



– RESEARCH REPORT –

Rock Painting Traditions around Waigeo Island, Raja Ampat, West New Guinea

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Abstract

Rock paintings around the western tip of New Guinea are extensive but poorly understood. This paper describes rock art around the northern Raja Ampat Islands, just off the coast of western New Guinea. Two main painting traditions are documented: a red pigment tradition and a white pigment tradition. Red paintings generally occur up to 10 m above the modern mean sea-level and are stylistically related to a larger painting complex around the Bomberai Peninsula of New Guinea and Misool Island. It is likely that

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these sites have been uplifted from their original position, and were produced during the Mid–Late Holocene when the marine high-stand was several metres above the present level. The white pigment tradition generally occurs just a few metres above present sea level and could have been produced from canoes within the past few hundred years. We suggest Raja Ampat Islanders were interconnected with a wider maritime community using red pigment in the Late Holocene, and a distinctive white painting style emerged locally within the past few hundred years. Further documentation of West New Guinea’s rock paintings is required to clarify whether coastal painting traditions strictly relate to the presence of Austronesian speaking groups (part of an Austronesian Painting Tradition) or whether the imagery reflects the interaction between multiple linguistic groups, including speakers of Austronesian and Non-Austronesian languages.

Keywords: Rock art; Austronesian painting tradition; New Guinea; West Papua

1. Introduction

The movement of people around the rainforested islands of northeastern Indonesia and western New Guinea was interlinked with the production of rock paintings in coastal settings. To make these images, people painted from their canoes applying red, white, and black pigment onto cliffs and small crevices. Although these painting traditions may be linked to a wider complex of art that has been described around the coasts of Southeast Asia and the western Pacific (Wilson and Ballard 2018), very little is understood about their chronology, distribution, and stylistic variation around West New Guinea (also known as West Papua or Indonesian Papua).

Red hand stencils, figurative animals, and narrative scenes in Borneo, Sulawesi, and Timor stretch back to the Pleistocene (Brumm *et al.* 2024), whereas in Papua New Guinea, stencils of everyday objects occur at sites that are in active use today (Tsang *et al.* 2022; 2023). On the other side of the border in West New Guinea, there are dense concentrations of rock paintings around the Bird’s Head and Bomberai peninsulas and their offshore islands. For instance, zoomorphic, anthropomorphic, and geometric designs have been noted in the Berau Gulf (Röder 1939; Galis 1957) and on Misool Island (Nasruddin 2015; Permana and Mas’ud 2022). Röder (1959) documented a series of rock painting styles around the Bomberai Peninsula, and Arifin and Delanghe (2004) later compiled a detailed photographic study of these styles.

Ballard (1992) suggested that paintings like those recorded around the Bomberai Peninsula may belong to an “Austronesian Painting Tradition” because similar designs stretch from Southeast Asia to Remote Oceania and generally co-occur with Austronesian languages. In New Caledonia, red pigment rock art has been dated to c.2500 years old (Sand *et al.* 2006) and it has been suggested that the Austronesian Painting Tradition is therefore a signature of early Proto-Malayo-Polynesian and Proto-Oceanic speaking groups that moved into the region from the fourth and third millennia before the present (see also O’Connor *et al.* 2015; Tan 2016). Many substantive questions remain, however: do these paintings purely mark an expansion of Austronesian seafaring groups into the New Guinea region, or the development of an internal art complex, involving established seaborne networks in the Mid–Late Holocene, or rather an expression of complex

intergroup interactions that remains to be unpacked? Beyond this, do these paintings represent initiation places, observations of animism and ancestor worship, or even navigational markers along seafaring routes?

To expand the regional corpus of rock imagery from West New Guinea, we here report 11 rock painting sites from the northern Raja Ampat Regency of Southwest Papua Province (Fig. 1). These sites were recorded during archaeological survey in 2018–2019 and 2024 as part of the Raja Ampat Archaeological Project (see Gaffney 2021). The project's broader focus is to clarify the nature of human dispersal and behavioural change in the island group, including the kinds of rock art produced at different times in the human past. Nine of these sites have never previously been reported in the literature, and none of them have been described in detail (although some have been reported in preliminary reports; Sukander 2011; Oktaviana *et al.* 2016). Site codes are provided alongside local names and stories (schematic site maps are illustrated in Appendix A). The sites were identified primarily by asking local people about nearby rock art; where possible, photographs were taken from a boat or the reef at low tide, and an aerial drone was used to record art higher up the cliff faces. DStretch images were produced of the original photography to highlight pigment that was not readily visible (see Appendix B). Our work does not represent a total survey of the coastline, and it is likely that other sites are present around Waigeo that are yet to be reported.

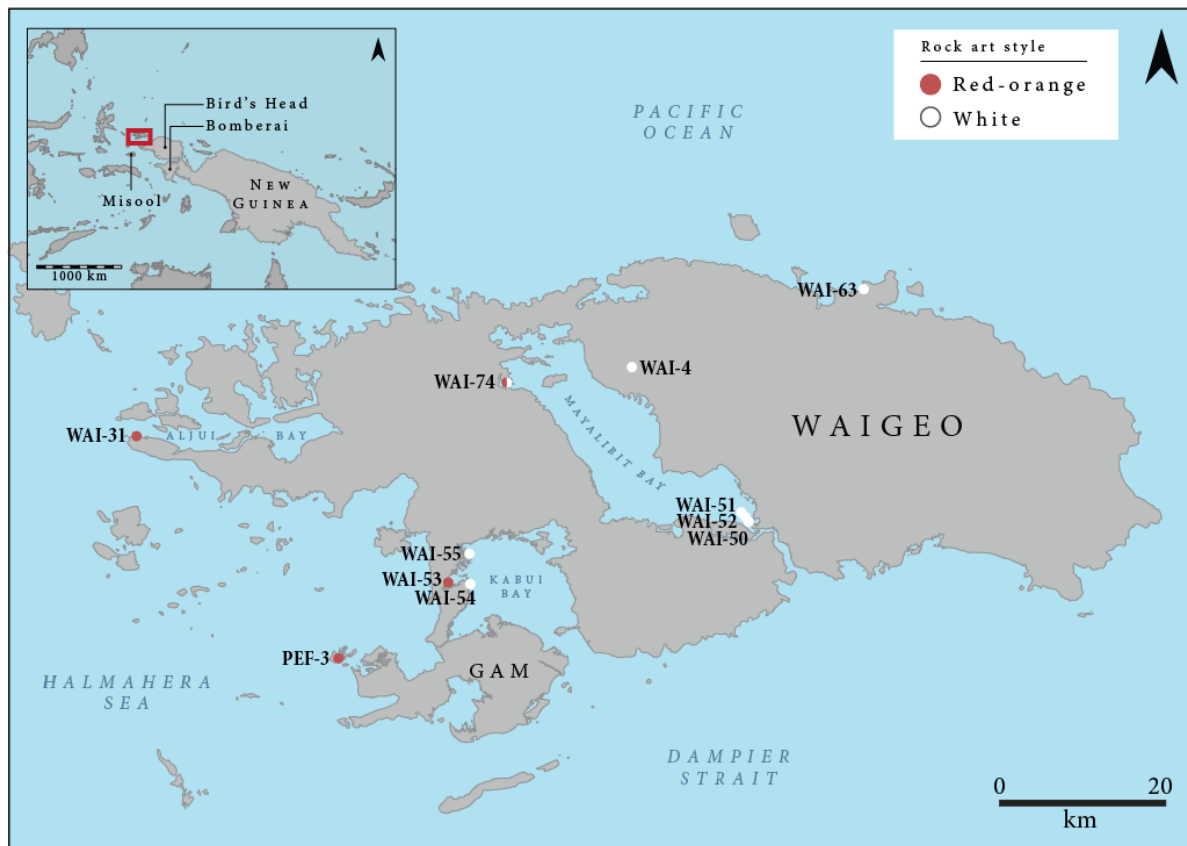


Figure 1: Newly recorded rock art sites around Waigeo Island, showing the presence of red and white painting traditions. Sites are marked by site codes, as per the Raja Ampat Archaeological Project survey database.

2. Red painted sites around Waigeo

The rock paintings of Waigeo can broadly be grouped into two distinct technical traditions: one tradition used red and orange pigments, and another used white pigment. Both traditions are occasionally overlain by black pigment, which appears recent. Red-orange rock art is present at three sites around the western part of Waigeo and one site in Mayalibit Bay. The three westernmost painting areas are located on coastal cliffs, several metres above the present-day sea level. The site within Mayalibit Bay is close to present sea level and is likely younger, contemporary with the white pigment tradition.

2.1. Aljui Bay

At the entrance to Aljui Bay, WAI-31 is located about 700 m northeast of Selpele village (Fig. 2–3). This area is known as Lentagin in the local Kawe Ma'ya dialect and consists of a large limestone cliff face approximately 50 m high and 100 m long, facing east onto Aljui Bay. A single gallery, about 10 m long, is located 5–7 m above the present high-tide mark, and primarily includes red and orange pigment designs (Fig. 2). The imagery seems to be contiguous, but patches of red and orange pigment have become faded, and it is not possible to determine the full coverage of the panel prior to weathering because the cliff is exposed to wave action and runoff. For ease of description, we divide the images into four clusters.

The first cluster includes two red and one orange hand stencils alongside a stencil of an unknown three-pointed object. Below this are other faded hand stencils in red. In the second cluster, there is a dotted image divided into four columns and nine rows, probably applied by finger painting. To the right of this is a segmented ovoid, two hand stencils, several simplified anthropomorphs (based on vertical lines) and possibly fish or other marine animals (based on horizontal lines). A single black pigment design is also superimposed over a red pigment hand stencil in the centre of the cluster, possibly representing an abstracted anthropomorph. It is unclear whether there is a contemporary relationship between the black pigment design and the hand stencils and red pigment anthropomorphs. Much of the third cluster is not readily described owing to water action. In this are segmented circular and ovoid motifs, and another dotted orange pigment design which forms a quadrangle subdivided into three parts. In the fourth cluster, from left, there are at least five hand stencils, an unknown elongate object in negative stencil, several patches of red pigment, and a singular fish spine stencil.

Stories about the site recounted by elders at Selpele tell that people hunted turtles in the area and used the blood of large turtles along with magic to produce the art; it is possible that the ovoid designs have, at some point in the life history of these images, represented turtle shells.

2.2. Pef Island

Brambaem (PEF-3), which means 'hand stencil' in the Beser Biak language, is located on the southeast edge of a small bay formed by Pef Island (Fig. 4). The paintings are all red pigment hand stencils, possibly produced by blowing pigment around the hand. These are located in two alcoves (Panel 1 and Panel 2). Panel 1 is about 10 m up the cliff face, containing two hand stencils (one right and one left hand) along with

faded areas of pigment above them. In Panel 2 about 3 m up the cliff, another painting contains a single right handprint. At the time of fieldwork, an information sign in Bahasa Indonesia describes the geology of the area in support of a UNESCO bid to make the Raja Ampat Islands a world heritage geopark.

2.3. *Kabui Bay*

In the Sabama (red mangrove) area of Kabui Bay, the Mon Ake (WAI-53) is located several metres above the present mean sea level (Fig. 5). The name means ‘secret place’ in the Wauyai dialect of Ma'ya. The site comprises a single red anthropomorph and a geometric to the top left. The anthropomorph has two protrusions from the head and has one hand with three fingers raised and another, without visible fingers, pointing down. As a possible interpretation, the two protrusions may represent bird plumes or *kain* (‘cloth’ in Papuan Malay), both of which were significant exchange valuables used as headdresses in the past (Swadling 1996; Timmer 2011: 384). Bird-of-Paradise plumes have likely been traded around New Guinea for over 2000 years, being depicted in Metal Age headdresses from the Lesser Sunda Islands (Spriggs 2019). Meanwhile, *kain* was used extensively around the Raja Ampat Islands in the recent past, and the knots used to secure the cloth to the head would often project upwards (e.g. Corbey 2017: 23, 114).

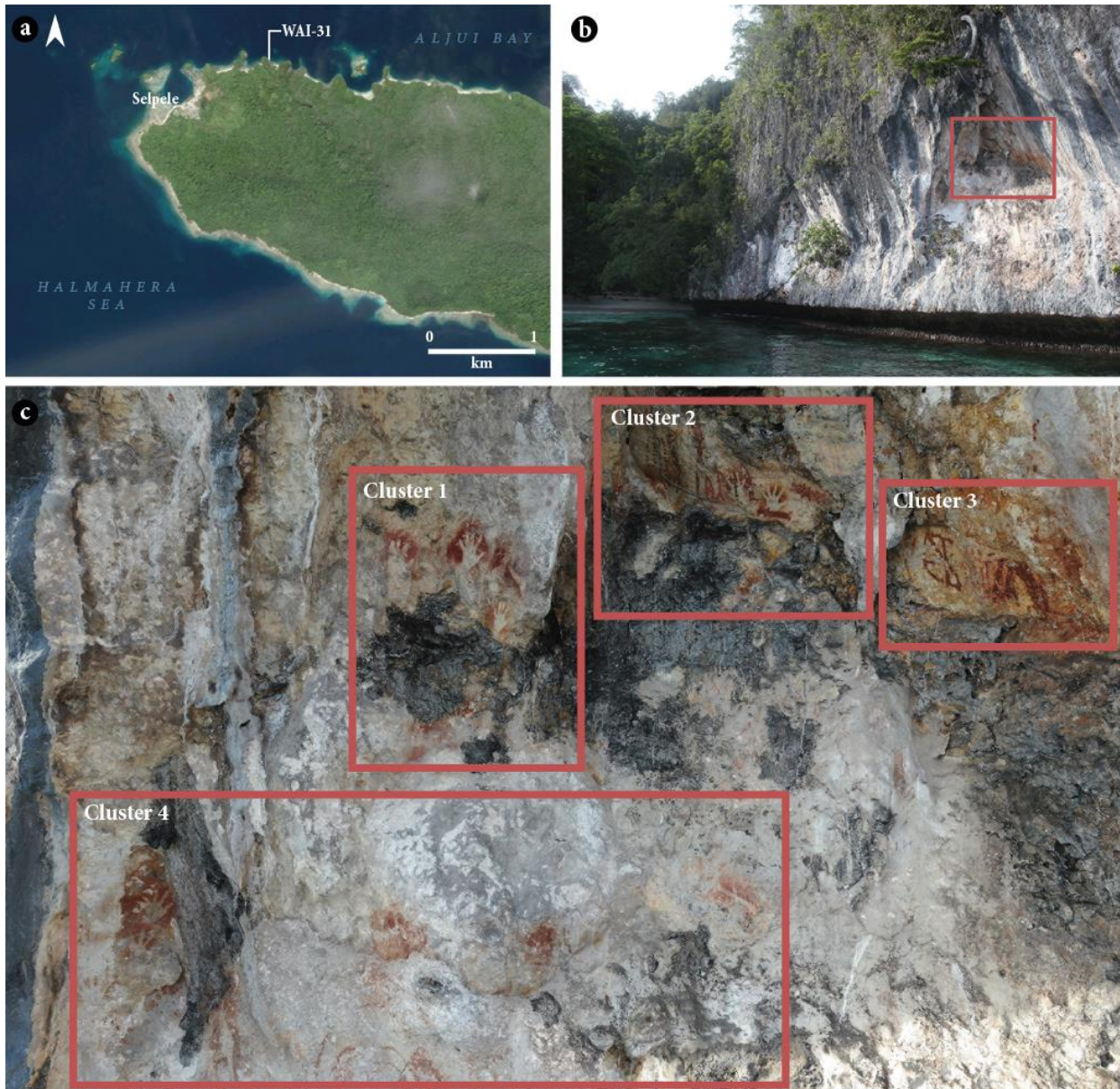


Figure 2: The Lentagin site: a) site location near Selpele village; b) rock paintings located up karst cliff; c) full view of painted panel showing clusters used for description. Scale bar is absent owing to inaccessibility.

