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DISCOVERY OF NEW TYPE OF CAVE ROCK PAINTINGS IN GUANGXI ZHUANG AUTONOMOUS REGION, CHINA

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Abstract. A rock art survey was conducted in February 2019 in Chongzuo region of Guangxi Zhuang Autonomous Region, south-western China. The rock art in Chongzuo region is widely distributed and consists almost entirely of rock paintings. In this survey, a large number of a new type of cave rock paintings was found within the territory of Pingxiang city. The motif type is mainly cat-like or cat face-like, and there are anthropomorphs, writing symbols and a few geometric motifs and other symbols. These types of rock paintings are mainly distributed in the Nongbu Mountain rock art sites and the Maoer Cave site. Two ideal dating samples were obtained from sites No. 3 and No. 6 of Nongbu Mountain rock art complex. Radiocarbon determinations provided two sets of direct dating results related to rock art. The results suggest that such types of rock paintings in Pingxiang region belong to a late period.

1. Introduction

Pingxiang City is located on the border between China and Vietnam in the southwest of China, with a total area of about 650.32 km², in the prefecture-level city of Chongzuo, Guangxi Zhuang Autonomous Region. Pingxiang adjoins Ningming County in the east and Longzhou County in the north. Vietnam borders the southwest, the centre of the city is 160 km from the provincial capital Nanning City, and it is only 3 km from the Vietnamese border. The area is governed by Chongzuo City. Pingxiang City has jurisdiction over five towns: Pingxiang Town, Baiyun Town, Youyi Town, Shangshi Town and Xiashi Town. The total population of the city is about 107 046, of which the Zhuang nationality accounts for 90.8%; therefore, it is a common gathering place of Zhuang population. The geomorphology of Pingxiang City presents a mountain karst landform, with limestone as the mainstay, followed by shale and sandstone. The city is surrounded by clusters of peaks, karst towers, deep caves, and the terrain is high in the west, low in the east, inclined from west to east.

The nearby Huashan rock paintings complex in Ninming County has been successfully applied to become the 49th World Heritage Site in China (Bednarik 2016; <http://whc.unesco.org/en/list/1508>). It features a spectacular series of 81 rock painting sites, including the main site, Huashan. That site consists of a vertical limestone cliff, 270 m high and 350 m wide at the base, the most extensive painting panel

in the world (Tang et al. 2018). Mainly distributed over the riverside cliffs of the Zuojiang River and the Mingjiang River and nearly 200 km long, the WHL site forms a spectacular corridor of rock painting sites (Huang Y. 2012). The wide distribution of rock art sites, the difficulty of painting at them, and the majestic limestone towers are rare in China and even in the world. These paintings are thought to be relics left by the Luoyue people, ancestors of the local Zhuang from the Warring States period to the Eastern Han Dynasty, and they have a history of more than 2000 years (Qin et al. 1987; Qing-Feng Shao 2017). With the increase of the survey work of rock paintings, nearly 30 new rock art sites have been found in the area far from rivers in Chongzuo region, Guangxi. In order to distinguish them from the rock paintings distributed along the rivers, we named these new rock painting sites 'land rock painting sites' temporarily. From 17th February to 1st March 2019, we have carried out a two-week investigation of this 'land rock art' in all counties in Chongzuo region, and a large number of new types of cave rock paintings were found within the territory of Pingxiang City, which belong to the late period. Mainly concentrated in the Nongbu Mountain rock art site complex and the Maoer Cave rock art site (Fig. 1), especially around the Nongbu Mountain area, this type of rock art is densely distributed. A total of eight rock art sites of this genre have been found so far. We checked the new type of cave art sites one by one, and comprehensively and systematically recorded the basic

