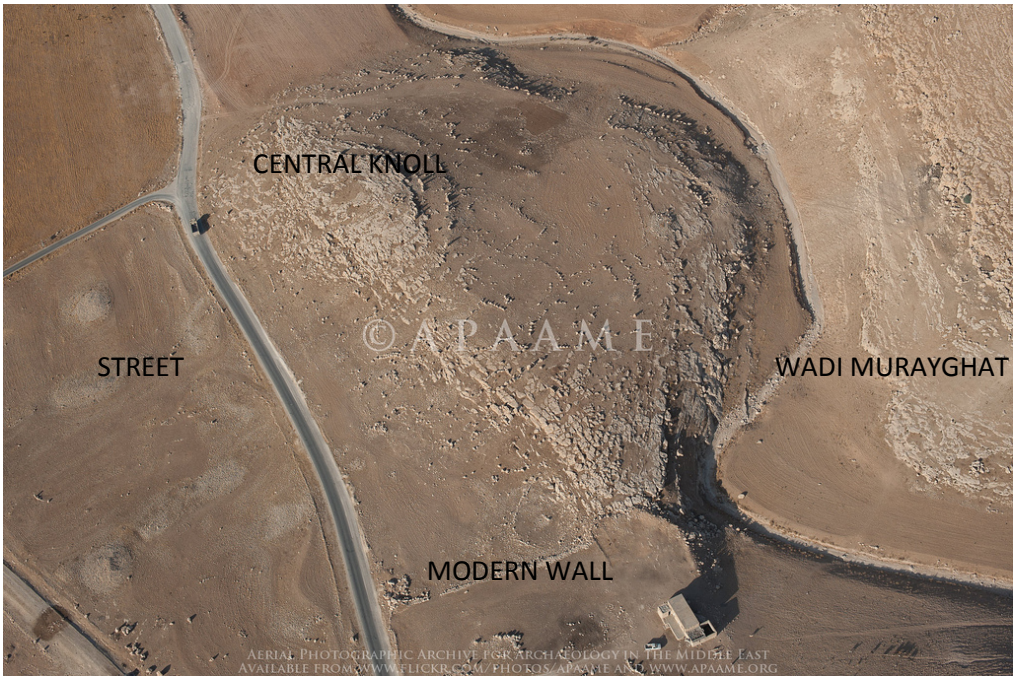
UNIVERSITY OF COPENHAGEN

The Ritual Landscape of Murayghat Project

3. Season: 2016

Susanne Kerner
Near Eastern Archaeology

ToRS



The Ritual Landscape of Murayghat

2016 report of 3. Season to the Department of Antiquities of Jordan

Susanne Kerner

Research History

The site of Murayghat has been mentioned by many early travellers (Conder 1889,184; Irby and Mangles 1985, 465–66), and was visited later by the Tuleilat Ghassul team the Pontific Institute (Mallon, Koeppel, and Neuville 1934, 155, pl. 63:4–9), as well as by Harrison in the 1990ies (Harrison 1997, 29) and later Savage (Savage 2010, Savage and Rollefson 2001). They reported material from the Chalcolithic, Early Bronze Age and later periods (see Kerner n.d.). It is not always clear, which exact area is meant by the different authors as the site of Murayghat.

Site and Present situation

The site consist of the central knoll (area 1; Fig. 1) and the surrounding low hills to the north (area 3), west (area 4) and southwest (area 5 and area 6). A road east of the knoll separates it from a field that runs towards the steep sides of Wadi Main. This field (area 7) contains some rather large dolmen and continues northwards until the Hadjar al-Mansub, a large standing stone, ca. 1 km from the centre of the central knoll. The north-eastern hill (area 3) is nearly eaten up by the northern quarry, but these activities that also threatened the south-western hill (area 5) have stopped in 2015. The quarries still work westwards (eating into area 6 and 8), but not anymore towards the site. Along the road are some broken down dolmens, according to the information by the local population, some of these have been blown up during the last decades. Some destruction is still continuing. The central knoll is ca. 3.5 ha, while all the area surveyed includes ca. 70 ha.

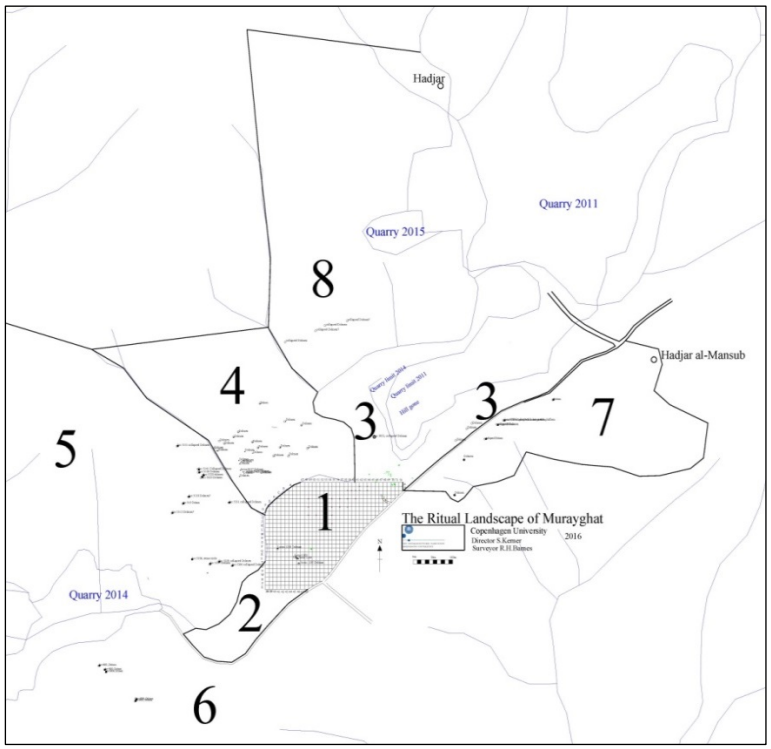


Figure 1: Murayghat survey and excavation areas.

The manager (Imad Abu Jerez) of the southern quarry, owned by Qassara Jerez Isa Abu Jerez, helped with heavy equipment, when the trenches 3 and 4 were first emptied and then backfilled at the end of the season. The mechanical emptying of trenches 4 was done from one of the sites that were planned to be excavated, so that any damage of baulks would not be a problem. The bulldozer was stopped when the first red cover material, used in 2015 to cover the surfaces, appeared in trench 4 and even before that in trench 3, as the walls in that trench had been unsubstantial and damage was avoided in this way (fig. 2).