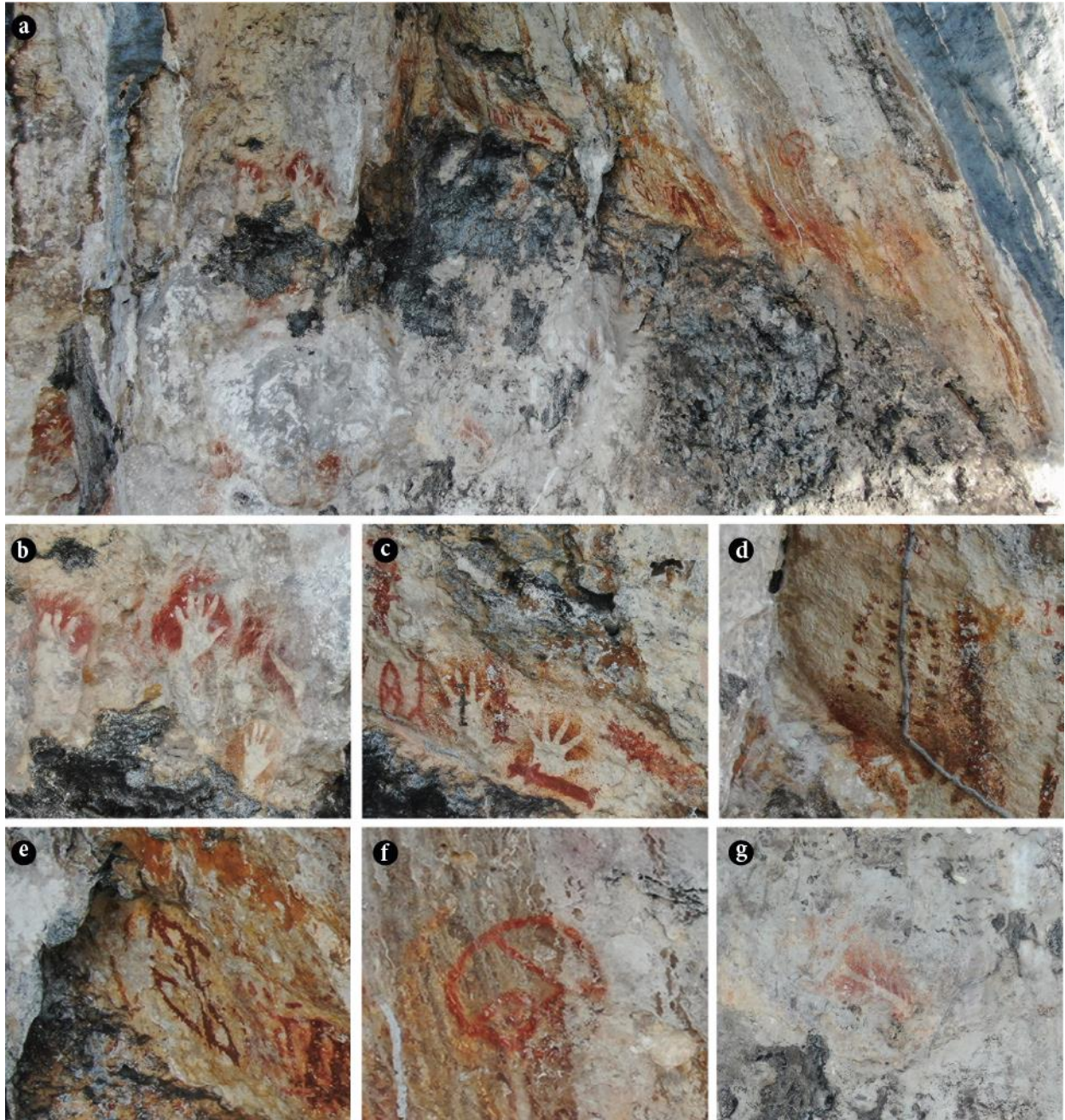


Figure 3: Motifs at Lentagin: a) view of painted gallery; b) Cluster 1, negative hand stencils in red and orange pigment and unknown three-pointed object; c) Cluster 2, anthropomorphs, zoomorphs, and hand stencils with one overlain by possible anthropomorph in black pigment; d) dot painting in Cluster 2; e) segmented ovoid in Cluster 3; f) segmented circle in Cluster 3; g) fishbone stencil from Cluster 4. Scale bar is absent owing to inaccessibility.



Figure 4: The rock art of Pef Island: a) location of Bramaem on Pef Island, near Raja4Divers homestay; b) two panels of hand stencils up cliff; c) Panel 1 with two stencils at highest point up cliff; d) Panel 2 with single stencil closer to sea level. Scale bar is absent owing to inaccessibility.

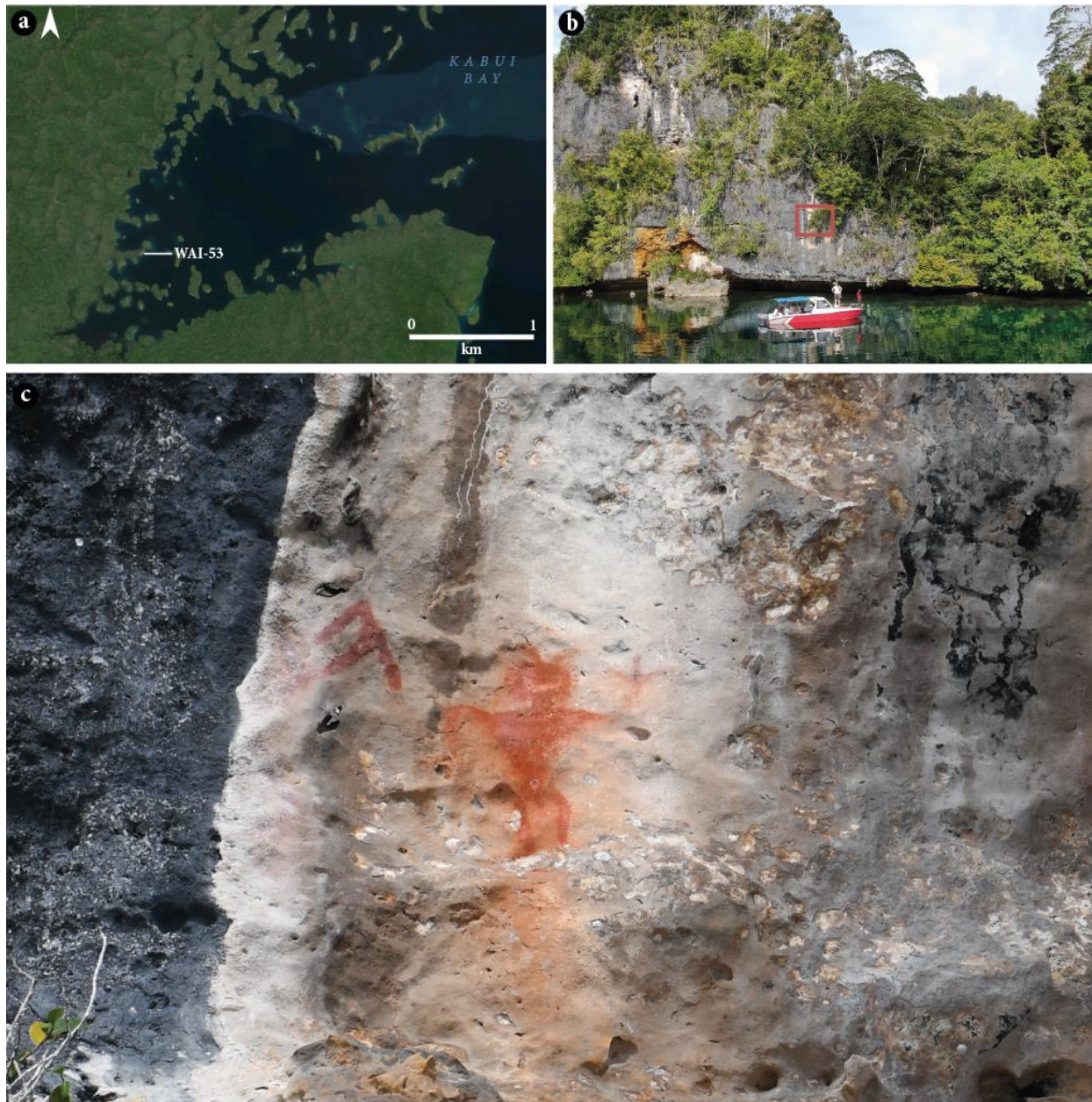


Figure 5: The Mon Ake site: a) location in Kabui Bay; b) painting up karst cliff, relative to survey boat; c) anthropomorph with geometric. Scale bar is absent owing to inaccessibility.

2.1. Northern Mayalibit Bay

The Mol II (WAI-74) site in northern Mayalibit Bay, adjacent to Arway village, displays both red and white rock images on a single rock face (Fig. 6). Mol II, in the Laganyan dialect of Ma'ya, refers to the position of the site 'behind the mountain,' as it is located on the south side of steep karst peninsula. A story recounted by elders at Arway notes that their ancestors formerly lived on top of the mountain in the time before monotheist religions, during the *hong*i raids. Until they were outlawed by the Dutch in the late

nineteenth century, *hongi* fleets travelled from Tidore to Raja Ampat to raid, collect slaves and extract tribute (Swadling 1996: 118).

In Panel 1, the red art (Fig. 6c) consists of one anthropomorph, a right hand print, and a faded geometric design below. Elders at Anday say the figure was made by Ma'ya people to depict themselves, being adorned with *kain* (cloth) on its head and waist and holding a shield and knife. Unlike other red paintings noted around Waigeo, the Mol II images are located only about 0.5 m above high tide, suggesting a more recent date of production. Elders at Arway were unaware of white art (Panel 2) immediately to the right of the red images, which depicts a human in a boat and other now faded designs (Fig. 6d).

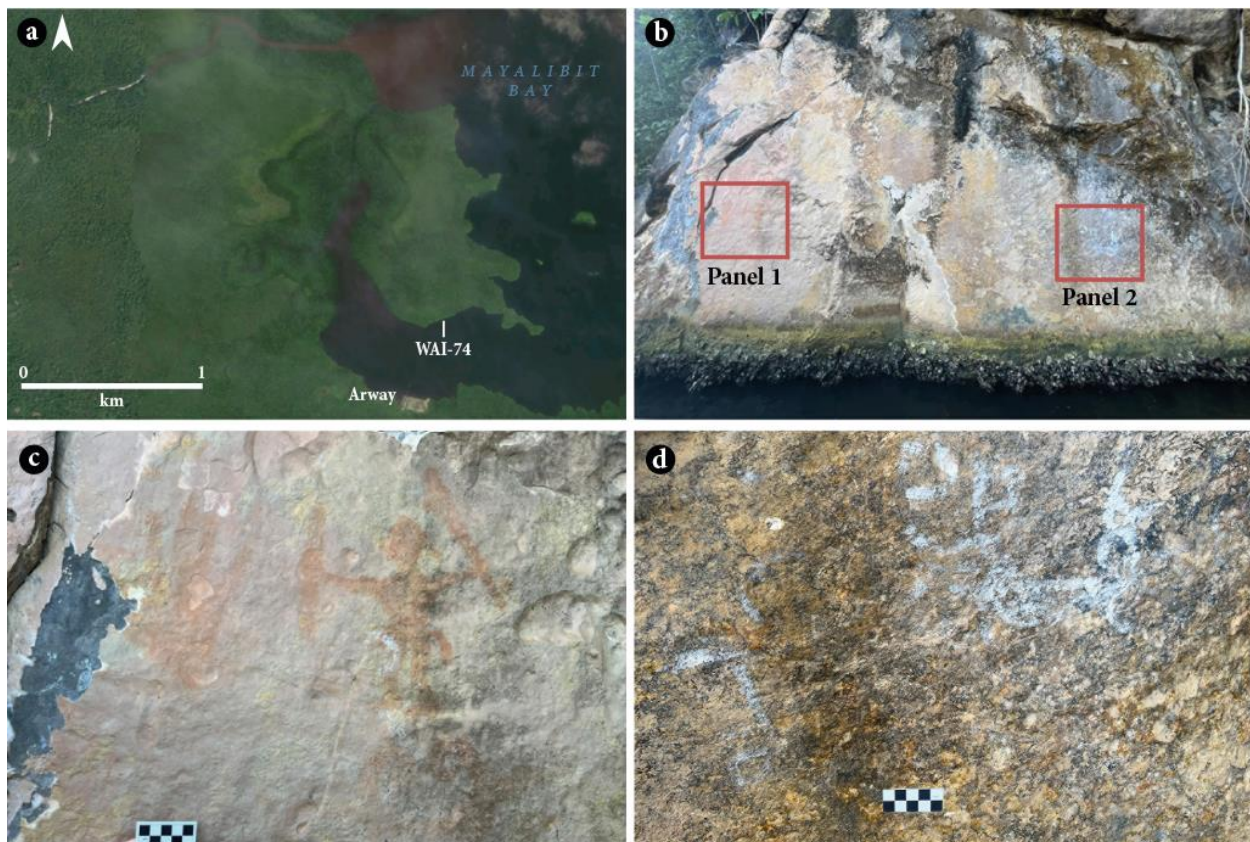


Figure 6: Red and white images at Mol II: a) location in Mayalibit Bay; b) red paintings relative to white images on same rock face; c) Panel 1 with red painting depicting handprint on left and anthropomorph wearing cloth and holding weapons on right; d) Panel 2 with white boat and faded designs at Mon II. Scale bars are in 1 cm increments.