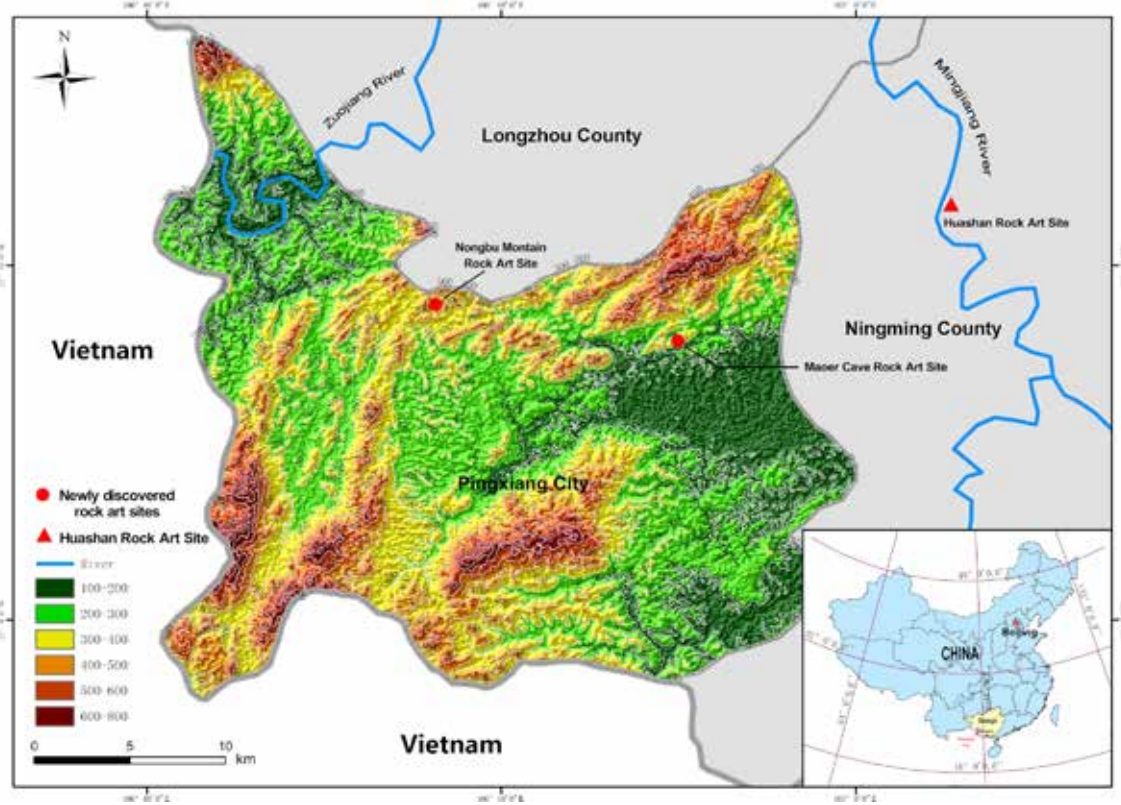


Figure 1. The location of Pingxiang City and the distribution of the new type of cave art sites.

information of rock paintings, such as the geographical location, distribution, content, quantity and size of the rock paintings. Here we report the details of each of these rock painting sites briefly.

2. Distribution of the rock art sites and description of the images

2.1 Nongbu Mountain rock art site complex

Nongbu Mountain is situated in Jiaotiao Tun, Bailong Village, Shangshi Town, Pingxiang City. The mountain features a cluster of at least seven rock

art sites with a total of 34 images. These sites are all distributed along the west side of Nongbu Mountain, and relatively close to each other.

Nongbu rock art site No. 1

The rock art is painted on the walls of a natural cave, which has a width of 9.5 m and a depth of 7 m and is about 10 m high from the ground. The cave faces west and is surrounded by dense vegetation; shrubs and vine plants have obscured its entrance. There are two rock painting images with different shape and



Figure 2. Cat face-like image near the entrance of the Nongbu rock art site No. 1 (left); and Dstretch-YRD enhancement of the photograph (right), 65×75 cm (H×W); white, ochre-red.

size alongside each other in the cave.

One of them is a feline face-like image (Fig. 2), which is drawn on the south wall near the entrance of the cave. The head is drawn with a white double line, and the space between the inner and outer contours is infilled with ochre-red pigment. The inner outline is painted with ears and 'hair bun', the forehead and cheeks are smeared with white pigment, the eyes are outlined with white lines and the outer corners of the eyes are upturned. The contour of the mouth is drawn with red ochre lines and seems to be painted with white teeth inside of the mouth. The nose is trapezoidal without pigment filling. The right arm with four fingers open is raised, close to the head's outer contour line. The lower body has disappeared because of weathering and rain erosion. Remains of a circle of an unclear reddish irregular frame painted on the periphery of the image are still visible.

The second image is an anthropomorph drawn on the south wall of the cave (Fig. 3). The contour of the body is outlined by white pigment, filled with ochre-red pigment. Wearing a peaked 'cap' on the top of the head, the whole face is painted monochrome with white pigment except for the sense organs. The eyes are outlined with a white line, and their outer corners are upturned. The mouth is large and appears closed, and the chin is relatively pointed and long. The anthropomorphous image is of a standing posture; the left hand is extended to the left, level with the shoulder and parallel to the ground. The right hand is raised and close to the head, both hands are with five fingers open. The lower limbs have weathered severely and are too indistinct to identify. The periphery of the image is painted with an irregular ochre-red frame.

Nongbu rock art site No. 2

The rock paintings are on walls of a natural cave, which is about 30 m from the ground. The west-facing mouth of the cave is 4 m high, 2.7 m wide, and the cave is relatively deep with a depth of about 14 m. The vegetation near the entrance is dense, mainly of shrub and vine plants, the latter almost covering the cave mouth. There are three images drawn on the inner wall of the cave, all of which are well preserved.

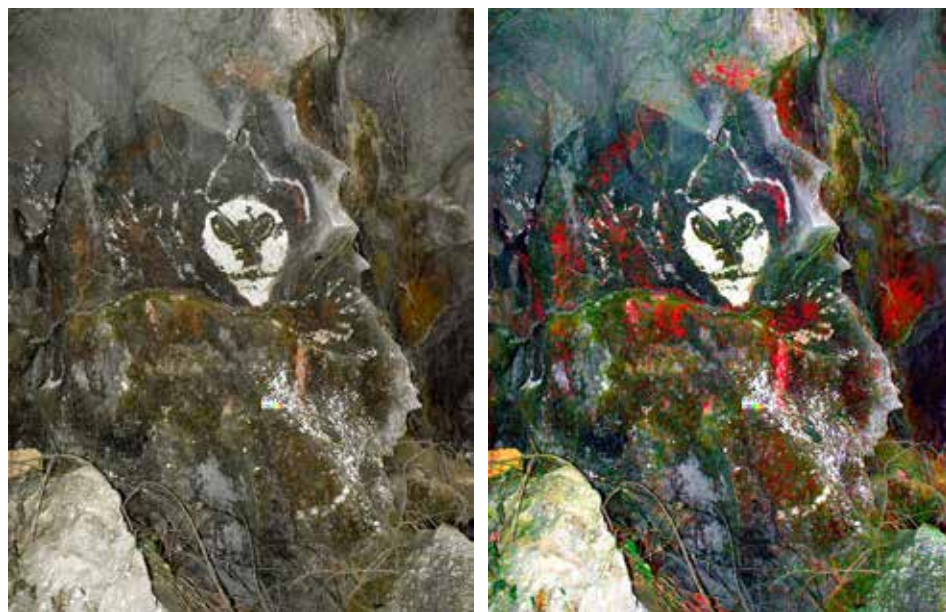


Figure 3. Anthropomorphous image (left) and image processed with Dstretch-LAB enhancement (right), Nongbu rock art site No. 1, 180×140 cm (H×W); white, ochre-red.



