

# REPORT ON THE ḤUMAYMA EXCAVATION PROJECT'S 2014 SURVEY OF PETROGLYPHS AND QUARRIES

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## Introduction

In May 2014 the Ḥumayma Excavation Project (HEP) conducted a short survey in the sandstone hills and ridges to the west of Ḥumayma's Nabataean to early Islamic settlement (**Fig. 1**). The incentive for the survey was the discovery during HEP's 2012 season of a petroglyph depicting a religious ceremony on one of the ridges. Subsequent analysis suggested that the petroglyph dates to the Roman period and depicts a Roman officer, a god (likely Jupiter - Ammon - Serapis) and the local topography (Reeves in 2015). A Greek inscription and a couple of Nabataean inscriptions were also noted on the same cliff face as this petroglyph, suggesting that the area held special significance for some of Ḥumayma's ancient inhabitants. The goal of the 2014 survey was to gain a better understanding of how this area had been used by Ḥumayma's past occupants by documenting other human activity areas on this ridge (especially petroglyphs and quarries) that had not been documented by previous scholars<sup>1</sup>.

## Survey Area and Methodology (Fig. 1)

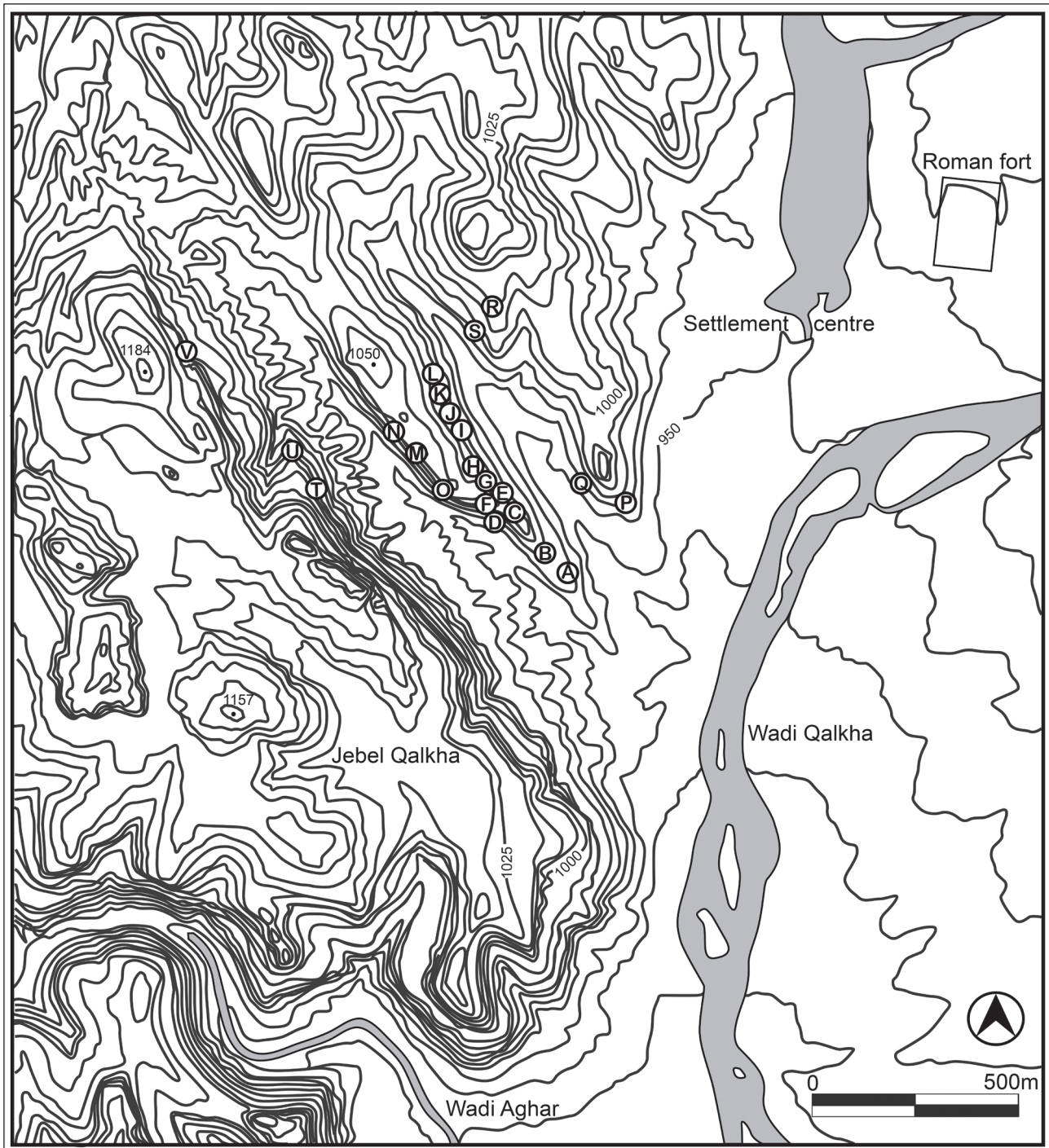
The survey area was located west of the plain on which Ḥumayma's ancient settlement was situated, near to the notched peak of Jabal Qalkha which is Ḥumayma's most prominent landmark. Prehistoric run-off from Jabal Ḥumayma to the north and Jabal Qalkha to the west has carved

out two *wadis* here, with towering dendritic ridges of sandstone on either side. Both *wadis* and ridges fall off from the north-west to south-east, where they merge into the desert north of Wādī Qalkha and the hypothesized route of the *Via Nova Traiana* (Oleson 2010: fig. 2.7). For the purposes of this survey, we designated the ridge closest to the settlement as Ridge 1 and the ridge between Ridge 1 and Jabal Qalkha as Ridge 2. The *wadi* between Jabal Qalkha and Ridge 2 is called Wādī Ḥumayma on maps and is also known locally as Wādī Abū Ṣuwwānah; the *wadi* between Ridge 1 and Ridge 2 is known locally as Wādī al-Burqa.

The two ridges and eastern flank of Jabal Qalkha have been the focus of several surveys since the 1980s. John Oleson has published the hydraulic structures, rock cut tombs, a church, and some betyls and inscriptions from Ridge 1 and Jabal Qalkha (Oleson 2010; Oleson and Schick 2013). David Graf has collected ancient inscriptions carved into the rocks in this area; he has published one Nabataean inscription from Jabal Qalkha (Graf 1992) and has indicated his intention to publish the others soon (Graf pers. comm., July 2014). Finally Donald Henry has published Upper Paleolithic and Epipaleolithic sites across all three of these landmasses (Henry 1995). Although the published surveys have contributed much to our understanding, some ancient remains (e.g. petroglyphs and quarries) have only received cursory mention in previous publications.

1. The survey took place from 18 to 21 May 2014. Funding was provided by the Senate Advisory Research Committee of Queen's University. The project director was Dr M. Barbara Reeves of Queen's University, Canada. Craig A. Harvey was the associate director, Brian Seymour was the draughtsman and Manal Basyoumi served as representative from the Department of Antiquities. Swaylem al-Manaja, a local resident, assisted in

locating and recording sites. The Ḥumayma Excavation Project is accredited by the Archaeological Standards Committee of the American Schools of Oriental Research and licensed by the Department of Antiquities of the Kingdom of Jordan. The team is very grateful to Dr Monther Jamhawi, director-general of the Department of Antiquities, and to Dr Barbara Porter and all the staff at ACOR for their assistance with the project.



1. Topographic map of Humayma with 2014 survey locations marked.

The discovery of the religious ceremony petroglyph in 2012 provided the incentive for a four-day survey in 2014 whose goal was to put the petroglyph into its regional context by documenting other unpublished ancient features on Ridge 2, with a special emphasis on other petroglyph sites. A five-person team walked along Ridge 2 noting the location of ancient features. Each feature was then documented via written

descriptions, photographs, measurements and GPS coordinates. Measurements of up to 5 m were recorded by tape measure; measurements over 5 m were recorded by pacing. Context was assessed by recording the views from each site and recording where each site could be viewed from. Although Ridge 1 and Jabal Qalkha lay outside our intended survey area, some petroglyph sites there came to our attention during the field

season. These particular sites were documented, but no systematic survey of either Ridge 1 or Jabal Qalkha was attempted. In order to keep track of the sites' location during the survey, sketch plans of Ridge 2 and the Eastern Cascading Plateau Site on Jabal Qalkha and photographic panoramas of each landmass were created. The sites were later plotted onto a topographic map (**Fig. 1**) prepared from the 1:25,000 Jordanian Ministry of Economy map (sheet 180-925).

