

PRELIMINARY REPORT ON 2022 SEASON OF EXCAVATIONS AT KHIRBAT AṢ ṢAFRĀ

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Introduction¹

Andrews University conducted its fourth season of archaeological excavations at KHirbat Aṣ Ṣafrā between May 11, and June 7, 2022. The excavations were directed by Paul Gregor of the Institute of Archaeology at Andrews University, with Robert Bates, Constance Gane and Trisha Broy as Field Supervisors. About thirty-seven faculty, students and volunteers

1. We wish to thank HE Fadi al-Balawi, Director General, and his staff at the Department of Antiquities of Jordan for their support of the project during this season. Also, we would like to express our appreciation to the Director of the Madaba Antiquities Directorate, of the Department of Antiquities of Jordan. In addition, we would like to thank Pearce Paul Creasman and Helen Malko of the America Center of Oriental Research (ACOR) for their usual assistance. Furthermore, we appreciate the help of Abdullah al Lababdah and Yasser Hashem Salem of the Department of Antiquities of Jordan, who served as our department representatives in 2022 season. Finally, we wish to thank Qutaiba Dasouqi for creating an GIS shapefile with coordinate information for the site, using AutoCad.

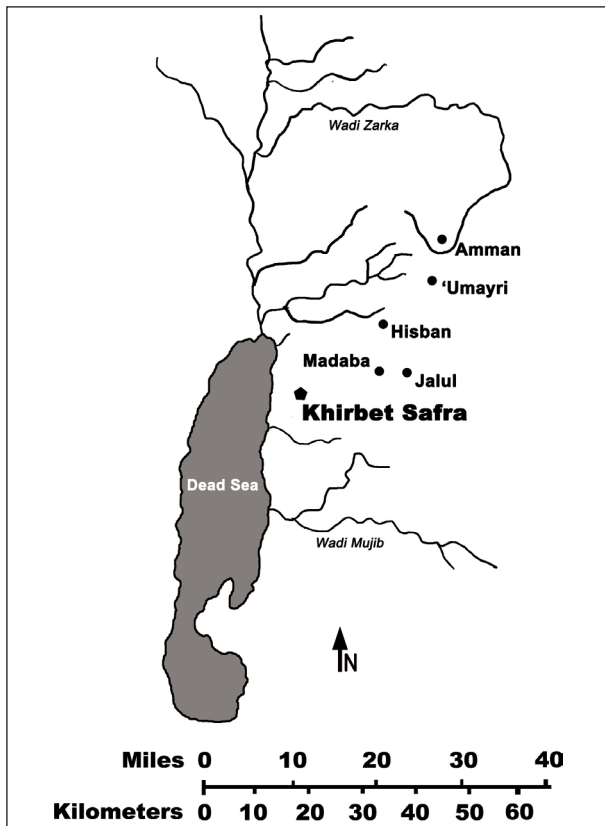
Staff for the 2022 season included Paul Z. Gregor as director. Elizabeth Emswiler served as object registrar, with the help of Stefanie Elkins-Bates, Jeffrey Hudon, Daliyah Hudon, and Nathanael Hudon. Trisha Broy served as pottery registrar. Robert Bates served as technical advisor, dealing with the electronic database and iPad issues. The Square supervisors for Field A were Roy Gane, Jeffrey Hudon, Oliver Glanz, David Jones, Kaitlyn Satelmayer, and Kiersten Zeike; for Field C they were Hala Ajilat, Eva Glazer, Aleksandra Jovanovic, and Charis Denton, and for Field E they were Elizabeth Emswiler, Arthur Viola, and Christian Teal. Volunteers included Daliyah Hudon, Nathanael Hudon, Melek Jones, Warren Johns, Dolores Antunica, Dalibor Jovanovic, Katherine Hesler, John Hargy, Scott Hill, Mairi Broy, Steve Huey, Sussie Stanley, David Johnson, Holly Singletary, Seo Dongbin, Hugo Villalobos, Soomin Kim, Jong Kim, John Reeve, and Teresa Reeve.

were joined by ten Jordanian workers during the excavations this season.

Since 1992, Andrews University has been conducting excavations in Central Jordan as part of the Madaba Plains Project, at the site of Tall Jalūl, near Mādabā, with Phase I excavations at the site, ending in 2012. More recently, excavations are being carried out at of the site of KHirbat Aṣ Ṣafrā. A surface survey was conducted in the summer of 2017, with physical excavations at the site, in 2018, 2019, and 2021, followed by a fourth season of excavations in 2022. For background information on Tall Jalūl, the Jalūl Islamic Village, and the history of the excavations at the site, see Gane *et al.* 2010; Gregor 2009; Gregor and Gregor 2009, 2010; Gregor *et al.* 2011, 2012, 2017; Herr *et al.* 1994, 1996, 1997; Younker *et al.* 1993, 1996, 1997, 2007; and 2009; Younker, Gane and Shqour 2007; Younker and Merling 2000; and Younker and Shqour 2008. For a report on the KHirbat Aṣ Ṣafrā Survey, in 2017, and a history of earlier research in the immediate region, see Gregor 2021. For a preliminary report on the first season of excavations at KHirbat Aṣ Ṣafrā, in 2018, see Gregor *et al.* 2021; on the second season of excavations in 2019, see Gregor, Ray and Moody, 2023: 233-239, and on the third season of excavations in 2021, *cf.* Gregor *et al.* 2023: 241-250.

