

IBEXES ON BLACK STONES: NEW PETROGLYPHS IN SURKHANDARYA (South Uzbekistan)

INTRODUCTION

Rock art is not unique in the regions of Central Asia; in south Uzbekistan, this phenomenon has not been closely studied yet for the simple reason that no sites with rock art have been discovered.¹⁾ The discovery of the petroglyphs occurred during the Czech-Uzbekistani-French archaeological expedition in the autumn of 2015, in the Sherabad District in Surkhandarya Province, south Uzbekistan. Several clusters with petroglyphs were discovered during two seasons of research (2015, 2016), and all of them were carefully documented and have been analysed.

GEOGRAPHICAL CONTEXT AND ENVIRONMENTAL CONDITIONS

The research area is situated in the western part of the Sherabad District of the Surkhandarya Province, south Uzbekistan, in the vicinity of the Zarabag oasis. The border between Uzbekistan and Turkmenistan runs nearby the research area, 15 km to the west of the Zarabag village, along the ridge of the Kugitang Mountains.

¹⁾ The only exception is the well-known site of Zaraut Kamar, where the rock paintings under a small rock overhang were discovered in the first half of the 20th century—Formozov (1965, 1966, 1969); Khujanazarov (2011): 109; Rozwadowski (2004): 39; Jasiewicz-Rozwadowski (2001).

It is to be found in the foothills of the Kugitang Mountains, which belong to the Gissar range—one of the ranges of the Pamir-Alays.²⁾ The slopes of the Kugitang Mountains (with the highest peak being Airibaba at 3138 m.s.l.) are long and gentle in the west of the range and short and steep in the east, which is typical for the Gissar Ranges.³⁾

The research area has the form of a foothill steppe, at an approximate elevation of between 700–1500 m.s.l., with a continental arid climate, where high summer and low winter temperatures are usual. The precipitation (approximately 200 mm) is concentrated mainly in the winter and spring seasons; there is none or very little during the rest of the year.⁴⁾

The landscape consists of vast rocky outcrops and elongated low ridges up the dry riverbeds, comprising of stone soils with sparse vegetation. The loose lying stones occur on the slopes of the ridges (Fig. 1). Some of them have a surface covered by a black patina, which strongly contrasts with the surrounding landscape, and on which the majority of the study petroglyphs occur. A geological analysis of these stones has shown that the petroglyphs are not associated with any specific type of stone or the black patina deposits on various types of rocks. The three samples that were analysed were found to be igneous rocks, specifically: granodiorite, lightly metamorphosed basalt, and peridotite and skarn deposits.

The steppe belt in the Kugitang Piedmonts is irrigated by several water sources. The three main seasonal rivers—the Shalkan Darya, the Machayly Darya, and the Kyzylalmi Darya—run from the mountain range mainly to the south-east, and the intensity of the flow rate depends on the precipitation in the mountains. Besides the seasonal rivers, there are springs in the still inhabited oasis, and *karez*s⁵⁾ had also been used during the past in several places in the foothills of the Kugitang Mountains.⁶⁾

²⁾ Černík—Sekyra (1969: 206).

³⁾ Votýpka (1982: 304).

⁴⁾ Votýpka (1982: 304).

⁵⁾ *Karez*s are the underground tunnels that collect the underground water and bring it to the places where it is needed—Chelebi (1983: 234).

⁶⁾ Karmysheva (1976: 50, 129).

TWO SEASONS OF RESEARCH

A local herder, Rustam Sukhrobov, from the village of Zarabag, showed the first of the previously unknown petroglyphs to us in the autumn of 2015. Based on this find, we focused on the detection of further petroglyphs. The first season of prospecting and documentation took six days in the field at the turn of September and October 2015.⁷⁾

The research continued the following season, in the summer of 2016, and it also took six days in the field at the turn of August and September. The activities were supported by the student project named ‘Petroglyphs in Surkhandarya Province (South Uzbekistan)’ by the Faculty of Arts at Charles University, led by Anna Augustinová, and supervised by Ladislav Stančo. The project will also continue in the season of 2017.