Figure 2: Trench 3 with plastic cover after the bulldozer removal of the 2015-fill

At the end of the 2016 season, the entire surface of the trenches was covered again with the same material, but the corners of the trenches, small test trenches, and the pit were first filled with sand-filled sacks, to enhance their stability. Walls were also surrounded by these sacks.

Geo-physical survey in November 2015

Between the 28.10. and 31.10. a team of experts (Eastern Atlas) carried out a geo-physical survey to test the possibilities for further excavation work at the site. The geophysical survey campaign consisted of magnetic measurements on four selected zones (in Areas 1 [A and B], 2 [C] and 7 [D]) of 4.5 ha and an additional GPR test measurement on a smaller scale (200 m^2) in Area 1 (B). For the magnetic investigations at Murayghat an array of seven Förster fluxgate gradiometer probes, mounted on a frame, was used. The probes were mounted on a light and foldable frame with two wheels. Two handlebar extensions were used to lift up the system in case of surface obstacles. Three areas were prospected by pulling the LEA MAX system. Due to challenging surface conditions the array was converted into a carrier system for the prospection of one area. For the positioning of the data a marker wheel as well as a GNSS receiver were incorporated. The measured gradient (the difference between two vertically arranged sensors in a gradiometer probe) is insensitive to the typical large fluctuations of the Earth's magnetic field and is determined only by the magnetic local anomalies in the ground.

The anomalies of metallic or unambiguously modern origin are separated and marked in blue colour and anomalies ascribed to geological and geomorphological features are depicted in green colour. Archaeological remains are marked in yellow, while filling of pits etc. are orange (fig. 3). In area 1 (A) the zone north of the central knoll, that included the trenches 3-5, several further wall-lines, a circle and several other anomalies, which might be of archaeological origin, can be seen. Particularly the area close to trench 5 shows remains of long walls. The GPR test showed continuation of a wall detected in trench 4. The western part of Area 1 (B) covered largely by soil, herding debris etc. showed that the structures visible on the surface, that have already been documented in the tell-survey: rectangular and circular configurations, continue underneath the soil cover towards the Wadi Murayghat. Area 2 (C) on the other hand proved empty, which shows that the area was probably always used for agricultural activities. The last zone surveyed was in Area 7 (D) east of the central knoll and was, due to the irregular surface, difficult to study and showed next to large stone heaps

(most likely collected from ancient structures) sub-terranean rectangular and circular structures, particular in the corner between both roads.

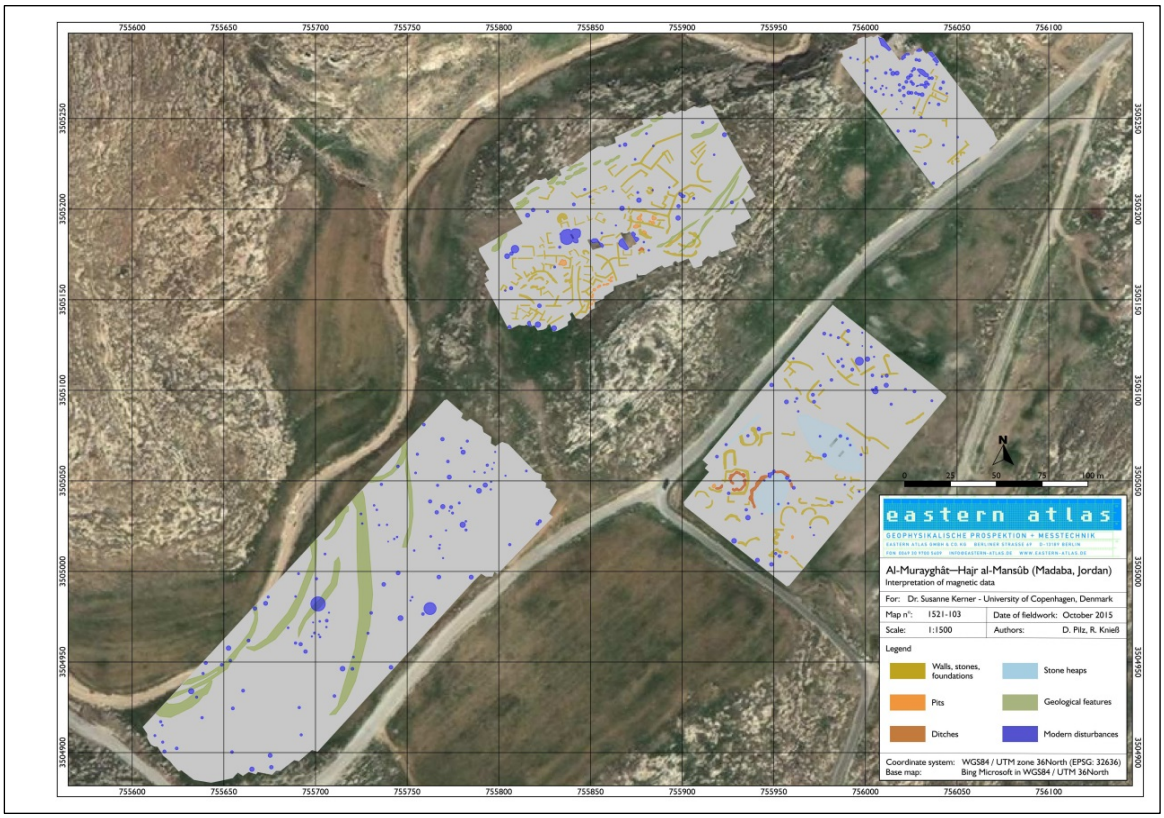


Figure 3: Results of geo-magnetic survey in areas 1, 2 and 7

Project "Ritual Landscape" in 2016

The project by the University of Copenhagen (Institute for Regional and Cross-Cultural Studies) directed by Susanne Kerner is designed to study the dolmen fields, central knoll and related structures of Murayghat in order to understand the relationship between the single elements and comprehend the reasons for the existence of the dolmen-field. The project is intended to understand the ritual meaning of the structures and identify their role in the ritual and socio-political make-up of the society as well as in the landscape of the periods involved.