Results of the 2022 Season at KHirbat Aṣ Ṣafrā

KHirbat Aṣ Ṣafrā is an approximately 2.6-acre site, located southwest of Mādabā, overlooking the Dead Sea (**Fig. 1**), with a casemate



1. Regional Map.

wall system around the perimeter. Excavations this season took place in three Fields (A, C, and E). Each excavation square was opened, using a Total Station on a grid of 6.0×6.0 m squares laid over a topographic map created by the Department of Antiquities surveyors during the survey season, in 2017 (**Fig. 2**).

Fortification System

Parts of the casemate wall system, which dates to the early Iron Age I, have been exposed in four of the excavation fields (A, B, C, and D) on the site. The casemate wall is divided into broad room compartments, which are integrated into rectangular-shaped houses, built up against it. The walls of these buildings are freestanding, built directly upon bedrock, which is uneven, with various-shaped crevices. A level surface for building the walls and laying the earliest floors was created by filling in these crevices with a densely packed, sterile, brick-like material. The site is entered via a gate structure at its northern end, also dating to the early Iron Age I (**Fig. 3**).²

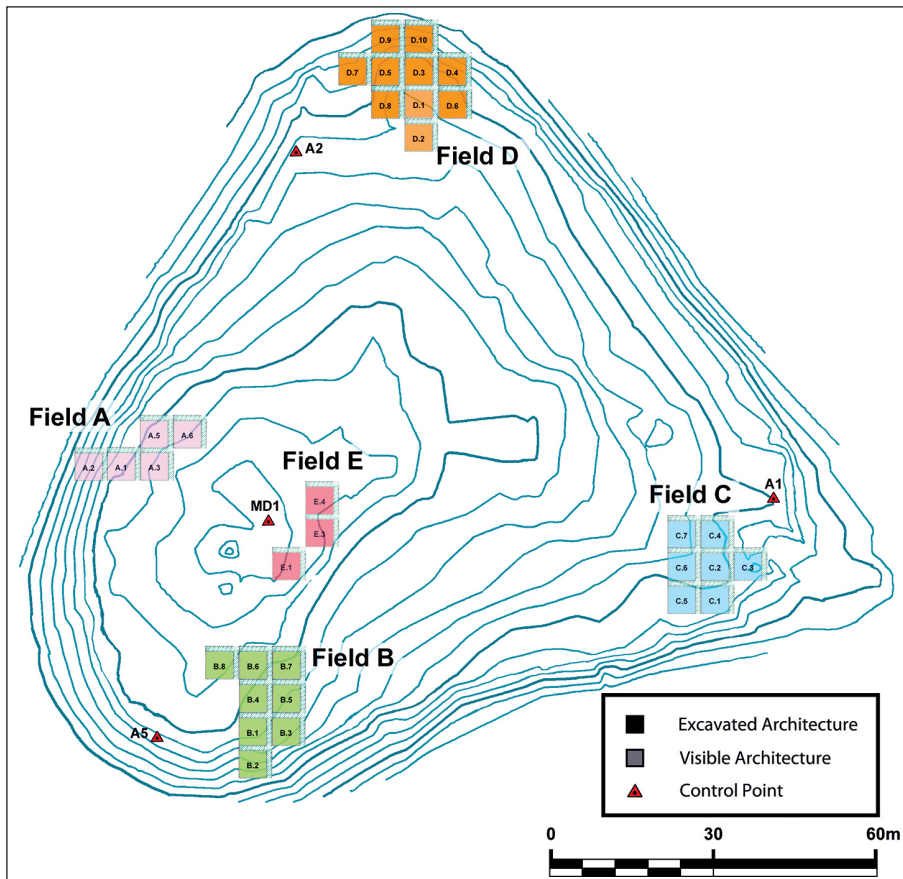
2. For a more in-depth description of the casemate wall system and the gate structure, see Gregor *et al.* 2021, Gregor, Ray, and Moody 2023: 233-239, and Gregor *et al.* 2023: 241-250,

Field A

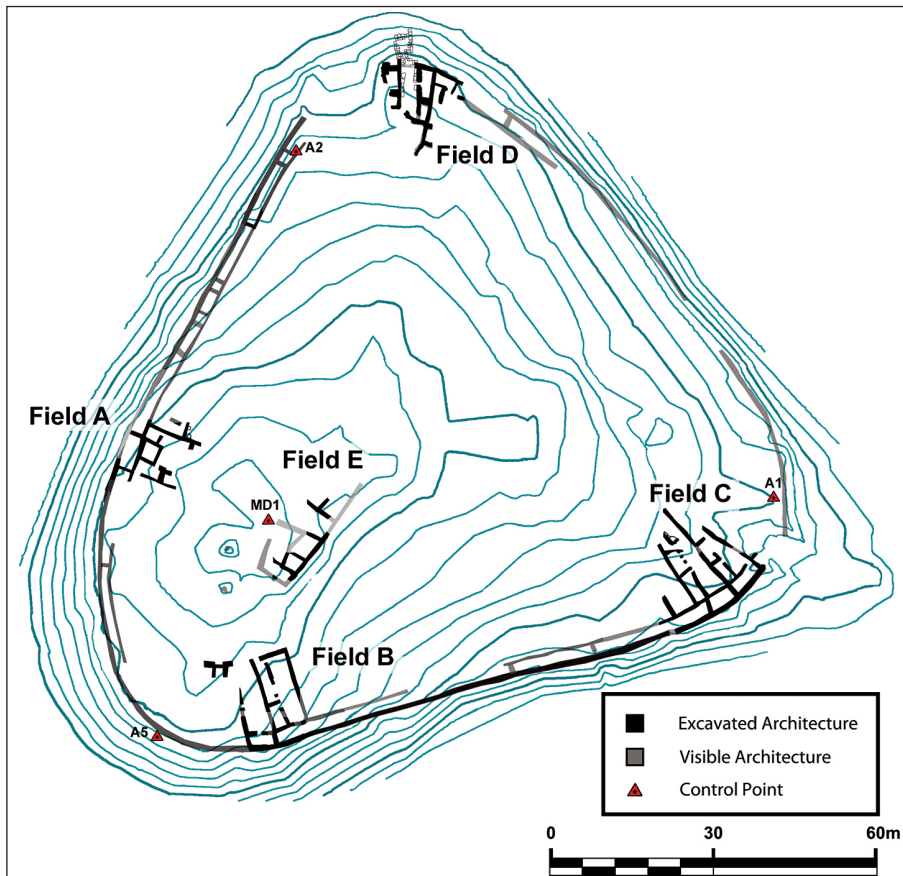
Field A lies on the western edge of the site (**Fig. 4**) and was supervised by Constance Gane. Excavation in this field was began in 2018 and focused on Squares A1 and A3. After a hiatus of two seasons, two new squares (A5, A6) were opened in 2022. Bedrock was reached in both squares. Based on the findings from 2018, which were confirmed by this season's results, the initial occupation of this part of the site began in Early Iron Age I and continued into Iron Age II. Followed by a long period of abandonment, it was then reoccupied in the Early Byzantine period.