**Sites Documented**

The survey documented 15 sites and 17 sub-sites across the three landmasses. For

convenience, each site was given a name based on both its cardinal location on the landmass and a prominent feature. For simplicity, the cardinal locations were abbreviated to “Eastern”, “Western” and “Southern”, referring to each site’s relative location on the flank of its landmass. **Table 1** lists the features documented at each site. As the survey was done quickly and no overburden was removed from the surface of sites, the numbers of features should be viewed as minima. Also, owing to time constraints and modern occupation, only rock shelters obviously associated with ancient features were documented.

**Table 1:** Summary of Survey Results.

Landmass	Site	Sub-site	Fig. 1 Label	Features
Ridge 2	Southern Tip of Ridge Activity Area		A	Two large bedrock holes
Ridge 2	Southern Knob Activity Area		B	Two large bedrock holes; many sets of linear scratches; many inscriptions (modern)
Ridge 2	Southern Flat Top Activity Area		C	One large and three small bedrock holes; one petroglyph (footprint)
Ridge 2	Western Scratches below Southern Flat Top Activity Area		D	Three sets of linear scratches
Ridge 2	Eastern Commemoration Cliff		E	Eight petroglyphs; three inscriptions (one Greek; two Nabataean)
Ridge 2	Eastern Quarry	Section 1	F	Quarry faces; quarry platforms; two petroglyphs (modern); many inscriptions (modern); two clusters of linear scratches above quarry
Ridge 2	Eastern Quarry	Section 2	G	Quarry faces; rock shelter
Ridge 2	Eastern Quarry	Abandoned Quarry Section	H	Quarry separation trenches
Ridge 2	Eastern Quarry	Section 3	I	Quarry faces; quarry platform
Ridge 2	Eastern Quarry	Section 4	J	Quarry faces; quarry platform; 12 linear scratches above quarry; one beryl in niche
Ridge 2	Eastern Quarry	Section 5	K	Quarry faces; one petroglyph (bovid); three inscriptions (modern)
Ridge 2	Eastern Quarry	Section 6	L	Quarry faces; quarry platforms; abandoned quarry area
Ridge 2	Western Footprint Site		M	Rock shelter; four petroglyphs
Ridge 2	Western Bovids Site		N	Rock shelter; six petroglyphs
Ridge 2	Western Big Quarry		O	Quarry faces

Landmass	Site	Sub-site	Fig. 1 Label	Features
Ridge 2	Western Little Quarry			Quarry
Ridge 1	Tomb Complex A104.T1		P	Tomb, stairs; quarry; one betyl
Ridge 1	Western Quarry		Q	Quarry
Ridge 1	Western Isolated Petroglyph on Rock		R	One petroglyph
Ridge 1	Western Rock Shelter Site	Upper	S	Rock shelter; 16 petroglyphs; one inscription
Ridge 1	Western Rock Shelter Site	Lower		Three sets of petroglyphs; one set of linear scratches
Jabal Qalkha	Eastern Cascading Plateau Site	Burial site	T	Two - three burials
Jabal Qalkha	Eastern Cascading Plateau Site	Panel 1		No visible features
Jabal Qalkha	Eastern Cascading Plateau Site	Panel 2	U	80 petroglyphs; 15 inscriptions (Greek; Nabataean; Thamudic; Arabic)
Jabal Qalkha	Eastern Cascading Plateau Site	Panel 3		Semicircular feature; linear and curvilinear grooves; seven petroglyphs
Jabal Qalkha	Eastern Cascading Plateau Site	Panel 4		Steps; one modern inscription (Arabic)
Jabal Qalkha	Eastern Cascading Plateau Site	Panel 5		Five petroglyphs
Jabal Qalkha	Eastern Cascading Plateau Site	Panel 6		12 petroglyphs; one inscription (Greek)
Jabal Qalkha	Eastern Cascading Plateau Site	Panel 7		No visible features
Jabal Qalkha	Eastern Niche and Petroglyphs Site		V	One niche; several petroglyphs

The rest of this report will describe the individual sites, organized by landmass.

### Ridge 2 (R2) (Fig. 1)

Ridge 2 is sandstone ridge located west of Ḥumayma's ancient settlement between Jabal Qalkha and Ridge 1. It is a dendritic ridge that has been cut by Wādī al-Burqa running along its eastern side and Wādī Ḥumayma running along its western side. This ridge emerges from the landmass to the north-west of the ancient settlement at a high elevation. It then slopes gradually down to the south-east for *ca* 1,500 m until it disappears into the desert at ground level. Along its top and upper sides are outcrops of exposed sandstone, whose relatively flat tops and straight sides have been used by humans for a variety of activities. In the region of the

Eastern Quarry, the outcrops are *ca* 100 m wide, whereas further south they diminish to less than 15 m wide. Below these sandstone outcrops the ridge slopes down into the *wadis* on each side. The sides of these slopes are covered in soil, loose cobbles and pebbles.

### R2 Southern Tip of Ridge Activity Area (Fig. 1.A)

The southernmost sign of human activity on Ridge 2 is a large hole (diam. 0.32 m; depth 0.2 m) carved into horizontal bedrock *ca* 10 m north of where the ridge disappears into the desert surface. The ridge here is only *ca* 15m wide and the hole is situated on the eastern side, *ca* 5 m west of the eastern edge. There is a second large hole (diam. 0.24 m; depth 0.18 m) in horizontal bedrock *ca* 90 m north of the southern hole, 4 m





2. Southern end of Ridge 2 viewed from the Southern Flat Top Activity Area; the Southern Knob Activity Area is in the centre.

east of the western edge of ridge (which is *ca* 25 m wide at this point). No GPS coordinates were recorded at these locations so the label on (Fig. 1) is only an approximation.

### R2 Southern Knob Activity Area (Figs 1.B and 2)

This natural, *ca* 18 m-long  $\times$  *ca* 15 m-wide sandstone knob with a flattish top sticks up *ca* 2 m above the surrounding area of Ridge 2 on the ridge's southern quarter. The ridge is only 20 m wide here, with this prominent knob riding the centre of its spine. Its elevation is far below that of the Southern Flat Top Activity Area to the north, but above the continuation of the ridge to the south. Natural steps on the north side lead up to a relatively flat ancient activity area. A large hole (diam. 0.22 m; depth 0.15 m) has been incised into the horizontal surface on the top of the knob near the centre of the southern edge. Another large hole (diam. 0.34 m; depth 0.2 m) has been incised into the horizontal bedrock near the centre of the knob on the western side. There are also many sets of linear scratches in the dark patina / desert varnish covering the eastern side of the top surface. The sides of the knob are covered in scratched and spray-painted modern Arabic graffiti; a mortar-covered block beside the knob has an incised Arabic graffiti.

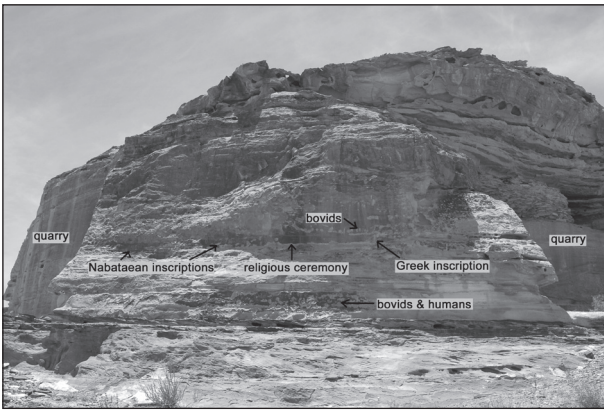
### R2 Southern Flat Top Activity Area (Figs 1.C and 3)

This large, flat sandstone surface (*ca* 115 m long by a maximum of 35 m wide) is located at the southern end of the high outcrop on which



3. R2 Southern Flat Top Activity Area with Quarry Section 1 and Commemoration Cliff at rear.

the Eastern Quarry and the Commemoration Cliff are located. It is directly south of Eastern Quarry Section 1 and shares its ground level. Its southern end is demarcated by a steep drop down to the southern continuation of the ridge. The northern section has been created by quarrying away the good tan and friable yellow sandstone, stopping at the level of the less useful dark purple sandstone. There are no obvious signs of quarrying on the southern section, but the possibility cannot be ruled out. The extant surface is relatively flat and consists of a vein of dark purple sandstone (*ca* 0.08 m thick) with patches of tan sandstone overlying in places. Pebbles and soil cover obscure much of the surface. Some exposed areas of the dark purple sandstone are breaking off in cobble-sized chunks, but the section in the approximate centre of surface seems stable. Near the centre of this stable area, a large hole (diam. 0.17 m; depth 0.24 m) has been carved. Nearby are three smaller holes: (1) diam. 0.09 m; depth 0.06 m; (2) diam. 0.1 m; depth 0.04 m; (3) diam. 0.11 m; depth 0.07 m. There is also a carving of a right foot (0.19 m  $\times$  0.11 m) that faces towards the southern end of the ridge. This large, windswept, flat surface that was elevated above the more southerly sections of the ridge would have been very visible from the surrounding landmasses, as well as from the desert and *Via Nova* below. The site also provided excellent views of Jabal Qalkha, Ridge 1, three *wadis*, the southern desert and *Via Nova*, Quarry Section 1, the end of the Commemoration Cliff and the southern continuation of Ridge 2. It is likely that this large, elevated, flat area with excellent visibility was used for a variety of activities.



