Press Conference

15 March 2025. From 01:00 PM to 02:30 PM (CET)

Castel San Pietro Terme (BO) Italy

SAR Tecnology Khafre Project For All Mankind

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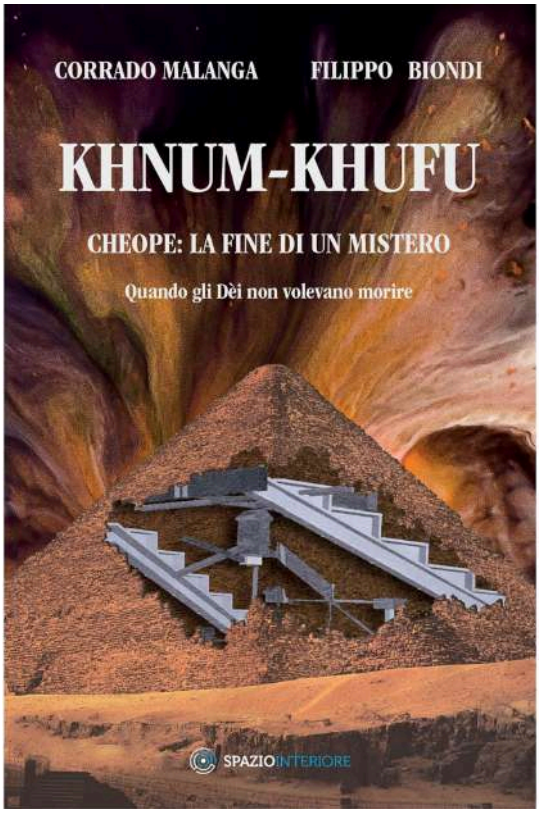
Khafre Project

Abstract of the Conference on March 16, 2025:

This abstract summarizes the key points of our research, which aimed to clarify the possible hidden structures inside the second pyramid of the Giza Plateau, known as the Khafre Pyramid. This research was conducted using non-invasive techniques based on publicly available Synthetic Aperture Radar (SAR) data, provided as open-source by Capella Space (https://www.capellaspace.com) and Umbra (https://umbra.space).

First Step

Our study was inspired by previous research conducted, described, and published by Filippo Biondi and Corrado Malanga. That research, focused on analyzing the internal structures of the Pyramid of Khafre, led to the publication of a book and a scientific paper. It revealed numerous internal structures within the first pyramid of the Giza Plateau, uncovering the presence of rooms and corridors both above and below ground level.This research utilized Synthetic Aperture Radar (SAR) technology, which, for the first time, employed an innovative and original software developed by Filippo Biondi. This software allowed the transformation of the radar electromagnetic signal into phononic information, capable of detecting millimetric displacements of vibrating structures inside the analyzed structures that had remained completely invisible until then.



remote sensing

MDPI

Article

Synthetic Aperture Radar Doppler Tomography Reveals Details of Undiscovered High-Resolution Internal Structure of the Great Pyramid of Giza

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Abstract: A problem with synthetic aperture radar (SAR) is that due to the poor penetrating action of electromagnetic waves inside solid bodies, the capability to observe inside distributed targets is precluded. Under these conditions, imaging action is provided only on the surface of distributed targets. The present work describes an imaging method based on the analysis of micro-movements on the Khnum-Khufu Pyramid, which are usually generated by background seismic waves. The obtained results prove to be very promising, as high-resolution full 3D tomographic imaging of the pyramid's interior and subsurface was achieved. Khnum-Khufu becomes transparent when observed in the micro-movement domain. Based on this novelty, we have completely reconstructed internal objects, observing and measuring structures that have never been discovered before. The experimental results are estimated by processing series of SAR images from the second-generation Italian COSMO-SkyMed satellite system, demonstrating the effectiveness of the proposed method.

