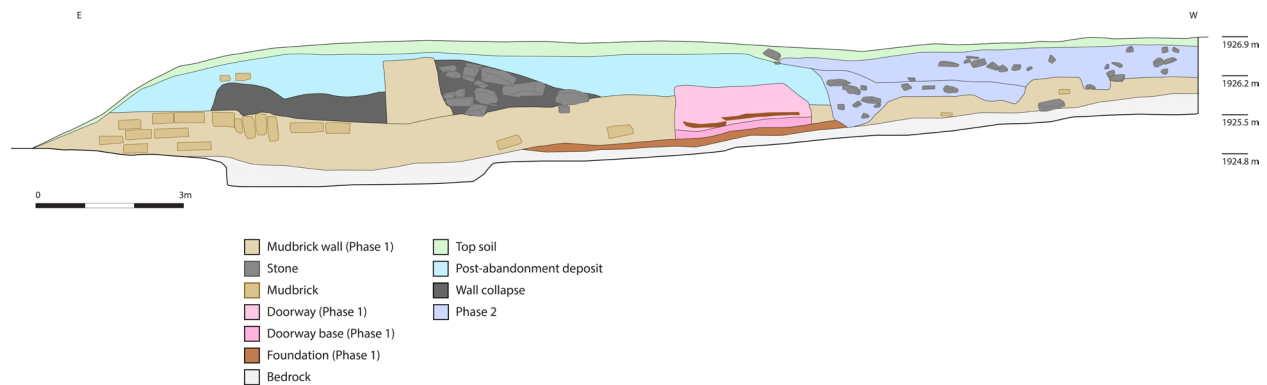


Fig. 4: Stratigraphy of the southern wall of the excavation area.

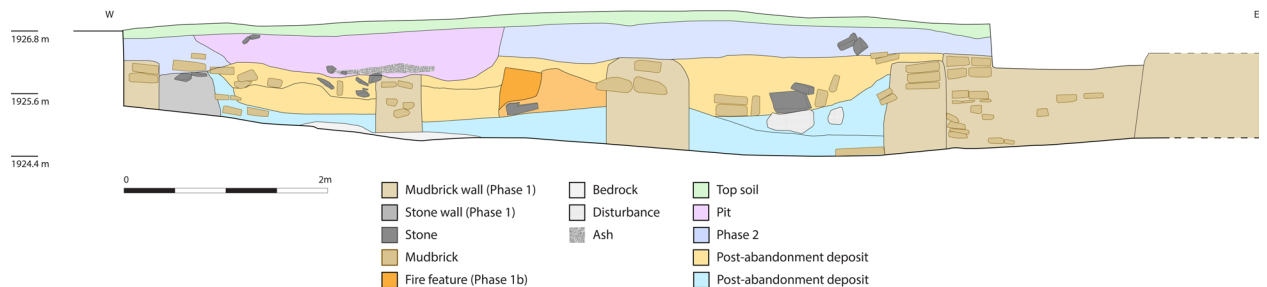


Fig. 5: Stratigraphy of the northern wall of the excavation area.

Phase 1: Early occupation

Phase 1 represents the earliest occupational phase and architectural modification on mound A1. During this period (mid 6th-late 7th c.), a large rectangular, multi-roomed building enclosed by outer walls was constructed for the first time, situated at an elevation of 1924.4-1925.2 m. Phase 1 can be divided into Phases 1a, 1b, and 1c based on stratigraphic evidence and radiocarbon dates, while Phases 1b and 1c represent architectural remodeling.

Within the walls, the northern half of the structure consisted of a series of rectangular rooms that were nearly identical in size, shape, and north-south orientation. Entrances to these rooms opened on their southern side and connected to a centrally located east-west corridor. The associated features included mudbrick floors, mud-brick walls, furnaces, and hearths and ovens, accompanied by abundant slag remains. The abundant slag remains and associated fire features indicate intensive high-temperature production activities. The addition of several interior walls and the remodeling of floors across the structure occurred without an apparent interruption in occupation. Despite the presence of these features, material remains from Phase 1 were not abundant, suggesting that the initial floors and rooms of the building were subsequently remodeled.

Phase 1a: Initial construction (Fig. 6)



Fig. 6: Features of Phase 1a.

