

ЗАРУБЕЖНАЯ АРХЕОЛОГИЯ

Research Article / Научная статья

УДК 902.035:903.27

[https://doi.org/10.14258/tpai\(2022\)34\(4\).-09](https://doi.org/10.14258/tpai(2022)34(4).-09)

IMAGERY OF THE KURTEKE ROCK-SHELTER (EASTERN PAMIR)

Lydia V. Zatkina¹, Nuritdin N. Sayfulloev²

¹Institute of Archaeology and Ethnography SB RAS, Novosibirsk, Russia;
lidiazotkina@gmail.com, https://orcid.org/0000-0002-1912-3882

²A. Donish Institute of History, Archaeology and Ethnography
at the National Academy of Sciences of Tajikistan, Dushanbe, Tajikistan;
sayfulloev.nuritdin@gmail.ru, https://orcid.org/0000-0001-8540-2145

¹Corresponding Author

Abstract. The Kurteke rock-shelter images in the Eastern Pamirs were discovered in 1958. Later, in 1960, V.A. Ranov studied the paintings as well as the archaeological layers. After a significant break, the fieldwork at the site was resumed in 2018 and 2019. Integrated interdisciplinary research led by S.V. Shnaider clarifies the chronology of the stratified Kurteke site, the paleoenvironmental features of the region and provides new data on the time of human occupation of the Eastern Pamir. Earlier, as part of general studies on this site, we published new findings on the rock paintings presented on the two walls of the rock-shelter. This article focuses on generalization of currently available data on Kurteke murals.

V.A. Ranov noted that the state of preservation of the images is extremely poor: most of them are not identifiable and look like blurring red mineral pigment. DStretch color filtering treatment allowed us to clarify some contours and details of the images, necessary for further interpretation. It is worth noting that some of the pigment spots visible without processing acquired clearer contours. The other part of spots neither in the field, nor on the photos without color filtration was not even recorded. Moreover, after treatment it is difficult to correlate the majority of paintings with concrete imagery and to find parallels to them.

Key words: Eastern Pamir, Kurteke rock-shelter, rock art, painted images, rock art recording, DStretch

Acknowledgments: the study is funded by RFBR project №20-09-00387 “Rock Art of the Eastern Pamirs: Chronology, Attribution, Context”.

For citation: Zatkina L. V., Sayfulloev N. N. Imagery of the Kurteke Rock-Shelter (Eastern Pamir). *Teoriya i praktika arheologicheskikh issledovanij = Theory and Practice of Archaeological Research.* 2022;34(4):148–162. (In Russ.). [https://doi.org/10.14258/tpai\(2022\)34\(4\).-09](https://doi.org/10.14258/tpai(2022)34(4).-09)

ИЗОБРАЖЕНИЯ НАВЕСА КУРТЕКЕ (ВОСТОЧНЫЙ ПАМИР)

Лидия Викторовна Зоткина^{1*}, Нуритдин Назурлоевич Сайфулоев²

¹Институт археологии и этнографии СО РАН, Новосибирск, Россия;
lidiazotkina@gmail.com, <https://orcid.org/0000-0002-1912-3882>

²Институт истории, археологии и этнографии
им. А. Дониша Национальной академии наук Таджикистана, Душанбе, Таджикистан;
sayfulloev.nuritdin@gmail.ru, <https://orcid.org/0000-0001-8540-2145>

*Автор, ответственный за переписку

Резюме. Наскальные изображения навеса Куртеке на Восточном Памире открыты в 1958 г. Позже в 1960 г., рисунки, как и археологические слои, были изучены В.А. Рановым. После значительного перерыва полевые работы на памятнике были возобновлены в 2018 и 2019 гг. Комплексные междисциплинарные исследования под руководством С.В. Шнайдера позволили уточнить хронологию стратифицированной стоянки Куртеке, особенности окружающей среды в этом регионе и получить новые данные о времени заселения Восточного Памира. В рамках обобщающих работ по этому памятнику ранее были опубликованы в том числе и новые данные о наскальных изображениях, представленных на двух стенах навеса. Эта статья посвящена обобщению имеющихся на настоящий момент сведений о наскальных рисунках Куртеке.

В.А. Ранов отмечал, что состояние сохранности изображений крайне слабое: большая часть из них не определимы и выглядят как размытые пятна красной минеральной краски. Обработка с помощью метода цветовой фильтрации DStretch позволила уточнить некоторые контуры и детали изображений, необходимые для последующей интерпретации образов. Стоит отметить, что часть фиксировавшихся без обработки пятен пигмента приобрела более четкие контуры. Другая часть пятен ни в полевых условиях, ни на фотографиях без цветовой фильтрации даже не фиксировалась. И после обработки большинство росписей сложно соотнести с конкретными образами и тем более найти им аналогии.

Ключевые слова: Восточный Памир, навес Куртеке, наскальное искусство, крашеные изображения, документирование наскальных изображений, DStretch

Благодарности: работа выполнена при поддержке РФФИ, проект №20-09-00387 «Наскальная живопись Восточного Памира: хронология, атрибуция, контекст».

Для цитирования: Зоткина Л. В., Сайфулоев Н. Н. Изображения навеса Куртеке (Восточный Памир) // Теория и практика археологических исследований. 2022. Т. 34, №4. С. 148–162. [https://doi.org/10.14258/tpai\(2022\)34\(4\).-09](https://doi.org/10.14258/tpai(2022)34(4).-09)

Introduction

Today there are only a few known sites of rock art in the Eastern Pamir. The majority of them are represented by painted images of mostly very poor state of preservation (Madian, Shakarak, Shakhty II, Zhukov's cave, Naizatash) (Zotkina, Bobomulloev et al., 2022). The most famous rock art site in the region today is the Shakhty rock shelter (Ranov, 1961; Zotkina, Bobomulloev et al., 2022, p. 62–64; Zotkina, Abolonkova, Kurbanov et al., 2022; Zotkina, Malikov, Shnaider et al., 2022). Kurteke rock art site can be considered the second most important in the region. It is located 40 km southeast from Murgab village and only couple kilometers from the Shakhty rock-shelter at an absolute altitude of 3980 m a.s.l. (Fig. 1, 2).

