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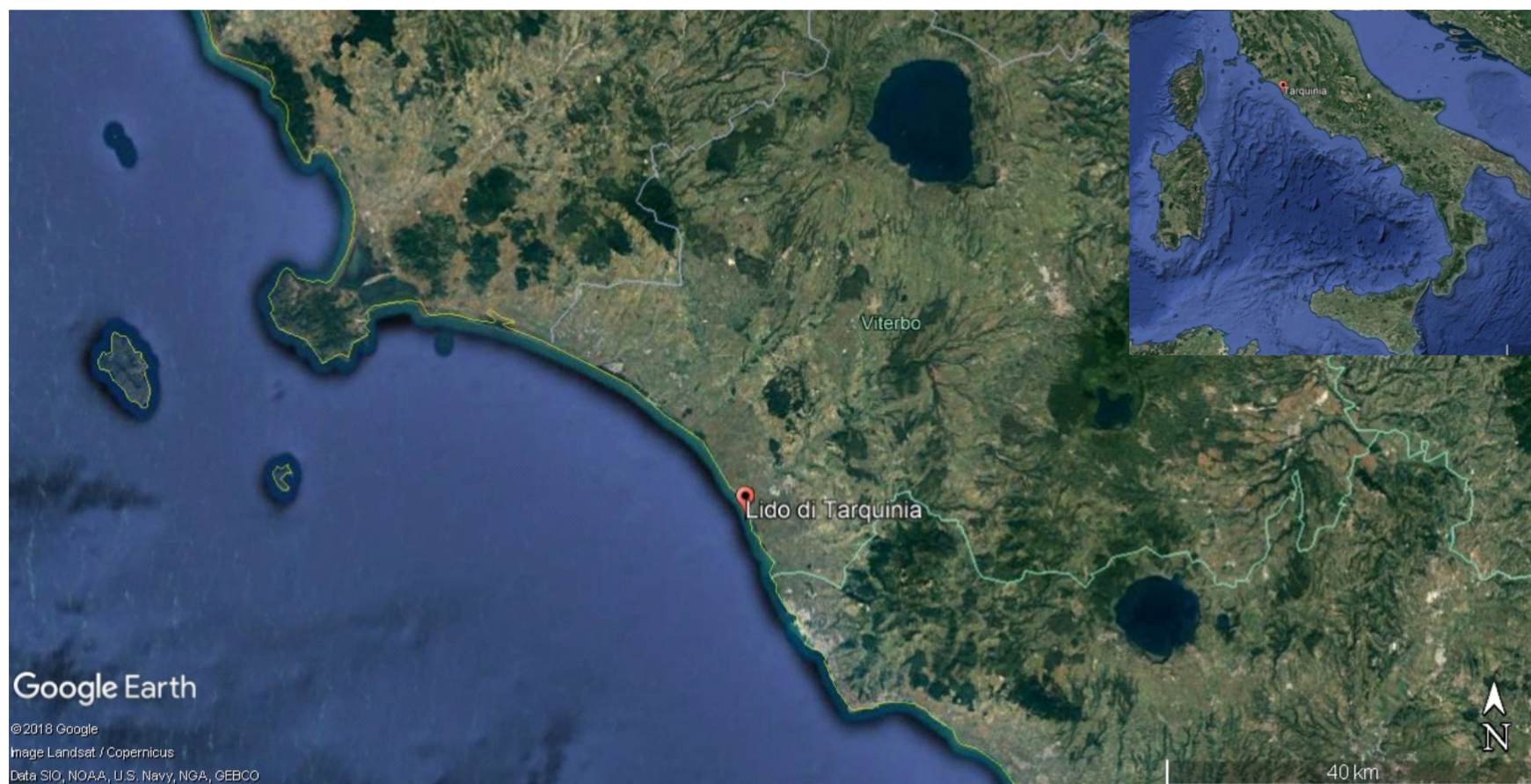
Understanding rituals in Gravisca site: a multidisciplinary approach