METHODS OF DOCUMENTATION

The documentation of the petroglyphs was conducted in the same manner in both seasons of the research and was carried out in several steps. We paid attention to every stone with any sign of human intervention—not only to the clearly recognizable motifs. This detailed documentation was necessary for the projection of the placement of the petroglyphs in the landscape.

Each of the stones was localized by GPS (Garmin eTrex and Topcon GMS-2), and its normalized description was made with an emphasis on the specific characteristics

Each of the stones was also photographically documented,⁸⁾ and selected stones were documented in multiple photographs. This manner of documentation has enabled the creation of a 3D model of the stone or the creation of an orthophotograph⁹⁾ (Fig. 2). Afterwards, the spatial data was processed in QGis software, the data for the particular stones was processed in MS Access, and the clearly recognizable petroglyphs chosen were redrawn in Adobe Illustrator.¹⁰⁾ During the evaluation of the motifs on the stones, we used the

⁷⁾ Augustinová—Stančo (2016: 122–138).

⁸⁾ The photographic documentation of the petroglyphs was made by A. Augustinová, L. Stančo and J. Tlustá (in the season 2015) and by A. Augustinová, J. Kysela, K. Paclíková and L. Stančo (in the season 2016).

⁹⁾ The orthophotographs have been created by K. Paclíková.

¹⁰⁾ The redrawing of the petroglyphs is in progress. The aim is to create a complete

software DStretch¹¹) (Fig. 3). Thanks to the high contrast of the engraving/paintings on the retouched photograph, this has created an entirely new perspective on the documented petroglyphs.

The only available topographic map for the research area had been created by the Soviet Military in 1983 (1:100 000) and was not sufficient for our aims. We used the satellite imagery of Google Earth as the underlying map for our work.

THE PETROGLYPHS IN THE KUGITANG PIEDMONTS

During both seasons (autumn 2015 and summer 2016), we detected 144 stones and up to now we can recognize six clusters (Za_01–06) where the stones with petroglyphs are concentrated (Fig. 5). We expect the number of petroglyphs to increase during following seasons. The petroglyphs occur on loose lying stones with black patina, which strongly contrasts with the surrounding landscape. Each of the documented stones has its own number (P001–144).¹²

They are situated at an average altitude of 1072 m.s.l.; however, in fact, each of the clusters lies at quite a different altitude.¹³ The average size of the surface with a motif is 52 × 38 cm, and the size of the motifs/compositions of motifs corresponds to the fact that the petroglyphs occur on loose lying stones, not on the rock walls.

The first cluster (Za_01) is situated on the slopes of a low range up the dry riverbed and contained 31 stones with 64 petroglyphs. The range runs from the south-east end of the Zarabag village in the direction of the Burgut Kurgan site. The average elevation, where the stones of this cluster are situated is 922 m.s.l. (P012—the highest lying stone is 920 m.s.l.; P008—the lowest

catalogue of the documented petroglyphs supplemented by the redrawing at the end of the project 'Petroglyphs in Surkhandarya Province (South Uzbekistan)'.

¹¹ <http://www.dstretch.com/>

¹² In the case that there are more motifs on different parts of the stone that are clearly separated, the single sites are characterised by the letter (e.g. P061a, P061b).

¹³ The lowest altitude of stones occurs in the cluster Za_02 (approximately 864 m.s.l.) and the highest stones with petroglyphs are situated in the cluster Za_05 (approximately 1183 m.s.l.).

lying stone is 866 m.s.l.). Apart from one (P046), all of them occur on the left bank slopes of the dry riverbed—only the petroglyph P046 is situated on the upper third of the opposite slope.

The second group (Za_02) is concentrated on the range that runs from the Burgut Kurgan site to the east. The slopes are noticeably steeper than in the cluster Za_01, and it is often very difficult to move on this slope. It is necessary to take into consideration the same conditions at the moment of the creation of the petroglyphs. The cluster contains 11 stones, with 32 petroglyphs lying on the south slopes. The average elevation of the stones is 856 m.s.l. (P063—the highest lying stone is 876 m.s.l.; P066—the lowest lying stone is 854 m.s.l.).