3. White painted sites around Waigeo

The white pigment tradition around Waigeo occurs in Mayalibit Bay, along the western edge of Kabui Bay, and on the north coast of Waigeo. Like the red-orange tradition, the white rock art is almost exclusively situated along coastal limestone karst; however, the art is sometimes painted onto a brown pigment

background and is located only a metre or two above modern mean sea level, meaning it could have been painted from canoes at high tide in the recent past.

3.1. *Southern Mayalibit Bay*

Three islands at the entrance to Mayalibit Bay preserve white pigment paintings (Fig. 7). At Yé lal (WAI-51), or ‘last island’ in the Ambel language, the northwest side of the island hosts two panels of white paintings about 1–2 m above the present high tide mark, along a stretch of about 10 m of limestone karst. In the northernmost part of the painted area, faded paintings in Panel 1 depict an anthropomorph with uplifted arms, an abstract arrow shape, two anthropomorphs in a canoe, and two marine animals, painted over a brown background (Fig. 7c). Below are two abstract designs (Fig. 7d) and nearby is a faded image, which may relate to a larger geometric or sailboat motif (Fig. 7e). Several metres to the south, and about one metre higher, is a scene showing two anthropomorphs with upraised arms above and adjacent to a sailboat, painted over a brown pigment background (Fig. 7f).

At Yé ha (WAI-50), or ‘tall island’, a single panel of art is located about 2 m above high tide level (Fig. 7g). This site is composed of one area of white pigment which appears to have been directly applied onto a naturally iron stained rock face. The painting depicts an anthropomorph with a cross above it (Fig. 7h). Two further figures are partially eroded, with one only preserving its head and one uplifted and bent left arm with five fingers. It is unclear if the protrusions from the figure’s head represent hair, a headdress, or something else. Another figure to the right only preserves two slightly bent and uplifted arms with five fingers on each hand. Two paintings nearby are abstract geometrics resembling the letter ‘A’, but which seem to be associated with tall karst islands at other sites like Mlelen Popo and Yé mampiar (see below).

The Yé mampiar (WAI-52) site, or ‘white wall island’, a single area of white pigment paint painted directly onto grey limestone is preserved on the south side of the island (Fig. 7i). This includes a small area with two triangles, and one diamond with a cross (Fig. 7j). A black painted figure in profile overlies these white designs.

3.2. *Northern Mayalibit Bay*

Two sites in the northern part of Mayalibit Bay preserve white rock art. This includes Mol II (WAI-74), described above, which has red and white rock images on different parts of the same rock face. On the other side of Mayalibit Bay, Kakit (WAI-4) is a large rockshelter located 4 km east-north-east from Warimak village. The site was first recorded in 2018, and stories about the site related by Yeheskial Dawa indicated that the ancestors of today’s Ambel speakers would stop at the shelter during hunting trips. The continued use of the site was demonstrated by black pigment words in Papuan Malay written on the karst walls of the rockshelter. Another set of white images were documented during excavations at the site in 2024, with four crosses situated in limestone crevices about 2.5 m above the ground surface (Fig. 8b–8d). The end points of each cross form T-shapes, and four dots were produced close to the axis of the crosses. Kakit represents the only non-coastal painted site in our database.

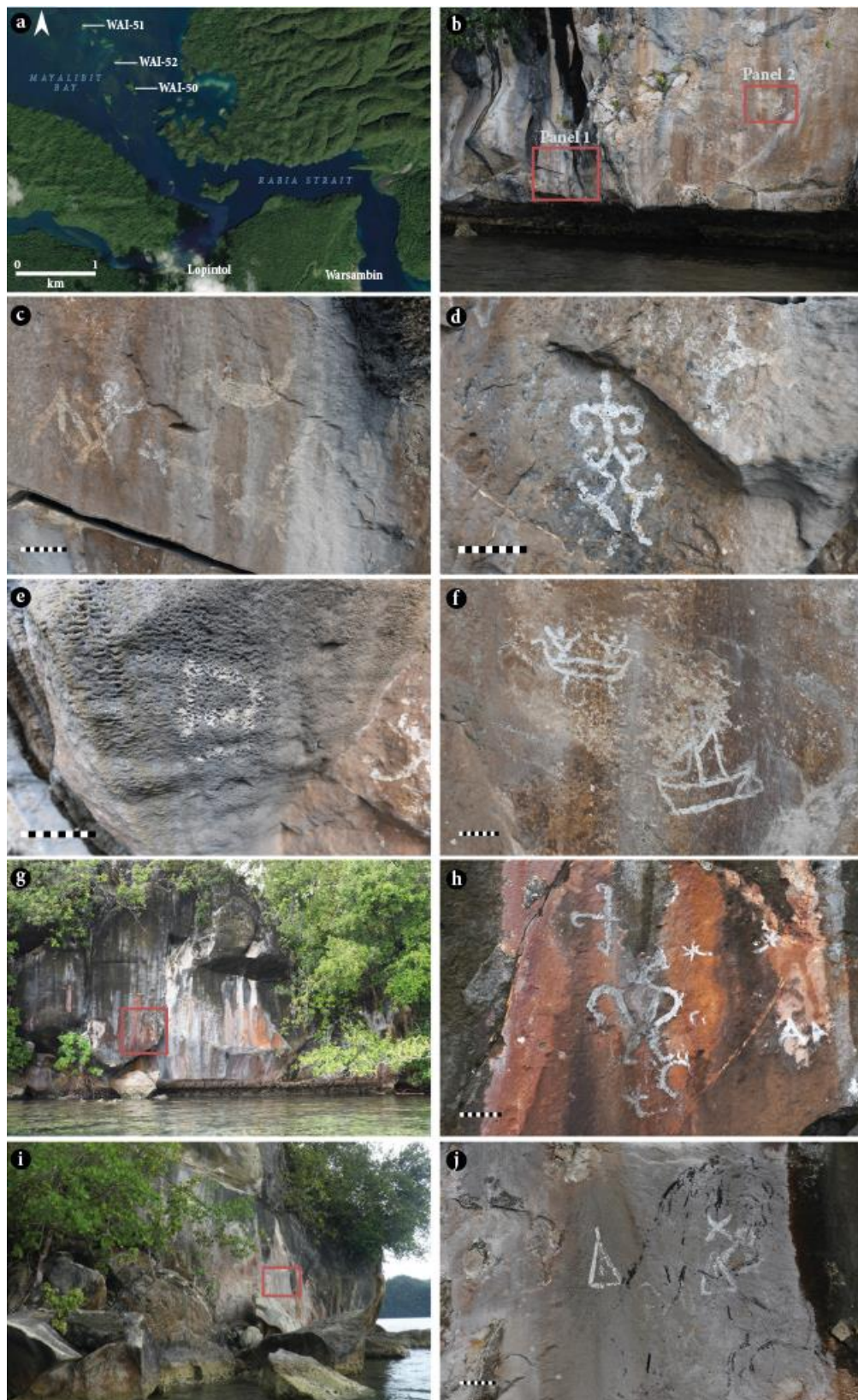


Figure 7: White paintings at the entrance to Mayalibit Bay Figure 7 (cont.): a) location of sites; b) Yé lal panels; c) Panel 1 with anthropomorph, animals, and canoe at Yé lal; d) Panel 1 abstract design at Yé lal; e) Panel 1 faded image at Yé lal; f) Panel 2 canoe and sail boat at Yé lal; g) single panel at Yé ha; h) anthropomorph and abstract designs at Yé ha; i) single panel at Yé mampiar; j) white geometric overwritten by black pigment human in profile at Yé mampiar. Scale bars are in 1 cm increments.

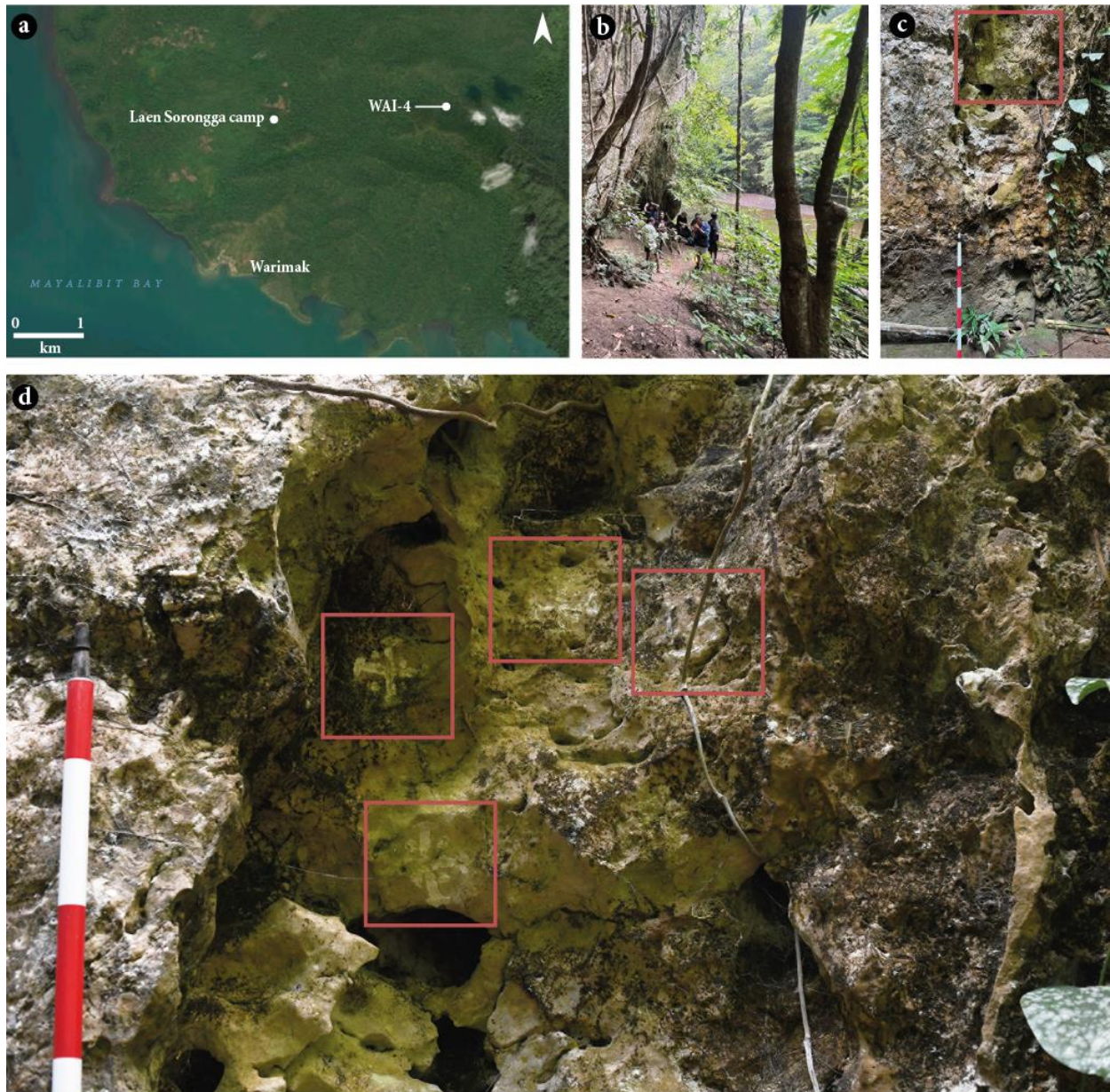


Figure 8: White paintings in northern Mayalibit Bay: a) location of Kakit site; b) view from main rockshelter area at Kakit to area of paintings; c) paintings located up the limestone karst at Kakit; d) four cross designs at Kakit. Scale bar is in 20 cm increments.

3.3. Kabui Bay

Two white pigment sites have been recorded in Kabui Bay. Mlelen Popo (WAI-54) refers to, in the Wuyai dialect of Ma'ya, a 'manta ray above' and a place where a cross can be seen (Fig. 9). It is located on the eastern face of a large peninsula of Waigeo Island on the western edge of Kabui Bay. Two panels of white pigment art with trace evidence for a brown pigment background are located along an approximately 10 m

stretch of rock face, close to the modern high tide level. A shell had been placed in a crevice near to the art, but it is unclear if this is contemporary with the art or has been discarded by a later visitor to the site. Panel 1, near to sea level, includes motifs like crosses and triangles, marine animals (one appears to be a crab) and anthropomorphs or lizards with slightly bent arms with three fingers. In Panel 2, an image of a sailboat is located about 5 m above the present mean sea level, which can be accessed by climbing (unlike the red pigment at Lentagin, Mon Ake, and Bramaem which would be difficult to access owing to a lack of handholds).

