

THE ROCK ART OF KISAR ISLAND, INDONESIA: A SMALL ISLAND WITH A WEALTH AND DIVERSITY OF ARTISTIC EXPRESSION

Sue O'Connor^{1,2}, Shimona Kealy^{1,2}, Adam Black¹, Marlon Ririmasse^{3,4}, Mahirta⁵, Stuart Hawkins^{1,2}, Mohammad Husni^{3,6}, Daud Tanudirjo⁵, Alifah⁷, Lucas Wattimena³, Wuri Handoko^{3,8} and Muhammad Al Muhabuddawat³

¹Archaeology and Natural History, School of Culture, History and Language, College of Asia and the Pacific, Australian National University, Canberra ACT 2601, Australia

²ARC Centre of Excellence for Australian Biodiversity and Heritage, Australian National University, Canberra ACT 2601, Australia

³Balai Arkeologi Maluku, Jl. Namalatu-Latuhalat, Ambon 97118, Indonesia

⁴Pusat Penelitian Arkeologi Nasional, Jl. Raya Condet Pejaten No. 4, Jakarta 12510, Indonesia

⁵Departemen Arkeologi, Fakultas Ilmu Budaya, Universitas Gadjah Mada, Yogyakarta 55281, Indonesia

⁶Balai Pelestarian Cagar Budaya Maluku Utara, Jl. R. Pertamina, Jumbula, Ternate 97751, Indonesia

⁷Balai Arkeologi Yogyakarta, Jl. Gedongkuning 174, Yogyakarta 55171, Indonesia

⁸Balai Arkeologi Sulawesi Utara, Jl. Pingkan Matindas No. 92, Manado, 95128, Indonesia

Corresponding author: Sue O'Connor, sue.oconnor@anu.edu.au

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ABSTRACT

We report 40 recently discovered rock art sites from Kisar Island in eastern Indonesia and investigate the commonalities between this art and painted art in other islands of Indonesia and in Timor-Leste. Predominantly painted, the art can be broadly divided into three categories: 1) small figurative motifs including humans, animals, boats and items of material culture, 2) a range of geometrics, both curvilinear and rectilinear, and 3) hand and arm stencils. On the basis of geological features and weathering we suggest that the Kisar paintings span a considerable period of time, from the Pleistocene through to the Indonesian historic period. We argue that the oldest paintings in the Kisar repertoire are some of the red pigment hand and arm stencils. The small figurative motifs such as the anthropomorphs and some of the geometrics are remarkably similar to those featured in the rock art assemblages of nearby Timor-Leste, and at a number of locations throughout eastern Indonesia. One site with an engraved motif carved into a stalagmite formation was also recorded.

INTRODUCTION

Here we describe the painted rock art of the tiny island of Kisar in Maluku Barat Daya (Figure 1) recorded during field surveys on the island in 2014, 2015 and 2017. Forty sites with painted rock art, one of which also contains an engraving, were recorded in shelters and caves in the limestone terraces and isolated boulders around the island. The painted motifs can be broadly divided into three categories: 1) small representational motifs including humans, animals, boats and objects of material culture, 2) a range of geometric motifs many of which are mostly larger in size than the representational motifs, and are both curvilinear and rectilinear in form, and 3) hand and arm stencils. Red pigment is the dominant color of the representational motifs, geometrics and hand and arm stencils but a range of other colors are used including white, pink, yellow, orange and even green. Five of these sites, KSR 9, 29, 62, 65 and 67, have been reported previously (O'Connor *et al.* 2018a) but only a few of the motifs from each site were published, and we have included additional images here.

Perhaps unsurprisingly, the Kisar painted art has strong stylistic affinities with the art found in the shelters at the eastern end of Timor-Leste

(O'Connor *et al.* 2018a). Timor is merely 25 km southwest of Kisar and the two islands have linguistic and cultural connections. The Papuan languages Makasae, Makalero, and Fataluku, the three languages spoken in a contiguous region of far eastern Timor, are related to Oirata which is the Papuan language spoken on the southern side of Kisar Island (Schapper *et al.* 2012). Historically, families are known to have intermarried between the two islands. Until Timor-Leste achieved independence from Indonesia in 2000, and national borders were established, families maintained contact by travelling between the two islands in small watercraft. Shared motifs include boats, small anthropomorphs shown in frontal and twisted profile, horses with riders, and geometric motifs based on series of concentric circles which include the use of more than one color, as well as the ubiquitous sunray motifs (O'Connor *et al.* 2018a:3–14). We provide information on the location of sites in Kisar and the range of motifs and pigment colors used, as well as potential threats to the long-term survival of the art.

Kisar Island

The island of Kisar is ~10 x 8.7 km with a total area of 81.15 km² and is almost completely encircled by a series of uplifted Quaternary, coral-line limestone terraces that run parallel to the coastline (Figure 1; Agustiyanto *et al.* 1994; Major *et al.* 2013). In some areas of the island these uplifted terraces have weathered to produce shallow overhangs, rock shelters and deep caves. Archaeological excavations at the site of Here Sorot Entapa (HSE; KSR 29) have recovered evidence for human occupation extending back to ca. 16–15 ka (O'Connor *et al.* 2019; Kaharudin *et al.* 2019). It is within this and the other rockshelters of Kisar that the paintings described herein are found. To date 40 painted rock art sites have been recorded (Figure 1). Some shelters contain only hand stencils. Others preserve only remnants of deep red pigment; testimony to the fact that they once had more extensive painted assemblages which have deteriorated over time. One of the painted shelters also contains an engraving. For such a small island Kisar contains a remarkable number of

painting sites with a diversity of motifs. Even after three seasons of fieldwork there remain areas of the north and east coast that have been incompletely surveyed, and we anticipate that with further reconnaissance more art will be located.

ROCK ART METHODS

The Kisar site code prefix KSR followed by a unique number was applied to every archaeological site we recorded. As not all sites are rock art sites, there are missing numbers in the table (Table 1). Sites were numbered as they were located, so spatially adjacent sites do not necessarily have sequential numbers. In most cases sites also have an additional site name and number, for example, where landowners know the site by a specific name or general locality.

Digital photographic data was collected during the field surveys. Image processing software was then used to visually separate the motifs from their backgrounds by firstly enhancing color differences to identify pigment, secondly deleting the surrounding background and then finally returning the remaining pigment to its original color-state. Sites with hand and arm stencils are noted in the table but only two are reproduced. Similarly, sites with small numbers of images or pigment patches which could not be clearly discerned are not reproduced. Only sites for which images are reproduced are discussed in the text below. All others are described in Table 1.

RESULTS

The Intuntun Rock Art Complex

The Intuntun rock art complex is located on the 1st terrace and ca. 1.5 km south from the main Wonreli Harbor on the west side of Kisar (Figure 1). In this area the limestone cliffs containing shelters rise dramatically above the terrace. However, due to the proximity of the limestone outcrops to the port, and the difficulty of importing building material to the island, the terrace has been extensively mined and an unknown number of caves and shelters in this area have been destroyed.

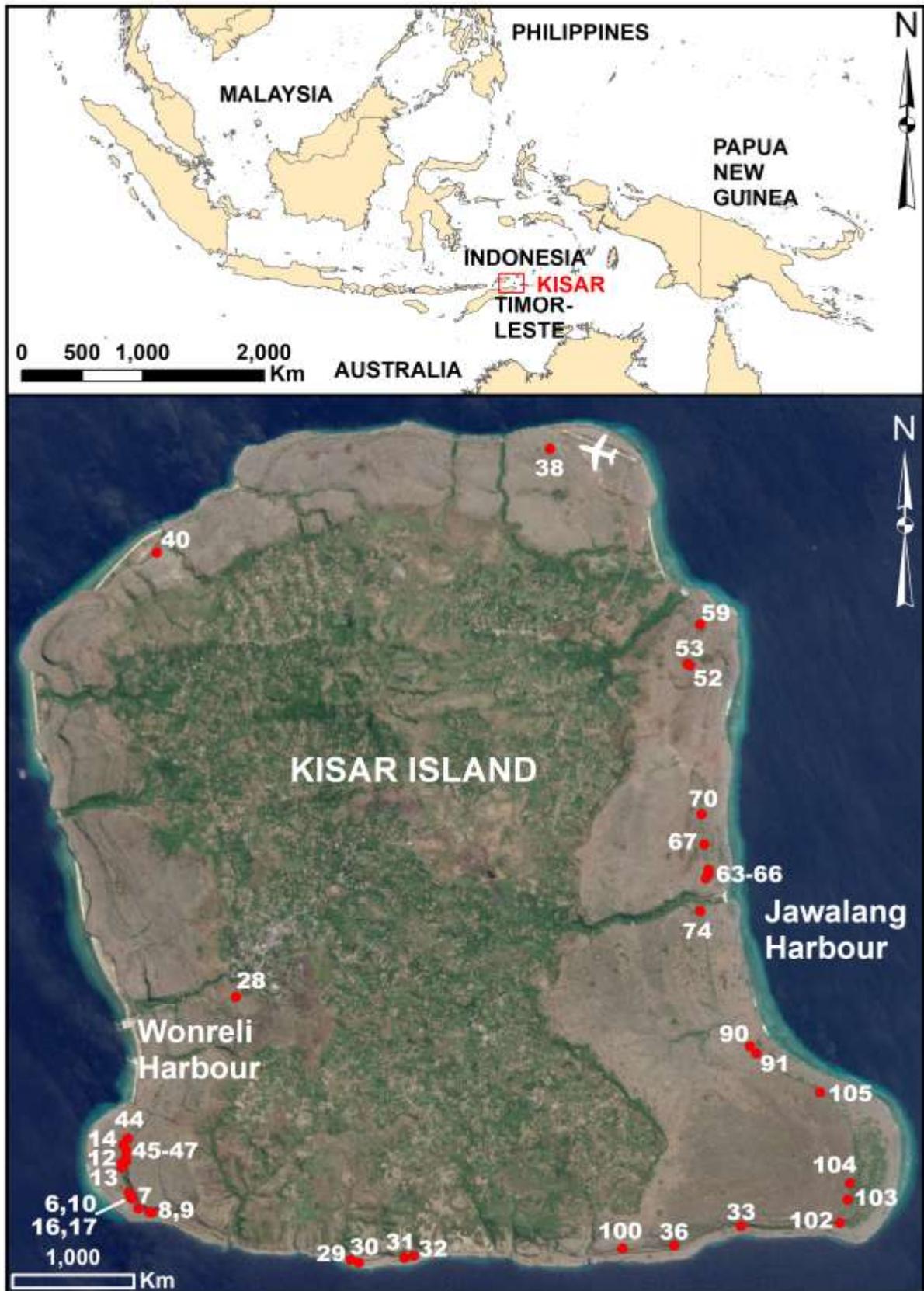


Figure 1: Map showing the location of Kisar (top) and identified rock art sites on the island (bottom). Sites are numbered based on their KSR codes (see Table 1). Satellite image from the Sentinel-2A satellite (2019-07-10) obtained from the Sentinel Data Hub (European Space Agency 2019).

Table 1: Rock art sites on Kisar Island. Sites are listed by KSR code (i.e. order of discovery), which corresponds to the numbers in Figure 1

Code	Site name	Latitude	Longitude	Distance to coast (m)	Elevation asl (m)	Site description ^a	Motif description
KSR 6	Intutun Shelter 1	-8.09916	127.14784	317	ca. 35	Small rockshelter in the base of limestone terrace 2a. The art is ca. 1–1.5 m above the shelter floor.	Geometrics, circular and oval shield-like motifs with internal divisions, quadruped, schematized boat with anthropomorph, red circles around natural holes in the rock.
KSR 7	Intutun Shelter 2	-8.10042	127.14877	223	ca. 35	Boulder on the 2nd limestone terrace with shallow indentations.	One red circle and faded red geometrics.
KSR 8	Intutun Shelter 3	-8.10084	127.14993	233	ca. 35	Very small overhang in cliff face of limestone terrace 2a.	Shield-like motif with cross hatching, eight sunray motifs, two schematized boats one of which has a mast and possible sail, a possible anthropomorph, circles with central dots and other indeterminate shapes; all in red.
KSR 9	Intutun Shelter 4	-8.10089	127.15023	225	ca. 35	Overhang in the raised limestone cliff of terrace 2b, about 3 m above the base of the cliff.	17 motifs in the shelter of which 15 are compositions of concentric circles with intersecting rays and lines dividing the circles. The geometric motifs combine both red and yellow pigment with the main circles in red and the inner circles in orange Geometric, red pigment, oval shield-like motif with one vertical line and horizontal evenly spaced lines creating internal pattern. One solid red pigment sun motif (see O'Connor <i>et al.</i> 2018a:Figure 12).
KSR 10	Intutun Shelter 5	-8.09865	127.14774	333	ca. 35	Southwest-facing rockshelter formed at the base of limestone terrace 2a.	Indeterminate red pigment.
KSR 12	Intutun Shelter 6	-8.09589	127.14695	357	ca. 35	Small shelter with narrow overhang at the base of limestone terrace 2a. Painted motifs are on the exposed face.	Two geometric red motifs. One has three concentric circles enclosing a sunray motif and another has five concentric circles with external rays.
KSR 13	Intutun Shelter 7	-8.09527	127.14697	363	ca. 35	Very small shelter with shallow overhangs in the base of limestone terrace 2a.	Extremely faded red/orange geometric and indeterminate motifs. Possible deteriorated sunray motif and possible triangular motifs. The remnant pigment occurs between 50 cm to 1 m above the shelter floor.