As of now, the most extended cluster (Za_03) occurs on the slopes on the range that runs from the north-west end of the Zarabag village to the village of Kampyrtepa and then to the north of this village. Up to the present, 68 stones with 181 petroglyphs have been documented, at an average altitude of 1129 m.s.l. (P104—the highest lying stone is 1,225 m.s.l.; P061—the lowest lying stone is 1068 m.s.l.). The stones are situated on the main range (running in the north-west to south-east direction) as well as on the smaller ranges (running from the main range in the south-west direction). Most of the stones with petroglyphs occur on the slopes facing the south or alternatively to the south-west.

The fourth cluster (Za_04) is situated in the vicinity of the first two clusters (Za_01 and Za_02). The slopes are orientated—as are other clusters—to the south or a little less to the south-west, and they are considerably gentler than in other clusters. They slope down to the wide river bed of the seasonal river Shalkan, flowing from the Zarabag oasis to the village of Kayrit. Twelve stones with 24 petroglyphs have been documented in this cluster, at an average altitude of 886 m.s.l. (P051—the highest lying stone is 903 m.s.l.; P059—the lowest lying stone is 860 m.s.l.).

The fifth concentration represents the cluster Za_05. There is a very high probability there will be a lot more stones with petroglyphs, while the slopes of this group have not yet been observed completely. For now, there have been twelve stones with 24 petroglyphs documented, and this cluster represents the highest lying cluster at an average altitude of 1183 m.s.l. (P130—the highest lying stone is 1229 m.s.l.; P127—the lowest lying stone is 1100 m).

The last concentration (Za_06) is situated to the north of the village of Karabag, and ten stones with 27 motifs have been detected there.

MOTIFS

Among the 333 motifs, there are 166 clear objects (animals, human figures, chariots etc.), 52 motifs have the form of unspecified animals, and 91 motifs represent geometric patterns or not clearly recognizable objects.

Among the recognizable animals, the most plentifully represented ones are of various species of ibexes and goats (115 depictions)¹⁴). The second most frequently depicted animal on the petroglyphs represent camels (15 depictions), even though, in comparison with ibexes and goats, this number is almost negligible. There are also human figures depicted on the petroglyphs (9 depictions)—sometimes alone and sometimes in interaction with animals or objects. The next group of motifs represents chariots (4 depictions), which are sometimes with draught animals and depictions of loose wheels (17 depictions). Other recognizable motifs represent cattle or snakes.

Among the geometric patterns, the motif of a quadrangle with a point in the middle is often depicted. Sometimes, this motif represents the lower part of the ibex or goat (chest and legs connected with the line that represents the ground and the point in the middle of this quadrangle). Several other motifs represent geometric patterns that are reminiscent of the number eight or glasses.

DATING OF THE PETROGLYPHS AND THE LANDSCAPE CONTEXT

The dating of the petroglyphs is a complicated issue. If we focused on the absolute dating of the petroglyphs, we could take into consideration dating through XRF analysis (X-ray fluorescent analysis). This method enables the time of the creation of the petroglyph to be determined through measuring the level of accumulated manganese on the surface of the stones/petroglyph. The dating of petroglyphs using this method has been carried out in the USA

¹⁴) In some cases, it may be possible to connect some of the petroglyphs to specific species—even the local inhabitants termed the depictions using definite appellations (*arkhor/ markhor* etc.), not by summarizing the term goat. It is possible to take into consideration four species (*Arkhor/Moufflon—Ovis orientalis bocharensis* (18 depictions); *Markhor—Capra falconeri heptneri* (8 depictions); Wild Goat—*Capra aegagrus* (7 depictions), Siberian Ibex—*Capra sibirica* (7 depictions).

in Coso Range¹⁵⁾ and Colorado Plateau.¹⁶⁾ The deposition of manganese on the surface depends on many factors (orientation of the stone to the cardinal points; type of the stone; amount of dust; local climatic conditions etc.) and, because in Central Asia this method has not been used yet, there is no available calibrated curve.