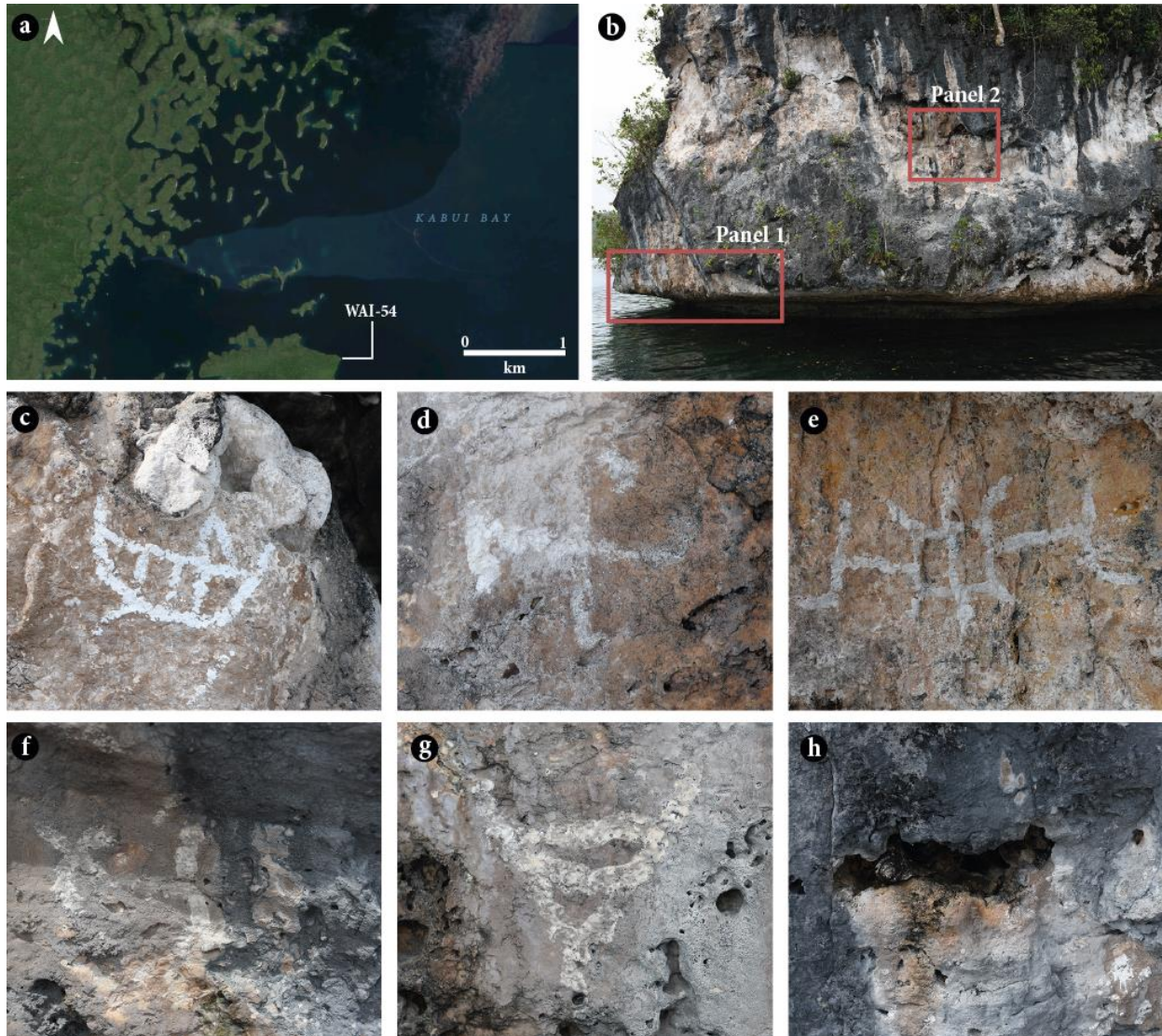


Figure 9: White paintings at Mlelen Popo: a) location of Mlelen Popo paintings; b) paintings, including Panel 1 with crab and other motifs closer to sea level and Panel 2 with sailboat high up the karst (scale bar is in 20 cm increments); c) sailboat in Panel 2; d) cross in Panel 1; e) crab in Panel 1; f) lizard or anthropomorph in Panel 1; g) geometric in Panel 1; h) crevice with shell and splashes of white pigment below.

Further north at Fafag (WAI-55), on the northeast side of Fafag Island, one panel of white paintings on a brown pigment background is present about 1 m above low tide mark, a few centimetres above high tide mark (Fig. 10). This panel can be grouped into three clusters, which appear to be related with one another. From left, the first cluster depicts an anthropomorph or hybrid human-animal motif with uplifted arms and an abstract motif above. The middle cluster depicts an anthropomorph or hybrid human-animal motif with raised arms and a cross above, an anthropomorph with uplifted arms and arrow through torso and cross above, a sailboat occupied by a smaller anthropomorph with cross below, an anthropomorph with uplifted arms next to a cross enclosed by a circle above another anthropomorph above a cross with forked ends. A curved abstract motif is situated above a trapezoid, a canoe, a half circle divided into three segments. It is possible that the trapezoid and canoe are in association, representing a sailboat, or the trapezoid may be unrelated and represent a landscape feature such as an island or mountain. To the immediate right of the canoe are other geometric motifs (two crosses and a triangle) along with a face in portrait view, and an anthropomorph (either with faded arms or arms behind its back). Below these are a canoe, a small anthropomorph, and abstract motifs that resemble 'E' and 'T' immediately below the canoe. In the third cluster, there are several small crosses and abstract motifs, an anthropomorph with raised arms, other abstract designs and crosses, and a curved animal design.

In the panel, many figures have upraised raised arms with three fingers and protrusions from their heads, which may represent hair or headdresses. Visually, the scene focusses around the sail ship and human-like figures with crosses in association. The scene was described by our interlocutor, Frans Waiganyam, as a fight between local Ma'ya people and incomers who are represented by the figure with an arrow through its torso. Given the shape of the sails, it is possible this recalls an undocumented attack on incoming sailors. For context, the late eighteenth and early nineteenth centuries saw increased trade from Malays, Chinese and Europeans as well as systematic raiding from Maluku (Andaya 1993). Alternatively, it is possible that the scene represents an earlier conflict between Ma'ya and Beser Biak or Malukan clans which arrived to Waigeo within the past five centuries (Gaffney *et al.* 2024a).

3.4. North Waigeo

The WAI-63 site has previously been mentioned in the literature by Galis (1964), Souza and Solheim (1976), and Nitihaminoto (1980), but not systematically described. This area near Asukweri village is known as sapormerek or 'painted cape' in Usba Biak and consists of a small white cross on a limestone cliff on the true left side of the outflowing of the Rainkan River (Fig. 11). Black charcoal writing overlies what appears to be red pigment at the nearby Anday rockshelter (WAI-47), but this requires confirmation.

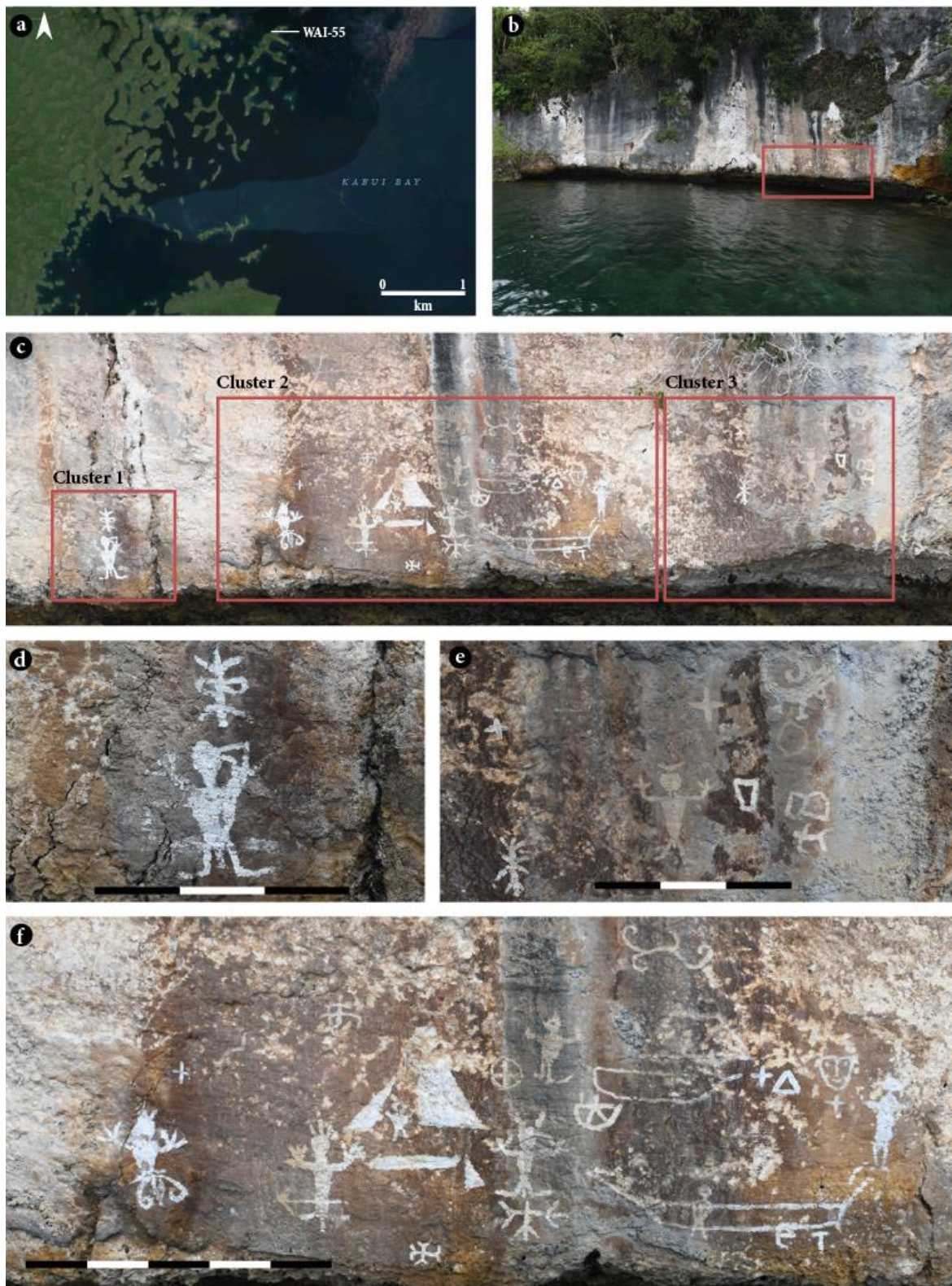


Figure 10: White paintings at Fafag: a) location of site; b) painted panel just above high tide mark; c) three clusters of painting; d) Cluster 1, the leftmost image, showing anthropomorph or hybrid human-animal with geometric motif above; e) Cluster 3, rightmost images, showing anthropomorph with uplifted arms surrounded by geometrics and a zoomorph above; f) Cluster 2, the central images, with anthropomorphs uplifting arms, figure with arrow through torso, sailboat, canoes, and face in portrait view. Scales are in 20 cm intervals.

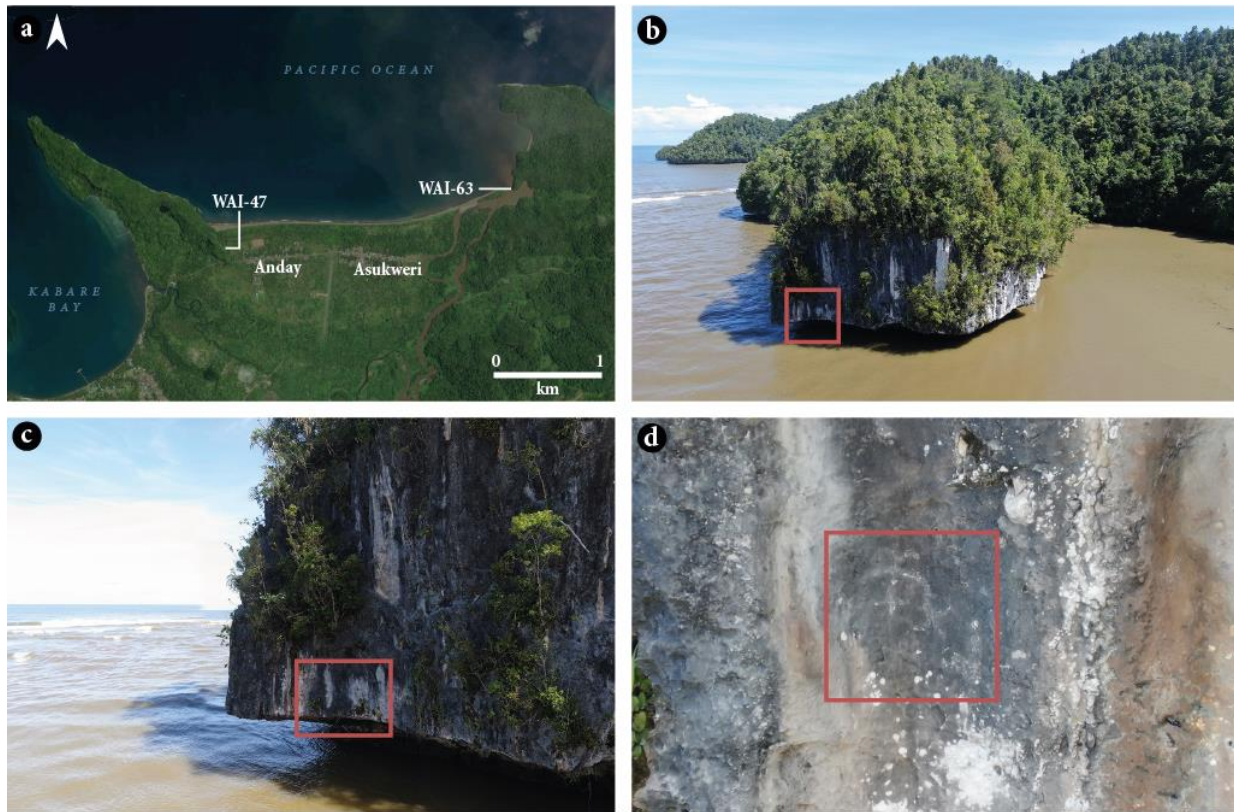


Figure 11: White pigment image from Sapormerek, north Waigeo: a) location of WAI-63 relative to Asukweri village. A possible red and black pigment site is located at WAI-47; b)–c) WAI-63 white rock painting area on karst cliff; d) abstract white pigment design at WAI-63. Scale bar absent owing to inaccessibility at time of recording.

4. Discussion

Having outlined the rock painting traditions of northern Raja Ampat, we now place these sites in their regional context. We draw from the Raja Ampat sites and other locations in West New Guinea to infer something about the relative chronology of painting, the nature of the motifs, and possible meaning underlying the images.

4.1. Chronology

Currently, no radiometric dating has been undertaken on rock art from Waigeo Island or the wider West New Guinea area. This means that the relationship between different painting styles and language groupings (following Ballard 1992) currently remains speculative. We hypothesise that some of the red and orange pigment art, such as at Lentagin and Brambaem, may have been produced by canoe-going populations in the Mid to Late Holocene when the eustatic sea-level high stand was several metres above today's level (Dickinson 2003). Very approximate uplift rates for Waigeo are 0.15 m/ka (Gaffney *et al.* 2024b), meaning

that limestone cliffs are likely to be a further 0.6 m uplifted from their Late Holocene position, on top of the c.3 m of eustatic sea level displacement. Alternatively, some red rock art may have been painted by people climbing cliff faces in the more recent past. Superficial similarities between the Mol II red anthropomorph, close to present sea level, and the Mon Ake figure, which is now several metres above sea level, may support this. However, in our assessment, there are no obvious ways to climb up the cliff face around Mon Ake. Moreover, the red hand stencils at Lentagin and Brambaem are distinct from the red handprint produced at Mol II and indicate that hand stencils produced high up the karst belong to an earlier phase of painting.