The shelter is formed by small niche in the rock outcrop of about 100 m long and 15–20 m high in the Kurteke valley. In 1958 S.S. Ikonnikov one of the members of the Pamir expedition headed by V. A. Ranov (2016, p. 54) reported new discovery of murals fragments not far

from the Shakhty rock-shelter. The site was studied by V.A. Ranov in 1960, it was initially called Nautaka and later renamed to Kurteke²⁷.

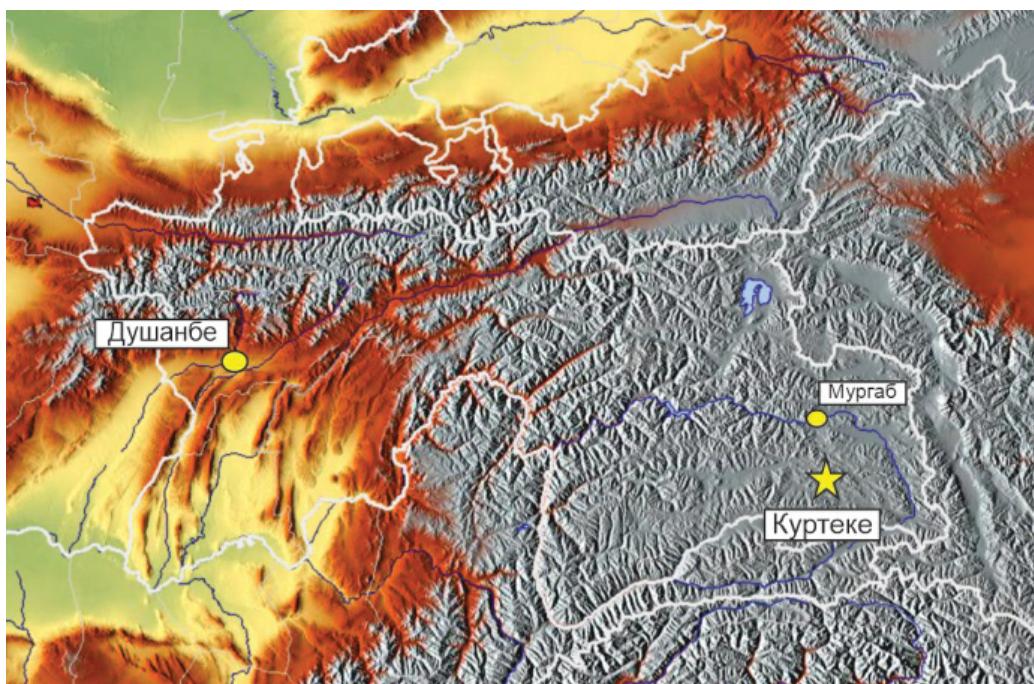


Fig. 1. Location of the Kurteke rock-shelter

Рис. 1. Расположение скального навеса Куртке

During the excavations V.A. Ranov discovered two archaeological layers with lithic industries and fire-places. The first layer was attributed to the Late Bronze age on the basis of typical ceramics for this period, bronze arrow-heads and some lithic artifacts; the second layer was referred to Neolithic and Chalcolithic periods based on the typical microlithic industry (Ranov, 1962). New findings from a multidisciplinary study of the Kurteke site precise radiocarbon age of the layers and provide new data on the human activities and paleoenvironmental conditions (Shnaider et al., 2021; Shnaider et al., in press).

The fragments of rock paintings were carefully documented and studied (Ranov, 1964). V.A. Ranov noticed two hues of red pigment, burgundy and brick shade. He divided into groups the murals fragments of northern and eastern walls of the shelter.

On the northern wall the researcher identified two anthropomorphic figures with their hands raised. These images were described as stylized and schematic thus parallels could be found all around the world from Neolithic to the Bronze age at least (Ranov, 2016, p. 56; Zotkina, Abolonkova, Alysher kyzzy et al., 2022, p. 213, fig. 7). The images on the eastern wall are

²⁷ From the diary of the head of the Pamir expedition, V. A. Ranov, 1960. Storage place is A. Donish Institute of History, Archaeology and Ethnography at the National Academy of Sciences of Tajikistan, Dushanbe, Tajikistan.

worse preserved. V. A. Ranov (2016, p. 56) described them as concentrations of wavy and straight lines and avoided any interpretation because of ambiguous outlines.

The studies of recent years made it possible to reveal by DStretch processing some figures which we considered previously as reddish spots or images with unclear contours. The most of new data of the Kurteke figures have been published as part of more general studies (Zotkina, Bobomulloev et al., 2022, p. 64–65, fig. 2; Shnaider et al., 2021, p. 288, fig. 3). Hence this paper focuses specifically on systematization of the Kurteke rock art which is represented by very few preserved evidences of ancient artistic activity.



Fig. 2. Overall view of the Kurteke rock outcrop from the Shakhty rock-shelter. The white arrow shows location of the Kurteke site

Рис. 2. Общий вид на скальное обнажение Куртеке из грота Шахты. Белая стрелка показывает расположение памятника Куртеке

Methods

The photographs of the Kurteke murals were made in 2019 by Nikon D750 camera equipped with Nikkor AF-S 60 mm f/2.8G ED Micro and Nikkor AF-S 105 mm f/2.8G IF-ED VR Micro lenses. Photographic recording was made at different scales (from general view to details) and at different lighting conditions (natural daylight and flash). The documenting procedure was described in details in previous papers focused on the field-work results (Zotkina, Bobomulloev et al., 2022, p. 62; Shnaider et al., 2021, p. 287).

To enhance the contrast and refine the contours of images the authors used DStretch — a method based on color filtering of photographs, namely, enhancing channels of different color spaces (Harman, 2015).

Materials

Following V. A. Ranov, we distinguish two main panels with rock imagery on the Kurteke rock-shelter. They are located directly above the excavation area and they are adjacent to each other (Fig. 3).

There are three graphic elements on the first frontal panel (northern wall) most likely representing a single composition (Fig. 3.-3; 4). To the right of the first panel there is a second one which contains four other paintings (Fig. 3.-3; 5).

