

MEDITERRANEAN ARCHAEOLOGY

AUSTRALIAN AND NEW ZEALAND JOURNAL FOR THE
ARCHAEOLOGY OF THE MEDITERRANEAN WORLD

Vol. 34/35, 2021/2022



OFFICIAL JOURNAL OF THE
AUSTRALIAN ARCHAEOLOGICAL INSTITUTE AT ATHENS

MEDITERRANEAN ARCHAEOLOGY
Australian and New Zealand Journal for the Archaeology
of the Mediterranean World

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All articles (but not reports) published in *Mediterranean Archaeology* have been reviewed by at least two members of the Advisory Board.

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Mediterranean Archaeology is produced by

MEDITARCH, CCANESA, Madsen Building (F09), The University of Sydney, NSW 2006 Australia

and distributed by Sydney University Press

Fisher Library (F03), The University of Sydney, NSW 2006 Australia

e-mail: sup.info@sydney.edu.au or phil.jones@sydney.edu.au; on-line sales: <https://sydneyuniversitypress.com.au>

Price double volume:

Aus\$ 180.00 (institutional)

Aus\$ 150.00 (personal)

Aus\$ 100.00 (student)

Layout by Céline von Tobel, La Civette, Geneva

Printed by Ligare on archive-quality paper (October 2022).

MEDITERRANEAN
ARCHAEOLOGY

Vol. 34/35, 2021/2022

ABBREVIATIONS

The reference system adopted by *Meditarch* is modelled on that of the German Archaeological Institute, and the bibliographical abbreviations are those listed in *Archäologischer Anzeiger* 1997, 612–24, and on the German Archaeological Institute's website, <https://www.dainst.org/en/publikationen/publizieren-beim-dai/richtlinien>, with the addition of the following:

ABNGV	Annual Bulletin of the National Gallery of Victoria, Melbourne
ABVic	Art Bulletin of Victoria, Melbourne
Atti I CMGr	Atti del primo Convegno di studi sulla Magna Grecia
BAPD	Beazley Archive Pottery Database
Beazley, ABV	J. D. Beazley, <i>Attic Black-figure Vase-painters</i> (1956)
Beazley, Addenda	Beazley Addenda. <i>Additional References to ABV, ARV</i> (2nd ed.) & <i>Paralipomena</i> , compiled by L. Burn & R. Glynn (1982)
Beazley, Addenda ²	Beazley Addenda. <i>Additional References to ABV, ARV</i> (2nd ed.) & <i>Paralipomena</i> , ed. by T. H. Carpenter (1989)
Beazley, ARV	J. D. Beazley, <i>Attic Red-figure Vase-painters</i> (2nd ed., 1963)
Beazley, EVP	J. D. Beazley, <i>Etruscan Vase Painting</i> (1947)
Beazley, Paralipomena	J. D. Beazley, <i>Paralipomena. Additions to Attic Black-figure Vase-painters and to Attic Red-figure Vase-painters</i> (1971)
BTCGI	G. Nenci–G. Vallet (eds.), <i>Bibliografia topografica della colonizzazione Greca in Italia</i> , Iff. (1977ff.)
CCEC	Cahiers du Centre d'études chypriotes
DACL	Dictionnaire d'archéologie chrétienne et de liturgie
DOP	Dumbarton Oaks Papers
NEA	Near Eastern Archaeology
OEANE	E. M. Meyers (ed.), <i>The Oxford Encyclopedia of Archaeology in the Near East</i> (1997)
ProcBritAc	Proceedings of the British Academy
QBNGV	Quarterly Bulletin of the National Gallery of Victoria, Melbourne
RGVV	Religionsgeschichtliche Versuche und Vorarbeiten
SHAJ	Studies in the History and Archaeology of Jordan (Department of Antiquities, Amman)

Abbreviations of ancient authors and works, and transliterations of Greek names conform to those listed in *The Oxford Classical Dictionary*.

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ZAGORA ARCHAEOLOGICAL PROJECT: THE 2019 FIELD SEASON

L. A. Beaumont, P. F. Donnelly, B. McLoughlin, S. A. Paspalas, H. Thomas

Field research undertaken at the Early Iron Age settlement at Zagora on Andros in July 2019 aimed at building on and further extending the work carried out in 2012–2014 and 2017.¹ Conducted over an intensive three-week period, the 2019 fieldwork employed excavation, archaeological surface survey, and infra-red remote sensing to explore targeted areas both inside the settlement and also in the site's hinterland.² Within the fortification wall, our aim was to explore potential evidence for supra-household level productive or manufacturing activities, while outside the fortified settlement zone we aimed to determine the existence of any extra-mural evidence of occupation and activities, as well as any indications of where the occupants of Zagora buried their dead.

EXCAVATION

Three trenches (Trenches 11, 12, and 13) were opened in the north-east part of the settlement, some 10 m inside the fortification wall and where the 2014 fieldwork had identified features not

¹ For reports of the 2012–2014 and 2017 field seasons, see L. A. Beaumont–M. C. Miller–S. A. Paspalas, 'New Investigations at Zagora (Andros): the Zagora Archaeological Project 2012', *Meditarch* 25, 2012, 43–66; L. A. Beaumont *et al.*, 'Zagora Archaeological Project: The 2013 Field Season', *Meditarch* 27, 2014, 115–21; H. Thomas–E. Williams, 'High resolution terrestrial thermography of archaeological sites', *Archaeological Prospection* 26.3, 2019, 189–98; M. C. Miller *et al.*, 'Zagora Archaeological Project: The 2014 Field Season', *Meditarch* 32/33, 2019/2020 (2021) 217–26. This work complemented and extended the original fieldwork conducted by N. Zapheiropoulos in 1960 ('Andros', *ADelt* 16, 1960, Chron. 248–9) and A. Cambitoglou in 1967–1974 (A. Cambitoglou *et al.*, *Zagora 1. Excavation of a Geometric Town on the Island of Andros. Excavation Season 1967; Study Season 1968–1969. Australian Academy of the Humanities, Monogr. 2* [1971]; *id.*, *Zagora 2. Excavation of a Geometric Town on the Island of Andros. Excavation Season 1969; Study Season 1969–1970* [1988]; A. Cambitoglou, *Archaeological Museum of Andros. Guide to the Finds from the Excavations of the Geometric Town at Zagora* [1981]).

In addition to the bibliographical abbreviations used in this journal, the following also appear below:

- Agora 26 J. K. Papadopoulos–E. L. Smithson, *Agora 26. The Early Iron Age. The Cemeteries* (2017)
- Eretria 20 S. Verdan–A. Kenzelmann-Pfiffer–C. Lédérrey, *Eretria 20. Céramique géométrique d'Érétrie* (2008)
- Eretria 22 S. Verdan, *Eretria 22. Le sanctuaire d'Apollon Daphnéphoros à l'époque géométrique* (2013)
- Lefkandi 1 M. R. Popham–L. H. Sackett–P. G. Themelis, *Lefkandi 1. The Iron Age Settlement. The Cemeteries* (1980)
- Lefkandi 3 M. R. Popham–I. S. Lemos, *Lefkandi 3. The Early Iron Age Cemetery at Toumba. The Excavations of 1981 to 1994. Plates* (1997)

- Zagora 2012 L. A. Beaumont–M. C. Miller–S. A. Paspalas, 'New Investigations at Zagora (Andros): the Zagora Archaeological Project 2012', *Meditarch* 25, 2012, 43–66

- Zagora 2014 M. C. Miller *et al.*, 'Zagora Archaeological Project: The 2014 Field Season', *Meditarch* 32/33, 2019/2020 (2021) 217–26

² The 2019 field season of the Zagora Archaeological Project (ZAP) was funded by an award made by the Nicholas Anthony Aroney Research Fund and also by a generous donation by the late Professor Alexander Cambitoglou. The ZAP Co-Directors (L. A. Beaumont, P. F. Donnelly, M. C. Miller, and S. A. Paspalas) are grateful to the Centre for Classical and Near Eastern Studies of Australia at the University of Sydney for providing the project's Sydney base and to the Ephor and staff of the 21st Ephorate of Prehistoric and Classical Antiquities under whose aegis the work was conducted. Thanks too to the Chau Chak Wing Museum at the University of Sydney for supporting the attendance of Paul Donnelly during a period close to the opening of the new Museum.