4. R2 Eastern Commemoration Cliff.

### R2 Western Scratches below Southern Flat Top Activity Area (Fig. 1.D)

This site is located just below the western side of Southern Flat Top Activity Area on a vertical, west-facing section of natural cliff face behind a small, low-lying bedrock ledge. There are three clusters of lines incised into the desert varnish here in a 4 m-long × 0.5 m-high area which begins 1.5 m above the ledge.

### R2 Eastern Commemoration Cliff (Figs. 1.E, 3 and 4)

The Eastern Commemoration Cliff is a *ca* 10 m-long natural, vertical cliff face that is covered with petroglyphs and inscriptions. It is located on the eastern side of Ridge 2, immediately north of the Southern Flat Top Activity Area, at the southern end of the Eastern Quarry on the corner between Quarry Section 1, which faces south, and Quarry Section 2, which faces east. While standing in front of the cliff and facing it, the Southern Flat Top Activity Area and desert, Wādī Qalkha and (hypothesized location of) the *Via Nova* can be seen to the left (south). While standing with one's back to the cliff, there are



5. R2 Eastern Quarry - Sections 4 - 6 with Wādī al-Burqa in foreground and eastern flanks of Jabal Qalkha in background.

good views of Ridge 1 (and its tombs), Wādī al-Burqa, Wādī Qalkha, the southern desert and the *Via Nova*. It is not possible to see over Ridge 1 to the settlement or fort. The surrounding Eastern Quarry and the Southern Flat Top Activity Area can be seen when viewing the Commemoration Cliff from the sloped sides of Ridge 1.

The rock carvings seem to be restricted to the more easily accessible bottom half of the cliff and to extant patches of dark desert varnish. In many places, sections of desert varnish have eroded away, eliminating portions of extant carvings and likely entire carvings as well. The surviving rock carvings are restricted to three bands of desert varnish.

The lowest band is immediately above the vein of dark purple sandstone that forms the top surface of most of the Southern Flat Top Activity Area. This section would have been easily accessible to the carver. However, it has also been easily accessible to other humans, sheep and goats, which, combined with wind and rain, have eroded away most of the desert varnish and carvings. The extant band of varnish is 5.4 m long and 0.65 m high, and contains at least seven widely spaced figures. From south to north, these figures are: an indeterminable set of figures (0.18 m wide × 0.2 m high); a horned bovid in profile, facing left (0.15 m wide × 0.07 m high); a horned bovid in profile, facing left (0.13 m wide × 0.11 m high); a horned bovid in profile, facing left with its face looking out (0.12 m wide × 0.14 m high); two interacting, standing humans (fighting, dancing or in *orant* poses) (0.13 m wide × 0.12 m high); a standing human with half-raised arms facing out (0.1 m wide × 0.12 m high).

The middle band (0.24 m high) is approximately one-third of the way up the cliff. It contains two long panels of Nabataean inscriptions to the south, the petroglyph showing a religious ceremony at the centre of the band and a short, isolated Greek inscription beginning with the word *MNESTHE* ("Remember") on the north side. The first Nabataean panel is 1.93 m wide and 0.13 - 0.17 m high. The second Nabataean panel is 1.2 m wide and 0.08 - 0.22 m high. The petroglyph is 0.21 m wide and 0.16 m high. The Greek inscription is 0.27 m wide and 0.16 m high, with letters 0.08 m high. These inscriptions, and all others on the landmasses,



are not discussed further here in deference to David Graf who is preparing his own publication on the inscriptions in Humayma's hills.

The only carving on the highest band is immediately above and south of the Greek inscription. It is 0.14 m wide and 0.11 m high, and shows two ibexes butting horns.

### R2 Eastern Quarry (Fig. 1.F - L)

The Eastern Quarry is a long, multi-sectioned sandstone quarry cut into the eastern face of a high, wide sandstone outcrop in the central section of Ridge 2. The Eastern Quarry begins with a south-facing section immediately behind the Southern Flat Top Activity Area and then extends for more than 300 m along the eastern face of the ridge. The quarry seems to have produced mostly tan sandstone blocks, as well as some yellow blocks and possibly light purple blocks. The presence of a betyl on one of the quarry faces indicates that the quarry was used in the Nabataean period. When it ceased to be used is not clear, but sections were abandoned with quarrying projects still in progress. After it was abandoned, environmental factors eroded some of its faces and allowed desert varnish to form in some places. Also after abandonment, humans added Arabic graffiti and petroglyphs.

For ease of recording, the quarry was divided into six quarry sections and one unquarried section. These are not intended to represent the ancient subdivisions of this quarry.

### R2 Eastern Quarry - Section 1 (Figs. 1.F and 3)

Quarry Section 1 is the southernmost section of Ridge 2's Eastern Quarry. It faces south-east and provides a back to the Southern Flat Top Activity Area. Adjacent to it on the east is the Commemoration Cliff; there is a natural rock shelter just beyond its western edge. Quarry Section 1 is ca 35 m wide and was sub-divided into several discrete areas for quarrying. The western areas are more than double the height of the eastern areas. From west to east, there are three right-angled, flat-backed stepped areas, then a convex-backed area and finally a concave-backed area. A flat, cube-shaped quarry platform (2.7 m long × 1.6 m wide × 0.6 - 0.7 m high) has been left in the western corner of the third stepped area from the west, and a shorter square quarry platform in the westernmost

stepped area. Modern Arabic inscriptions and petroglyphs of a dagger (*bedouin* [?]) and curved sword have been carved into the concave-backed face of the quarry.

Two clusters of scratches are located ca 2 m above the highest extent of the tall quarry face on this section's eastern side. They are scratched into the desert varnish covering a small, flat ledge that measures ca 2 m by ca 6 m. The ledge looks over the southern end of Ridge 2 (providing views of the town, fort, southern end of Ridge 1 and Wādī al-Burqa), Wādī Qalkha, the southern desert and the presumed path of the *Via Nova*. The southernmost cluster consists of four separate scratches, whereas the second concentration, 0.2 m to the west, consists of two sets, one of which is very deep and large, and has removed a great deal of the desert varnish. It is possible these marks are related to the quarry below. No other features were found above the quarry in this area.

### R2 Eastern Quarry - Section 2 (Figs. 1.G and 6)

The second quarry section from the south end of the Eastern Quarry is also the southernmost section on the east face of Ridge 2. It is ca 40 m long and consists of two quarry bays with a small, unquarried cliff face in between. Its southern edge abuts the Commemoration Cliff; its northern edge abuts a long section of unquarried stone. Bands of diagonal pick marks cover the quarried face. Black desert varnish is forming in some places over these pick marks. The area seems to have been quarried in sections.

The narrower, southern bay has a rock shelter on top that is currently used by local *bedouin* to pen their sheep and goats at night. The current



6. R2 Eastern Quarry - Section 2: southern bay.



7. R2 Eastern Quarry - Abandoned Quarry Section adjacent to north end of Section 2: overview of separation trenches.

east wall of fieldstone and mud is *ca* 100 years old, according to local informant Swaylem al-Manaja. There is black soot staining in the area around the entrance. A quick inspection provided no definitive signs of ancient use. The rock shelter does not extend behind the Commemoration Cliff.

#### R2 Eastern Quarry - Abandoned Quarry Section (Figs. 1.H and 7)

The unquarried section of cliff directly north of Quarry 2 contains four parallel trenches that demonstrate that this section was intended to be quarried but, after these preliminary trenches were carved, no further quarrying took place. The southernmost separation trench (which is closest to the northern bay of Quarry Section 2) is parallel with Quarry 3's northern face. This trench is 2.73 m long and its width ranges from 0.22 m to 0.15 m. The bottom of this trench was carved in five levels resembling steps. Five carved steps form the bottom of this trench. The second trench to the north measures 2.6 m long and 0.22 m wide. It is 0.29 m deep and has three internal steps. The third trench to the north is 3.15 m long and 0.22 m wide. As it is now filled with dirt and rock, it is not possible to determine its depth nor how many internal steps it might have. The fourth and northernmost trench measures only 1.1 m long and 0.23 m wide. It is also filled with dirt and rock, and thus its depth is not known. The spaces between these separation trenches and between the quarried section of Quarry 3 and the first trench are, from south to north: 1.71 m, 1.76 m, 1.73 m and 1.7 m.