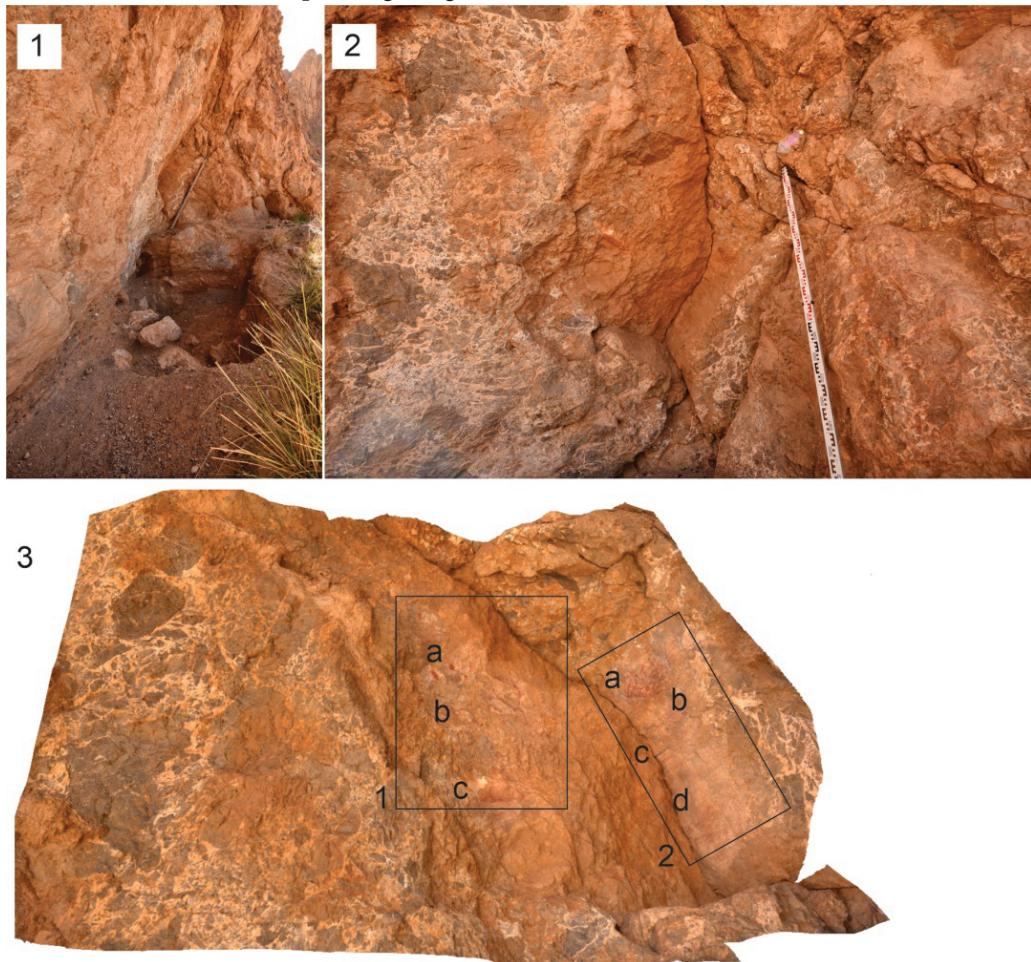


Fig. 3. Overall view of the Kurteke site: 1 — excavation are; 2 — overall view of two adjacent panels with painted images; 3 — 3D-model of the main panels with identified areas of rock paintings

Рис. 3. Общий вид на памятник Куртеке: 1 — вид на раскоп; 2 — общий вид на две прилегающие друг к другу плоскости; 3 — 3D-модель с указанием расположения наскальных изображений

Results

DStrech-treatment of the photographs reveals some outlines which can be considered as figures and geometric motifs. And here we present some results of this kind of processing and interpretations of recognizable figures.

An uppermost graphic element on the first panel represents finger-prints (Fig. 3.-3a; 4). Some of them look like someone tried to wipe the pigment off his finger on the rock surface (indicated by an arrow on the Figure 4b).