Figure 4. A cat face-like image, Nongbu rock art site No. 2, 55×50 cm (H×W); white.

The first is a cat face-like motif drawn on the north wall, which is about 4 m from the mouth of the cave (Fig. 4). It is painted with monochrome white pigment. The face was painted evenly, the eyes are outlined, and their outer corners are upturned. The nose and mouth are connected in trapezoidal-shape and without filling inside. There is an arc on each side of the face as if there were two arms raised above the head.

The second image is an anthropomorph of standing posture (Fig. 5). The contour of the body is outlined by white line, and the periphery of the image is painted with an ochre-red irregular frame. The 'person' wears a pointed 'cap', and on the top of it occurs some ochre-red pigment. The left arm is extended to the left, kept



Figure 5. Anthropomorphic image, Nongbu rock art site No. 2, 170×155 cm (H×W); white, ochre-red.



Figure 6. Anthropomorphic image, Nongbu rock art site No. 2, 160×130 cm (H×W); white, ochre-red.

at the level of the shoulder; the right arm is raised, close to the head, both hands with fingers separated. The legs are separated with the centre of gravity placed on the right foot. The left leg extends forward with the toes outward, while the right leg is upright with the toe turned inward. There seems to be a male genital painted between the legs, and red dots under the respective armpits. The facial features are similar to those of previous images. It is worth noting that

there are two glyphs, ‘大人’, that were written with the ochre-red pigment and arranged vertically on the right side of the top of the head.

The third motif is also an anthropomorphic image of standing posture (Fig. 6). The ‘person’ wears a pointed ‘cap’ with traces of black charcoal smear inside. Both arms are raised and fingers separated. The legs are split and toes turned outwards, and the lower body seems to be dressed in a skirt or tunic.



Figure 7. Nongbu rock art site No. 3.



Figure 8. A group of motifs painted on the north wall of Nongbu rock art site No. 3, 155×120 cm (H×W); white, ochre-red.

There are again red dots painted under the armpits. The periphery of the image is also painted with an ochre-red irregular frame, the lower part of which is missing.

Nongbu rock art site No. 3

The rock paintings occur on the inner wall of a natural cave, which is about 10 m high from the ground and 10 m deep. There are two cave entrances which are 2 m apart and interconnected internally (Fig. 7). Both entries face west, are about 6 m high and together 10 m wide. The nearby vegetation is luxuriant, shrubs almost obscure the southern entrance, and at the top of the cave occur stalactite speleothems. A total of eight motifs are painted on the walls of the cave. Three of them are on the north wall near the mouth of the cave, and they are poorly preserved and blurred. The rest of the images are described as follows.

A group of motifs painted on the north wall of the cave was arranged vertically (Fig. 8). The image at the top is a standing cat-like motif, the contour of the body is outlined with white pigment, and without filling inside. The facial features are eroded, but remains of eyes and nose are still visible. The body is small and the back is slightly arched, the limbs are stout and arranged horizontally, the tail is long and thin. In the middle position is a zoomorphic motif in the posture of stretched-out limbs, and under these two motifs, another set of images is drawn. On the left occurs an anthropomorphous image and some glyphs seem to be on the right. The latter are difficult to identify because of severe exfoliation.

There are two cat-like images painted on the south wall of the cave, which are about 55 cm apart from each other (Fig. 9). The image on the left is in an inverted pose, the head down, the limbs stretched out on both sides of the body. The tail is elongated and swung to one side, with the tail tip hanging down to the forelimbs. The cat-like image on the right side is depicted in side-view and a standing pose, the head is small and in a frontal perspective, the body is fat and round, the back is slightly arched, the limbs are stout and arranged horizontally, the tail is elongated and naturally