Outermost wall (Fig. 7)



Fig. 7: Isovlew of northeast corner of battered stone and mudbrick wall of structure on mound A1, Tugunbulak (3D photogrammetry model).

The outermost wall was located on the eastern edge of the upper platform of mound A1. This battered wall was composed of stone foundations and multiple courses of sun-dried mudbrick. It measures approximately 2.6 m in width, with a maximum remaining height of 1.7 m. The wall followed a south-north alignment before turning to an east-west orientation at its northeastern corner.

Excavation revealed variation in construction techniques along different segments of the outermost wall. Along the southern portion of the eastern façade, the foundation was first leveled by cutting down into the bedrock surface. Mudbrick was then laid atop this leveled surface, followed by the placement of stone elements measuring approximately 20-30 cm in length (**Fig. 8**). Within and above this stone alignment, multiple courses of mudbrick (20 cm in width, 45 cm in length) were used to infill the interior of the wall and to form its upper course.

Near the northeastern corner and along the east-west segment of the wall, a more substantial stone foundation was identified, consisting of up to eight courses of stones laid on bedrock level (**Fig. 9**). On the northeastern corner, the battered wall was undergirded with large flagstones (70 cm in length), likely for structural support rather than defensive function. Along the northern façade, large basal stones (50-60 cm in length) were placed at the lowest levels, overlain by stones (40-50 cm in length), with smaller stones used to fill interstitial spaces between larger stones. In some areas, continuous stone courses were absent and were instead replaced by mudbrick layers, while the upper portions of the wall were consistently constructed of interlaced mudbrick.



Fig. 8: Building technology of the outermost wall (eastern façade).



Fig. 9: Building technology of the outermost wall (northern façade).

Rectangular structure (Fig. 10)



Fig. 10: Plan view of final excavations of mound A1, Tugunbulak. (North is oriented upward)

Within the outermost walls, the northern half of the structure is composed of a series of rectangular rooms. Up to four rooms were indicated, three of which have been securely identified during excavation. These rooms were nearly identical in size, shape, and orientation, measuring approximately 7 m in length and 2.3 m in width, with the easternmost rooms slightly wider at 2.8 m. All rooms were aligned along a north-south axis and are accessed via doorways located on their southern sides, opening into a centrally positioned corridor oriented east-west. Although only three rooms have been fully identified, the regular spacing, repeated architectural pattern, and wall

alignments suggest the presence of a fourth room in the westernmost part. In addition, across the corridor, a possible southern wall and an associated doorway were found at the southern border of the excavation area (**Fig. 11**). Aligned wooden features may represent part of a doorway structure.



Fig. 11: Southern wall and doorway.

The walls of the rooms were constructed using well-executed mudbrick technology, characterized by smooth, regular courses across the building (**Fig. 12**). Individual mudbricks measured approximately 25 cm in length and 10 cm in width and were preserved to more than six courses and two to three rows. Doorways were consistently located in the western portion of the southern wall of each room and measured approximately 1m in width. Each room contained fire-related features, including furnaces, hearths, and ovens, accompanied by abundant slag remains.

Easternmost room

The easternmost room, adjacent to the outermost wall, measured approximately 2.8 m in width and is wider than the other rooms. No distinct internal architectural features were identified except for the doorway. Architectural elements associated with the doorway include circular perforations approximately 17 cm in diameter, identified on both sides at the base of the doorway wall. Between these features, a linear trace approximately 23 cm in length was recorded. These may represent door-related installations or components of a water feature.

Second room from the east (Fig. 12)



Fig. 12: Interior features of the second room from the east during Phase 1. (View from north to south)

The second room from the eastern outer wall featured fire-related features and a doorway. Two fire-related features were identified in the southern half of the room. A rectangular fire feature (70 cm in length, 40 cm in width) was located at the junction of the internal partition wall and the room wall (**Fig. 13**). Another fire feature, lined with mudbrick and measuring approximately 60 cm in length and 40 cm in width, was identified in the southeastern corner of the room (**Fig. 14**). The mudbricks (20 cm in length, 6 cm in width) were preserved in one or two courses, with clear evidence of burning on the interior.



Fig. 13: Rectangular fire feature.



Fig. 14: Rectangular fire feature.