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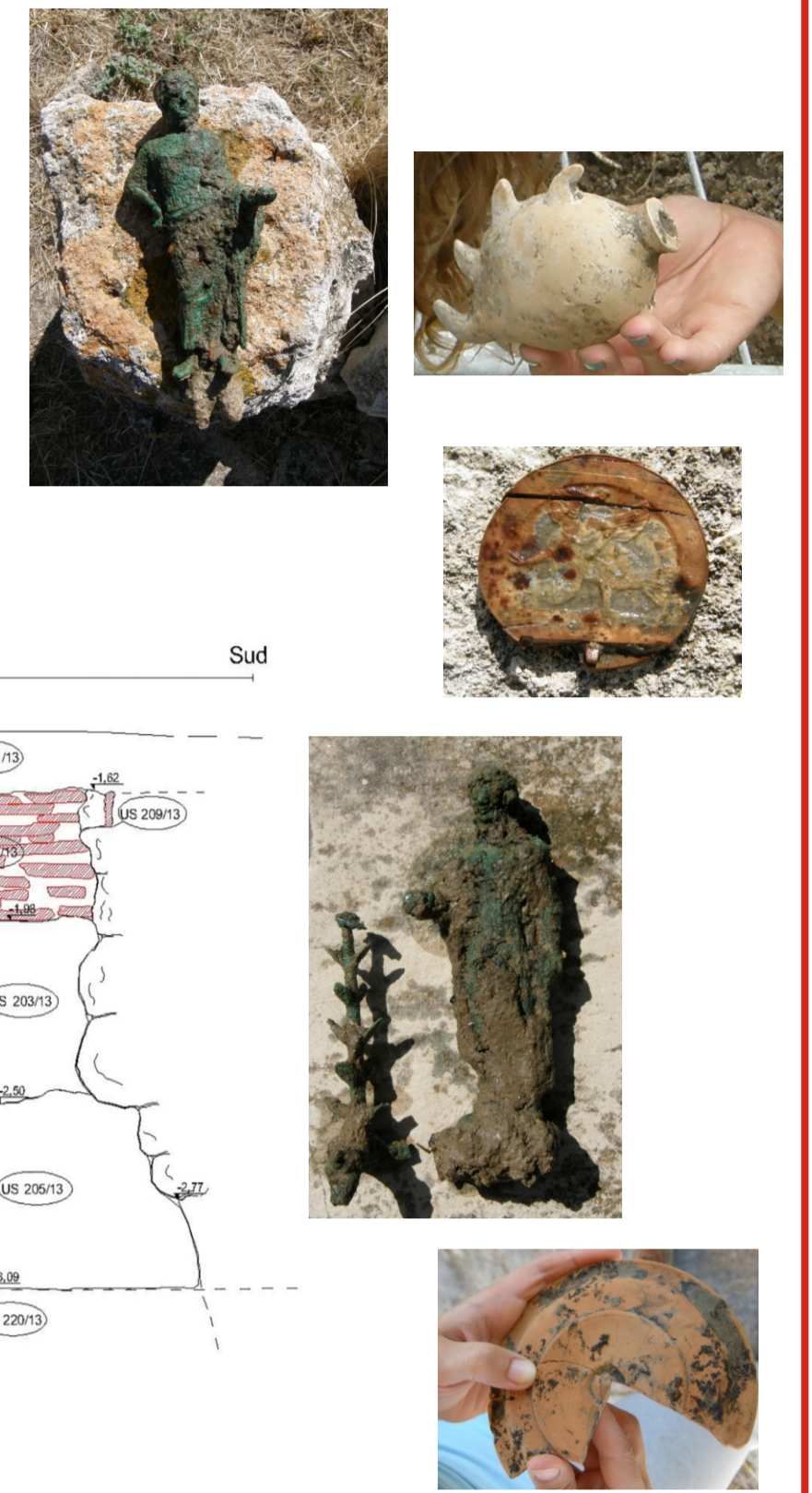