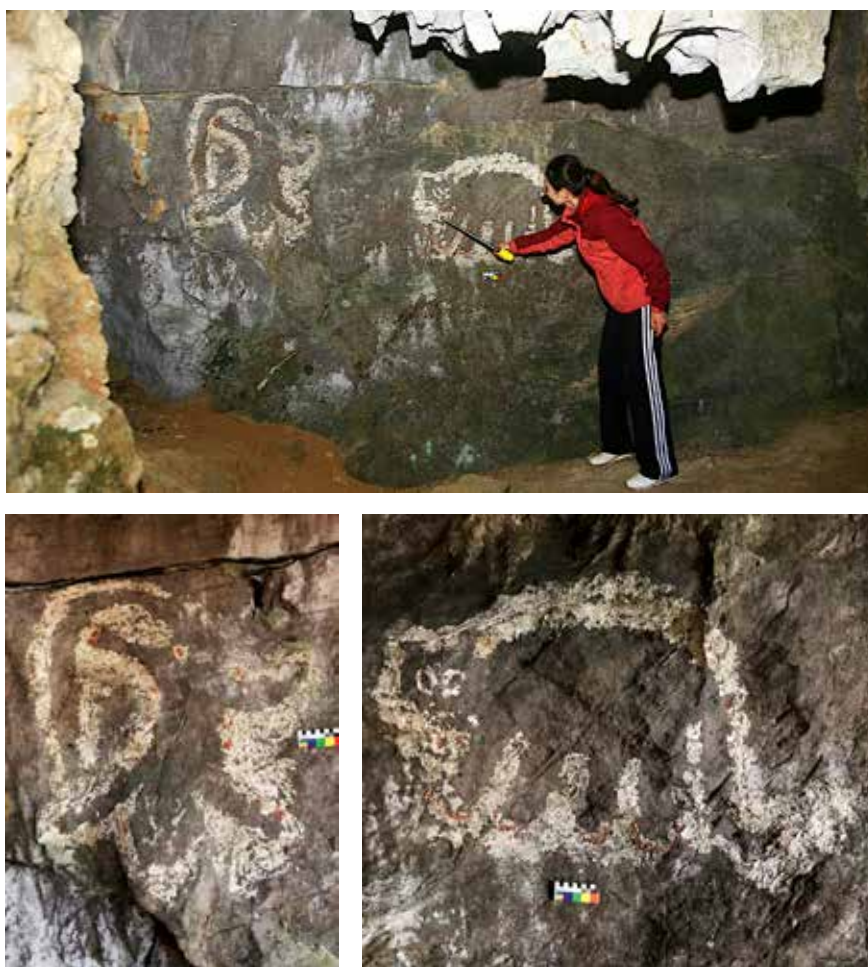


Figure 9. Two cat-like images, Nongbu rock art site No. 3, 80×70 cm (left); 60×100 cm (right) (H×W); white, ochre-red.

drooping, and the tip of the tail is raised slightly. The contours of these two images are drawn with white pigment, and there is no pigment inside the body contour, but a small number of ochre-red pigment marks are seen on the bottom of the feet and elsewhere.

Nongbu rock Art Site No. 4

A cat-like image is painted in this rockshelter, which is about 25 m high above the ground (Fig. 10) and faces west, in a vertical rock wall and overlooking farmland.

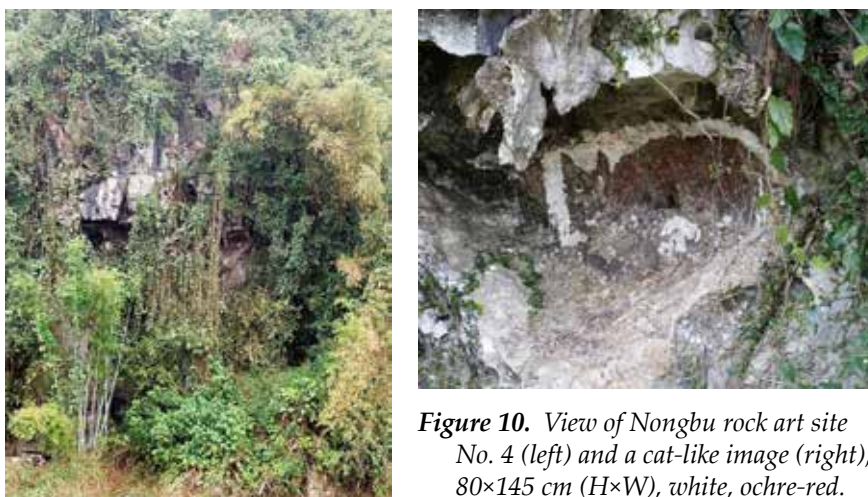


Figure 10. View of Nongbu rock art site No. 4 (left) and a cat-like image (right), 80×145 cm (H×W), white, ochre-red.



Figure 11. Two glyphs, Nongbu rock art site No. 5, 50×30 cm (left); 60×32 cm (right) (H×W); white, ochre-red.



Figure 12. A 'vulva' symbol, Nongbu rock art site No. 5, 18×12 cm (H×W); white, ochre-red.

The surrounding vegetation is dense, vine plants have obscured the front of the rockshelter, and it is difficult for people to find it.

The contour of this cat-like image (Fig. 10) is drawn with white pigment and the space inside the body outline seems to be smeared with some ochre-red pigment. The facial features are blurred, and only two eyes are vaguely discernible; two ears are erected vertically, the tail is drooping naturally, the limbs are missing because of the exfoliation and weathering.

Nongbu rock art site No. 5

The rock paintings are drawn on the wall of a rockshelter which is about 10 m high from the ground, and about 2.30 m high and 8.50 m wide. It faces southwest and has two glyphs and one 'vulva' symbol.

The two glyphs are painted on the left end of the

rockshelter and are arranged about one metre apart (Fig. 11). The image on the left is poorly preserved, its lower half has disappeared. Two characters '大人' painted in negative with white pigment can still be recognised, and an ochre-red approximately rectangular outer frame is drawn outside of the characters. The glyph symbol on the right is relatively well-preserved. There are three characters '陳大人' painted in the same manner that can be recognised easily, and outside of the characters, a surround has been painted in ochre-red.

On the right end of the rockshelter, a presumed vulva symbol has been painted (Fig. 12). It is well preserved. The overall appearance of the image is oval-shaped, the outer contour is painted with white pigment, and the interior is filled with ochre-red pigment.