Architectural elements associated with the doorway included circular perforations approximately 17 cm in diameter, identified on both sides of the doorway wall. Between these features, a linear trace approximately 23 cm in length was recorded. These may represent door-related installations such as wooden thresholds (**Fig. 15, 16**).



Fig. 15: Doorway



Fig. 16: Detail of doorway elements

Third room from the east (Fig. 17)



Fig. 17: Interior features of the third room from the east during Phase 1. (View from north to south)

The third room from the eastern outer wall also contained a fire-related feature. A circular ashy pit (45 cm in length, 35 cm in width), containing many pieces of slag, was identified near the inferred western room wall (**Fig. 18**).



Fig. 18: Circular ashy pit.

Walls

A mudbrick wall associated with an adjacent stone wall was found in the westernmost portion of the excavation grid (**Fig. 19**). The orientation of this wall differs slightly from that of the other room walls. While most walls were aligned northeast-southwest, this wall followed a slightly northwest-southeast orientation. In addition, the stone and mudbrick walls appeared discontinuous.



Fig. 19: Mudbrick wall associated with a stone wall in the western portion of the excavation area (Phase 1).

The stone wall was attached to the eastern side of the mudbrick wall and measured approximately 45 cm in width, with a preserved height of 60 cm. Up to seven courses of stone were preserved, with individual stones ranging from approximately 15 cm to 88 cm in length and arranged in two to three rows. The basal stones were notably large, measuring up to 88 cm in length, 44 cm in width, and 15 cm in height (**Fig. 20**). Partial removal of stones from the southern portion of this wall revealed that some stones were laid beneath the mudbrick wall, suggesting that they functioned as a foundation for the mudbrick superstructure (**Fig. 21**). There is a possibility that this stone wall was related to other stone walls identified to the south of the excavation area, although this relationship remains uncertain.

The associated mudbrick wall measured over 50 cm in width and was constructed of more than two rows of bricks. Individual mudbricks measured approximately 25 cm in length and 10 cm in width, and the outlines of the bricks were clearly visible on the upper surface of the wall. The terminal ends or corners of this mudbrick wall could not be clearly identified due to later disturbance or preservation conditions.



Fig. 20: Stone wall from the front view.

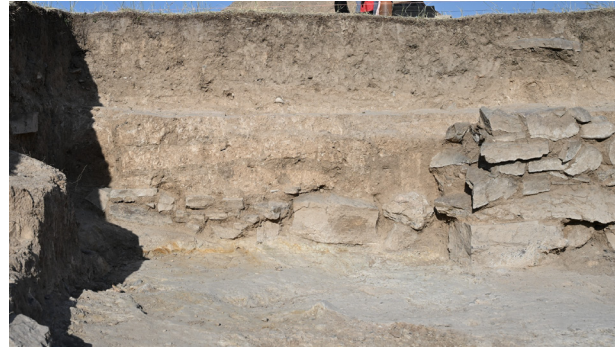


Fig. 21: Building process of mudbrick wall and stone wall.

Corridor (Fig. 22)

In the southeastern part, a rectangular feature measuring approximately 145 cm in length and 70 cm in width was identified (**Fig. 22**). This feature contained abundant ash, burnt material, and slag, suggesting intensive high-temperature activity. Direct analysis of the slag materials is forthcoming, which will shed necessary light on the particular stage of production, technological details, and output from this large-scale production facility.



Fig. 22: A large amount of slag found in the southeastern excavation area.

Foundation technology (Fig. 23)



Fig. 23: Levelling strategies in the southern excavation area (View from north to south).

Multiple levelling strategies were identified in the preparation of building foundations. A gravel (pebble) layer approximately 20 cm thick was present on the bedrock across the entire site. This layer appears to have been intentionally added, possibly to improve drainage or solid foundation, upon which the floors were constructed, made of compacted mud or mudbrick. In addition, several areas exhibit stacked mudbrick courses used as flooring elements. These stacked mudbrick floors likely functioned as a leveling strategy to make up for uneven surfaces.

Key artifacts of Phase 1a (Fig. 24)





Fig. 24: Key artifacts of Phase 1a: A) Coin found on the floor in the second room from the eastern outer wall. B) Bronze object found on the floor in the second room from the eastern outer wall. C) Spindle whorl found near the stone circular fire feature in the second room from the eastern outer wall. D) Rim of handmade pottery found near a fire feature in the third room from the eastern outer wall. E) Vessel with pattern found near mudbrick floor in the second room from the eastern outer wall. F) Tandoor-making tool found in the southern excavation area.