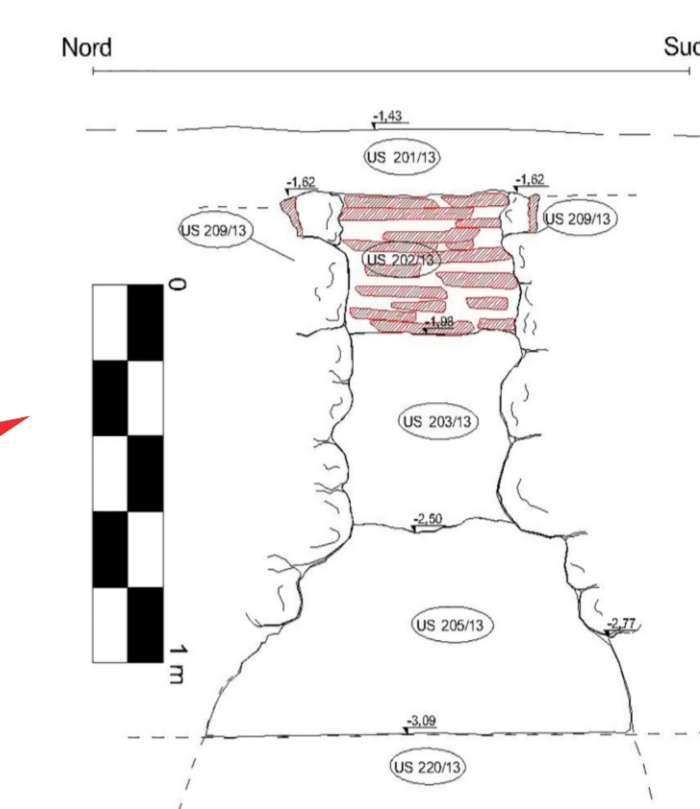
GRAVISCA SITE