The 2016 season had the following plan: continuation of the central knoll survey, continuation of trenches 3 and 4, survey of the surrounding hills (finishing area 5 and continuing area 4). The project took place between the 10.5. and 16.6. Between the 17.5. and 14.6. the annual field-school of the University of Copenhagen (with 10 students) was part of the project (see list at the end). The other members of the team included, beside the director, Isabelle Ruben (vice-director) responsible for the excavation, Matthias Flender, responsible for the survey, and Hugh Barnes, responsible for the technical survey. Ann Anderson analysed the pottery. The supervisors from Copenhagen University included Ann Sofie Drewsen (find-documentation), Sarah Sibbern and Josefine Fredborg (survey), Johanne Nielsen (survey central site and find photography), Morten Jørgensen and Sandra Mularczyk (excavation), Pernille Nielsen (draughtsperson and find photography), and Reem Abed Aljader (pottery-assistant).

Hearty thanks are sincerely offered to HE Dr Monther Dahash, Director-General of the Department of Antiquities of Jordan, for his full and unreserved backing of the project. In addition, Aktham Oweidi

and his staff of the Department of Antiquities office in Amman made sure that the work could start in time and good order. He and Achmed Lash helped also at the end of the season to bring everything to a systematic finishing. It was also a pleasure to have Khalid al-Hawaurha as our DOA representative, who was most helpful. Bassim Mohammed, head of Madaba office, was also of invaluable assistance. Abu Ibrahim worked as guard, admitted us to his land, and provided lots of very helpful information about the recent history of the site.

Support in Denmark was equally as enthusiastic, especially from Professor Ingolf Thuesen (ToRS), and the H. P. Hjerl-Hansen Mindefondet for Dansk Palæstinaforskning.

Systematic survey of the central knoll

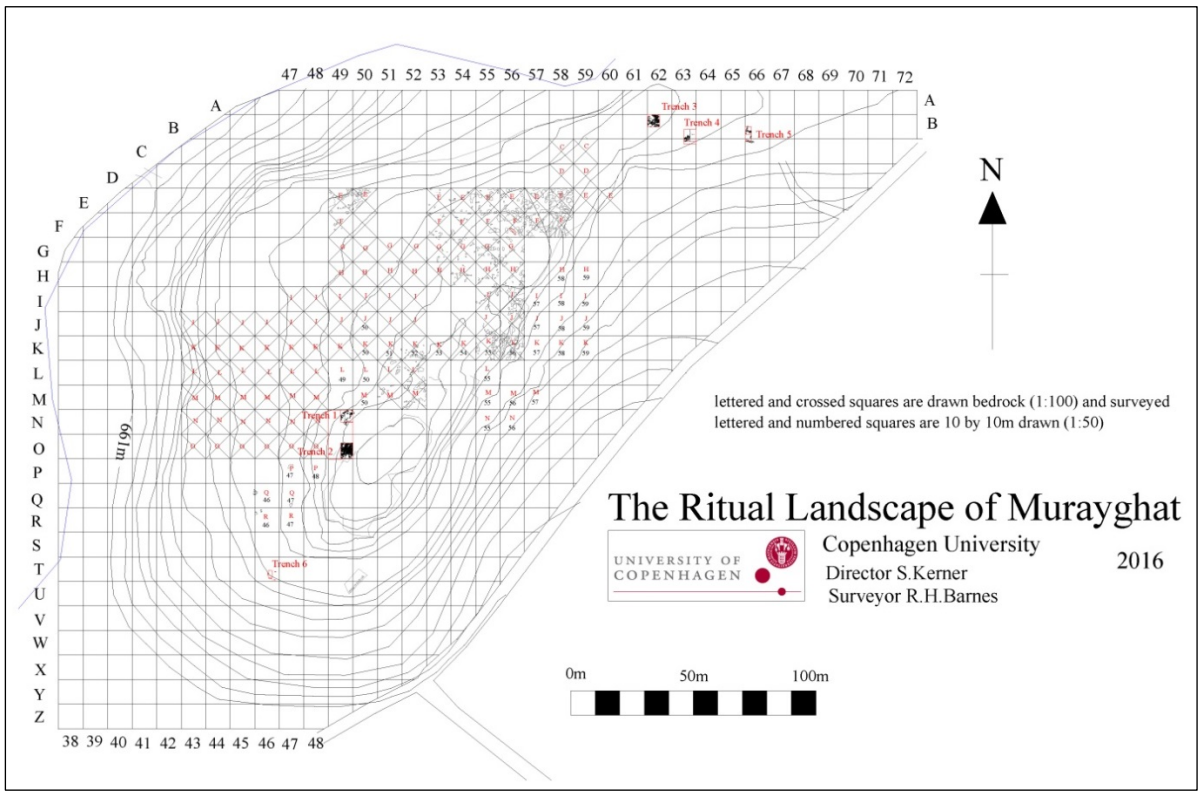


Figure 4: Area 1 (central knoll) with surveyed andndrawn squares and trenches

The central knoll is limited in the west by Wadi Murayghat (flowing into the Wadi Main) and in the east and south-east by the street towards the Wadi Main. The northern border is created by an artificial wall, formed by the already mentioned bulldozing activities since the 1970s. The knoll consists of limestone, a material that breaks in relatively straight slabs, easy to use for the construction of dolmens without the need of much further work. The site, with a 10 x 10 m net, has been surveyed intensively (Fig. 4), thus 101 squares (ca. 30 % or 1 ha) have been surveyed documenting the visible bedrock (1:100 plans), cup-marks and assembling surface collections. In 34 squares (340 m2) the stone structures visible on the surface (walls, circles etc.) have been documented in 1:50 plans. Work was done in particular on the western edge of the central knoll, where the geo-magnetic survey showed rich archaeological material.