While it is not conclusive, it is possible to

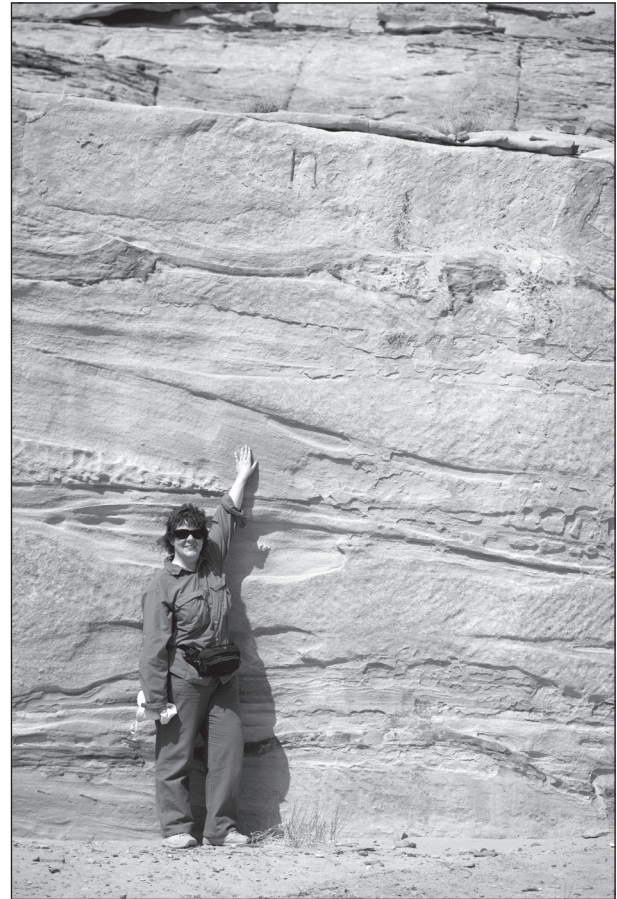
suggest that the spacing of these trenches was based on the Roman foot (0.295 or 0.296 m). The average distance between the centres of the trenches is 1.752 m, which equals 5.94 Roman feet. The use of the Roman foot may, but need not, indicate that this quarrying was done after the Roman annexation.

#### R2 Eastern Quarry - Section 3 (Fig. 1.I)

Quarry Section 3 begins *ca* 85 m north of Quarry Section 2 and marks the beginning of a continuous stretch of quarrying that extends all the way to Quarry Section 6. The southern end of Section 3 abuts the natural cliff face and begins with a stepped ramp; the northern end is separated from Quarry Section 4 by a thick protruding section of stone. Section 3 is *ca* 60 m long and has many major quarry bays.

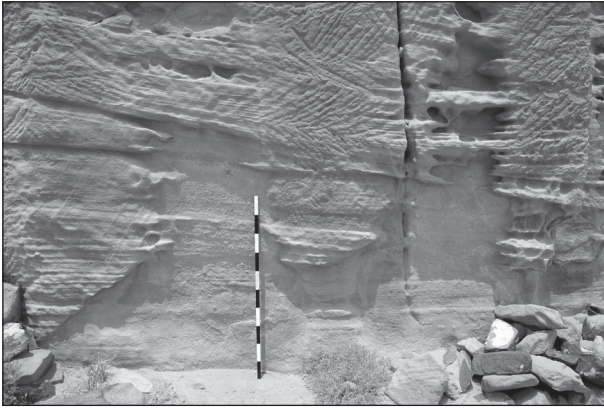
#### R2 Eastern Quarry - Section 4 (Figs. 1.J, 5 and 8)

Quarry Section 4 is bordered on the south by a thick protruding section of stone and on the north by a triangular wedge of quarried rock protruding from the quarry face. It is *ca* 40 m long and has



8. R2 Eastern Quarry - Section 4: beryl on quarry face.





9. R2 Eastern Quarry - Section 5: ibex carved over worn quarry face.

three major bays. Tan and yellow sandstone was quarried in this section. An east-facing betyl in a rectangular niche (0.16 m wide  $\times$  0.23 m high) has been carved into the back face of the first bay, 0.25 m below the top of the quarry. It is now very eroded. The betyl faces towards the ancient settlement, but from the walkway above it neither the town nor the fort can be seen. Just above it to the north, on an unquarried rock face coated in dark desert varnish, are 12 evenly spaced vertical scratches in a 0.1  $\times$  0.1 m area. It is possible that these marks have something to do with the quarry below.

#### R2 Eastern Quarry - Section 5 (Figs. 1.K, 5 and 9)

Quarry Section 5 is bordered on the south by a triangular wedge of quarried rock protruding from the quarry face, and on the north by a tall quarried outcrop. It is *ca* 60 m long and consists of several quarry bays. Several trenches from the quarrying process are visible at the top of the face. The quarry faces (with diagonal chisel marks) are now very worn. After the chisel



10. R2 Eastern Quarry - Section 6: abandoned quarry area.

marks had worn down, someone carved an ibex petroglyph (0.18 m long  $\times$  0.21 m high) into the southern face of the northernmost quarry section wall, 4.31 m from its end. The ibex is shown in profile with its feet tipped towards the *wadi*. It has big haunches and horns that curve past its back. Modern Arabic graffiti have also been carved onto the quarried walls of this section.

#### R2 Eastern Quarry - Section 6 (Figs. 1.L, 5 and 10)

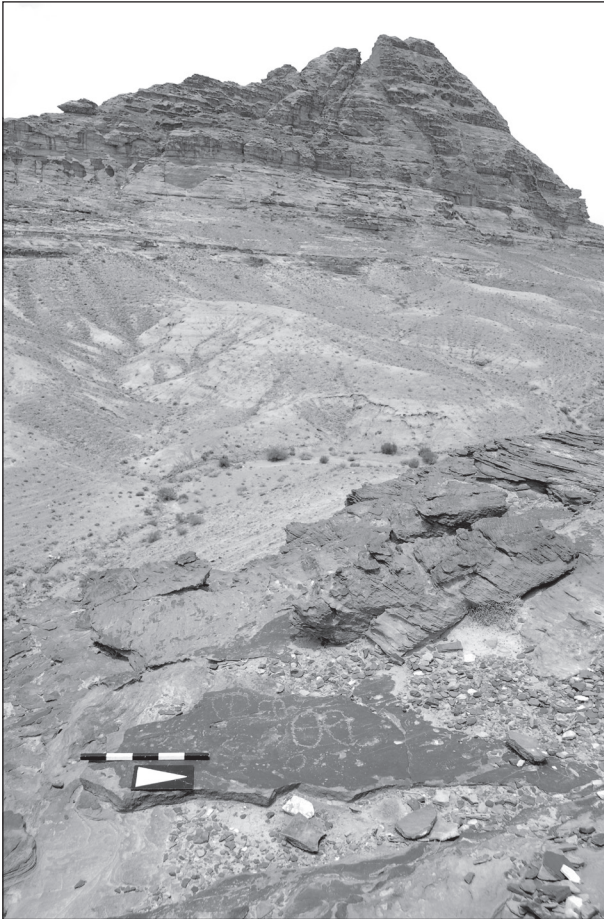
Quarry Section 6 is the northernmost quarry section on the eastern side of Ridge 2. It is 30 m long. At its northern edge is a quarried wedge; at its southern edge is a tall, quarried outcrop. It was quarried in several bays. Much of the quarry face is worn and dark desert varnish has formed over sections. A large hole dug against the quarry face suggests the original quarry may have extended down below the level of the current surface.

One bay has only been partially quarried, with the result that blocks have only been partially freed; the quarry trenches along their sides are still visible. Given the symmetry of the resulting 'feature', it is possible that it was put to some use, perhaps as a raised platform. This area has an internal length of 6.77 m. Quarry trenches are 0.17 m, 0.18 m, 0.2 m, and 0.23 m wide. Partially quarried blocks are 1.7 m and 2.83 m wide.

#### R2 Western Footprint Site (Figs. 1.M and 11)

This activity area is located on the western side of Ridge 2, almost at the very top of the ridge and directly at the edge of a cliff face. The area overlooks Wādī Ḥumayma and provides an excellent view of Jabal Qalkha and the Jabal Qalkha - Eastern Cascading Plateau Site. This area is also located close to the Western Bovids Site, which is to the north.