In 2019 the joint Australian Archaeological Institute at Athens and University of Sydney team welcomed valued industry partner GML Heritage Pty Ltd. GML most ably took on responsibility for redesigning ZAP's public website and for the creation of live blog posts from the field: these can be viewed at <http://zagoraarchaeologicalproject.org>

Thanks go to all team members: G. Agavanakis (conservation), R. Alagich, L. Alexopoulos, S. Beaumont-Cankaya, J. Cameron (GML Heritage), C. Diffey (wet-sieving), A. Dukes, M. Gouma (soil micromorphology), N. Harrington, A. Hooton (illustration), E. Lin, K. Mann (trench supervision), B. McLoughlin (finds management), H. Thomas (trench supervision, infra-red and aerial photography), N. Vasilikoudis (photography), I. Vetta (trench supervision), E. Williams (infra-red and aerial photography), A. Wilson ('Heurist' database support).

hitherto known at the site (**pl. 15**).³ These features comprised parts of a wide road-like surface running north-east/south-west and crossed by a stone channel, and an adjacent small, poorly built, apparently one-room structure (E4) oriented south-west/north-east, within which were found ash layers and a schist installation with what appears to be clay lining, suggestive of a processing or manufacturing facility (**pl. 16: 1**). This part of the site was also where geophysical testing conducted in 2012 had detected a large sub-surface magnetic anomaly suggestive of the presence of buried metal or metallurgical remains,⁴ and where a thermal anomaly shaped like the figure 8 had been identified by the Zagora Infrared Photogrammetry Project in 2017 (**pl. 16: 3**).⁵

Excavation of Trench 11 in 2019 continued the work begun in 2014. By the end of the 2014 field season, the above-mentioned structure E4 had been partially cleared of deep layers of clay roofing collapse mixed with wall rubble. Displaced raw clay lining or installation fragments were recovered throughout the lower tumble, and a disturbed schist installation, apparently clay lined, was partially exposed in the north-west corner of the room. A small portion of the room was excavated below the wall and roof collapse to expose an ash layer.⁶ In 2019, the full ground plan of E4 was revealed and the adjacent space (F4) south and east of E4 was further investigated to reveal an additional section of the wide road-like surface and the stone channel that cuts through it.⁷ Elements were also recovered of the wider built environment in which E4 and F4 are located, indicating that the exterior space F4 is flanked on its north by walled spaces F5 and F6 and on its south by F7 and F8 (**pl. 16: 2**). The evidence so far excavated indicates that the construction of F7 and F8 postdate that of E4. In 2014 we were able to establish that the final period of use of E4 was LG II, and some earlier evidence of MG activity was also identified. The stone-lined channel, oriented north-east/south-west, ran between and roughly parallel to the facades of E4 and F8: the channel is, however, badly disturbed at its south-west end. The excavated portion of F4 narrows from north-east to south-west, measuring 6.7 m at its widest point and 2.3 m at its narrowest point where it is partially blocked by, and continues alongside, E4. The fully exposed internal dimensions of E4 are 4.1 (east/west) x 2.3 m (north/south). The external dimensions are 5 x 3.2 m. The entrance to E4 was probably located in the centre of the long south-east wall of the structure and necessitated a substantial step down into the room from the latest surface of F4. So far, room E4 stratigraphically pre-dates all fills and surfaces excavated in F4. The south-east wall of E4 curves towards its eastern end and warrants comparison to the previously excavated curved exterior corners of rooms D3, H18, and J4, located elsewhere in the settlement: such structural curvatures have been suggested to be indicative of external thoroughfares, with the external corners of buildings rounded to facilitate the passage of pack animals and other pedestrian traffic along narrow streets.⁸

Excavation of E4 in 2019 revealed that the collapse and ashy deposits within the room were considerably deeper than expected. Given this depth, coupled with the time and manpower constraints of the season, excavation focused on a 1.2 m wide sondage along the north-west side of the room in order to target investigation of the stratigraphy and architecture there. Soil micromorphology and phytolith samples were taken to facilitate high-resolution analysis of the unusual stratigraphy, which differs substantially from that of other rooms previously excavated at Zagora. The ashy deposits below the roof collapse inside E4 were found in 2019 to be at least 40 cm deep beside the north-west wall of the building. Further structural collapse and an earlier roof collapse or fill layer were found below the ashy deposits, fallen across a floor surface. The lower-most ash and collapse layers continue below the schist installation in the

³ Zagora 2014.

⁴ See A. Sarris *et al.* in Zagora 2012, 45–8 pl. 3d (GP4, magnetic anomaly 4c).

⁵ See Thomas–Williams art. cit. 196 fig. 9 (Area 3B).

⁶ Zagora 2014.

⁷ The excavation was supervised by Kristen Mann.

⁸ Cambitoglou *et al.*, Zagora 1 (cit. n. 1) 14 Plan III (D3); *id.*, Zagora 2 (cit. n. 1) 76–7 pl. 6 (H18); Cambitoglou *op. cit.* (n. 1) 34 (J4).

north-west corner of E4. In addition to this clay-lined schist installation previously exposed in 2014, the 2019 excavations recovered a dense concentration of collapsed schist slabs interspersed with fragmentary clay lining against the opposite end of the building beside the north-east wall, perhaps indicating the presence of a second clay-lined schist installation. The north-east corner of the structure further revealed what might originally have been a stone-built bench or the modified remains of an earlier wall (**pl. 16: 4**). As in 2014, unfired clay fragments were recovered throughout the E4 collapse deposits excavated in 2019. The occurrence of at least one, and possibly two, collapsed schist features, combined with the extensive finds of clay lining fragments, suggests the presence of a processing or manufacturing facility within E4. We now await the results of samples collected for residue, phytolith and soil chemistry analysis, as well as via the application of flotation and soil micromorphology techniques.

Trench 12, measuring 2 x 2 m, was located approximately 14 m south-west of structure E4 in Trench 11 and was opened with the aim of ground-truthing the subsurface thermal anomaly that had been recorded in 2017 (see above).⁹ Directly below the plough soil a fill densely packed with stone rubble, pottery and, above all, animal bone was found. Notable among the faunal remains were a considerable number of jaw bones and teeth, as well as goat horns. The ceramic evidence indicated that the fill, which has a character suggestive of a dump or rubbish pit, had been deposited in the LG II period. The high concentration of bone raises the possibility that processing of faunal material at a supra-household level may have been taking place in the vicinity.¹⁰ Below these finds was material dating to the Middle Geometric period (SPG III) which included pottery, a faceted rock crystal (**pl. 16: 6**), and an obsidian blade and flake. A section of a wall was uncovered running north-west/south-east across the south-west corner of the trench. Expansion of this trench in a future excavation season is desirable to further investigate whether this area was indeed associated in the Late Geometric period with faunal processing and to recover a wider expanse of the Middle Geometric (SPG III) levels. Also, given that the rubbish fill excavated in Trench 12 appears to coincide with part of the thermal anomaly, further exploration of this area would aim to test the hypothesis that a second rubbish dump lies to north (see below the section by H. Thomas on ‘Infrared Remote Sensing – Trench 12’).

Trench 13, measuring 2 x 4 m oriented east/west, was located 20 m north of Trench 12 and approximately 10 m north-west of the north-west corner of E4 in Trench 11 (**pl. 16: 3**).¹¹ The aim here was to investigate a large sub-surface anomaly identified by magnetometry survey conducted in 2012 by a team led by Apostolos Sarris from the Laboratory of Geophysical-Satellite Remote Sensing and Archaeo-environment at the Institute for Mediterranean Studies (Rethymnon): this anomaly was considered to be suggestive of the presence of buried metal or metallurgical remains.¹² Trench 13 was laid over the northern part of the magnetic anomaly. Beneath the plough soil, excavation revealed a layer of wall collapse extending across the whole trench. Removal of this wall collapse exposed remains of a small (approximately 90 cm) section of a schist-built wall oriented north-east/south-west and cutting across the south-east corner of the trench. The wall was variously preserved to four or five courses in height and incorporated a threshold block together with a door jamb in the form of a vertically placed large schist slab, 43 cm wide and over half a metre high (**pl. 16: 5**). Beneath the wall collapse there was a layer of

⁹ The Zagora Infrared Photogrammetry Project was directed by Hugh Thomas. Thomas–Williams loc. cit. refer to the ‘figure of 8’ anomaly as ‘Area 3B’. The 2019 excavation of Trench 12 was also supervised by Thomas.

¹⁰ Note that the dumps FW6 (A. Cambitoglou ‘Ανασκαφή Ζαγοράς Άνδρου’, *Prakt* 1974, 180; Cambitoglou op. cit. 103–08) and F (B. McLoughlin–S.A. Paspalas, ‘Ninth- and Eighth-Century Zagora, Andros: Indications of Central Aegean Networks and Engagements’, in: D. Athanasoulis

[ed.], *Περί των Κυκλάδων Νήσων. Το Αρχαιολογικό Έργο στις Κυκλάδες*. Αθήνα 22–26 Νοεμβρίου 2017 [forthcoming] also had a high proportion of faunal remains; they indicate that large amount of animal bones and teeth could be deposited in concentrated amounts elsewhere within and on the periphery of the settlement.

¹¹ Excavation supervised by Ivana Vetta.

¹² See n. 4.

roof collapse from which LG pottery was retrieved. Excavation of the underlying abandonment deposit and occupation debris focused on the west side of the trench, where the floor surface and floor packing were also identified. The occupation and abandonment deposit, also Late Geometric in date, produced a bronze pin, a ceramic bead, a number of fine-ware sherds, bone, shell, pumice, a stone pounder, obsidian, and a substantial amount of slag. Due to the quantity of slag recovered from this deposit, the sieved soil was tested with a magnet for iron-oxide waste produced during the smithing process (hammerscale). Since the sieved soil from this western side of the trench produced a large quantity (326 g) of it, 30 x 30 cm sondages were dug in each of the north-east and south-west corners of the trench to assess the distribution of hammerscale across the trench. To standardize the collection process, sieved soil from each of the sondages was tested with a magnet for one minute per litre of soil. While the sondage in the north-east corner of the trench produced 35 g of hammerscale from 10 litres of soil (3.5g/L), the south west corner revealed a considerably higher concentration, with 70 g of hammerscale from 6 litres of soil (11.67g/L). Soil chemistry samples were also collected for analysis.

