

The Kulal Tapa Archaeological Project: Preliminary report for the first season of archaeological survey, autumn 2023 (southern Uzbekistan)

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ABSTRACT

This report introduces the background and methods of the survey part of the Kulal Tapa Archaeological Project of the Czech-Uzbekistani Archaeological Expedition, which combines extensive surface survey, systematic surface collection, and remote sensing, and outlines the preliminary results of its first season in 2023. The surface assemblages show in the valley of Kulal Tapa only a limited past activity related either to the Prehistory or to the High Medieval and Pre-Modern periods. On the other hand, this area seems to have been steadily occupied in the Antique and Early Medieval periods. Although only a small portion of the valley was used during the Hellenistic and Transitional/Early Kushan period (the site of Iskandar Tapa), the collected material suggests a substantial development dated from no later than the Kushano-Sasanian period, resulting in an identified artefact scatter stretching on around 80 ha around Kulal Tapa. A combination of more or less stable settlement activities and irrigated agriculture is suggested as a preliminary interpretation.

KEYWORDS

Central Asia; Northern Bactria; archaeological survey; landscape archaeology; Kushano-Sasanian period.

INTRODUCTION

The Kushan Empire has long been associated with exceptional urban growth in the pre-Islamic history of the region (LITVINSKIY 1973; PUGACHENKOVA – RTVELADZE 1990, 67–76; LITVINSKY 1996; LERICHE 2007) reflecting the attention paid traditionally by archaeologists to the large Antique period urban centres.¹ However, rural settlements – their antipole and complementary partner – have been studied considerably less, usually in the form of extensive survey and excavations of only limited extent, predominantly test trenches (e.g., RTVELADZE – KHAKIMOV 1973; PIDAEV 1978). The character of the evidence on the Antique period rural settlement in Northern Bactria is fragmentary for various reasons and shaped strongly by the prevailing scale of investigations. The focus of the research has been predominantly either on the level of individual site (typically *tepa* sites) or on the (micro-)regional level and site distribution patterns in the landscape, and rural settlement research in Bactria still largely lacks a complex perspective on the community level of settlement, i.e. considering also a settlement's immediate surroundings, which were inevitably used and exploited by a past community for various purposes, such as agriculture, pasture, production, extraction, cultic and funeral activities, etc.

The Kulal Tapa Archaeological Project, which operates under the auspices of the Czech-Uzbekistani Archaeological Expedition, was thus initiated to form a new dataset targeting the

1 The term Antique period is referred here as the late 4th century BCE – 4th century AD. The Late Antique period corresponds here roughly to the 3rd–4th centuries AD.

community level of past rural settlement activities, using a range of excavation and survey methodologies. As discussed in more detail elsewhere in this issue (MORRIS *et al.* 2024), the impetus for this research is significant lacunae in our knowledge of the scope and catalysts of economic development in the Central Asian region of Bactria-Tokharistan under the Kushan Empire (1st-3rd centuries AD), the topic of a larger research project at Charles University.² This report introduces the background and methods of the survey component of the Kulal Tapa Archaeological Project, and an overview of preliminary results gained during the first field season in 2023. The overall project and its background are presented and discussed in detail in Morris *et al.* (2024), followed by the preliminary results of the first season of excavation.

Kulal Tapa is a small, mounded site located in a flat valley in eastern Kugitang piedmonts (Sherabad district, southern Uzbekistan) – a semi-arid foothill steppe zone of northern Bactria, and an area where the Czech-Uzbekistani Expedition has been active increasingly since 2010. Previous survey done by the Czech-Uzbekistani expedition (STANČO *et al.* 2017, 130–132; STANČO 2020, 152–155) suggested that the main period of occupation stretches between the Great Kushan and Kushano-Sasanian periods (i.e., 1st-4th c. AD) with only a limited or no re-occupation of the site and its immediate vicinity in the later periods. This fact, together with

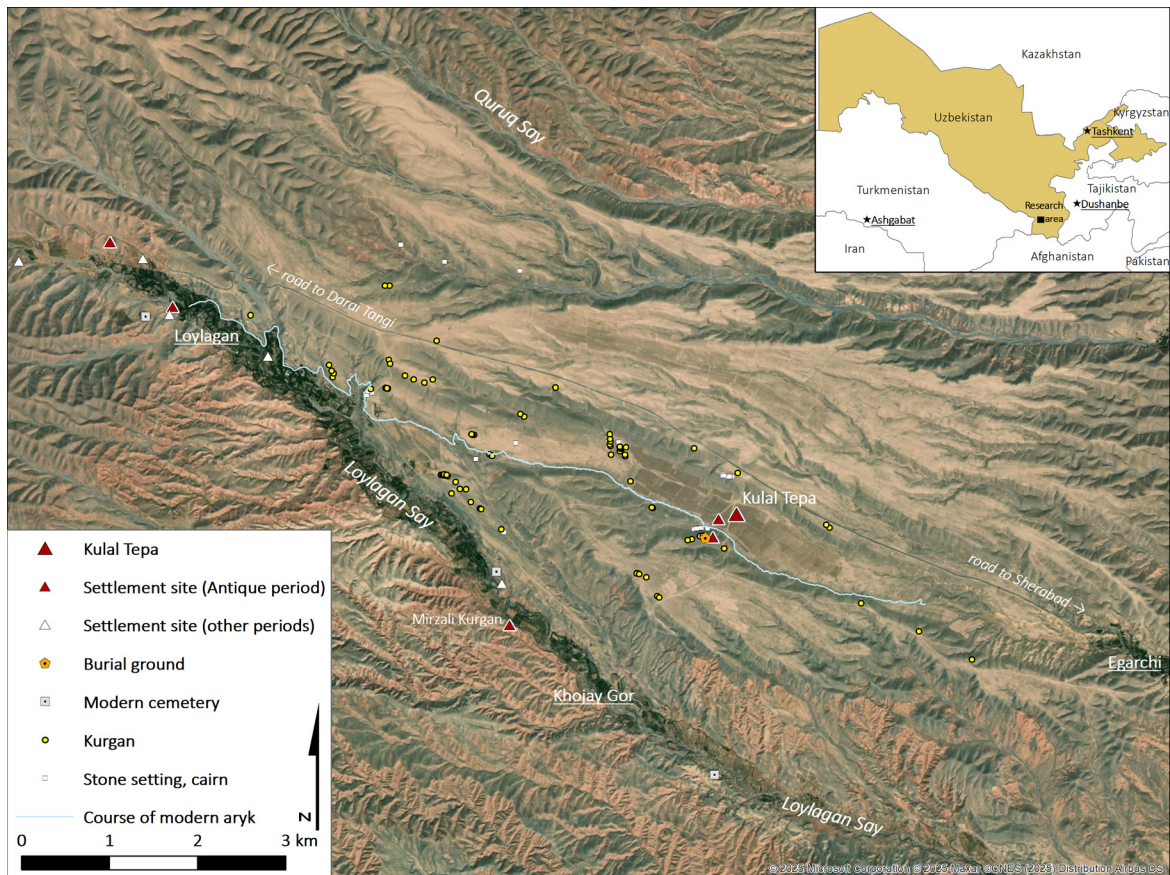


Fig. 1: The location of Kulal Tapa within the Loylagan valley. Map by J. Havlík with a contribution of A. Vilím Augustinová. Basemap: Bing.