The central knoll shows two possible circular alignments on the highest point on the bedrock (N-O/51-52). From there a good view is provided to the surrounding area, almost all dolmen on the hills (area 3, 4, 5, 6 and 7) would have been visible from that point, or better that point would have been visible from nearly all dolmens on the surrounding hills (Fig. 5). Even two dolmens along a small side

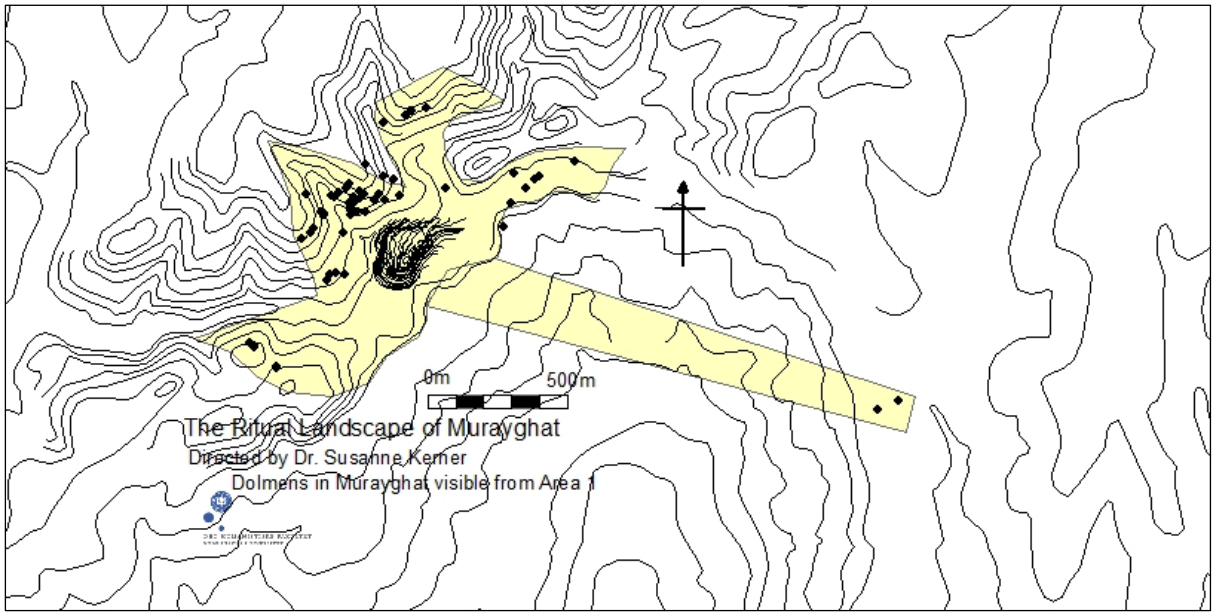


Figure 5: Visibility of dolmens in areas 1, 3, 4, 5, 6, 7 and 8 from the center of the site (area 1)

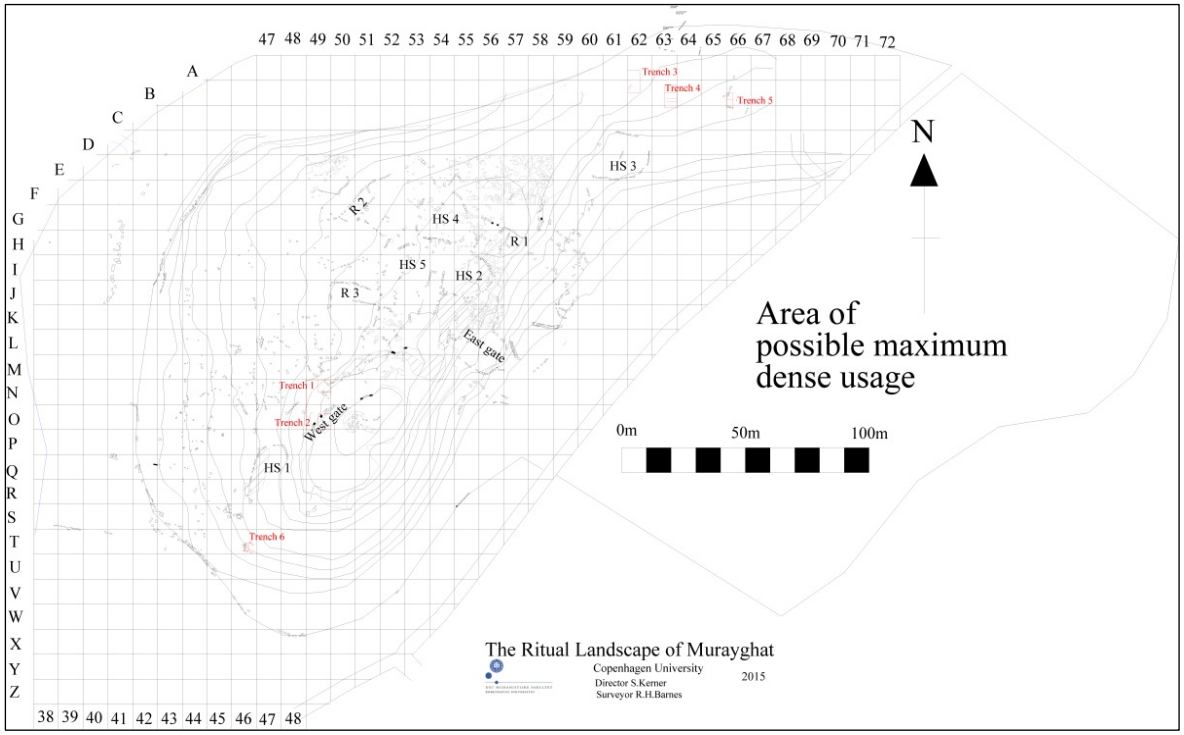


Figure 6: Area 1 (central knoll) with horse-shoe shaped and rectangular shapes

road above the Wadi Main have sight contact with the central knoll of Murayghat – over a distance of ca. 1.2 km. The other structures on the central knoll are four large horse shoe shaped arrangements, of which HS1 (P-Q/47-48), HS2 (I-J/55-56) and HS4 (F-H/54-55) (Fig. 6) appear on the northwestern and southwestern side of the central knoll. Only HS 3 is on the northeastern side of the knoll (E/61-61) and thus directed towards the larger dolmen along the modern road. The dating of HS3 is very uncertain, it might be a much later construct used as an animal pen. Another very large horseshoe-shape (HS5) just south of HS4 was recognised in the geo-magnetic survey carried out in 2015 (only

small parts of it are visible on the surface).Several rectangular structures have also been documented. The R2 (F51) and R3 (J/50-51) are again on the western side of the central knoll on the flatter area outside the immediately visible bedrock. They are built from smaller stones and on flat, even ground. The R1 is built from large standing stones and on the bedrock east of the hilltop (H57). The south and west of the central site is delimited by a wall which has for most parts an interior and exterior face. On the eastern slope of the central knoll are two other double walls visible forming an entrance-like structure (L57 and K58), while the western slope again has an entrance like structure, where two larger standing stones form a gap in a longer wall made from orthostats (O49, Fig. 7).

Figure 7: Orthostate wall on the western side of the central knoll in Murayghat ("western gate").