From the work conducted in 2019, it can be concluded that Trench 13 has exposed an interior roofed space that was accessed via the entrance identified in the south-east corner of the trench. The finds of slag and hammerscale indicate that iron smithing was conducted in this room, a conclusion that is consistent with the results of the 2012 magnetometry survey of this area. The scale of the magnetic anomaly recorded, which exceeds the confines of Trench 13, now makes desirable the extension of the trench in order to reveal the full outline and dimensions of the built structure. Future excavation, combined with targeted magnetometry survey of the whole building aimed at recording the distribution of hammerscale across the structure, should seek to establish the location of the anvil and the scale of smithing taking place. Important questions yet to be answered include whether the smithing here was being conducted within a domestic structure to serve the needs of the occupants or perhaps community requirements more widely, or whether this building was a non-domestic dedicated metalworking space. Given the close proximity of E4 in Trench 11 with its excavated features suggestive of processing/manufacturing activities, combined with the nearby high concentration of animal bone dumped in Trench 12 that may be suggestive of faunal processing at a supra-household level, the addition of the identification of metalsmithing in Trench 13 allows us to tentatively hypothesize that this area of the settlement prominently located close to the fortification wall bore, at least by the LG period, the character of a productive centre, different in function and organization to other domestic and religious zones of the site previously excavated. A great deal of fieldwork, however, remains to be done in and around Trenches 11, 12, and 13 before any conclusions can be drawn.

L. A. B.

POTTERY AND OTHER FINDS

TRENCH 12

The pit or levelling fill excavated as Trench 12 produced the greatest amount of ceramics in the 2019 season along with a small number of metal and stone finds (**pIs. 16: 6–9; 17: 1–3, 5**).

The fill differs from the dumps over the fortification wall (FW6), excavated in 1974, and from the doline fill to the south of the gate, Pit F, excavated between 2012 and 2014. It contains much less bone and shell, very few technical ceramic feature fragments, and there is a higher proportion of fragments from medium to large coarse-ware vessels. Most of the pottery is worn or has abraded surfaces which suggests that the material is in tertiary deposition, similar to levelling fills excavated in D26 and in the J Area.¹³

¹³ See Zagora 2014, 218–9; McLoughlin–Paspalas art. cit. For the FW6 and F dumps, see the refs. in n. 10.

All of the fine-ware pieces are preserved in an extremely fragmentary state, and many of them are not readily datable. The pit's upper reaches contained a number of LG II sherds, such as two fragments of Euboean skyphoi, one with a series of dots on its rim (**pl. 16: 9a**),¹⁴ the other simply decorated with horizontal lines over a white slip (**pl. 16: 9b**). However, the same excavation unit also contained earlier material, including a neck fragment of an Attic amphora decorated with a meander pattern which should be placed in MG II to LG I (**pl. 16: 9c**) as well as a fragment of a horizontally-ribbed pedestal foot of an Attic krater (**pl. 17: 1a**) that may be cautiously assigned to MG II. The chevron skyphos body fragment 19-007 can be similarly dated (**pl. 16: 9d**). Alongside these finds there was a notable amount of Subprotogeometric (SPG) ceramics including pendent semicircle skyphoi (**pls. 16: 9e; 17: 1b**) and closed vessels (see, e.g., the shoulder fragment **pl. 17: 1c** which preserves part of a set of concentric circles).¹⁵ Deeper levels of the pit revealed more SPG ceramics, including pendent semicircle skyphoi (**pl. 17: 2a, b**), kraters that carry sets of concentric circles (**pl. 17: 2e**), as well as skyphoi with solidly painted bodies and horizontal lines or a reserved band on their rim (**pl. 17: 2f, h**). A pedestal foot from a skyphos or krater may be assigned to the transition between SPG II and SPG III at Lefkandi (**pl. 17: 2g**).¹⁶ One of the lowest levels produced the rim and upper body fragment of a SPG pyxis (**pl. 17: 2d**) of a type well known at Lefkandi which dates from SPG I to SPG II/IIIa.¹⁷ The fragment of a circles skyphos (**pl. 17: 2c**) from one of the lowest excavated levels finds its best parallels among the SPG II and III material from Lefkandi, while a fragment of an Attic closed vessel preserving a dog-tooth pattern (**pl. 17: 1d**) dates from MG II or LG I at the latest.

While not as numerous as those retrieved from the 'F pit' in Trenches 3, 8, and 9 in previous ZAP seasons, or those from the FW deposits excavated in the earlier campaigns directed by Alexander Cambitoglou,¹⁸ the fine-wares from Trench 12 supplement the finds made in these other areas of the site. They testify to earlier phases in the settlement's development prior to that represented by most of the standing architectural remains and associated deposits.

The range of types represented by the coarse ware is similar to that observed in other MG–LG I deposits. The pithos types include relief-band pithoi and rope-band pithoi, and mid-sized vessels (with a wall thickness of one centimetre) preserving incised decoration directly on the body (**pl. 17:3**). Thin-walled cooking jugs and hydriai are all handmade and preserve pattern burnishing.

Of the local coarse incised wares, two forms previously undocumented at Zagora were recovered from the uppermost level of the deposit: a dish with traces of handle scars on the upper surface of the rim and an hourglass-shaped openwork (fenestrated) stand with complex incised decoration (**pl. 17: 5**). The former (inv. 19-010) is a very rare shape, otherwise attested in miniature form, with upswung or lug handles extending upwards from the rim, from burial contexts at Eretria, Lefkandi, and Athens,¹⁹ the latter (19-002) has no known parallels.²⁰ The

¹⁴ Cp. Eretria 22.2, 17 no. 270 pl. 167.

¹⁵ For a similar set of concentric circles, see Lefkandi 3 pl. 57: 1 Tomb 50 (Table 2 = LPG–SPG I).

¹⁶ Cp. Lefkandi 1 53 no. 724 pl. 27; Lefkandi 3 pl. 101.

¹⁷ Ibid. pl. 57, 14 Tomb 51 (Table 2 SPG I) and pl. 80, 42 Tomb 80 (Table 2 SPG II/IIIa).

¹⁸ See n. 10.

¹⁹ Eretria: Eretria 20, 30–1 type CP1; B. Blandin, Eretria 17. *Les pratiques funéraires d'époque géométrique à Erétrie* (2007) 84–5 pls. 44, 51–2, the closest parallel is T3,3, dated by the tomb finds to MG II, which features an incised spiral on the interior floor and upswung handles attached to the rim; cf. T3,4, T3,5 and C/7-207: small shallow dishes of similar form, with plain interior, incised decoration on the exterior and the upper surface of the lip; horizontal plates and / or spurs extending from the rim, one of which is pierced. The incision on T3,4 and

T3,5 is executed free hand with a pointed tool, similar to the incision style of 19-010 and other incised wares at Zagora. C/7-207, which comes from a context dating to c.700 BC, has been incised with a multi-headed comb, a tool common to incised wares at Eretria, but unknown at Zagora (O. Cerasuolo, 'Greek Geometric incised coarse ware, Euboea, and its connections to central Italy', in: Ž. Tankosić–F. Mavridis–M. Kosma [eds.], *An Island between Two Worlds. The Archaeology of Euboea from Prehistoric to Byzantine Times* [2017] 235–52). Lefkandi: small painted dishes with 3 up-swung handles on rim, and slashes on upper rim surface, Lefkandi 3: T46.6, T46.7; T70.1 pls. 52, 71, 107; cf. T.71.1 pl. 71; incised lug-handled bowls: T38.13 (with tripod feet) and T.38.14 pl. 107. Athens: Agora 26, cat. nos. T45-8, 327, 675 pl. 111 figs. 2.226–7. Tomb 45 is dated to MPG–LPG; T45-8 is believed to be an import due to the unusual fabric and burnished finish.

²⁰ Painted open-work stands are known in the central and eastern Mediterranean from LM III and LH III onwards

close proximity of the two vessels in the upper levels of TR12, combined with the stylistic affinity in their decoration is suggestive of a set. The incised dish sits snugly inside the stand, with the now lost upswung handles allowing for easy placement and removal (pl. 17: 5). The dish has signs of smoke smudging on its underside, indicating that it may have been used as a chafing dish.