² Rural life in a changing world: new light on economic development and inequality in Central Asia under the Kushan Empire (PRIMUS/23/HUM/013). Principal investigator: L. Morris. The project is implemented at the Faculty of Arts, Charles University.

the presence of the Late Hellenistic ephemeral settlement at Iskandar Tepa nearby, replaced later by the Transitional/Early Kushan period burial ground, and the only limited landscape damage caused by modern agricultural activities, make the site a promising candidate for investigating landscape use development in a marginal area through the Antique period, as well as benefiting from and contributing to the expedition's broader research agenda in this area. Being the first preliminary report on the survey in the valley of Kulal Tepa on research midway, this article aims neither to be a comprehensive overview of the collected data nor to answer the research questions, but to summarise the course of the first season of surface survey and provide reflections on its preliminary results.

RESEARCH AREA AND BACKGROUND

Being located on the western edge of a large sedimentary basin known as the Tajik depression, the Kugitang mountains, characterised by dramatic angular peaks (the highest point at Ayribaba, 3139 m.a.s.l.) with steep walls and sharp rocky ridges, form the present-day border between Turkmenistan and Uzbekistan. At the middle and lower altitudes between ca. 500 and 1200 m.a.s.l., the steep ridges alternate with dry rolling steppes interwoven with deep cut river valleys and numerous dry stream beds defining the transitional foothill landscape. The semi-arid, continental climate is here distinguished by drastic temperature variations between both day and night, and summer and winter. While the predominant expanse of hilly dry steppes is frequented by shepherds with their flocks throughout the year, limited pockets of vegetation, so called microoases, situated along the perennial streams and in the vicinity of springs allow the development of horticulture and small-scale agriculture, and thus naturally attracts a stable human occupation.

The valley of Kulal Tepa (around 800 m.a.s.l.) is located in the northern part of the eastern Kugitang piedmonts ca. 4 km to the east from the village of Loylagan, which is situated along the banks of the Loylagan Say river. One of the upper terraces of Loylagan Say transforms gradually into a parallel side valley surrounded on both sides by flat elevated plateaux that follow the orientation of a nameless minor seasonal stream. Being formed by a combination of colluvial and alluvial processes, the valley of Kulal Tepa is relatively flat in its nature, gently sloping towards south-east and the valley of Sherabad Darya. Except for dry stream beds fed occasionally in winter and early spring by rainwater, there is no source of water in the vicinity of Kulal Tepa, and not even historical military maps suggest any presence of freshwater sources, such as springs or wells. The only potential stable source of water for the valley of Kulal Tepa is the today defunct water channel – *aryk* – running under the southern slopes of the valley, which took water directly from the Loylagan Say ca. 5.5 km upstream (**Fig. 1**). This water channel was partly rebuilt in concrete during the Soviet period, however, both terrain features and testimony of locals confirm its use also in the Pre-Soviet period. The existence of a predecessor of this water channel in the Antique period is one of the working hypotheses for explanation for the development of a permanent settlement in this, for most of the year otherwise dry, valley.

The mountain river valleys of the eastern Kugitang piedmonts, especially their flat river terraces, represent trajectories of nowadays communication, and to a certain degree, this probably also applied to the past mobility (cf. HAVLÍK – SHAYDULLAEV 2024, 20–22). Located around 2.5 km as the crow flies from the river, Kulal Tepa is placed just by the modern road, which provides easy access to one of the few crossings of the mountains in the western direction (to Sogdiana) through the Darai Tangi gorge. Given its location, the site was already

known to local archaeologists before the initiation of the Czech-Uzbekistani surveys in the area (BOBOKHOJAEV – ANNAEV – RAKHMANOV 1990, 26–27; SVERCHKOV 2005, 42; cf. STANČO *et al.* 2020, 146 and MORRIS *et al.* 2024 for the summary), however, it had not been investigated in detail before. Six years after the first brief reconnaissance surveys in 2010–2011, since 2017 the Loylagan Say valley has become one of the key areas of investigation for the Czech-Uzbekistani Expedition: A discovery of the Late Hellenistic site of Iskandar Tepa just about 350 m to the south-west of Kulal Tepa (STANČO *et al.* 2017, 130–132) was followed by large-scale excavations (STANČO *et al.* 2020) and geophysical survey that led to identification of the Yuezhi-Transitional burial ground surrounding the older settlement (L. Stančo and J. Kysela, work in progress).

The extensive survey of the surrounding area has shown settlement activities ranging chronologically between the Late Bronze Age and the Pre-Modern period, located predominantly in the close vicinity of the perennial river, as a rule on its first terrace or on the surrounding slopes (VILÍM AUGUSTINOVÁ 2024). Among the settlement sites, the excavations of a small walled hilltop settlement at Mirzali Kurgan near the hamlet of Khojay Gor shown the occupation time span chronologically corresponding to that of Iskandar Tepa and Kulal Tepa (STANČO *et al.* 2022, 106–110; BAZAROV 2024), providing evidence for the Antique period human activities located directly in the Loylagan Say river valley. In the immediate vicinity of the Kulal Tepa, the remains of a small tepa mound, Tigrman Tepa (see below), damaged by modern agriculture, as well as an extensive artefact scatter were identified. In terms of chronology, the pottery distributed in the fields and on the summit of the small tepa revealed the same dating as the material collected on the summit and slopes of Kulal Tepa. However, an extensive survey did not allow the Czech-Uzbekistani team to define neither the dimensions of the scatter nor the exact sherd densities, which could tell more about the past use of the space on the valley bottom and the potential origin of the artefacts. The complementary survey focusing on the non-settlement components of the cultural landscape, namely the kurgan mounds and other stone features (stone settings and cairns; see HAVLÍK – HAVLÍKOVÁ – STANČO 2018) supplemented this view and demonstrated the past landscape exploitation far beyond the narrow strip around the river. Although the kurgans near Loylagan have been identified and investigated already since the 1970s (DUKE 1975), their sepulchral function has not been satisfactorily confirmed yet (cf., LITVINSKIY – SEDOV 1984, 134; STARK 2008, 274–275; HAVLÍK – HAVLÍKOVÁ – STANČO 2018). The tentative chronological attribution of the Loylagan kurgans to the period between the Late Antiquity and Pre-Islamic Middle Ages has been suggested (DUKE 1975; BOLELOV 1994; HAVLÍK – HAVLÍKOVÁ – STANČO 2018, 157), corresponding in an interesting way also to the later phases of the Kulal Tepa valley occupation (see below; cf. MORRIS *et al.* 2024).