Phase 1b·c: Continued occupation and architectural modification (Fig. 25)

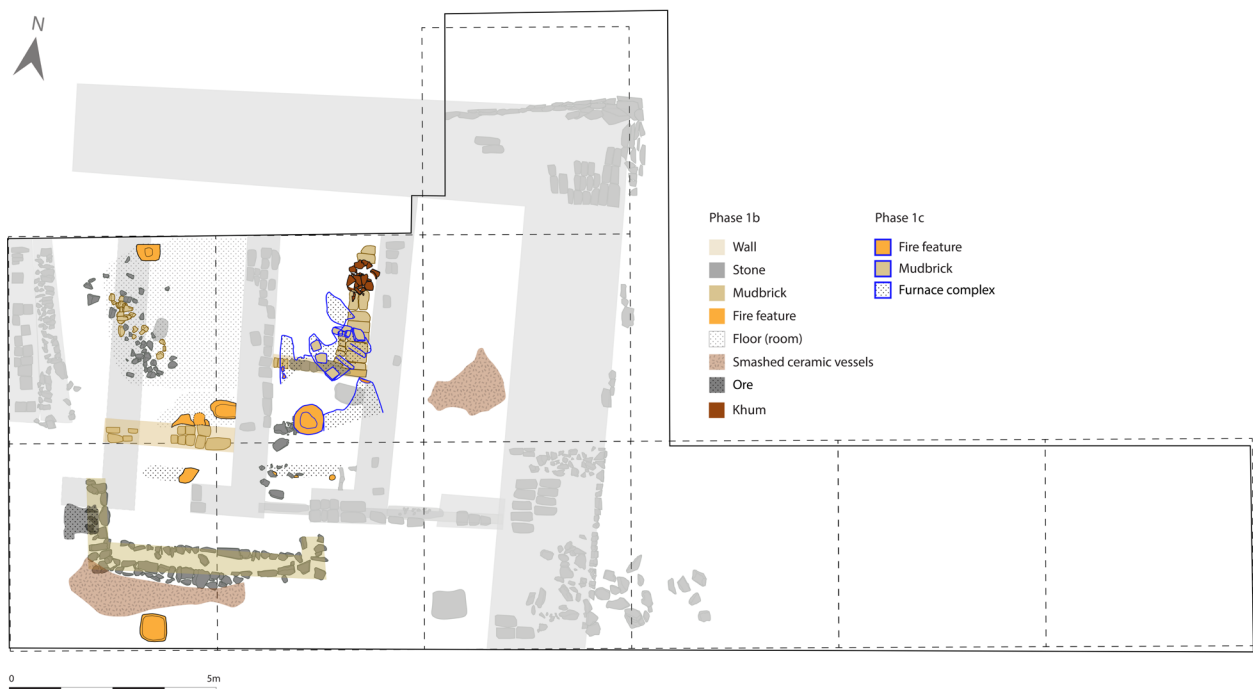


Fig. 25: Features of Phases 1b·c.

Phases 1b and 1c are characterized by continued occupation with significant architectural modification, situated at an elevation of 1925.4-1925.7 m. A new wall and internal partition walls were added, along with a floor and associated fire features. Material culture from Phases 1b and 1c is extremely abundant, with hundreds of ceramic vessels identified in situ, many of them smashed and strewn across floor surfaces, as well as spindle whorls and beads. The high density and quantity of in situ artifacts may indicate an abrupt abandonment of the building at the end of Phase 1.

Phase 1b

Second room from the east

The second room from the eastern outer wall featured a mudbrick floor, a fire-related feature, and an internal partition wall. Stratigraphic relationships suggest that the mudbrick floor and inner wall represent a later modification or maintenance phase following the initial construction of the room.

The internal partition wall divided the room approximately in half and measured 20-25 cm in width and up to 50 cm in preserved height (**Fig. 26**). It was constructed as a single row wall, with a basal course of large stones (50 cm in length, 15 cm in height), overlain by two courses of mudbrick measuring approximately 20 cm in length and 10 cm in width.