Nongbu rock art site No. 6

This site is a natural cave, about 10 m from the ground and 9.3 m deep. The mouth of the cave is 3 m high and 2.4 m wide. The surrounding vegetation is luxuriant, mainly some small shrubs. The rock paintings are on the inner wall of the cave, with a total of twelve painted motifs in the cave, including five cat-like images, one cat face-like image, four glyphs and two geometric figures.

Three glyphs were painted on the north wall of the cave mouth, all of which made with white pigments as negatives and about 40 cm apart from each other (Fig. 13). The left one is a single character, '大', two characters '大人' were arranged vertically at the middle of the three symbols, and the right one is a single character, '陳', which is larger and surrounded by a near-circular ochre-red outer frame.

This glyph is painted on the south wall about 1.5 m away from the entrance of the cave (Fig. 14). The whole image is approximately rectangular-shaped,



Figure 13. Three glyph symbols, Nongbu rock art site No. 6, 25×20 cm (left); 30×20 cm (middle); 35×35 cm (right) (H×W); white, ochre-red.



Figure 14. Glyph symbol, Nongbu rock art site No. 6, 70×28 cm (H×W); white.

and there is no surround. The lower half of the image is poorly preserved, and only three characters, '陳大人', can be recognised now. They are arranged vertically and are also painted as negatives with white pigment. However, there seem to be other characters underneath them but they are too indistinct to identify because of exfoliation and weathering.

Two cat-like images located at the corner of the north wall of the cave are arranged vertically and about 70 cm apart from each other (Fig. 15). The upper image is a cat face-like motifs, which is painted mainly in white pigment. The face is evenly infilled with white pigment, the eyes are outlined with white line and the outer corners of the eyes are upturned. The nose is left blank. A circle of light-red pigment outlines the contour of the mouth. A white irregular outer frame is painted outside the image, but the upper part of it is not closed. The cat-like image below is in a crouching pose, the contour of which is outlined with white pigment, and the interior space of the body contour line was filled with ochre-red and white pigment. It was observed that white pigment was superposed on the red pigment. The 'cat's' head is depicted frontal, two ears are relatively large, the facial features are blurred, but remains of two eyes are still visible. Besides, on the left side of the head, there is an ochre-red circular pattern about 18 cm in diameter.



Figure 15. Cat face-like image and a crouching cat-like image, Nongbu rock art site No. 6, top figure 70×58 cm (left); bottom figure 60×65 cm (right) (H×W); white, ochre-red.



Figure 16. Huge standing cat-like image, Nongbu rock art site No. 6, 160×205 cm (H×W); white, black, ochre-red.

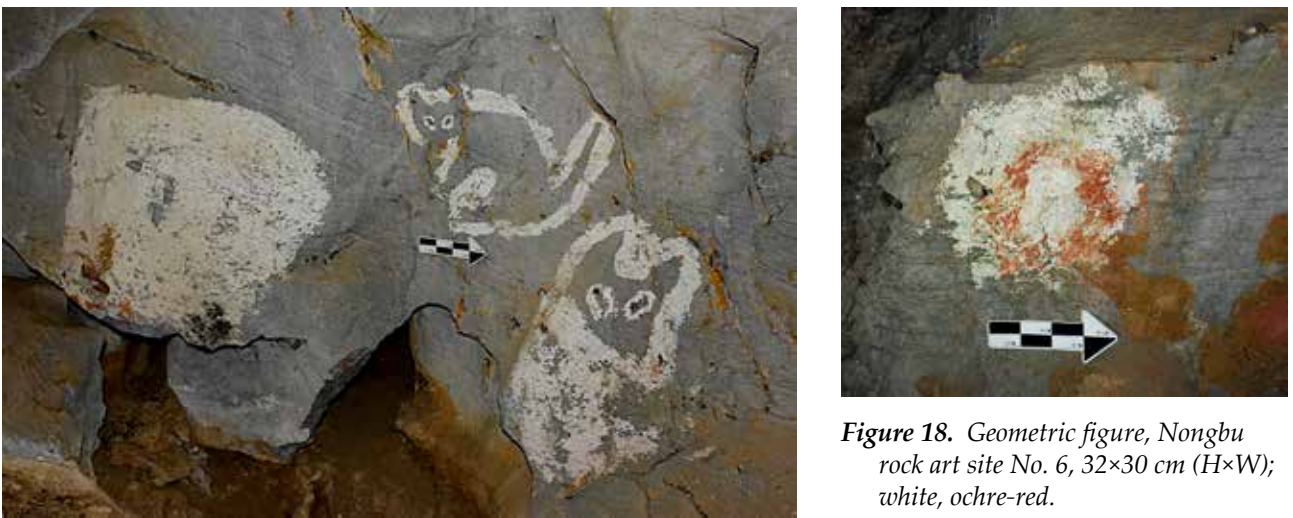


Figure 18. Geometric figure, Nongbu rock art site No. 6, 32×30 cm (H×W); white, ochre-red.

Figure 17. Geometric figure and two cat-like images, Nongbu rock art site No. 6; 60×70 cm (left); 35×55 cm (middle); 77×67 cm (right) (H×W); white.