SURVEY OBJECTIVES

The design of the archaeological surface survey aims to bring a set of methods complementary to the focus of the Kulal Tepa excavations and investigate the mounded site and its surroundings as part of a continuous cultural landscape. The survey focuses on a better understanding of the local level transformation of the piedmont steppe landscape and its (economic) use in a long-term perspective. Although the period contemporaneous to the occupation span of Kulal Tepa, i.e., the Antique period, represents the main focus of the research project, human activities related to the other periods cannot be omitted. Special attention is paid to the activities subsequent to the abandonment of Kulal Tepa, inevitably influencing the state of preservation of the archaeological remains in the Kulal Tepa valley. Using diverse research components (see below), the objective of archaeological survey is to assess the character

and intensity of past human activities in the immediate vicinity of Kulal Tepa, including the plateaux surrounding the flat valley bottom: How did the settlement structure change over time? Is it possible to identify a past, Kushan, Kushano-Sasanian period, or later, micro-oasis surrounding the tepa? Are there any traces of past activity foci, an ancient field systems or irrigation channels? Were there other settlements scattered in the valley? In a broader perspective, the survey aims to contribute to clarifying the relationship between well-defined tepa mounds (a typical focus of Central Asian archaeology) and their surroundings.

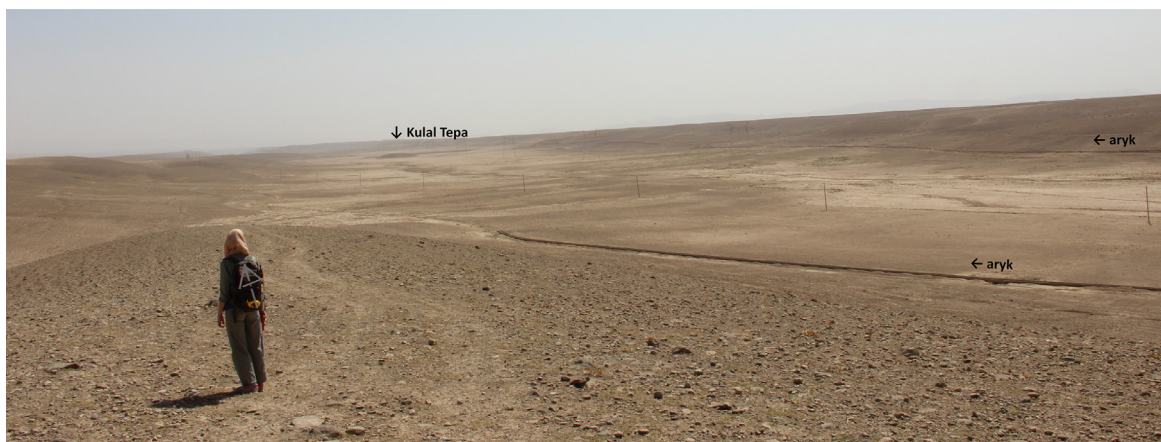


Fig. 2: The valley of Kulal Tepa. View from the north-west. The mound of Kulal Tepa is visible as the dark spot in the distance. The aryk leading to Kulal Tepa mentioned in the text is situated on the other side of the valley (top right). Photo by J. Havlík.

METHODOLOGY

DEFINING THE SURVEY AREA

The landscape of the eastern Kugitang piedmonts is characterised by the rugged and manifold nature of the vast piedmont steppe. Although the dry steppe environment usually provides archaeologists with near-ideal conditions for pedestrian surface survey (sparse or no vegetation cover, good passability as well as only limited extent of the area used for agriculture or building purposes significantly facilitates the recognition of surface features as well as artefact collection), the defining landscape units to be used for systematic surface sampling may encounter many practical problems. While employing small geomorphological units may in the field represent a very time-consuming task, large units such as river basins are usually too large to be covered with sufficient intensity within the timeframe of a single project. Given the aims of the survey part of the Kulal Tepa Archaeological Project oriented towards identification of past activities related to the occupation of the settlement mound and evaluation of their extent and distribution, an adaptive approach was applied based on the Euclidean distance from the tepa, naturally resulting in the concentric polygons of almost regularly circular shape. Another decisive factor in defining the survey area is the feasibility and practicability of the field part of the project. Being limited by only three field seasons of four weeks duration, the distance from the feet of the tepa mound to be surveyed was set to 1.000 m, which can be extended – in the case of a continuous occurrence of artefacts – up to 2.500 m, either by covering a contiguous area or with a less time-consuming transect method (see below). The same distance was also used for the definition of area of the extensive sur-

vey and remote sensing. While covering all the extent of the Kulal Tepa valley (to the west it opens toward the river, to the south the valley gets narrow and disappears in the small hills in the direction of the village of Egarchi), this interval also almost precisely corresponds to the distance between Kulal Tepa and Loylagan Say to the south and the no name say to the north.

RESEARCH COMPONENTS AND SAMPLING STRATEGY

The research design consists of three main research components aimed at providing a variety of scales of investigation of the physically diverse environment of the Kulal Tepa valley:

- 1) Systematic remote sensing – visual analysis of satellite imagery
- 2) Extensive topographical (on-site) survey
- 3) Systematic (off-site) survey

Remote sensing in the form of visual interpretation of satellite imagery covers a square area 5×5 km centred in Kulal Tepa. This phase of research was preceded by the study of cartographic data, most importantly the Soviet military maps (Карты Генштаба) of the area in various scales, an already well established and important approach in Central Asian archaeology (cf., RONDELLI – STRIDE – GARCÍA-GRANERO 2013 for discussion). Study of cartographic sources enabled mapping the depicted anthropogenic features as well as the pathway and waterway network corresponding to the second half of the 20th century (the most accurate maps correspond to 1960s–1970s, however, to a certain extent they clearly reflect an older situation captured on the source maps not available to our team (cf., information on particular map sheets). Subsequently, satellite imagery of various dates was employed to map all the anthropogenic features of archaeological significance in the defined area. In addition to the freely available modern satellite imagery (Esri, Bing, Google Earth), the U.S. declassified imagery (CORONA KH-4 and HEXAGON KH-9) was employed, allowing our team to assess the ground situation in the late 1960s to late 1970s.