By contrast to the red paintings, the white painted tradition reflects a sea level consistent with today. Stories relating to the white paintings — primarily consisting of geometrics, animals, and people on canoes and sailboats — further indicate that they were produced at a time of contact and conflict. These contacts may have occurred between local Ambel/Ma'ya speaking groups and newcomers to the area, such as clans arriving from Maluku or Biak within the past five centuries. Conflicts, especially during the time of *hong'i* raids from Tidore, are well attested in the Dutch and Malukan sources (see Andaya 1993). Elsewhere it has been speculated that sailboats produced in the white art tradition may represent long distance traders on Malay perahu, Chinese junks, or Dutch schooners, dating to the past two or three centuries before the present (Gaffney *et al.* 2024a; 2025).

The timing of black pigment overlying red and orange pigment is unclear. Certainly the black painted images overlying white art in Mayalibit Bay appears very recent. The black images include faces drawn in profile, in distinct contrast to the portrait-oriented faces of the red and white traditions. This change perhaps reflects new drawing styles influenced by Dutch and Indonesian era books and photographs. Papuan Malay writing in charcoal is today common at many caves and rockshelters.

Looking further afield, the existing record from West New Guinea may provide an aid to interpreting the age of the Raja Ampat paintings. In relative chronological order, Röder's (1959) styles proposed for the Bomberai Peninsula include: 1) Tabulinetin style with extensive palimpsests of figurative and abstract forms produced with stencils, red pigment line drawings, and white images painted on red backgrounds; 2) Manga style, with red pigment images of humans, animals, and geometrics using parallel spiral lines; 3) Arguni style, with more simple linear forms produced with red pigment, sometimes combined with black pigment; 4) Ota I and II styles with simple line drawings and abstract geometric motifs using red and black pigment respectively. Following Röder's classification, the Lentagin and Mon Ake art on Waigeo most closely resembles the Arguni style, tentatively implying a slightly later date than other red pigment paintings around Bomberai and Kaimana. In support of this, concentric circle with rays, which characterise the earliest art from Bomberai as well as sites further west in Timor, are notably absent from the Waigeo sites. The white art of Waigeo is not represented in the Bomberai sequence. The black images that overlie red and white art in Waigeo, however, mirrors the same practice around the Bomberai Peninsula (e.g. Museum voor Land- en Volkenkunde 1954).

4.2. Imagery and implications

Both red and white paintings around Waigeo display motifs related with humans and the sea, which is characteristic of coastal rock art in the wider area. The red painting tradition depicts hands, geometric designs, humanoid figures, and marine animals (Fig. 12). The white painting tradition shares some of these design elements, depicting geometrics, humanoids and marine animals, but also different types of watercraft arranged in more clearly narrative scenes (Fig. 13).

As noted above, there are similarities between the red Waigeo paintings and other sites in southern Raja Ampat, eastern Indonesia, and the Bird's Head of New Guinea. For instance, the presence of three fingers on the Mon Ake figure mirrors art around Bomberai Peninsula and Kaimana (Röder 1959: 148; Arifin and Delanghe 2004: 115). Red pigment dots, like those at Lentagin (Fig. 3d), are known from sites like Tumarawesi in Bitsyari Bay (Arifin and Delanghe 2004: 213). Stencils at Lentagin (Fig. 3b) are similar in shape to a red pigment image from Mampoga in the Berau Gulf (see Arifin and Delanghe 2004: plate 89). Speculatively, it is possible that the three-pointed object used to produce the stencil is a piece of metal (bronze or iron) as it does not resemble the 'boomerang' stencils known from Bomberai. This suggests there were common design forms that connected Raja Ampat Islanders with people living around the coast of western New Guinea in a visual community of practice.

There are some superficial similarities between the white Waigeo art and motifs recorded on the mainland of New Guinea. For instance, white crosses like at Fafag, Kakit, and Sapormerek are very similar to those recorded at Ambibiaom in Berau Gulf (Arifin and Delanghe 2004: 173). However, the broader white art tradition of Waigeo is not reflected in the Bomberai art. This may suggest regional diversification in painting occurred locally around northern Raja Ampat within the last few centuries before the present.

Although still hypothetical, we can build upon information provided by our interlocutors and the wider ethnographic literature to examine the meaning imbued in some of the painting designs. For instance, *mon* (spirits in Ambel and Ma'ya) were common around Raja Ampat in the recent past, and there was a repeated motif used to depict *mon* with arms raised upwards towards a higher sky deity (Corbey 2017). *Mon* were mythical beings and distant clan ancestors venerated by the wider community, which seem to predate the introduction of recent named ancestors from Biak, known as *korwar* (see Corbey 2017: 25). Meanwhile, benevolent and malevolent spirits manifested as human-like figures, animals, plants, and weather formations and occupied the wider landscape (Corbey 2017: 110–129).

We have hypothesised that the red painting tradition may stretch back several thousand years, and some of the art may therefore provide evidence for long-term connections with the spirit world. As an example, the red anthropomorph at Mon Ake raises one arm upwards. Numerous hand stencils at Lentagin and Bramaem also project upwards onto cliff faces. White anthropomorphs at Yé lal, Yé ha, and Fafag also depict arms raised upwards. Similar examples of the raised arm motif can be seen in wooden carved *mon* figures made as early as the late eighteenth century around Waigeo and in pencil drawings made by Waigeo spirit priests in the early twentieth century (see Fig. 14). The pencil drawings were used to guide priests on



Figure 12: Motifs from Waigeo's red pigment sites. The early phase, most closely matching the Arguni style in Bomberai is distinct from the late phase which is likely contemporary with white painted sites.

their travels to the spirit world – perhaps rock paintings served a similar function prior to the introduction of paper.

The presence of three digits on the hands of the Mon Ake figure, and some of the Fafag figures, is in distinct contrast with other figures depicted with five fingers. We can speculate that those individuals with five fingers represent humans of some kind, but those with three digits may represent human-hybrids with connections to totemic animals. Our interlocutors suggested the presence of three digits was used specifically to depict reptiles (this association may even extend beyond Raja Ampat as far as the border with Papua New Guinea – see Permana and Mas'ud 2022). Origin stories for Raja Ampat and other nearby island groups emphasise descent from eggs (see Gaffney *et al.* 2024a), which may provide support that the Mon Ake figure depicts an ancestor deity linked to a reptile totemic origin.

The emphasis on boats in the later white paintings indicates their significance for the ancestors of today's Ambel and Ma'ya speakers. This significance may have stemmed from the importance of watercraft being used to acquire valuables through trade, and their use for extracting tribute from vassals and paying tribute to Tidore. As Coreby (2017: 122) notes, this focus on extracting and paying tribute by boat may have become interlinked with expectations of delayed returns characteristic of cargo cults in the area (see Kamma 1972). Moreover, the similar representation of boats in white rock paintings and in the pencil drawings produced by spirit priests (see Corbey 2017: 110–129) indicates boats might have spiritual significance. For instance, the pencil drawings depict evil spirits using ships during their search for living souls (it is worth noting these drawings were made just after the *hong*i raids, during which time there was an atmosphere of fear and settlements were placed in high defensive locations). Boats were also used by spirit priests to travel to the spirit world and to cut through bad spirits using *benteng* (from Papuan Malay = protective devices) (Corbey 2017: 121). Canoes with what appear to be flags at Mol II and pointed prows at Fafag may be representations of protective *benteng*. Many of the abstract motifs in the white art and the Mol II red image may reflect similar *benteng*. Those with sharp and angular forms represent aggressive *benteng* and rounded forms represent protective ones (see Corbey 2017: 128). Similarly, the spiked and curved designs under three-fingered anthropomorphs at Fafag may signify they are hostile humans or spirits. Meanwhile, those with curved features may represent benevolent ones.

The presence of what might be Latin characters at Fafag and Yé ha is either chance similarity (with, for instance, the 'A' motif representing a karst island), or the early use of letters. We know that spirit priests used both Arabic and European texts in their work and that characters from both scripts were used alongside specific words to produce magic (Corbey 2017). If this is the case, it provides further support that the white painted sites date to within the past five hundred years.

The striking similarities between the Waigeo white rock paintings and the spirit priests' pencil drawings suggest magic may have been a key component in producing and enacting rock imagery. Importantly, in nearby areas of West New Guinea, similar motifs were produced on bark cloth, carvings, and rock paintings, suggesting that the practice of transposing symbols across media might have been common (e.g. Tichelman

et al. 1944: Pl. X). As a recent example of this, some white abstract motifs observed in rock paintings can also be found in Ambel and Ma'ya villages around Waigeo today (Fig. 15).

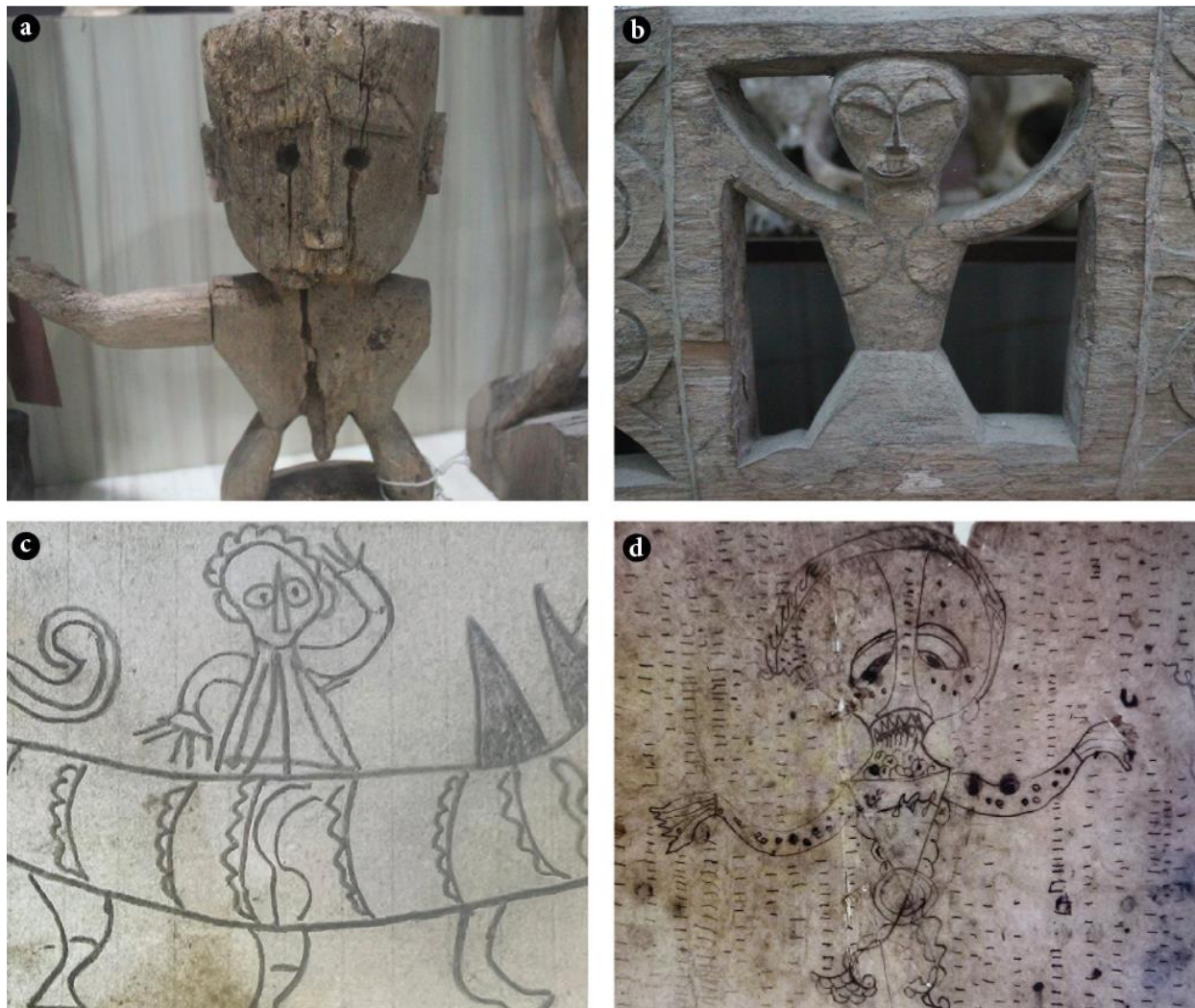


Figure 14: Figures with uplifted arms from Waigeo: a) a *mon* or *korwar* figure described originally by Wilhelm Solheim who collected it from an unspecified cave site around Waigeo; b) a detail of wooden funerary furniture collected by Solheim from Monfeu cave (see Solheim 1978); c) *korano faknik*, a leader of evil spirits depicted by a spirit priest; d) protective spirit. a-b) Reproduced courtesy of Museum Loka Budaya, Universitas Cenderawasih; c-d) compiled from Corbey (2017) based on documents in Het Utrechts Archief, the Netherlands.

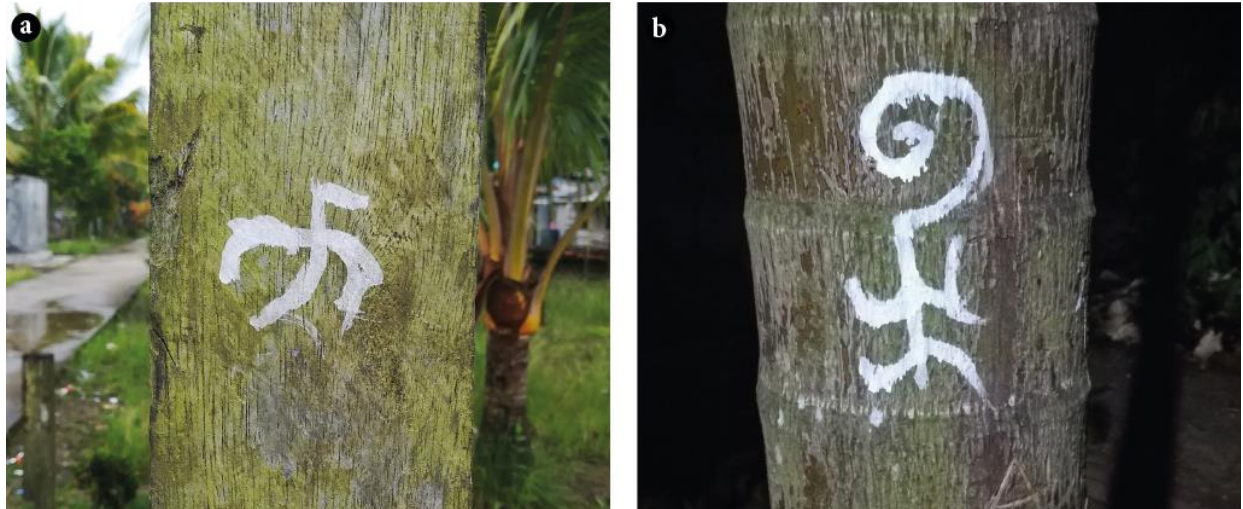


Figure 15: Abstract white painted designs around present day Warsambin village, Mayalibit Bay, Waigeo.