The activity area consists of a horizontal bedrock surface covered in desert varnish, into which have been carved three sets of feet on a common orientation and a smaller ovoid (perhaps a single human or animal foot, or an egg) on a different orientation. All of the carved footprints face west towards the peak of Jabal Qalkha and Jabal Qalkha's Eastern Cascading Plateau Site. Two sets of footprints are outlines of feet (one possibly with toes), while the



11. R2 Western Footprint Site with Jabal Qalkha in background.

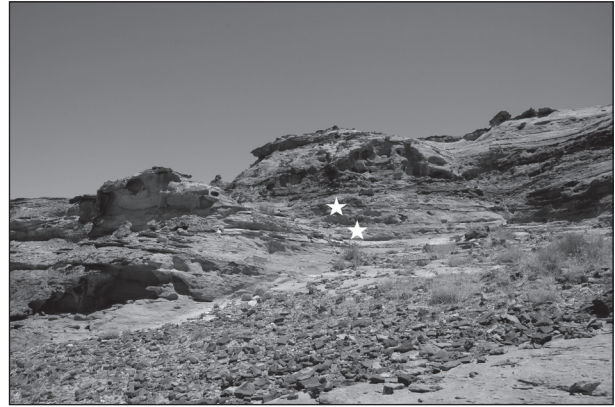
third set of footprints is bisected by a line. The footprints were not measured, but the entire area measures less than 1 m × 1 m.

A few meters to the north of these footprints is a rock shelter used by local *bedouin* to store grain and other supplies. It is possible that the overhanging rocks that form part of the shelter's roof also attracted people to this area in ancient times.

#### R2 Western Bovids Site (Figs. 1.N and 12)

The Western Bovids Site is located on the western face of the high middle section of Ridge 2 at the northern end of a large natural circular alcove facing Wādī Ḥumayma and the flanks and notched peak of Jabal Qalkha. There is a natural rock shelter just below the carvings. Above this site on the ridge top nearby is the Western Footprint Site and another rock shelter. An Epipaleolithic activity area (J407) surveyed by Henry (1995: 216, fig. 9.1) is also nearby.

The rock carvings are situated on two desert varnish-covered registers of a vertical, natural rock face. When standing on a rock shelf



12. R2 Western Bovids Site: overview with rock shelter; stars indicate location of bovid petroglyph panels.

before them, they are at head and knee height. The upper register shows from north to south: a bovid with long horns parallel to its back in profile, facing right (0.13 m wide × 0.11 m high), and another bovid, now partially broken off, with long curved horns extending up into the air in profile, facing right (extant width 0.09 m; 0.12 m high). The lower register shows from left to right: a horned bovid in profile, facing left (0.13 m wide × 0.12 m high), the left side of a horned bovid facing outwards (0.13 m wide × 0.12 m high) and two horned bovids in profile, facing right ([1] 0.18 m wide × 0.11 m high; [2] 0.11 m wide × 0.08 m high). The relative lightness of these petroglyphs in contrast to the surrounding desert varnish makes it unlikely that the petroglyphs are contemporaneous with the Epipaleolithic site noted above.

#### R2 Western Big Quarry (Fig. 1.O)

This quarry is located on the western side of Ridge 2 immediately opposite the south end of Eastern Quarry Section 3. It is *ca* 7 m wide × *ca* 5 m deep × *ca* 2 m high. At the base of the quarry, the ridge slopes down to Wādī Ḥumayma via a *ca* 45-degree slope. No petroglyphs or inscriptions were visible on its walls.

#### R2 Western Little Quarry

This small section of quarried cliff face is located at the northern section of the western side of Ridge 2, at the base of the ridge on the floor of Wādī Ḥumayma. This quarry was not examined in detail.

#### RIDGE 1 (R1) (Fig. 1)

Ridge 1 is the dendritic ridge running



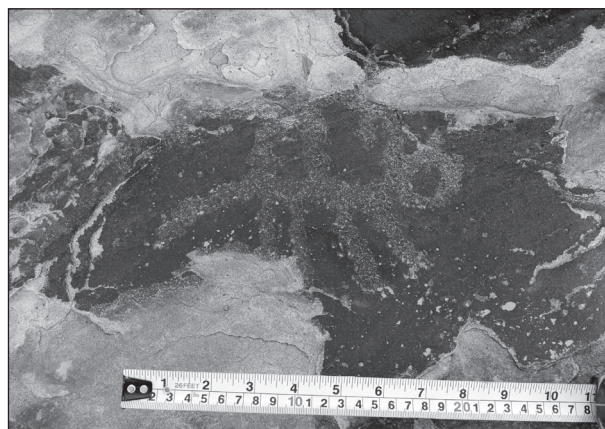


13. Looter disturbance south of Tomb Complex A104.T1 on Ridge 1.

along the western side of Ḥumayma's ancient settlement. Wādī al-Burqa runs along its western flank, separating Ridge 1 from Ridge 2. Oleson has documented several cisterns, rock cut tombs and a small Byzantine church on this ridge, as well as the betyl associated with Tomb Complex A104.T1 (Oleson 2010; Oleson and Schick 2013), and Henry documented an Upper Paleolithic activity area at a rock shelter (1995: 137, Site J412). In contrast, no documentation has been previously carried out on any petroglyphs or quarries on this ridge. Although this area was outside our planned survey area, we did document some petroglyphs and quarry sites we came upon by chance while taking photographs of Ridge 2.

#### R1 Tomb Complex A104.T1 (Figs. 1:P and 13)

This tomb complex on a prominent knob near the southern end of Ridge 1 has been catalogued by Oleson, who described it as “one of the... largest and visually most prominent tombs in the Hawara area” (Oleson and Schick 2013: 55). It is also notable for its vertical rock-cut betyl which faced south towards the desert, Wādī Qalkha and the *Via Nova*. From the surface fronting the betyl, there are good views of the desert, Wādī Qalkha, the *Via Nova*, Ridge 2 (including the Commemoration Cliff, Southern Flat Top Activity Area, Eastern Quarry and Southern Knob Activity Area), Wādī al-Burqa and the ancient town. This year we looked (and failed) to find bedrock holes similar to those found at the front of the knobs on Ridge 2. We also noted that the area immediately south of the knob has recently been disturbed by looters; there is no indication that they found anything.



14. R1 Western Isolated Petroglyph on Rock.

#### R1 Western Quarry (Fig. 1:Q)

This small quarry is on the western side of Ridge 1 between Tomb Complex A104.T1 and the Western Rock Shelter Site. Although it was not fully documented, a quick scan did not reveal any petroglyphs or inscriptions.

#### R1 Western Isolated Petroglyph on a Rock (Figs. 1:R and 14)

This site consists of a single petroglyph carved into desert varnish on a rock outcrop at the top of Ridge 1. The petroglyph faces southwest and overlooks Wādī al-Burqa and Ridge 2. This area also provides good views of Jabal Qalkha. As this site is on the very top of Ridge 1, there is no sheltered area in the immediate vicinity, but directly in front of the petroglyph there is a small, flat ledge above the western slope of the ridge. This site is situated above the Western Rock Shelter Site, but the two sites cannot be seen from each other.

The extant petroglyph measures 0.2 m long by 0.13 m high. It is poorly preserved and difficult to see owing to the weathering of the



15. R1 Western Rock Shelter Site: petroglyphs to right of rock shelter.

rock on which it was carved. Its visibility is further reduced by the subsequent formation of dark patina over the carved outline. The extant sections of the petroglyph show a four-legged animal in profile, facing right; it has a long tail, circular head, possibly a backward curved horn, and a large bump on its back. Its identification is unknown; perhaps it is an imaginary creature.

#### R1 Western Rock Shelter Site (Figs. 1:S and 15)

This activity area is located roughly halfway up the west side of Ridge 1, across from the peak of Jabal Qalkha and just north of the end of the Eastern Quarry on Ridge 2. It is below the Western Isolated Petroglyph on a Rock. From this site one has good views of Ridge 2, Jabal Qalkha and Wādī al-Burqa. The site includes upper and lower activity areas that are probably related to each other.