Over 40 cup-holes have been documented; there is a concentration of them along the edge of Wadi Murayghat, where in some cases groups of four and six have been found. They are usually around 15 to 20 cm in diameter and of differing depth.

The central knoll is surrounded on all sides by flat ground, where the bedrock disappears under layers of soil of varying thickness/depth. The area south (area 2) has obviously a long tradition of agricultural use and practically no cultural remains have been found. A systematic and intensive survey carried out in transects by nearly the entire team brought very little results. The space to the west and east in contrast has been shown to contain many cultural structures, as proven by the geo-physical survey in 2015.

Excavation

Figure 8: Trench 3.2 (2016)

The two trenches started 2014 (trench 3 and 4) were re-opened during 2016 to study the stratigraphy as well as continue the wall structures over a larger area in order to understand the complex better. All trenches were re-filled at the end of the season. Several fill layers were sieved with different percentage from 20 to 100 %.

Trench 3/3.2 (A62/B62) had been opened with 45 m^2 in the former years and now the original 5 x 5 m trench from 2014 was re-opened. Trench 3 was extended 6 m towards east (with a 1 m baulk left between the old and the new trench) as trench 3.2. The new trench 3.2. was originally laid out with 5 x 3m (fig. 8) to understand the context and dating of the pit in trench 3 better and work towards a connection with trench 4. Directly after laying out the trench it became clear and was confirmed by the landowner, Abu Ibrahim, that a recent bulldozer dug-out cut across the north-eastern part of the new trench. The northern limit of the trench was thus moved 1.5 m

further south, so that the bulldozer dug-out was cut, but not entirely re-excavated. Instead the southern limit of the trench was moved 2 m south, which led to a 5.5 x 3 m trench (16.5 m^2).

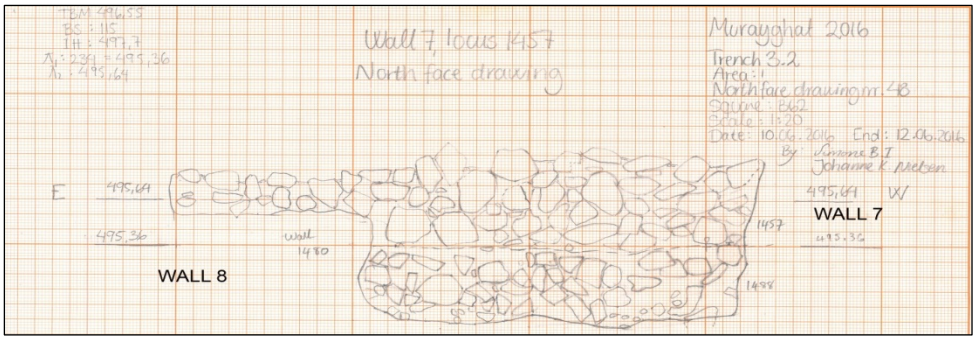


Figure 9: Section of Wall 7 (L.1457-opper wall, L.1488-lower wall). Wall 8 is not drawn here.

The bulldozer cut was first emptied and it went down to hard, very reddish soil. Afterwards the remainder of the trench was excavated stratigraphically to a similar height level. In trench 3.2 the large wall 7 (L.1457) was excavated next to several filling layers that consisted out of brown soil interspersed in the upper layers with ash, lower down with yellow clayish flecks. The wall 7 had at least two phases (the lower phase is L.1489), which corresponds with the two phases visible in many of the walls in trench 3 excavated in 2014 and 2015. The upper phase of the wall 7 (L.1457) consists of middle-sized and larger stones (fig. 9), held together with a clayish matrix, while the lower phase (L.1489) has been made from smaller stones. This lower wall 7 is bonded together with more material than the upper wall, and the matrix is very clayish. The whole wall leans slightly, but appears solid and was excavated up to 1.2 m height. No foundation trench existed (as for most of the walls). Another wall 8 (L.1480), consisting of only a few large boulders (and running into the baulk) is connected to the later phase of the large wall (wall 7, L. 1489), but stratigraphically slightly earlier (fig. 10). The fill north of the walls was partly ashy (L.1468, 1472, 1464, 1460, 1459, 1456), also including ashy pits; but further down also rather hard and containing large flecks of hard, yellow clay (L.1482, fig. 11).

Figure 10: Wall 7 and orthostate Wall 8 to the left.

Work was also carried out in trench 3 (original), where the southern part around the stone-lined pit (L. 1421) was further studied (fig. 12a). The surrounding consisted out of several rubble layers and a very narrow foundation trench for the pit (L.1486). A possible floor connected with the pit might have been cut accidently in 2014.

Figure 11: Brownish fill with flecks of hard, yellow clayish material.

The relationship between the pit, the platform and L.1419 become clearer (see below stratigraphy).

Wall 7 from trench 3.2. is clearly connected to the L.1420 in trench 3.1 (fig. 12b), this continuation of Wall 7 is leaning against the orthostat Wall 9 (L.1479). From the latter only two stones remain in the trench. The alignment of Wall 9 made from large stones (both slightly rounded and more squarish) and Wall 7 (cont.) made of smaller stones differ; Wall 9 runs SE-NW, while Wall 7 is more ESE-WNW oriented. The base of both walls is on material that seems to be natural soil. The material is hard and red, very similar to the soil in trench 3.2.

The stratigraphical order in trench 3 presents itself as follows:

Pre-settlement phase = possibly untouched soil L.1452, L. 1487 (trench 3), L. 1488 (trench 3.2) and bedrock.

Phase 1: Orthostatic Wall 9 (L.1479) running SE-NW would seem to be the earliest structure in the sequence.

Phase 2: This is followed by the lower levels of a number of rubbly walls: Wall 7 (L.1489) running ESE-WNW, a lower phase of Wall L.1419 (possibly L. 1447), which was not recognised as a wall in 2014, running N-S. Phase 2 might be including a lower phase of the 'platform' L.1418/1438 that is yet not uncovered. Several fill layers that abut these walls (1477, 1474, 1490).

Phase 3: stone-lined pit L.1421, which leans against the lower phase of rubbly wall L.1419.

Phase 4: orthostatic Wall 8 (L.1480) standing on fill L.1474, running ENE-WSW.