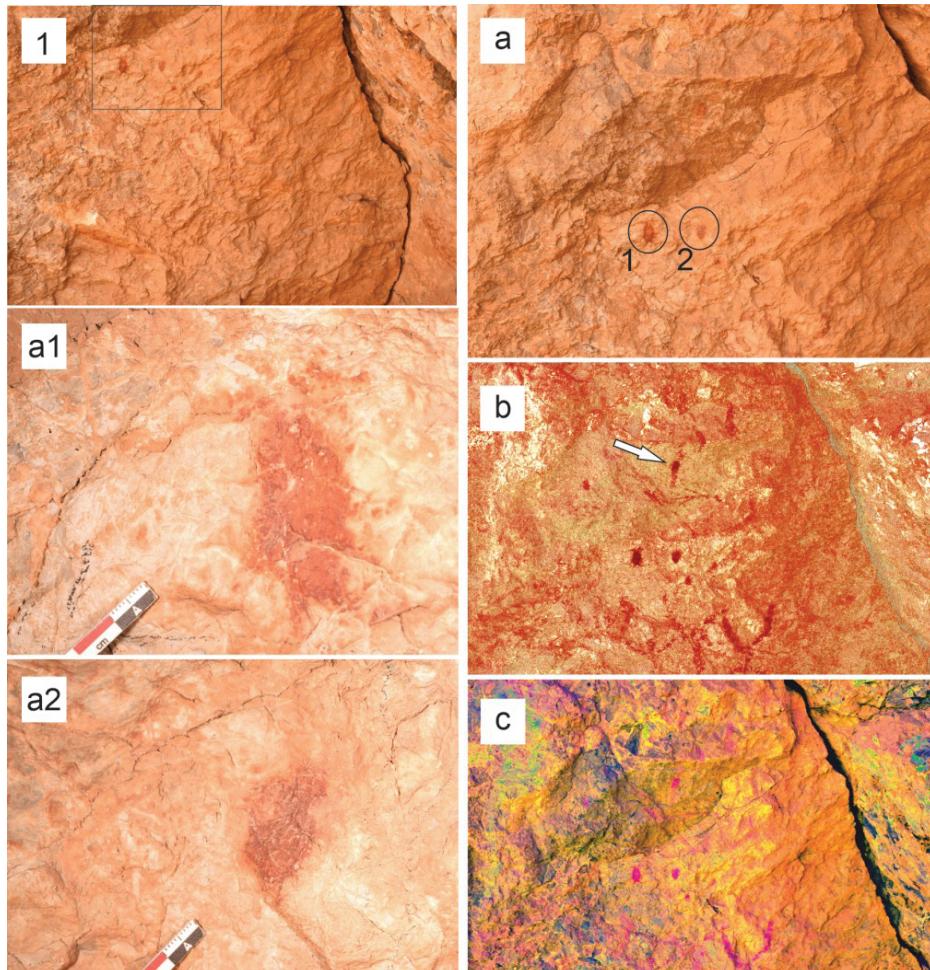


Fig. 4. The uppermost graphic elements from the first panel (northern wall): 1 – overall view on the panel with indicated location of finger prints; a – the upper part of the panel; b, c – the same photo treated with DStrech; a1 and a2 – close-up of finger prints

Рис. 4. Графические элементы в верхней части первой плоскости (северная стенка): 1 – общий вид на плоскость с указанием расположения отпечатков пальцев; а – верхняя часть плоскости; б, в – та же фотография, обработанная при помощи DStrech; а1, а2 – крупный план двух отпечатков пальцев

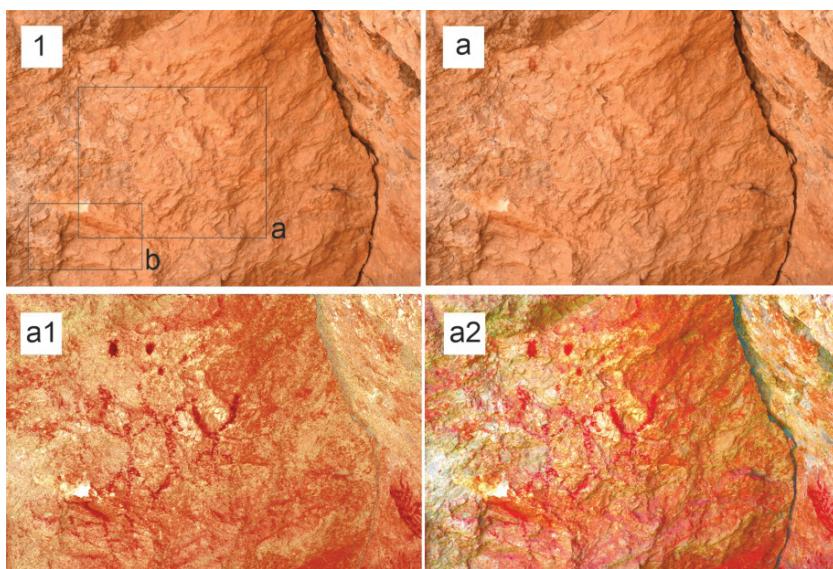


Fig. 5.1. The middle part of the first panel: 1 – overall view; a – three anthropomorphic figures; a1–a2 – photos treated with DSStretch

Рис. 5.1. Средняя часть первой плоскости: 1 – общий вид; а – три антропоморфные фигуры; а1–а2 – фотографии, обработанные DSStretch

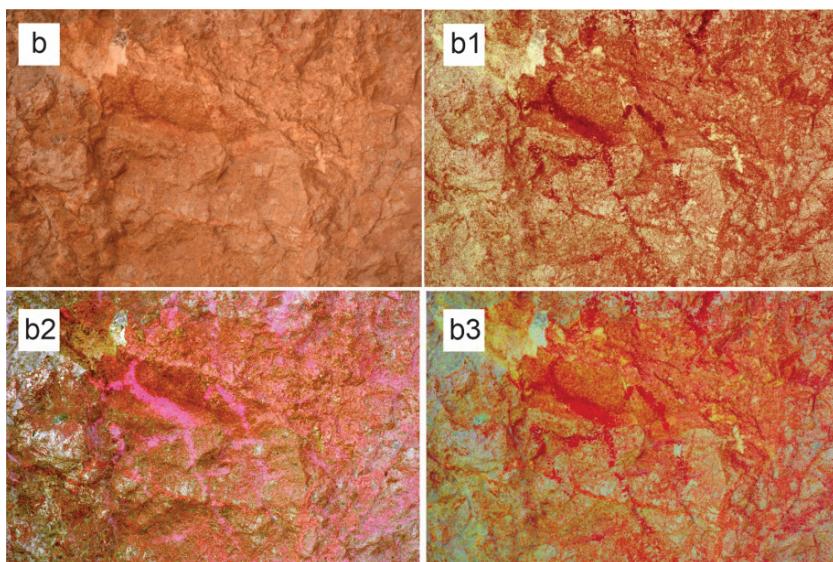


Fig. 5.2. The middle part of the first panel: b – unidentified painted lines; b1–b3 – photos treated with DSStretch

Рис. 5.2. Средняя часть первой плоскости: б – неопределимые крашеные линии; б1–б3 – фотографии, обработанные DSStretch