As described above, the extensive topographic survey covers a roughly circular area corresponding to a distance of 2.5 km from the feet of Kulal Tepa. Because the area of the Kulal Tepa valley has been investigated several times by means of pedestrian survey (STANČO *et al.* 2017, 132; HAVLÍK – HAVLÍKOVÁ – STANČO 2018), the survey team took advantage of a relatively good state of its exploration, making this research component of a predominantly supplementary character. In 2023 the extensive topographical survey consisted mainly of the targeted ground-truthing of data coming from remote sensing and surveying the locations to which less attention has been paid so far. The extensive survey aimed to inventory anthropogenic features in the wider vicinity of Kulal Tepa, i.e., in the area that is impossible to cover in an intensive systematic way within the limited time frame of the Kulal Tepa Archaeological Project. The focus of this component is on a wide range of features occurring in the piedmont landscape (kurgan mounds, cairns, stone settings, water channels, campsites, collapsed walls, abandoned corrals, petroglyphs, etc.) as well as surface finds and artefact scatters. Data collection was carried out in a standardised way following the procedure established already within the framework of previous research of the Czech-Uzbekistani mission (HAVLÍK – STANČO – HAVLÍKOVÁ 2017; HAVLÍK – HAVLÍKOVÁ – STANČO 2018; HAVLÍK – DĚDKOVÁ – TOSHALIYEV 2023), thus forming a compatible dataset. Individual features were thoroughly described in terms of their construction (size, height, shape, composition, etc.) and state of preservation. The emphasis is regularly placed on a visual analysis of location of particular features in the landscape, as well as on a spatial relation to other features of both natural (i.e., cardinal directions, terrain features, river beds, etc.) and anthropogenic (i.e., settlements, irrigation, petroglyphs, etc.) character including their visual interconnectivity.

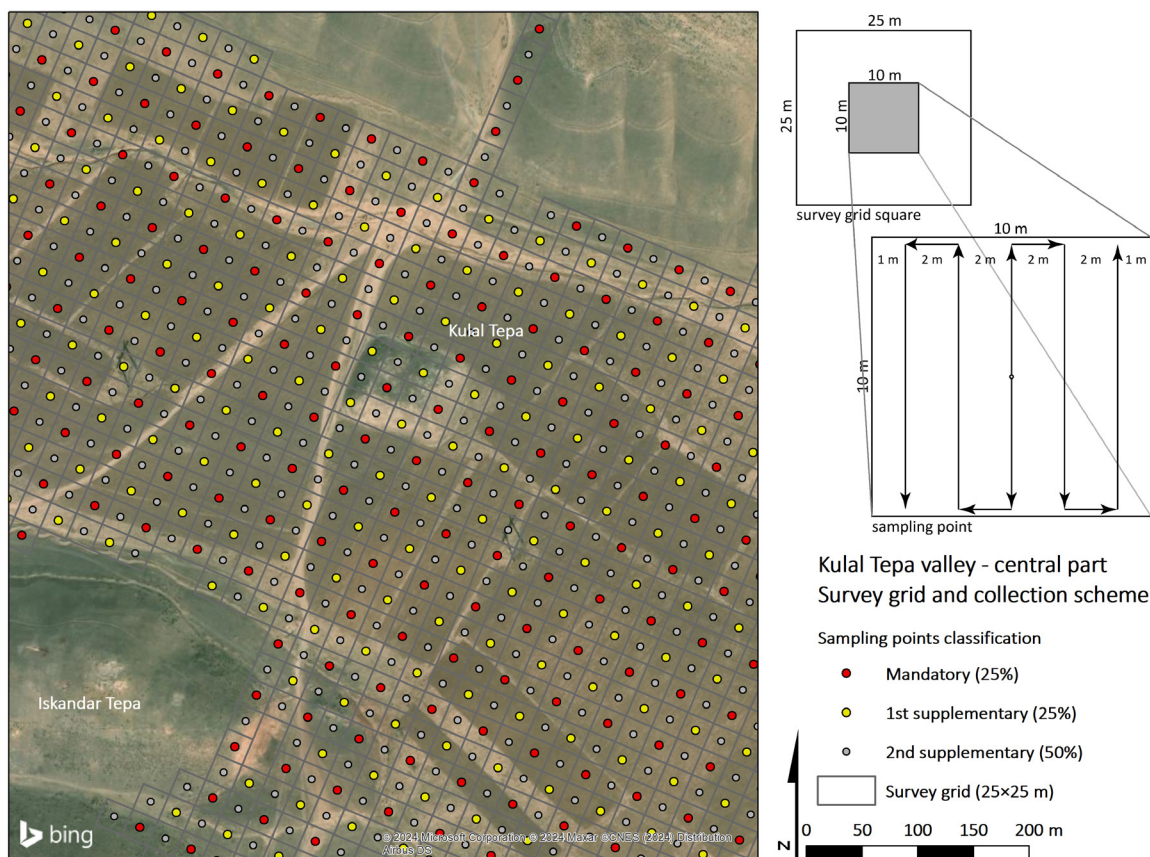


Fig. 3: Central part of the Kulal Tapa valley. Example of the systematic survey grid and classification of sampling points. Top right: scheme of a collection unit. Arrows indicate the trajectories of the field walking. Basemap: Bing. Map by J. Havlík.

The systematic surface survey of the immediate vicinity of Kulal Tapa represents the dominant research component of the Kulal Tapa survey, aiming to analyse the artefact distribution in the environs of the mounded site. To cover a meaningful whole within the pilot season, only the flat valley bottom within the distance of 1500 m from the Kulal Tapa mound became the subject of the 2023 survey. To define this particular geomorphological class, the topographic position index (TPI) based geomorphological classification was used. Calculated using the SRTM digital elevation model, the resulting 2023 survey area covers in total 172 ha, which were successfully walked in three weeks by a team of three people (Pl. 3/1-2).