Keywords: synthetic aperture radar; doppler frequencies; multi-chromatic analysis; micro motion; pyramid of Khnum-Khufu; sonic images

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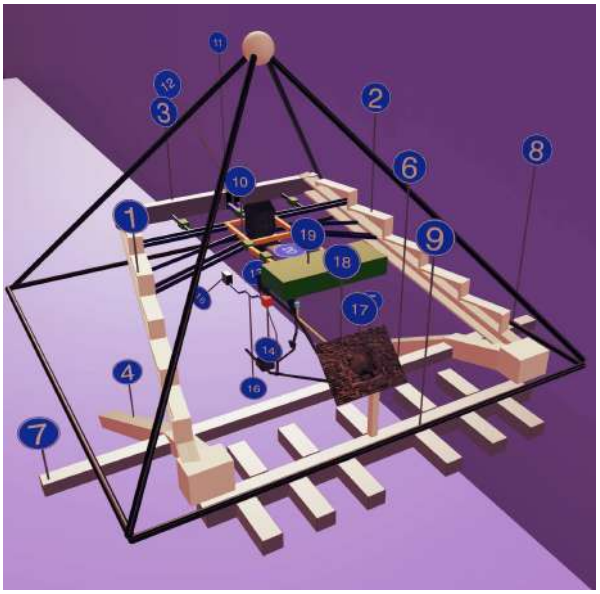
1. Introduction

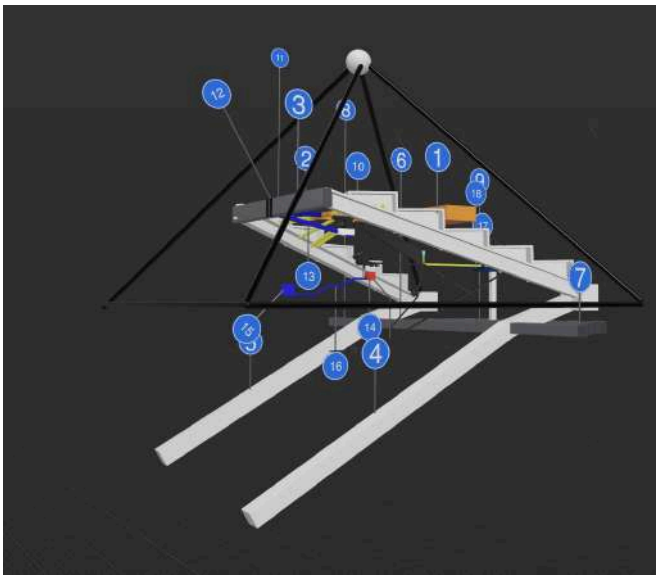
The Pyramid of Khnum-Khufu, also known as the Great Pyramid of Giza or Cheops, is the oldest and largest of the three main pyramids that are part of the necropolis of Giza (Egypt). The infrastructure is built with blocks of granite, weighing approximately 2.5 t each. Completion of the work is estimated to have taken at least two and a half million blocks, put in place with millimeter precision in a short period of time, estimated at around 15 or 30 years [1]. Despite being one of the oldest and largest monuments on Earth, to date, there is still no common and scientifically established idea on how the pyramids of Egypt were built [2,3]. The Red Sea was the most important Harbor Facilities at the time of King Khufu [4], where an exceptionally well-preserved harbor complex from the Early Old Kingdom at Wadi al-Jarf along the Egyptian coast of the Red Sea has been excavated.

1.1. Egyptology Engineering and Ultrasound Introduction

In studying the origin of the pyramids, we believe we should not overlook the existence of ancient mythological writings. A study concerning the myths and folklore of the ancient peoples of the world, highlighting all the similarities between them, was made in [5]. The argument that myths are insignificant—often considered mere stories passed on through generations—has been challenged. The authors are open to the possibility that a technologically more advanced civilization existed before a known timeline, where the existence of various glacial ages [6] prevented the passing down of history. They focus on

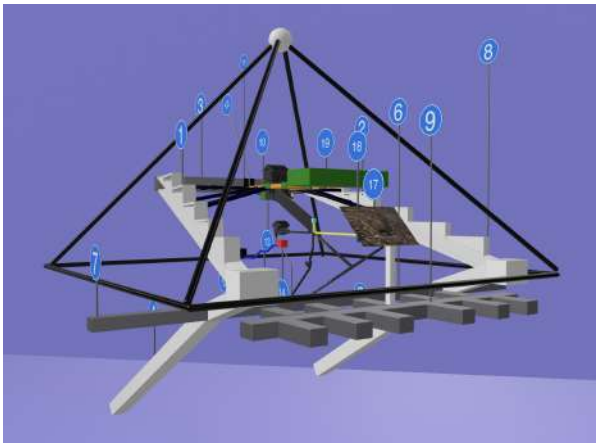
The tomographic images obtained through this methodology led to the construction of a model of the Pyramid of Khufu, of which we present four reconstructions below.