5. Conclusion

In contrast with the southern Raja Ampat island of Misool, the rock painting traditions of northern Raja Ampat have not previously been described in detail. This paper presented 11 such sites around Waigeo Island, which are primarily (although not entirely) restricted to the coast, having been produced on karst limestone cliffs. The relative phases we proposed for Waigeo Island's rock paintings included red images produced earliest in time, sometimes overlain by black, and followed by white (and some red) images, again sometimes overlain by black. The early red imagery seems to be most consistent with the Arguni style produced on the Bomberai Peninsula of New Guinea. This suggests that Raja Ampat was connected, by maritime movements, to broad stylistic changes that occurred throughout the wider region.

We hypothesised that the earliest red images include hand stencils, anthropomorphs, animals, and geometrics, which were produced at a time of raised sea levels in the Mid–Late Holocene. Direct dating on the rock art, or on calcite overlying the art, will be required to test this hypothesis. Furthermore, although there does seem to be an association between these kind of rock paintings and Austronesian speaking groups from Island Southeast Asia through to the Pacific (i.e. the Austronesian Painting Tradition), the extent to which the imagery also reflects descendent groups with Non-Austronesian heritage needs to be explored through stylistic comparisons with inland areas (especially given Raja Ampat and much of the New Guinea area reflect extensive contact between language groups — see Schapper 2020; Arnold *et al.* 2024). White rock paintings appear to have been produced in the past few centuries, owing to their location at present sea level and depictions of sailboats. These images signify places of interaction, conflict, and possibly spiritual importance. We argued there was a later regional diversification that saw Waigeo's white painting tradition develop its own characteristics. Both the red and white images are important to Ambel, Ma'ya, and Biak speakers who live around the coast today, and stories recounted about each site reflect the ongoing engagement between people and these paintings.

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Data Availability Statement.

All data is relating to this paper and is available in the text and appendices.

Partnerships

This paper uses information generated by the Raja Ampat Archaeological Project, a collaboration originally formed between the University of Cambridge and Universitas Gadjah Mada (2018–2022), and now administered by the University of Oxford, Universitas Gadjah Mada, Universitas Cenderawasih, and Badan Riset dan Inovasi Nasional (2023–2025). Primary fieldwork was undertaken in 2018–2019 under the research permit 359/SIP/FRP/E5/Dit.KI/X/2018 with the Arway site documented in 2024 under permit 559/SIP/IV/FR/7/2024. National, provincial, and regency government permissions were obtained each season prior to fieldwork. Multi-year community engagement relating to survey and excavations has been undertaken with Ma'ya, Ambel, and Beser Biak groups at Warsambin, Asokweri, and Warimak villages, which acted as a base to then visit rock art around Wawiyai, Selpele, Kabui (Pef), and Arway. Village and provincial leaders (*kepala desa/kampung* and *kepala distrik*) were consulted prior to our rock art documentation. Nixon Anson showed us art around southern Mayalibit, Frans Waiganyam showed us sites around Kabui Bay, Septinus Wanma showed us sites around Arway, Yeheskial Dahwa and family worked with us at Kakit, Karolis showed us sites at Pef, and Martin Makusi, Tobias Mambrasar, and Yahya Mambrasar accompanied us to Selpele. All these people provided important insights into the rock art and shared their knowledge for the purposes of this research and publication.

Conflicts of Interest

The authors declare no conflicts of interest.

Author Contributions

Conceptualization, D.T. and D.G.; field data collection, D.T., D.G., A.R.M., T.R., B.U., M.D., Y.L., E.N.I.D., Z.M.; DStretch analysis, R.T.; writing—original draft preparation, D.T., D.G.; writing—review and editing, D.T., D.G., R.T. A.R.M., T.R., B.U., M.D., Y.L., E.N.I.D., Z.M.; project administration, D.G., D.T.; funding acquisition, D.G. All authors have read and agreed to the published version of the manuscript.

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Appendix A: site sketches

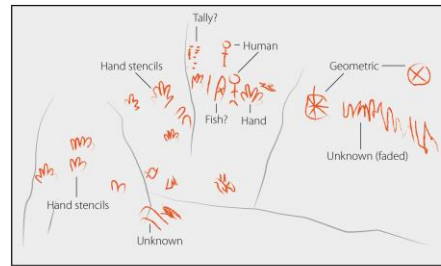
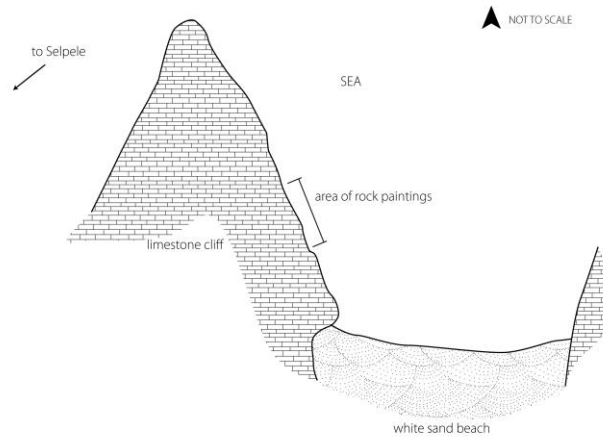


Figure A.1: Lentagin (WAI-31).

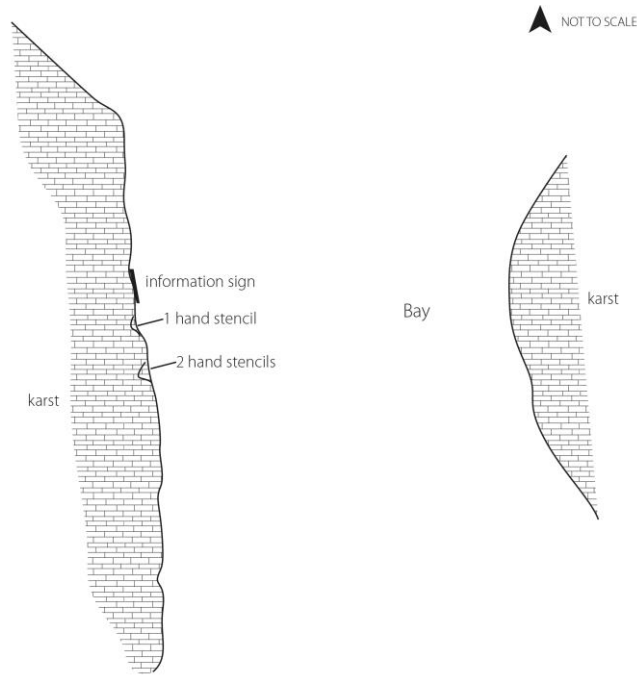


Figure A.2: Brambaem (PEF-3).

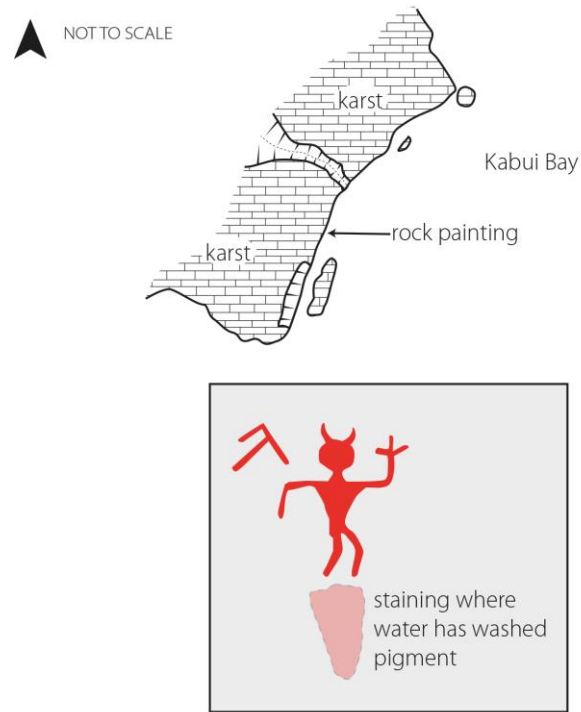


Figure A.3: Mon Ake (WAI-53).

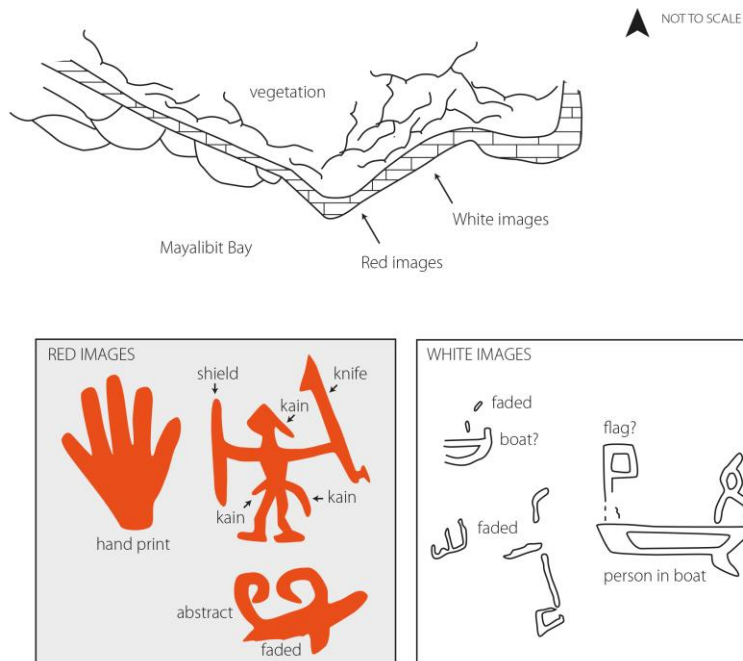


Figure A.4: Mol II (WAI-74).

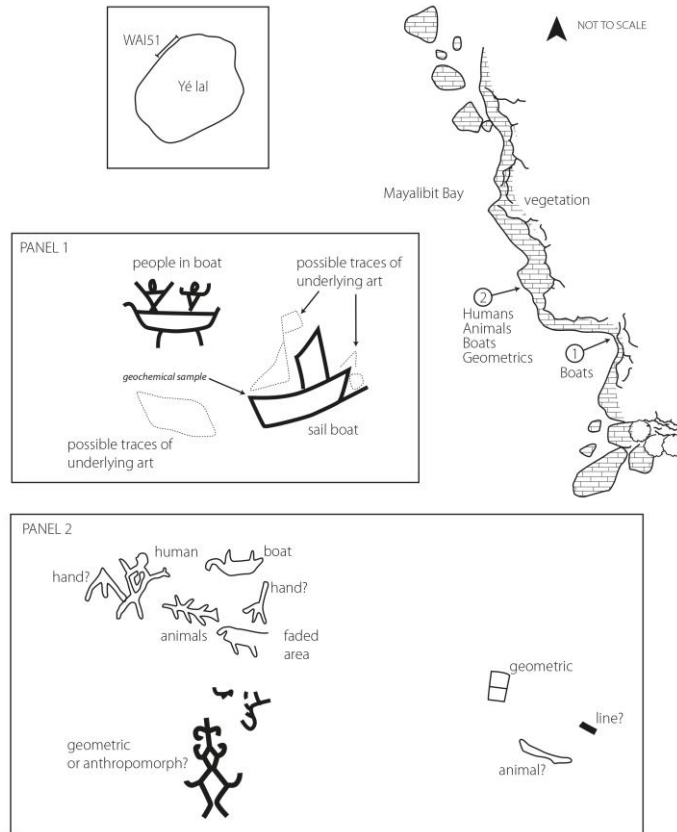


Figure A.5: Yé lai (WAI-51).

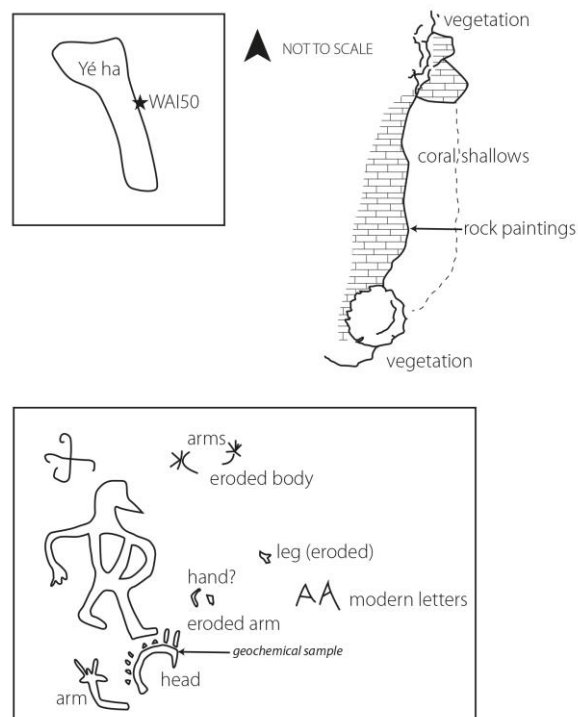


Figure A.6: Yé ha (WAI-50).

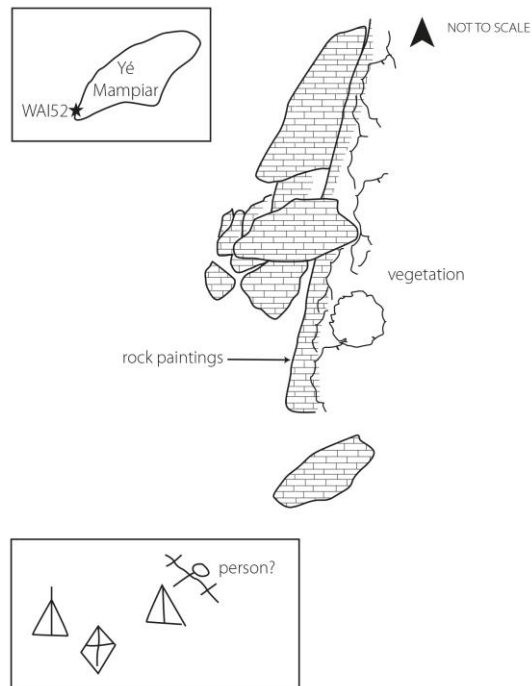


Figure A.7: Yé mampiar (WAI-52).