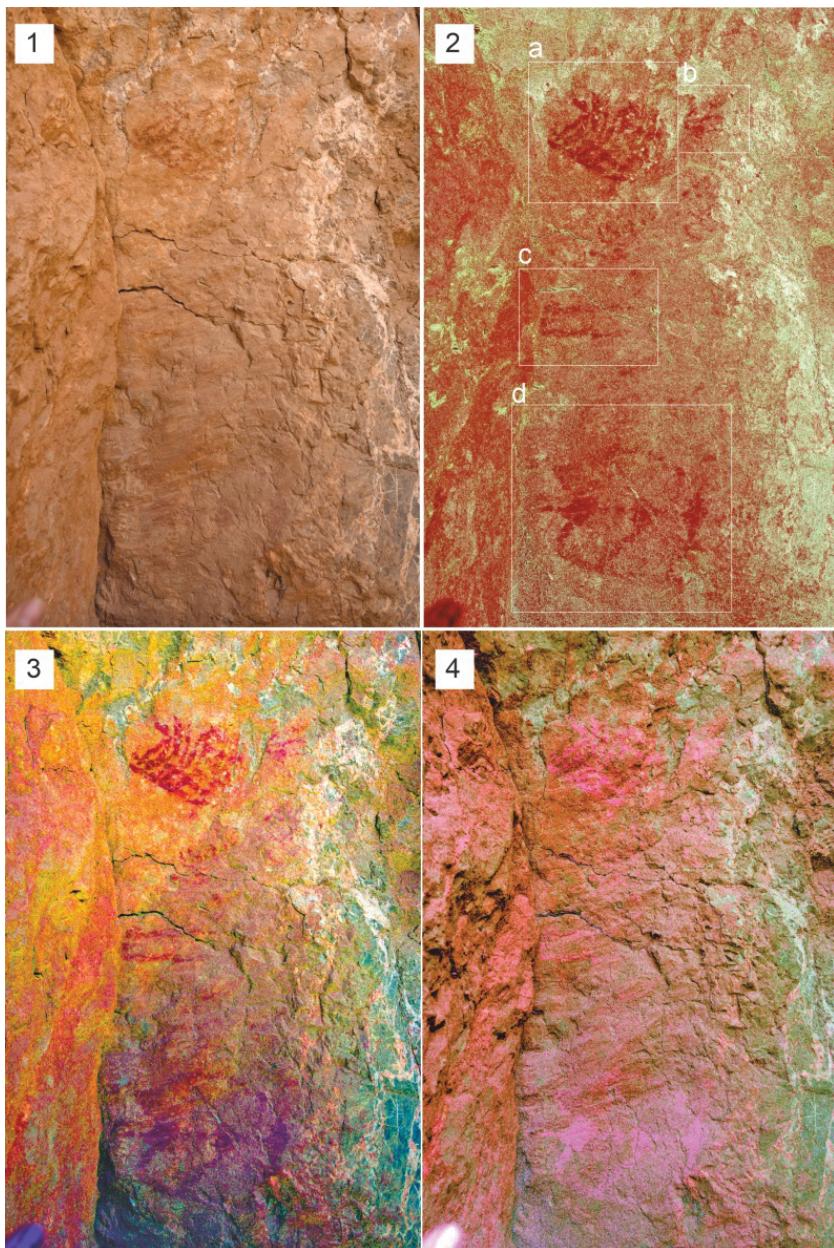


Fig. 6. The second (eastern wall): 1 – overall view of the panel; 2 – location of the paintings; 2–4 – the same photo treated with DStrech

Рис. 6. Вторая плоскость (восточная стенка): 1 – общий вид; 2 – расположение рисунков; 2–4 – первая фотография, обработанная при помощи DStrech

On the same panel V.A. Ranov (2016, p. 55, fig. 4) recorded two anthropomorphic figures called “dancing humans”. Treated photographs show more details and as we can see there

are three anthropomorphic figures (Fig. 5.1 a, a1, a2). Probably the mentioned finger prints are related to these images.

Directly underneath we distinguished several painted lines that have not previously been published and that are hard to interpret (Fig. 5.2 b, b1–b3). Probably they are not completely preserved. It cannot be excluded that all these graphic elements formed a single composition on the northern panel.

The second panel is a relatively narrow surface (Fig. 3.-3; 6). It includes at least four motifs which outlines are more or less distinguishable. As we can see on untreated photographs the pigment looks faded with natural daylight and only the biggest figures with the highest number of details and therefore with the highest pigment saturation are considered as painted motifs (Fig. 6). On the treated photographs much more graphic elements are revealed. Here we mention only four paintings but on the overall view (Fig. 6.-2–4) between a and c areas there are probably remains of almost lost painted image or some details corresponding to other figures.

As mentioned above, V.A. Ranov discovered wavy and straight lines concentration at the upper part of the panel. This motif looks different after treatment; this is some kind of geometric grid pattern (Fig. 7.1 a, a1–a3).

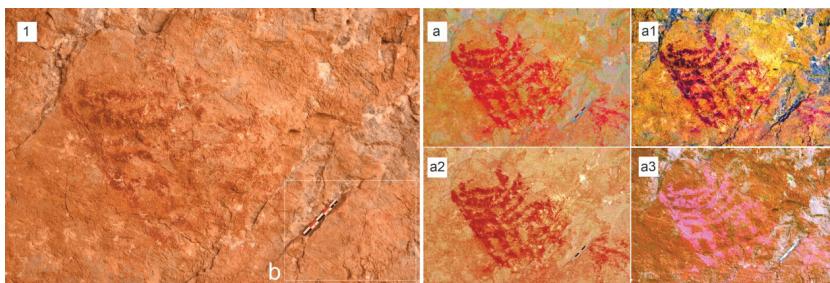


Fig. 7.1. Upper part of the second panel:
1 – overall view; a, a1–a3 – the same photo treated with DSTrech

Рис. 7.1. Верхняя часть второй плоскости:
1 – общий вид; а, а1–а3 – первая фотография, обработанная при помощи DSTrech

To the right of the motif there is a small zoomorphic figure oriented to the left, it is probably a goat with corn (Fig. 7.2). Unfortunately the state of preservation is not good enough for reliable interpretation. It could be a fragment of the previous geometric grid pattern as well.

Down below there is a graphic element probably representing a U-shape geometric motif (Fig. 8). As the most of the previous paintings this one is not well preserved. It looks like its right part was damaged.

And finally, the last motif located in the lower part of the second panel is some kind of geometric sign. Inside of sub-oval outline there are partitions, it reminds a wheel (Fig. 9). After DSTrech treatment we consider that it could be a geometric symbol, probably, an element of sophisticated ornament without direct parallels known today.

It should be noted that the surface on this section of the second panel is not modified. This area looks as if it has been abraded. However, a similar relief is found on the panels of Pamir limestone in its natural form.