Figure 12a: Trench 3 (left). Figure 12b: Trench 3 and 3.2 showing Wall 7 and continuation

Phase 5: Upper part of rubbly Wall 7 (L.1457 in trench 3.2 and L.1420 in trench 3.1), that is built directly on top of L.1489). In the same phase would be Wall L.1419 running roughly N-S and abutting Wall 7 (L.1420) at the S end as well as abutting the upper phase of 'platform' 1418/38 at the N end, and going over the top of the western upright slabs of the stone-lined pit L.1421). On the south side of the platform and perhaps associated with this structure, or at some time later, is a surface (1445 =1416). Various fill layers are deposited on both sides of the 'platform'; quite ashy deposits to its north-east, but with virtually no charcoal in them, and rather pebbly slightly ashy deposit in the north-west, with much pottery and bone.

Phase 6: A series of 4 very badly made walls constructed of single lines of large, rounded boulders placed directly on the fill layers were built Wall 1 (L.1407), Wall 2 (L.1408), Wall 3 (L.1409) and Wall (L. 1433). Wall 2 from the south and Wall 6 from the north (L.1408 and L.1433) end with a forced bond into the top of 'platform' 1438, and Wall 1 was built parallel into the south face of the 'platform'.

Phase 7: The latest Wall 5 (L.1432) runs into the northern baulk; the foundation trench cut for this wall cuts down through the sub-surface packing (L.1435) and the fill layer below that (L.1443). It might well have been the last remains of a **Classical period** wall that was mostly removed by bulldozer during the 1980s.

Trench 4 (B63/C63) was re-opened in the same area as 2014 with the 1 m enlargement to the south (from 2015). The trench was again enlarged as trench 4.2. southwards (by 2 m), but cutting of the eastern 2 x 3 m thus effecting an opening of ca. 34 m^2. The northern extension from 2015 was not re-opened. The objective was a further study of the large Wall 1 (L.1307) and its stratigraphic situation. The wall continued in the entire length of the trench (fig. 13).

Figure 13: Trench 4 and 4.2 with Wall 1 and test trench on the left (eastern) side.

In order to understand the depth and construction of wall 1 (L.1307) the test-trench on the East side of the wall, started in 2015, was re-opened and enlarged (2 x ca. 2.5 m). After the removal of the grey crust L. 1338 that had already been encountered in 2014 (L.1308) and 2015 (L.1330 N and L.1321 S), several fill layers were encountered. In the test-trench layers were excavated particularly carefully, so several artificial layers were created, some of which turned out to be the same (L. 1339, L. 1341; as well as L.1344 and L. 1345 and L. 1353). The consistency of these upper layers was sandy with different amount of broken limestone in them. Most of the fill was also sieved (up to 100 %). In the east, a possible pit was excavated separately (L.1352); but it was hardly recognisable even in the east section. The lowermost part reached was a very hard reddish clay with white flecks (L. 1359 in the North and East, possibly virgin soil) and a yellowish, hard material (L. 1361) in the SW.

Next to Wall 1 running into the northern section of the test-trench is a very large limestone block situated (L. 1360 at least 65 x 55 cm) with one hole each on top and in the front (fig. 14). The top-hole is flat bottomed and has straight walls (a post-hole?), while the one in the front is more in the shape of a cup-hole with narrowing walls. The block had a narrow foundation trench cut for it (L. 1364, L.

Figure 14: Large limestone block with two holes on top and front (L. 1360)

1365) that sits on L. 1359 and under Wall 1.

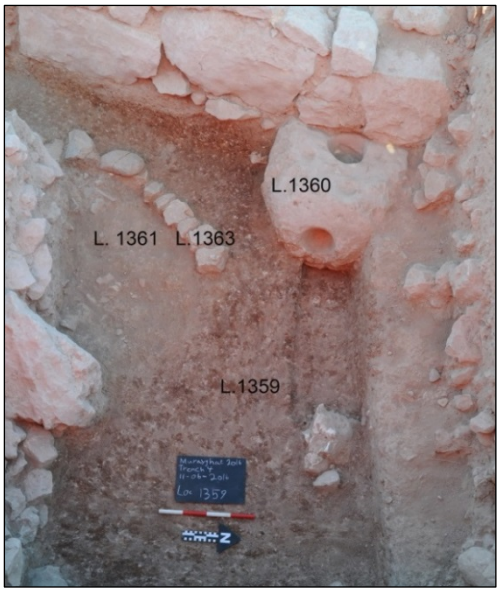


Figure 15: Test trench in trench 4 with "post-hole" (L.1360), circular stone line (L.1363) and natural soil L. 1359.

At the SW-corner of the test-trench the yellow, compact clayish soil (L.1361) formed a crescent, that was actually bordered by a single row of relatively small stones (L.1363), dividing this locus from L. 1359 (fig. 15).

The large double-faced Wall 1 (L.1307) is made of mostly large natural boulders and a few squared blocks with a smaller rubble core. In the eastern face of the wall, which is the only face exposed so far, there is mostly only one course remaining, though in places there are two courses. Interestingly, this east face is quite straight and relatively flat-faced (fig. 16), as if stones had been chosen carefully because this face of the wall was intended to be visible. In contrast, the top of the west face being just visible, is not very straight and there does not seem to be any attempt to create a flat face. Only one long stone stretches across the whole width of the wall, otherwise it is a double-faced wall. There are small stones between the boulders, and presumably some sort of mud mortar to fill the gaps.

Figure 16: East face of Wall 1 in Trench 4

In trench 4.2. (the extension to the S) several fill layers, very similar to those in the test-trench, grey with many stones, were excavated before the same hard red material with white flecks (L. 1357) was encountered. In the SE corner of trench 4.2. might have been a pit with ashy filling, which was very difficult to define in size and position. Just at the edge between trench 4 and 4.2. was a 1.3 m long orthostat (L.1346) lying next to the eastern side of wall 1, being supported in place by small wedging stones (L.1347), set on crumbly material (L.1355). The single large stone might have been part of a once larger wall that was destroyed by the modern bulldozing activities.

The stratigraphical situation on trench 4 is as follows:

Phase 1: The hard red, white flecked as well as the orange/brown material appear natural soils, although the orange material is in clear connection with the quarter-circle of small stones (L. (L.1363), which must be the oldest construction in the trench so far.

Phase 2: Very close, possibly contemporary is the setting of the boulder with two holes ((L.1360) underneath wall 1. The boulder seems out of context, so it would be advantageous to find the original context. Both of these phases date most likely to the EBA.

Phase 3: Wall 1 (L.1307).

Phase 4: Single orthostat (L.1346) running against Wall 1. The crust (L.1343) seemed to run against the stone.