Code	Site name	Latitude	Longitude	Distance to coast (m)	Elevation asl (m)	Site description ^a	Motif description
KSR 14	Intutun Shelter 8	-8.09332	127.14712	316	ca. 35	The art is on the underside of the overhang/roof of a very large shelter formed within limestone terrace 2a.	Red and black rectilinear geometric motifs including crosses and lattice designs. Some red and overlapping pigment which varies in color from mulberry to orange red. At least one black hand stencil (third from top left in panel) and at least nine red hand stencils.
KSR 16	Intutun Shelter 9	-8.09915	127.14797	327	ca. 35	Face of small boulder on the 2nd limestone terrace, with a protected overhanging area preserving art.	Possible shield motif, comprising an oblong with a geometric pattern of a central vertical red line dissected by three red horizontal lines and a small red sunray motif.
KSR 17	Intutun Shelter 10	-8.09929	127.14804	321	ca. 35	Narrow shelter in ridgeline of terrace 2a. Art is on the lower protected face starting less than 1 m above the floor.	Three red schematized anthropomorphs. Boat with human figure on deck, sail, steering oar. Red infilled circle.
KSR 28	Wakrow	-8.07692	127.15968	1285	ca. 100	An isolated outcrop of large boulders inland from Wonreli Harbor. Art begins within 30 cm above the floor deposit and extends about 2 m up the back wall.	Faded schematized anthropomorph and some very faded motifs which are indeterminate.
KSR 29	Here Sorot Entapa (HSE)	-8.10626	127.17227	153	ca. 23	HSE is a shelter about 12 m in length at its widest point, and 10 m in depth from the back wall to the dripline. The wall of the shelter opens into a deep dome-shaped chamber (O'Connor <i>et al.</i> 2018b). The art is found exclusively on the shelter walls – none was seen in the deep chamber. The cave and shelter are at the base of the 3rd limestone terrace.	HSE contains a variety of art in various stages of preservation. Motifs include geometrics, boats and anthropomorphs. The geometrics near the chamber opening are well preserved and include a small boat which appears to have sails. Other motifs from this site including the small schematized boat below this panel were published in O'Connor <i>et al.</i> (2018a).
KSR 30	Wosi/Posi Cave 2	-8.10658	127.17318	112	ca. 23	Overhang in the base of the limestone terrace 2a to the east of KSR 29.	Faded indeterminate red pigment.
KSR 31	Wosi/Posi Cave 3	-8.10604	127.17823	191	ca. 28	Boulder with shallow overhangs at base of terrace 2b.	Faded indeterminate red pigment motifs. Art begins at about 1 m above the shelter floor.
KSR 32	Wosi/Posi Cave 4	-8.10585	127.17924	157	ca. 28	Small shallow area of overhang at base of terrace 2b. Art begins less than a meter above the deposit floor.	Three shield-shaped motifs, one sunray motif and two stick-figure type anthropomorphs. Other motifs include rectilinear motifs (lower center and lower right). All in red pigment.

Code	Site name	Latitude	Longitude	Distance to coast (m)	Elevation asl (m)	Site description ^a	Motif description
KSR 33	Irmula Cave	-8.10267	127.21557	183	ca. 38	Large deep overhang at the base of terrace 2b. Overhang roof in main part of site is at least 3 m high.	This site has extensive panels showing scenes of groups of anthropomorphs holding shields and other objects and one mounted on a horse. One figure sits on a large seat. It includes red sunray motifs and other geometrics. All in red/orange pigment. At least three boats, one with passengers and two with masts and sails.
KSR 36	Here Soro Soro Cave	-8.10481	127.20816	186	ca. 24	This overhang formed at the base of the 3rd limestone terrace and is divided into three walled sections. The stone walls are humanly constructed. The 1st walled compound measures approximately 20 x 10 m facing south to sea 150–200 m away with sloped scarp from terrace flat to wall. The 2nd walled enclosure is smaller 15 x 5m on terrace flat with less rock art. The 3rd enclosure is 15 x 10 m with no sign of rock art on the walls.	Small red anthropomorphs shown in frontal stance, circles, circles divided by crosses, concentric circles and other geometrics all in red pigment, red pigment used to enhance holes or to fill holes. The 1st walled section contains at least 19 anthropomorphs and 13 sunray motifs. The 2nd walled section contains at least three anthropomorphs and five sunrays.
KSR 38	Pur-Pura Cave	-8.01602	127.19473	276	ca. 73	A cave at the base of the 3rd limestone terrace near the modern airport. The entrance faces north to the sea.	This cave contains more than 60 hand and arm stencils in red pigment. Most are extremely faded and weathered. One appears to have a stalactite formed over the top of it indicating significant antiquity.
KSR 40	Midao Shelter	-8.0274	127.15108	304	ca. 15	A small northwest-facing shelter in a boulder formation at the base of the 2nd limestone terrace.	A single faded red hand stencil with only three fingers preserved.
KSR 44	Intutun Upper Terrace 1	-8.09261	127.14761	288	ca. 50	A west-facing overhang formed at the base of limestone terrace 2b.	Three red concentric circle geometrics which are obscured by coatings of calcium carbonate.
KSR 45	Intutun Upper Terrace 2	-8.09397	127.14745	373	ca. 65	A west-facing rockshelter at the base of terrace 2c with a mostly rocky floor.	Remnant red pigment. Possible faded incomplete hand stencils.
KSR 46	Intutun Upper Terrace 3	-8.09476	127.14738	409	ca. 65	A west-facing rockshelter at the base of limestone terrace 2c. The shelter is shallow and lacks sediment except for a small indent with a sandy floor approximately 6 x 3 m in size.	Red hand stencils (more than 20). Variable state of preservation. Some covered with carbonate.

Code	Site name	Latitude	Longitude	Distance to coast (m)	Elevation asl (m)	Site description ^a	Motif description
KSR 47	Intutun Upper Terrace 4	-8.09515	127.14746	417	ca. 65	A west-facing rockshelter in at the base of terrace 2c, with a raised rocky floor. Approximately 6 m wide and 4.5 m high at the entrance.	Hand stencils (at least six or seven), geometrics including crosses and crosses inside circles, and curved and spiral patterns. Red, black, and white pigment.
KSR 52	Pur-Pura Negeri Lama 1	-8.04023	127.21015	605	ca. 52	Medium size solution cave formed within the 3rd limestone terrace below the large Pur-Pura Negeri Lama.	A single very faded image in red pigment, possible anthropomorph.
KSR 53	Pur-Pura Negeri Lama 2	-8.04006	127.20993	631	ca. 52	Low, approximately 1 m high shelf in 3rd limestone terrace facing east and extending back ca. 2–3 m.	Dozens of images. Orange and dark red pigment. Stick figure anthropomorphs, geometric crosses, small sunray motifs.
KSR 59	Lui Puru 2	-8.03563	127.21132	437	ca. 44	Medium-size solution cave with a low (ca. 1–1.5 m high) entrance formed at the base of the 3rd limestone terrace.	Faded circles, spirals and handstencils in dark red pigment.
KSR 63	Jawalang 2	-8.06395	127.21182	339	ca. 30	East-facing overhang at the base of the 3rd limestone terrace, with a low roof and sloping rubble and sediment floor that narrows to join the roof at the back.	Roof and walls have at least 60 hand and arm stencils predominantly in red but some in orange/brown, and small anthropomorphs shown in action, quadrupeds: possible goat or dog, and possible phalanger, and possible monitor, three red fish in solid red pigment, some faded geometrics and red pigment applied to outline natural features and carbonate flows on the rock wall (O'Connor <i>et al.</i> 2018a).
KSR 64	Jawalang 3	-8.06358	127.2121	292	ca. 30	Small shallow overhang with rocky floor which connects the larger shelters of KSR 63 and KSR 65. Pigment art is at ca. 1–2 m above floor.	All motifs are in red pigment. Faded red geometrics, patches of indeterminate red pigment, 1 possible small red sunray motif.
KSR 65	Jawalang 4	-8.0634	127.21215	277	ca. 30	Large, deep, east-facing rockshelter shelter at base of 3rd terrace with a high ceiling. Back wall has weathered to form two levels at the back with the floor of the 2nd level approximately 2 m higher than the first.	Contains large numbers of sunray motifs in different colors including multi-colored motifs in red, black, yellow, white and cream. One red sunray motif includes a green pigment center (O'Connor <i>et al.</i> 2018a:Figure 9c). Also includes geometric motifs, two dogs with uplifted tails, at least four handprints in red, black and yellow and a possible small anthropomorph made using a stencil (O'Connor <i>et al.</i> 2018a).
KSR 66	Jawalang 5	-8.06297	127.21212	262	ca. 30	Long shallow overhang, east facing and extending north from KSR 65.	Patches of possible red pigment which may be deteriorated motifs.

Code	Site name	Latitude	Longitude	Distance to coast (m)	Elevation asl (m)	Site description ^a	Motif description
KSR 67	Jawalang 6	-8.06017	127.2117	282	ca. 30	Large overhang north of Jawalang 1–5 but still in the base of terrace 3. Massive speleothem columns have formed near the dripline, with a deeper internal cavern containing most of the rock art.	Red hand stencils, red boat with anthropomorph with a paddle facing the steering oar, a number of small anthropomorphs, and sunray motifs all in red pigment (O'Connor <i>et al.</i> 2018a).
KSR 70	Loi Puru Ula 2	-8.0568	127.2114	291	ca. 35	East-facing overhang formed high up in the cliff face of the 3rd limestone terrace	Patch of faded red pigment.
KSR 74	Jawalang 1 South	-8.06759	127.21119	476	ca. 35	Elevated small V-shaped cave at the base of the 3rd limestone terrace.	Three faded hand stencils in dark red pigment were observed.
KSR 90	Laha Wera'a 3	-8.08266	127.21665	380	ca. 35	Laha Wera'a is a complex of three elevated connected shelters formed along the east-facing cliff of the 3rd limestone terrace. The 3rd shelter has a floor that slopes from the back wall towards the dripline. One section of the shelter is fortified with a stone wall built along the front.	The shelter had a single red hand stencil and an engraving on a stalactite formation. The engraving has a trident design with three cupules – one above each of the trident spokes. The engraving faces out from the site. A deep bowl has been cut into the top of the stalactite surface, above the engraving.
KSR 91	Lilit Wera'a 1	-8.08342	127.21738	387	ca. 35	Small cave formed at the base of the 3rd limestone terrace, ca. 12x15 m with a sloping floor.	Modern graffiti in white paint adorns much of the cave but two red hand stencils were also recorded.
KSR 100	Oirata 3	-8.10512	127.2024	189	ca. 45	Small east-facing cave ca. 3 m up the face of the 3rd limestone terrace. Cave is ca. 4x3 m with a 4 m high roof, but with a small opening.	Includes hand stencils, circles and small highly stylized anthropomorph all in red pigment.
KSR 102	Lorong Kodoo Wera'a	-8.10235	127.2265	293	ca. 37	Exceptionally large rockshelter, at least 80 m long with a wide floor up to 6 m deep along its length, and ceiling height ca. 2–3 m. Shelter is east facing and 5–10 m up the 3rd terrace face.	Poorly preserved red rock art on ceiling.
KSR 103	East Oirata Cave	-8.09978	127.2274	445	ca. 52	A small cave 10 m wide and 15 m deep at the base of the 3rd limestone terrace. The roof is 2 m high near the entrance, narrowing towards the back of the shelter.	At least 16 faded red hand stencils.
KSR 104	Oirata 4	-8.0982	127.2277	710	ca. 93	A small very narrow rockshelter at the base of the 3rd terrace ca. 2 m high at entrance.	Small anthropomorphs: one in solid black holding an object, one red outlined in black, and at least 6 others in red pigment. At least one red sunray motif with concentric circles in center.
KSR 105	Jawalang South 10	-8.08782	127.2244	294	ca. 42	Small cave at base of 3rd terrace with built stone structure in center near dripline.	One well-preserved left hand stencil in red pigment and patches of faded red pigment.

^a Terrace numbers follow Major *et al.* (2013).

KSR 6 *Intutun Shelter 1* (Figure 2) contains circular and oval geometrics, shield-like motifs with internal divisions formed by crosses and circles, a possible quadruped, some red cross-shaped figures which may be schematized anthropomorphs, and a possible schematized boat with anthropomorphs.

KSR 8 *Intutun Shelter 3* (Figure 3) is an overhang at the base of terrace 2a (Major *et al.* 2013) with small areas of protected wall. It contains a shield-like motif composed of two concentric circles with cross hatching in the center (left panel), at least eight sunray motifs, two possible schematized boats one of which has a mast and sail, circles with central dots, and other indeterminate shapes (center of panel) and an anthropomorph (right).

KSR 12 *Intutun Shelter 6* (Figure 4A) contains two geometric red motifs. One is circular with a central red dot and five concentric circles which are dissected by lines running from the rim of the first circle through the outer circle to form external spokes radiating from the outer circle. The other has three concentric circles enclosing a sunray motif with seven spokes. These are very similar to those in *Intutun Shelter 4* (KSR 9).

KSR 14 *Intutun Shelter 8* (Figure 5) is a very large shelter with art on the flat ceiling. Red and black rectilinear geometric motifs include crosses and lattice designs. At least one black (third from top left in panel) and nine red hand stencils.

KSR 16 *Intutun Shelter 9* (Figure 4B) is a small boulder with a shallow overhang on the 2nd limestone terrace. It contains a red shield-like form and a red sunray motif.

KSR 17 *Intutun Shelter 10* (Figure 6) contains three highly schematized stick figure anthropomorphs and a boat with at least one person shown on deck. The anthropomorphs have raised arms and head dresses and the one on the viewer's left is holding an object. The boat has a central mast and sail and above the sail a flag flies. The boat has an upraked prow and a steering oar and also appears to show oars. All motifs are very faded.

KSR 28 *Wakrow* (Figure 7) is small overhang in a boulder outcrop located ca. 1.4 km

from the coast and at least 100 m above sea level, overlooking the harbor town of Wonreli. It includes three schematized red anthropomorphs and some faded red indeterminate motifs.