The casemate fortification wall system uncovered in Square A1 in 2018, was built directly upon bedrock. Uneven portions of the bedrock were leveled using a densely packed, red-bricky material. The outer wall (A1:4) is two-rows thick, built with large field stones. The inner wall (A1:3), which was only partially exposed, is one row thick. A one row thick, east-west cross wall (A1:5) connected the outer and inner casemate walls, created two rooms, without a discernable doorway between them. Early Iron Age I ceramics were found directly upon the bedrock (A1:14, 15), upon which beaten-earth surfaces (A1:9, 11) were found in both rooms, with ceramics dating to early Iron Age I. Numerous animal bones, stone grinders and pestles were also found as well as large pockets of ash. Above this surface in both rooms is a mix of Iron Age I, Iron Age II, and Byzantine-period ceramics among what appears to be a mudbrick superstructure collapse, indicating a violent disruption, probably by an earthquake.

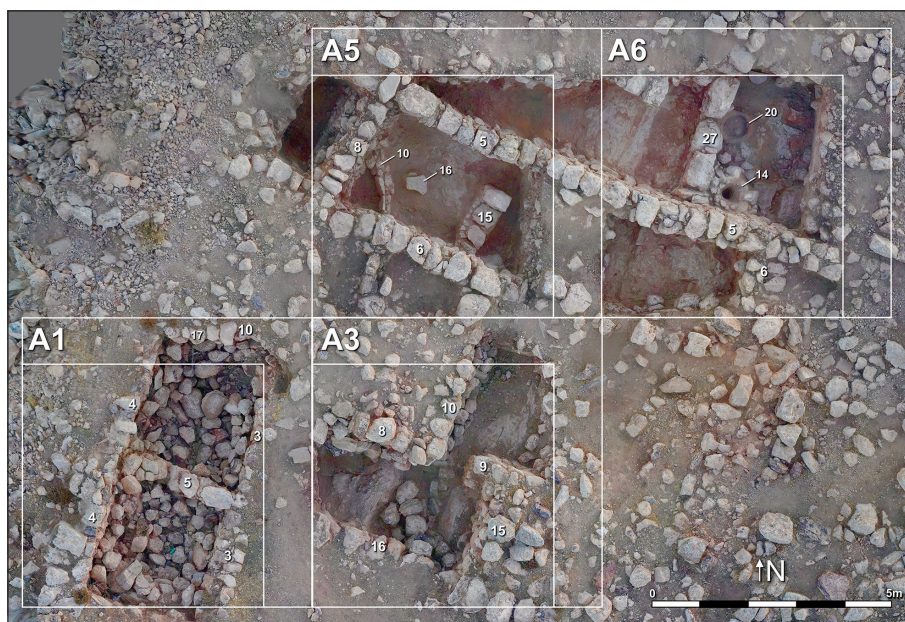
Square A3, provided a clearer occupational history. Approximately half of the square was excavated in 2018. At least three phases of occupation are discernable in the two, partially excavated rooms. A doorway provided access between the rooms. Once again, red-bricky material (A3:24) was used to even out the bedrock surface. In the southern room, Early Iron Age I ceramic remains were found in this material, below a plaster floor (A3:21). Early Iron Age I sherds were also found embedded in the plaster floor providing it a reliable date. Above this level, a thick (up to 0.50 m) ashy lens covered most of the two rooms, indicating