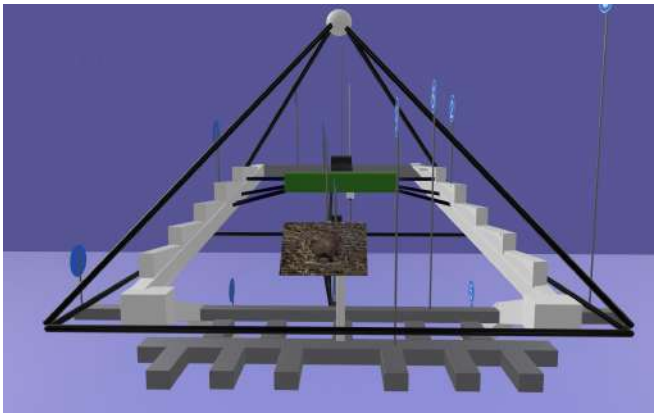




Second Step

In the second phase of our research, we decided to focus the radar analysis on the second most important pyramid of the Giza Plateau, the Pyramid of Khafre. This pyramid provided a wealth of data regarding previously unknown internal structures. The tomographic images obtained from the satellite data processing immediately highlighted the presence of 5 structures located at the center of the pyramid, above Belzoni's chamber, which contains a presumed sarcophagus mistakenly believed to be the Pharaoh's tomb.