A huge cat-like image is painted on the north wall of the cave, the biggest motif in the cave (Fig. 16). The contour of the image outline with white pigment and remains of black charcoal and white pigment in the interior space of the body contour line are still visible. The 'cat' faces right; its head is oblate, two ears are relatively large and erected on the top of the head, the eyes are outlined with white line and the outer corners are upturned. The nose is a red dot pattern. The body is fat and large; the back is protruding, the limbs are strong and separated from each other, implying a walking pose. The tail is long, naturally drooping, and the tip of the tail is slightly upturned. In addition, on the lower right of the image, below the cat's head, there is a tiny humanoid image drawn in thin red lines. It resembles a snowman, consisting only of the head and upper torso without limbs, but the facial features are clearly visible.

There is a set of images painted on the south wall, which are located opposite the large 'cat' in Figure 16, including a geometric figure and two cat-shaped

images (Fig. 17). The geometric figure on the left is roughly square-shaped and is smeared evenly with white pigment. The cat-like image in the middle is in a standing pose; it has a small head, curved torso, upturned tail and the erect limbs. The image on the right is a crouching cat-like image, similar to Figure 15. The contours of body and eyes are outlined with white pigment; the pupils are filled with black charcoal, the head is relatively large, the face is lateral, pointed mouth, the nose features a red dot pattern, two big ears are erect on top of its head. The body is infilled with white pigment, the limbs are blurred and cannot to be identified, and part of the tail is missing because of exfoliation, only the root of the tail is still visible, which seems to be slightly upturned.

A geometric figure is painted on the north wall of the cave with white and ochre-red pigment (Fig. 18). It was observed that the ochre-red pigment overlies the white pigment, so it can be inferred that the figure was daubed with white pigment into a near-circular pattern of about 30 cm diameter as the background, and then a red ring pattern of about 20 cm diameter was superimposed on the white pigment.



Figure 19. A glyph at Nongbu rock art site No. 7, 70×40 cm (H×W); white, ochre-red.



Figure 20. Two glyphs, Nongbu rock art site No. 7, 68×70 cm (left); 50×37 cm (right) (H×W); white, ochre-red.

Nongbu rock art site No. 7

The rock paintings at this site occur on the wall of the rockshelter about 10 m from the ground, comprising three glyphs.

The first glyph is painted on the left side of the rockshelter, with a total of eight characters in white pigment applied as negatives (Fig. 19). The upper left corner features a single character, '陳'. Seven characters, '陳大人上山坐天', are shown in two vertical columns, and the periphery is painted with an irregular ochre-red frame.

In a small cave to the right end of the shelter, two glyphs occur on the outer and inner top, respectively of the cave (Fig. 20). The image of the outer top is poorly preserved because of weathering. The characters are relatively vague, but the three characters '陳大人' can still be identified. On the right side is '陳' and on the left side is '大人', which are smaller than the character '陳' and arranged vertically. The outer periphery of these characters is painted with an ochre-red oval frame. The glyph on the inner top of the cave is well preserved, three characters, '陳大人', can be easily recognised, which are arranged vertically. The character '陳' above is relatively larger, and an ochre-red surround is painted around it.

2.2 Maoer Cave rock art site

Maoer Cave is situated in Paidao Tun, Baima Village, Xiashi Town, Pingxiang City. The rock paintings are distributed in a cave about 30 m from the ground (Fig. 21). The cave faces south; the entrance is 1.3–1.7 m high, 8.5 m wide, and 5.5 m deep. The cave is divided into two chambers, the front chamber is 3.7 m deep, and the rear chamber is 1.8 m deep. There are in total



Figure 21. An exterior view of Maoer Cave.

nine rock painting motifs in the cave, all of which are painted on the walls of the front chamber, including three cat-like images, three cat face-like images, two geometric figures and one glyph. They are all well preserved; the colours are white, black and ochre-red.



Figure 22. A geometric figure (20×20 cm) and a cat face-like image (80×103 cm, H×W), Maoer Cave; white, ochre-red.



Figure 23. A cat face-like image, Maoer Cave, 100×105 cm (H×W); white, ochre-red, black.



Figure 24. A standing cat-like image and a geometric figure, Maoer Cave, 60×95 cm (H×W); black, ochre-red, white.

A geometric figure and a cat face-like image are painted on the west wall near the mouth of the cave (Fig. 22), separated by about 40 cm. The geometric figure on the left is a circle motif, an ochre-red ring about 20 cm in diameter filled with white pigment inside which is peeling off. The image on the right side is a cat face-like motif, the face is infilled with white pigment, the outline of the eyes is sketched with white lines, the outer corners of the eyes are upturned, the nose is left blank. The outline of the mouth is drawn with light red pigment, and the teeth are painted with white pigment. The face is surrounded with a white and ochre-red frame but not closed at the top.

Another cat face-like image painted on the west wall, about one metre from the image in Figure 22 (Fig. 23). The main image resembles a panda; its face is infilled with white pigment, the ears and pupils are filled with black charcoal, the nose is relatively large and lacks pigment, a ring pattern of about 30 cm in diameter is drawn at the mouth, and there seem to be some teeth drawn. An ochre-red pointed 'cap' is on the top of the head. On the periphery of the image is an ochre-red irregular frame. The space between the face and the frame is locally filled with white pigment. Besides, there is a faint dry charcoal drawing of another cat face-like motif to the left, but from the perspective of painting style, it is not the same painting system as the cat face-like image on the right. It is speculated that the cat face-like motif on the left may be an imitation graffiti made by later people based on the image on the right. Also, a row of characters written with black charcoal occurs to the right side of the main image. The latter are the seven characters '陳大人上山坐天'.