2. Topographic Map of KHirbat Aṣ Ṣafrā with Excavation Fields.



3. Topographic Map of KHirbat Aṣ Ṣafrā, with excavated and visible architecture.



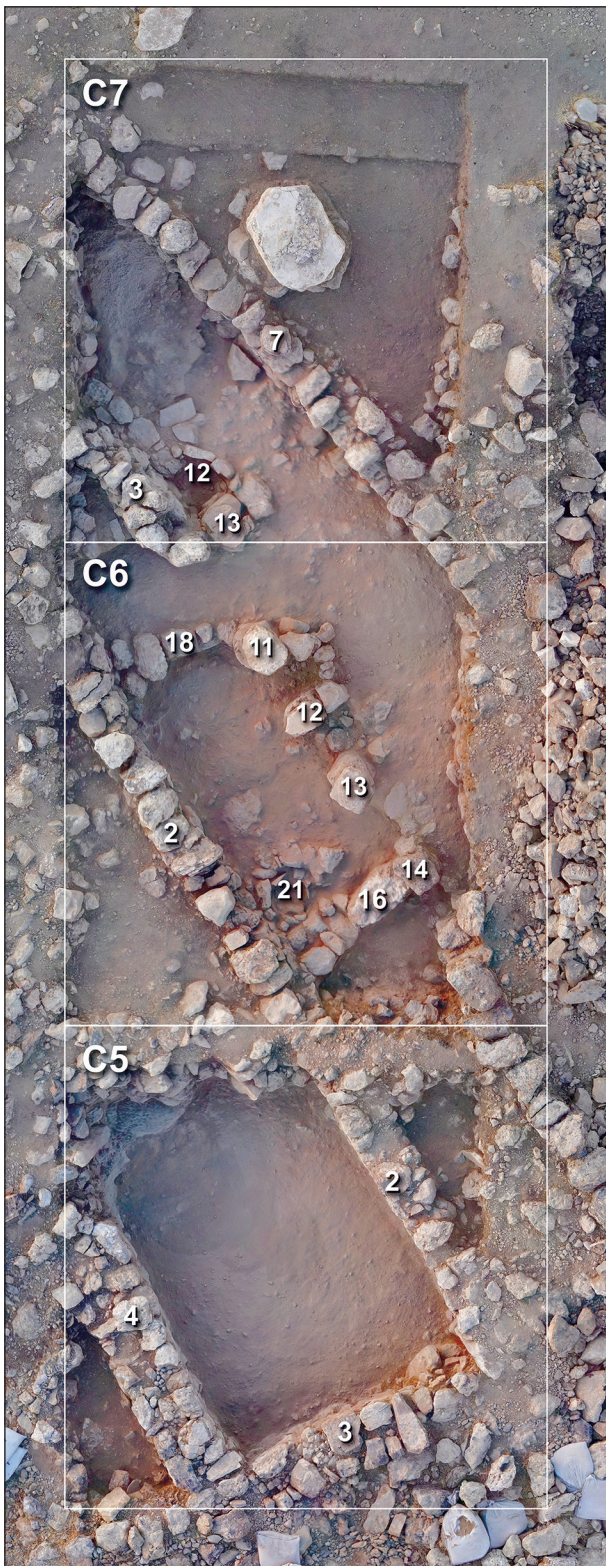
4. Field A.

a conflagration of the Iron Age I habitation, including the tops of its walls (A3:25, 27). Post-occupational debris suggests a period of abandonment. Above the debris was a beaten earth surface (A3:17) that dates to the Byzantine period. At this time, substantial Byzantine walls (A3:8, 9, 10) and probably Walls A3:15, and 16 were built; with at least one (A3:8) built upon an earlier Iron Age I wall (A3:25). A later beaten earth surface (A3:11) also dates to the Byzantine period.

During the 2022 excavation season, two new squares (A5, A6) were opened. A substantial single-row, 4-5 course wall (A5:5=A6:5), went through both squares, over 10.0 m in length. To the north of this wall there is a large, open (western) room, running through Square A5 and part of A6, its exact dimensions unknown at this point. Just above bedrock (A6:13) and the typical red-bricky material is a hard-packed earth surface (A5:27=A6:18). The date of this surface, based on the abundant ceramic finds, is Early Iron Age I. Numerous grinders, pounders and other stone household implements were found in this room. Above this surface, was post-occupational debris covered by a second Iron Age I hard-packed earth surface (A5:21). As elsewhere in the Field, this surface was disturbed by seismic activity, with mixed debris and tumble from the surrounding walls, including a mixture of Early and Late Iron Age I and Byzantine-period ceramics.

In the eastern half of Square A6 there is a north-south two-phased wall. The first course of massive field stones (A6:27), dating to Iron Age I, is topped by another course (A6:7), dating to the Byzantine period. East of this wall there are three surfaces, all dating to Iron Age I, with the earliest dating to Early Iron Age I. Two *tabuns* (A6:14 and A6:20) were found against the east face of Wall A6:27. These installations were associated with a smooth and level plaster floor (A6:23), only portions of which are preserved. The pottery found associated with the plastered floor dates to Early Iron Age I, the same as the plaster floor in Square 3. Above this floor is a shallow lens of debris and a heavy deposit of ash, topped by a second Iron Age I surface (A6:22). A third Iron Age I surface (A6:16) of hard-packed earth represents the final discernable occupation of this East Room.

An entirely different scenario is presented by the area occupied just south of Wall A5:5=A6:5. In Square A6, a hard-packed surface (A6:30) was found just above bedrock, above which was a thick post-occupational deposit that included ceramics from the Iron Age I and Byzantine periods. In Square A5, a large room is bound by walls on the north (A5:5), south (A5:6) and west (A5:8). Two surfaces were found in this room, both dating to the Byzantine period. The earliest surface is a hard-packed earth surface, upon which is a stone installation in the southwest corner (A5:10), next to what appears to be a



5. Field C: Squares excavated in 2022.

stone “table” (A5:16), and a *tall* central, stone pillar possibly connected with a single course wall (A5:15) that abuts the southern wall (A5:6) at the eastern end of the square. A relatively

thick post-occupational deposit covered this entire area. Later a second Byzantine-period hard-packed earth surface indicates another occupational level. Several worked stone beads were found, randomly distributed in the debris.