Arguably the most singular artefact excavated from the pit in Trench 12 was the piece of rock crystal inv. 19-017, prismatic in form (pl. 16: 6).²¹ The piece, hexagonal in section, is broken at both ends, its preserved length measuring 3.8 cm. Its basic form of a hexagonal prism occurs naturally and is not uncommon; when complete, one of its terminals would have ended in an apex. This prism is currently a unique find at Zagora, though rock crystal incorporated into jewellery is not at all unknown from contemporary contexts in the Aegean, geographically the closest to Zagora being Lefkandi, where rock crystal items have been excavated in graves ranging in date from EG II to MG I.²² Early Iron Age rock crystal finds, though, are most common on Crete where the material had been used for jewellery-making from the Bronze Age.²³ The most impressive piece is enclosed in a gold setting of a necklace found in the Khaniale Tekke tomb at Knossos and dated to c.800 BC.²⁴ However, most of the EIA Cretan corpus consists of beads and small pendants.²⁵ A very close parallel to the Zagora find was excavated at Knossos' Fortetsa cemetery though not in a precisely datable context.²⁶ It, too, is a prism, hexagonal in section, though in a more ruinous state than the piece in Zagora. Close parallels, some preserving a pointed terminal, have also been excavated at the sanctuary at Vryokastro, Kythnos, which was

(E. Kountouri, 'Ceramic Stands in the Late Bronze Age Aegean: Form and Function with Special Reference to a Stand from the Vlachopoulos Tholos Tomb in Messenia', in: A. Dakouri-Hild–S. Sherratt [eds.], *Autochthon: Papers Presented to O. T. P. K. Dickinson on the Occasion of His Retirement* (2005) 282–95; L.P. Day, 'The Pottery', in: L.P. Day–G. C. Gesell [eds.], *Kavousi IIC: The Late Minoan IIC Settlement at Vronda: Specialist Reports and Analyses* (2016) 93–5 fig. 55), and a wide range of coarse-ware versions are also known, particularly at Azoria, Crete (D. C. Haggis *et al.*, 'Excavations at Azoria, 2002', *Hesperia* 73, 2004, 373, 375 with nn. 71–3; M. I. Stefanakis *et al.*, 'Excavations at Azoria, 2003–2004, Part 1: The Archaic Civic Complex', *Hesperia* 76, 2007, 263 with nn. 49–50 fig. 9). All examples are larger and thicker walled, clearly designed to support heavier vessels. At Zagora, the role that such stands may have played in domestic contexts was clearly filled by reused painted hydria and amphora necks, e.g., Zagora 2014, 219–20 pls. 46: 2e–f, 48: 4).

²¹ A bluish quartz example very similar in form and equipped with a suspension hole was incorporated into a 6th-century BC necklace alongside faience amulets now in the Utica Archaeological Museum: N. Stampolidis (ed.), *Sea Routes ... From Sidon to Huelva. Interactions in the Mediterranean, 16th–6th cent. BC* (2003) 521 no. 1017 (Ben Taher).

²² Lefkandi 1, 222–3 pl. 234b, d–f. Note that the bead from the so-called Tomb of the Rich Athenian Lady in the Athenian Agora once considered to be of rock crystal has now been identified as glass: Agora 26, 172, 174 no. T15-78f fig. 2.99. For what has been identified as an irregular wedge-shaped fragment of rock crystal collected at the Tsikalario cemetery on Naxos as a chance find but dated to c.800–750: Stampolidis (ed.) op. cit. 558 no. 1107 (Zapheiroupolou). Note that the cemetery was in use into the Archaic period: Ph. Papadopoulou-Zapheiroupolou, 'Αρχαϊότητες και Μνημεία Κυκλάδων. Τσικαλαριό,' *ADelt* 22 1966, Chr B'2 (1968) 395; X. Charalambidou, 'Ceramics, Cultural Interconnections

and Influences on Naxos,' in: V Vlachou–A. Gadolou (eds.), *Terpsis. Studies in Mediterranean Archaeology in Honour of Nota Kourou* (2017) 377. (Xenia Charalambidou has kindly informed S. A. P. that given the area where the piece was found it may well have originally belonged to an 8th-century context.)

²³ For close parallels to inv. 19-017, see A. J. Evans, *Cretan Pictographs and pre-Phoenician Script* (1895) 109–10 fig. 90 (set in a gold mounting) and S. E. Iakovidis, Περσική. Το Νεκροταφείο (1969) 199 Tomb 100 (Λ209) pl. 60a. For Crete as a source of rock crystal see J. Boardman, *The Cretan Collection in Oxford. The Dictaeon Cave and Iron Age Crete* (1961) 92. For more widespread sources in the Aegean: P. Voudouris, 'Gemstones of Greece: Geology and Crystallizing Environments', in P. Voudouris *et al.* (eds.), *Mineralogy and Geochemistry of Gems* (2020) 497, 509.

²⁴ R. W. Hutchinson–J. Boardman, 'The Khaniale Tekke Tomb', *BSA* 49, 1954, 216–18 pl. 27: 1; R. A. Higgins, 'Early Greek Jewellery', *BSA* 64, 1969, 150. For other rock-crystal pieces, see Hutchinson–Boardman art. cit. 217, 219 pls. 28–42.

²⁵ For a selection: E. D. Hall, *Excavations in Eastern Crete: Vrokastro* (1914) 143 no. 4 fig. 85 O and R; p. 159 no. 10; p. 165 no. 7; p. 166 no. 4; H. van Effenterre, *La nécropole de Dréros. EtCret* 7.2 (2009) 156, 169 fig. 90 nos. 72–3.

²⁶ J. K. Brock, *Fortetsa. Early Greek Tombs near Knossos* (1957) 100 no. 1150 pl. 76 (found by a burial pithos placed in the dromos of Tomb P, dated as 'Orientalizing', i.e. 735–630 BC in Brock's scheme; sherds in the dromos were dated from Late Geometric to Late Orientalizing [870–630]). A similar piece, which preserves its pointed terminal, was excavated from a tomb at Eleutherna and has been dated to 'before the middle of the 7th century BC': N. C. Stampolidis (ed.), 'Princesses' of the Mediterranean in the Dawn of History (2012) 213 no. 29 (Stampolidis). For a bead from Vrokastro that is similarly hexagonal in section, see Hall op. cit. 165 no. 7.

founded in the early 7th century.²⁷ It is of note that, unlike most of the rock crystal excavated in the Aegean, inv. 19-017 was found in a settlement context, albeit a refuse pit, rather than a funerary or votive one.

TRENCH 11 (PLS. 17: 4; 18: 1–2)

The fine-wares excavated in TR11 in 2019, all in a very fragmentary state, are consistently LG in date. The heavily undercut amphora rim fragment inv. 19-019 may well be Attic (**pl. 18: 1a**). The little that is preserved of the skyphos rim and upper body fragment inv. 19-033 (**pl. 18: 1b**) suggests that its decorative scheme would have been close to that most often, but not exclusively, occurring on LG II Parian vessels.²⁸ The Euboean skyphos fragment inv. 19-003 is of similar date (**pl. 18: 1c**). The most recent fine-ware fragment may be inv. 19-066 which was excavated in a lower ashy level within room E4. It is a wall fragment of a Euboean heavily slipped skyphos dating to advanced LG II (**pl. 18: 1d**). Although from the same context, the neck fragment inv. 19-067, decorated with meander elements and belonging to a narrow-necked closed vessel, should be earlier in date (**pl. 18: 1e**). Small finds include two terracotta beads, one biconical (**pl. 18: 2a**), the other an incised ‘eye bead’ (**pl. 18: 2b**); two obsidian fragments (inv. 19-047, not illustrated, and inv. 19-054, weighing 2 g: **pl. 18: 2c**); a corroded metal shaft (not illustrated); a leaf-shaped metal object with a tang, weighing 4.7 g (**pl. 18: 2d**); a possible grinding or pounding stone (**pl. 17: 4**).

TRENCH 13 (PL. 18: 3–5)

The deposits excavated in Trench 13 produced very little pottery, all clearly residual. As those from Trench 11, all fine-wares are LG. The slipped skyphos rim and upper body fragment inv. 19-060 (**pl. 18: 3a**) comes from a well known Euboean type, characterized by a series of concentric circles on the rim.²⁹ The small, possibly burnt, kotyle rim fragment inv. 19-069 (**pl. 18: 3b**) probably dates towards the latter part of the period. Little is preserved of the Attic lekane (**pl. 18: 3c**) other than one of its reflex handles and a section of its rim, though it probably dates to LG II. Small finds include two fragments of a bronze pin (**pl. 18: 4a**), an intact terracotta eye bead (**pl. 18: 4b**), the leg of an animal (?) figurine (**pl. 18: 4c**), a worked stone counter or lid weighing 33.7 g (**pl. 18: 4d**), and an unusual disc-shaped stone grinder or polisher of non-local origin.

While there are very few diagnostic local coarse-ware fragments in the deposits excavated, a shoulder fragment in a fabric usually associated with Corinthian transport amphorae preserves a mastos (**pl. 18: 5a**), a feature characteristic of Corinthian (and Argive) hydriai from the MG II period until the 7th century. A rim fragment of the same fabric, inv. 19-072 (**pl. 18: 5b**), which we would usually identify as a Corinthian transport amphora rim, was found in proximity. The rim forms of Corinthian coarse-ware hydriai and transport amphorae are very similar; that of 19-072 belongs to a type that appears in MG II and continues throughout LG and is best paralleled by the later examples.³⁰

B. McL/S. A. P.

²⁷ A. Mazarakis-Ainian, ‘Ein antikes Heiligtum auf Kythnos’, in: H. Frielinghaus–J. Stroszeck (eds.), *Neue Forschungen zu griechischen Städten und Heiligtümern. Festschrift für Burkhardt Wesenberg zum 65. Geburtstag* (2010) 35 pl. 20: 3; Ch. Koukoulidou *et al.*, ‘Small Finds from the Sanctuary of Kythnos’, in: A. Mazarakis-Ainian (ed.), *Les sanctuaires archaïques des Cyclades* (2017) 238 fig. 130. For the sanctuary’s foundation date, see: A. Mazarakis-Ainian, ‘A Sanctuary in the Ancient City of Kythnos. Topography and Architecture’, in: Mazarakis Ainian (ed.) *op. cit.* 115, 120.