The systematic survey framework was designed to best fit the characteristic environment of the rolling piedmont steppe consisting of flat plateaux, river terraces, hillslopes, ravines, river beds, and man-made water channels, as well as tepa mounds and other remnants of past human occupation. The research design draws inspiration from the tradition of systematic (probabilistic) sampling methods of landscape archaeology in the Near East (cf., REDMAN – WATSON 1970; REDMAN 1987; UR 2002; UR – KARSGAARD – OATES 2011; MCMAHON *et al.* 2023) as well as in Central Europe (SMRŽ – KUNA – KÁČERIK 2011). Quantified observation and controlled artefact collection was conducted using a predefined grid (25 × 25 m) that follows the direction of the valley by its orientation (Pl. 3/1). The collection was carried out as walking 10 × 10 m area located in the geometric centre of a square (= 16% of the square surface; see Fig. 3). The collection (sampling) units (CUs) were divided into three categories: Main dataset (25 % of CUs spaced in distances of 50 m from each other), 1st supplementary dataset (25% of

CUs spaced in distances of 50 m from each other located between the obligatory CUs), and 2nd supplementary dataset (the remaining 50% of CUs located in a chessboard-like pattern). While the main dataset represents an obligatory collection unit class, ensuring an overall 4% survey intensity, the two supplementary datasets are to be treated separately in terms of statistics. Their purpose is to make survey intensity higher either, a) in the areas which evince signs of past anthropogenic activity, such as terrain anomalies detected via satellite imagery or pedestrian survey (1st supplementary class), or, b) in the vicinity of obligatory collection units, which give evidence of location of higher density artefact scatters (1st and 2nd supplementary classes). This approach allows both a uniform analytical assessment of artefact distribution in the research area and a more detailed insight into the spatial, functional, and chronological characteristics of identified anomalies and artefact concentrations. Additional 10 × 10 m square collection units may be placed in a targeted way at locations not covered adequately by the predefined grid. Being kept carefully separate from the rest of the systematic CUs in terms of statistics, this opportunistic sampling may provide even more details on the function and chronology of particular points of interest. Subsequent sampling using supplementary CUs was in 2023 employed only in the vicinity of Kulal Tepa and a small low tepa mound labelled Tigrman Tepa nearby (see below). Accidental diagnostic finds outside of the predefined CUs location were also collected, treated as 'grab samples' with no statistical value. Standardised forms were employed to assess not only the distribution of artefacts in the surface material, but also the traversability, agricultural conditions, vegetation cover, soil erosion, etc., i.e., conditions that affect surface collection and obtrusiveness of surface finds. This research design allows for the other ways of additional sampling using the same grid: systematic employment of metal detectors, targeted point or transect sampling of selected areas beyond the main survey zone, or use of test pits of limited size to compare surface and subsurface finds assemblages will provide complementary data to the main systematic survey dataset.

PRELIMINARY ANALYSIS OF THE SURFACE DATA

An important factor affecting conditions of all the survey research components are ubiquitous traces of intensive agricultural activities of the Soviet and post-Soviet periods, especially the period after the half of the twentieth century. The extent and scale of the impact of mechanised agriculture on the landscape are not comparable to devastating consequences of collectivisation in lowland areas of Uzbekistan (cf., RONDELLI – STRIDE – GARCÍA-GRANERO 2013; STANČO – TUŠLOVÁ eds. 2019; HAVLÍK *et al.* 2022) – the piedmont environment did not give space for creating an extensive network of water channels. However, both historical satellite imagery and field observations show a surprisingly large area under cultivation in the Soviet period, leaving traces of ploughing in almost every area flat enough to be accessed by a tractor. Among the areas visited by our team, the Kulal Tepa plain is inevitably the worst affected by modern agriculture due to its well irrigable position and flat topography. Unlike the surrounding elevated plateaux, sections of the Kulal Tepa plain have occasionally been under cultivation until today. As mentioned above, according to the accounts provided by the locals, the valley of Kulal Tepa has already been cultivated in the pre-Soviet period, taking advantage of the water channel that carried water from Loylagan Say. The first season of the systematic survey fully confirms the suggestion that the intensive human occupation of this area dates back at least to the (Late) Antique period.

Without a doubt, the damage caused by agricultural activities had a negative impact on the preservation of the terrain features. Although some of the features (especially kurgan mounds)

are highlighted by plough marks avoiding them (this phenomenon facilitates to a certain degree their identification on the satellite imagery; cf. HAVLÍK – DĚDKOVÁ – TOSHALIEV 2023, fig. 10), there is no way to determine how many features had been destroyed before the imagery was captured during the late 1960s and early 1970s. Among the relatively small number of terrain features recorded during the 2023 season, kurgan mounds represent a majority (13 mounds), expanding the total number of inventoried kurgan mounds in the Loylagan area to 88 (cf., HAVLÍK – HAVLÍKOVÁ – STANČO 2018, tab. 1). Besides this, the extensive survey revealed several more stone circles and cairns. Only a few sherds of uncertain dating have been detected in the vicinity of the identified features. Remote sensing has revealed several dozens of other anomalies located both inside and outside the research area that significantly resemble kurgan mounds. These features are to be ground-truthed during the forthcoming seasons.

The 2023 pilot season succeeded in covering the Kulal Tepa plain in a systematic way within a distance of 1.5 km from the tepa. More than 4000 artefacts, predominantly fragments of historical pottery, but also of saddle querns, hand stones, and rotary querns were collected, indicating a relatively intensive past land use of the surveyed area. The highest artefact densities were detected in the direct vicinity of the Kulal Tepa and a small, severely damaged nameless tepa mound (14 × 25 m, height up to 1 m) located ca. 130 m to the south-west (cf., STANČO *et al.* 2017, no. 244). Due to more than forty fragments of quern stones (both saddle querns and rotary querns) discovered at the top of the mound (apparently collected during ploughing) and in its direct vicinity, the tepa was labelled Tigrman Tepa (i.e., ‘mill hill’; **Pl. 3/2** inset). The chronological range of material discovered in the area of both tepa mounds is very similar: pottery attributed to Late Antiquity, most probably to the 3rd–4th centuries AD (i.e., the Kushano-Sasanian), is clearly dominant among diagnostic fragments (**Fig. 4**). A smaller amount of the collected material probably indicates also later, Late Antique/Early Medieval occupation of the 5th century AD. It is possible to preliminarily assume that both tepa mounds visible today – Kulal Tepa and Tigrman Tepa – reflect a single settlement unit dated from these periods. The nature of the past occupation of the area of ca. 2–4 ha (**Pl. 3/3** inset) that stretches between them (A nucleated settlement destroyed by ploughing? A group of scattered buildings or shelters which left no terrain remains? An open space activity area?) remains for now an open question. A significantly lower proportion of the ceramic material coming from the slopes of Kulal Tepa allows the attribution of earlier occupation phases to the so-called Great Kushan period (i.e., 1st–2nd centuries AD). Only two discovered sherds (two fish plate resembling rim fragments; see MORRIS *et al.* 2024, fig. 11) suggest even earlier occupation of Kulal Tepa before the turn of our era, i.e., in the Graeco-Bactrian and/or Yuezhi-Transitional period.