Gravisca is an emporic sanctuary situated along the Tiberian Coast and about 10 km from Tarquinia (VT). The site was built at the end of the VIIIth century b.C. as a protected area where Greek merchants could exchange their products in the Etruscan territories under the protection of divinities who were their guarantors. In this complex framework, thanks to the detailed archaeological field work, traces of rituals connected to the divinities that patronized the sanctuary were identified.

THE ARCHAEOLOGICAL CONTEXT

The well situated in the sacellum of Demeter was found during the excavation campaign in 1972 but investigated in 2013. According to the documentation, the well should have been built during the last phase of the sanctuary (end of the IVth century b.C.) and was in use until the destruction of the site on 281 b.C. At that time some of the votive materials present in the sanctuary were hidden in this structure accompanied by a series of actions recognised, as demonstrated by the findings, as atonement sacrifices.



ARCHAEOBOTANICAL ANALYSIS

SOIL SAMPLES



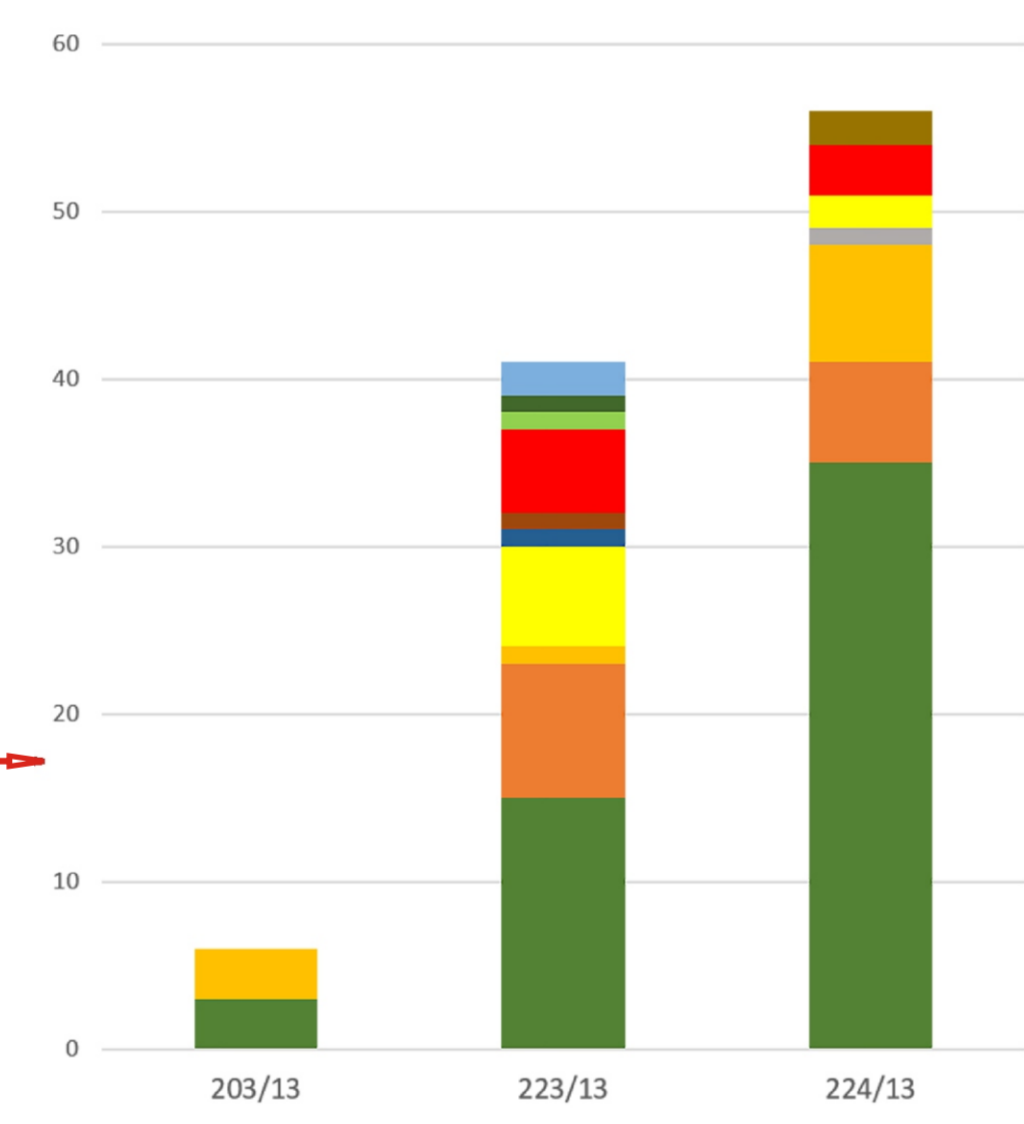
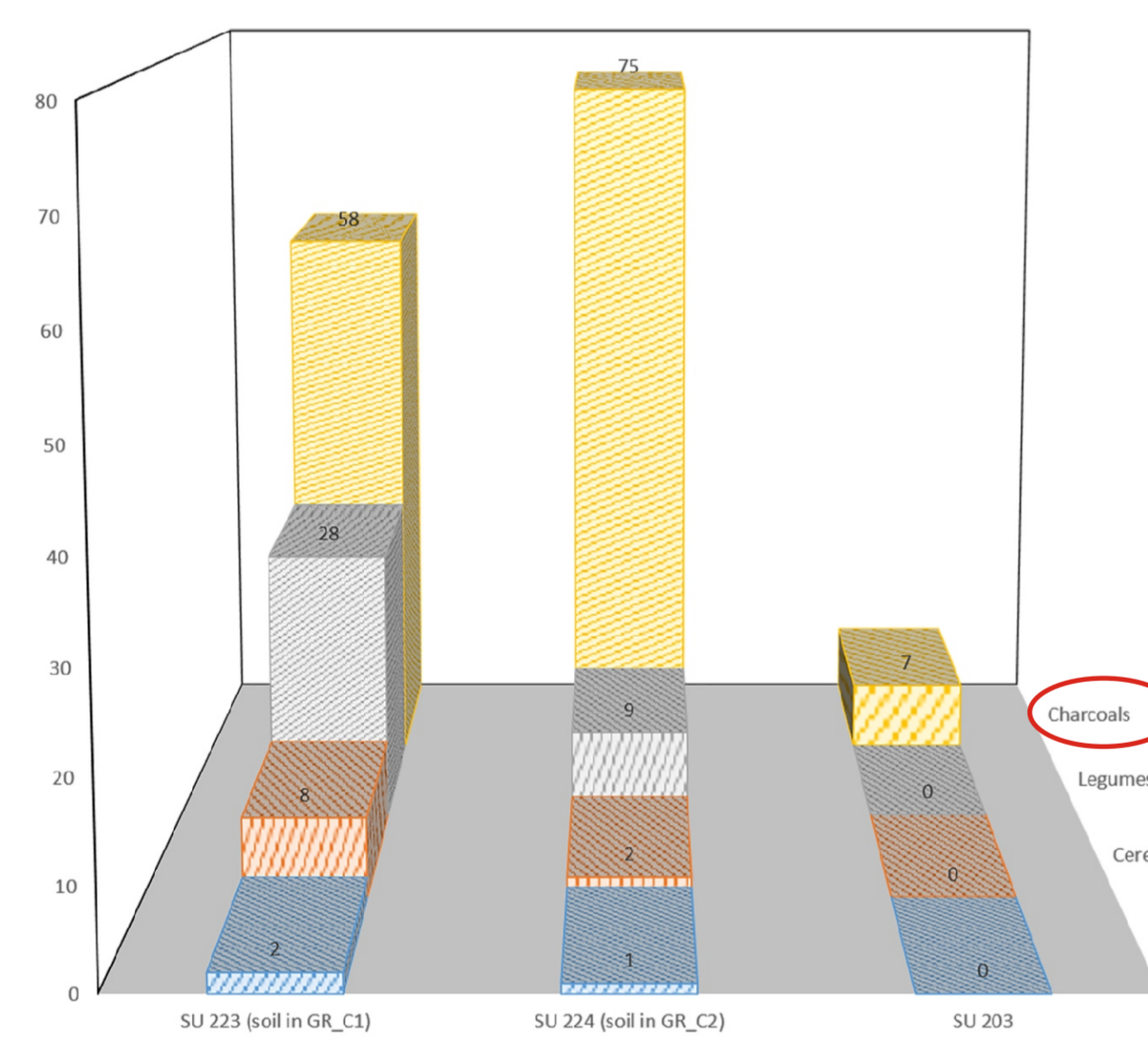
Soil inside the ollae GR_C1 and GR_C2



