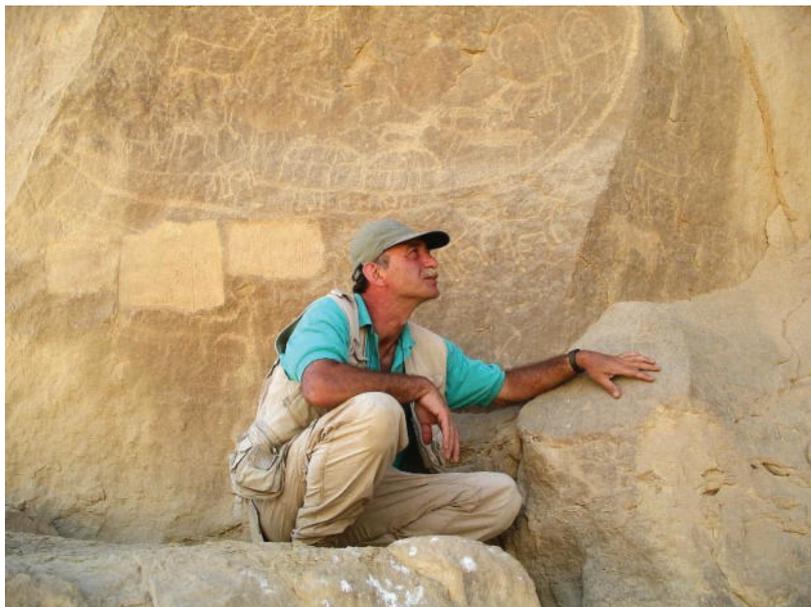

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Current Research in the Rock Art of the Eastern Sahara

In Memory of Dirk Huyge (1957–2018)



Edited by

**Frank Förster, Maria Carmela Gatto, Paolo Medici,
Paweł Lech Polkowski and Gunnar Sperveslage**

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The Jebel Uweinat Rock Art Survey: Achievements of the Past 20 Years

ANDRÁS ZBORAY, MARK BORDA, FLAVIO CAMBIERI, ALESSANDRO MENARDI NOGUERA AND MARIA EMILIA PEROSCHI

Abstract

Jebel Uweinat remains to this day one of the remotest terrestrial spots on the globe, in the centre of the hyper-arid Libyan Desert (Eastern Sahara). Between its discovery in 1923 and the Second World War, about a dozen expeditions reached the mountain, reporting numerous prehistoric rock art sites with engravings and paintings. After the war, up to the turn of the millennium, there were only a handful of reported visits to the region, but some resulted in spectacular new rock art finds.

In the elapsed 20 years, the authors have conducted more than forty privately funded expeditions, combining their efforts on a number of occasions to survey the mountain and the surrounding smaller massifs for rock art sites in a systematic manner. Prior to the start of their collaborative effort, about 200 individual rock art sites were known in the area, while the current corpus exceeds a thousand, elevating the central Libyan Desert to one of the most important and intensely studied rock art provinces of North Africa.

Keywords: Jebel Uweinat, Jebel Arkenu, Jebel Kissu, Libyan Desert, rock art, survey

Rock Art and Exploration of Jebel Uweinat Prior to the Year 2000

Located in the centre of the Libyan Desert (Eastern Sahara), the largest hyper-arid region of the world, Jebel Uweinat (Fig. 1) and the adjacent smaller massifs of Jebel Arkenu and Jebel Kissu remained some of the last major unmapped geographical features well into the twentieth century. It was only in the spring of 1923 that Ahmed Hassanein Bey completed what was the last of the great camel journeys of exploration, revealing the existence of the granite massifs of Jebel Arkenu and Jebel Uweinat. Due to the circumstances Hassanein only made a brief visit, but he already noted ‘on a wall of rock [...] figures of animals [...] rudely, but not unskillfully carved’, apparently of great antiquity (Hassanein 1924, 229).

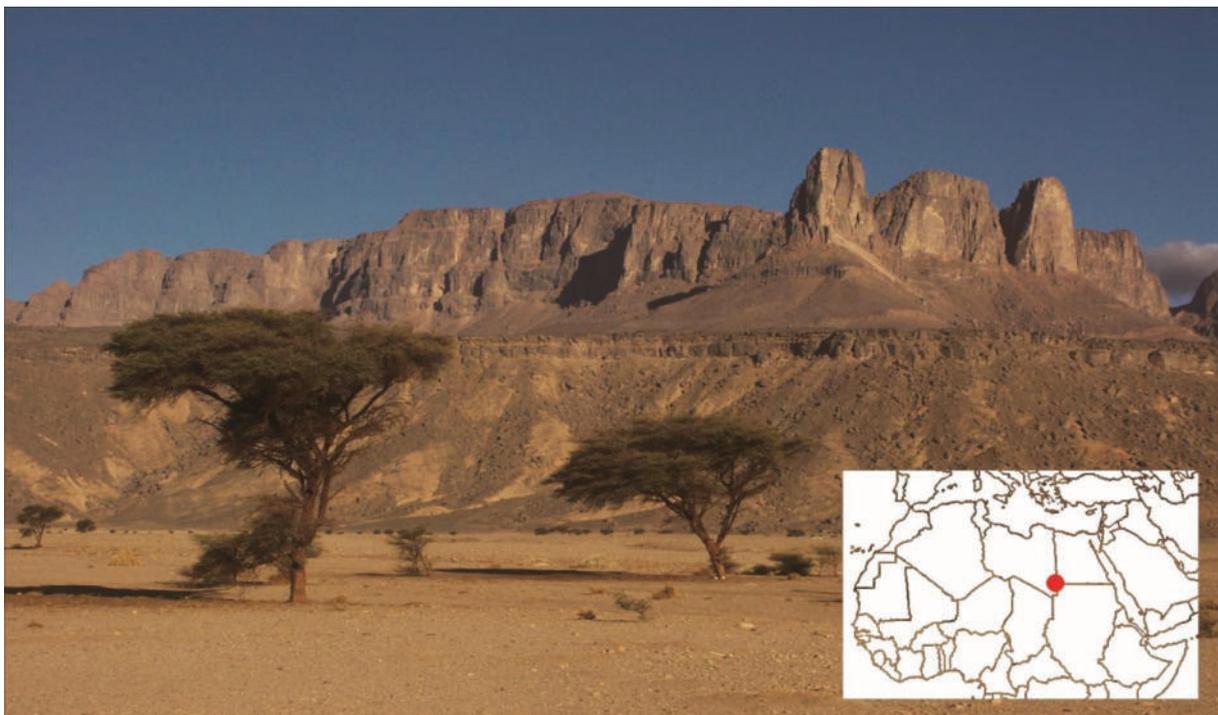


Fig. 1. Jebel Uweinat viewed from the south (summit plateau in centre, with the ‘triple peak’ at right). Inset: position of Jebel Uweinat at the convergence of the borders of Libya, Egypt and Sudan.