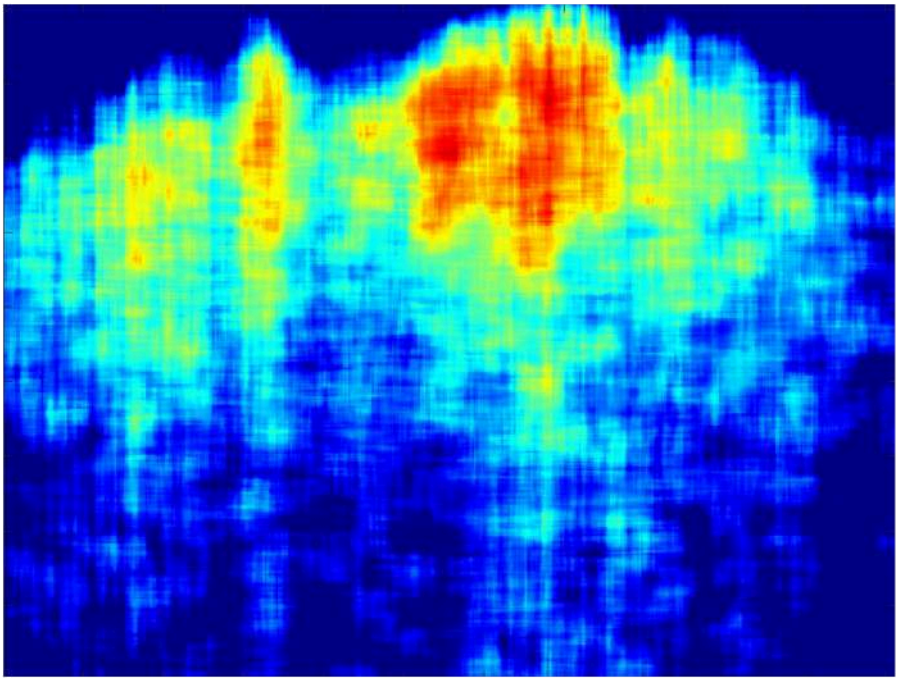


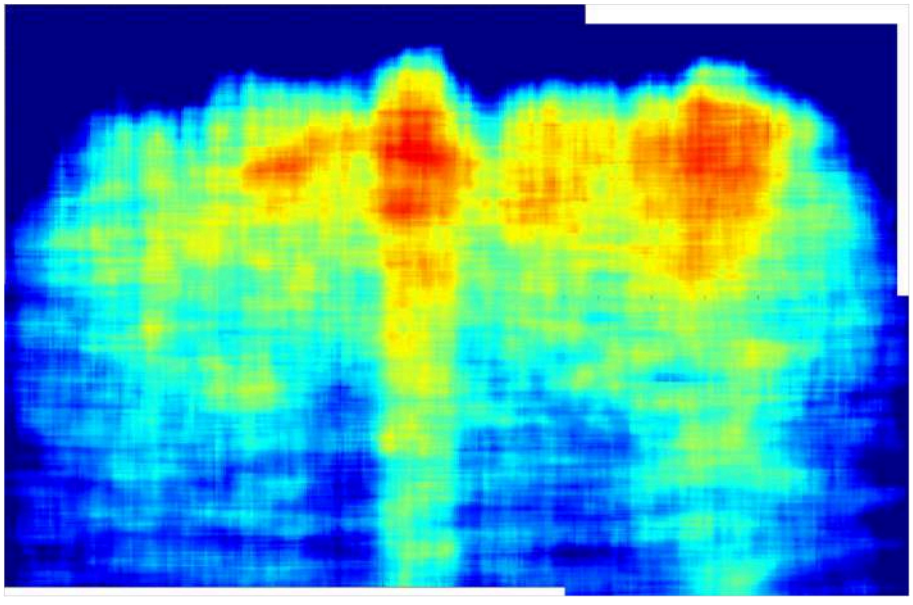


These structures share the same shape as the so-called Zed structure found inside the Pyramid of Khufu, above the ceiling of the so-called Pharaoh's or King's Chamber. The 5 Zeds appear to be

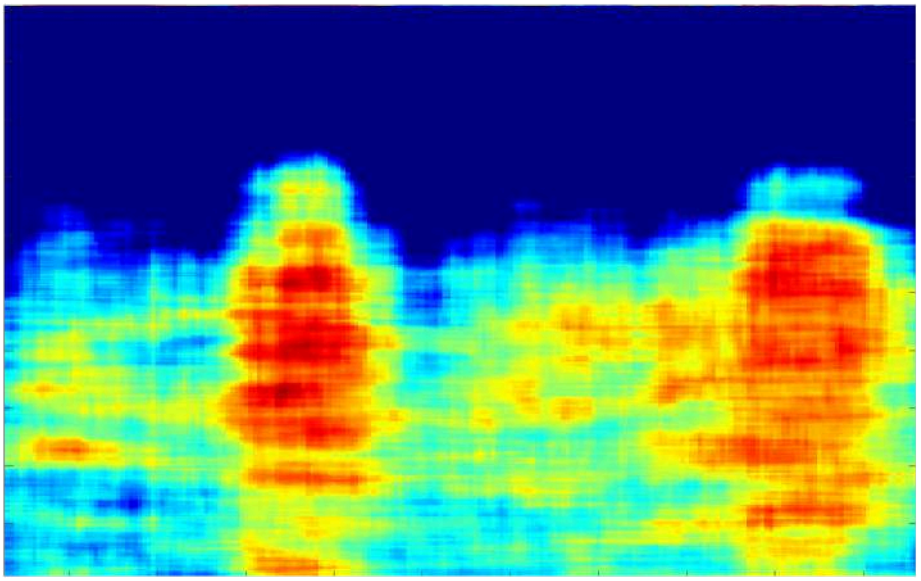
connected by geometric pathways, and alongside these structures, additional secondary structures are visible from various satellite angles, as shown in some of the tomographic images below.

The analyses of these data, obtained using entirely non-invasive techniques, are briefly summarized below. These findings allowed us to construct a 3D model of the entire complex. The examination of dozens of tomographic images obtained from different angles, using Capella Space and Umbra radars, enabled the 3D reconstruction of most of the objects inside the Pyramid of Khafre. Below, we present some images from our 3D analysis.





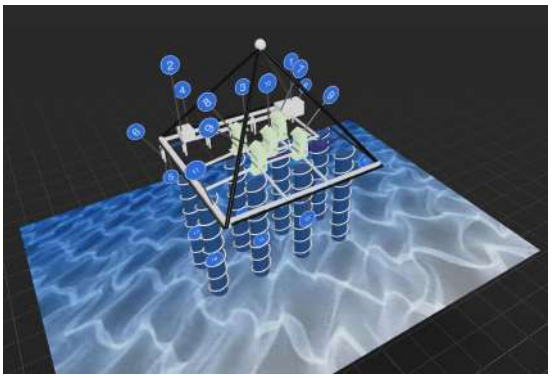
Analysis of the structures above Belzoni's chamber: intensely colored spots can be observed, appearing in all tomographic images taken from different angles, corresponding to internal artificial structures.