SU 203

FLOTATION WITH SIEVES

MORPHOLOGICAL AND ANATOMICAL ANALYSES OF THE ARCHAEOBOTANICAL REMAINS



- Fruit/seed remains and charcoal were found mainly in the ollae, while they are lacking in the layer around (SU 203) and in the other vessels (GR_C3, GR_C4 and GR_C7).
- Archaeobotanical remains recovered from vessels GR_C1 and GR_C2 are carbonized, but their containers do not present traces of thermal alteration.
- The charcoal belongs to various taxa and all originate from the Mediterranean area. They were probably used as a fuel for the fire.
- Seeds are mainly cereals (*Triticum aestivum/durum*) and legumes (*Vicia faba*), while tree fruits are from *Vitis vinifera* and *Punica granatum*. They were the fruits selected for the offering at the divinity.

ORGANIC RESIDUE ANALYSIS

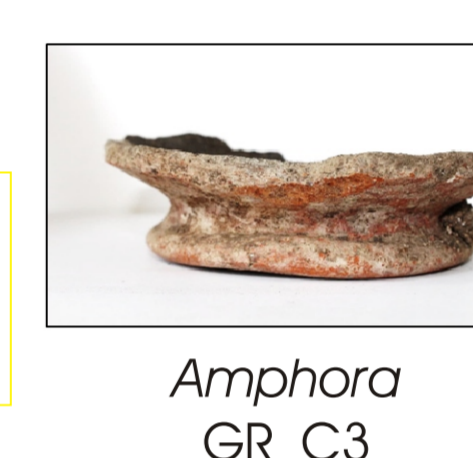
CERAMIC AND SOIL SAMPLES



Olla GR_C1



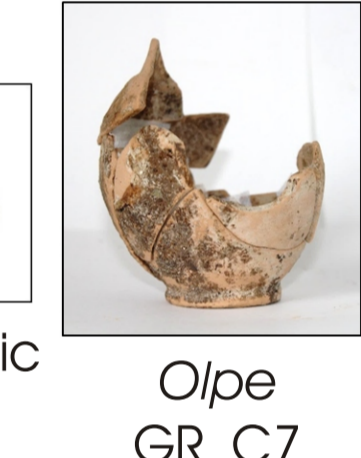
Olla GR_C2



Amphora GR_C3



Miniaturistic olpe GR_C4



Olpe GR_C7

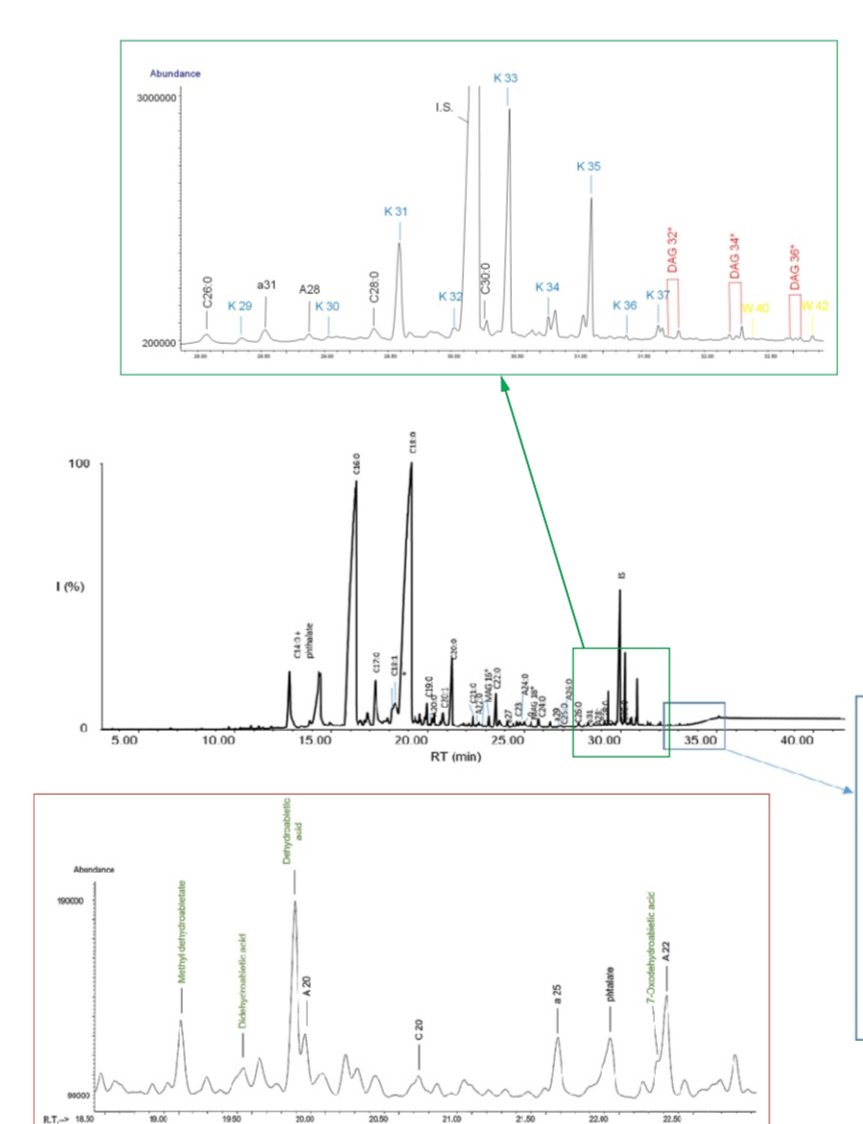
SOLVENT EXTRACTION (DCM:MeOH)

SOLVENT EXTRACTION (BF3:BuOH:Cyclohexane)