²⁸ e.g., O. Rubensohn, *Das Delion von Paros* (1962) 89–90 pl. 14: 12–13.

²⁹ J.-P. Descœudres, *Die vorklassische Keramik aus dem Gebiet des Westtors*, in: P. Auberson *et al.*, *Eretria* 5 (1976) 44; for examples in Eretria, see, e.g., *Eretria* 20, 121 no. 96 pl. 24 (LG I–II); *Eretria* 22, 12 no. 142 pl. 74 (LG I); 19 no. 324 pl. 94 (LG II).

³⁰ See McLoughlin–Paspalas *art. cit.* (n. 10); R. S. Young, ‘The Geometric Period’, in: C. W. Blegen *et al.*, *Corinth* 13. *The North Cemetery* (1964) 21 no. 14-1; 22 no. 15-1; 23 no. 16-9 pl. 6; 25 no. 17-5; 27 no. 18-8; 28 no. 20-3 pl. 6; C. A. Pfaff, ‘A Geometric Well at Corinth: Well 1981-6’, *Hesperia* 57, 1988, 32 n. 43.

ARCHAEOLOGICAL SURFACE SURVEY

The surface survey of the hinterland north-east and east of the Zagora settlement's fortified boundary both expanded on, and complemented, the extra-mural survey conducted in 2012 to contextualize the settlement within its topographical and geomorphological landscape.³¹ **Plate 19: 1** illustrates the extent of landscape and number of units surveyed in the 2012 and 2019 field seasons. The red 2019 units are colour-coded to show the density of finds, with the darker shade representing greater numbers. The 2012 units are shaded yellow. While evidence from the Iron Age remains the focus of the Zagora Archaeological Project, the survey was conducted with a diachronic philosophy that placed the Iron Age in the broader temporal context and recorded evidence from all periods up to the modern.

Zagora surface surveys 2012 and 2019		
	East ridge units surveyed	36,985 m ²
	North-East ridge units completed	43,361 m ²
Total 2019 survey units		80,346 m ²
Total 2012 survey units		173,313 m ²

AIMS AND PRIORITIES OF THE 2019 SURFACE SURVEY

The specific goals of the survey were to identify evidence of integrated functional organization exploring the dynamic between the Zagora settlement site and its hinterland for evidence of extra-mural habitation, burials, other ancient land use and hydrogeology. Specifically, this included:

Any evidence of Iron Age land use north-east and east of the main site as evidenced by concentrations of ceramic finds or features.

Any evidence of later antique land use north-east and east of the main site as evidenced by concentrations of ceramic finds or features.

The 'ground truthing' of features identified in the 2017 and 2019 infra-red remote sensing survey, including that possibly associated with burials in the hinterland (see the 'Infrared Remote Sensing' report by H. Thomas below).

Exploration of evidence relevant to hydrogeology including water access, storage, or channelling.

TERRAIN AND METHODOLOGY

The methodology was dictated by the nature of the steep terraced landscape typical of the cultivable regions of Andros. Each survey section was delineated on the 1:5000 topographical contour map produced by the Greek Army's Geographical Service. These were devised to make as practical as possible traversing the complexity of the 19th-century anthropogenic landscape consisting of narrow field terraces, larger fields, and areas immediately adjacent to standing (often derelict) structures. Larger fields tended to be on the lower slopes and reflected the natural landscape's fall towards the cliff edges or valley floors (and framed by boundary walls), whereas the steeper terrain featured terraces that had been constructed to create narrow but flat field surfaces to enable cultivation. Each terrace wall performed a dual function as both the retaining wall of the upper terrace field, and the back wall of the terrace field below. Maintenance of these terrace walls has largely ceased due to late-19th- and early-20th-century socio-economic change and subsequent population migration with the result that sections of walls are collapsing to varying degrees into the terrace below. Excluded from the survey were the interiors of built structures and boundary lanes delineating field systems.

³¹ Zagora 2012, 43–66.

Each transect was traversed by survey participants walking in parallel, scanning 2.5 metres to each side. The number of sherds encountered was recorded with the aid of mechanical counters, and diagnostic sherds and other portable samples were collected and bagged. Ceramic fragments smaller than a thumb nail were discarded unless diagnostic. GPS readings were taken at the start and end of transects within each survey unit. Total sherd numbers were recorded and bags were numbered, dated and initialled for each unit in preparation for analysis and subsequent data upload to the Zagora Heurist database. Morphological features in the landscape were described, photographed and identified spatially by GIS.

RESULTS AND INTERPRETATION OF SURVEY FINDINGS

The most striking outcome of the survey was the remarkable absence of Early Iron Age ceramic finds or evidence of manipulation of the landscape. This includes activity around the water source where it had been hoped there might be indications of ancient water management such as channelling or storage. The verdant landscape at the extramural spring currently makes an exhaustive evaluation difficult and warrants planning a focused exploration of this area for a future field season. Future work could employ techniques such as coring. Even considering the intensive sculpting of the landscape during the last few centuries, the notable absence of Early Iron Age evidence suggests that Early Iron Age habitation in this area was restricted to the protected zone behind the settlement's fortification wall. By contrast, the concentration of Late Roman pottery on the hill slopes east of the Zagora settlement suggest the later existence of a farm or other habitation in this location. This distinct evidence from a later period demonstrates a different approach to the Zagora hinterland than was the case in the Geometric period.

P. F. D.

INFRARED REMOTE SENSING

Following the success of the 2017 season of the Zagora Infrared Photogrammetry Project (ZIPP),³² which conducted an intensive thermal survey (thermography) of the site, an additional season of targeted remote sensing work was conducted across the Zagora peninsula and hinterland during 2019. Thermography, a relatively new remote sensing technique, utilises infrared cameras to detect subtle changes in ground temperature caused by sub-surface archaeological remains. Over the course of the diurnal cycle, buried remains heat or cool at different rates to that of the surrounding ground.³³ These heat disparities can then be detected by infrared cameras. In addition, this technique can also be used to discover surface architecture obscured by foliage. Over the past few years thermography has grown in popularity due to its low cost and its ability to conduct both macro- and micro-level surveys when performed either terrestrially with a photographic pole or aurally with a drone.³⁴

The principal goals of the 2019 thermographic survey were to record and possibly excavate a number of thermal anomalies detected during the 2017 season. It should be noted that thermal anomalies are impacted by external factors, such as climate, foliage cover, soil moisture, etc. As such, it is important that a number of thermal surveys be conducted at different times of the year and temporally apart in order to avoid bias. Although both the 2017 and 2019 seasons

³² Thomas–Williams art. cit. (n. 1).

³³ J. Casana *et al.*, 'Archaeological Aerial Thermography in Theory and Practice', *Advances in Archaeological Practice* 5, 2017, 312 fig. 1.

³⁴ A. C. Cool, *Aerial thermography in archaeological prospection: applications & processing* (2015); H. Thomas, 'Some like it hot: the impact of next generation FLIR

systems thermal cameras on archaeological thermography', *Archaeological Prospection* 24, 2017, 1–7; H. Thomas, 'A methodology for combining terrestrial and aerial photographs to create high resolution photogrammetric models of large-scale archaeological sites: A case study for Methone, Greece', *JASc Reports* 16, 2017, 27–36; Thomas–Williams art. cit.; S. Walker, 'Low-altitude aerial thermography for the archaeological investigation of arctic landscapes', *JASc* 117, 2020, 105–26.

were performed approximately one calendar month apart, the environmental conditions of each season were markedly different:

Season	Day temp max	Temp. at photography	Wind	Humidity	Sunset	Time recorded
7/6/17	26 °C	24 °C	Still	74%	8:39pm	9:03pm
14/6/17	30 °C	25 °C	Still	58%	8:42pm	9:26pm
8/7/19	37 °C	25 °C	Still	74%	8:50pm	10:09pm
9/7/19	37 °C	22 °C	Still	73%	8:50pm previous day	5:57am

Weather conditions for recording sessions around Trench 12. 2017 statistics from Gavrio, Andros and 2019 from Spata, Attica.

In total, 3 days of thermal survey were performed over the course of the 2019 season. These surveys focused on the areas around Trenches 6, 11, and 12 (only Trench 11 and 12 are discussed here), as well as the terraced fields and slopes surrounding the site. Prior to the commencement of survey all grass coverage and foliage was removed. A series of cardboard crosses were placed in the survey areas with their location recorded by total station. These crosses functioned as Ground Control Points (GCPs), allowing the resulting imagery to be georectified.³⁵ Each area was then photographed with a DJI Phantom 4 Pro prior to sunset followed by thermal images taken after dark with a 3 m photographic pole. The same radiometric infrared camera was used in both the 2017 and 2019 seasons, a FLIR Vue Pro R which has a spectral range of 7.5 to 13.5µm with a sensitivity of 50Mk NETD. Its sensor resolution is 640 x 512 pixels, with our model using a 9 mm lens which results in a view of 69° × 56°. The resulting sets of images were processed using Agisoft Photoscan, with georectified orthophotographs produced of both the infrared and drone photographs. Comparison of the two orthophotographs allows for the identification of topographic features or fauna that may have been mistaken for a thermal anomaly caused by archaeological remains.