The eastern portion of the northern half of the room contained a well-arranged mudbrick tile floor, measuring approximately 50 cm in length and 20 cm in width (**Fig. 12**). Most bricks were laid horizontally, with two bricks set vertically. In areas where the mudbrick tiles were absent, large fragments of a broken khum were found (**Fig. 27, 28**). This floor abutted the northern side of the inner wall, suggesting that both features belong to the same construction period.



Fig. 26: The internal partition wall (View from south to north).



Fig. 27: Fragments of a broken khum in mudbrick floors.



Fig. 28: Fragments of a broken khum in mudbrick floors

A fire feature, circular in form and constructed of stone, was attached to the western wall of the room (**Fig. 29**). Large stones (30 cm in length) formed the upper portion, while smaller stones (10 cm in length) were present at the base. Only the southern half of this stone feature was preserved.



Fig. 29: Stone circular fire feature



Fig. 30: Details of the furnace complex

Third room from the east

The third room from the eastern outer wall also contained fire-related features and an internal partition wall. This inner wall was located along the southern portion of the room and divided the space roughly at the three-quarter point, suggesting that it represents a secondary modification or renovation period. The inner wall measured approximately 30 cm in preserved height and was composed of five to eight stacked mudbrick courses (20 cm in length, 10 cm in width), arranged in one or two rows (**Fig. 31**).



Fig. 31: Internal partition wall.



Fig. 32: Furnace complex.

A furnace complex was found attached to the southeastern corner of the room at the intersection of the inner wall and the eastern room wall, indicating contemporaneity between these fire features and the inner wall (**Fig. 32**). Three furnace installations were identified, all constructed of mudbrick. One attached to the north of the inner wall preserves portions of its superstructure, including a flat ceiling, and measured approximately 90 cm in length and 40 cm in height (**Fig. 30**). Another attached to the eastern room wall was oval in plan and measured approximately 55 cm in length and 45 cm in width (**Fig. 32**).

Additional fire features were identified in the northwestern portion of the excavation area. These were located within a large ash-filled depression (remaining 3.7 m in length, 2.6 m in width). As the depression was excavated, two mudbrick fire features were revealed. One feature, attached to the northern edge of the depression, consists of a rectangular fire feature measuring approximately 50 cm in diameter with a firing area approximately 20 cm in diameter (**Fig. 33**). A second feature, located east of the depression, measures approximately 40 cm in length, with a firing area approximately 20 cm in length (**Fig. 34**).



Fig. 33: Mudbrick-made fire feature 1.



Fig. 34: Mudbrick-made fire feature 2.

Corridor

In the southern portion of the excavation area, a double-rowed stone wall foundation measuring approximately 95 cm in width was identified (**Fig. 35, 36**). This foundation aligned along a west-east axis, parallel to the doorway orientation of Phase 1a, before turning northward approximately 5 m from the western end of the remaining feature. Individual stones range from approximately 15 cm to 55 cm in length, with gaps of up to 40 cm between stones filled with compacted soil. A single preserved stone course overlay a layer of yellowish, hard-packed soil, beneath which a pebble layer was identified.



Fig. 35: A double-rowed stone wall foundation.



Fig. 36: A double-rowed stone wall foundation (View from east to west).

Immediately south of this wall foundation, large quantities of smashed ceramic vessels were recovered in situ (**Fig. 37**). A similar pattern was observed in the northeastern portion of the excavation area (**Fig. 38**). These support the interpretation of intensive activity followed by rapid abandonment during this phase. In addition, large quantities of ore were found west of this wall (**Fig. 39**).



Fig. 37: Smashed ceramic vessels in the southern excavation area.



Fig. 38: Smashed ceramic vessels in the northern excavation area.



Fig. 39: Ore in the southern excavation area.

In the southwestern part of the excavation area, an additional square fire-related feature was identified. This feature measures approximately 45 cm in length and was constructed of mudbrick (**Fig. 40**). Several mudbrick units were recovered in association with this feature, which may represent either the floor or the outer wall of this structure.



Fig. 40: Fire feature in the southwestern excavation area.