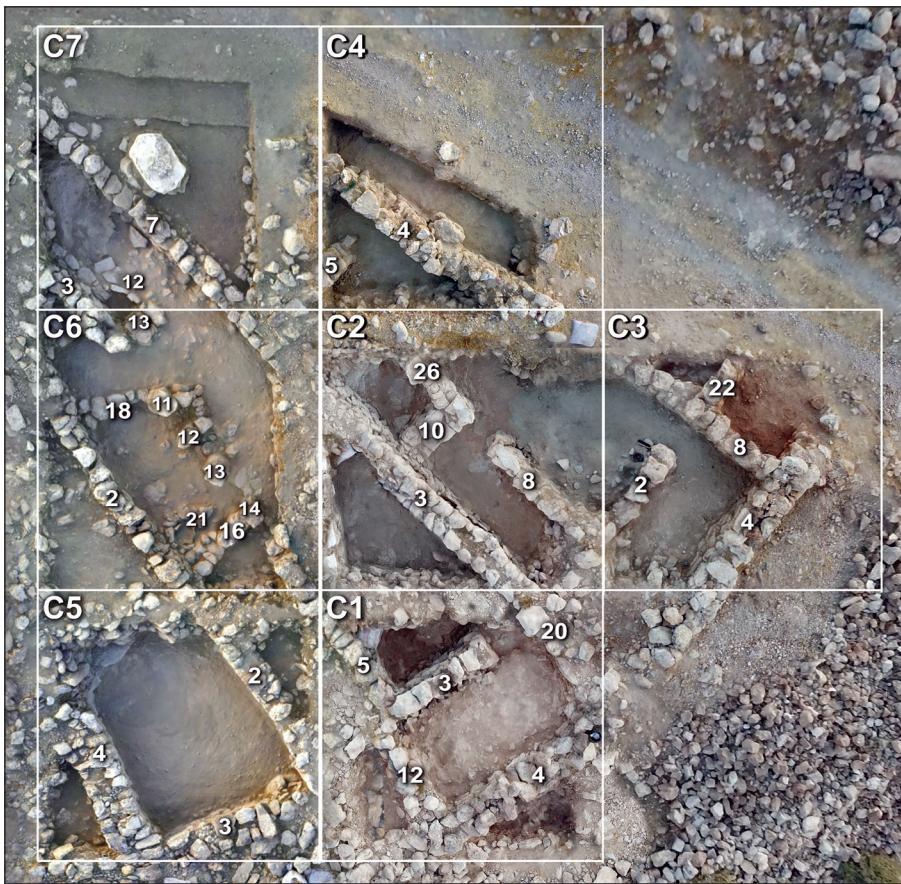
To understand the ephemeral western wall (A5:8), a 1.0×2.0m exploratory trench was excavated just west of it. The trench contained nothing but post-occupational debris, except at the very bottom, where an Early Iron Age I hard-packed earth surface was found, under which was only Early Iron Age I pottery. While the top of the western wall (A5:8), which is small and very poorly built, dates to the Byzantine period, it is built on top of an earlier Early Iron Age I wall (A5:32) that is much more substantial, and possibly the continuation of the inner casemate wall (A1:3) found in Square A1.

Field C

In Field C, on the eastern edge of the site (Figs. 5 and 6), three new squares (C5, C6, C7) were opened this season, with bedrock reached in Squares C5 and C7, while the earliest floor in Square C6 was left intact.

Supervised by Trisha Broy, excavation in Field C during the 2018 and 2021 seasons focused on portions of three buildings incorporated into the fortification system (Fig. 6). These buildings each have a rear room, formed by the casemate walls. The two-rowed outer casemate wall (C1:4=C3:4), consisting of five extant courses, is *ca.* 90cm wide, and built directly on bedrock. It was leveled by the original builders, with a red-bricky material with gravel inclusions, and is composed of unworked field stones varying in size from 40-60cm in width. The inner fortification wall (C1:3=C3:2=C5:3) is a single row wall, also built directly on prepared bedrock, and is *ca.* 55cm wide, composed of unworked field stones 40-60cm in width. Single row walls (C1:12, 20 and C3:8) divide the space between the casemate walls into rear rooms that extend into the associated building via doorways. All the walls unearthed in Field C so far are made of boulder and chink construction with unhewn field stones. These stones are primarily made of limestone with a small percentage of chert stones.

In the 2022 season, operations in Field C



6. Field C.

concentrated on exposing the interior rooms as well as further illuminating the building's relationship to adjacent structures. A new structure, designated Building 4, was opened in Square C5, southwest of Building 1. The two buildings, share an exterior wall (C5:2, C6:2) which runs south-east to north-west. It is a single-row wall with four extant courses. No doorways were found between the two buildings throughout its excavated length. Two other walls were excavated in Building 4. These are the inner casemate wall (C5:3), running perpendicular to Wall C5:2, and one of the building's interior walls (C5:4), parallel to Wall C5:2 from Wall C5:3, to the north-west, before disappearing into the west balk. These three walls characterized the only room excavated in Building 4 this season. The first occupation surface (C5:10=C5:11) was covered with a thick ash layer (C5:9), rich in food preparation implements. Among them was a large ovoid stone bowl, measuring 30cm in length.