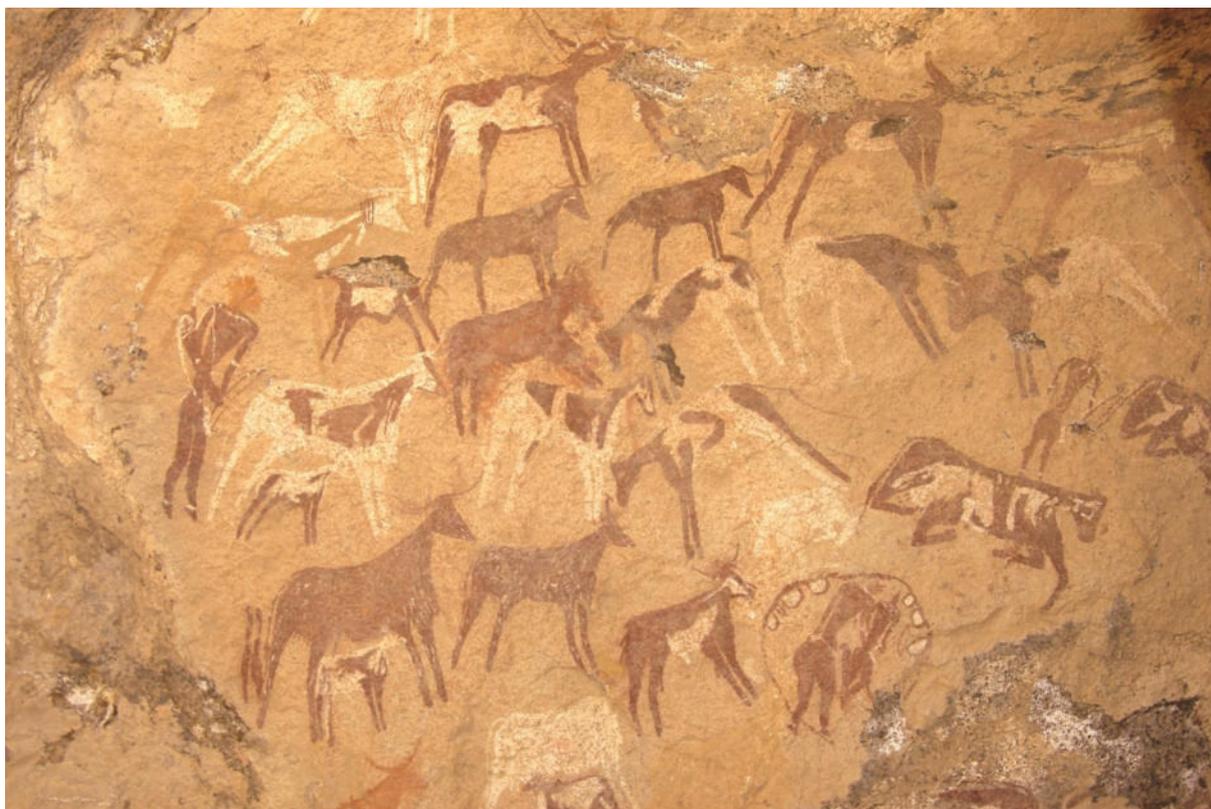


Fig. 2. Cattle and human figures at Ain Dua (site AD 1).

Encouraged by Hassanein's finds, Prince Kemal el Din organised two motorcar expeditions to Jebel Uweinat in 1925 and 1926, during which he discovered a number of new rock art sites in the principal valley of Karkur Talh near Hassanein's rock, including a shelter with red paintings (El Dine and Breuil 1928). In 1930 and 1932, Ralph Bagnold and William Kennedy Shaw found some further paintings in the same area, and at the small hill of Yerguehda some 60 kilometres to the south of Jebel Uweinat (Shaw 1934).

In the spring of 1933, László Almásy and Lodovico di Caporiacco have come upon a number of spectacular and well-preserved paintings depicting humans and cattle (Fig. 2) near the spring of Ain Dua at the western part of the mountain (Di Caporiacco and Graziosi 1934; Almásy 1936). The following autumn Almásy and Leo Frobenius organised a two-month expedition with the specific aim of documenting the rock art of the Libyan Desert, making many new discoveries. Hans Rhotert, the archaeologist of the expedition, produced the first inventory and description of the rock art sites in the region (Rhotert 1952).

Early in 1934, following the dispute between Italy and Great Britain on the Libyan-Sudanese border, the Sudan Defence Force set up a small garrison in Karkur Murr at the south-eastern part of Jebel Uweinat, commanded by Captain Francis Bertram Godfrey Arkwright. With little to do, Arkwright spent time exploring the southern side of the mountain (in part with Almásy, who arrived with a party from Egypt on yet another expedition), finding several engravings, and also a painted shelter at nearby Jebel Kissu (Almásy 1936).

In 1938, Bagnold organised a multidisciplinary expedition to the Gilf Kebir and Jebel Uweinat that included Hans Winkler, who was engaged in a monumental survey of the engravings in the desert flanking both sides of the Nile in Upper Egypt. During a one week stay at Karkur Talh, Winkler and companions have re-located practically all the sites noted by previous explorers and made several discoveries. Unfortunately, only a small fraction of the visited sites were published (Winkler 1939). However, Winkler took photographs of all recorded sites which now rest in the archives of the Egypt Exploration Society in London.

The Second World War brought an end to the early explorations. It was only in the early 1960s that the area was revisited, mostly by military personnel and oil exploration parties. In 1961, a party of Italian geologists led by Emilio Bellini located the hitherto known largest rock art site of Jebel Uweinat among a picturesque heap of enormous granite boulders named Bu Helega (Fig. 3) in Karkur Idriss, a shelter with hundreds of individual figures (Bellini and Arie 1962). A year later an expedition organised by the Royal Military Academy Sandhurst explored the smaller massif of Jebel Arkenu to the north-west of Jebel Uweinat (which was previously visited by Hassanein, Almásy and Rhotert without finding any rock art), reporting a number of sites from the main valley deeply penetrating the igneous complex forming the bulk of the mountain (Williams and Hall 1965).



Fig. 3. Paintings in the big shelter of Bu Helega in Karkur Idriss (site BH 3).



Fig. 4. Cattle and procession of human figures in the principal site reported by the 1968 Belgian expedition (site KT 83/B).