There is a stone pillar in the middle of the west side of the front chamber, with a standing cat-like image on it (Fig. 24). The main image is a black 'cat', the whole body of which is smeared with black charcoal, and the contour of the cat's body and eyes are outlined with white pigment. The nose bears a small ochre-red dot pattern; the back is slightly bulging, the limbs are short and arranged horizontally, the tail is slender and



Figure 25. A cat face-like image and a standing cat-like image, Maoer Cave, 100×130 cm (left); 50×95 cm (right) (H×W); white, ochre-red, black.

naturally drooping. An ochre-red irregular surround forms the periphery of the image. Also, there is a white circular pattern of 15 cm in diameter, located approximately 20 cm above the image.

There is a naturally formed boulder partition near the bottom of the front chamber. A ceiling beam runs east-west, on which a cat face-like image and a standing cat-like image are drawn. These motifs are about 20 cm apart from each other (Fig. 25). The image on the left is a cat face-like motifs, which looks somewhat like a panda, very similar to the image in Figure 23. The contour of its head is outlined with black charcoal; the two ears are infilled with charcoal. The face is also smeared with white pigment, and there is a red heart-shaped pattern in the middle of its forehead. The contours of the eyes are outlined with black and white lines, and the pupils are filled with charcoal. The nose is triangular shaped and filled with black charcoal, and a red ring pattern of about 20 cm in diameter is drawn at the mouth. An irregular ochre-red outer frame marks the periphery of the image, and the space between the face and the outer frame is locally smeared with white pigment. The image on the right is a standing cat-like motif facing west. The contour of the whole body is outlined with white; the posture of the animal is very similar to that of Figure 24. An irregular ochre-red frame forms the periphery of the image.

A standing cat-like image is painted in the lower part of the front chamber (Fig. 26). The animal faces



Figure 26. A standing cat-like image, Maoer Cave, 90×170 cm (H×W); white, ochre-red, black.

east; the contour of the whole body is outlined with white pigment, remains of black charcoal in the body are still visible. It has round eyes and a red dot nose, the contour of the open mouth is outlined with ochre-red pigment, and the teeth are painted with white pigment. The cat's body is fat, its back is slightly bulging and the tail is drooping naturally, the limbs are stout and arranged horizontally.

3. Statistical classification and the dating results for rock paintings

A total of 43 rock painting images were recorded in this survey. The motif types are cat-like, cat face-

Motif type	Rock art sites		Total	%
	Nongbu Mountain	Maoer Cave		
Cat-like image	11	3	14	32.5
Cat face-like image	3	3	6	14
Anthropomorphous image	6		6	14
Glyph symbol	10	1	11	25.6
Geometric figure	3	2	5	11.6
Special symbol ('vulva')	1		1	2.3
Total	34	9	43	100

Table 1. Quantity statistics of motif types of known Nongbu Mountain and Maoer Cave rock paintings.

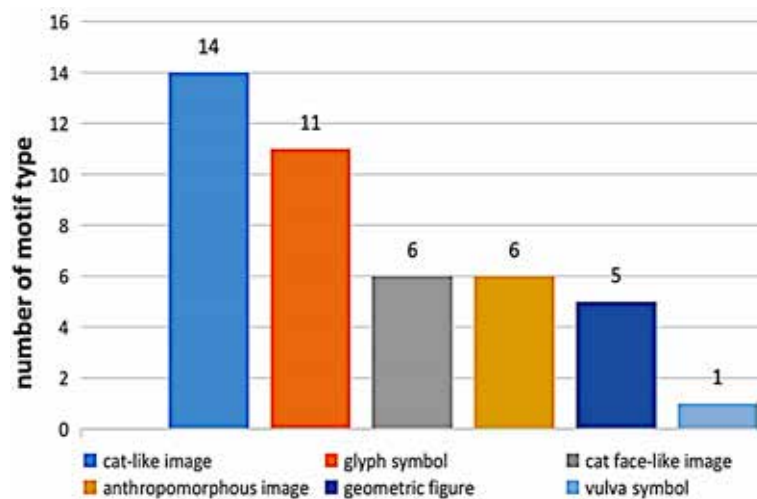


Figure 27. Histogram of the motif types of Nongbu Mountain and Maoer Cave rock paintings.

like, anthropomorphous, '陳大人', '大人' and other related glyph symbols. There are also a few geometric figures and other special symbols, such as the vulva symbol. Such type of rock paintings accounts for 93.5% of the total number of rock paintings now known in Pingxiang territory (Table 1, Fig. 27).

In this investigation, we obtained two ideal dating samples, one each at site No. 3 and site No. 6 respectively of Nongbu Mountain rock art site complex. Radiocarbon analysis was measured by BETA Analytical Laboratory, and two sets of scientific and effective data were obtained, which are 80 ± 30 BP and 250 ± 30 BP, respectively. Details are as follows:

Sample 1: obtained from site No. 3 of Nongbu Mountain rock art site complex. A set of images are drawn in the middle of the north wall of the cave (Fig. 8). A beehive of 10×15 cm size has been built below the set of images (Fig. 28). It is observed that the upper part of the hive is superimposed on the white pigment at the bottom of the set of images. Therefore, the upper half part of the hive was taken as an organic matter dating

sample, and the dating of this hive is 80 ± 30 BP years before present (Beta-520693), that is 1870 ± 30 CE. Accordingly, the age of the rock painting is at least earlier than the age of the hive. That is to say, it is demonstrated that the set of images should have been painted during the Tongzhi period of the Qing Dynasty.