TRENCH 12

During the 2017 ZIPP season, an unusual ‘figure of 8’-shaped thermal anomaly was identified over multiple recording sessions.³⁶ As a result, this area was selected as an area of interest, with excavations conducted in 2019 in this part of the site as Trench 12 (see above and **pl. 16: 3**)



Figure 1. Trench 12, schematic interpretation of ‘figure 8’ thermal anomaly as two pits.

The potential cause for the thermal anomaly was identified during excavation as a deposit of loose, yellowish-brown sandy loam, characterized by up to 50% stone inclusions, 0.02–0.30 m in size. This horizon was artefact rich, with significant quantities of ceramic and faunal remains recovered. A number of the faunal elements were found in partial articulation, suggesting that they were covered by rapid infilling. The matrix of this feature, in addition to the presence of partially articulated faunal remains suggests that this feature may have consisted of two circular pits, one cut into the other, as previously hypothesized,³⁷ resulting in the distinctive ‘figure of 8’ shape (**fig. 1**).

These pits were filled with refuse and redeposited soil. Pits are generally characterized by looser fill than the surrounding area and are more prone to retain moisture after rainfall. Waterlogged soil has a different thermal inertia (effectively the measure of the rate with which an object loses or obtains heat from its surroundings), compared to the adjacent compact dry earth, creating distinct temperature differences.³⁸

³⁵ Thomas–Williams art. cit. (n. 1) 192–3.

³⁶ Thomas–Williams art. cit. 196.

³⁷ Ibid.

³⁸ Casana *et al.* art. cit. 310–27.

Furthermore, as the outer edges or cut of the pit remain looser than the surrounding soil, the addition of water to the fill would result in the appearance of a ‘cold’ area; whilst the presence of stones within the feature would warm the centre of the pit, counterbalancing the ‘cooler’ edge of the cut.

TRENCH 11

During the 2017 season a similar thermal anomaly was recorded near Trench 11, some 12.5 m north-east of the north-east wall of E4. In contrast to the ‘figure 8’-shaped feature in Trench 12, this rectangular anomaly was significantly ‘cooler’ than the surrounding ground and lacked the inner hot spot of the aforementioned feature. This suggests a more homogenous deposit of loosely compacted fill. Furthermore, this part of the site is marked by healthier/greener vegetation than nearby areas, suggesting moisture is being collected by a subsurface feature (**pl. 19: 2**). The shape of this anomaly also corresponds to a roughly L-shaped magnetic feature identified by geophysical survey conducted in 2012 by a team led by A. Sarris.³⁹ The shape of the feature and the homogenous fill may indicate that this is a well or cistern that naturally filled with dirt over millennia rather than being a dump for refuse as witnessed by the ‘figure of 8’ pits. This feature was subsequently re-identified during the 2019 season and was the strongest thermal anomaly identified, albeit slightly more diffuse. The feature has not yet been excavated.

ZAGORA HINTERLAND

In 2017, two rectangular cuts were found in a small, terraced field in the foothills above the site (**pl. 18: 6**). Both cuts were oriented roughly east/west and were between 1.3 and 1.5 m in length, 0.65–0.85 m in width, and 0.40 m in depth; both features were covered in heavy vegetation. These cuts were located approximately one metre away from a natural rock outcrop which was used as a terrace wall. The size, shape, and location of these cuts are suggestive of looted burials. Two tombs dating to the Early Iron Age were discovered in 1899 by local farmers, and the grave goods are kept in the Andros Archaeological Museum.⁴⁰ Notes about their discovery state that they were found, ‘in the field of B. Pantazis or Poriotis in Zagora of Korthion. The area is now the property of John Mendrinis’.⁴¹ In 2019, a local shepherd who has lived in the area since childhood was able to confirm that the two rectangular cuts are located in the fields owned by the Mendrinis family, further adding support to the possibility of these features being the tombs identified in the 19th century.⁴²

Thermography performed on this field in 2017 and 2019 revealed four ‘warm’ anomalies (**pl. 19: 3**). Three of these features in the east of the field are approximately 1.1 m in length by 0.40 m in width, whilst the fourth was more amorphous. Unlike the areas of ‘cooling’ identified near Trenches 11 and 12, which are possibly pits, areas of warmth are likely to be result of subsurface structures made of stone. Although warm anomalies are most commonly indicative of walls, the absence of linearity as well as their contained rectangular shape, may be suggestive of stone-lined cist burials.⁴³ The proximity of these features to the rock outcrop and their almost identical orientation, further supports this assertion.

The 2019 infrared survey provided further evidence that thermal anomalies recorded during the 2017 ZIPP season were likely caused by subsurface archaeological remains. Identifying

³⁹ Zagora 2012, pls 3d, 4E.

⁴⁰ Cambitoglou *et al.*, Zagora 1 (cit. n. 1) 1–2.

⁴¹ *Ibid.* 1 n. 6.

⁴² It must be noted, though, that we have been informed that the local archaeological Ephoreia dug a number of trial trenches in the wider Zagora hinterland a number of years ago.

⁴³ According to V. R. d’A. Desborough, *Protogeometric Pottery* (1952) 129 (followed by I. S. Lemos, *The Protogeometric Aegean. The Archaeology of the Late Eleventh and Tenth Centuries BC* [2002] 179), the graves were ‘single cist-burials’, which is not reported by D. P. Paschales, *Ἡ Ἀνδρός*, I (1925) 585.

the same feature across multiple seasons and under differing weather conditions reduces the possibility that recent and localized events may have resulted in thermal disparities. Excavations at the site suggest much of the extant remains are relatively shallow, increasing the possibility that they can be detected by thermal remote sensing. With the success of the 2017 and 2019 surveys, it is hoped that further thermographic studies can be conducted in future seasons.

H. T.

CONCLUSION

The Zagora 2019 field season has shed new light on, and raised new questions about, the productive economy and organization of the settlement in the LG period, and contributed new evidence for the less well known MG and SPG phases of the site. Beyond the fortified boundary of the settlement, the campaign also added to our understanding of the site's hinterland, and generated an indication of where future field research might seek to uncover a burial ground for the settlement's occupants. Infrared remote sensing work succeeded in testing the accuracy of the thermographic technique in the archaeological context, and further added to our understanding of the capabilities of thermal survey in archaeology.

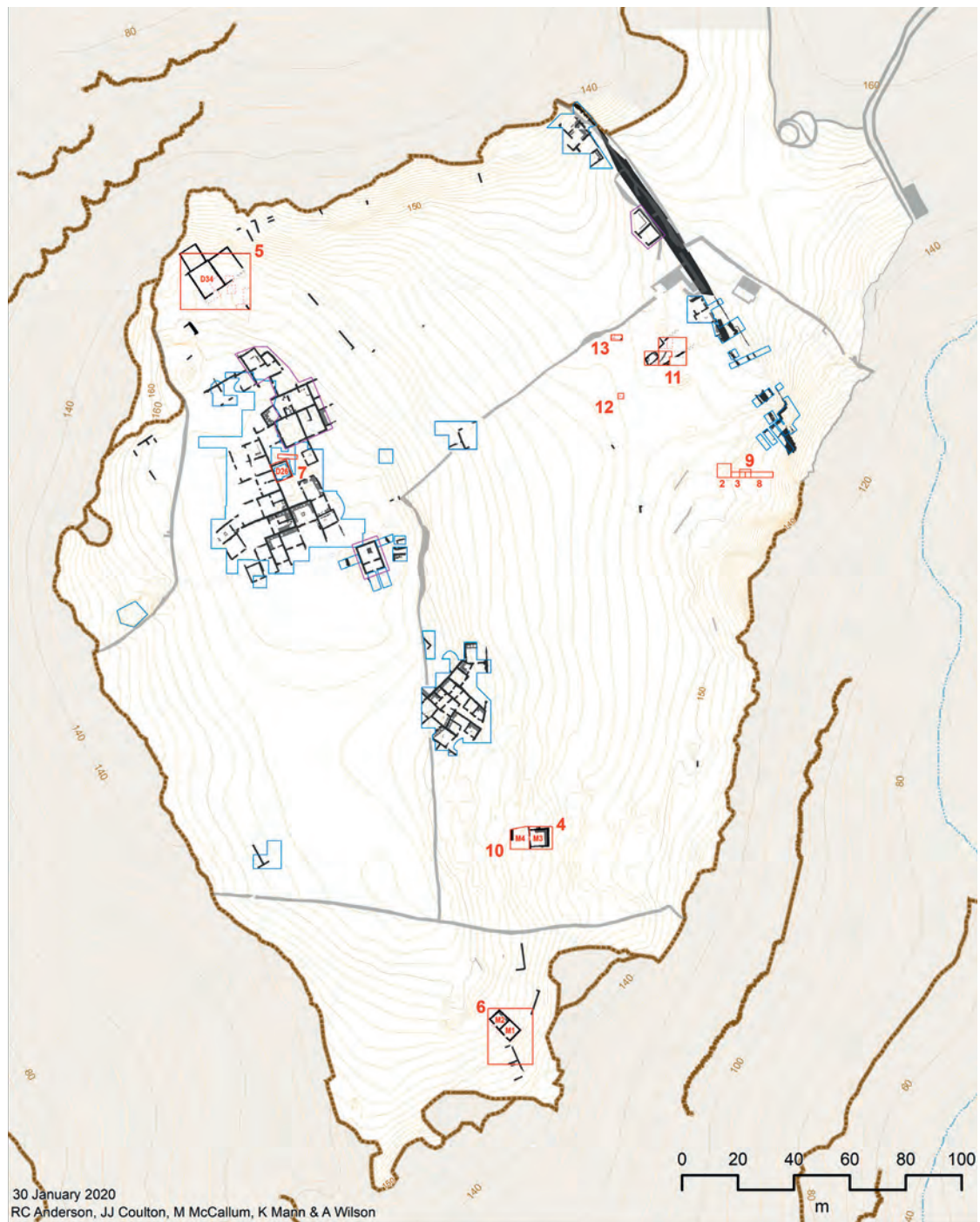
We may observe that the area located some ten metres inside Zagora's fortification wall, and investigated by the placement of Trenches 11, 12, and 13, exhibits a character different from other areas of the LG settlement that have been previously excavated and identified as having a distinct domestic or religious function. Accessed by what appears to be a wide road, this part of the site is by contrast the locus for excavated features suggestive of concentrated processing/manufacturing activities, comprising structure E4 (Trench 11), as well as a nearby roofed space in which metalworking was conducted (Trench 13). In addition, a dump/rubbish pit situated close by and densely packed with animal bone, pottery and stone rubble (Trench 12) raises the possibility that faunal processing may also have taken place in the vicinity.