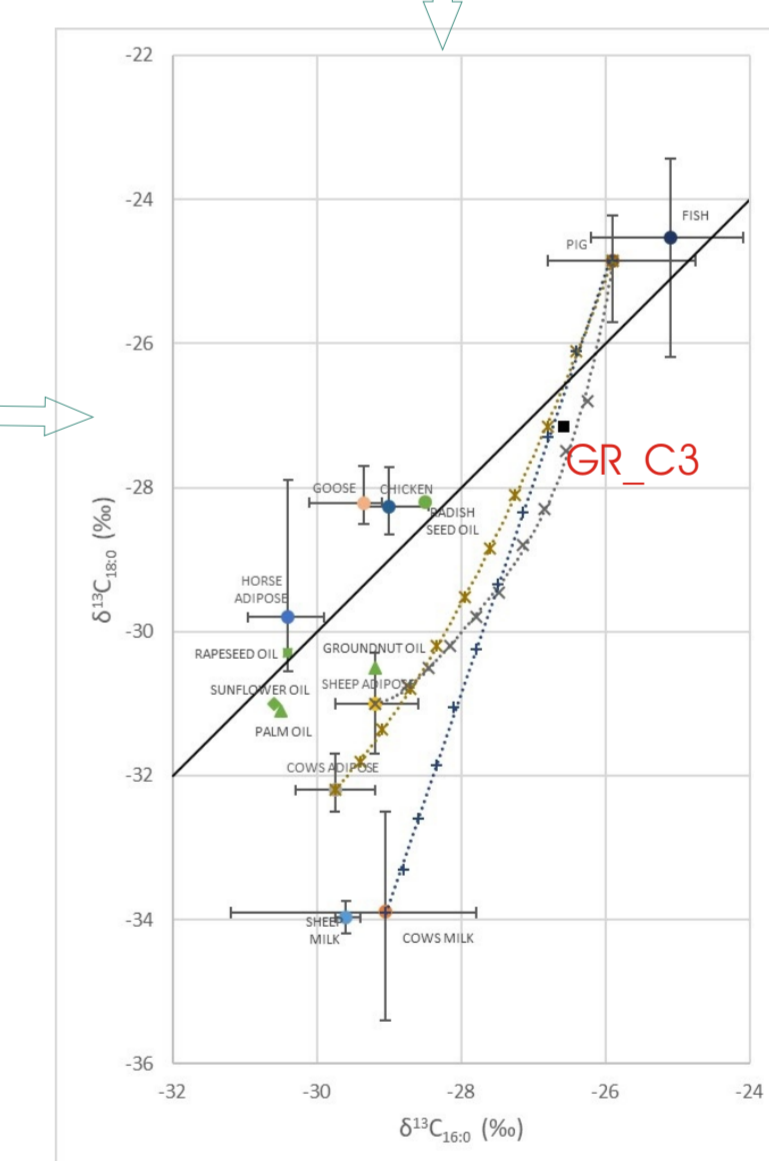
GC and GC-MS

GC-C-IRMS

GC and GC-MS



GR_C3



No wine markers found



Soil inside the vessel GR_C7

- The results presented here include only those pertaining to understanding the sequence of the ritual.
- The olpe GR_C7 presents a dark crust on both the external and internal surfaces. ORA revealed the crust as pine resin, probably used to seal the vessel. Analysis of a soil concretion taken from within the vessel and close to the base showed evidence for pine resin and beeswax. The former probably arises from the crust which was in very close contact with the soil concretion, while the latter is potentially indicative of the vessel content. Soil tested from burial context did not contain pine resin or beeswax.
- Vessel GR_C3 presents evident traces of burning on the internal but not on the external surfaces. A series of ketones (29-37) confirm that the vessel content had been exposed to more than 300°C. Biomarker analysis shows the presence of animal fats, and plant oil and beeswax.
- No specific markers were present in the miniaturistic olpe GR_C4, possibly because of its limited use.

ORA reveals that the burning of the fruits offerings was probably carried out in amphora GR_C3; the absence of the typical markers of the fruits and cereals could be given mainly because of the strong heating. After this process the burnt seeds were intentionally placed into the ollae GR_C1 and GR_C2, as suggested by their finding in the containers, which do not present traces of thermal alteration, and confirmed by ORA analyses carried out on them. The chemical signals found in GR_C3 probably indicate the presence of other ritual offerings, given the faunal remains found close to the amphora GR_C3 during the archaeological excavation. GR_C4 and GR_C7 are also related to the ritual, as suggested their position in the archaeological context, the shape of the miniaturistic olpe (GR_C4) and the beehive product present in olpe GR_C7.

SEQUENCE OF ACTIONS IN THE RITUAL:

The ritual took place probably in autumn, given the presence of *Vitis vinifera* and *Punica granatum* pips found in the ollae, which are harvested at this time.

Different tree taxa were used as a fuel to burn the vegetable offerings (cereals, legumes and tree fruits) for the divinity. This burning process took place probably inside the vessel GR_C3.

After the ritual, charcoals and seeds were selected and intentionally collected in the ollae.

Fresh meat was grilled/deposited in the same vessel and seasoned with oil and beehive product

The materials used during the ritual, vessels and offerings, were intentionally deposited in the well.