KSR 44 *Intutun Upper Terrace 1* (Figure 8) is a small overhang in the base of terrace 2b (Major *et al.* 2013). It has three red geometric motifs which are obscured by coatings of calcium carbonate. The two clearest examples (middle and lower panel) are formed from concentric circles divided by rays or lines similar to those in *Intutun Shelter 4* (KSR 9; O'Connor *et al.* 2018a:Figure 12).

The Wosi/Posi Rock Art Complex

Located along the southern to southeastern coast of Kisar are the limestone terraces within the territory of the Wosi/Posi villages. A multitude of rockshelters and caves have formed in these terraces, the majority at the base or within the cliff face of the 3rd terrace (see Major *et al.* 2013). Many of these sites preserve rock art on the shelter/cave walls.

KSR 29 *Here Sorot Entapa* (HSE) is a combined cave and shelter that was excavated in 2016 with occupation shown to have begun at the shelter ca. 16,000 years ago (O'Connor *et al.* 2019). The art at HSE occurs exclusively on the walls and ceilings of the shelter (Figure 9). None was seen inside the cave. The HSE assemblage is dominated by geometric motifs featuring scrolls, but also figurative motifs including a number of schematized boats (O'Connor *et al.* 2018a:Figure 11).

KSR 32 *Wosi/Posi Cave 4* (Figure 10) has a single panel of art containing two anthropomorphs, three shield-like motifs and a sunray motif in red pigment, and a lattice rectilinear motif. The human forms are simple stick figures with raised arms. The body, head and genitals are formed by a simple line with an upturned cup or U-shape for the arms and a downturned one for the legs.

KSR 33 *Irmula Cave* (Figures 11 and 12) is a large deep overhang in the base of terrace 2b (Major *et al.* 2013) on the south coast with several panels and isolated motifs painted in solid red or orange pigment. The largest panel (Figure

12) shows lively scenes of people engaged in ritual or actual combat. Groups of people are shown holding shields and other weapons, and riding horses. At the top of the panel two anthropomorphs face each other. In front of their bodies they hold long shields which reach to the ground, connecting to their inner foot. In their other hand they hold an object, possibly a weapon. They are painted in semi-profile in order to depict their traditional bark loincloths. The figure on the left has an elaborate branching headdress. To the right of this group and facing them is another shield holder. Below them in the panel is a rider and a seated human figure. On the lower left side panel are another two figures with backswept pointed headdresses and numerous figures holding shields or weapons. This panel includes at least four red sunray motifs. The scene at Irmula Cave and the style in which the figures are painted have striking similarities to the panels at Tutuala Scarp in Timor Leste (O'Connor et al. 2015:Figure 6). In other parts of the shelter there are additional small anthropomorphs with upraised arms some holding objects, sunray motifs and concentric circles as well as three boats (Figure 11). The smaller boat (upper center) is in dark red pigment and has passengers. The two larger boats (upper left and right) have sails and two masts. The craft on the left is flying flags. The one on the right looks like a European 'tall ship' with its sails in the furled position. Both of the large boats with sails are painted in orange pigment.

KSR 36 *Here Soro Soro Cave* (Figure 13) is a large overhang divided into three sections by built walls. It contains small red anthropomorphs shown in frontal stance with raised arms. Some are holding objects and some have vertical headdresses. It also has a large number of concentric circles, circles divided by crosses, sunray motifs and other geometrics all in red pigment, as well as red pigment used to enhance or fill holes.

KSR 100 *Oirata 3* (Figure 14) is a small cave in the 3rd terrace with hand stencils, circles and a small highly stylized frontal anthropomorph. The anthropomorph has a large head divided by the body line, raised arms that bend down at the elbow and splayed legs.

KSR 104 *Oirata 4* (Figure 15) contains a panel of anthropomorphs in twisted partial profile in red and black. There are at least five figures distinguishable with an additional three partial figures, two to the viewer's left and one to the right. All are shown facing left (to the viewer's right), with the exception of the two figures on the right; one of these is shown in frontal view with arms outstretched and the one at the far right seems to be seated and facing right towards the main group. The anthropomorph at the center of Figure 15 is in solid black pigment and is holding an object aloft. Below is a solid red human figure outlined in black pigment with arms raised, holding an object in its upstretched arm. Below and above are two partial solid red pigment anthropomorphs. Two other isolated red pigment human figures occur at Oirata 4, one seated on a chair holding an object to its mouth while the other has outstretched arms, a head and torso, but is otherwise incomplete.

The Jawalang Rock Art Complex

Just north of the eastern harbor on Kisar known as Jawalang Harbor, are a series of east-facing rock shelters which extend for a distance of about 400 m along the base of the 3rd coralline terrace about 30 m above sea level and 300 m from the coast. Five of these shelters, Jawalang 2, 3, 4, 5 and 6 (KSR 63, 64, 65, 66 and 67) contain painted art. Jawalang 2, 4 and 6 have been described in an earlier publication and some of the motifs published (O'Connor et al. 2018a). Here we present additional images from Jawalang 6 (KSR 67). South of Jawalang harbor a number of sites were also identified in the same eastward-facing terrace.

KSR 67 *Jawalang 6* (Figure 16) is a very large overhang with impressive speleothem columns at the southern end of the shelter. The painted art is all red pigment and includes at least seven hand stencils (not illustrated), geometrics including sunray/star motifs with multiple rays (G and I), a quartered circle with opposing pigment infill (H), a circular motif composed of two circles with four tentacle-like lines emerging from it (F), and an infilled circle (not illustrated). Three rayed geometrics with a dist-

inctive cross at their center, possibly referencing those cast on the upper surface of Moko drums, were reproduced previously (O'Connor *et al.* 2018a:Figure 9e, f and g). Moko drums are small hourglass-shaped drums cast of bronze. They were made in workshops in east Java for export to the Nusa Tenggara islands and are found from Flores to Alor, but are most common in Alor. They are still played during ceremonies marking transitions in life such as marriage and death (Calo 2014:120–125). They are thought to have been produced from the late first millennium CE with production continuing into the twentieth century (Calo 2014:151).

Jawalang 6 includes a number of anthropomorphs including group A which has two central figures facing each other with backswept hair, which appear to be engaged in pounding (rice or maize). This group is very similar to a group similarly engaged in Jawalang 2 (KSR 63; O'Connor *et al.* 2018a:Figure 3a). Anthropomorph B has upward spikey hair or a head-dress of feathers and wears the traditional bark loincloth (Kennedy 1934). One hand is missing and the other has three fingers, like a short sword. Anthropomorph C also may be pounding. It has backswept hair like the figures in group A and is shown in profile. It appears to have only one leg but the other leg may have been lost due to poor pigment preservation. An

anthropomorph in a boat with an upraked prow from this site was previously illustrated (O'Connor *et al.* 2018a:Figure 11). Animals include a possible fish and a quadruped (D and E).

KSR 90 Laha Wera'a 3 (Figure 17) is a shelter in a complex of three elevated connected shelters in the 3rd terrace. The front of the cave has a reinforcing stone wall built up to, and at the edge of, the natural slope where it drops away outside the dripline. A single hand stencil and an engraving were recorded at this site. The engraving is on a stalagmite and according to our local guide is believed by the community to be a 'snake' rock. The engraving consists of a trident with one cupule above each trident spoke. A bowl has been carved into the flat top of the stalagmite, above the engraving.

The Pur-Pura Rock Art

KSR 38 Pur-Pura Cave (Figure 18) is a deep cave on the northeast coast near the current airport, facing north to the sea. It contains more than 60 red hand and arm stencils. One has a stalactite growing over the palm of the hand. This, and the weathered condition of the stencils, suggests a probable Pleistocene age for the art at this site.

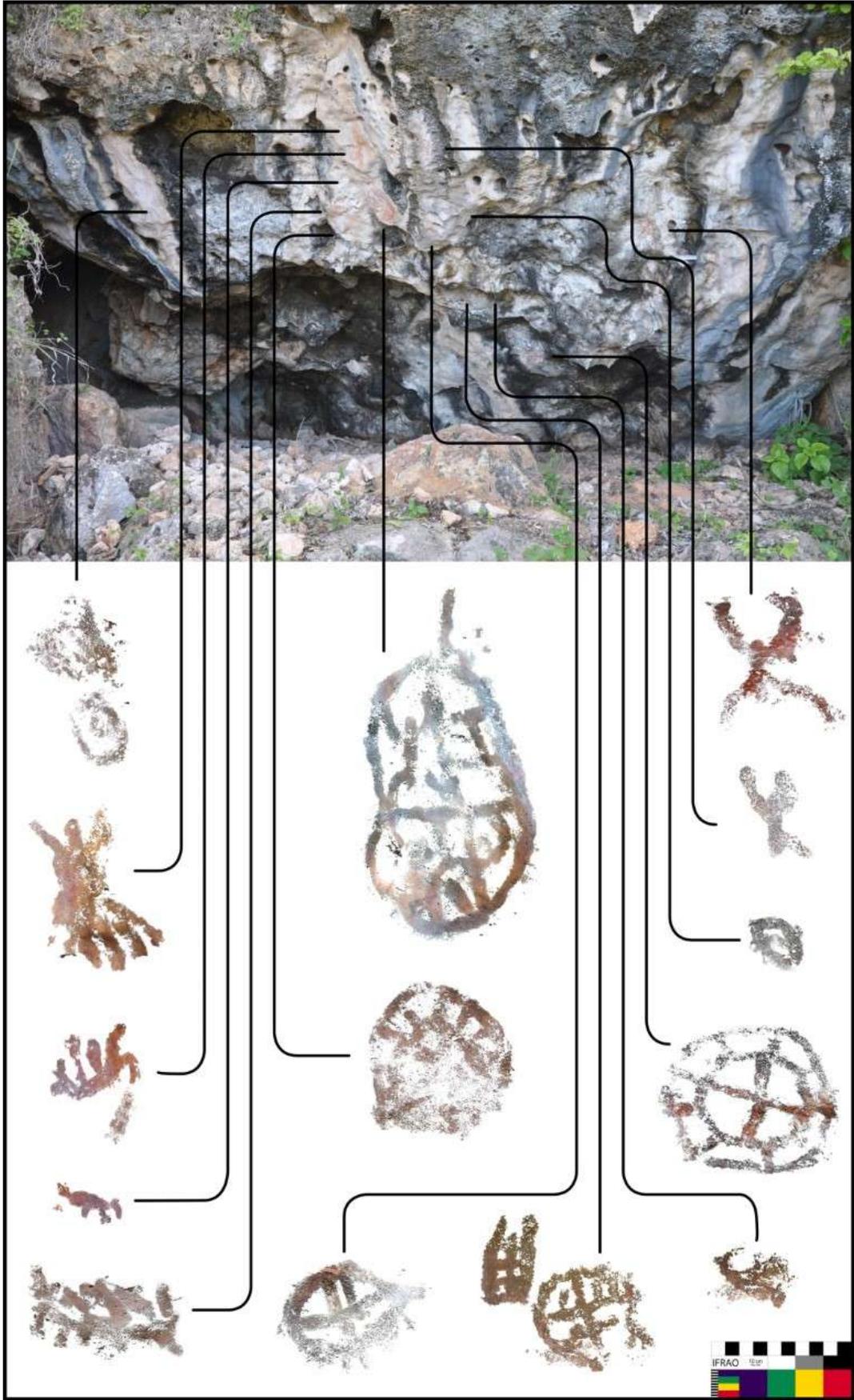


Figure 2: Overview of KSR 6 (top) with extracted images (bottom). Lines indicate location of motifs across the site. Photograph by Marlon Ririmasse. Image by Adam Black.

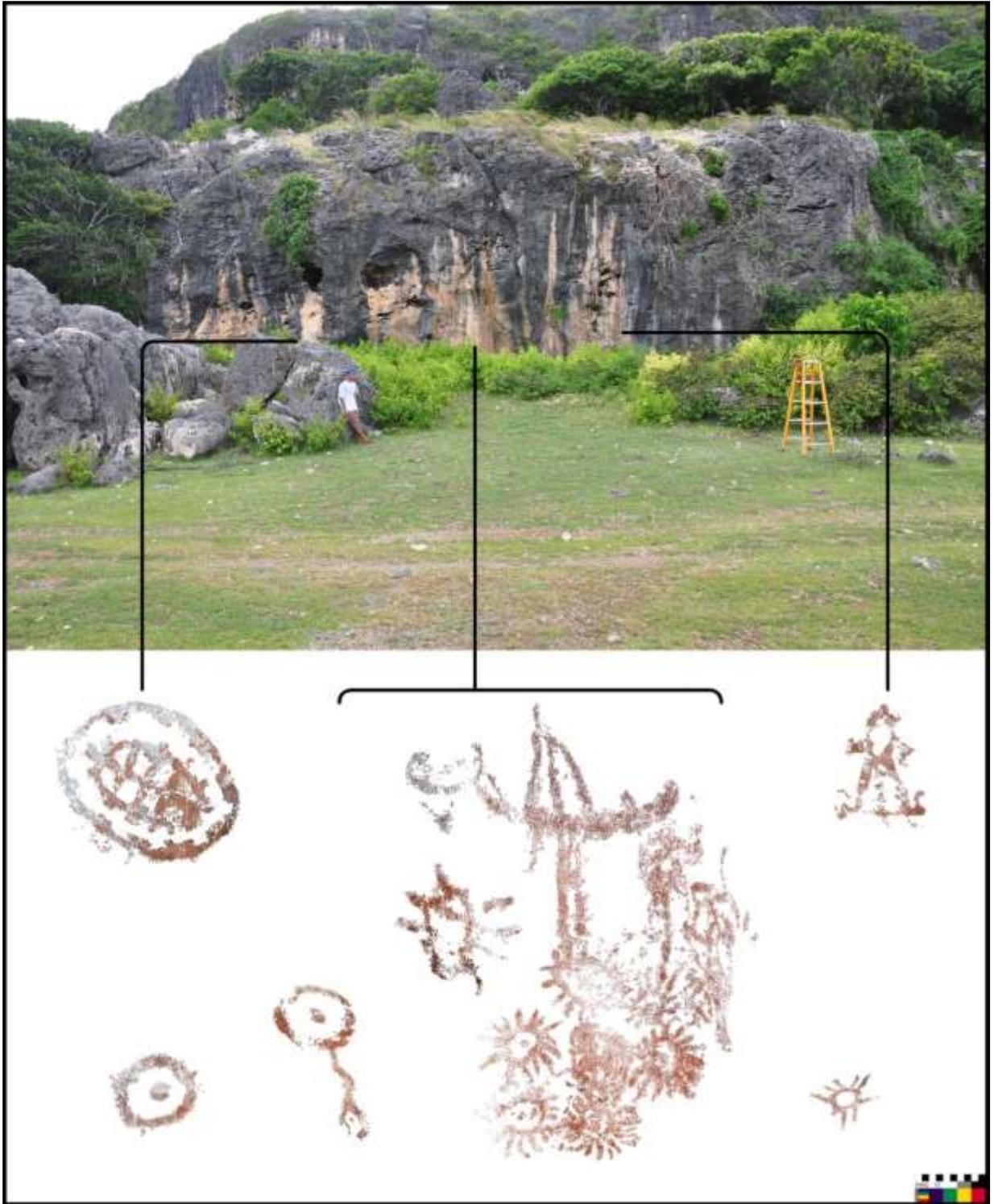


Figure 3: Overview of KSR 8 (top) with extracted images (bottom). Lines indicate location of motifs across the site. Photograph by Marlon Ririmasse. Image by Adam Black.