About the same time Angelo Pesce, a topographer employed by an Italian oil company, explored the western and southern parts of the mountain, finding some previously unknown paintings (Graziosi 1962). In 1968, the Belgian Scientific Expedition, a multidisciplinary team of researchers led by the botanist Jean Leonard, spent several weeks at Jebel Uweinat focusing on the Karkur Talh area. A number of outstanding paintings (Fig. 4) were discovered in the mid-section of the valley, just upstream of the sites reported by Rhotert and Winkler. Some

further finds were made in Karkur Idriss, including a panel of round headed figures of a style previously unknown in the area, with an appearance suggesting great antiquity (Van Noten 1978).

In 1978, a NASA funded expedition led by Faruk el Baz visited the area to seek terrestrial analogies for Martian landforms. On a short visit to Wadi Handal, a geological party led by Vance Haynes noted some engravings, however these were not documented (El Baz 1982; Vance Haynes, pers. comm.). For the next two decades, the area and its rock art received little attention until in 1996 Jean-Loïc Le Quellec visited the western (Libyan) side of Jebel Uweinat and found several previously unreported paintings in Karkur Idriss, Karkur Ibrahim and along the western and southern perimeter of the mountain (Le Quellec 1998; Le Quellec and De Flers 2005).

Through the combined efforts of these early explorers, by the year 2000 approximately 200 sites with paintings and petroglyphs were known from the area, however only partially published.

The First Decade of the Jebel Uweinat Rock Art Survey Till 2009

Andr s Zboray first visited Jebel Uweinat in 1998, and from 2000 onwards organised regular privately funded expeditions, initially with the modest objective of locating and visiting the sites recorded by earlier explorers. This task proved more ambitious than imagined, especially in the principal valley of the eastern part of the mountain, Karkur Talh. The published literature provided little clues to the sites' location, and there were no accurate and sufficiently detailed topographic maps of the area available. Adding to the confusion, various authors used different numbering schemes (or none at all), frequently lumping several close-lying sites under a single identifier. This state of affairs prompted Zboray to begin a systematic survey and documentation of rock art sites. Five expeditions in the 2000–2002 period (four starting from Egypt and one from Libya) succeeded in visiting and recording with a handful of exceptions all of the previously published sites. These surveys also yielded a few previously unreported sites. In the spring of 2002, Jean-Marc Mercier and party located three previously unknown shelters with paintings in Karkur Talh (Zboray 2003a). In the same period, Samir Lama and Giancarlo Negro found a previously unreported shelter near the entrance of Karkur Talh with the same type of round headed archaic figures as the ones reported from Karkur Idriss by the 1968 Belgian expedition (Giancarlo Negro, pers. comm.).

About this time, NASA made medium-resolution Landsat satellite images freely available on the Internet. Thus, the accurate plotting of the location of known sites became possible. It became apparent that most of them concentrated in the lower courses of the principal valleys, easily accessible with motorcar. The upper reaches and innumerable side wadis were devoid of known sites, most probably due to a lack of exploration. In October 2002, an expedition was organised to systematically explore a number of lateral wadis and a part of the upper reaches of Karkur Talh. The results surpassed all expectations, with over 60 new sites discovered in six days (Zboray 2003b), including several panels with round headed figures and a superbly preserved site with miniature figures of which only a few damaged examples were noted previously by Rhotert and Mercier (Fig. 5). In February 2003, a dense cluster of new sites was found in the upper reaches of the southwestern branch of Karkur Talh, including a key site with clear superimpositions of the principal regional styles that permitted the establishment of a relative chronology (Fig. 6).

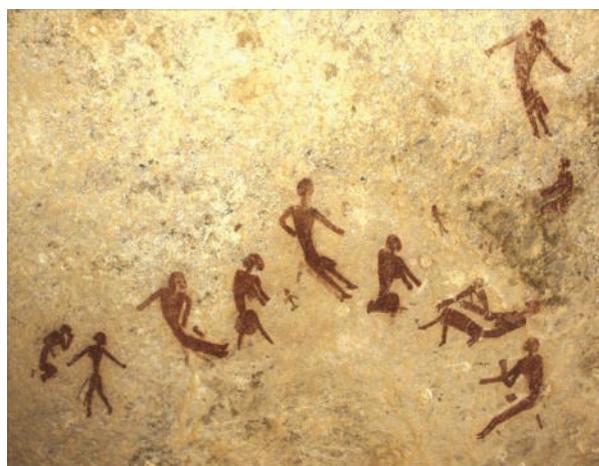


Fig. 5. Miniature style figures, averaging 8–10 cm in height (site KTN 31).



Fig. 6. Miniature style figures holding bow and arrows painted over large 'Uweinat roundhead' figures, in turn superimposed by red running pastoralist figures (site KTW 21/A).



Fig. 7. View of the 'white spot' from the Hassanein Plateau. Inset: satellite view of the same feature (source: Google Earth).



Fig. 8. Engraving of a soft-shelled turtle with an adult and a young giraffe grazing a tree, executed in low relief (site KT 22).



Fig. 9. Large shelter with pastoralist paintings on the Hassanein Plateau (site HP 21/A).

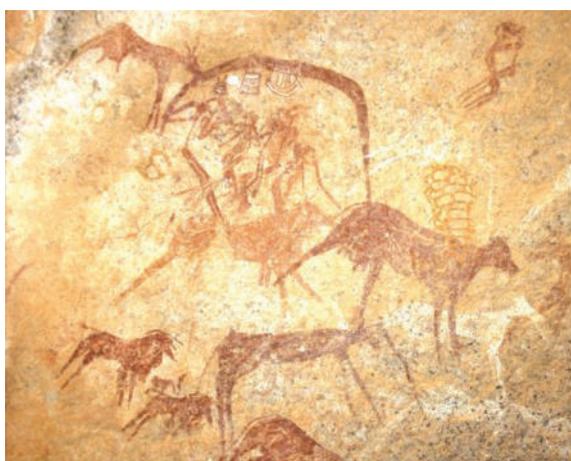


Fig. 10. Shelter with pastoralist paintings in Karkur Gabor, Western Jebel Uweinat (site KG 21).

Fig. 11. Human figures with a dog, Wadi Wahesh (site WW 52).