We now await results of the analysis of residue and soil chemistry samples from E4 for identification of the material being processed/manufactured there, and look forward to conducting further field investigation of this part of the site in order to establish whether the remains of metalworking and other productive activities discovered here reflect activities taking place at a supra-household level. Further work is also required to define the extent of F4 and investigate its proposed identity as a major thoroughfare leading into the settlement.

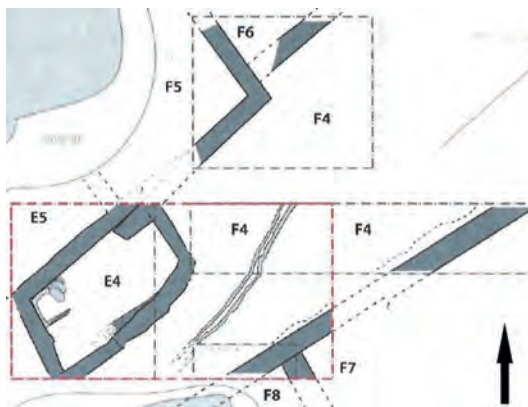
The ground-truthing by excavation in Trench 12 of part of a subsurface 'figure-of-8' feature located by infrared remote sensing demonstrates the efficacy and accuracy of the application of the thermographic technique in the archaeological context. This provides impetus for the excavation in a future field season of another thermal anomaly recorded near Trench 11, and hypothesized to be a water cistern that possibly formed part of a hydraulic installation associated with the nearby stone-lined channel that cuts the road-like surface of F4.

Infrared remote sensing in the site's hinterland has also suggested the possible location of further burials in the same area where two Early Iron Age graves were previously uncovered in 1899. Further investigation is now required.

Finally, though the inhabitants of Zagora would most certainly have exploited the agricultural potential of the settlement's rural hinterland, archaeological surface survey conducted both in 2019 and 2012 has provided no evidence for Early Iron Age habitation outside the settlement's fortification wall, suggesting that threats to safety and security may have constituted paramount concerns for the occupants.

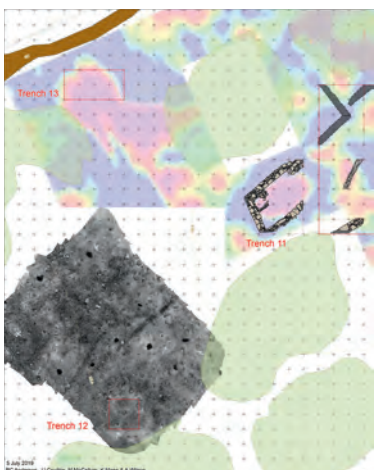


1. Zagora site plan with Trenches 11, 12, and 13 dug in 2019 and Trenches 2–10 dug in 2012-2014.



1. Aerial view of TR 11 at the end of the 2014 season. Structure E4 in the bottom left corner, right of which road-like surface cut by stone-lined channel F4 (cp. pl. 16: 2).

2. TR 11 area with structure E4, road-like surface F4, and walled spaces E5, F5–8 (K. Mann).



3. TR 11–13. Pink: sub-surface magnetic anomalies; grey area: infrared remote-sensing results, with TR 12 atop a 'figure 8'-shaped thermal anomaly.



4. TR 11 from W. Structure E4 with a schist installation in its NW corner adjacent to an ashy deposit. E of E4, F4 cut by a stone-lined channel.



5. TR 13 from W: section of schist-built wall with threshold block and door jamb in its SE corner, two 30 x 30 cm sondages in its NE and SW corners.



6. TR 12, quartz crystal inv. 19-017, 1:2.



7. TR 12, iron shaft inv. 19-016, 1:1.



8. TR 12, flaked obsidian inv. 19-046, 1:1.



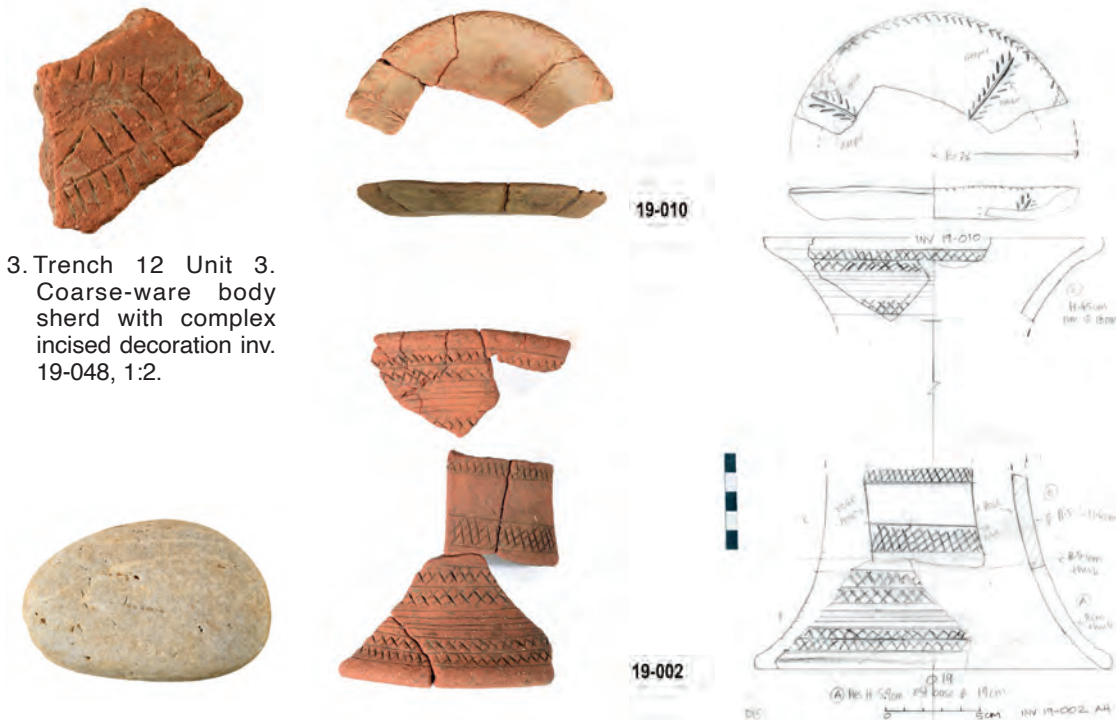
9. Trench 12 Unit 3, fine wares, 1:2. (a) Euboean skyphos rim inv. 19-021 (LG I–II); (b) Euboean skyphos rim and upper body fragment inv. 19-013 (LG); (c) amphora neck fragment inv. 19-020 (Attic MG II–LG I); (d) chevron skyphos body fragment inv. 19-007 (Attic? MG II); (e) pendent semicircle skyphos body fragment inv. 19-006 (Cycladic? SPG).



1. Trench 12 Unit 3, fine wares, 1:2.
 (a) fragment of ribbed krater foot inv. 19-008 (MG II?); (b) pendent semicircle skyphos fragment inv. 19-012 (SPG); (c) amphora shoulder fragment inv. 19-011 (SPG); (d) fragment of closed vessel with dog-tooth pattern inv. 19-005 (MG II-LG I).



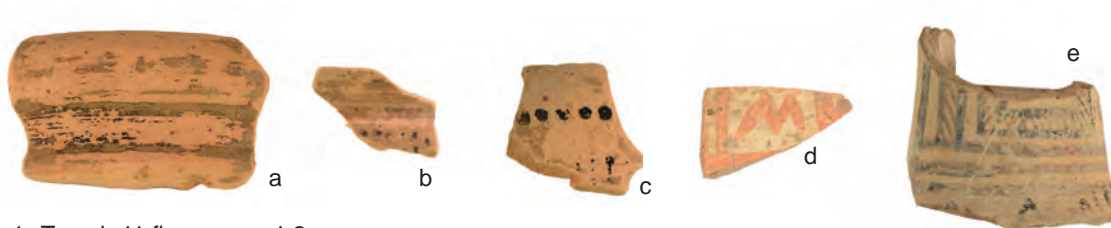
2. Trench 12 Units 5-10, fine wares, 1:2.
 (a, b) pendent semicircle skyphos fragments inv. 19-026 and 19-041 (SPG); (c) circles skyphos fragment inv. 19-065 (SPG II-III); (d) pyxis rim fragment inv. 19-040 (SPG I-SPG II/IIIa); (e) krater fragment inv. 19-025 (SPG); (f) skyphos fragment inv. 19-043 (SPG); (g) pedestal foot fragment inv. 19-035 (SPG); (h) skyphos fragment inv. 19-042 (SPG).