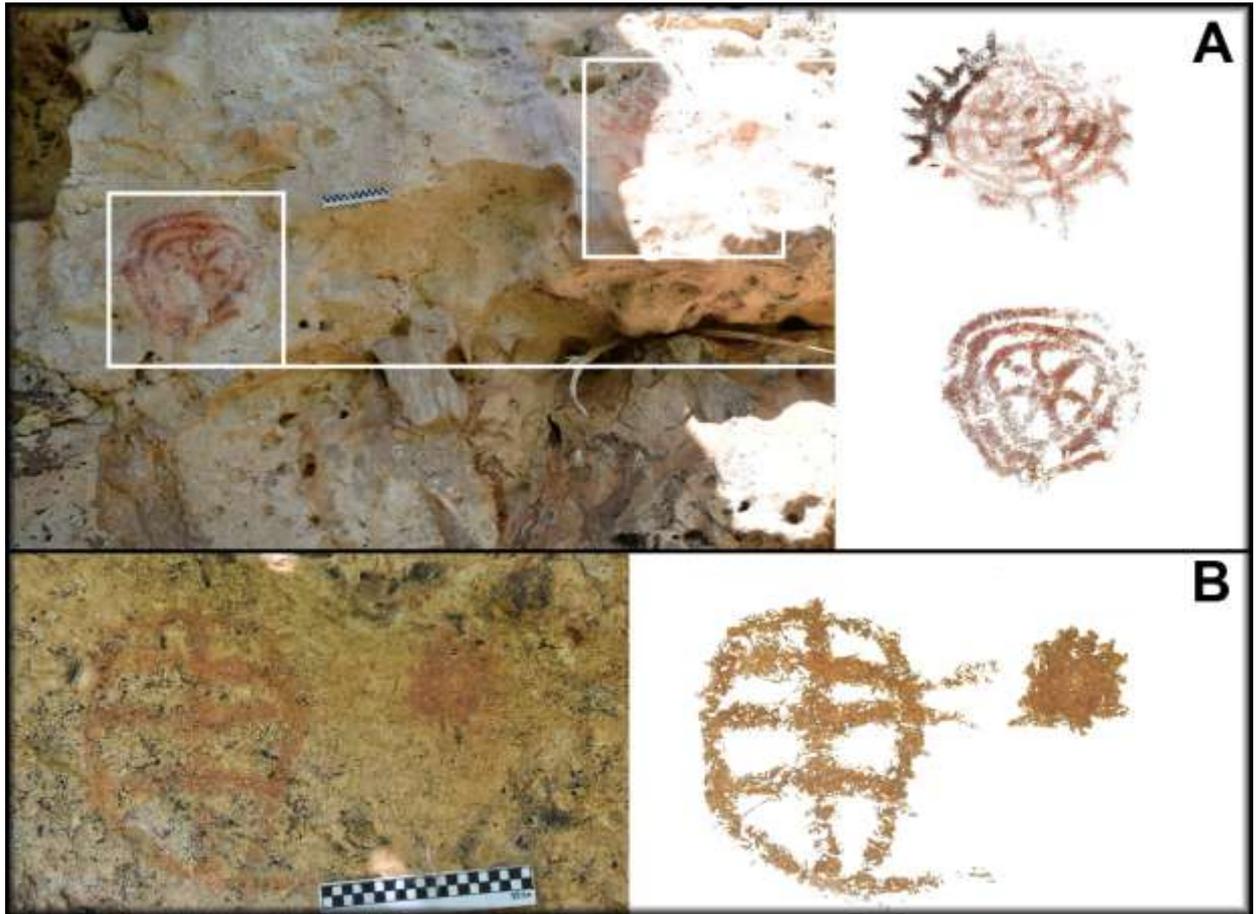


Figure 4: Original photograph (left) and extracted sunray/shield motifs (right) at KSR 12 (A) and KSR 16 (B). Photographs by Marlon Ririmasse. Image by Adam Black.

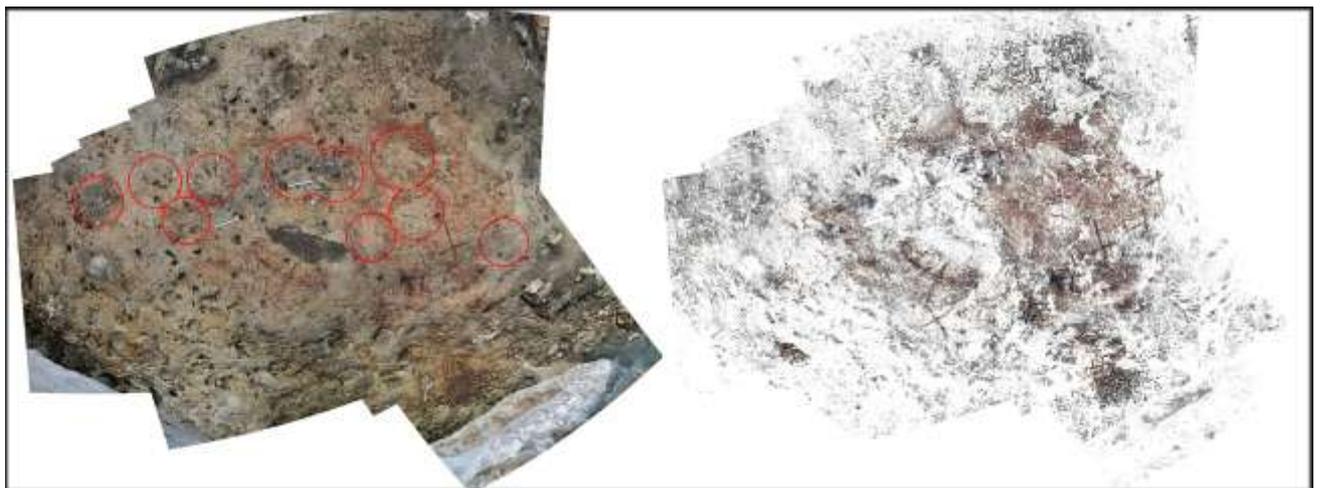


Figure 5: Hand stencils and crosshatching on the roof of KSR 14. Original photo with stencils circled (left) and extracted images (right). Photographs by Marlon Ririmasse. Image by Adam Black.

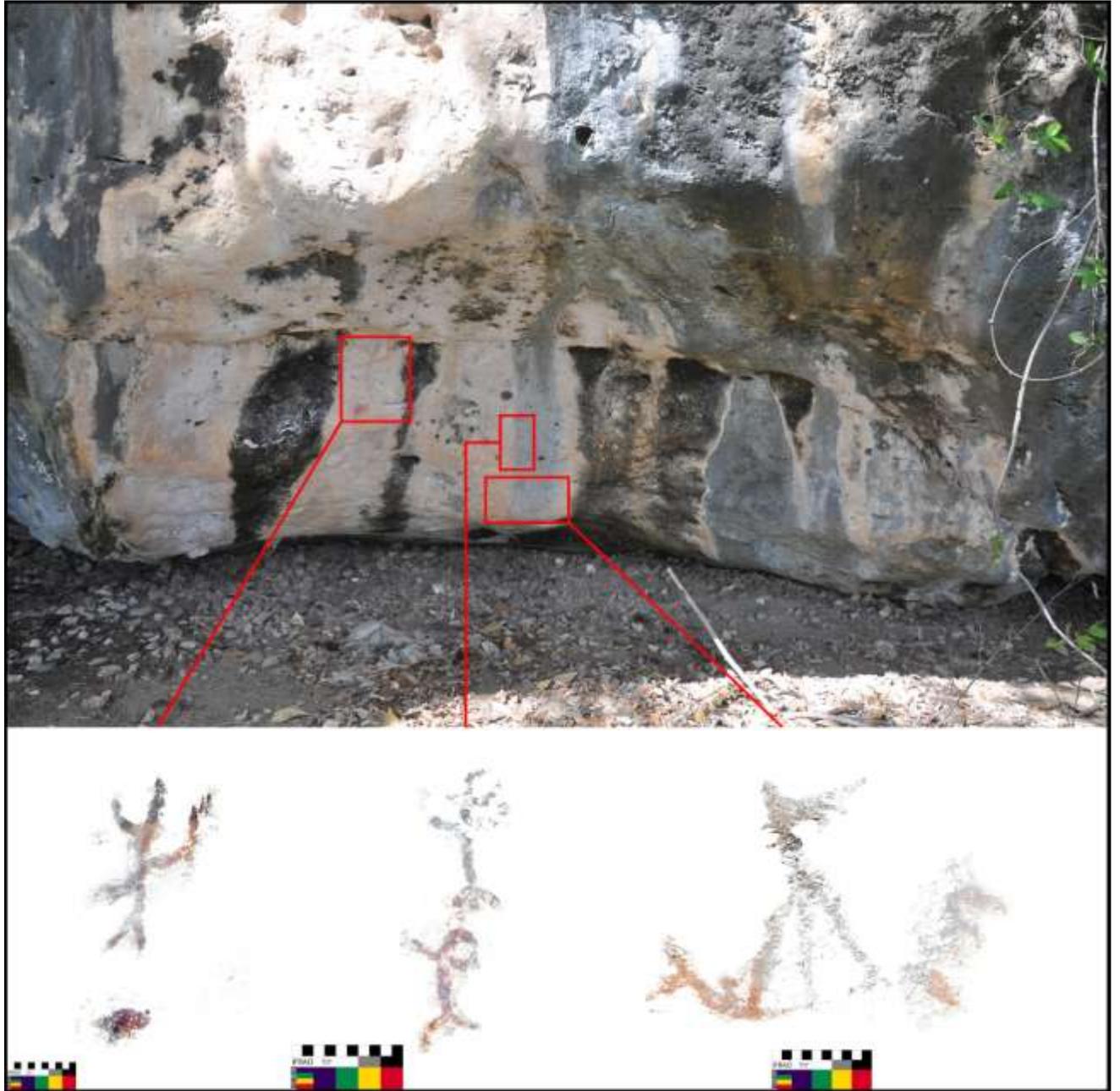


Figure 6: Overview of KSR 17 (top) with extracted images (bottom). Lines indicate location of motifs across the site. Photograph by Marlon Ririmasse. Image by Adam Black.