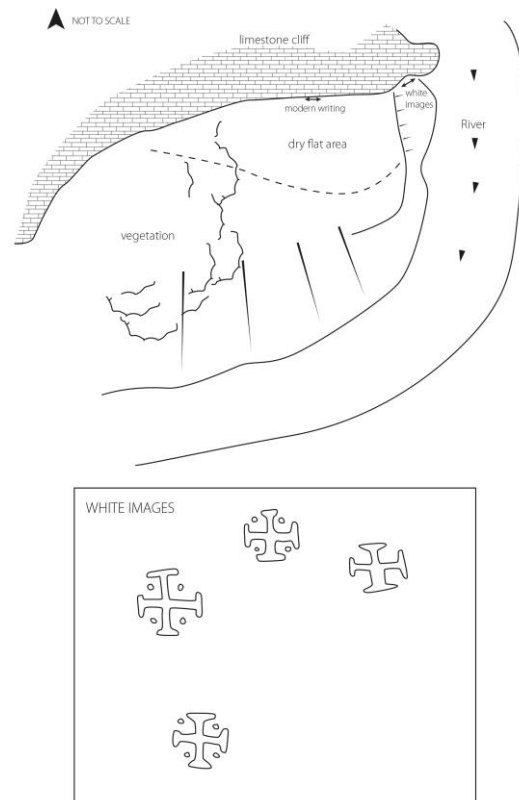


Figure A.8: Kakit (WAI-4).

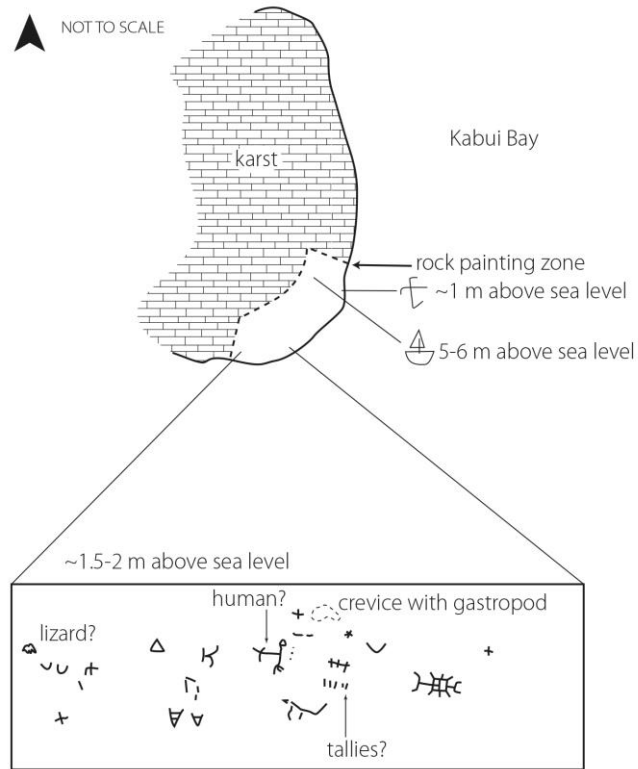


Figure A.9: Mlelen Popo (WAI-54).

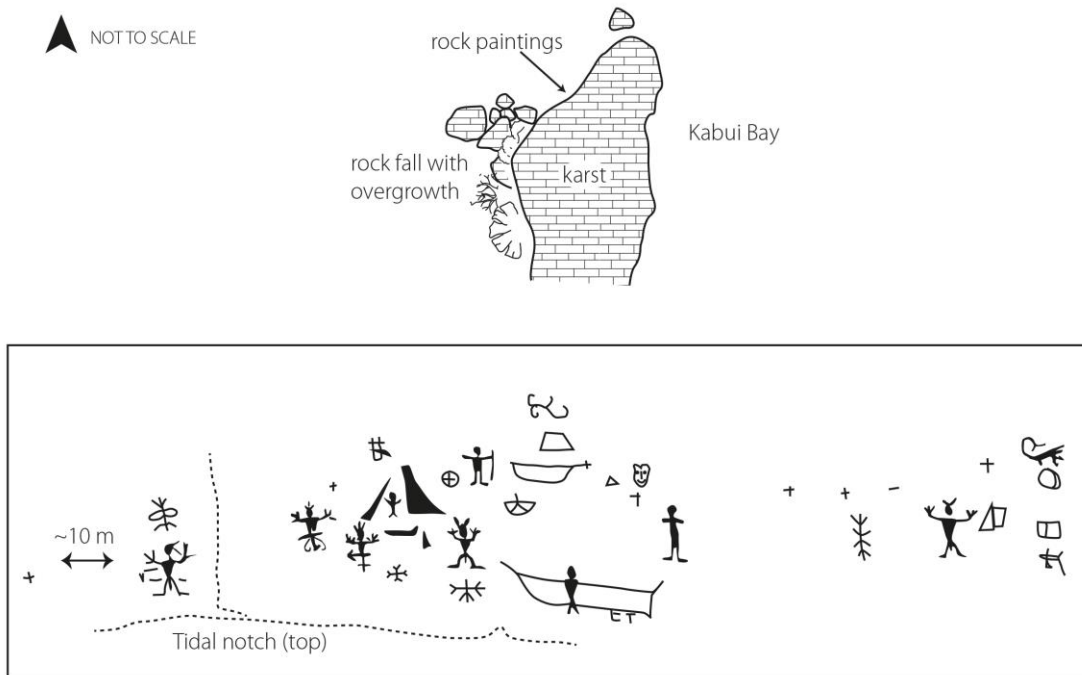


Figure A.10: Fafag (WAI-55).

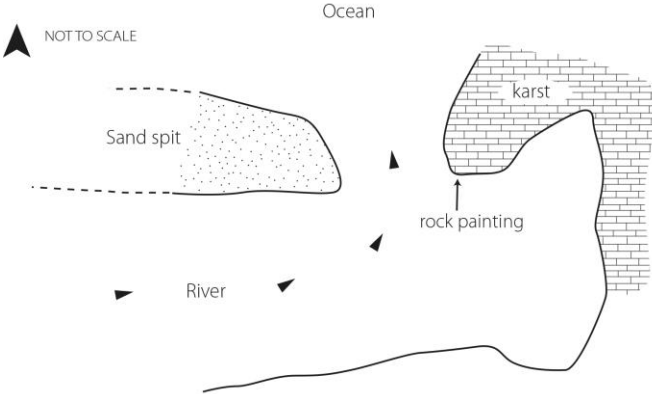


Figure A.11: Sapormerek (WAI-63).

Appendix B: DStretch images

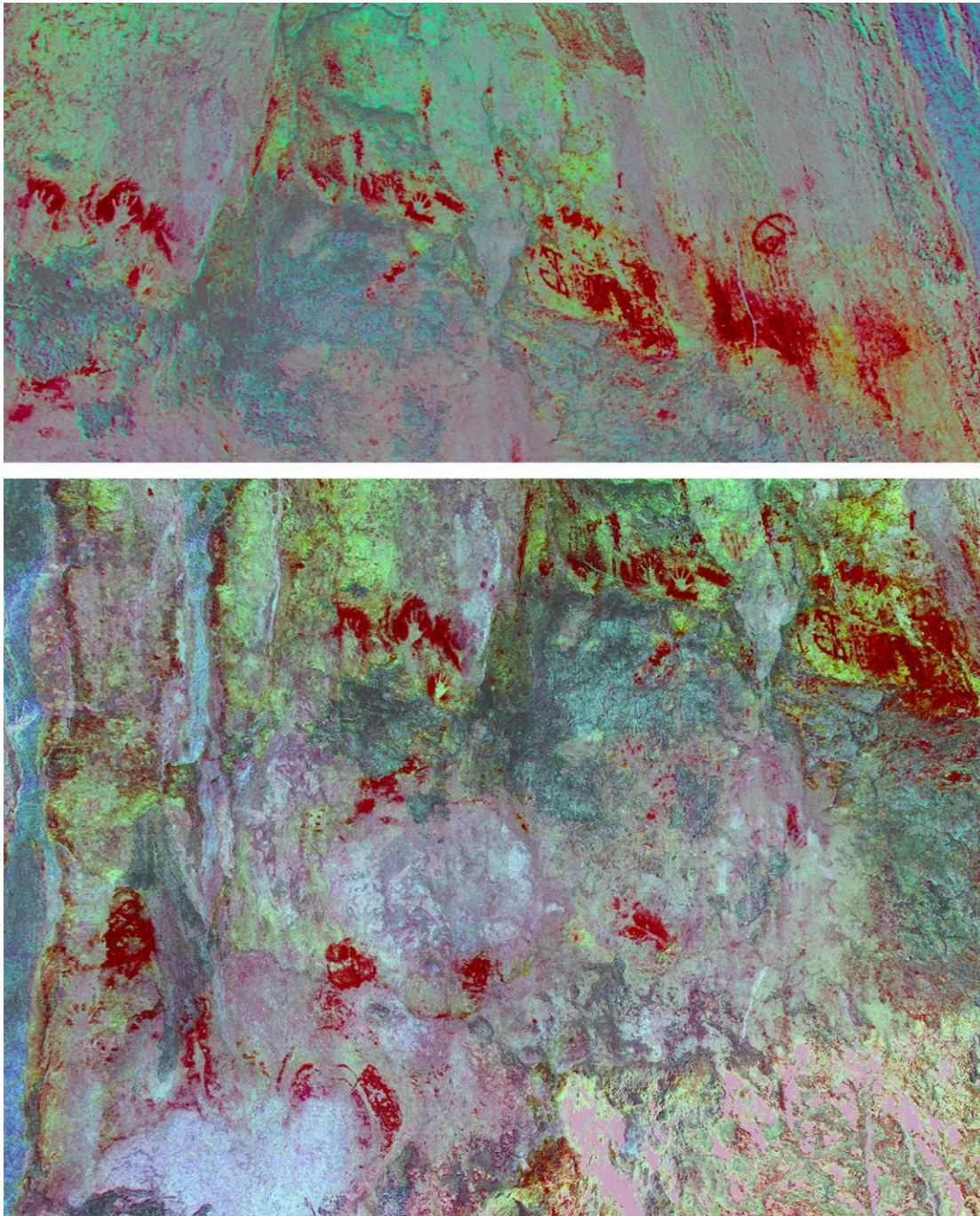


Figure B.1: Lentagin (WAI-31).

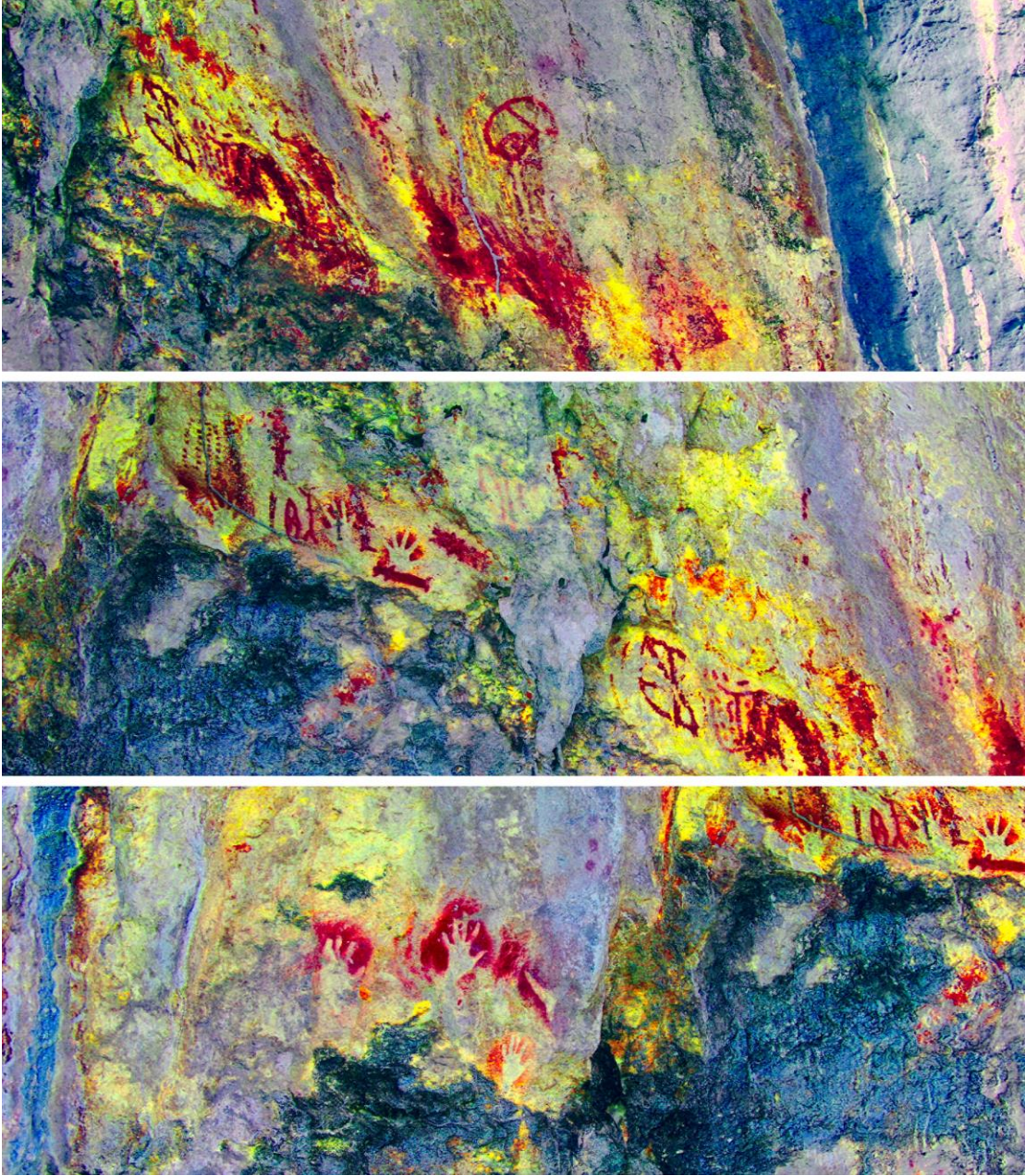


Figure B.2: Lentagin (WAI-31).