A significant number of artefacts is to be found in a much wider area beyond the core Kulal Tepa – Tigrman Tepa zone, creating an artefact scatter covering almost continuously the surface of the valley bottom within a radius of 1000 m around Kulal Tepa, i.e., more than 80 ha in total (**Pl. 3/3**). In the north-western, south-western, and south-eastern direction, the sampling of a contiguous block of landscape was during the first season supplemented by three transects following the predefined grid (more similar transects are planned to be surveyed during the following seasons to sample the wider area around Kulal Tepa in a more extensive way). Artefact counts preliminarily suggest significantly lower artefact densities or no surface material at all in the area beyond the 1000 m radius. Late Antique pottery is clearly predominant in the surface record of the Kulal Tepa plain. However, distinctive Early Medieval (Pre-Islamic period) pottery has also been detected in the area of Kulal Tepa scatter as well, though in smaller quantities. Later, the High Medieval to Early Modern/Modern ceramic assemblages are represented only by a few isolated fragments (**Pl. 3/4**). Comparably higher artefact densities were identified in the southern part of the valley. This trend may

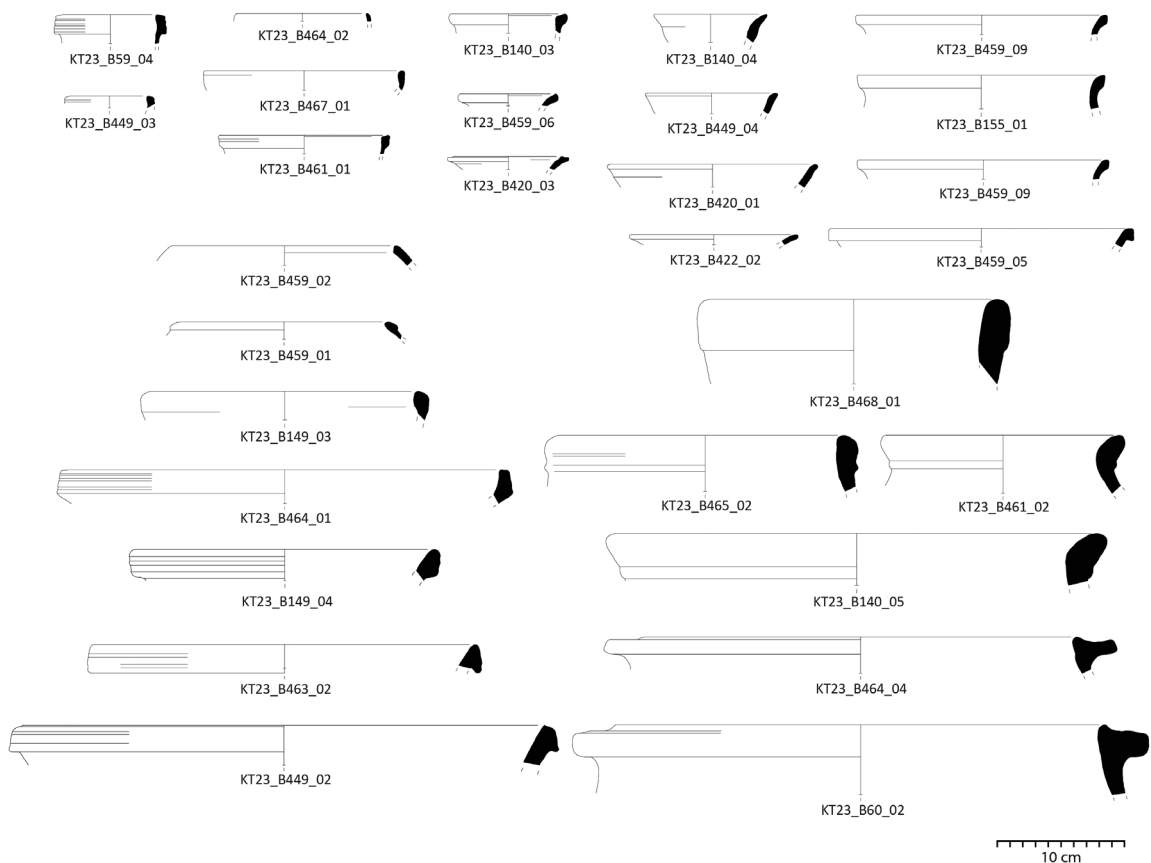


Fig. 4: Selection of pottery assemblage from the vicinity of Tigrman Tepa. Drawings by J. Bobik.

be caused by post-depositional processes; the southern part of the valley has been ploughed more frequently in the recent past. In the northern part of the valley, in the vicinity of a natural water stream, the surface is characterised by seasonal water splashes, creating here and there a seamless layer of hard dried mud). On the other hand, the presence of surface material may be tied with the presence of the aforementioned surface water channel (*aryk*) that lines the Kulal Tepa valley along its southern edge. Being partly made of concrete, this *aryk* is nowadays mostly out of use. Its predecessor of uncertain date, simply dug into the ground, was bringing water from the Loylagan Say river ca. 5.5 km to the north-west. In the same way as during the twentieth century, a similar water channel could have been used to supply the Kulal Tepa valley with the water necessary for irrigation or watering livestock. The higher artefact densities in the southern part of the valley may also be related to the activity foci located above its slopes, such as Iskandar Tepa or the High Medieval artefact scatter detected by L. Stančo on the low promontory of a neighbouring spur (STANČO *et al.* 2020, 145, 155, pl. 4/2). Clarification of the past use of the elevated plateaux on both sides of the Kulal Tepa valley will be one of the focuses of the forthcoming seasons of the systematic survey.

A possible explanation for the extensive low density artefact scatter, a carpet of mostly highly fragmented sherds, could provide a presence of ephemeral activities related to past agriculture – above all, manuring fields with settlement refuse. This interpretation is based on the assumption that the cultural debris from a settlement was incorporated into systematically collected animal dung, organic waste, etc., which were subsequently spread in the

cultivated parts of the landscape, serving there as fertiliser. Artefact scatters around settlements of various sizes have been recorded in many places throughout Eurasia and beyond. Following the mentioned model, based among others on ethnological parallels, the presence of such artefact scatters has been used as a proxy indicator of intensity of manuring and past land use in general (in the Near East: WILKINSON 1982; 1989; 1994; for the Mediterranean see e.g. BINTLIFF – SNODGRASS 1988; cf. ALCOCK *et al.* 1994; FORBES 2013). A detailed analysis of the surface material around Kulal Tēpa will hopefully allow us to test the plausibility of this hypothesis. At this point, intensive agricultural use of the flat valley bottom within around 1000 m from the settlement appears to be the most likely explanation for the identified artefact scatter. Approximately 12–15 minutes of walking distance, corresponding in the flat terrain to 1000 m, represents an imaginable effort to cart manure to the fields from a farmstead(?) at Kulal Tēpa. Interestingly, in the area of the artefact scatter outside the core zone of Kulal Tēpa – Tigrman Tēpa, no stone tools, building material, terracotta fragments, or other finds typical for scatters corresponding to the destroyed settlement sites (cf., HAVLÍK *et al.* 2022) have been collected in 2023. Most surface finds discovered comprise small fragments of storage jars and common ware, which usually make up the largest proportion of nondegradable settlement waste. However, the presence of smaller settlements or activity foci in the plain (reflected by areas with relatively higher artefact densities?) cannot be ruled out at this point. When compared with ceramic assemblages from the excavations at Kulal Tēpa and analysed in the context of the settlement, the promise of the collected data is in defining the (agricultural, economic?) catchment of the Late Antique settlement.