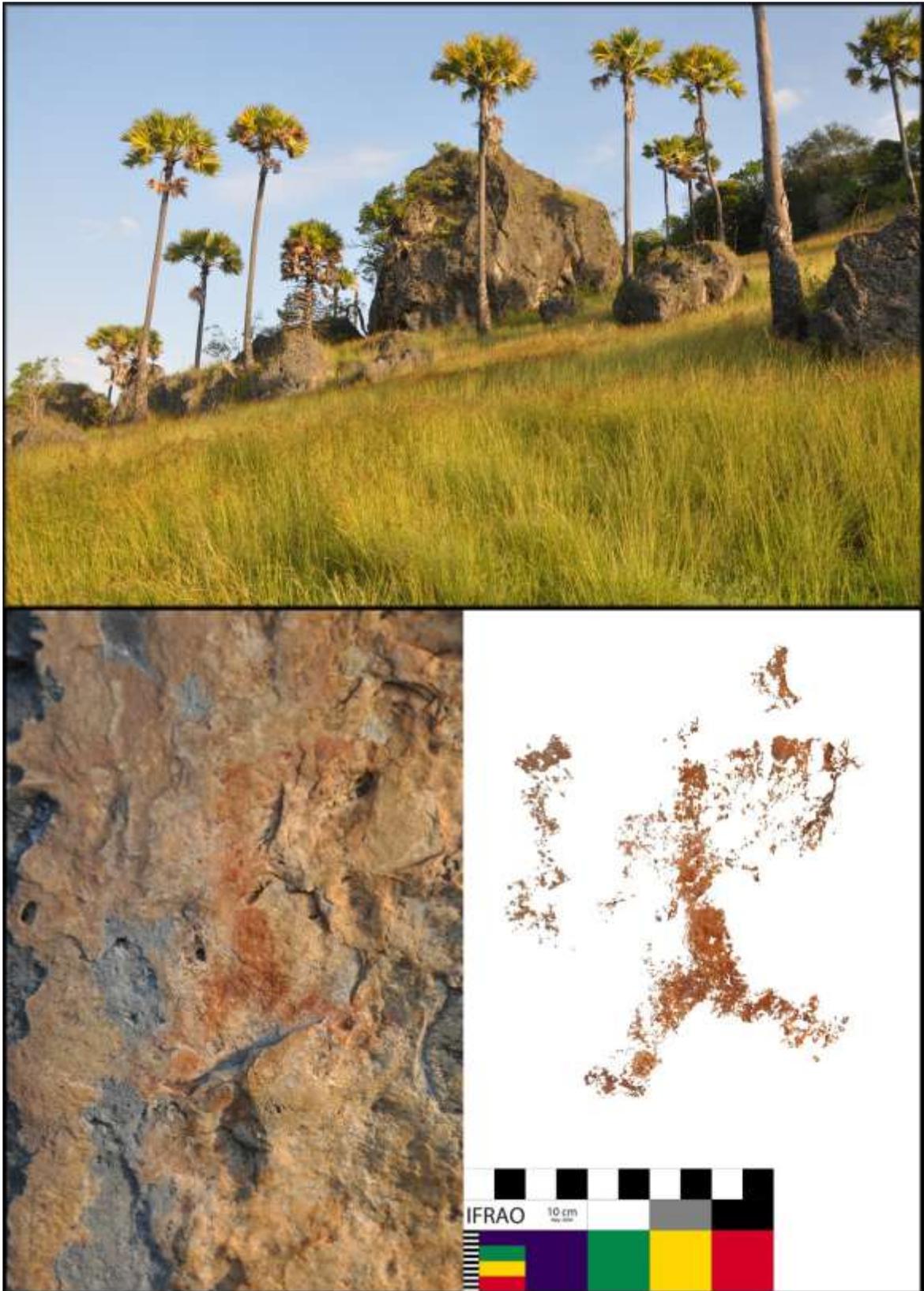


Figure 7: Overview of KSR 28 (top) with extraction of one of the anthropomorphs (bottom). Photographs by Marlon Ririmasse. Image by Adam Black & Shimona Kealy.

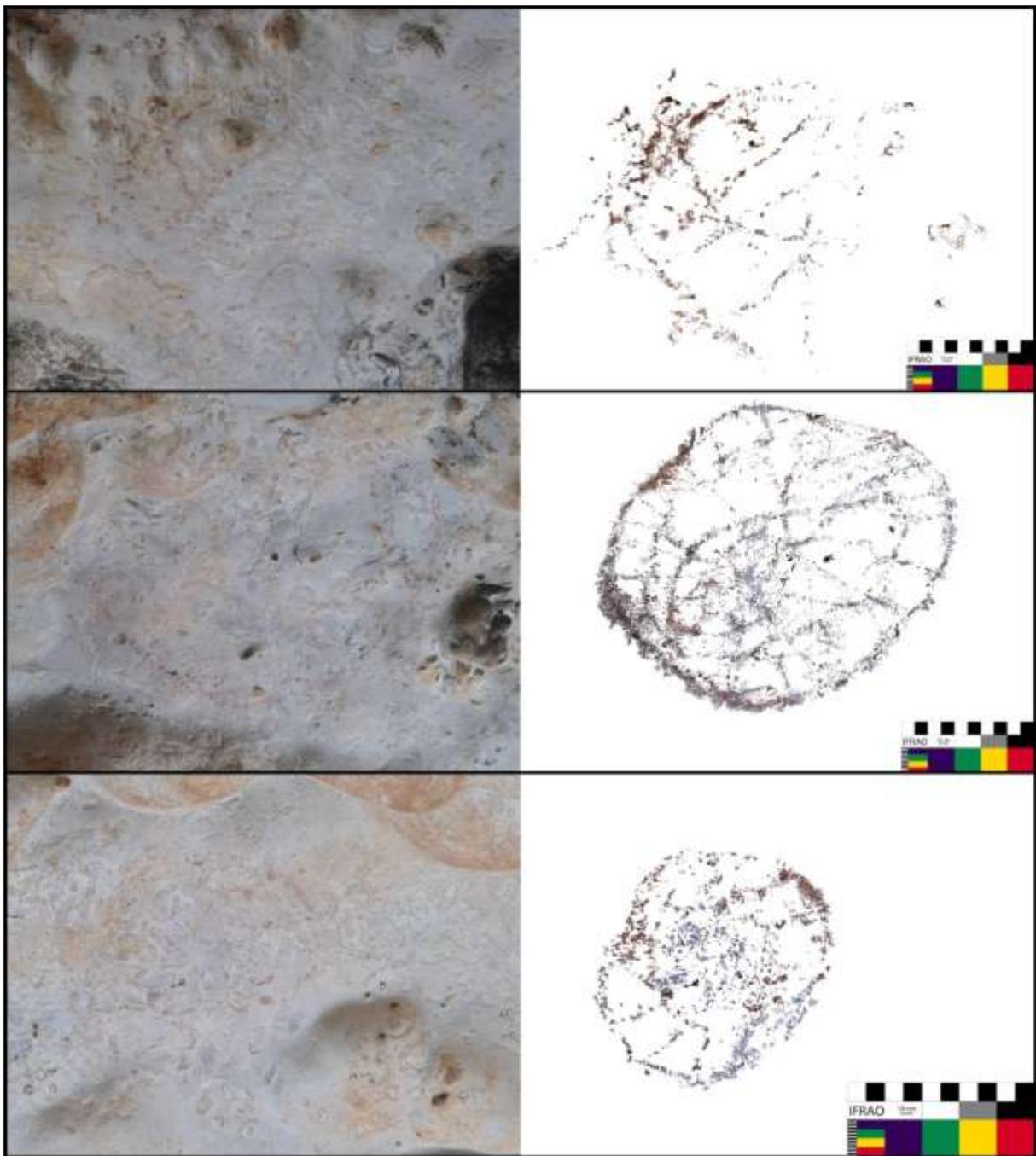


Figure 8: Original photographs (left) and extracted sunray/shield motifs (right) at KSR 44. Photographs by Marlon Ririmasse. Images by Adam Black.

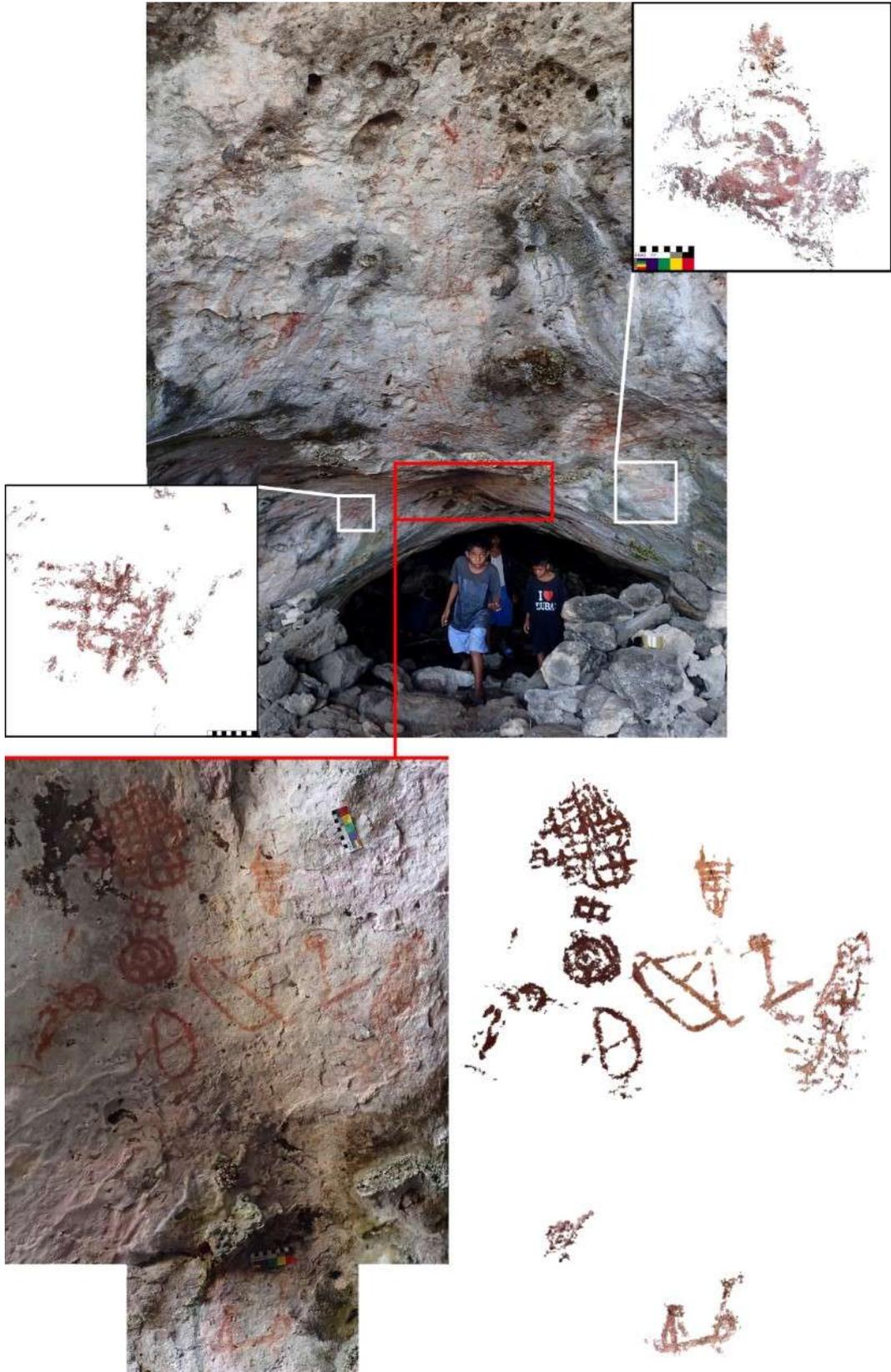


Figure 9: Overview photograph of KSR 29 (top) and close-up of the largest panel (bottom left), with corresponding extracted images and their locations at the site indicated. Photographs by Marlon Ririmasse. Images by Adam Black.

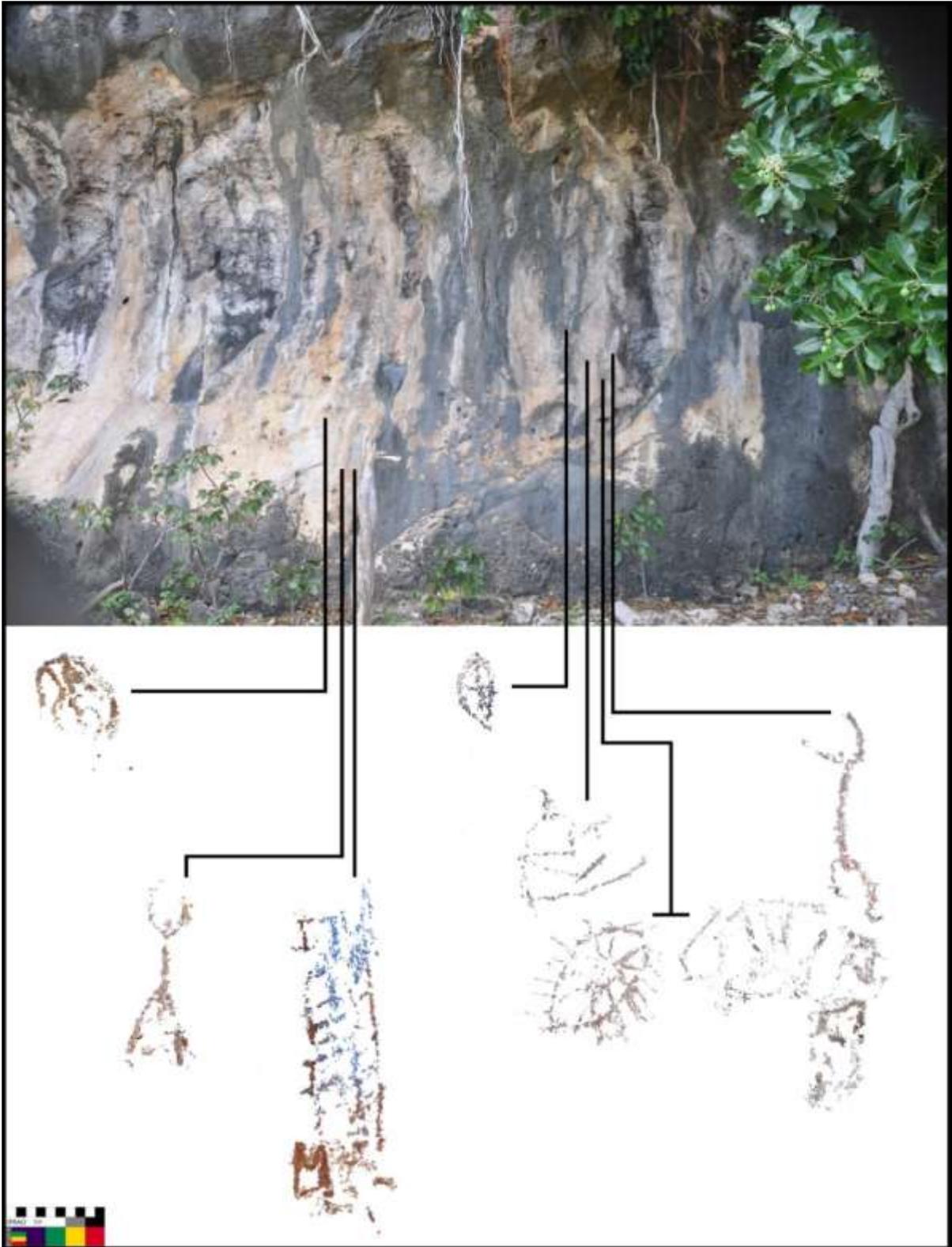


Figure 10: Overview of KSR 32 (top) with extracted images (bottom). Lines indicate location of motifs across the site. Photograph by Marlon Ririmasse. Image by Adam Black.