During the same expedition, Zboray and companions succeeded in scaling the cliffs of the Hassanein Plateau (the easternmost of the high sandstone plateaus making up the bulk of the eastern part of the mountain) to the mysterious ‘white spot’, a prominent bright circular feature with a 500-metre diameter visible on satellite imagery (Fig. 7). The white spot turned out to be a sand-filled erosional basin surrounding a circular basalt dyke, not an impact structure as hoped for. However, this was more than compensated for by the discovery of several shelters with paintings in adjacent valleys on the top of the plateau, implying that practically all of the mountain may host rock art, not only the lower courses of the wadis as previously thought. In March 2003, Mahmoud Marai and party further confirmed this intuition, finding an important site on a terrace high up on the slopes under the Northern Plateau, above the upper section of the north-western branch of Karkur Talh (Mahmoud Marai, pers. comm.).

At the same time, the somewhat neglected Jebel Arkenu began to receive more attention. In October 2002, Uta and Friedrich Berger, with Tarek el Mahdy and Peter Gaballa, located a large shelter with pastoralist paintings along the southern edge of the mountain (Berger *et al.* 2003). In January 2003, a team from the ACACIA project

of the University of Cologne found a large vertical rock wall decorated with numerous petroglyphs in the central valley of the mountain, apparently missed by all earlier explorers (von Czerniewicz *et al.* 2004). In October 2003, further finds were made by Zboray and companions in the upper reaches of the central wadi, and also at the entrance of Karkur Ibrahim on the Libyan side of Jebel Uweinat. On the same trip, the exploration of Jebel Bahari, a mountain composed of igneous rocks located at a short distance to the north of Jebel Arkenu, failed to find any rock art.

In November 2003, Zboray returned to Karkur Talh with Pauline and Philippe de Flers and Jean-Loïc Le Quellec to continue with the survey of the numerous side valleys and re-capture already known sites with digital photography (Le Quellec and de Flers 2005). While the majority of the time was spent at the known locations, a number of new finds were made, including a unique engraving of a soft-shelled turtle (Fig. 8) that could be one of the oldest rock art in the area (Zboray 2018c). In the same period, Alessandro Menardi Noguera visited the eastern part of Jebel Uweinat and explored the northern branch of Karkur Talh till its end near the border between Sudan and Libya, however without finding any rock art. In March 2004, Zboray and party made a second ascent to the Hassanein Plateau, where a two-day stay revealed several new paintings, including one of the largest sites ever reported from Jebel Uweinat (Fig. 9), with hundreds of individual figures (Zboray 2004). On this same expedition Jebel Kissu was visited, re-locating Arkwright's site and finding another three unreported ones.

In October and November 2004, Zboray organised two more expeditions to visit and document known sites and continue exploring for rock art in the remaining blank areas in the eastern part of the mountain (principally on Sudanese territory). On both trips, several new sites were found in the northern sector of Karkur Talh and along the southern foothills of the mountain, near the border with Libya. In November, Wadi Wahesh was explored, and it became apparent that a number of petroglyphs found by the Belgian expedition and erroneously attributed to Karkur Talh (Van Noten 1978) were in reality located in this valley on the southern side of the mountain. The documentation collected by all expeditions to this date was published on a DVD ROM as a comprehensive illustrated catalogue and bibliography of all known rock art sites in the Libyan Desert (Zboray 2005a), covering about 300 new sites found at Jebel Uweinat and at the surrounding smaller massifs during the 2000–2004 period.



Fig. 12. Decorated handprints (site KTW 27/G).



Fig. 13. Winkler's site 75 in Karkur Murr, showing a complex series of superimpositions (site KM 17).



Fig. 14. Elaborately dressed and decorated 'Uweinat roundhead' figures, one on the left holding bow and arrows fitted with transverse arrowheads (site KTW 11/D).

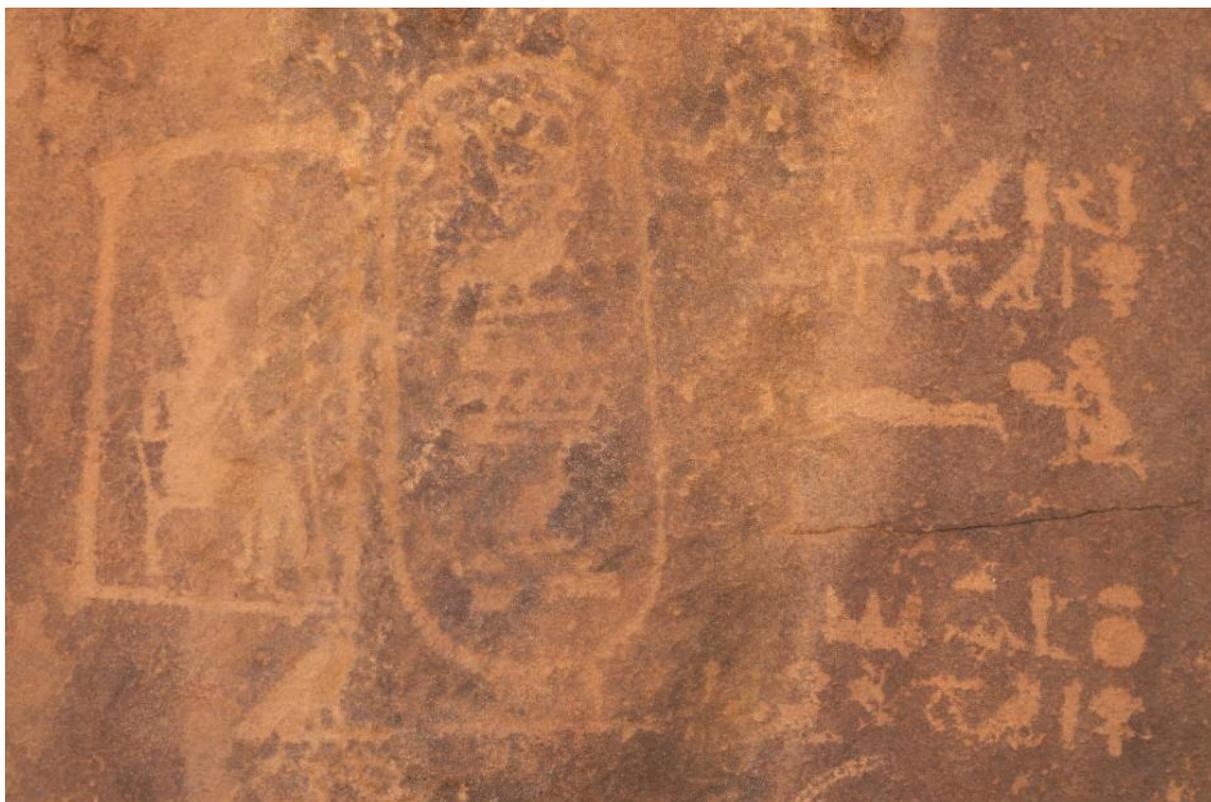


Fig. 15. The inscription of Mentuhotep (II) Nebhepetre, the first ruler of the Middle Kingdom, at Jebel Uweinat.