Sample 2: obtained from the site No. 6 of Nongbu Mountain rock art site complex. On the north wall near the bottom of the cave, there is a large cat-like image, the contour of which is outlined with white pigment, and remains of charcoal and white pigment inside the body outline are still visible (Fig. 16). According to observation, a small amount of white pigment is superimposed on the charcoal remains, and there are several well-protected charcoal particles in the rock cracks of the cat's body (Fig. 29). We extracted four charcoal particles about 1–2 cm² in size and the radiocarbon dating analysis was carried out by the BETA Analytical Laboratory to determine the age of the charcoal particles as 250 ± 30 BP years BP, that is 1700 ± 30 CE (Beta-520694). According to this, it can be calculated that the age of the rock painting is around 1700 CE, that is to say, the image should have been painted during the Kangxi period of the Qing Dynasty.

4. Conclusion

This new type of cave rock paintings discovered in the territory of Pingxiang City with a novel appearance and unique style, which has not been found in other places at present, has the characteristics of local uniqueness. Based on the dating results of samples obtained from two rock art sites of Nongbu Mountain site complex, it can be known that the approximate age of such type of rock art is 1870 ± 30 to 1700 ± 30 CE, that is from the period of Kangxi to the Tongzhi of the Qing Dynasty.

Throughout the survey, it is not difficult to find that such types of cave paintings are mostly related to 'cat' and '陳大人' inscriptions. There are even two places where there is a clear '陳大人上山坐天' text. Some obvious questions come to mind: why is there so much cat imagery? What is the significance of these inscriptions? Who is '陳大人' and what is the meaning of '坐天'? '陳' means the surname of 'Chen', and the '大人' means 'da ren', literally a respectful salutation for elders/adults/your excellency, or a man of noble character and lofty aspiration in ancient China. The Zhuang nationality in the Chongzuo area of Guangxi has been preoccupied with ghosts and gods since ancient times. When encountering anything unusual, people asked the witch or wizard for magic divination,



Figure 28. A beehive sample was obtained from site No. 3 of the Nongbu Mountain rock art complex.



Figure 29. Charcoal samples were obtained from site No. 6 of Nongbu Mountain rock art site complex. The sampling sites are indicated by red circles.

or to drive out evil spirits. In the border areas between China and Vietnam in Guangxi, the Zhuang people in Pingxiang, Ningming, Longzhou, Daxin, Fangcheng and Shangsi still have retained the worship of God of Then (Fan 1996; 'Then' means sky or heaven). During the period from the first to the fifteenth day of the first lunar month every year, Zhuang people usually burn incense and place sacrifices to the God of Then. This kind of solemn ritual ceremony is known

as '做天' (which means the sorceress-like shaman conducts a trance ritual for summoning the gods and spirits), which is the same as '坐天'. The purpose of this ceremony of '做天' is to meet any requirements and aspirations of the Zhuang people. They include asking the gods and spirits to exorcise, heal disease, drive away the plague or bless the good weather, the harvest of the grain and the prosperity of offspring in the year (Fan 1996). The sorceress who presided over

the ceremony was called as 'Then po' or 'Xian po' by the locals, and she was responsible for communicating with the ghosts and gods (Huang J. 2014). Similar to the shamanic ceremony, after the '做天' ceremony begins, the *Then po* starts trembling, dancing, reciting some words, summoning the gods or requesting the gods or spirits to enter the body (Fan 1996). Concerning the scene of 'Tian po' presiding over the '做天' ritual, which is also described in the Guangxi local chronicle '(Jiaqing period of the Qing Dynasty) Longzhou Ji Lue'. The inscription of '陳大人' appearing together with the rock paintings may be the name of a locally famous 'Tian po'. So the inscription of '陳大人上山坐天' means a sorcerer or sorceress surnamed Chen goes up the mountain to conduct a trance ritual.

As for why the sorcerer '陳大人' be painted as a cat, we have not found direct evidence. However, we can find some ethnology materials to which we can refer. The Zhuang people in He County, which is situated east of Guangxi, have retained the cultural tradition of cat worship. Every year, during the Spring Festival, usually from the 1st to the 15th day of the first lunar month, Zhuang people will choose an auspicious day to hold a 'dancing cat' performance (Liu 1988). 'Dancing cat' was originally a kind of performance activity in the religious ceremony of Zhuang nationality, the '做天' ceremony, which is a kind of collective sacrifice ceremony held jointly by the whole village of Zhuang nationality, with a history of more than 400 years (Liu 1988). People use straw or wood to make cats, or people are dressed up as cats, arranged in a row, dancing while walking, praying to drive out evil spirits and to bless the happiness and peace in the new year. Therefore, we speculate that the appearance of '陳大人' in the form of a cat should be the same as the 'dancing cat' in the ceremony of '做天' by witches in He County, which all should be a means for Zhuang shamans to enter into ecstasy. The reason why it appears in the form of cats rather than other animals needs to be further investigated and studied.

This investigation comprehensively records the basic information of this type of rock paintings and further enriches the types of rock art known in the Guangxi Zhuang Autonomous Region. Using scientific and technical means it obtained effective chronological data, which is of great guiding significance for discussing the historical and cultural connotation of this kind of rock art in the future.

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