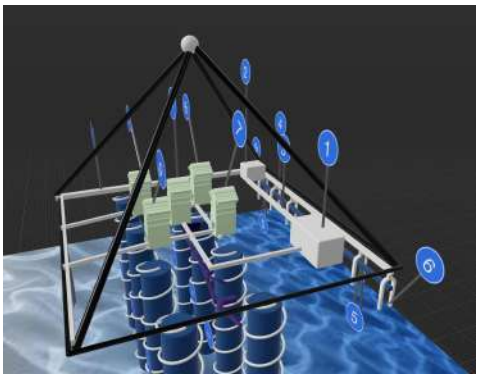


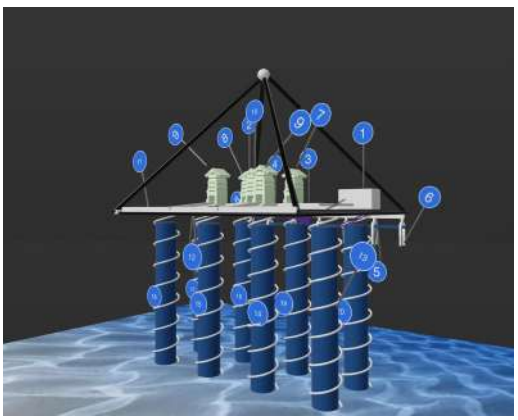
Improvement of the signal-to-noise ratio revealing the internal structure of the 5 Zeds, consisting of 5 horizontal levels and a sloping roof

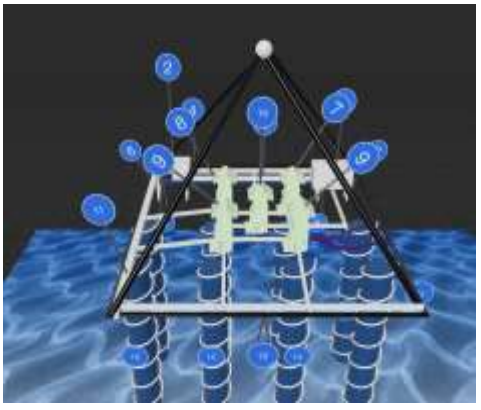
Tomography with another cross-sectional line showing the presence of vertical structures located

As observed in the 3D model, below the ground level (ground zero) of the main structure, vertically aligned cylindrical structures extend for hundreds of meters beneath the Giza Plateau. Notably, eight of these structures, arranged in two parallel rows from north to south, descend to a depth of 648 meters, merging into two large cubic structures measuring approximately 80 meters per side. These features are illustrated in the tomographic images and 3D models presented below.