By this time, the majority of the Egyptian and Sudanese sectors of the mountain have become well-known, with only a few patches of difficult to access areas left blank in the Libyan part of the mountain. The reported sites were clustered around the two springs at the easily accessible foot of the mountain and along the banks of the principal valleys. In March 2005, Alessandro Menardi Noguera and companions made a three-day exploratory trek to the Emeri Highland, the elevated plateau made of igneous rocks to the south of Karkur Ibrahim, with spectacular results (Menardi Noguera *et al.* 2005). The party located a total of ten new sites with paintings, including a richly decorated shelter in Karkur Gabor, the largest sand-filled basin on the plateau, with some excellently preserved pastoralist scenes (Fig. 10).

In the same period, Zboray returned to Wadi Wahesh along the southern side of the mountain, and high above the known sites came upon a dense cluster of paintings (Zboray 2005b), all executed in a hitherto unknown style (Fig. 11). Some more new sites were found in the eastern tributary of Karkur Murr, where further finds were made in October of the same year. On the same October expedition, an exceptional site with one of the richest concentration of paintings attributable to the archaic styles of the region (Fig. 12) was discovered among the cluster of sites in upper Karkur Talh known since February 2003, one that escaped detection on several previous visits (Zboray 2006).

In the spring of 2006, Menardi Noguera and party returned to the Emeri Highland at western Jebel Uweinat (Libya) to continue surveying this vast and promising uncharted area. With more preparation and a better understanding of the terrain from newly available high-resolution satellite imagery, the party located a further 15 sites with paintings east of the 2005 areas, mostly along the perimeter of sand-filled valleys among the syenitic granite ridges constituting the external ring of the igneous complex forming the western part of Jebel Uweinat (Menardi Noguera *et al.* 2007).

By 2006 almost every site published before 2000 had been re-located at Jebel Uweinat, Jebel Arkenu and Jebel Kissu, with a single notable exception. In 1938, Bagnold found a splendid site with unique paintings somewhere in the upper reaches of Karkur Murr (Winkler 1939), extensively photographed and published by Winkler who recognised its importance (Fig. 13). This site remained elusive despite numerous attempts at locating it, until in October 2006 Zboray and companions finally managed to locate the large but low and unusually shallow shelter in a bend of the valley (Zboray *et al.* 2007). On this same trip, the exploration of the table-land at the foot of the southern cliffs of the Hassanein Plateau produced a few additional finds (Zboray 2008).

In February 2007, Hardy Böckli and Mahmoud Marai continued the exploration of the upper reaches of the north-western branch of Karkur Talh, where it bends back towards the high plateaus near the Libyan border.

During the ascent, Marai found a very well preserved site with ‘Uweinat roundhead’ figures (Fig. 14) near a cluster of known sites (Mahmoud Marai, pers. comm.). On the flanks of the Northern Plateau, at an elevation of 1425 metres, Böckli chanced upon a shelter with impressive pastoralist paintings (Böckli and Marai 2008). A month later, Maria Emilia Peroschi and Flavio Cambieri explored Clayton’s Craters, a group of volcanic hills about 50 kilometres to the north-east of Jebel Uweinat. They unexpectedly found a group of petroglyphs on an outcrop of igneous rocks within one of the crater-like ring dykes.

In October of the same year, Zboray and companions ascended the unnamed north-western plateau (adjacent to the Hassanein Plateau) of eastern Jebel Uweinat, finding a site at 1500 metres, the second-highest elevation site on the mountain. Further finds were added to the inventory in the Wadi Handal, the only valley of the mountain that is located mostly on Egyptian territory, and in the mid-section of the Wadi Wahesh above the sites found in 2005 (Zboray 2008). However, the most spectacular discoveries of the year were made by Mark Borda and Mahmoud Marai during a November surveying expedition. Over the course of nine days, more than 50 sites were found along the little explored southern side of Jebel Uweinat, including one that turned out to be one of the shelters photographed by Angelo Pesce (Graziosi 1962, fig. 70), previously thought to lie somewhere in the western part of the mountain. At one location, scanning a large rock some distance up a slope with binoculars, Borda noticed possible engravings. Ascending, they were astonished to find a hieroglyphic inscription, with a seated figure of an Egyptian king and the royal titulary (Fig. 15). It turned out to be an inscription dating to the reign of Mentuhotep (II) Nebhepetre of the 11th Dynasty, proving that the ancient Egyptians were capable of deep-desert travel (Clayton *et al.* 2008, cf. Förster 2015, 479–487). Encouraged by the spring find of Peroschi and Cambieri, Borda searched an area in the vicinity of Clayton’s Craters and found a small shelter with perfectly preserved exquisite paintings (Fig. 16) of the earlier pastoral period (Borda 2008).

In January 2008, Menardi Noguera continued the survey of the Libyan part of Jebel Uweinat, exploring the Wadi Waddan, the broad valley roughly delimiting Libyan and Sudanese territory at the eastern edge of the granitic terrain. Some distance up the valley, they came upon one of the most important sites with paintings at Jebel Uweinat, which had eluded all previous explorers (Menardi Noguera and Soffiantini 2008). The shelter under an enormous granite boulder contains pastoralist scenes depicting hundreds of cattle and humans, which cover the entire ceiling of the vault, superimposed over a few earlier round-headed figures (Fig. 17).



Fig. 16. A couple inside a hut surrounded by cattle and other human figures. Note calves tethered to the post of the hut at lower left (site CC 21).



Fig. 17. The great vault at Wadi Waddan, with paintings covering the entire ceiling (site WWD 21).

In October 2008 and January 2009, Mark Borda organised two expeditions to thoroughly survey the unnamed plain in Egypt between Jebel Uweinat and Clayton's Craters, where no rock art was known (nor expected) prior to the finds of 2007. A systematic search of all the small hills and outcrops yielded a further 14 rock art sites, all of them conforming to the stylistic conventions already known from Jebel Uweinat (Borda 2009). In the following February, Hardy Böckli also returned to eastern Jebel Uweinat, and found some unreported petroglyphs in the south-western branch of Karkur Talh (Hardy Böckli, pers. comm.).

In the summer of 2009, Zboray released the second, revised and expanded edition of the regional rock art catalogue on DVD ROM, covering over 700 sites at and around Jebel Uweinat, about 200 of them added to the corpus in the 2005–2009 period (Zboray 2009).