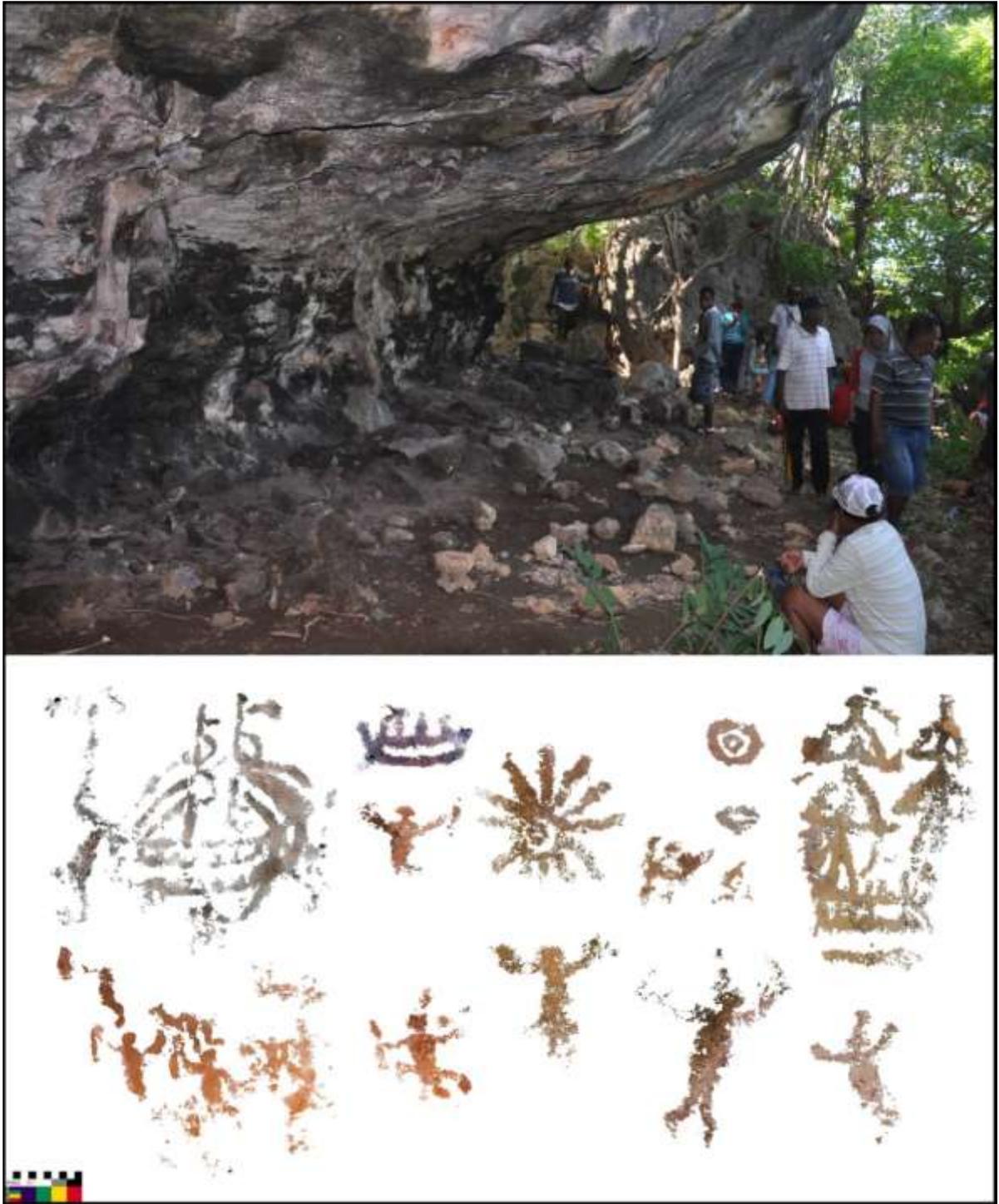


Figure 11: Overview of KSR 33 (top) with extracted images from various parts of the site (bottom). Photograph by Marlon Ririmasse.
Image by Adam Black.

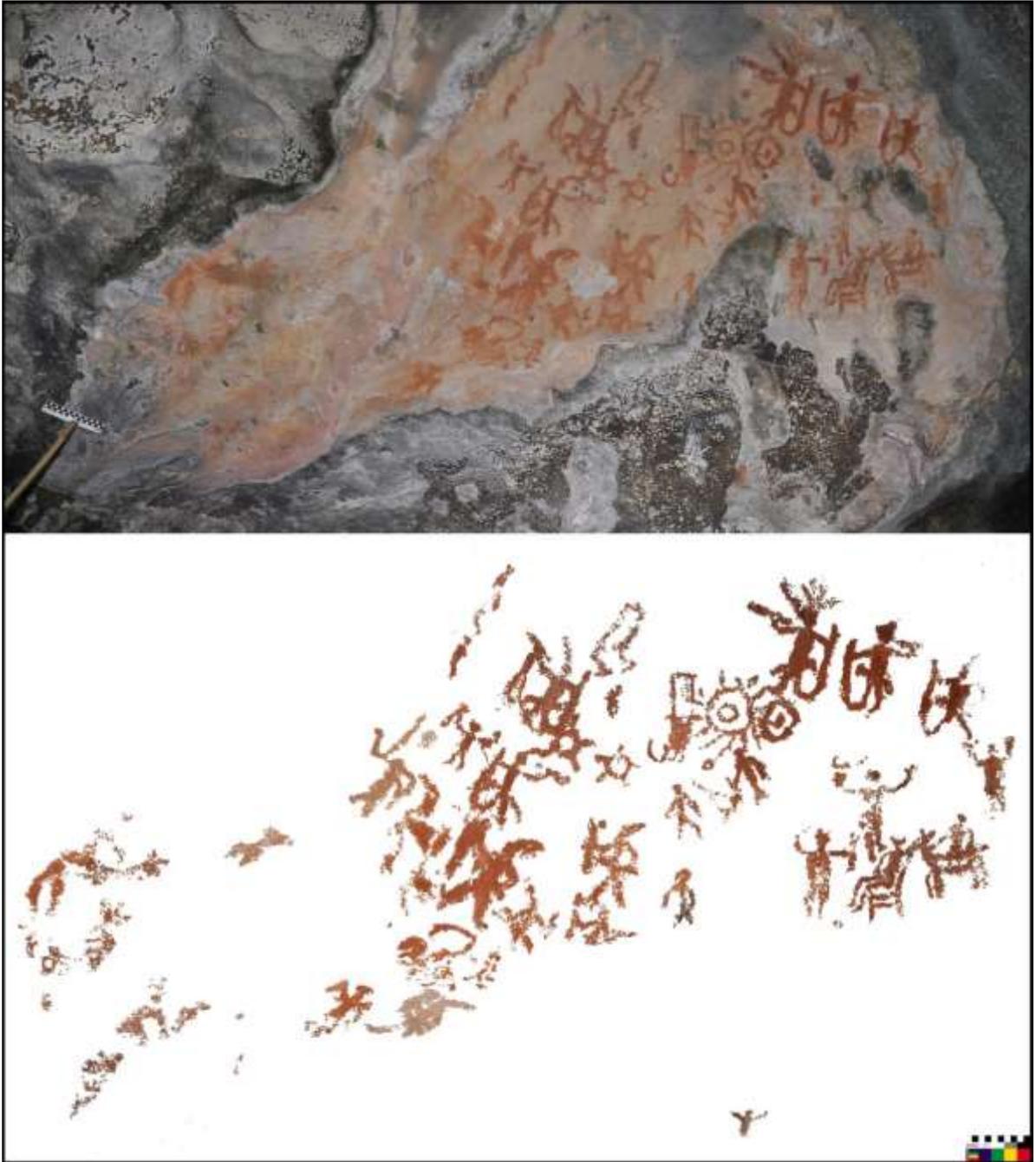


Figure 12: Overview photo of the most extensive rock art panel at KSR 33 (top) with corresponding extracted image (bottom). Photograph by Marlon Ririmasse. Image by Adam Black.

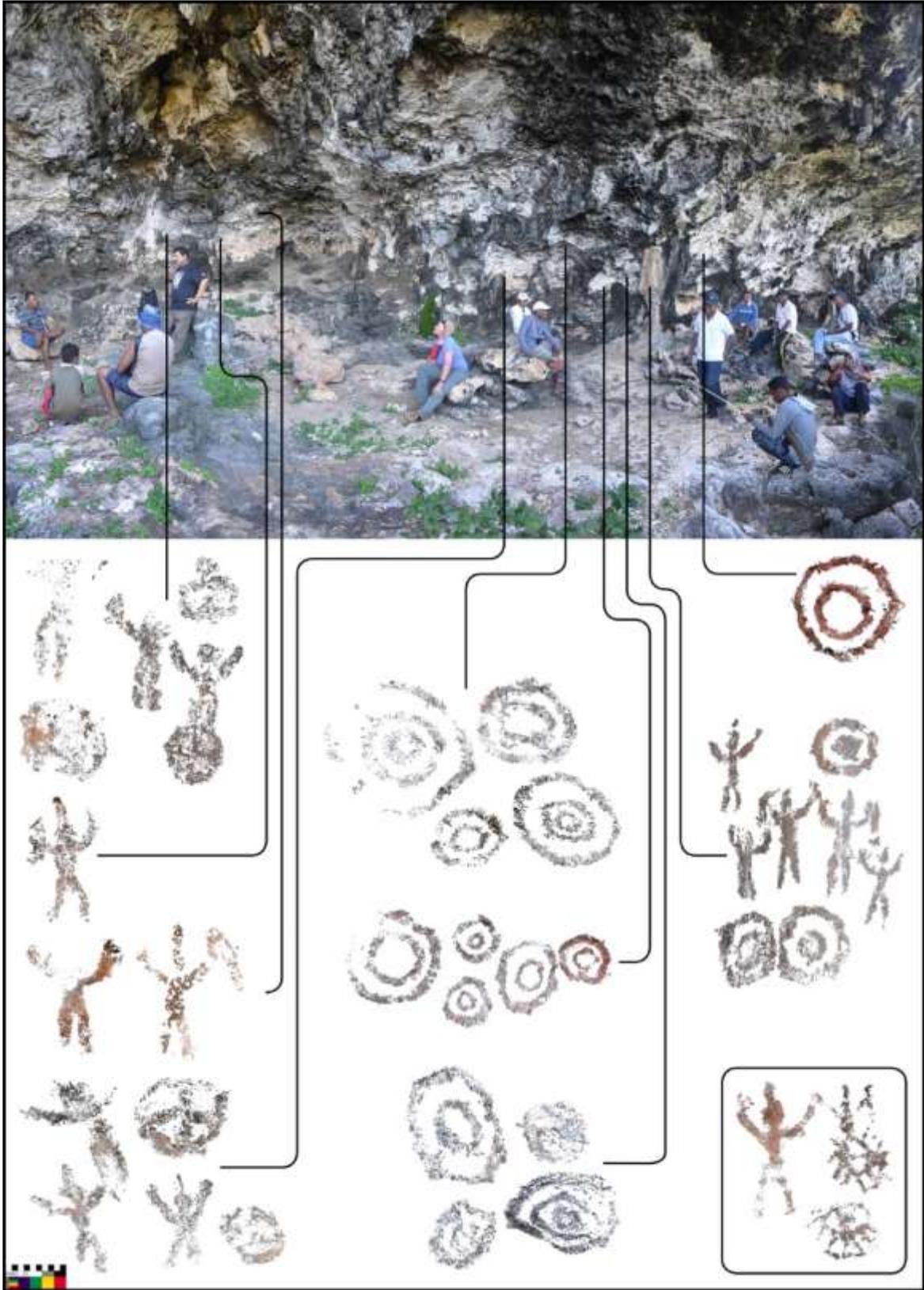


Figure 13: Overview of KSR 36 (top) with extracted images (bottom). Lines indicate location of motifs across the site. Photograph by Marlon Ririmasse. Image by Adam Black.