Phase 1c

Second room from the east

The second room from the eastern outer wall featured multiple fire-related features. At a later floor level, a furnace complex and two associated air channels were documented (**Fig. 41**). The furnace complex consisted of a circular feature measuring approximately 40 cm in diameter, and a larger circular feature, open on its northern side, measuring approximately 1.5 m in diameter, with a firing area approximately 50 cm in diameter. Both features were built of mudbrick, with individual bricks measuring approximately 25 cm in length. Large quantities of burnt wood, charcoal, and slag were recovered in association with this complex, indicating repeated high-temperature activity. Air channels connected to the furnace complex were identified along its northern side (**Fig. 42**). Their superstructure was preserved and measured approximately 20 cm in length, 8 cm in width, and 30 cm in height.



Fig. 41: Furnace complex.



Fig. 42: Air channel of the furnace complex.

Key artifacts of Phases 1b and 1c (Fig. 43)



Fig. 43: Key artifacts of Phases 1b and 1c: A) Transparent bead found in the rectangular structure in the southeastern excavation area. B) Small ceramic vessel. C) Spindle whorl found in the northern excavation area. D) Iron ring found in the northern excavation area. E) Iron arrowhead found near the iron ring. F) Knife found in the northern excavation area.

Phase 2: Later occupation (Fig. 44)



Fig. 44: Features of Phase 2.

Phase 2 construction (late 7th c.) represents a marked shift in architectural technology, characterized by multi-coursed stone structures defining newly oriented buildings constructed atop leveled and collapsed walls and features of Phase 1. These features were situated at an elevation of 1926-1926.5 m. Many fragments of kiln walls and crucibles were found across the site during this period. Although we only intercepted a portion of the last phase of occupation on mound A1, it would appear that it was actively occupied for hundreds of years.

Most stone features attributed to Phase 2 are somewhat preserved as linear alignments, but their overall configurations are difficult to reconstruct due to fragmentary preservation (**Fig. 45**). These features may indicate wall foundations, collapsed stone walls, or stone-supported installations such as postholes, although their precise functions remain uncertain.