In October 2009, Borda organised an expedition from Libya to continue his survey of the smaller massifs surrounding Jebel Uweinat. At a small hill to the north of the mouth of Karkur Idriss, he found four unreported sites, including one with exceptionally well preserved 'elongated roundhead' figures. Continuing to Jebel Arkenu, he explored the eastern sandstone part of the mountain thought to lack rock art and found further 14 sites scattered about the slopes and at higher elevations (Borda 2010). A brief visit made to the igneous mountain of Jebel Babein further north showed it to be mostly void of rock art (like the neighbouring Jebel Bahari); only a single site was noted with some traces of paint but no recognisable figures.

In November 2009, Zboray and Borda returned to the eastern side of Jebel Uweinat, to explore the remaining blank spots. By this time, Google Earth replaced the NASA Landsat imagery as the most readily available online source of satellite data. The recently uploaded high-resolution images of Jebel Uweinat enabled the precise identification of prospective areas for rock art in previously unexplored areas. Several finds made in the upper Wadi Handal and on the elevated plateau west of Karkur Murr confirmed the potential offered by this newly available data. A further area with high exploratory potential was identified in a small northern tributary of the north-western branch of Karkur Talh. Making a detour on the return from an ascent to the summit of Jebel Uweinat, an exceptionally rich cluster of sites was discovered at the expected location (Fig. 18), with paintings from all the regional styles and periods (Zboray and Borda 2010).



Fig. 18. 'Bird headed' couple displaying the elongated style of depicting a human figure, typical for Jebel Uweinat cattle pastoralist paintings (site KTW 53).

Surveying in the Past Decade

After ten years of intense exploration by dozens of search parties in a coordinated manner, one would have expected that the potential for significant new finds was exhausted. Nevertheless, 2010 turned out to be one of the most productive years, with several unexpected and spectacular finds.

In January, Borda returned to Jebel Arkenu, locating a further 14 sites in the eastern sandstone part of the mountain (Borda 2010). Soon after, in February, Cambieri and Peroschi visited the eastern part of Jebel Uweinat. On a terrace adjacent to known sites, they found two panels of petroglyphs, one of which depicts a train of pack donkeys accompanied by some human figures (Fig. 19) in the same style as the petroglyphs close to the Mentuhotep inscription (Zboray and Borda 2013), raising the tantalising possibility that the scene could be a depiction of an Egyptian caravan as seen by the native inhabitants (cf. Förster 2015, 507, figs 372–374). On the same trip, on an isolated rocky pillar along the eastern edge of Jebel Uweinat where no rock art was previously known, a large number of unique petroglyphs were recorded, including a human figure wearing an animal skin and several depictions of horned vipers with no analogies in the region (Cambieri and Peroschi 2010). In March 2010, Zboray re-visited this sandstone column, and on a nearby outcrop found some further petroglyphs, including several of the strange 'carrier' figures holding some unidentified objects above their heads (De Cola *et al.* 2014).



Fig. 19. Train of pack donkeys with human figures (site KTN 13/C).



Fig. 20. Archaic human figures with a giraffe (site KTN 52; image processed with DStretch® LBK filter).

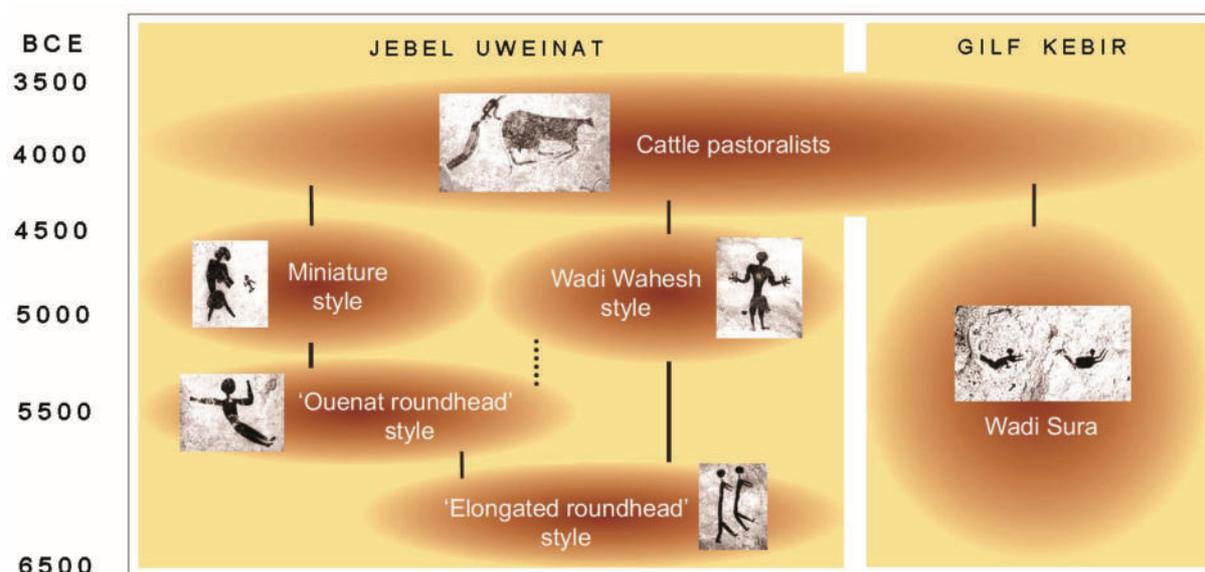


Fig. 21. Summarised chronological framework of the rock art of the central Libyan Desert (Zboray 2013a, fig. 17, slightly modified).

On the same expedition, Zboray and party found a small shelter on the plateau above the sites discovered by the 1968 Belgian expedition in Karkur Talh, with some extremely weathered paintings depicting animals and human figures (Fig. 20) in a style previously known from only a few scattered and damaged examples. Later analysis revealed these paintings to be the most ancient at Jebel Uweinat (Zboray 2018a). The party also noted a trail leading southwards from the southern branch of Karkur Talh, with a number of cattle engravings on already smoothly worn rock surfaces along the path, proving its prehistoric origin (Zboray 2013b).

These important new finds necessitated a revision of the previously published analyses of the regional rock art (Le Quellec and De Flers 2005; Zboray 2005). In June 2010, Zboray presented a revision of the style definitions and relative regional chronology at the Brussels rock art conference 'The Signs of Which Times?' (Zboray 2012, with key findings summarised in Zboray 2013a). The refined relative chronological sequence provided the input for a multidisciplinary collaborative effort towards the establishment of a robust absolute chronology (Fig. 21) of the rock art of the region (Riemer *et al.* 2017).