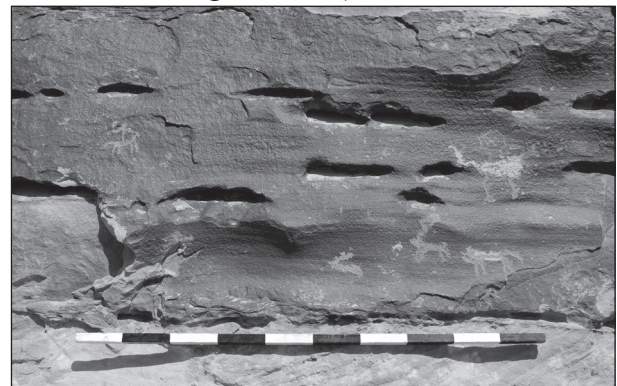
The upper activity area is dominated by a large rock shelter formed by an overhanging rock shelf that provides shade in the morning and at midday. Modern rubbish and the ashes of a recent fire indicate that the rock shelter is still used today. Petroglyphs to either side confirm its use in the past. There is also a small, ovoid niche with a blackened interior at shoulder height on the south side of the rock shelter that might have been used to hold an oil lamp or betyl. Ceramic sherds found in this area were produced from the first to third centuries AD and may represent use of the site at that time, although they might also have been displaced from tomb complexes or other structures on this ridge.

On the north side of the rock shelter there is a small, horizontal rock surface covered in desert varnish into which one pair of footprints and one individual footprint have been carved. The entire area of this carved surface measures 0.51 m by 0.5 m. The pair of footprints was not measured but face in a northerly direction, while the single footprint (0.2 m long  $\times$  0.1 m wide) faces easterly, in the direction of Jabal Qalkha. Although these footprints were presumably carved into desert varnish, the formation of a new layer of patina over the carvings has made them very difficult to see. They are possibly much older than the lighter petroglyphs to the south of the rock shelter.

To the south of the rock shelter, petroglyphs have been carved into a panel covered in desert varnish that curves from ground level to the beginning of a vertical cliff face. This panel of petroglyphs has a total length of 8.13 m. From north to south, the extant carved figures consist of a horned bovid facing left (0.11 m wide  $\times$  0.1 m high), two bovids butting horns (0.3 m wide  $\times$  0.1 m high), a faint horned bovid facing right (0.2 m wide  $\times$  0.12 m high), two horned bovids facing each other (0.36 m wide  $\times$  0.16 m high), two horizontal rectangles (likely with something in them) joined by a horizontal line (0.64 m wide  $\times$  0.1 m high), four horned bovids facing right (0.8 m wide  $\times$  0.16 m high), a possible inscription (0.37 m wide  $\times$  0.19 m high), a worn set of unidentifiable figures (0.38 m wide  $\times$  0.12 m high), two unidentifiable four-legged animals (0.26 m wide  $\times$  0.13 m high) and a horned bovid facing right (0.09 m wide  $\times$  0.12 m high). The darkness of the patinas varies between these petroglyphs, suggesting they were not all carved at the same time. Some images also overlap and have lighter sections, indicative of later additions.

The lower section of this activity area is immediately below the upper section, although the vertical cliff face between them prevented direct access. The petroglyphs here are carved into a band of the surrounding vertical cliff face that is covered in desert varnish. There is no ledge immediately before the petroglyphs, but their light colouring against the dark desert varnish allows them to be seen easily from below.

Clockwise from left to right are several rock carvings: a man on horseback with a weapon in his raised right hand (0.08 m wide  $\times$  0.09



16. R1 Western Petroglyph Set below the Rock Shelter Site.



m high) chasing a small animal with big ears and no tail (possibly a hare), a compact set of horizontal scratches, a human or deity standing with arms raised above the shoulders, holding a weapon in the right hand (0.21 m wide × 0.18 m high), a carnivore chasing a horned bovid (0.27 m wide × 0.15 m high) towards an open-sided triangular feature (0.08 m wide × 0.06 m high).

### **Jabal Qalkha (JQ) (Fig. 1)**

The western flanks of Jabal Qalkha towered over the ancient settlement and are very visible from the settlement and the two ridges. The ancient hydraulic works here, including three cisterns and a dam, have been published by Oleson (2010); some prehistoric activity areas have been published by Henry (1995). Oleson (2010) and Graf (1992) also recorded the existence of some Nabataean, Thamudic and Greek inscriptions and betyls associated either with these hydraulic works or with ancient sandstone quarries. When local resident Swaylem al-Manaja offered to guide us to some rock carvings on Jabal Qalkha in 2014, we assumed it would be to one of the previously published sites. Instead, he led us to two new sites that were obviously very important in antiquity.

### ***JQ Eastern Cascading Plateau Site (Figs. 1: T,U, 17, 18 and 19)***

This site consists of several horizontal bedrock surfaces that cascade from south to north down the slope of Jabal Qalkha in a topographically impactful location. Beneath the southern end of the site is the juncture of Wādī Raqabat as-Samrā (Black-Neck Wadi), which runs along the site's north-west side, with Wādī Ḥumayma, which runs along its north-east side. To the north-west, across the open expanse carved by Wādī Raqabat as-Samrā, the notched peak of Jabal Qalkha towers dramatically above the site's cascading surfaces. There are also excellent views down into Wādī Raqabat as-Samrā and Wādī Ḥumayma, across Wādī Ḥumayma to the western side of Ridge 2, and south into the desert towards Wādī Qalkha and the *Via Nova*. From the top of the site it is also possible to look over Ridge 2, with clear views of Ḥumayma's Roman fort, Abbasid *qasr* and

much of the ancient town. The site can also be seen from all of the aforementioned places. It is also worth noting that the footprints found at the top of Ridge 2 point towards this site and the adjacent peak of Jabal Qalkha. Two of the Epipaleolithic activity areas (J406a; J406b) surveyed by Henry (1995: 217, 251) should be located just south-west of this site, but they were not visited by our survey team.

This site consists of seven natural surfaces (Fig. 17). Each of these was documented separately, although they all form part of a cohesive whole.

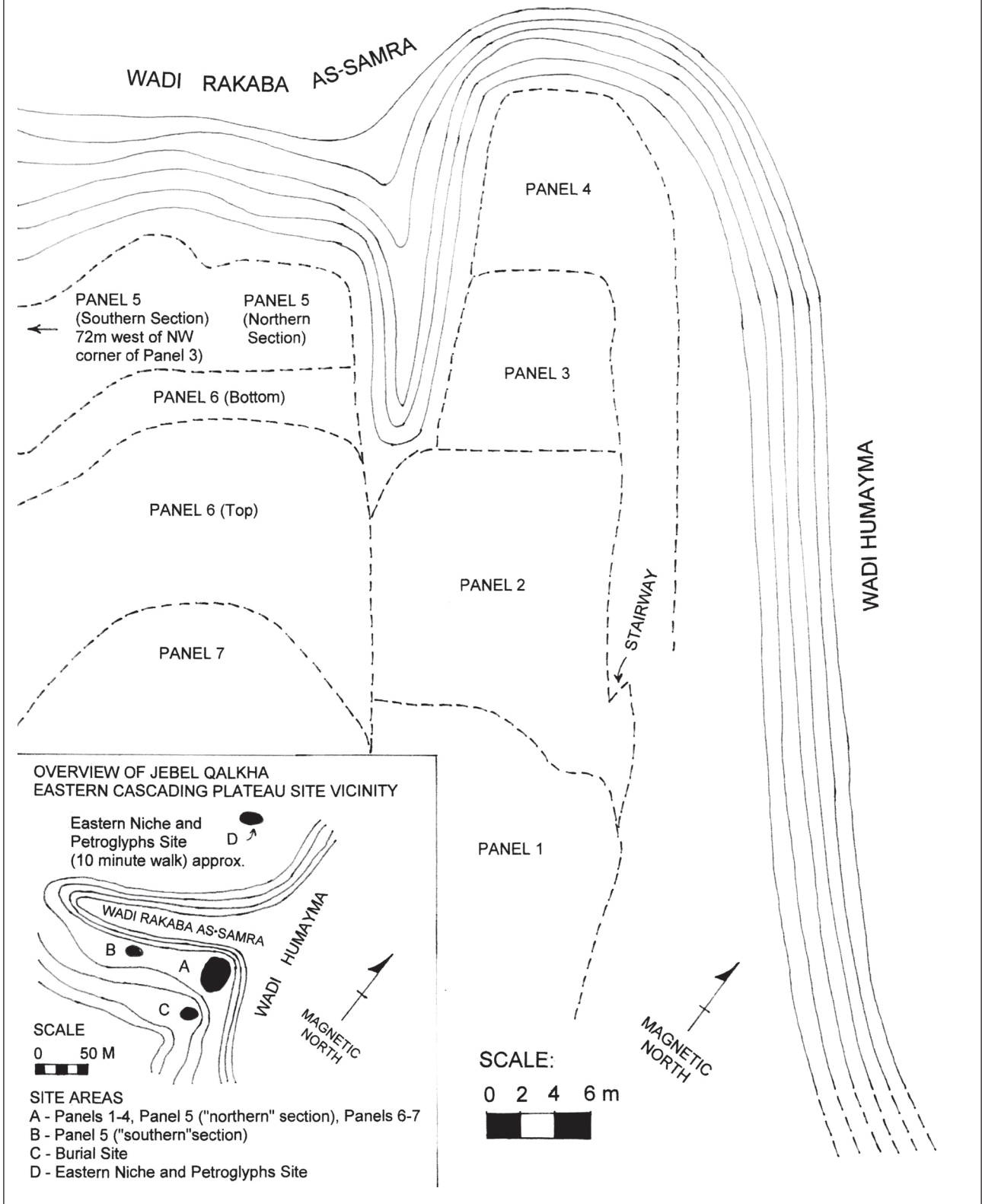
### ***JQ Eastern Cascading Plateau Site - Burial site (Figs. 1:T and 17)***