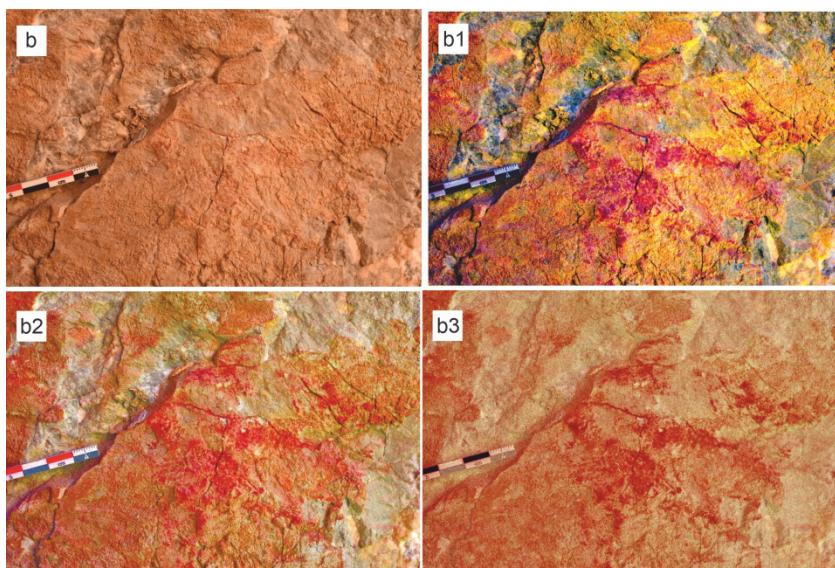


Fig. 7.2. Upper part of the second panel: b – close up of zoomorphic figure; b1–b3 – the same photo treated with DStrech

Рис. 7.2. Верхняя часть второй плоскости: b – крупный план зооморфного изображения; b1–b3 – первая фотография, обработанная при помощи DStrech

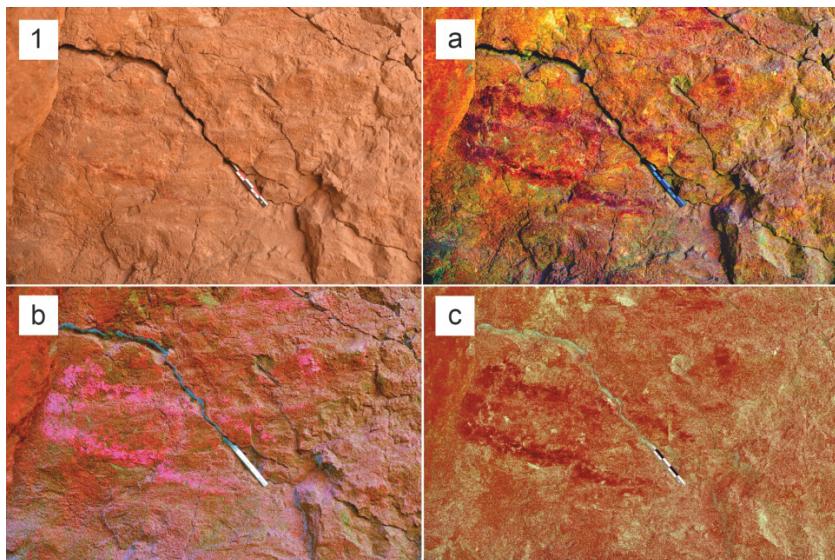


Fig. 8. Middle part of the second panel: 1 – close up of U-shape motif; a–c – the same photo treated with DStrech

Рис. 8. Средняя часть второй плоскости: 1 – крупный план зооморфного изображения; a–c – первая фотография, обработанная при помощи DStrech

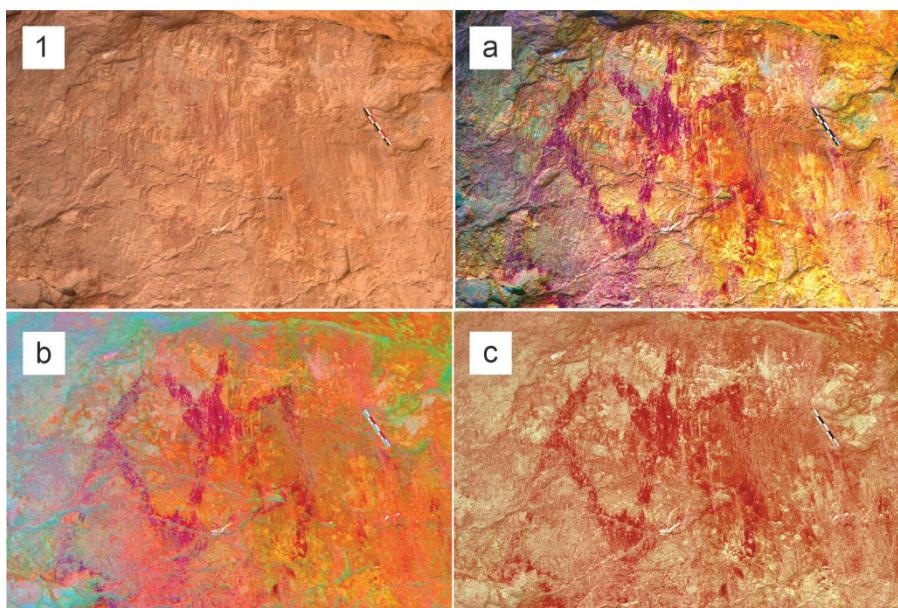


Fig. 9. Middle part of the second panel: 1 – close up of wheel-like geometric symbol; a–c – the same photo treated with DStretch

Рис. 9. Нижняя часть второй плоскости: 1 – крупный план геометрического символа, напоминающего колесо; а–с – первая фотография, обработанная при помощи DStretch

Discussion

The study of the Kurteke murals shows that most part of them are very poorly preserved and even for the motifs with relatively clear outlines it is not always possible to identify an image content. Another difficulty is that often Kurteke's paintings were made on a quite irregular surface. As a result, the pigment did not always lay down exactly as the artist wanted it to. It is not obvious if it was the issue of uneven relief or of the posterior exfoliation. Therefore, in this case it is necessary to be extremely careful with the interpretation, because the original contours of the images could be quite different.