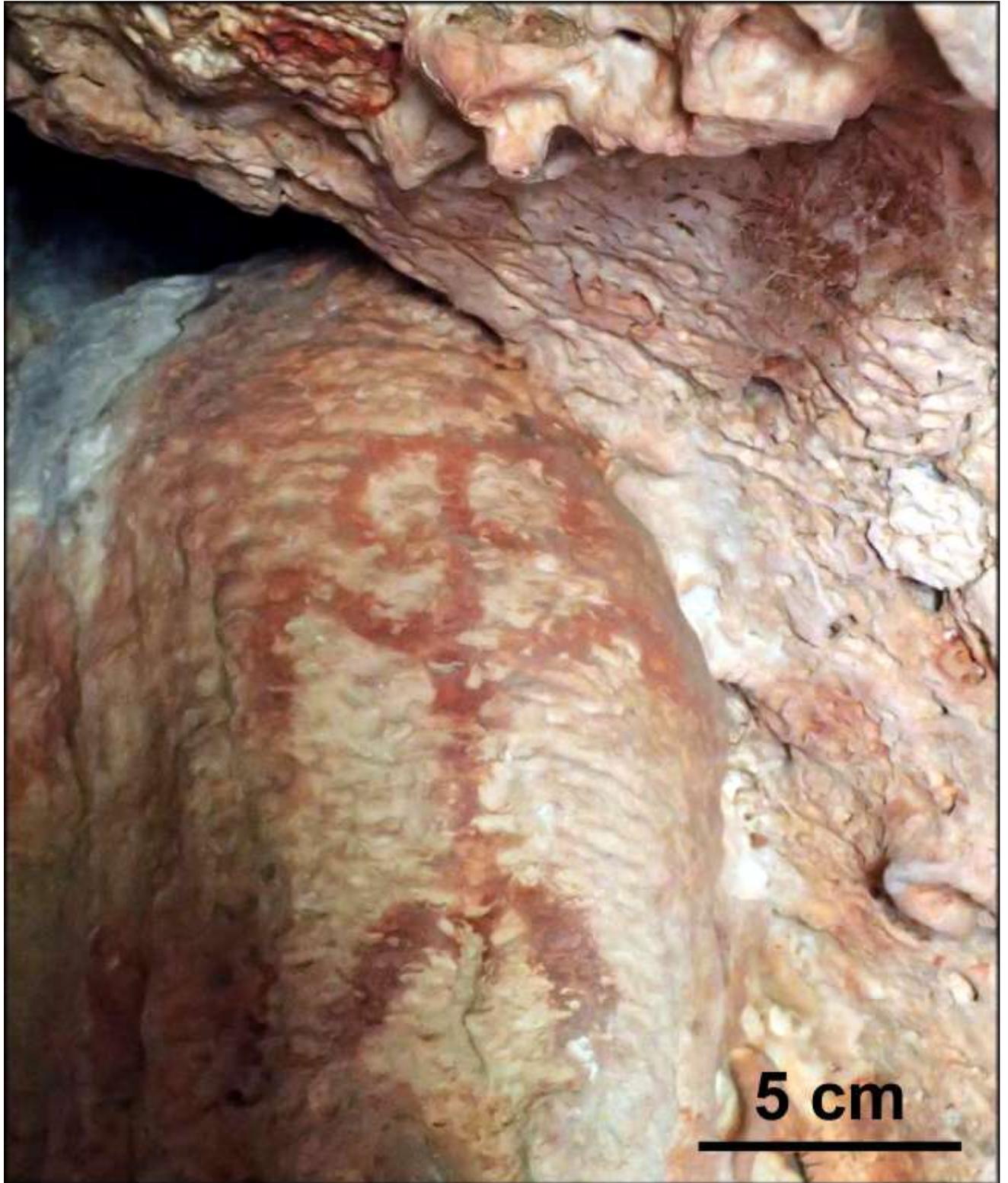


Figure 14: Photograph of the anthropomorph at KSR 100. Photograph by Stuart Hawkins.

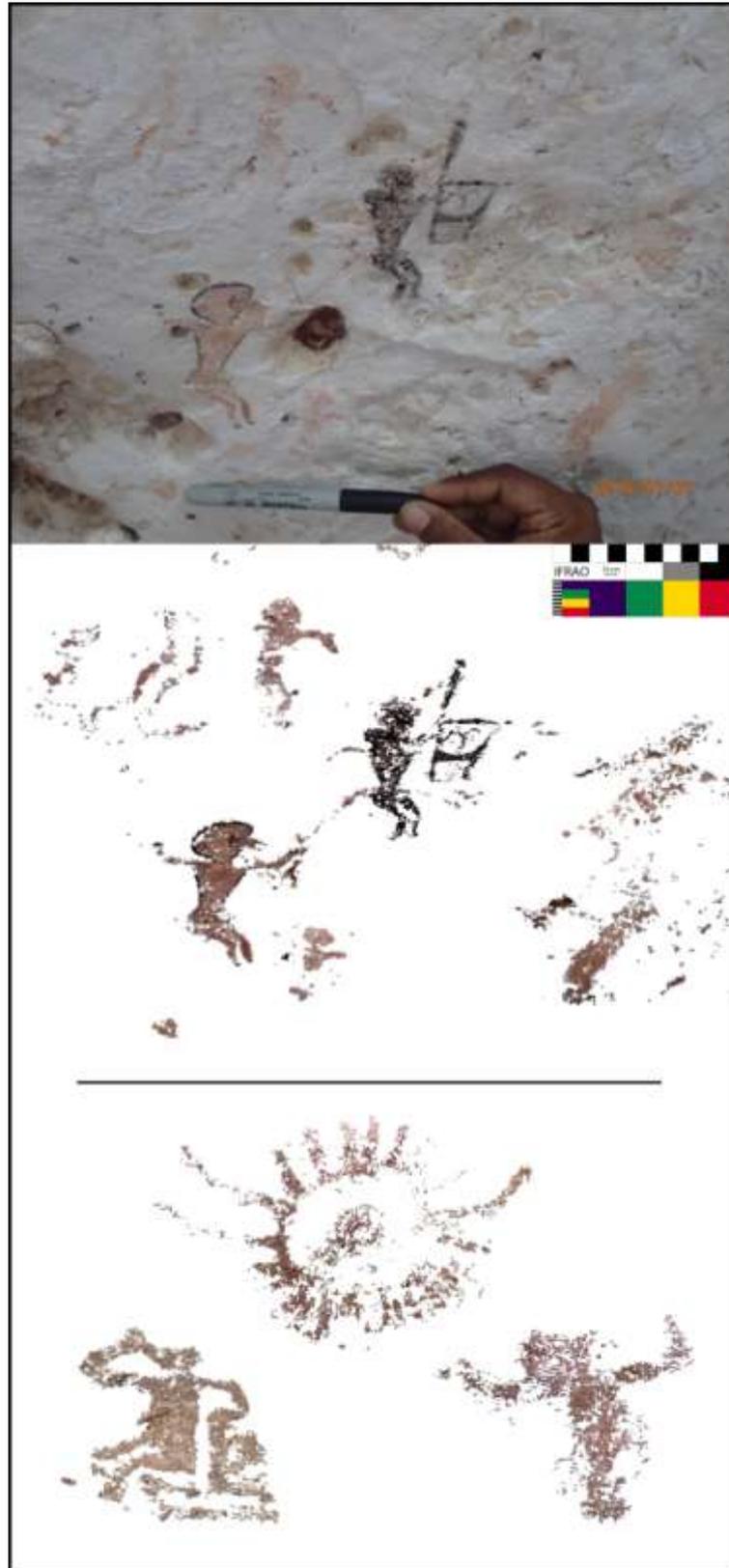


Figure 15: Overview photo of the most extensive rock art panel at KSR 104 (top) with corresponding extracted image (middle), and other extracted motifs also preserved at KSR 104 (bottom). Photograph by Stuart Hawkins. Images by Adam Black.

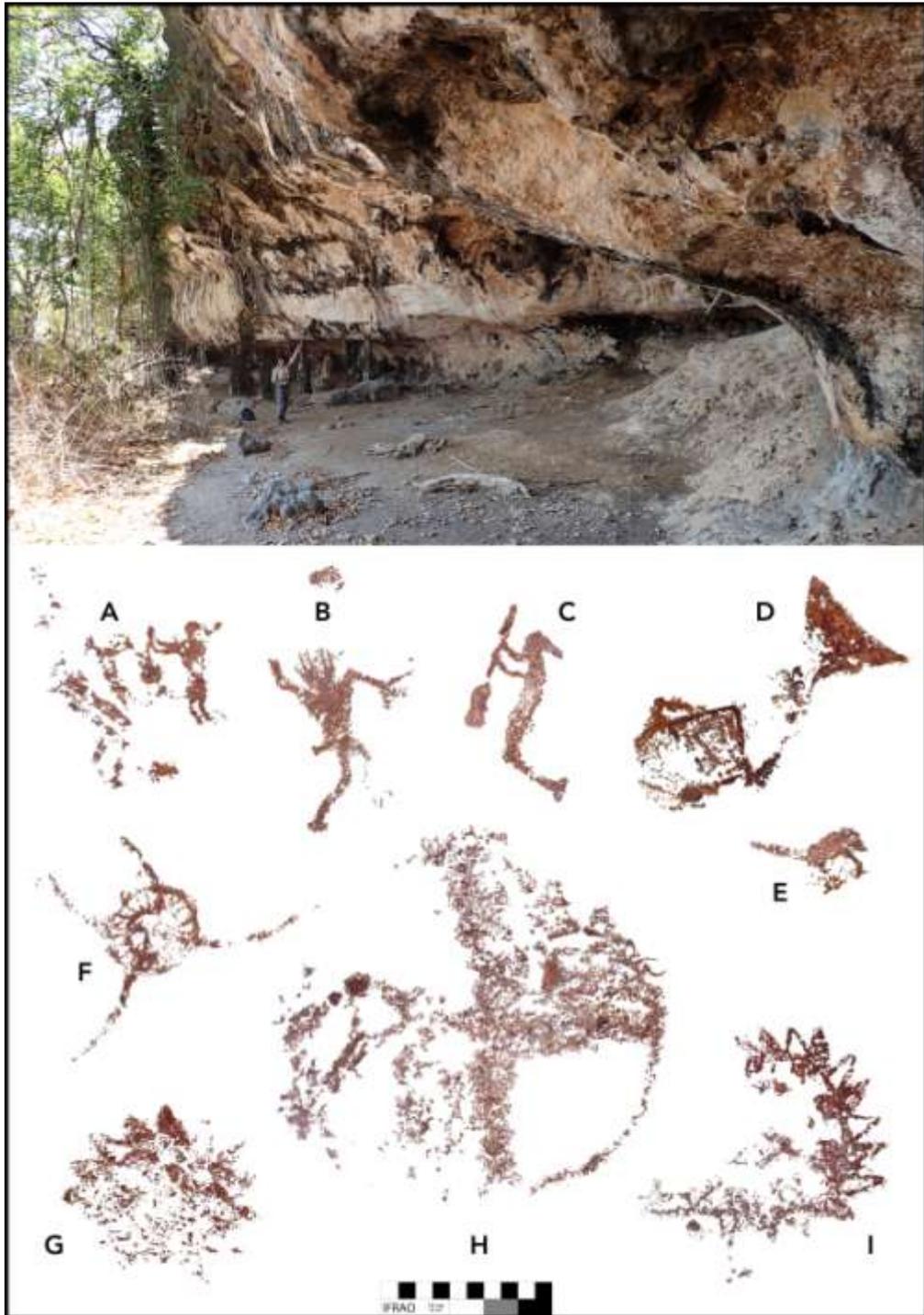


Figure 16: Overview of KSR 67 (top) with extracted images (bottom), letters indicate motifs as referred to in the text. Photograph by Sue O'Connor. Image by Adam Black.

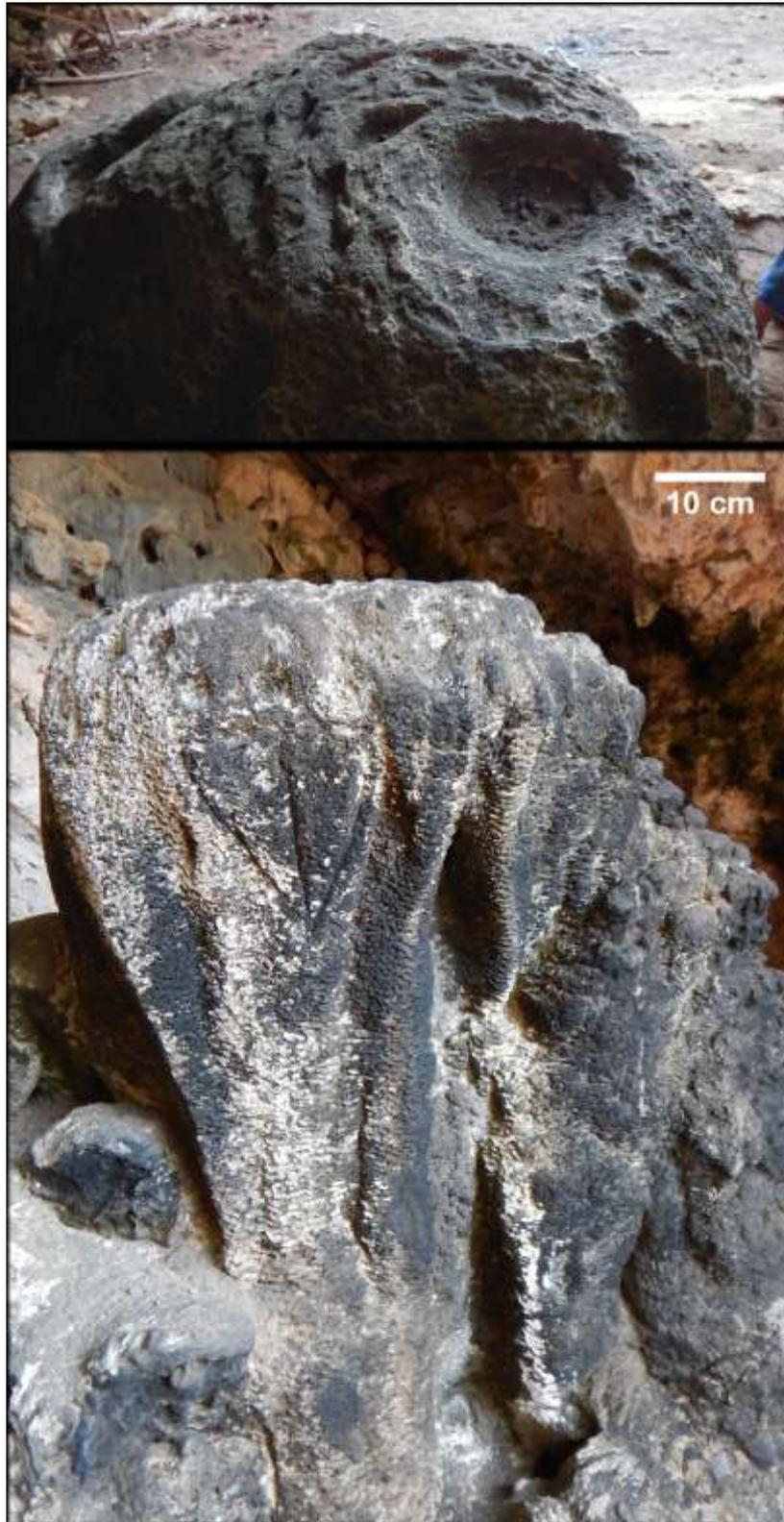


Figure 17: Stalagmite formation at KSR 90 with trident-shaped engraving with cupules above (bottom) and bowl carved into the upper flat surface (top). Photographs by Stuart Hamkins.