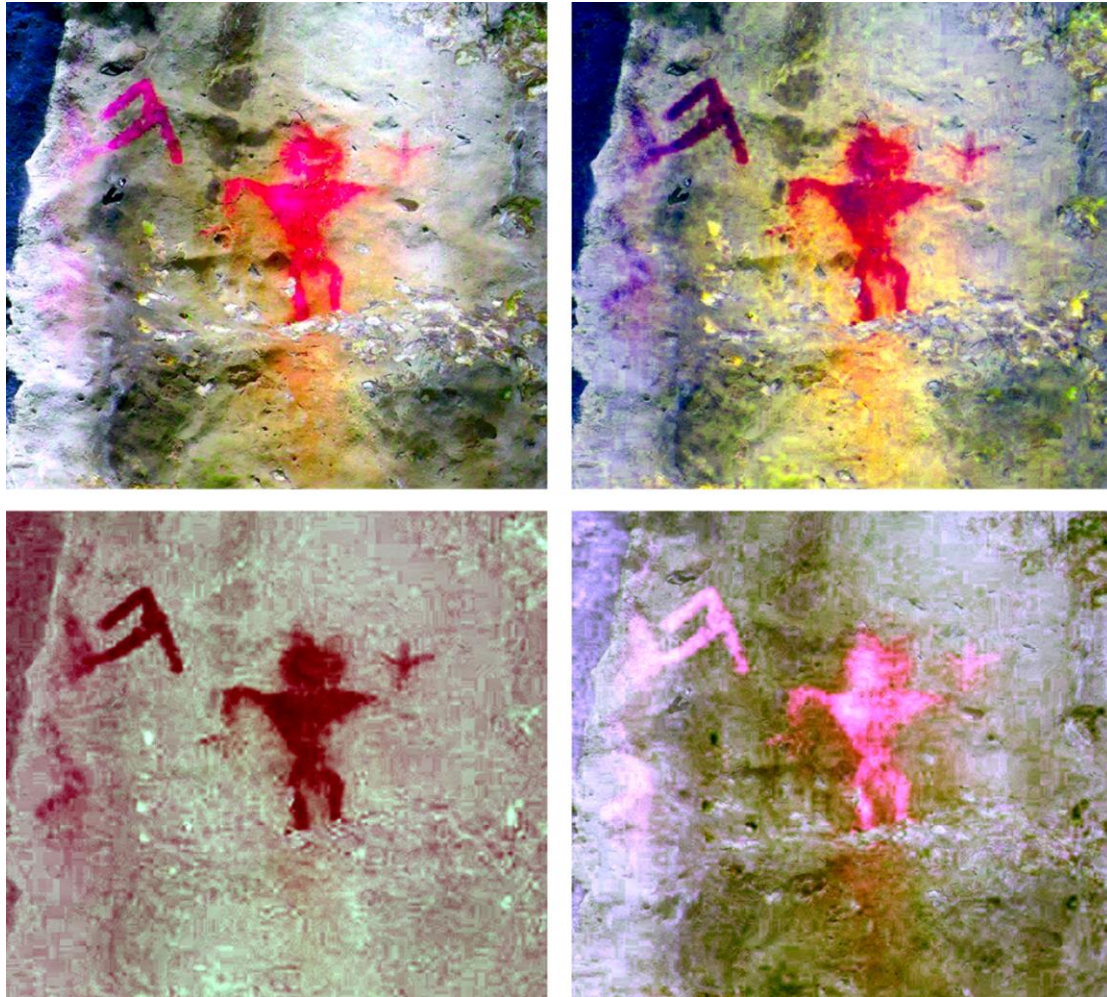


Figure B.3: Mon Ake (WAI-53).

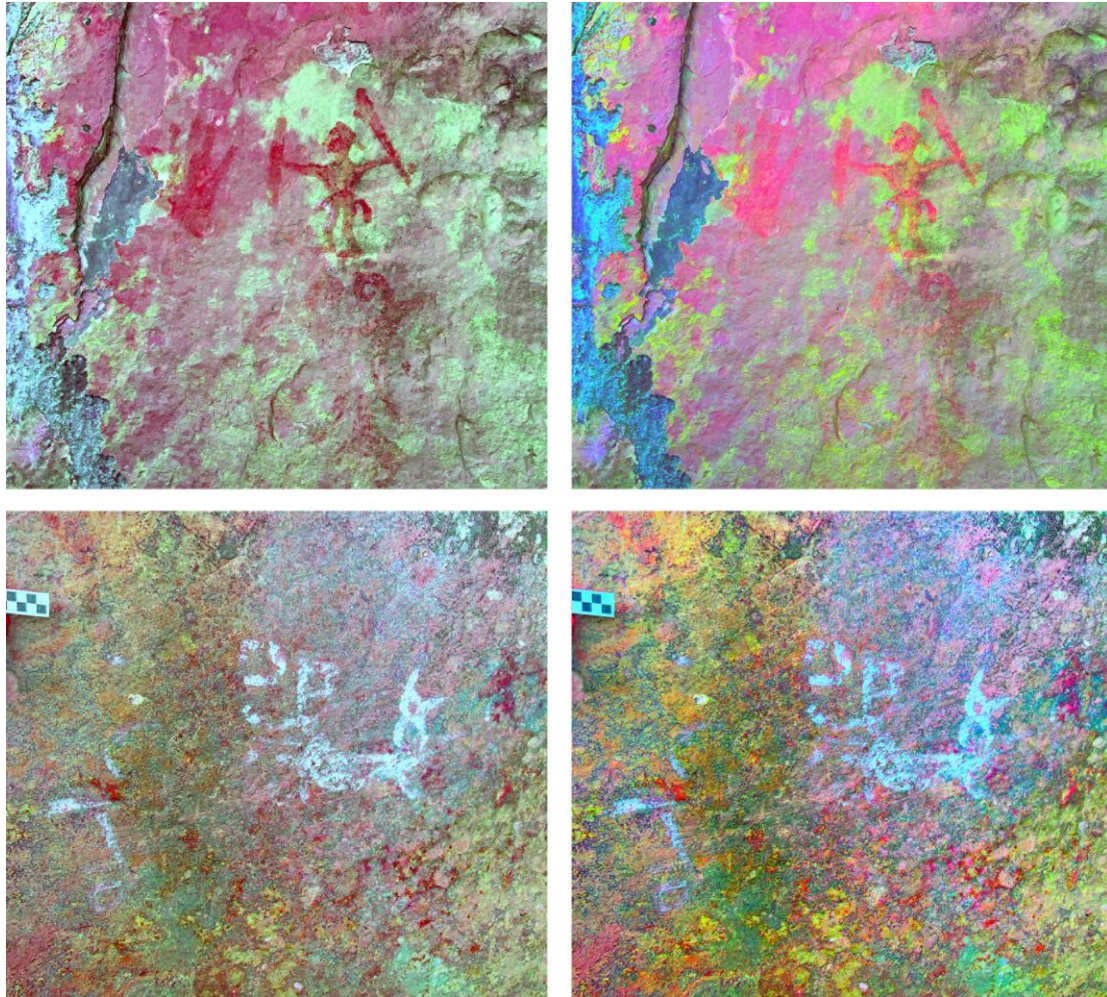


Figure B.4: Mol II (WAI-74).

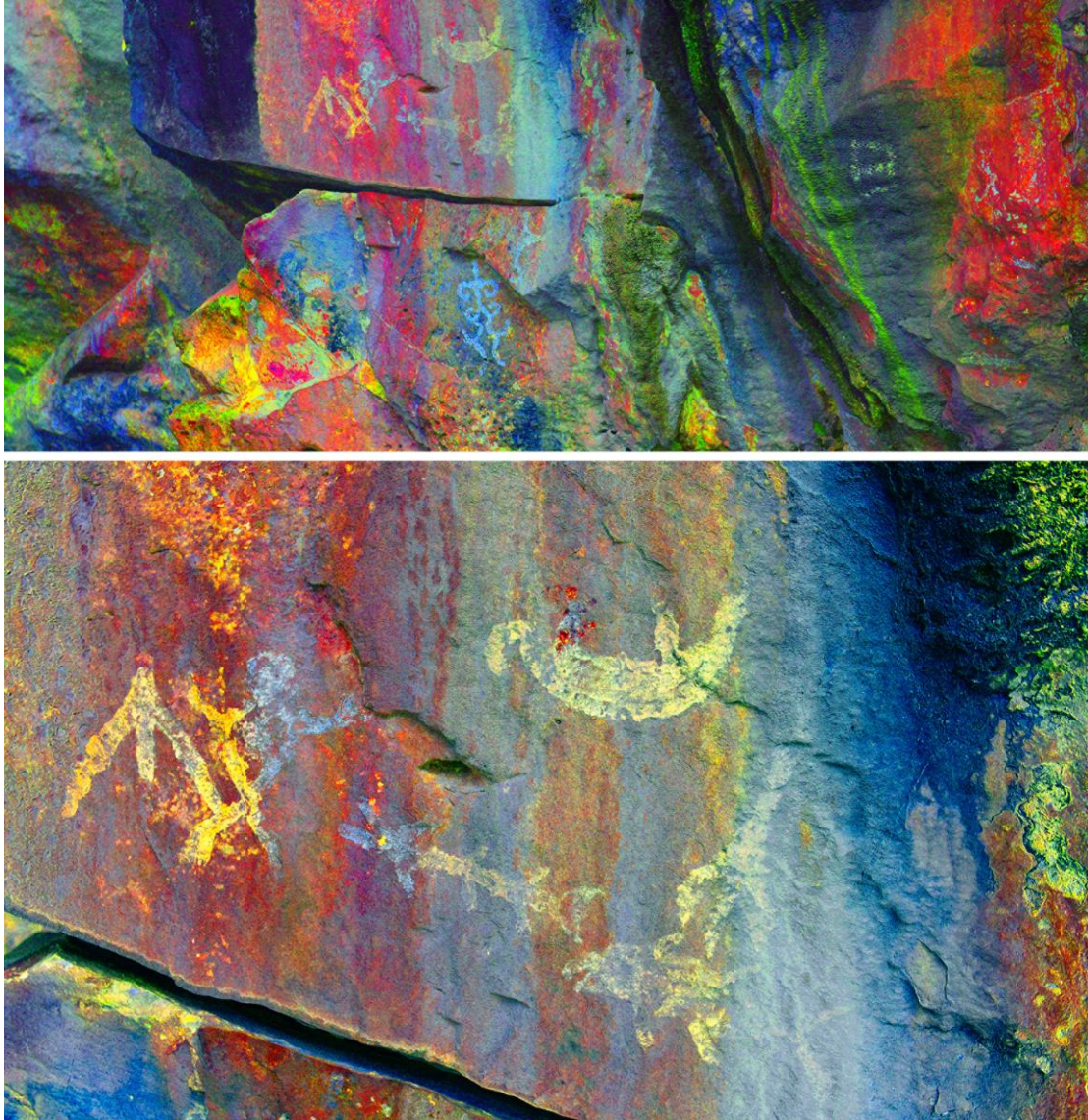


Figure B.5: Yé lal (WAI-51), Panel 1.

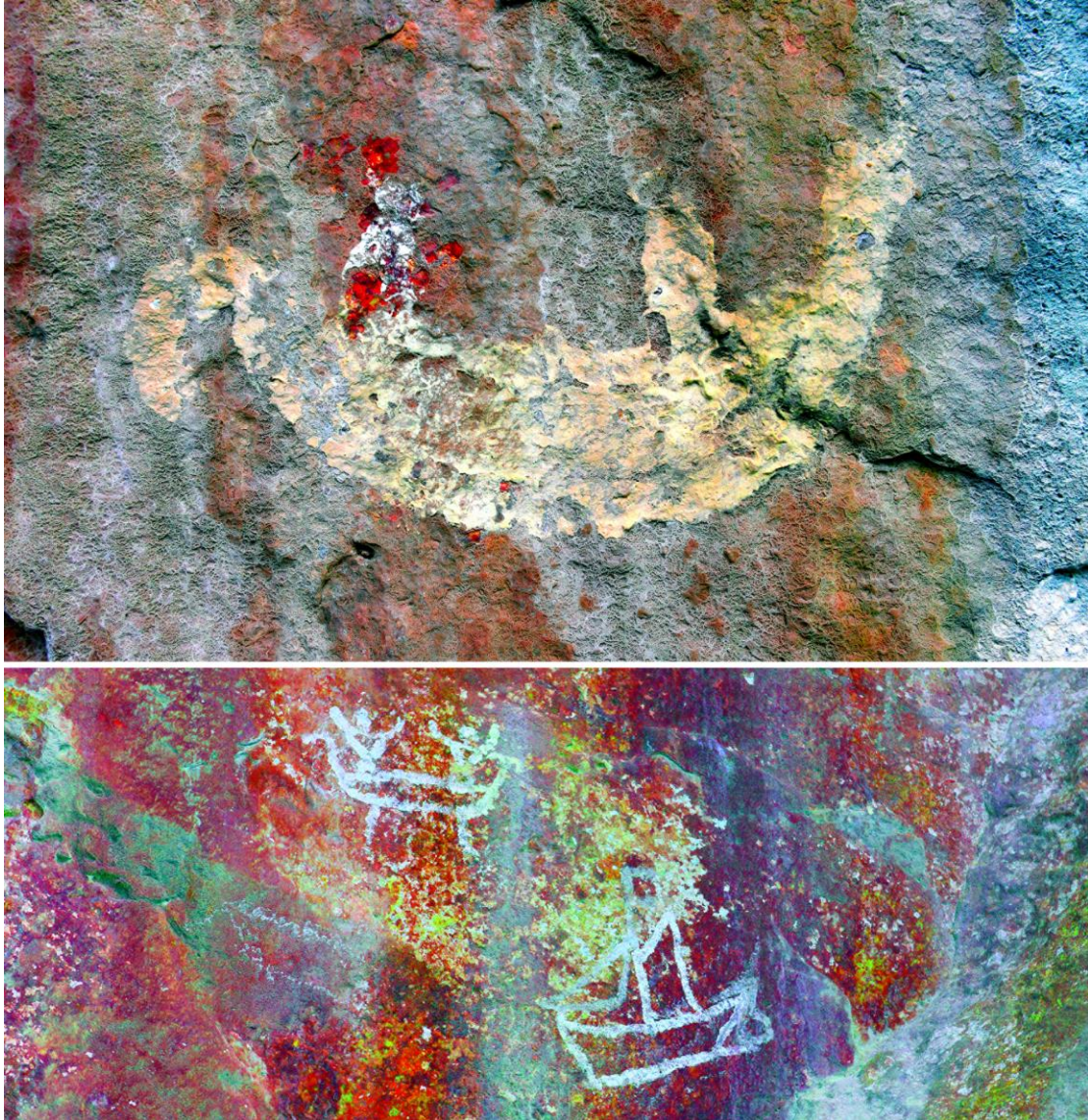


Figure B.6: Yé lal (WAI-51), Panel 1 (above) and Panel 2 (below).



Figure B.7: Above: Yé ha (WAI-50); below: Yé mampiar (WAI-52).



Figure B.8: Fafag (WAI-55).

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