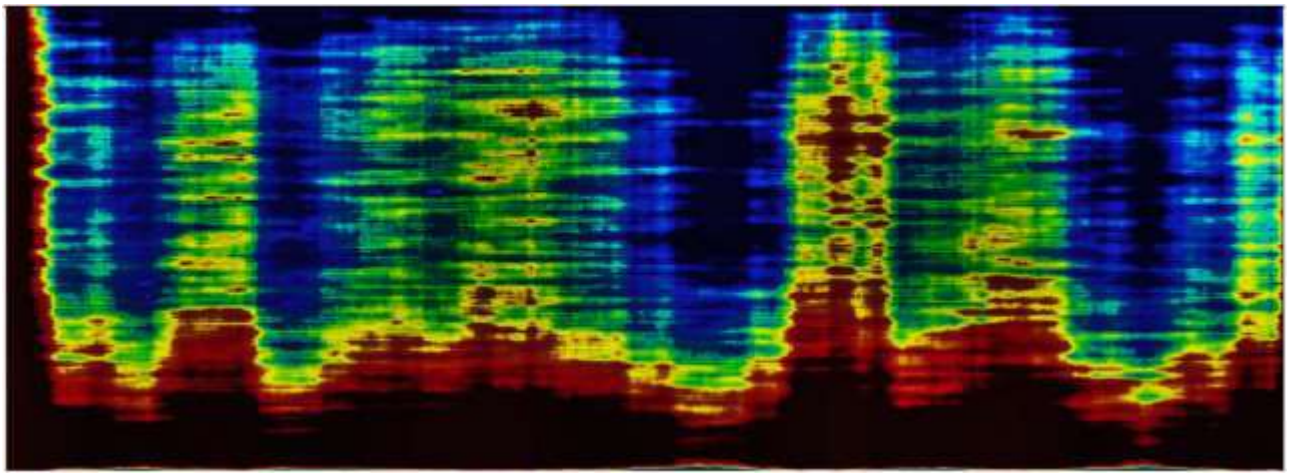




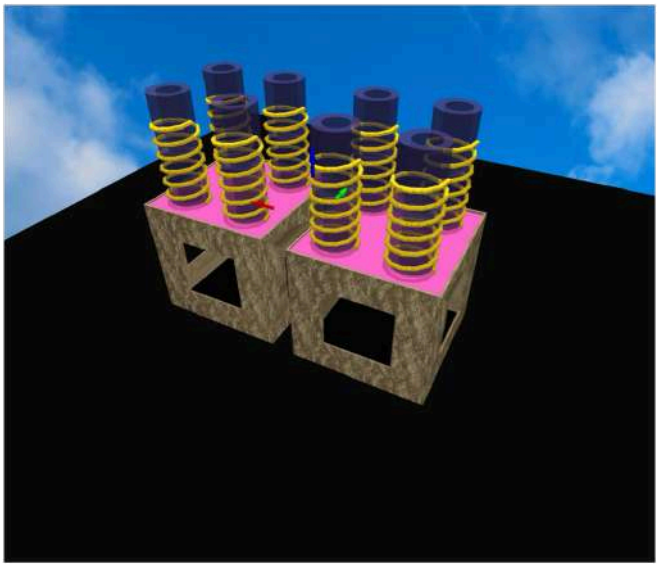


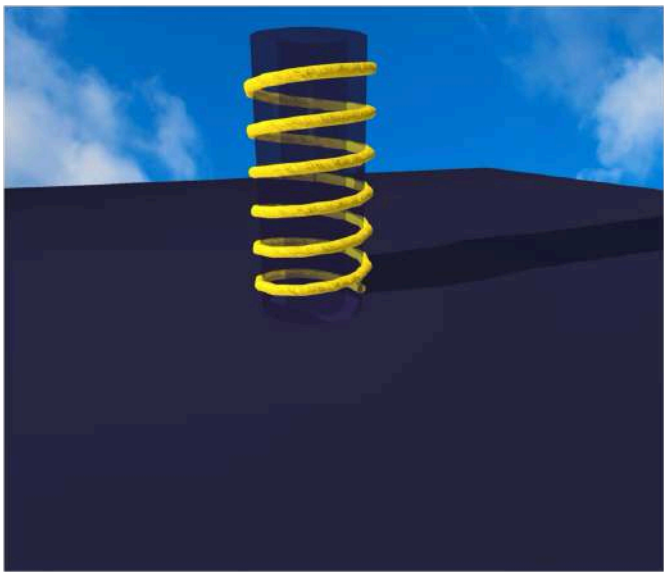


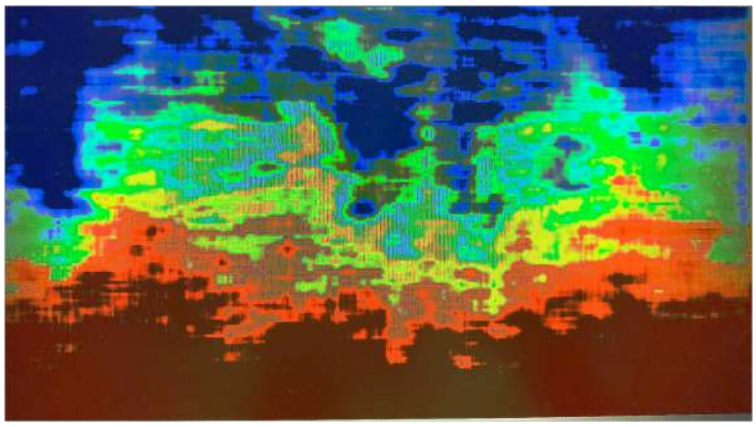
The 8 cylindrical structures identified in our tomographic images appear as vertical wells,

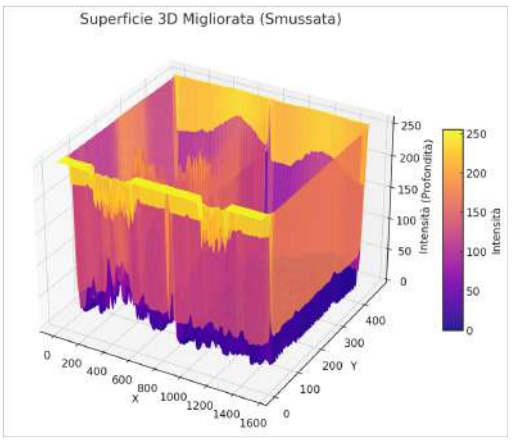


hollow inside, surrounded by descending spiral pathways.