CONCLUSIONS

The overview of the pilot field season of the Kulal Tēpa survey allows one to sketch some preliminary observations regarding both the project itself and the settlement development in the area in question: The 2023 field season confirmed that the selected methods, especially systematic sampling, are suitable for answering the designated research questions. Although the intensity of the survey used predominantly is relatively low (4%), the archaeological material recovery appears to be sufficient to bring a representative sample of the remains of past activities in the immediate vicinity of Kulal Tēpa. The collected assemblage shows only a very limited extent of later human activities in the Kulal Tēpa valley – except the modern period agriculture – which makes this area promising for in depth analysis of land use transformations between the Hellenistic period and the Early Medieval (Pre-Islamic) period. The prevalence of the Late Antique to Early Medieval surface material suggests an intensive use of this area corresponding to the so far identified main occupation phases of Kulal Tēpa (cf., MORRIS *et al.* 2024). The spatial extent of the continuous artefact scatter, around 80 ha, although most likely extended by ploughing to a certain degree, reflects highly probably some kind of combination of more stable activities around the main Kulal Tēpa compound (minor settlements, temporary buildings, or shelters?) with more extensive ephemeral activities, such as manuring fields by settlement refuse – a hypothesis to be tested in the future. A core Kulal Tēpa – Tigrman Tēpa zone corresponding to ca. 2–4 ha represents in this matter apparently an area of more intensive Late Antique to Early Medieval activities, which may preliminarily be related to the existence of a settlement exceeding significantly the nowadays extent of the mound of Kulal Tēpa. The character of this (highly probably agriculturally oriented) settlement remains, however, unclear at this point.

Although naturally limited by the fact that the research project is still in its initial phase and needs to be completed by the subsequent field seasons employing various other ways of investigation (surface collection resampling, test pits, metal detector survey, geophysical survey, etc.), as well as in-depth study of the collected finds assemblages, the evidence gathered during the pilot season 2023 promises a significant contribution to the knowledge on the past landscape development in the Central Asian foothills. The complementary research of the Kulal Tepa Archaeological Project combined with the Czech-Uzbekistani Archaeological Expedition's past and ongoing research in the area will hopefully provide archaeologists with – in the context of northern Bactria-Tokharistan – a unique dataset on the development of landscape use during the Antique period.