In October 2010, Borda made yet another journey to the Libyan side of Jebel Uweinat. Surveying the small granitic hill of Garet Shezzu and the surrounding sandstone outcrops some 50 kilometres to the south-west of Jebel Uweinat where no rock art was previously reported, he located 33 sites with paintings and petroglyphs, including one with a remarkable depiction of an aardvark (Fig. 22), associated with 'Uweinat roundhead' figures (Borda 2011a). On the return journey, he found a shelter with over a thousand individual pastoralist figures at Jebel Arkenu, near the highest elevations of the eastern sandstone plateau. This site ranks among the largest and most important in the region. In January 2011, Borda returned with a professional photographer to fully document this exceptional discovery (Borda 2011b).

A few weeks after Borda's expedition, in November 2010, Menardi Noguera and Zboray also visited the Libyan side of Jebel Uweinat. The party again ascended the Emiri Highland and also made a complete survey of the perimeter of the mountain from the mouth of Karkur Ibrahim to a point a few kilometres to the east of Ain Dua. This area, excluding the immediate vicinity of Ain Dua explored by Rhotert in 1933, and a few isolated spots checked by Le Quellec in 1996, was never surveyed for rock art in a systematic way. By the end of the expedition, a total of 36 previously unreported sites were added to the regional rock art inventory (Menardi Noguera and Zboray 2011). In the same period, Daniele Mancini found an unreported panel of pastoralist paintings at the entrance of Karkur Ibrahim (Mancini and Risari 2011). Menardi Noguera, Zboray and party continued their trip to Jebel Arkenu, where during a brief visit several new sites were recorded in the eastern part of the mountain in addition to the ones reported by Borda, including a well-preserved site with rare 'elongated roundhead' paintings (Menardi Noguera and Zboray 2012).

The 2011 political developments in Egypt and Libya closed off the access routes to Jebel Uweinat used by practically all visiting parties since the time of discovery. The only way left open was from Sudan, along an untried route with numerous logistical challenges. In November 2011, Borda, Cambieri and Lorenzo De Cola succeeded in reaching Jebel Uweinat along this southern route. They resumed the survey of the south-eastern corner (Peroschi *et al.* 2021) and the southern flanks of the mountain. On a slope below the 'triple peak' west of Wadi

Wahesh, they found a shelter (Fig. 23) with some excellently preserved pastoralist scenes (Cambieri and De Cola 2013). Continuing to Jebel Kissu, they found several new sites in the single valley penetrating the interior of the mountain. Borda returned to Jebel Uweinat, approaching again from Sudan, in October 2012, finding many new sites at the south-eastern corner of the mountain.

In March 2013, Zboray and Borda made a further expedition from the Sudanese side, in part to re-visit the sites found on the previous two expeditions, and to continue eliminating some of the remaining blank spots. In Wadi Wahesh, on the ascent route used on several previous trips and in the close vicinity of a known site, they documented a remarkable panel of paintings depicting the capture of cattle with lassos (Fig. 24), a scene without any unambiguous parallels in Saharan rock art (Zboray and Borda 2013).

In January 2015, Borda returned to Jebel Uweinat, and surveyed parts of the low plateau to the north of the main valley, with a number of new finds there as well as in the upper reaches near the Karkur Talh – Wadi Handal watershed. Another trip was made to Jebel Uweinat from Sudan by Zboray and Borda in November 2015, with the aim of re-visiting known sites to take advantage of the vastly improved digital camera technology since the original visits, some over ten years earlier. However, they also made several new finds, some of them new panels inside known sites (some revealed by DStretch[®], a software tool to enhance faint rock paintings developed by Jon Harman), others in close proximity. In Karkur Murr, a panel of ‘elongated roundhead’ paintings was found near the camel trail leading from Karkur Talh to the Ain Murr spring, and an exceptional ‘Uweinat roundhead’ site (Fig. 25) was located under a huge boulder overlooking the cluster of sites in upper Karkur Talh discovered in 2009 (Zboray 2018a).

In November 2017, Zboray, Cambieri and Peroschi made a further visit to re-photograph some of the known sites. During this expedition, some time was allotted for the exploration of the few remaining unsurveyed areas in the Sudanese sector of the mountain. The most important target was Wadi Wahesh, the upper reaches of which were only visited previously by Jean Leonard, the leader of the 1968 Belgian expedition, during an ascent of the summit and a hurried search for botanical specimens, reporting no rock art (Leonard 1969). The expectations proved correct. In the upper areas of the wadi, a scatter of new sites was found, including one showing ‘Uweinat roundhead’ figures in apparent association with wild animals (Zboray 2018a).

The most recent visit to Jebel Uweinat was made by Zboray in March 2019, with the primary objective to explore the top of the last unclimbed high sandstone plateau of the eastern part of the mountain. In this area, on the flanks of the Northern Plateau, several sites were already known at lower altitudes (Böckli and Marai 2008; Zboray and Borda 2010). Based on satellite imagery, the terrain on the top of the plateau looked promising for further shelters that may contain rock art. After a day of climbing to a base camp at the foot of the plateau along the north-western branch of Karkur Talh, a surprisingly easy ascent route was found the following morning along a series of rock steps. On the top, true to expectations, three shelters with pastoralist paintings were found at the pre-identified locations.

Currently, a third edition of the DVD-ROM ‘Rock Art of the Libyan Desert’ is under preparation, to incorporate all the new finds and the photographic documentation collected since the release of the second edition (Zboray 2009). The new edition will contain approximately 1000 sites, a fivefold increase in the number of known sites since the authors began the survey of Jebel Uweinat 20 years ago (Fig. 26). The detailed analysis of the body postures in the ‘Uweinat roundhead’ paintings and the revised typology of the cattle pastoralist human figures presented at the 2015 Rock Art Conference in Brussels (Menardi Noguera 2018; Zboray 2018b) were to a great extent based on recent finds and observations. Zboray also prepared a complete revision of the styles and relative chronology of the Jebel Uweinat petroglyphs (Zboray 2018c).



Fig. 22. An armadillo surrounded by 'Uweinat roundhead' figures (site GS 46/B; photo by Mark Borda).



Fig. 23. Group of humans in a shelter on the slope below the 'triple peak'. Note the translucent white skirt of the larger female figures (site WW 71).