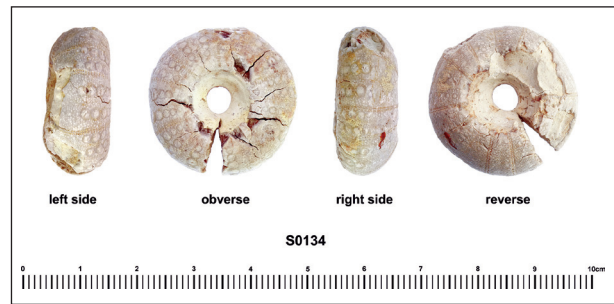
On the second occupation surface (C5:8), a large amount of wall tumble and fill, was found, indicative of destruction.

The architecture of Building 1 is more complex and was excavated in both Squares C6 and C7 this season. The building's south-western exterior wall is shared with Building 4 as described above. More of its north-eastern exterior wall (C1:20, C2:3, and C7:7) was exposed in Square C7 this season extending from Squares C1 and 2. The interior space of the building consists of two long rooms divided down their length by a pillared wall (C1:5, C6:11-14, and C7:3). This wall is segmented in the middle by a series of four pillars (C6:11-14). The northern (C6:11) and southernmost (C6:14) of these pillars are connected to low, single-row walls (C6:16, and 18) that further divide the south-western long room (Room B). During a second phase of Building 1, Wall C6:10) was built to connect the two northern pillars (C6:11-12), further enclosing this subdivided space. The south-western long room disappears into the western balk of C6 and C7. The north-eastern long room of Building 1 (Room C) has no exposed divisions and continues along the full length of the building. At its northern end, a small wall (C7:13) extends from the central

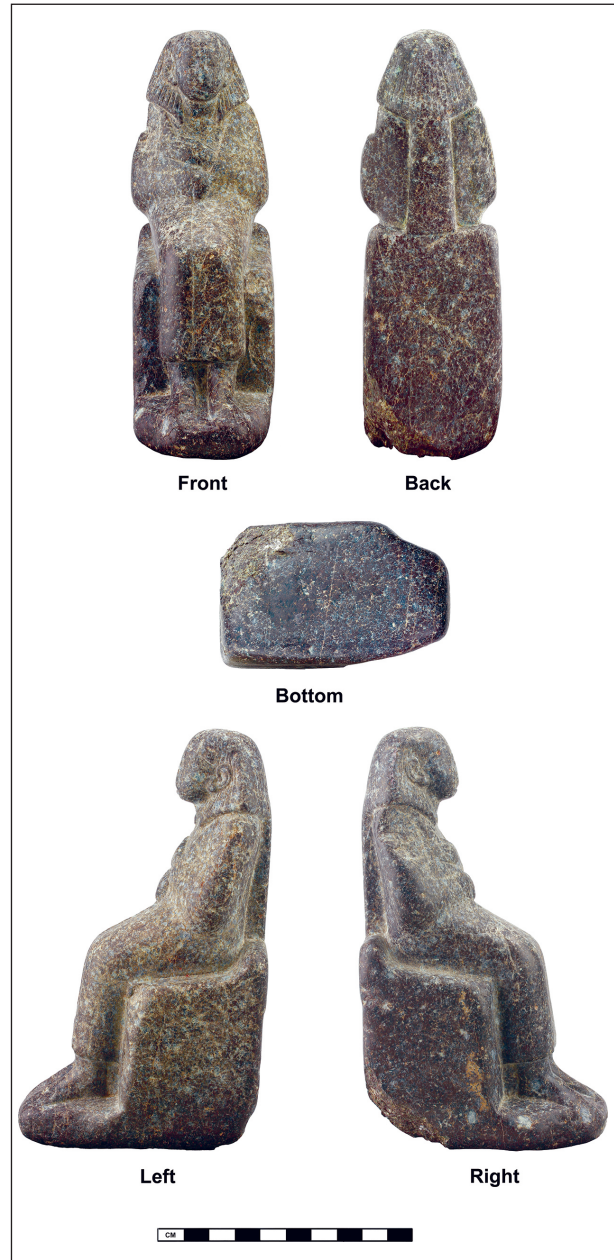
dividing wall toward the north-eastern exterior wall (C1:20, C2:3, and C7:7), forming a door.

Two use layers were discovered this season, one dating to the early Iron Age I and the later to the early Iron Age II. The first occupation layer consisted of bedrock with leveling fill in the low areas of the bedrock to create an even surface. In Building 1, this floor (C6:22=C7:10=C7:11) is consistently covered with an ash layer (C6:15=C6:17=C7:6), sealed under the second occupation floor (C6:8=C6:9=C7:5). The early Iron Age 1 floor in Building 1 incorporated two installations. In the south-western corner of Room B is a *tabun* (C6:21), with several large body sherds incorporated into its stone and brick construction. In Room C a semi-circular installation (C7:12) was uncovered in the space between and against Walls C7:3, and C7:13, that subdivide Rooms B and C. While the exact function of this feature is unknown, it is surrounded by a partial pavement (C7:11), contemporaneous with the original construction of the walls. The interior of the installation (C7:12) itself, is also plastered and may have been used to contain a small pool of water. The ash layer on the early Iron Age 1 floor in Building 1 is rich food preparation with implements, including querns, loaf-shaped grinders, pounders, pestles and mortars. Several additional objects of interest were found in this layer, in the space to the north of the door formed by C7:13 and the north-eastern exterior wall (C1:20, C2:3, C7:7). These included a fossilized sea urchin pendant (**Fig. 7**; S0134), a bronze needle, and an Egyptian figurine (**Fig. 8**, S0148), portraying a seated, cloaked male figure. The Egyptian figure underwent extensive conservation by Stefanie Elkins and Robert Bates to remove centuries of soil and calcrite but no writing was found on the object identifying the name of the figure.