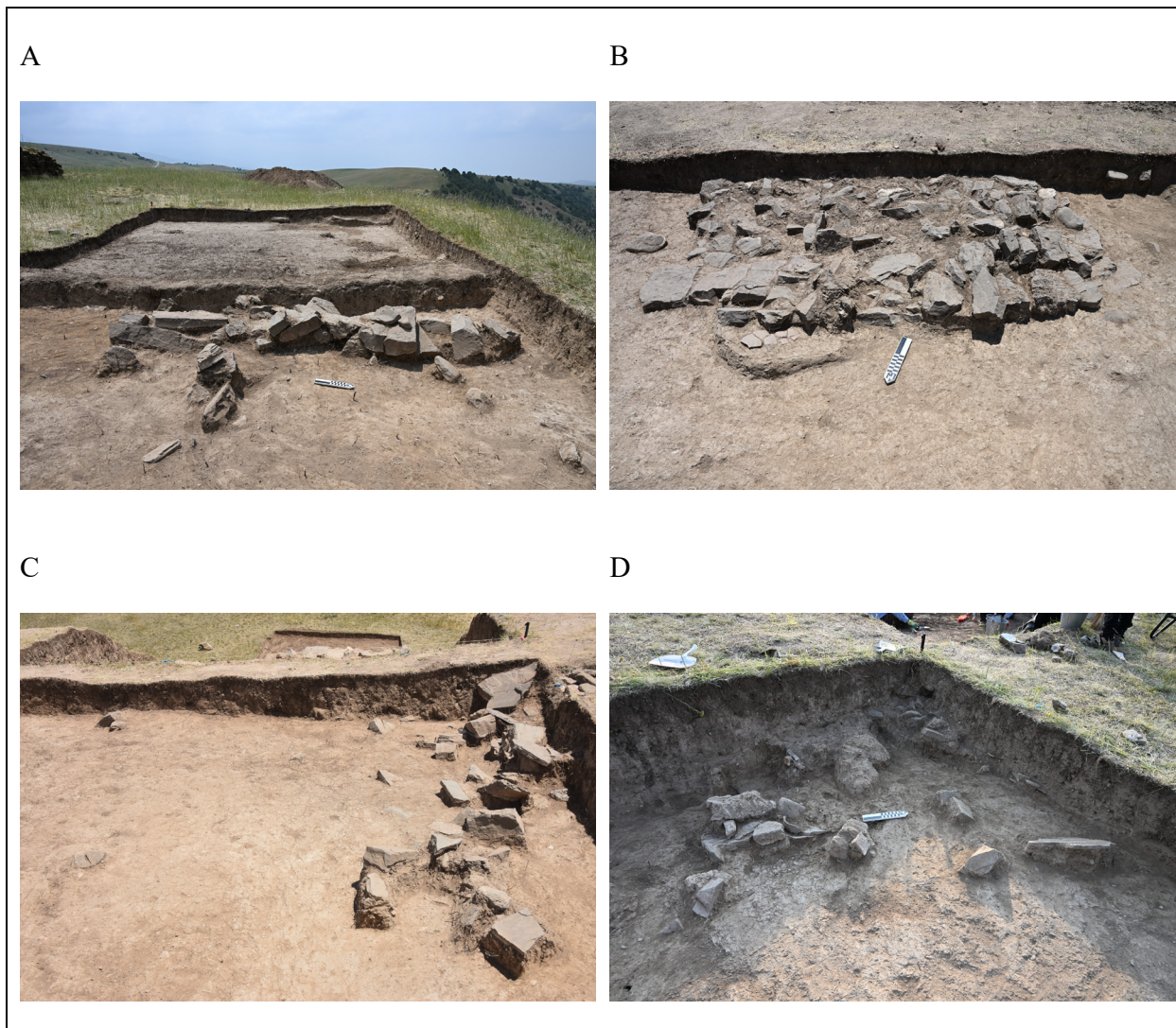


Fig. 45: Multi-coursed stone structures during Phase 2

Key artifacts of Phase 2 (Fig. 46)



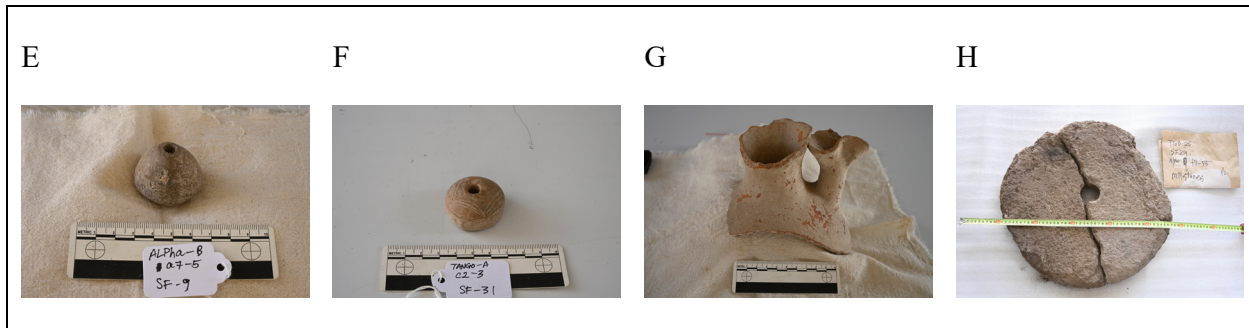


Fig. 46: Key artifacts of Phase 2: A) Coin found in the southeastern excavation area. B) Knife found in the northern excavation area. C) Knife found in the northern excavation area. D) Crucible found in the southeastern excavation area. E) Spindle whorl found in the northern excavation area. F) Bead found in the northeastern excavation area. G) Double spout vessel found in the northern excavation area. H) Millstone found in the center of the excavation.

On the basis of the 2025 field season, we conclude that the structure on mound A1 was utilized primarily as an iron production facility and secondarily as domestic space, likely for iron workers and their families. The number of furnaces, abundance of iron slag, both aggregated droplets and larger run-off slags, ores, and crucibles indicate this structure was deployed for the bloomery stage of iron production (pending technical analysis of the slags). As such, we can conclude that the function of this structure, as well as its architectural scale and layout, were very similar to the structure built on mound A2, excavated in 2024. The main difference between the two structures is wall technology; A1 was largely built of standardized mudbrick courses, whereas A2 was solely constructed of rammed earth (pakhsa). Phase 2 structures on mound A1 were unique to the 2025 excavations and illustrate that this elevated and fortified structure was occupied throughout the longer chronology of habitation at TGB.