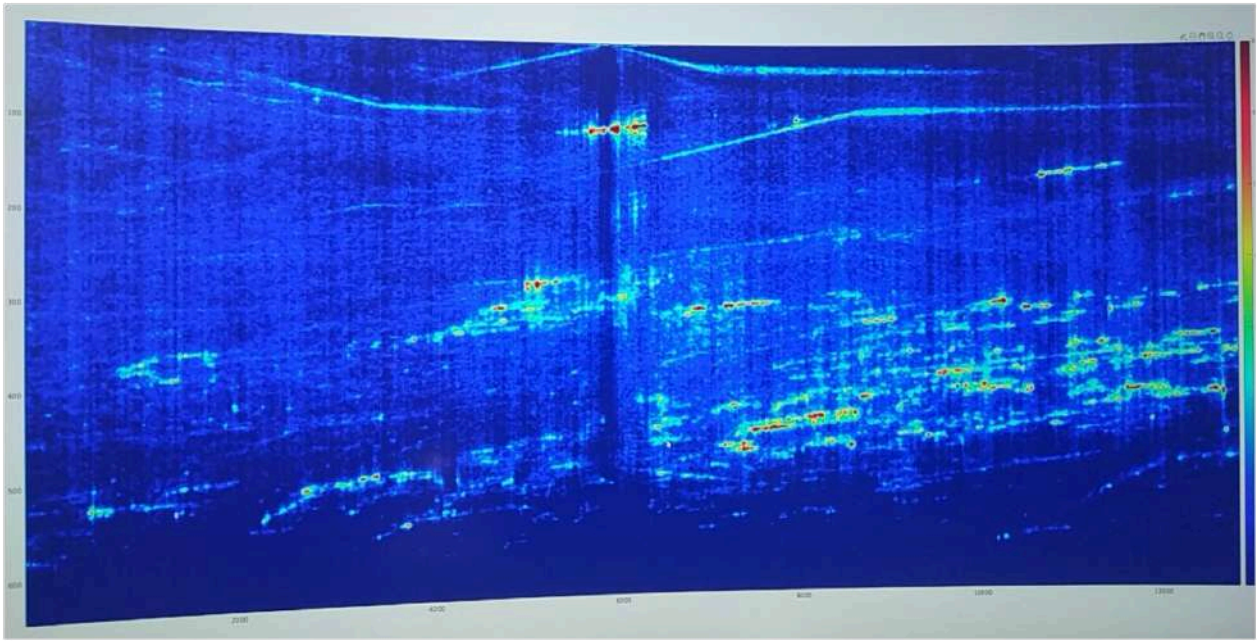






Third Step

The next phase involved analyzing the tomographic data to determine the full extent of the underground structures beneath the Giza Plateau. The tomographic images clearly reveal that structures exist beneath the plateau, extending below the pyramids of Khafre, Khufu, and Menkaure (Mykerinos) for approximately two kilometers beneath ground zero. As seen in the tomographic data, which places the Pyramid of Khafre at the center, with Khufu's shadow on the right and Menkaure in the upper left, these structures form a vast area of non-natural constructions following complex geometries. In the fourth step of our investigation, these structures will be further analyzed, with the possibility of excavation to verify the artificial nature of the structures we have identified.



Panoramic South-North view of the Giza Plateau with a tomographic line cutting through the Khafre structure at approximately half of its height. The darker central line corresponds to the edges of the Khafre Pyramid (Northeast and Southwest), which have low vibrational content and therefore appear darker. The various bright spots beneath the pyramids represent artificial structures located approximately 2 kilometers below the pyramid plateau.

Note: This abstract is released exclusively for journalists interested in attending the press conference on March 16 2025, where these discoveries will be extensively discussed and presented with supporting evidence.

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Armando Mei

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Marzo 2025