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Paleoradiology and N.D.T. by X-rays - Visual abstracts about Radiology and the past: secrets unveiled / Paleorradiologia e A.N.D. por Raios-X — Abstractos Visuais sobre Radiologia e o Passado

"N.D.T. and Ancient Ceramics: Assisting in Authenticity"

"Análise Não-Destrutiva em Cerâmicas Antigas: Apoio à Autenticidade"

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Adapted from: Palmela's "Pseudo-Panathenaic" Amphora: Unveiling the truth, more than 200 years later.
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VISUAL ABSTRACTS about RADIOLOGY and the PAST: secrets unveiled

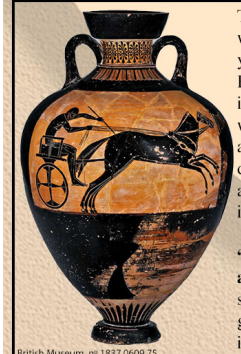
SPRMN — Section of Paleoradiology e N.D.T. by X-Rays (case nº2)

N.D.T. and Ancient Ceramics: Assisting in Authenticity

As part of a restoration plan, the Lisbon Museu Nacional de Arqueologia (M.N.A.) requested Nondestructive Testing (N.D.T.) through X-rays (C.R. and C.T.) of an **ancient Greek black-figure "pseudo-Panathenaic" amphora** (left, and lower left text box). This decoration is achieved with a paint slip that turns black during firing while the background keeps the clay-colored tone. The figural motifs depict Athena on one side and wrestlers on the opposite. The X-rays revealed unexpected findings that we will focus on **integrity** and **surface decoration**.

INTEGRITY: The CT scan data of its structure and outer and inner contours (near right) ensured an uncommon finding: the integrity of this fragile artifact believed to be nearly 2.500 years old. However, the surface of the amphora shows damage from numerous irregular craters spread all over (far right, blue). Their global distribution and physical characteristics suggest an unknown, repetitive pricking and curiously defacing some of the portrayed figures, making it difficult to rule out intentionality.

SURFACE DECORATION: The CT density evaluations of the amphora's superficial decoration also had unanticipated results. However, densities in many areas evolve from the perceived addition of coatings or paints, which either conflict with or even block the expected X-ray black-figured technique density pattern.
The **black** should be dense, as in Athena's robe (far left), being almost unseen (CT, near left).
The **orange/clay** should have had low density (far left), but instead, they were dense and irregular (CT, near left).
The **white** in Athena's uncovered body parts (far left) should be of very low density; rather, they have one of the highest densities (CT, near left).


British Museum nº 1837,0609.75

The **Great Panathenaia Games** were held in Athens every four years, starting in the VI century BC. They had several events, including athletic competitions, where the winners received prizes as **Panathenaic amphorae** (left) decorated with the athletic event and inscribed with data linked to it.

"Pseudo-Panathenaic" amphorae were decorative similar vases, but not linked to the games, generally smaller and not inscribed.

RESULTS:
The CT findings strengthened doubts about the amphora's origin (Greece, VIth cent. BC) and, as such, its authenticity. In the end, Dosimetry Luminescence was done to ascertain its age.
Its outcome finally discarded ancient Greek pottery and led instead to a highly probable origin in Italy, around the **Grand Tour (XVII/early XIX cent.)**, a well-known birthplace of numerous similar artifacts, several of which rest undetected in prestigious public and private collections around the world.

PALMELA'S "PSEUDO-PANATHENAIC" AMPHORA: UNVEILING THE TRUTH, MORE THAN 200 YEARS LATER
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