Spatial modeling and 3D architectural reconstruction

During the excavation, we established a permanent site grid system using advanced GPS technology (GNSS) and total stations. Survey and site datums were created to construct the core GIS platform, which integrated survey data and excavation findings into a 3D digital analytical environment. Architectural remains at TGB were meticulously mapped using 3-dimensional photogrammetry software, facilitating the digital reconstruction of buildings with high-resolution oblique photography. A series of high-resolution photographs were captured from various angles, allowing photogrammetry software to produce realistic digital models of the buildings. Beyond serving as a visual archive, the data enabled quantitative analysis, providing insights into construction techniques, physical dimensions, engineering properties, and virtual simulations of movement and viewing within the reconstructed city. This work was led by M. Frchetti at the Spatial Analysis, Interpretation, and Exploration (SAIE) Laboratory at Washington University in St. Louis.

Material analysis and conservation

All archaeological materials, including ceramics, metals, glass, and human and animal remains, were documented and photographed in the field, then labeled, bagged, and transported to the laboratory at the National Center of Archaeology in Tashkent. Local ceramic specialists from the Uzbek team alongside other project specialists will work to catalog, sort, illustrate, and conserve pottery uncovered during excavations. Additional finds, such as coins, metal tools, weapons, jewelry, and stone implements, were catalogued during excavation with basic attribute analysis conducted on-

site by team members under the direction of M. Frachetti and F. Maksudov. After complete documentation, all excavated trenches were sealed with a non-permeable membrane and completely backfilled to the original surface levels.

Concluding remarks

The medieval history of Central Asia has long been defined as an interplay between two deeply rooted political-economic systems: urbanized agrarian empires and nomadic tribal confederacies (i.e. *khanates*) (Grousset 1939; Krader 1978; Lattimore 1940: 77; Weissleder 1978). Archaeological and historical evidence clearly illustrates that Central Asian cities fostered the growth and political hegemony of regional empires, serving as hubs for production and trade, religious expansion, and political power for thousands of years (Khazanov 2005; Hansen 2012; Golden 2003; Baumer and Novak 2019). Almost by definition, however, highland (nomadic) polities have been viewed as untethered by urbanism, instead generating their political power from swift-moving cavalries and confederated tribal networks based in the steppes, mountains, and deserts of Central and Inner Asia (Chaliand 2004, cf. Sneath 2007). All the while, highland regions and their populations are uncritically assumed to be dependent upon the agrarian and technological productivity of lowland centers and their political influence (Khazanov 1994).

Challenging this narrative, the results of the 2025 field campaign at Tugunbulak illustrate a long-standing integration of nomadic and urban institutions starting at the time of the first Turkic Khaganate (ca. 560 CE) and the development of a complex political and economic center in highland Ustrushana throughout the 6th, 7th c. CE. While future field campaigns will shed much needed light on this question, the coinage, chronology, and burial traditions thus far recovered from mound A1 at Tugunbulak point to a population most likely aligned with medieval Turks, who were engaged in metallurgical production and the management of this large, highland urban constellation until the mid 8th c., if not early 9th c. CE.

Medieval archaeological research in Central Asia points to appreciable social diversity in lowland centers and competitive political dynamics across a range of regional geographies, where communities of Turks, Persians, Arabs, Chinese (and others) fused and fissured to shape a complex political landscape from the 6th to 11th c. CE (Mantellini and Berdimuradov 2005). Meanwhile, our own previous archaeological work in the highlands has documented abundant occupation throughout Ustrushana by mobile pastoralists in the medieval period (Frachetti and Maksudov 2014). These facts suggest the existence of a broader complexity of political forces at play across the economic and social landscape of medieval Central Asia, especially in the highland realms.

As one of the largest known highland urban settings in medieval Central Asia, TGB has vast potential to revise the canonical history and archaeological narrative generated from lowland Central Asian cities. Building from our preliminary data showing dense architectural investment, diverse forms of economic production and trade, and robust political signaling of Turkic identity at Tugunbulak, the **SR-HUBs project** aims to continue the archaeological campaign of in-depth excavations to provide the requisite detail and range of archaeological data to expand our understanding of the social, economic, and political landscape of Central Asia – especially in the highlands – throughout the early medieval era.

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