As can be seen on one of the petroglyphs in the surroundings of Zarabag (P111, Za_03; Fig. 4), it is not possible to state that the rate of patina deposited on the surface clearly speaks for the age of the petroglyph. The whole creation of the engraving—based on the style, technique and composition of motifs—can be dated to a single moment. But the contrast between the petroglyph and the surrounding surface is very different on the other sides of the stone. While on a more vertical one, the contrast between the petroglyphs and the surrounding surface is very high—even on the top of the side the patina is not yet deposited—on the more horizontal side, which is more exposed to the sun, rain and other external factors, the difference between the engraved motifs and the surrounding surface is almost invisible.

XRF analysis represents an interesting possibility of how to treat the petroglyphs, but the use of this method in the study area is conditioned by the creation of the calibrated curve beforehand. On top of that, the example of the stone P111 shows how strong the influence of external conditions on the rate of the patina on the stone and petroglyph surface is.

Because there was not any possibility of dating the petroglyphs in the Piedmonts of the Kugitang Mountains using natural science methods, we analysed the stylistic and iconographic aspects of the motifs in comparison with similar depictions in other regions. Most of the depicted motifs evince similar characteristics (techniques, style, theme). Based on such analogies, we can date the majority of the petroglyphs in the study to the Late Bronze Age and Early Iron Age.

Besides the rock art in numerous sites, these two periods are represented in the study region: at excavated sites such as Tilla Bulak,¹⁷⁾ Kayrit,¹⁸⁾ and Burgut Kurgan,¹⁹⁾ at sites detected during the prospecting in the piedmont

¹⁵⁾ Lytle et al. (2008).

¹⁶⁾ McNeil (2010: 9–21).

¹⁷⁾ Kaniuth et al. (2010: 129–164); Kaniuth et al. (2011: 261–282); Gruber–Il'yasov–Kaniuth (2012: 339–375).

¹⁸⁾ Stančo et al. (2014: 31–41); Stančo (2016: 73–85).

¹⁹⁾ Stančo et al. (2016: 86–111); Lhuillier (2016: 112–121).

steppe belt,²⁰⁾ at the sites detected during the recording of the archaeological evidence in the oases.²¹⁾ All of this archaeological evidence of the erstwhile presence of the inhabitants (settlement sites, burial sites, irrigation systems, rock art etc.) create the form of the cultural landscape in a specific period.

The following examples of analogies, which could help us to date the petroglyphs in the study area, represent only a sample of the wide collection of analogous rock art in the area of Eurasia.

The first cases of similar motifs can be found in the extended complex of petroglyphs in the Chu-Ili Mountains in the Kulzhabasy Range in the Zhambyl Region, south Kazakhstan.²²⁾ Among the motifs dated to the Late Bronze Age, the frequently depicted goats and ibexes can be seen as well as the camels, chariots and wheels.²³⁾ Even here, there is evidence of human activities during the Bronze Age.²⁴⁾

Another analogy of the depicted goats/ibexes and wheels can be seen in the complex of petroglyphs at the site of Jorbat in north Khorasan Province, northern Iran. A stylistic and iconographic similarity between motifs here and the motifs in Kugitang Piedmonts is obvious. The petroglyph complex lies in the vicinity of the site called Rafteh, which is dated to the Bronze Age and early Iron Age,²⁵⁾ and it represents a similar landscape context of these two periods, as in the piedmonts of the Kugitang.

Yet another analogy comes from the more distant region—Ukok Plateau in the Altai Mountains—the stylistic similarity is obvious and in the context of the nomadic societies that cover long distances, it is not incomprehensible. Here, depicted goats and ibexes, similar to those in the piedmonts of the Kugitang, have been dated to the south Siberian Late Bronze Age, represented in the area by the Afanasievo culture.²⁶⁾

²⁰⁾ Stančo (2016: 73–85).