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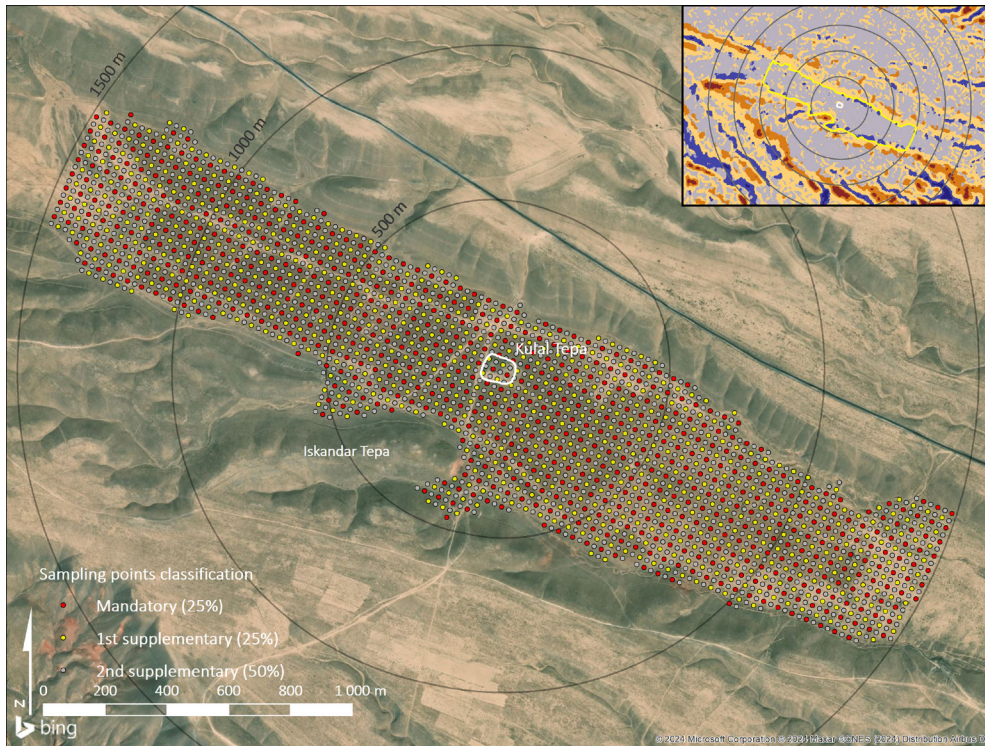
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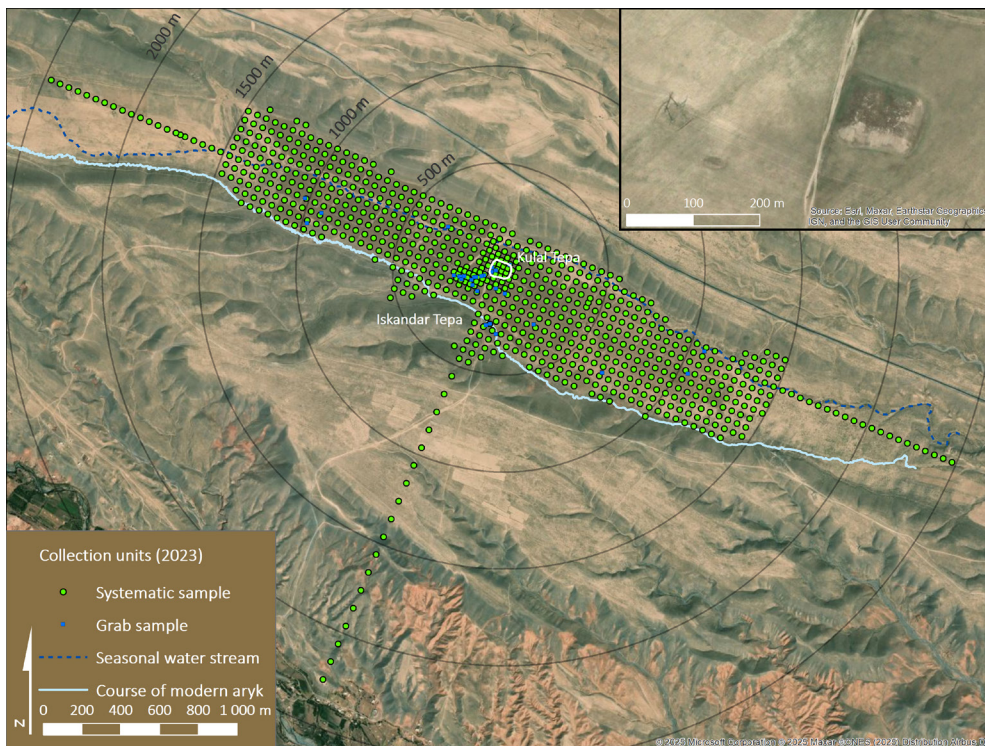
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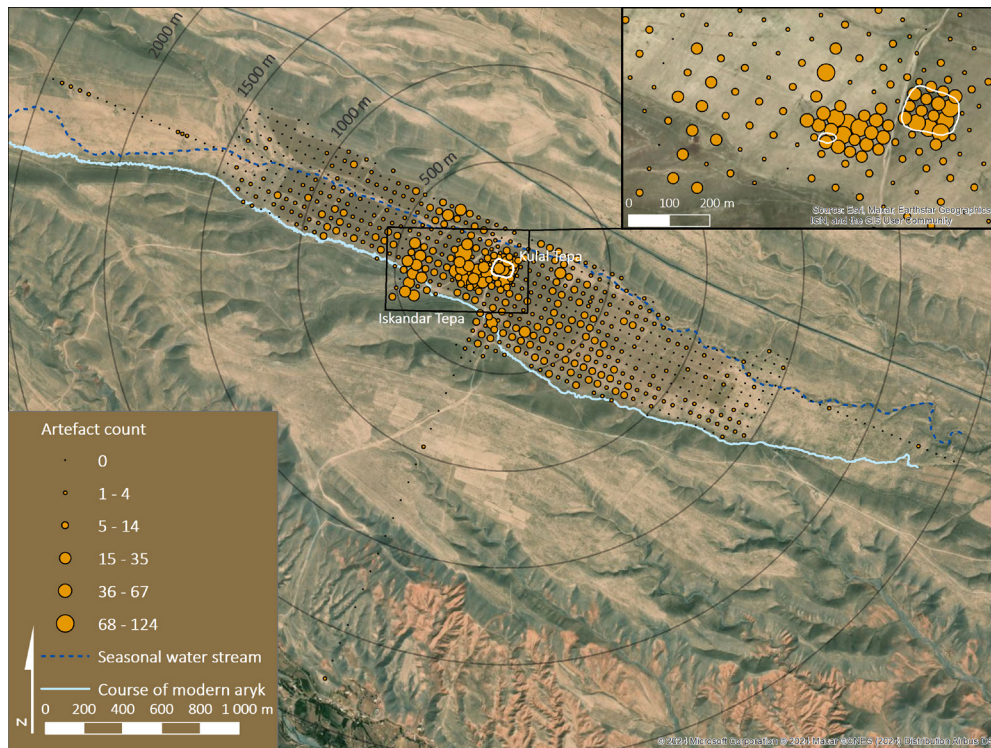
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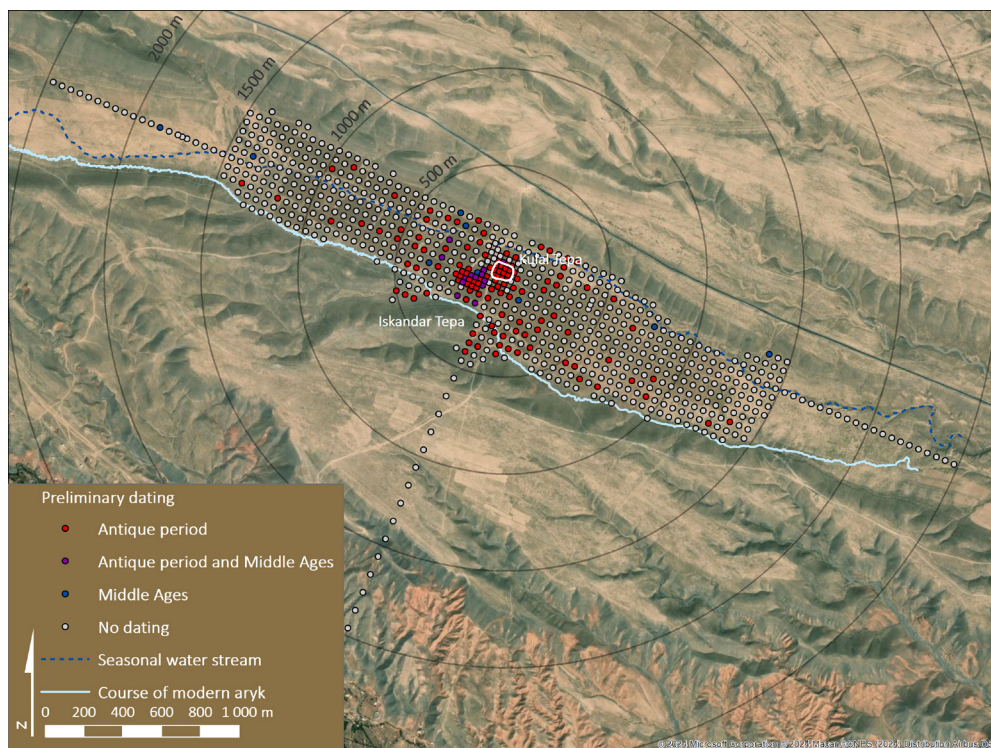
Pl. 3/1: Kulal Tępa survey. Sampling points classification and the definition of the systematic survey area in the 2023. Inset: TPI-based geomorphological classification with the flat valley bottom marked yellow (SRTM). Map by J. Havlík. Basemap: Bing.



Pl. 3/2: Kulal Tępa survey. Collection units surveyed in the 2023 season. Basemap: Bing. Inset: Kulal Tępa - Tigrman Tępa core area. Basemap: Esri. Map by J. Havlík.



Pl. 3/3: Kulal Tewa survey. Artefact count - systematic collection units only. Basemap: Bing. Inset: Kulal Tewa - Tigrman Tewa core area. Basemap: Esri. Map by J. Havlík.



Pl. 3/4: Kulal Tewa survey. Preliminary dating of the ceramic material within the collection units. Quantity of finds is not taken into account. Map by J. Havlík. Basemap: Bing.