Nevertheless, we identified several motifs: three anthropomorphic figures with finger prints above, U-shape motif, grid-like and wheel-like symbols zoomorphic figure (probably goat). Some unidentified painted lines were found as well.

Three anthropomorphic figures with finger prints above are represented on the first panel (Fig. 4 and 5.1). Grid-like and wheel-like symbols and zoomorphic figure (probably goat) are found on the second one (Fig. 7–9). Applied on quite irregular surface and poorly preserved the painted lines of the motif represented on the Figure 5.2 it reminds the contours of wheel-like sign (Fig. 9).

As for parallels, it has long been believed that the closest parallel to the Kurteke anthropomorphic figures is Ak-Chunkur site in Kyrgyzstan (Formosov, 1969, p. 80–81; Mosolova, 1987). However V.A. Ranov (2016, p. 56–57) expressed some doubts on that point, suggesting

that Ak-Chunkur's paintings was of a younger age. This parallel was based mostly on the content of images (anthropomorphic figures) and on mineral pigment application in both cases. These arguments cannot even be considered as auxiliary today (Zotkina, Abolonkova, Alisher kyzzy et al., 2022).

The identification of new images at the Kurteke rock art site let us look for other parallels. For example, the DStrech treatment of the Skakhty rock-shelter composition revealed three anthropomorphic figures with raised hands. These images are schematic and stylized too (Zotkina, Abolonkova, Kurbanov et al., 2022, fig. 2.-1). It could be the closest parallel in the region. However, we believe that typological features of the Kurteke "dancing humans" are too universal and schematic for reliable assertion of the parallels.

The wheel-like and grid-like symbols can have parallels in a wider context. Wheels images and symbols are found within the Pamirs (Akjilga site in Eastern Pamir; Vybitadara and Lyangar in Western Pamir), and much wider, in Near East and Central Asia from the Bronze Age (see for example: Kovaleva, 2011, p. 49–53, fig. 2, 22; Novgorodova, 1984, p. 59–70; Ranov, 2016, p. 64, fig. 27, 83, 102, 105, 121, 138, 147). The second geometric symbol reminds a grid with a complex internal structure. We do not know any direct parallels to this motif in the region. However, numerous grid variations can be found in the world's rock art. It is one of universal motifs not strictly tied to a specific period.

Conclusion

It is not discovery that the results of color filtration treatment provide new insights at rock art sites. This study shows how ideas about the content of rock art imagery can change when this approach is applied to a long-known site. It highlights the value of rock art re-documenting.

We believe that there are examples of Bronze Age representations among the Kurteke rock art. Nevertheless, the possibility of the earlier age of some figures cannot be ruled out as well.

REFERENCES

Zotkina L. V., Abolonkova I. V., Alisher kyzzy S., Sayfulloev N. N. Eastern Pamir Rock Art: Analogies and Concepts about the Age of These Images. *Stratum Plus*. 2022;2:203–218. (In Russ.) <https://doi.org/10.55086/sp222203218>

Zotkina L. V., Abolonkova I. V., Kurbanov R. N., Malikov D. G., Marchenko D. V., Shnайдер S. V., Sayfulloev N. N. Rock Art and Life in the Shakhty Rock-Shelter (Eastern Pamir). *Ural'skij istoricheskij vestnik = Ural Historical Journal*. 2022;77(4): 6–17. (In Russ.) <https://doi.org/10.55086/sp222203218>

Zotkina L. V., Bobomulloev B. S., Solodeynikov A. K., Abolonkova I. V., Shnайдер S. V., Sayfulloev N. N. New Data on the Rock Paintings of Eastern Pamir. *Vestnik Novosibirskogo gosudarstvennogo universiteta = Bulletin of Novosibirsk State University*. 2022;21(3):60–72. (In Russ.) <https://doi.org/10.25205/1818-7919-2022-21-3-60-72>

Kovaleva O. S. Late Bronze Age Rock Art in the Minusinsk Basin. Novosibirsk : Izd-vo Instituta arheologii i etnografii SO RAN, 2011. 160 p.

Mosolova L. M. The Most Ancient Anthropomorphic Depictions of Kyrgyzstan. In: Anthropomorphic Figurines: Prehistoric Art. Novosibirsk : Nauka, 1987. Pp. 216–223. (In Russ.)

Novgorodova E. A. World of Mongolian Petroglyphs. Moscow : Nauka, 1984. 168 p. (In Russ.)

Ranov V. A. Stone Age Paintings in the Shakhty Rock Shelter. *Sovetskaya etnografiya = Soviet Ethnography*. 1961;6:70–81. (In Russ.)

Ranov V. A. Excavation of Primitive-Communal System Sites in Eastern Pamir. *Arheologicheskie raboty v Tadzhikistane = Archaeological Works in Tajikistan*. 1962;8:6–26. (In Russ.)

Ranov V. A. Traces of Scribes in the Canopy of Kurteke. *Izvestiya Vserossijskogo geograficheskogo obshchestva = Proceedings of the All-Russian Geographical Society*. 1964;96(1):67–69. (In Russ.)

Ranov V. A. Running on the Rocks: Rock Paintings of the Pamirs. Dushanbe : Donish, 2016. 412 p. (In Russ.)

Formozov A. A. Essays on Primitive Art. Rock Images and Stone Sculptures from the Stone and Bronze Ages in the USSR. Moscow : Nauka, 1969. 255 p. (In Russ.)

Shnaider S. V., Ashastina K. A., Alisher kyzy S., Sayfullaev N., Zakabluk G. A., Chernonosov A. A., Spengler R., Zotkina L. V. The Results of the Complex Study of the Kurteke Site (Eastern Pamir). *Teoriya i praktika arheologicheskikh issledovanij = Theory and Practice of Archaeological Research*. 2021;33(4):284–286. (In Russ.). [https://doi.org/10.14258/tpai\(2021\)33\(4\).-16](https://doi.org/10.14258/tpai(2021)33(4).-16)

Harman J. Using DStretch for Rock Art Recording. *International Newsletter on Rock Art*. 2015(72):24–30.