At the highest point surveyed on this plateau (although not at its top), two probable intact burials were found abutting on their long side. The continuation of one external wall suggests the possibility of a third burial. Others might be buried under the thick layer of soil and surface cobbles that cover the plateau side. The two visible features are rectangular and lined with upright sandstone slabs, one set of which is of light purple sandstone and *ca* 0.04 m thick. There is no sign of covering slabs, but some of the surrounding cobbles might once have been placed on top. The features have an internal length of 1.18 m and an internal width of 0.86 - 0.87 m. They are aligned north-west to south-east, seemingly oriented towards the peak of Jabal Qalkha although it is also possible that they are oriented towards Mecca. From this site, there are dramatic views of the notched peak of Jabal Qalkha, the rock carvings below, the two *wadis*, the west side of Ridge 2, the desert, Wādī Qalkha, the *Via Nova* to the south, the Roman fort, the Abbasid family's *qasr* and parts of the town. It would be a prime location for a prominent person's tomb.

### ***JQ Eastern Cascading Plateau Site - Panel 1 (Figs 17 and 18)***

This flat surface, *ca* 14 m long × *ca* 14 m wide, is below the burial site and immediately above Panel 2 on the south-east side of the cascading plateau. The desert varnish has worn off the exposed surface and the remaining surface (at the south-east end) is obscured by a

# EASTERN CASCADING PLATEAU SITE: AREA-A



17. JQ Eastern Cascading Plateau Site sketch plan.



18. JQ Eastern Cascading Plateau Site from north-west; Ridge 2's Southern Flat Top Activity Area and Southern Knob Activity Area visible behind on left.

covering of soil, pebbles and cobbles. There are no visible petroglyphs or worked rocks.

*JQ Eastern Cascading Plateau Site - Panel 2 (Figs. 17 - 20)*

This flat surface is located below Panel 1 and above Panel 3, and faces towards the peak of Jabal Qalkha. Steps lead up to its eastern side from a path that currently leads down into Wādī Ḥumayma. Its maximum dimensions (including stairs) are *ca* 18 m long × *ca* 14 m wide. The back half has been eroded away and there is a shallow eroded crevice across the centre. The natural, flat surface of this panel is coated in a layer of black desert varnish into which almost one hundred petroglyphs and inscriptions have been carved. The images include at least 43 horned bovids (including a carnivore attacking a bovid), 18 footprints and shoeprints, seven humans riding animals (camels or horses), a standing human, a solitary carnivore and possibly a camel. There are also four ovoids and at least seven curvilinear symbols (including stars, suns, infinity symbols and circles within circles), as well as at least 17 sets of linear symbols (including crosses, Xs, Vs and hatch marks). Some of these symbols may be *wasms*. There are also *ca* 15 inscriptions on this panel: one Greek inscription, three Nabataean or Thamudic, four Nabataean, two Arabic and five other possible inscriptions. Some of these inscriptions accompany images, including a

very light-coloured carving of a foot that bears an Arabic inscription dating to 1952. Over the

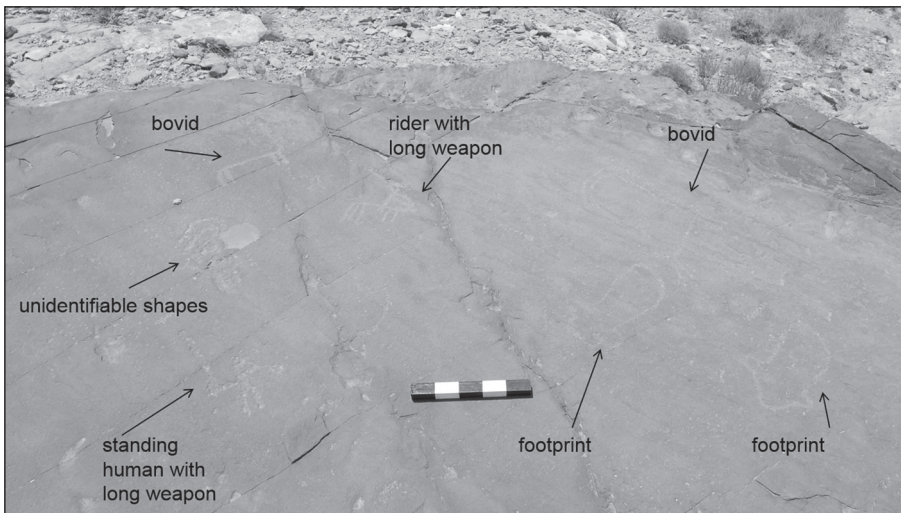


19. JQ Eastern Cascading Plateau Site, facing north from Panel 7; people are standing on Panel 2.



20. JQ Eastern Cascading Plateau Site: (foreground) Panel 2 with numerous petroglyphs and inscriptions; (background) Panel 3 with semicircular feature at centre back and petroglyphs to left.





21. *JQ Eastern Cascading Plateau Site: petroglyphs on Panel 3.*

panel, a great many variations are visible in the lightness of the carvings relative to background desert varnish, in the styles of the feet and bovids, and in other details. These variations, in conjunction with the overlap of carvings, might help to date human activity at this site.

*JQ Eastern Cascading Plateau Site - Panel 3 (Figs. 17-21)*

This flat surface (*ca* 15 m long  $\times$  *ca* 9 m wide) is located below Panel 2 and above Panel 4. It faces towards the notched peak of Jabal Qalkha. There are several carved linear or curvilinear grooves (0.07 - 0.14 m wide), with peck marks inside, at various locations on the surface. Two linear grooves / channels stick out from the rock face at the back. There is also a semicircular carved or natural indentation at the front (facing the peak). As this is the only panel with any visible features beyond petroglyphs and inscriptions, a special activity, possibly a religious ceremony, likely took place here. Most of the panel's surface is now worn or carved down. On the extant desert varnish some petroglyphs remain: an ibex with exaggerated horns, another horned bovid, one unknown animal, two single shoeprints, a standing human holding up a long spear or lance, and a human on horseback wielding a long spear or lance.

*JQ Eastern Cascading Plateau Site - Panel 4 (Figs. 17-18)*

The northern end of this flat surface is located below Panel 3, at the front of the cascading plateau, directly over Wādī Raqabat as-Samrā and beneath Jabal Qalkha's notched peak. The

back half of the northern end is obscured by soil, pebbles, cobbles and boulders. The surface wraps around below the sides of Panels 3 and 2 to the bottom of the steps leading up to Panel 2. No petroglyphs or inscriptions are visible on any of Panel 4's exposed surfaces. Just south of the steps (and at the top of the path leading to the site from the *wadi* below), an Arabic name has recently been carved into the vertical rock below Panel 1.