Phase 5: Several fill layers (possibly created by flooding) with different amounts of smallish stones in them. All of them covered with a thin, multi-layer crust ("pond-crust"), which is very uneven and broken in many places. This might have been created by standing water (or by several incidents of standing water, each of short duration). These layers are often mixed MBA and EBA.

Phase 6: Wall and crust are overlaid by several more fill layers and an orthostat wall (L.1334) in the northwest corner of the trench (clearly on top of L. 1330= crust).

Phase 7: Abandonment and later bulldozing.

Trench 6 (T46) was briefly re-opened to finalize the excavation of the dolmen (L.1205). The stone slab on the floor was removed. The loci 1214-1218 were behind and underneath the floor stone and all contained Early Bronze Age material (disturbed). The floor stone sat very tight between the two side slabs. The side slabs were not cut on their standing side, nor was there a cut on the ground, they were held in place by smaller stones wedged underneath (fig. 17).

Figure 17: Side slab of dolmen L. 1205 with smaller wedging stones underneath.

Survey

The systematic survey of the surrounding areas concentrated on area 4, but also included features in other areas. The areas were divided into fields (loci) where the whole surface was systematically surveyed. Other loci recorded included single structures (such as dolmens, standing stones, tombs, unclear structures). A new Area 8 was defined this year.

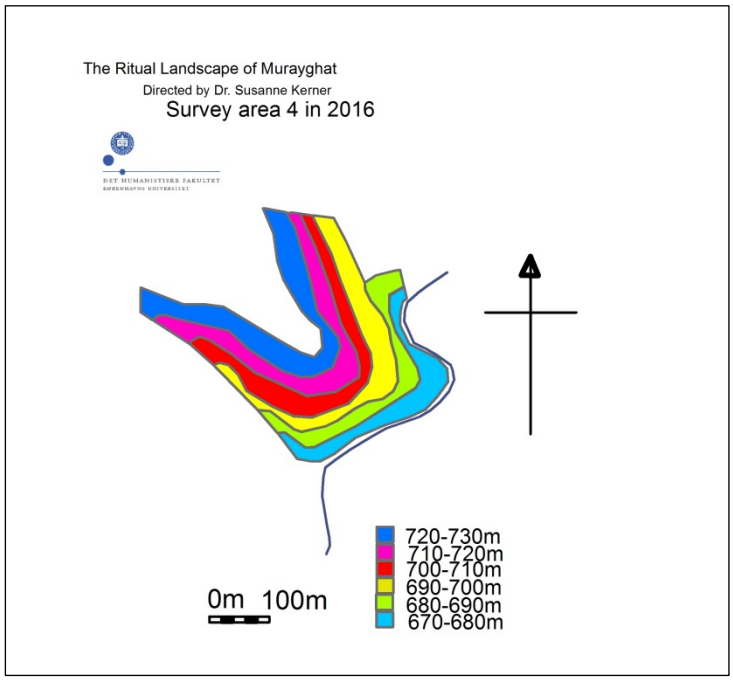


Figure 18: Terraces in Area 4

Area 4 is on the northern hill west of the central knoll of ca. 10 ha (fig. 1). The area is demarked by Wadi Murayghat in the east (towards area 1), by two side wadis running west-east into the Wadi Murayghat to the north and south. The western limit is west of the hilltop and not finally marked yet. Area 4 can be divided into a number of geographical-geological zones: a ploughed field at the bottom of the eastern slope and a steep slope toward the SW along the main wadi, another steep slope to the northern as well as the southern side wadis. The lower parts of the steep slopes are only partly covered with soil, from which the steep bedrock

layer rises up as a cliff (partly up to ca. 10 – 15 m) to the lowest rock terrace at mid-slope. There are seven of these rock terraces forming the slope up to the hilltop. The fields are usually arranged along these geographical formations and the dolmen are lying along the terraces (fig. 18 and 19).

Figure 19: Dolmen along one of the terraces

The dolmen found in area 4 are mostly of type A2 (a platform/floor slab, on each side one side stone/orthostates and a capstone. Most slabs (side, floor and roof) are better smoothed on the inside of the dolmen (fig. 20) than the outside, while the outside is weathered (see fig. 19). The floor-slab as well as the blocking slabs at the entrances are much smaller than the orthostats at the side and the capstones. The floor-stones seem to be carefully chosen, since they fit very well in between the vertical slabs/orthostats.

Figure 20: Inside view of a dolmen

Several small ancient quarries have been documented in area 4, they are usually in the direct vicinity of a dolmen and indicate by their shape that the dolmen slabs might come directly from them (fig. 21).

Area 5 is also to the west of the central site (fig. 1), forming the southern hill. It is limited by the Wadi Murayghat to the east, the small side wadi dividing area 4 and 5 to the north and the quarry to the south. Most parts of area 5 have been surveyed and documented before, but two more stone structures have been documented in 2016. A tumulus (L. 5008) that had been documented in 2015 appeared to be re-robbed this year (fig. 22). It had most likely contained burial(s) and a few grave goods could still be picked up.

Figure 21: Quarry of dolmen slabs

Figure 22: Robbed tumulus

Area **8** is a hill with a steep slope rising northwest of Wadi Murayghat (and a further tributary) and Area 4, west of Area 3 and the northern quarry. The hill forms a plateau and ends in the highest peak in the northern region of the Murayghat landscape with about 774 m a.s. On top of Area 8 are structures, including a tower, which most likely date to the Late Antique period.

The team has counted/registered 122 possible dolmens, of which 36 dolmens are complete and "in situ" or only very slightly disturbed, while the rest of them are collapsed, but can quite certainly dolmen. Other stone features cannot always be identified with certainty. The largest number of complete dolmen have been found in Area 4 (fig. 1), and here particularly in the southern part close to the small side wadi towards Area 5.

Material

The archaeological material collected consists of lithic, ceramic, basalt items and a few glass items (see appendix). The amount of animal bones is very limited so far and the different soil samples have not been analysed yet.