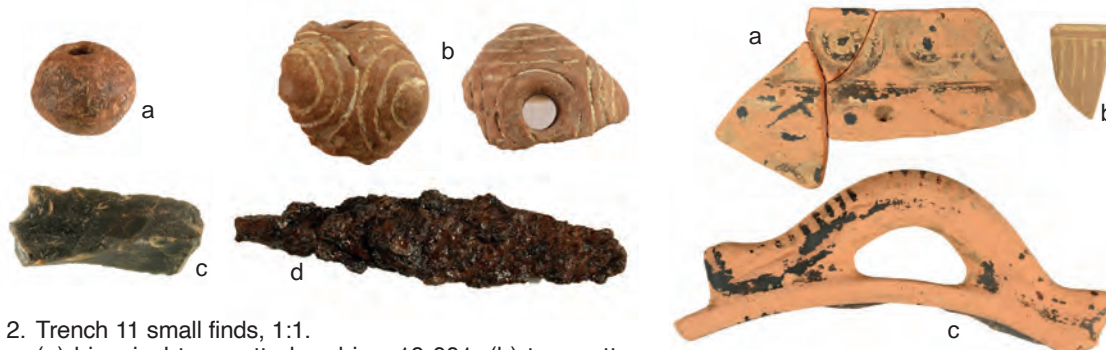
3. Trench 12 Unit 3. Coarse-ware body sherd with complex incised decoration inv. 19-048, 1:2.

4. Trench 11. Stone grinder or pounder (209 g) inv. 19-022, 1:3.

5. Trench 12 Unit 3. Fragmentary incised coarse-ware dish inv. 19-010 and openwork (fenestrated) stand inv. 19-002 (drawing Anne Hooton).

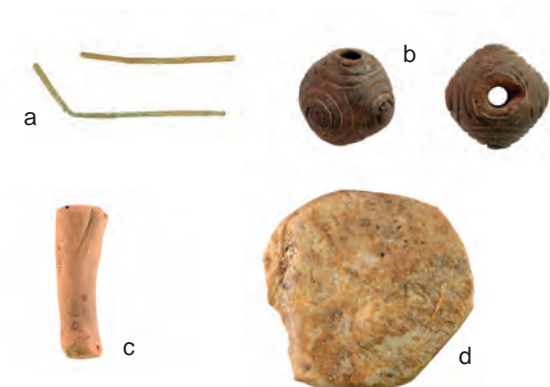


1. Trench 11 fine wares, 1:2.
 (a) amphora rim fragment inv. 19-019 (LG II); (b) skyphos fragment inv. 19-033 (LG II); (c) skyphos rim fragment inv. 19-003 (LG II); (d) skyphos body fragment inv. 19-066 (LGII); (e) closed vessel neck fragment inv. 19-067 (LG).

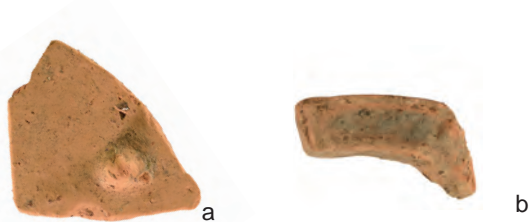


2. Trench 11 small finds, 1:1.
 (a) biconical terracotta bead inv. 19-001; (b) terracotta 'eye-bead' inv. 19-029; (c) obsidian blade fragment inv. 19-054; (d) iron object with tang inv. 19-015.

3. Trench 13 fine wares, 1:2.
 (a) skyphos fragment inv. 19-060 (LG); (b) kotyle fragment inv. 19-069 (LG II); (c) lekanis fragment inv. 19-070.



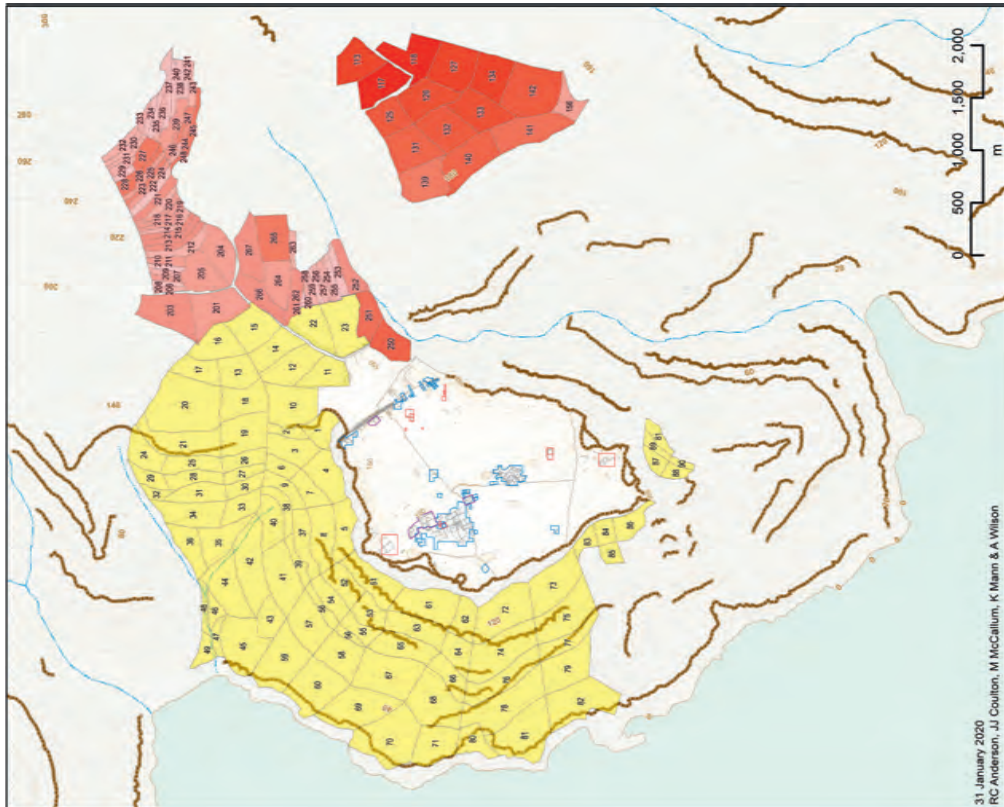
4. Trench 13 small finds, 1:2.
 (a) bronze pin inv. 19-018; (b) incised terracotta 'eye bead' inv. 19-030; (c) terracotta figurine inv. 19-037; (d) ground stone, counter, or stopper inv. 19-055.



5. Trench 13, imported coarse ware, 1:2.
 (a) shoulder fragment with mastos inv. 19-036 (Corinthian hydria?); (b) Corinthian (?) transport amphora or hydria rim, inv. 19-072.



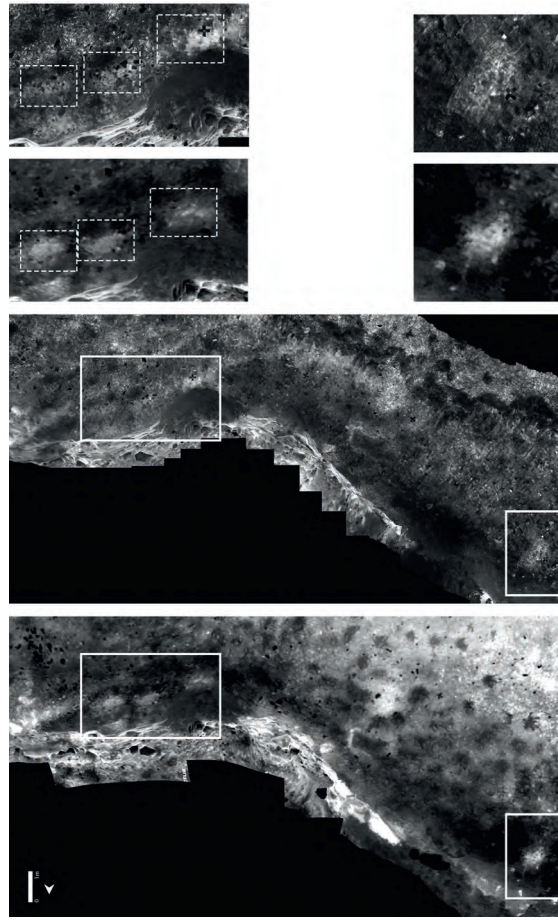
6. Rectangular cut located in a small terraced field in the foothills above the Zagora settlement site.



1. 2019 (red) and 2012 (yellow) surface survey units.



2. Thermal subsurface anomaly and ground surface differential vegetation growth, recorded in the vicinity of Trench 11, some 12.5 m north-east of the north-east wall of E4. Left: 2017 thermal orthophotograph. Centre: 2017 drone orthophotograph. Right: 2019 thermal orthophotograph.



3. Results of infrared remote sensing survey conducted in small terraced field located in foothills above the Zagora settlement site. The superimposed white rectangles indicate the position of the four 'warm' anomalies detected.