Above the second occupation surface, wall tumble and fill continue to indicate destruction from an earthquake in early Iron Age II. Found in this debris (C6:5, C6:6, C6:7, C7:2, C7:4, C7:8) were more food preparation implements including a large, rectangular stone bowl (32cm in length), possibly interpreted as a trough or mortar, found in the northwestern corner of Square C7.



7. Fossilized Sea Urchin Pendant (Object S0134). Photo by Robert D. Bates.



8. Egyptian Seated Statue (Object S0148). Preliminary examination suggests that the statue dates to the late Middle Kingdom Egypt, possibly during the 13th Dynasty. Photo by Robert D. Bates.

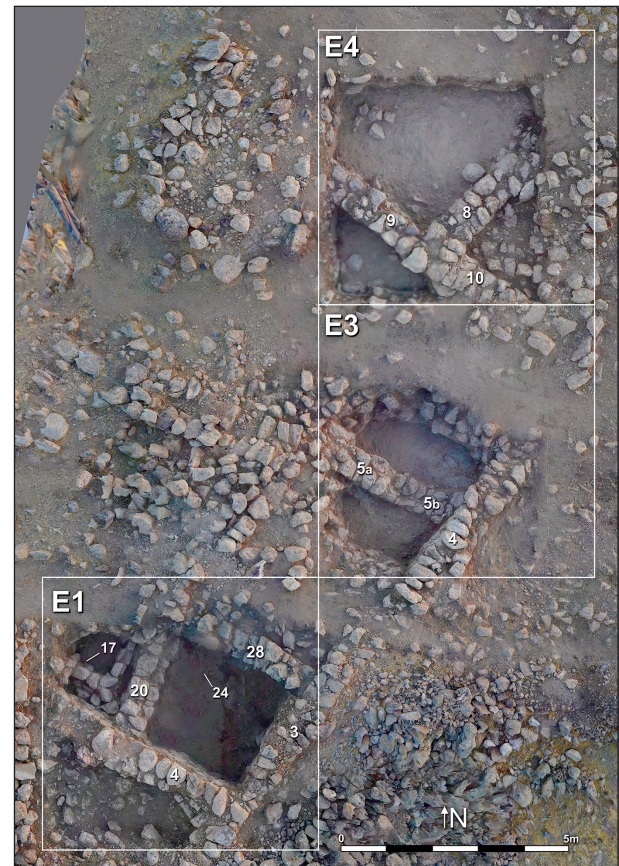
Field E

Excavations in Field E (**Fig. 9**) were supervised by Robert Bates, and in the 2022 season two new squares (E3 and E4) were opened, with work continuing in Square E1 from the previous season. Field E was opened in 2021 at the highest point of the site, approximately six meters south of its main control point (MD1). This area was chosen because usually the highest elevations of a site are reserved for cultic places and important buildings like administrative centers and elite living quarters. Squares E1 and E3 were also chosen specifically because they share a 35.0m wall that stretches north to south along the ridge.

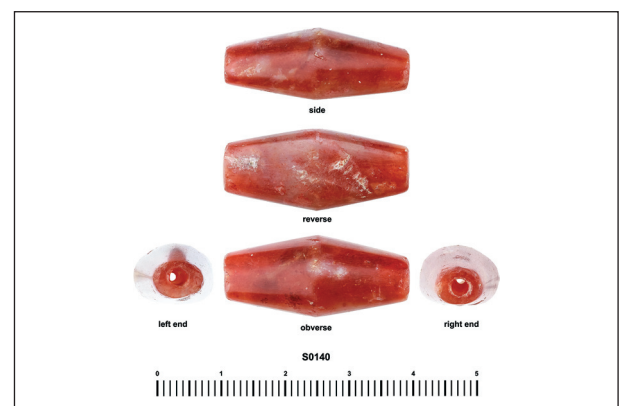
Square E1, consisting of a narrow building, *ca.* 1.8×4.6m, is divided into two rooms, and was opened briefly this season to remove the northern part of the east balk which obscured the relationship between the northern (E1:28) and eastern (E1:3) walls. A small triangular-shaped area was removed, systematically connecting each soil layer with those found in the 2021 season. The floor from the earliest occupation (dating to late Iron Age I) was exposed and a small utilitarian object was discovered. The eight-course eastern wall (E1:3) is *ca.* 1.4-1.5m high and is abutted by the northern wall (E1:28), which is *ca.* 1.3m high, with six courses. Both walls consist of two rows of partially faced hard limestone boulders between 0.30-0.45×0.20-0.30m in size, built on bedrock.