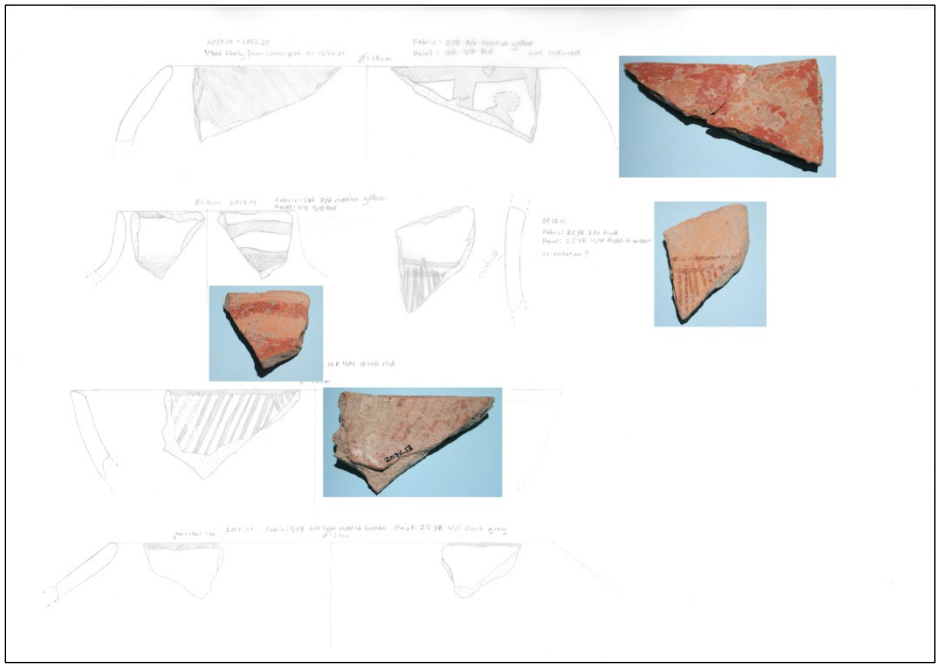


Figure 23: Decorated EBA pottery

Pottery

The ceramics analysis dealt with over 16400 pieces of pottery (since 2014). The pottery from areas 3 and 4 is often from the later periods (Classic, Islamic pottery), but also from earlier periods. The material from the survey on the central knoll (area 1) consists mostly of very small fragments, making the dating rather difficult. It contains a mix of Late Chalcolithic, Early Bronze and Middle Bronze Age material.

The excavated trenches have in most fill layers MBA pottery, particularly the already described cooking ware and a finer, speckled ware appearing predominantly in jars with large not very high necks. The lower levels, connected to the earliest walls, in trench 3 and 4 have more EBA type vessels. The fragments are again rather small, making the identification difficult. The EBA types include hole-mouth-jars. These have different kinds of decoration, such as pie crust rims or finger impressed marks running around the orifice of the vessel a few centimetres below the rim. Different kinds of ledge handles are present ranging in size from large to very small (i.e. purely decorative) with different kinds of decoration (such as scalloping along the edge of the handle or impressed marks above or below the handle). Small fine bowls in an assortment of different wares are represented in the supposed EBA material, some of those with painted decoration (fig. 23).

Stone tools

From all squares in Area 1 (survey) basalt fragments have been reported, which are mostly too small to be analysed further. Numeorus groundstone tools, more fragments of basalt bowls (one with incision) and broken stones with depressions (mortars?) have been found. Several hammerstones (fig. 24) have also been excavated.

Figure 24: Hammerstones

Figure 25: Basket imprint of plaster

Other material

One piece of plaster with the impressions of a basket was found (fig. 25, FN 8089). In trench 4 (test trench) several bitumen scraps and small pieces of ochre were excavated. The looted tumulus in Area 5 produced a number of beads, one made from carnelian, a group of flat, round, stones with large holes (fig. 26). The metal axe (FN 2875) excavated in 2015 and on loan for conservation has now been treated in the German Bergbau-Museum (fig. 27). Compared with last year's report (fig. 27) the improvement is obvious.

Figure 26: Beads

Figure 27: copper axe (found 2015)

Bibliography

Conder, Claude R.
1889 *The Survey of Eastern Palestine.* London: Palestine Exploration Fund.

Harrison, T. P.
1997 Shifting Patterns of Settlement in the Highlands of Central Jordan during the Early Bronze Age. *BASOR* 306,1–37.

Harrison, Timothy & Savage, Stephen H.
2003 Settlement Heterogeneity and Multivariate Craft Production in the Early Bronze Age Southern Levant. *Journal of Mediterranean Archaeology* 16, 33–57.

Irby, C. L., & Mangles, J.
1985 *Travels in Egypt and Nubia, Syria and Asia Minor during the Years 1817 & 1818.* London: Darf.

Mallon, A., Koeppel, R. & Neuville, R.
1934 *Teleilat Ghassul I: Compte rendu des fouilles de l'Institut biblique pontifical*. Rome: Pontifical Biblical Institute.

Savage, Stephen H.
2010 Jordan's Stonehenge: The Endangered Chalcolithic/Early Bronze Age Site at al-Murayghât–Hajr al-Mansûb. *Near Eastern Archaeology* 73.1, 32–46.

Savage, S. H., & Rollefson, G.
2001 The Moab Archaeological Resource Survey: Some Results from the 2000 Field Season. *Annual of the Department of Antiquities of Jordan* 45, 217–36.

Appendix (colour coding geo-physical survey)

Colour	Magnetic anomaly type	Amplitudes	Main type of magnetisation	Related structures
	Distinct linear negative anomalies of moderate amplitudes	-1... -10 nT	Induced, diamagnetism	Walls, foundations, stone settings (of archaeological and possibly of modern origin)
	Distinct circular and oval positive anomalies of moderate amplitudes	+3... +10 nT	Predominantly remanent	Fillings of pits possibly containing scattered construction debris enriched with burnt daub and ceramic fragments

	Mainly elongated distinct positive anomalies (forming circular structures) of moderate amplitudes	+3... +10 nT	Both, remanent and induced	Organically enriched fillings of ditches and backfills of construction debris
	- Linear negative anomalies - undefined anomalies: slightly positive or negative	-5... -20 nT < +10 nT < -10 nT	- Induced, diamagnetism - Unclear	- Bedrock, outcropping or close to the surface (limestone) - Fillings of cracks, ditches, former wadi courses, enriched with organic material or bearing erosional limestone material
	Not clearly defined, rather weak magnetic anomalies	-	Unclear	Stone heaps (piles of loose limestone rocks)
	- Clearly defined dipole anomalies - Weak dipole anomalies	>±50 nT ±10... ±30 nT	- Induced - Induced	- Modern objects such as iron poles, scrap metal, other ferromagnetic sources - Smaller or deeper ferromagnetic sources