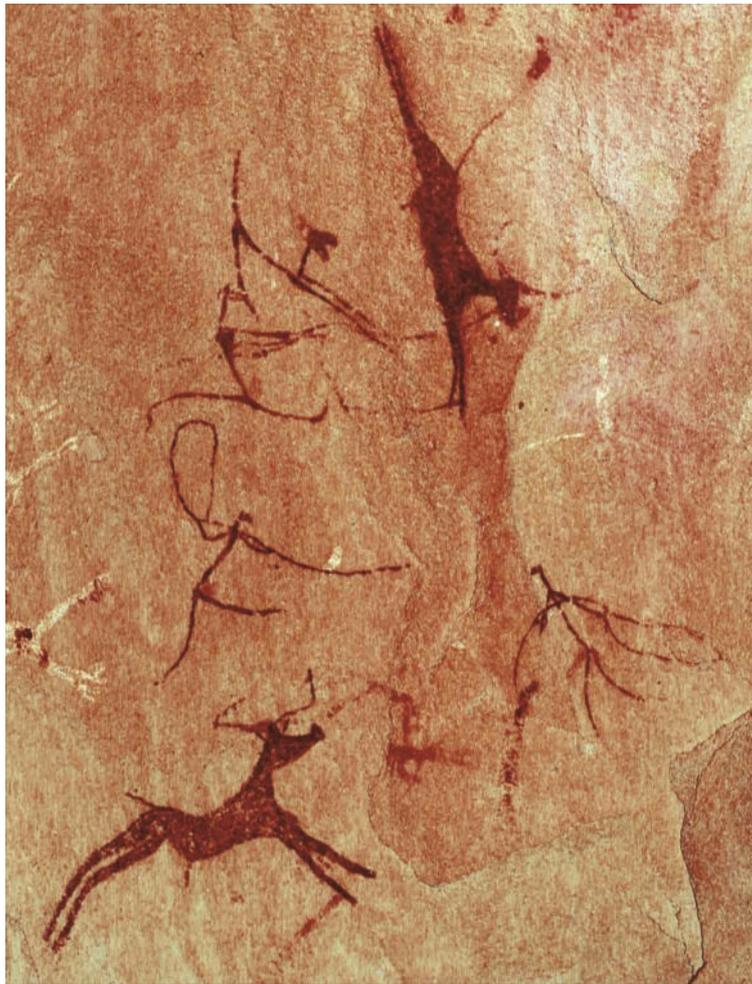


Fig. 24. Capture of cattle with lassos (site WW 46/B; image processed with DStretch® YRE filter)



Fig. 25. Elaborate group of 'Uweinat roundhead' figures (site KTN 55; image processed with DStretch® YBK filter).

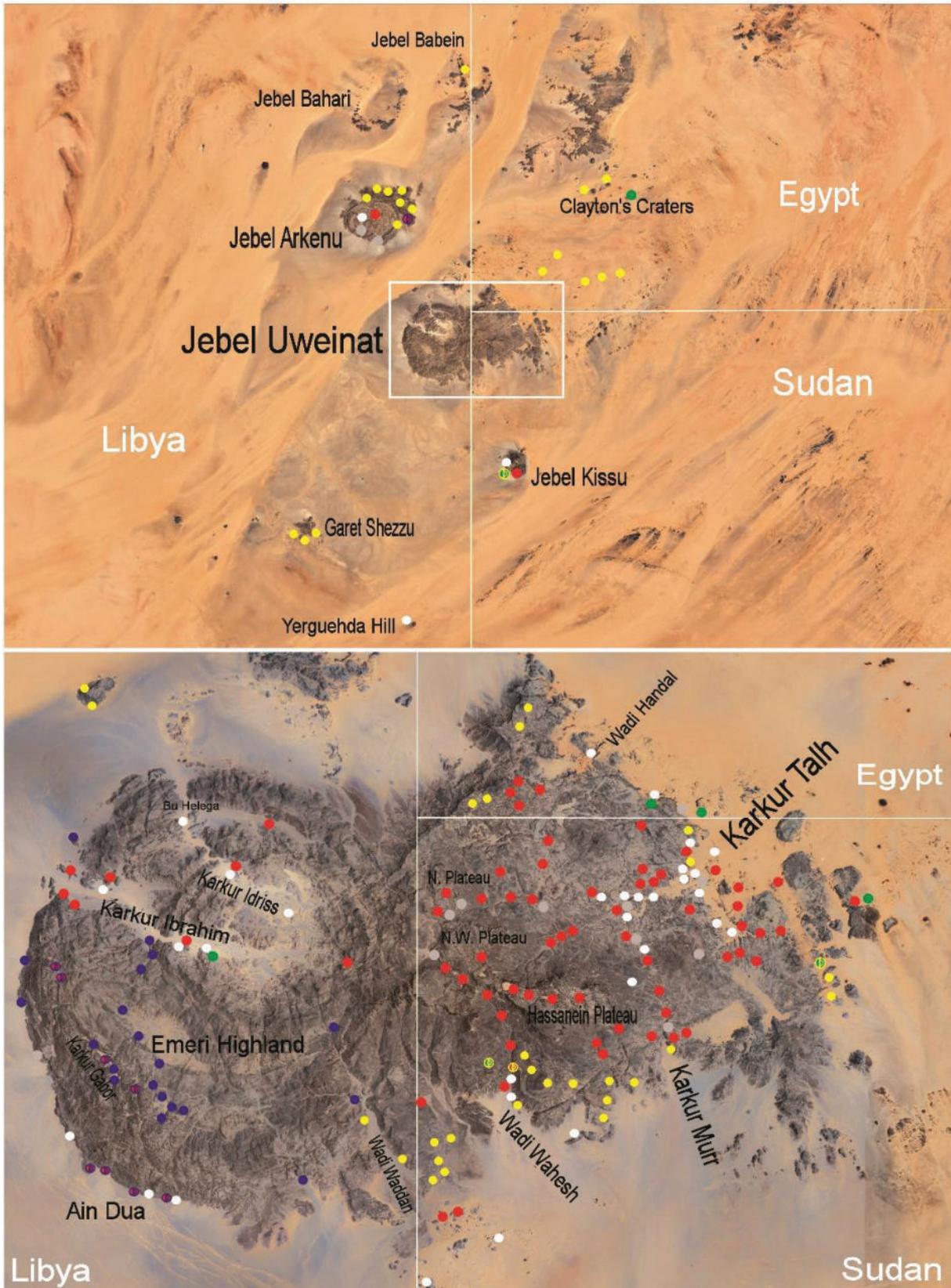


Fig. 26. Location map of the toponyms and rock art sites mentioned in the text. Depending on site density, each mark may represent a single site, or a cluster of multiple sites in the same general area.

- White: sites known prior to 2000.
- Red: sites recorded by A. Zboray.
- Blue: sites recorded by A. Menardi Noguera.
- Yellow: sites recorded by M. Borda.
- Green: sites recorded by F. Cambieri and M.E. Peroschi.
- Grey: sites recorded by others.

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Notes to Figures

All photographs accompanying the article were taken by András Zboray except if otherwise noted. Site designators in figure captions correspond to the site numbering system developed by Zboray as published in 2009 (Zboray 2009).

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