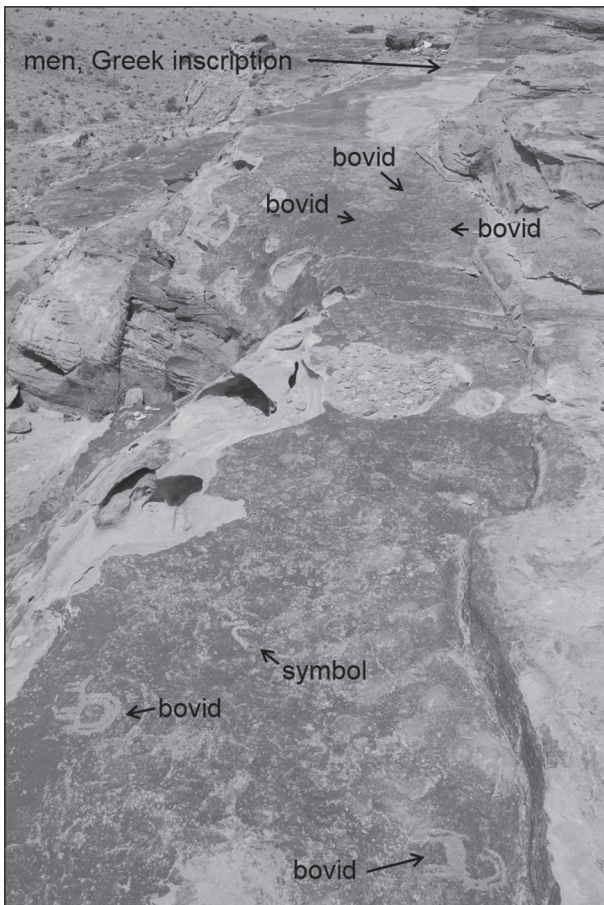
*JQ Eastern Cascading Plateau Site - Panel 5 (Figs. 17, 18 and 22)*

This naturally flat surface is south-west of Panel 4 and roughly at the same elevation. It extends for dozens of meters to the south, around the edge of the plateau overlooking Wādī Raqabat as-Samrā, and faces the notched peak of Jabal Qalkha. In front of Panel 6 it is at least 23 m wide and up to 8 m long. No petroglyphs or other man-made features are visible on the majority of the exposed surface,



22. *JQ Eastern Cascading Plateau Site: petroglyph of headless horseman and large feline on Panel 5.*





23. *JQ Eastern Cascading Plateau Site: petroglyphs on bottom section of Panel 6.*

except for a section far to the south. This *ca* 5 m × 5 m southern section, which is *ca* 72 m from the north-west corner of Panel 3 on a bearing of 345 degrees, contains a cluster of petroglyphs carved into the black desert varnish: a (headless?) man on a horse spearing a large animal (feline?), a standing camel, two horned bovids walking in a row and two unidentified shapes. Additional petroglyphs may exist in this area beneath a wind-blown accumulation of red sand.

#### *JQ Eastern Cascading Plateau Site - Panel 6 (Figs. 17, 18, 22, 23 and 24)*

This natural two-level surface is located above the northern section of Panel 5 and below Panel 7. Its curved front faces the notched peak of Jabal Qalkha. The bottom (front) layer is 2.3 m long and 4 m wide. The top (back) layer is 2.3 m long × 6 m wide. Both layers are covered in black desert varnish that is worn down in places. No petroglyphs or man-made features are visible on the top layer. The bottom layer is

partially obscured by dirt and very worn, which makes it difficult to see all potential carvings. The petroglyphs that are visible include seven horned bovids, two men with shields in their left hands and swords in their right, another human (?), two footprints and a symbol (*wasm?*). There is also a Greek inscription.

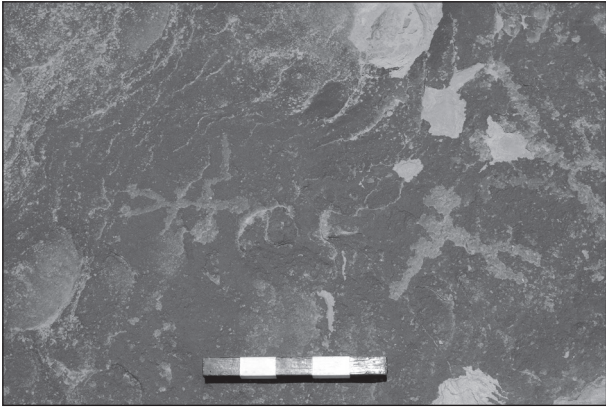
#### *JQ Eastern Cascading Plateau Site - Panel 7 (Figs. 17 and 18)*

This surface above Panel 6 and west of Panel 4 extends up and back into the hillside. The burial site is located to its south-east. Panel 7 is very big - more than 8 m long and *ca* 20 m wide. The exposed section of its surface is highly eroded with only small patches of desert varnish remaining. No petroglyphs or other man-made features are visible on the exposed surface.

#### *JQ Eastern Niche and Petroglyphs Site (Figs. 1:V and 25)*

This ancient activity area is located in a large, flat-sided alcove directly below the prominent groove in Jabal Qalkha's peak, at the location where the natural cliff meets a soil-, rock- and shrub-covered surface approximately halfway up the face of the *Jabal*. It is just north of Wādī Raqabat as-Samrā at the approximate elevation of the Cascading Plateau Site, from which it can be reached via a 10-minute hike. There is a slope down to Wādī Ḥumayma directly in front of the alcove and no sign of any structures or artifacts. Probably the combination of the peak above and accessibility to the Cascading Plateau Site provided a justification for this site's occupation, as the views from it are not particularly interesting, at least to a modern viewer.

The signs of ancient human involvement at this site consist of a betyl niche and several petroglyphs. The betyl niche has been carved into the back wall of this activity area, at a height of 1.1 m above the surface, and faces Wādī Ḥumayma. The upright niche is rectangular and contains another sunken upright rectangle inside it, which likely either represents a betyl or the recess into which a portable betyl was placed. The exterior dimensions of the larger rectangle are 0.5 m high by 0.35 m wide, while its interior dimensions are 0.43 m high and 0.33 m wide. This larger rectangle is carved



24. JQ Eastern Cascading Plateau Site - Panel 6: petroglyphs of men with swords and round shields; another possible human at right centre.

to a depth of 0.2 m. The smaller rectangle set in the larger one measures 0.31 m high by 0.18 m wide, and is a further 0.05 m deep. The combined depth is thus 0.25 m. There are four circular holes surrounding the niche, which were possibly used for attaching a covering. These holes are 0.05 - 0.09 m deep and 0.54 - 0.67 m apart from each other. The feature resembles other betyl niches found at Ḥumayma and Petra. A hole, now topped by sand, has been dug into the ground beneath the niche. Several petroglyphs have been carved on the northern wall of the alcove, *ca* 3 m north of the betyl niche. Unlike most of the petroglyphs discovered at Ḥumayma, these ones have been carved directly into the tan-coloured sandstone, rather than into a layer of black desert varnish. These petroglyphs are very difficult to decipher.



25. JQ Eastern Niche and Petroglyphs Site with location of petroglyphs marked.

One set seems to show two butting bovids.

People appear to have been digging in this area recently. Holes have been dug and left open *ca* 40 - 50m south-east of the activity area.

### Conclusion

This short survey by Ḥumayma Excavation Project staff succeeded in collecting a great deal of information about the landmasses to the west of Ḥumayma's Nabataean to early Islamic settlements. Our original plan, to only survey Ridge 2, was amended to include some sites on the western and southern faces of Ridge 1 and on the western flanks of Jabal Qalkha whenever it was brought to our attention (either by a local resident or during distance photography) that there were important sites on those landmasses in need of documentation. We documented a total of 15 sites and 17 sub-sites, and collected data on 11 quarry areas, one new burial area, eight bedrock holes and several other features. We also documented more than 150 petroglyphs, 20 Greek, Nabataean or Thamudic inscriptions, two carved betyl niches and numerous recent Arabic inscriptions. Analysis of all the sites, features and petroglyphs is in progress and has already resulted in one publication (Reeves 2015). Analysis of the inscriptions is temporarily on hold to allow David Graf to publish those that he collected during his own surveys.

Although the sites documented have been quite well preserved because of their relative isolation from modern population centres, they



can all be easily accessed by people without any specialised climbing abilities. Their future survival is, therefore, at risk from humans climbing or carving graffiti over the ancient features. Already a great deal of recent graffiti has been carved or painted over ancient features at some of the sites. In addition, some of the sites are near rock shelters that are still used by local shepherds for penning their animals or storage. This means that petroglyphs carved onto the very thin desert varnish are extremely vulnerable to being rubbed off by climbing goats and sheep. For example, an access route to the rock shelter above Ridge 2's Eastern Quarry Section 2, where animals are currently penned, is up the unquarried rock faces adjacent to that quarry. In addition, probably because these sites are largely out of sight of Humayma's main archaeological site (on the plain) and the modern military base to its north-west, there are indications that people have been digging holes near some of these sites or on the slopes of the *wadis* between them, presumably looking for buried remains. This illicit excavation represents an ongoing threat to the survival of the sites. Especially vulnerable are the three intact burials at Jabal Qalkha's Eastern Cascading Plateau - Burial Site. It should be noted that human involvement in and around all of the documented sites is also likely to increase in future years owing to traffic from the nearby military base and tourist interest in the newly discovered petroglyphs. It should also be noted that, just as all of this human activity threatens the survival of the ancient features, so too does the continuing erosion of the exposed sandstone by wind, rain and wild animals.

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