Excavations in Square E3 focused on its southern half, where the eastern wall (E1:3) of Square E1 continues northward, passing through the eastern side of the square. The east wall (E3:4) in Square E3 was built during the earliest phase of occupation and continued in use until a final wall collapse resulted in its abandonment. Wall E1:3=E3:4 runs north/south and was built on bedrock, using hard packed clay and small cobbles to fill in the unevenness of the surface. It is oriented at 35 degrees northeast and made of two rows of partially faced hard limestone boulders, ranging between 0.30-0.45×0.20-0.30m in size. A surface (E3:13=14), consisting of hardpacked soil, with flat lying pottery, sealed against Walls E3:4 and 5b. Two objects were found on the floor including a large (2.92 cm) red carnelian barrel bead

(S0140; **Fig. 10**), and a basalt bowl or mortar (S0123; **Fig. 11**). During this early phase an east/west wall (E3:5b) abutted Wall E3:4, dividing the area into two living spaces (Rooms A and B), north and south of the wall respectively. Only a single foundation course of this wall was found. It was built on the bedrock (E03:18) with hard packed clay. The eastern portion of the wall (E3:5b) was removed during a later phase and sealed with a new floor (E3:11). In this later phase, the remaining portion of the



9. Field E.



10. Large Carnelian Barrel Bead (Object S0140). Photo by Robert D. Bates.

wall (E3:5a) was extended westward, *ca.* 10.0 m, into the currently unexcavated Square E2. It consists of two rows of partially faced hard limestone boulders, ranging from 0.20-0.30m in size. Unlike Wall E3:4, Wall E3:5a was not founded on bedrock, but rests on 0.25m of soil.

Square E4 is located north of Square E3 but is not connected to the main North/South wall (E1:3=E3:4) that passes through Squares E1 and E3. This square consists of three walls, dividing it into parts of three rooms. The main wall (E4:8) is 3.4m long and is oriented 45 degrees northeast. The secondary walls (E4:9 and E4:10) abut it and are oriented 49 degrees northwest and 125 degrees southeast, respectively. All three walls consist of two rows of 0.30-0.40m of unhewn partially faced hard limestone and chert boulders. The north faces of Walls E4:8 and 9 form part of Room A, on the north, which is the largest of the three, and consists of five hard packed floors (E4:11, 13, 14, 15 and 16), with flat lying pottery, one on top of the other, all dating to the Early Iron Age I. Room B, on the east, is outlined in part by Walls E4:8 and 10, and was filled with wall stones that had collapsed into the area. Room C, southwest of Walls E4:8 and 10, consists of a

single hardpacked floor (E4:20), sealed against the walls.

Preliminary Conclusions

The results from the first four seasons of excavation indicate that the first settlement at KHirbat Aṣ Safrā was established during early Iron Age I, possibly as early as the late 13th century BC. This settlement was at least partially destroyed by fire later in Iron Age I, reflected by thick ash layers throughout much of the site, as revealed in Fields A, C and D. Following this destruction, the site was reoccupied until sometime in the early in Iron Age II, when it was destroyed a second time, most likely by an earthquake. Some post-destruction squatter occupation following the earthquake is possible based on a few late Iron Age II sherds. There was then a hiatus at the site until the Byzantine period, at which time a significant building was built in Field A, as well as the reuse of nearby structures. Some pitting activities in Field B, and surface sherds found throughout each of the excavation fields also indicate occupation at that time.

The preliminary phasing of KHirbat Aṣ Safrā is as follows:

Phase	Period	Excavation Fields and Features
Occupational Phase 1	Byzantine Period	A structures, B pits, B, C, D, E sherds
Occupational Phase 2	Early Iron Age II	B, C, reused buildings, A, D sherds
Occupational Phase 3	Iron Age I	A, B, C, D, E, fortifications, and buildings



11. Small Basalt Bowl (Object S0123). Photo by Robert D. Bates.

As in the first three seasons, the excavations in 2022 yielded mostly small finds connected with agricultural and domestic functions. Of the 157 objects discovered this season, 86 were related to agricultural and domestic activities. In addition, 14 textile objects were also uncovered, with eight items of jewelry; mostly beads, seven recreational (gaming piece) artifacts, with only four (sling stones) related to warfare. Based on the ceramics and objects, found so far, it appears as though the site of KHirbat Aṣ Safrā generally represents a domestic settlement, with an emphasis on agriculture and some cottage industries. Notwithstanding, at least six of the artifacts, are Egyptian or Egyptian inspired, including the seal³, and scepter found in 2021, and more prominently, the seated Egyptian statue⁴ found this season, which suggests that KHirbat Aṣ Safrā played a more significant role in the region.

Flotation

While material culture is important for understanding the lives of ancient people, the focused activities performed in specific places within domestic locations **can provide another** window into aspects of their behavior. Soil samples from carefully selected **stratigraphic contexts** were again collected this season, in all three of the excavation fields (A, C, and E). These samples were run through floatation tanks, under controlled conditions, providing archaeobotanical evidence for which laboratory analysis and species identification should yield added insight into the micro-level activities of the daily life of the ancient people at the site. Unfortunately, our biotechnological analyst Annette Hansen was unable to be physically present on-site but was available for logistical help via email. Financial support for this part of the project was again provided by a Faculty Research Grant from Andrews University.

Logistics

Work on the digital form of the *locus* sheets of the Madaba Plains Project Field Manual has

continued to evolve, with new functionality for recording of botanical samples added by Robert Bates this season. The system uses FileMaker Pro software, and runs on the FileMaker Go App, on iPads. The data are backed up to a laptop computer at the end of each day. Progress shots and end-of-the-season photography were taken with a digital camera mounted on a Wonder Pole™ (a telescoping device with a camera mount on top), using a blue tooth connected mobile phone to activate the shutter, as well as 3D LiDAR digital photography taken on iPads. The numerous images are combined to create final 3D images of each square, using Metashape Photoscan Pro software by Robert Bates.

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3. The seal (Object S0085) is being studied separately by Trisha Broy, who will present the results in a separate venue.

4. Interestingly, this artifact is typical of Middle Kingdom Egypt statues, hundreds of years earlier than the early Iron Age I *in situ* context in which the artifact was found. This fact suggests the possibility that it was an heirloom brought to the site by a family connected with Egypt in some capacity.

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