
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

“Caparica Ancient Cliff, Modern Tech: A Sperm-Whale Reborn”

“Falésias Antigas da Caparica, Técnicas modernas: Renascimento de um Cachalote”

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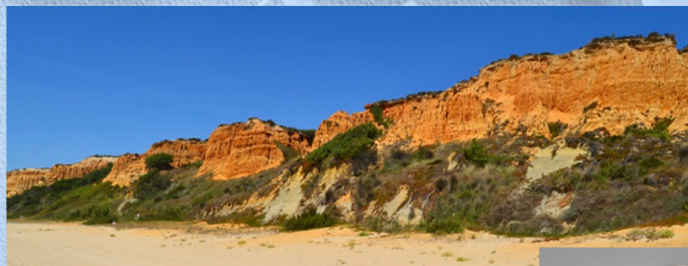
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VISUAL ABSTRACTS about RADIOLOGY and the PAST: secrets unveiled

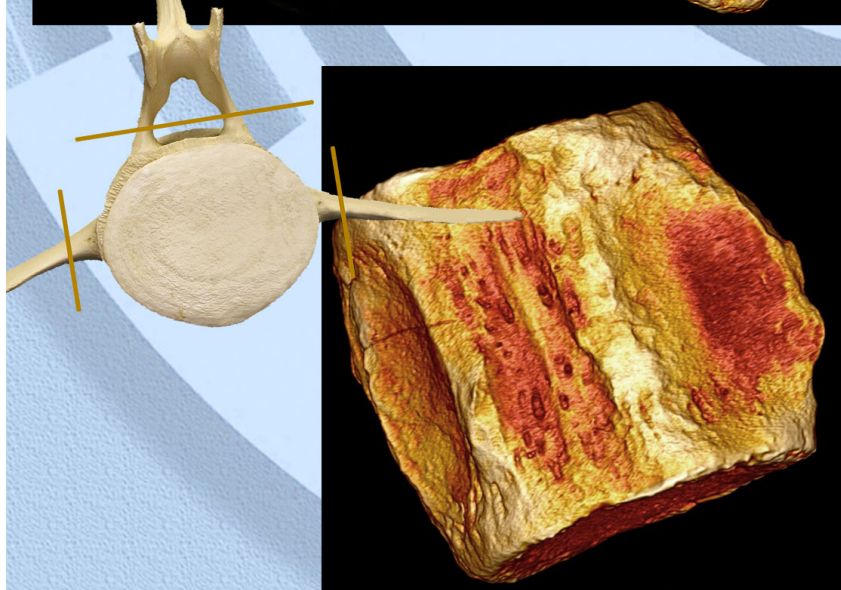
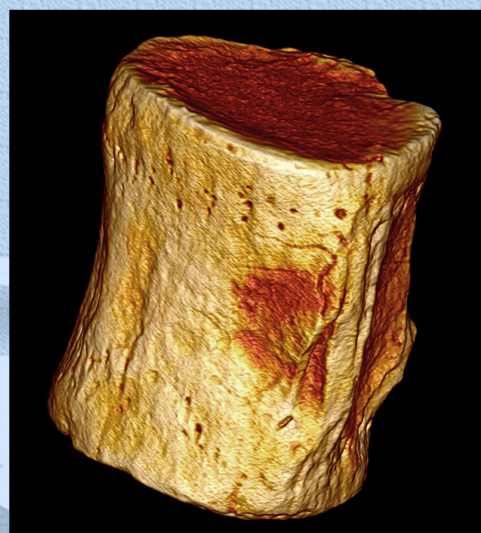
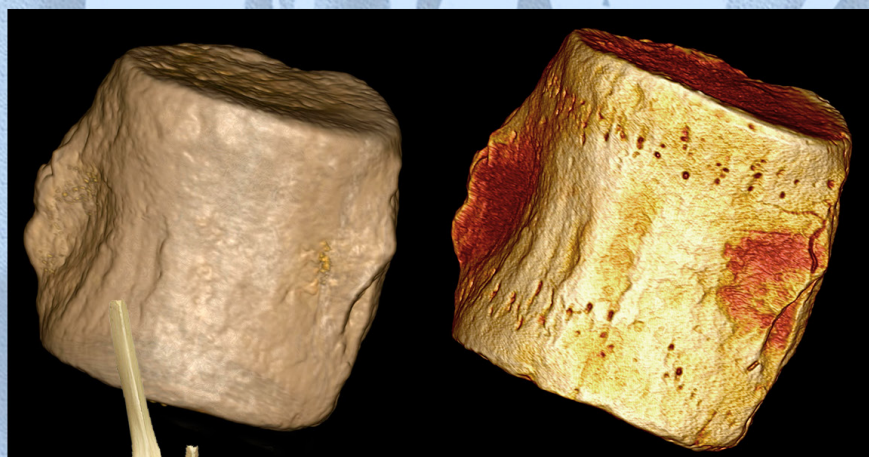
SPRMN — Section of Paleoradiology e N.D.T. by X-Rays (case nº5)

Caparica Ancient Cliff, Modern Tech: A Whale Reborn



The Fossil Cliffs of Costa da Caparica (Portugal) are remarkable and date back to the Miocene and, primarily, the Pliocene epoch, spanning from approximately 23 to 3 million years ago. The fossil was unearthed in the early 1970s at a cliff loss created by the road between Almada and Caparica (nowadays all the cliffs are protected areas).

The fossil (right), a bone, a vertebra, was studied by CT scanning in 2012. While its external appearance was very similar to the CT 3D data reconstruction views (below, left), when the window parameters were adjusted (below, right), the underlying cortical bone appeared remarkably well-defined depicting fractures (lost processes, graphic model below) and in particular, revealing in great detail the cortical bone and its vascular tracks and penetration holes.



These findings led to the conclusion that it was a mammal vertebra, specifically from a cetacean. Subsequent research identified its owner as a sperm whale (below), once living happily in the nearby sea, by then with a very distinct coastal pattern from the present-day Caparica Cliffs and beautiful beaches.



This Visual Abstract aims to reveal what CT can help reveal in fossils. Beneath the rough stony shapes it may superbly emphasize their underlying original anatomy.