Shnaider S. V., Zhilich S. V., Zotkina L. V., Ashastina K. A., Taylor W. T. T., Alisher kyzy S., Sayfullaev N., Koval V. V., Baranov S. V., Chernonosov A. A., Orlando L., Spengler R. Occupation of Central Asian High-Lands: New Evidence from Kurteke Rock-Shelter, Eastern Pamir. *Journal of Archaeological research in Asia*. In press.

Zotkina L. V., Malikov D. G., Shnaider S. V., Sayfulloyev N. N., Kolobova K. A. Boar or Bear? Rock Art of the Shakhty Rock Shelter (Eastern Pamir). *Journal of Archaeological research in Asia*. 2022(32):100415. <https://doi.org/10.1016/j.ara.2022.100415>

СПИСОК ИСТОЧНИКОВ

Зоткина Л. В., Аболовкова И. В., Алишер кызы С., Сайфуллоев Н. Н. Наскальное искусство Восточного Памира: аналогии и концепции о возрасте рисунков // *Stratum Plus*. 2022. №2. С. 203–218. <https://doi.org/10.55086/sp222203218>

Зоткина Л. В., Аболовкова И. В., Курбанов Р. Н., Маликов Д. Г., Марченко Д. В., Шнайдер С. В., Сайфуллоев Н. Н. Живопись и жизнь в гроте Шахты (Восточный Памир) // Уральский исторический вестник. 2022. Т. 77(4). С. 6–17. <https://doi.org/10.55086/sp222203218>

Зоткина Л. В., Бобомуллоев Б. С., Солодейников А. К., Аболовкова И. В., Шнайдер С. В., Сайфуллоев Н. Н. Новые данные о наскальном искусстве Восточного Памира // Вестник Новосибирского государственного университета. 2022. Т. 21(3). С. 60–72. <https://doi.org/10.25205/1818-7919-2022-21-3-60-72>

Ковалева О. С. Наскальные рисунки эпохи поздней бронзы Минусинской котловины. Новосибирск : Изд-во Ин-та археологии и этнографии СО РАН, 2011. 160 с.

Мосолова Л. М. Древнейшие изображения Киргизии // Антропоморфные изображения. Первобытное искусство. Новосибирск : Наука, 1987. С. 216–223.

Новгородова Э. А. Мир петроглифов Монголии. М. : Наука, 1984. 168 с.

Ранов В. А. Рисунки каменного века в гроте Шахты // Советская этнография. 1961. Вып. 6. С. 70–81.

Ранов В. А. Раскопки памятников первобытно-общинного строя на Восточном Памире в 1960 году // Археологические работы в Таджикистане. 1962. Вып. 8. С. 6–26.

Ранов В. А. Следы писаниц в навесе Куртеке // Известия Всероссийского географического общества. 1964. Т. 96(1). С. 67–69.

Ранов В. А. Бегущие по скалам: наскальные рисунки Памира. Душанбе : Дониш, 2016. 412 с.

Формозов А. А. Очерки по первобытному искусству. Наскальные изображения и каменные изваяния эпохи камня и бронзы на территории СССР. М. : Наука, 1969. 255 с.

Шнайдер С. В., Ашастина К. А., Алишер кызы С., Сайфуллаев Н., Закаблук Г. А., Черноносов А. А., Спенглер Р., Зоткина Л. В. Результаты комплексного исследования памятника Куртеке (Восточный Памир) // Теория и практика археологических исследований. 2021. Т. 33(4). С. 284–286. [https://doi.org/10.14258/tpai\(2021\)33\(4\)-16](https://doi.org/10.14258/tpai(2021)33(4)-16)

Harman J. Using DStretch for Rock Art Recording // International Newsletter on Rock Art. 2015. Vol. 72. P. 24–30.

Shnaider S. V., Zhilich S. V., Zotkina L. V., Ashastina K. A., Taylor W. T. T., Alisher kyzzy S., Sayfullaev N., Koval V. V., Baranov S. V., Chernonosov A. A., Orlando L., Spengler R. Occupation of Central Asian High-Lands: new evidence from Kurteke rock-shelter, Eastern Pamir // Journal of Archaeological research in Asia. In press.

Zotkina L. V., Malikov D. G., Shnaider S. V., Sayfulloev N. N., Kolobova K. A. Boar or Bear? Rock Art of the Shakhty Rock Shelter (Eastern Pamir). Journal of Archaeological research in Asia. 2022. Vol. 32. 100415. <https://doi.org/10.1016/j.jara.2022.100415>

CONTRIBUTION OF THE AUTHORS / ВКЛАД АВТОРОВ

L. V. Zotkina: archival research, material processing, writing sections of the article, scientific editing.

Зоткина Л. В.: проведение архивных изысканий, обработка материала, написание разделов статьи, научное редактирование.

N. N. Sayfulloev: collection of material, providing access to archival materials.

Сайфулоев Н. Н.: сбор материала, обеспечение доступа к архивным материалам.

There is no conflict of interest / Конфликт интересов отсутствует.

INFORMATION ABOUT THE AUTHORS / ИНФОРМАЦИЯ ОБ АВТОРАХ

Nuritdin Nazurloyevich Sayfulloev, Candidate of Historical Sciences, Head of the Archaeology Department of A. Donish Institute of History, Archaeology and Ethnography of the National Academy of Sciences the Republic of Tajikistan, Dushanbe, Tajikistan.

Сайфулоев Нуритдин Назурлоевич, кандидат исторических наук, заведующий отделом археологии Института истории, археологии и этнографии им. А. Дониша Национальной академии наук Республики Таджикистан, Душанбе, Таджикистан.

Lydia Viktorovna Zotkina, Candidate of Historical Sciences, Senior Researcher of Institute of Archaeology and Ethnography, Novosibirsk, Russia.

Зоткина Лидия Викторовна, кандидат исторических наук, старший научный сотрудник Института археологии и этнографии Сибирского отделения Российской академии наук, Новосибирск, Россия.

*The article was submitted 09.11.2022;
approved after reviewing 19.11.2022;
accepted for publication 01.12.2022.*

*Статья поступила в редакцию 09.11.2022;
одобрена после рецензирования 19.11.2022;
принята к публикации 01.12.2022.*