²¹⁾ Augustinová et al. (2015: 262–281); Augustinová (2016).

²²⁾ Maryashev—Zheleznyakov (2013); Sala (2004, 18–33).

²³⁾ Maryashev—Zheleznyakov (2013: 112, 139)

²⁴⁾ Sala (2004, 23–25).

²⁵⁾ Vahdati (2010); Vahdati (2011: 177–187).

²⁶⁾ Miklashevich (2003: 88–118).

CONCLUSION

The petroglyphs are an inseparable part of the cultural landscape, which was created and used by the inhabitants in the past. They represent an important source for the study of settlement patterns, and they have the same significance as the settlements or burial sites.

This brief report focused on the introduction of the newly discovered rock art in Surkhandarya Province, research on which is ongoing. For now, it is obvious that the majority of the petroglyphs in the microregion of the Zarabag oasis in the piedmonts of the Kugitang Mountains could be based on stylistic and iconographic analogies, dated to the Late Bronze and Early Iron Age—to those periods that are numerically represented in the study region by numerous archaeological sites. All of this archaeological evidence allows us to slowly reconstruct the form of the cultural landscape in these periods.

Acknowledgement

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Fig. 1: The landscape in the piedmonts of the Kugitang Mountains (range in the background) – slopes with the petroglyphs in the cluster Za_05, (photo by J. Kysela).

0,25 m



Fig. 2: Orthophotograph of the petroglyph P050 – cluster Za_03 (created by K. Paclíková).



Fig. 3: Highlighting of the contrast on the petroglyph P002 in the cluster Za_01 using the software DStretch – A: photograph conducted in the field; B: photograph processed in DStretch), (photo conducted and processed by A. Augustinová).



Fig. 4: The petroglyph P111, cluster Za_05 (photo by J. Kysela).

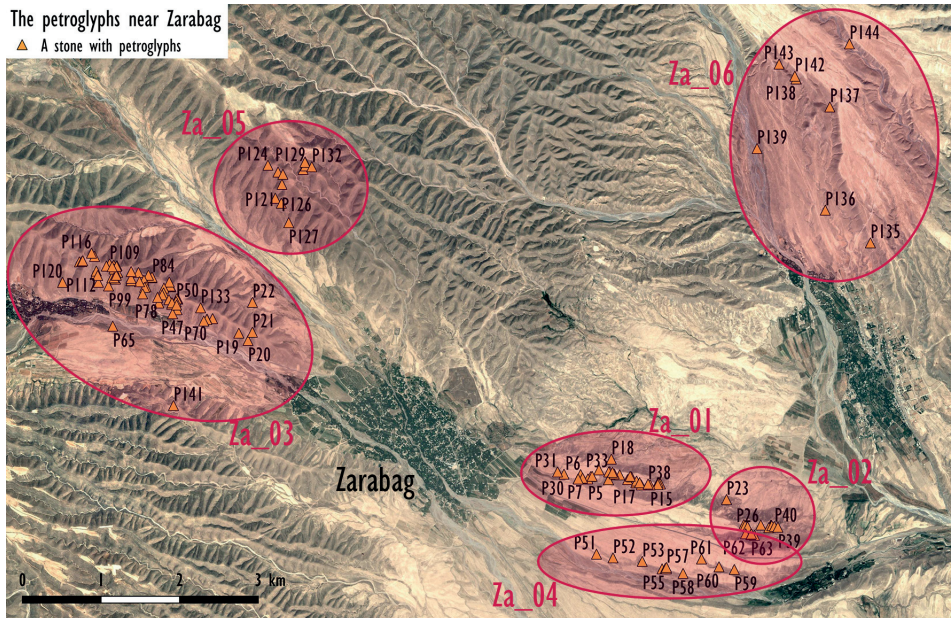


Fig. 5: The petroglyphs in the surroundings of the Zarabag oasis (clusters Za_01–06), (map by A. Augustinová).