Figure 18: One of the hand stencils of KSR 38 showing the stalactite that has grown over the stencil and now hangs down from the roof of the cave. Photograph by Marlon Ririmasse.

DISCUSSION

The tiny island of Kisar has an extraordinary number of rock art sites. This is no doubt in part due to the presence of extensive expanses of limestone terraces containing deep overhangs with surfaces suitable for painting. However, it cannot be solely due to geology as large numbers of limestone caves with suitable surfaces for painting have been recorded during reconnaissance of similar duration and landscape coverage by members of our team, in Timor, Babar, Lembata, Bisa and Obi, with few or no art panels found (Kealy *et al.* 2018; O'Connor *et al.* 2018b; SO, SK, M, SH, & LW pers. obs.).

Kisar Rock Art

The Kisar painted art falls into three primary categories: figurative motifs, geometrics, and hand and arm stencils. Figurative motifs include people, boats, animals and a variety of objects of material culture including, most prominently, shields and other weapons but drums and seed pounders also feature. Figurative motifs are distinguished by their very small size with anthropomorphs often being less than 10 cm in maximum length.

Anthropomorphs

The anthropomorphs can be divided into two distinct groups; a) humans shown in frontal stance, often no more than stick-figures lacking anatomical detail; and b) humans shown in twisted half profile with the head, hips and legs shown in profile and the shoulders viewed as if from the front (e.g., KSR 104, Figure 15). The b) group of figures are more finely executed. The upper torsos are often triangular; wider at the shoulders and narrowing to the waist. Where gender is depicted the figures are male. They are often shown in active poses and holding weapons. Some are wearing the traditional barkcloth pubic coverings “wound round the hips and passed between the legs” (Kennedy 1934:241) with the ends hanging down in front and rear. Very similar anthropomorphs shown in active poses are recorded from sites at the eastern end of Timor-Leste and in Alor Island (O'Connor

2003; O'Connor *et al.* 2018a; Yuwono *et al.* 2020)

Boats and items of material culture

Items of material culture shown in the art assemblages include boats, drums, a seed pounder (KSR 63 and 67, Figure 16) and weapons, most prominently shields. The boats are highly schematized and highly variable. Examples include those in HSE (KSR 29, Figure 9), one of which has a sail and a flag, while another includes stylized passengers, and Jawalang 6 (KSR 67) which is being paddled and has a large steering oar (O'Connor *et al.* 2018a:Figure 11c). Irmula Cave (KSR 33, Figure 12) has at least three boats including two that appear to be of European design, one of which looks like a European tall ship. No two boats are the same, or even similar. The boats in Timor-Leste (Lape *et al.* 2007) and Sulawesi (Oktaviana 2018:Figure 6.14) painted art are also exceptionally variable in size and form.

Animals

Animals in the Kisar art include fish, a possible phalanger, a possible monitor lizard and domestic introduced animals such as dogs and horses (O'Connor *et al.* 2018a).

One panel at Irmula Cave (KSR 33) shows a horse with a rider to the viewer's far right (Figure 12). Next to the mounted figure is a person sitting on a large chair. Two other figures with upraised arms holding objects face the seated figure, the entire scene suggesting formal attendance on an elite or important person. The majority of human figures in this panel are shown in close combat, often in groups of two facing each other with shields and weapons raised. The horses with riders are similar to those depicted at Ile Kere Kere at the east end of Tutuala. Gua Metanduno, Ceruk Lakan Taghu and Gua Pominsa in Muna Island, Sulawesi also depict scenes with warrior horsemen (Oktaviana 2018:Figures 6.5, 6.11 and 6.13).

Geometrics

Some of the Kisar geometrics fall into distinct groups which largely occur as spatially discrete clusters in different parts of the island. They in-

clude sunray/star motifs which can be single circles with rays, but are often much more elaborate combining two or more concentric circles with internal and/or external rays and sometimes a central dot or cross dividing the inner circle. On Kisar geometrics are predominantly red, but some include white, cream, pink, orange and even green pigment (O'Connor *et al.* 2018a). These are very similar to some of the elaborate rayed geometric motifs recently reported from Kaimear Island in the West Kei Islands (Handoko *et al.* 2018). Rayed motifs often co-associate with anthropomorphs.

The elaborate sunray/star motifs at Jawalang 4 and 6 (KSR 65 and 67, Figure 16) which feature crosses in the center and quartering the rayed motif are remarkably similar to those on the percussion surface of Moko drums (O'Connor *et al.* 2018a: Figure 14). This is reinforced by the scene at Irmula Cave (KSR 33, Figure 12) showing warriors engaged in actual or ritual combat in the company of a figure on a horse and one on a chair or throne who may be an elite ruler.

Another class of geometrics are the 'shield' motifs. These are formed from circles or oblongs divided by internal lines. It is tempting to speculate that these may represent actual shield designs associated with particular clan groups resident in different parts of the island. They tend to be most common in shelters near the Wonreli Harbor and occur less frequently in shelters which contain the small anthropomorphs and sunray motifs.

Engravings

A single engraving on a stalactite was recorded in Kisar consisting of a simple trident with cupules at the end of each trident spike at Laha Wera'a 3 (KSR 90, Figure 17). The practice of engraving stalagmite/stalagmite formations has also been identified at Lene Hara in Timor-Leste where a number of engraved face motifs were found, and one dated to the terminal Pleistocene (O'Connor *et al.* 2010). It is likely that further examples will be located in both regions if speleothems are inspected with a good light source.

Antiquity of the Art

Many of the Kisar motifs such as boats, anthropomorphs shown in fighting poses, geometrics, with an emphasis on roundels or sunray motifs feature prominently in the corpus of art found widely across eastern Indonesia and the western Pacific known as the Austronesian Painting Tradition (APT) (Wilson and Ballard 2018:7). This tradition was originally identified by Ballard on the basis of shared locational characteristics, motifs and colors (Ballard 1992; O'Connor 2003; Ballard *et al.* 2004). Its occurrence in islands unoccupied prior to Austronesian colonization, and in Austronesian language areas, led Ballard (1992:98) to propose that it was coincident with, or post-dated, the expansion of Austronesian peoples into the islands ca. 3500 years ago. APT motifs were also often positioned in highly visible but inaccessible locations, sometimes overlooking the sea as if having a signaling role (Ballard 1992). It has recently been demonstrated that some of the diminutive red anthropomorphs in the Timor-Leste panels are wielding ceremonial metal axes (*candrasa*), placing their production after the introduction of metal into the islands, 2500 years ago (Fauzi *et al.* 2016:254–256; O'Connor *et al.* 2018a; Oliveira *et al.* 2019; see also Ballard 1992:98). We have suggested elsewhere that some of the scenes and motifs at Jawalang 4 and 6 (KSR 65 and 67) reflect ritual performance and symbols related to the use of prestige objects such as Dong Son and Moko drums. If this is the case it places their production in the Metal Age, however Moko drums are still used in Alor Island today (O'Connor *et al.* 2018a), so taken together with the horses in Irmula Cave (KSR 33), they may date to the historic period.

The exact date of the first horse import into Island Southeast Asia is uncertain. Sculptured horses on Borobodur in Java probably constitute the earliest evidence for the horse in Indonesia, and are thought to date from the 8th and 9th centuries CE (Clarence-Smith 2015:35). While it is possible that the horse was imported to Java from China and India centuries earlier than this (Hendricks 1995:60–61), there is currently no physical evidence to support this. The horse appears in the eastern islands of Indonesia signifi-

cantly later than in the western islands. The earliest record for horses in Sulawesi dates to the 1600s (Whitten *et al.* 1987:76). At this time horses were reserved for the king and other elite members of the community (Bulbeck 2001). One king in southeastern Sumatra is known to have imported a horse from India by ca. 1650 CE (Hall 1992:194). In view of the remoteness and small size of Kisar it is unlikely that horses reached this island as early as the larger islands further west. Accordingly, the Irmula Cave (KSR 33) horses are unlikely to have been painted earlier than ca. 400 years ago and may be considerably more recent. Irmula Cave also includes a figure on a large seat or throne, perhaps a king or elite ruler of Kisar. The co-association of the anthropomorph ‘warriors’ and seated figure may reference a battle or even a victory ceremony. It has been suggested elsewhere that the sunray/star geometrics may reference remarkably similar motifs found on the tympanums of bronze Dong Son and Moko drums. Moko drums are used to this day in ceremonies marking rites of passage in the nearby island of Alor to Kisar’s west.

The dogs shown at Jawalang 4 (KSR 65) are small and carefully executed with upturned tails (O’Connor *et al.* 2018a:Figure 10). Dogs are thought to have been brought to Island Southeast Asia during Neolithic times. The earliest archaeological evidence for dogs is the dog burial in Matja Kuru 2 in Timor-Leste which is dated to ca. 3000 cal. BP (2867±26 BP, Wk-34931; Gonzalez *et al.* 2013). Thus 3500 years is a maximum age for the dog paintings, but they may have been painted any time since then.

Some of the Kisar images, most notably the hand stencils, may have far greater antiquity. Indonesia is known to have some of the world’s earliest rock art with the earliest examples in Borneo and Sulawesi dated to the Pleistocene and characterized by suites of hand stencils and large naturalistic animals (Aubert *et al.* 2014, 2018). The weathered condition of many of the Kisar hand stencils suggests significant age. At Pur-Pura Cave (KSR 38), a hand stencil emerges from under a broken, weathered stalactite. In view of this we would argue that it must have significant antiquity and could be Pleisto-

cene in age. In the future it is hoped that the overlying stalactite can be directly dated using the Uranium Thorium method which has been so successfully applied in Sulawesi and Borneo (Aubert *et al.* 2014, 2018). Although no large naturalistic animals occur in the early Kisar art repertoire, such as have been identified in Borneo and Sulawesi, this is hardly surprising as no terrestrial mammals of any size are endemic to Kisar. It might be surmised that if animals were to be associated with early stencil traditions in small islands such as Kisar, which are depauperate in terrestrial fauna, it would be marine mammals, reptiles or fish. Fish have been recorded at Jawalang 2 (KSR 63) which has large numbers of hand stencils, but as fish are also common in the later Austronesian Painting Tradition and depicted frequently in the late art assemblages of Papua, dating would be required to demonstrate their antiquity.

The impression of antiquity for a number of the stencils is also indicated by their placement, sometimes in the deep inner parts of the caves where little light reaches. The corpus of rock art attributed to the APT and more recent painting repertoires is usually in prominent, easily visible positions (O’Connor 2003:118; Ballard *et al.* 2004). The combination of the extreme weathering of some stencils, the growth of a limestone stalactite formation over the stencil in Pur-Pura Cave (KSR 38) and the positioning of many in the deeper internal chambers of caves, indicates that they operated within a different graphic tradition.

Heritage and Conservation

The presence of water flow through and across the face of the cave and shelter walls has served to both damage the pigment art by removing it, as well as to preserve it by sealing paintings beneath the carbonate skins. These carbonate flows and encrustations provide the potential for future Uranium Thorium dating and this should be undertaken as a matter of some urgency as some paintings are at risk of being completely obscured.

The destruction of sites near Wonreli Harbor is significant and was ongoing at the time of our survey. This process involves the entire limestone cavern being broken up into small trans-

portable rocks to be used for road base and building material elsewhere on the island. We are uncertain how many sites have thus far been destroyed but conservation of the remaining shelters should be a priority.

CONCLUSION

Forty sites with painted rock art and one engraving have been located and recorded on Kisar Island. Based on our analysis of the subjects depicted and assessment of the antiquity of the paintings, we suggest that art was produced throughout the full span of human occupation on the island; from at least 16,000 years ago, until the historic period. The oldest rock art on Kisar is predicted to be the hand stencils at Pur-Pura Cave (KSR 38), one of which is partly obscured by a stalactite growth. Uranium Thorium dating of this formation to assess the minimum age for the stencil should be a future research priority. The depiction of European sailing ships and horses in Irmula Cave (KSR 33) shows that painting was ongoing into the last 400 years. We have suggested elsewhere that the sun-ray/star motifs at Jawalang 4 and 6 (KSR 65 and 67) reference those found on the percussion surface of Dong Son and Moko drums. If this is the case, these motifs reference objects which would have been first seen in the islands in the last two thousand years. Moko drums are still used in rites of passage ceremonies today in Alor and Kisar. A figure featured in Jawalang 6 appears to be playing a drum (O'Connor *et al.* 2018a:Figure 7). It is tempting to think that the large number of rock art sites, in combination with the scene of warriors and the throned and mounted figures, might indicate that Kisar, despite its small size, was a socio-political and ritualized center with a powerful ruling elite.

Some of the caves and shelters, particularly those in the area of Wonreli Harbor, have been extensively damaged or destroyed by limestone quarrying. It is hoped that preservation measures can be enacted to ensure the survival of the remaining sites. Areas of the island remain unsurveyed and we expect further survey efforts will add to the corpus of art on Kisar, and hopefully its conservation. This new data will contribute to future research plans to examine the

spatial distribution of the different styles of painting on Kisar and see if they correlate with the known distribution of villages where Papuan and Austronesian languages are spoken.

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