

# Earthquakes in ancient Egypt Evidences and impacts

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The Pharaohs considered the earthquake as “God’s Hammer”. There have been many earthquakes since the 19th century BC, the most famous earthquakes recorded in the history of ancient Egypt was the massive earthquake that struck Alexandria and caused the sinking of parts of the city in the Mediterranean sea, including the Isis Temple. this earthquake was between AD 956 and 1323



Lighthouse remains found in the Mediterranean Sea

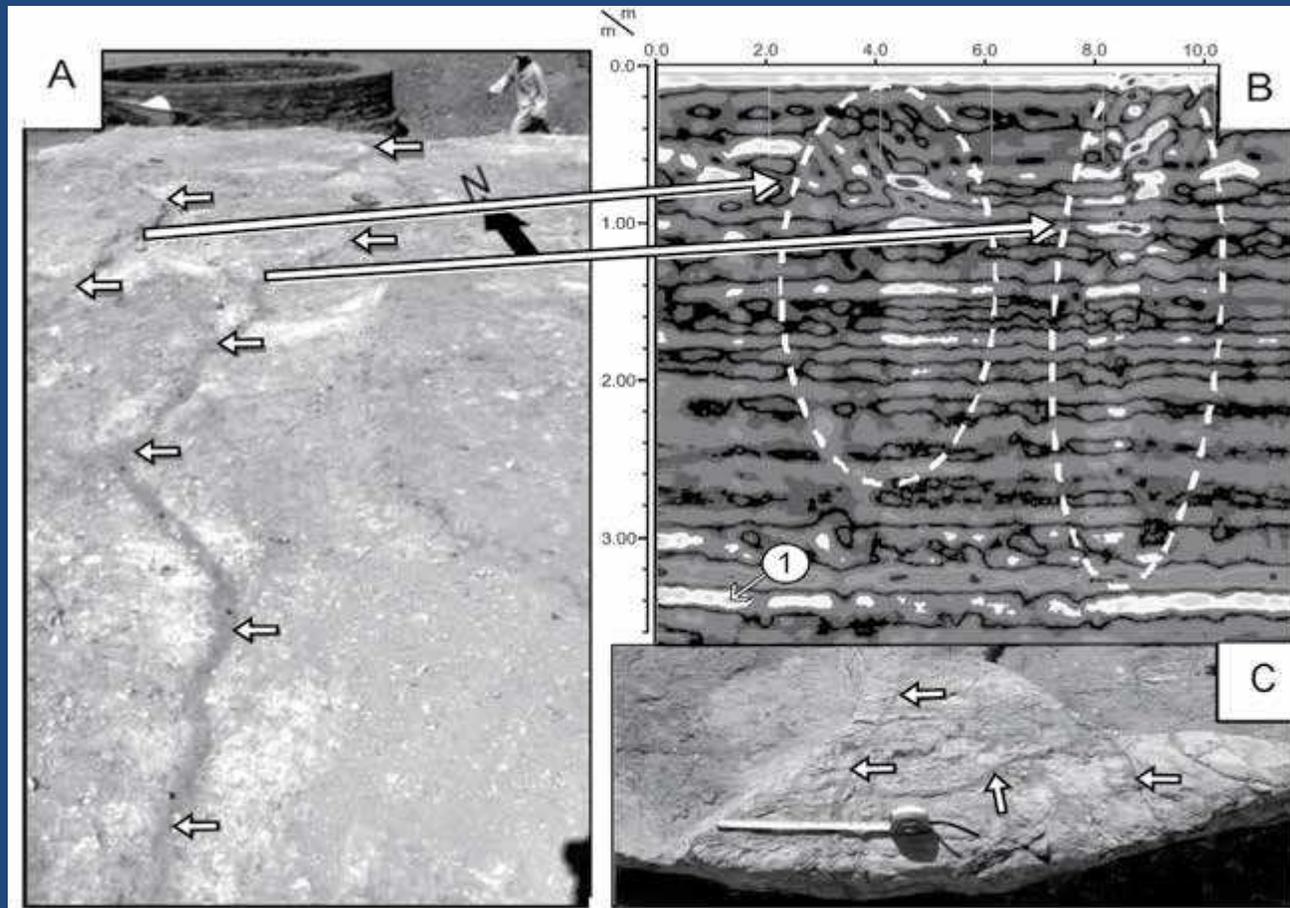
**The historian Strabo** talked about an earthquake in 27 BC and destruction one of the Memnon Colossi in the Temple of Amenhotep III is one from rare historical reports attesting to destructive seismic impacts in Ancient Egypt.

Then some archeologists have tried to find explanations for some aspects of the destruction of Pharaonic monuments that could be result of earthquakes Like Hourig Sourouzian & Dieter Arnold

**First :the German Mission** identified Evidence of a Strong Earthquake in the Period Between 1200 and 900 BC in the Temple of Amenhotep III and in Other Temples of the Ancient Thebes



They discovered Three clear signs of a strong earthquake were identified within the peristyle during the investigations of 2007-2010. Many signs of liquefaction and soil spreading caused by strong earthquake were recorded the earthquake occurred between 1200 and 900 BC, and the pottery shards recovered from the destruction level date to 1200 BC.

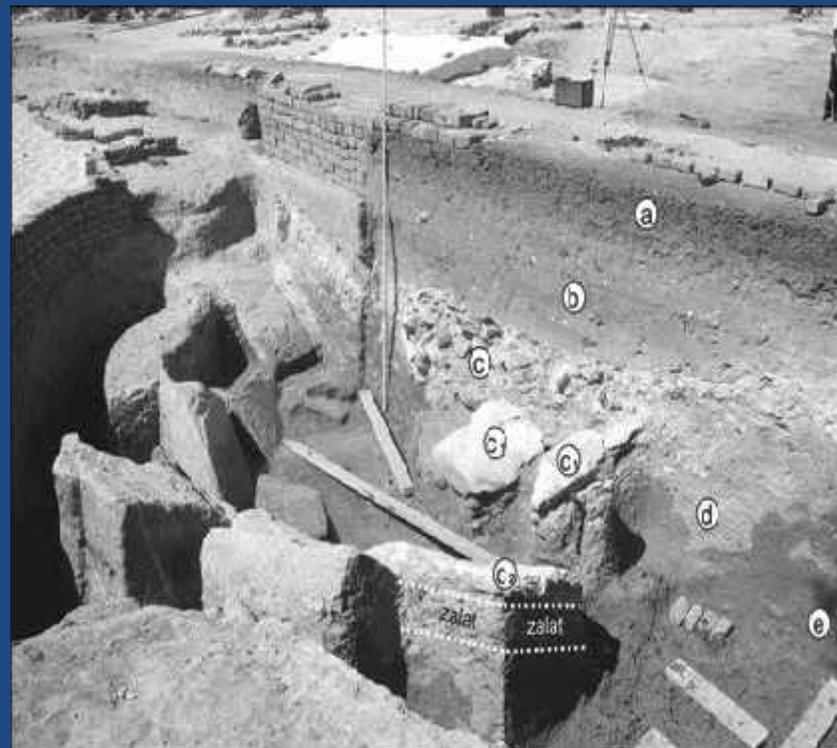
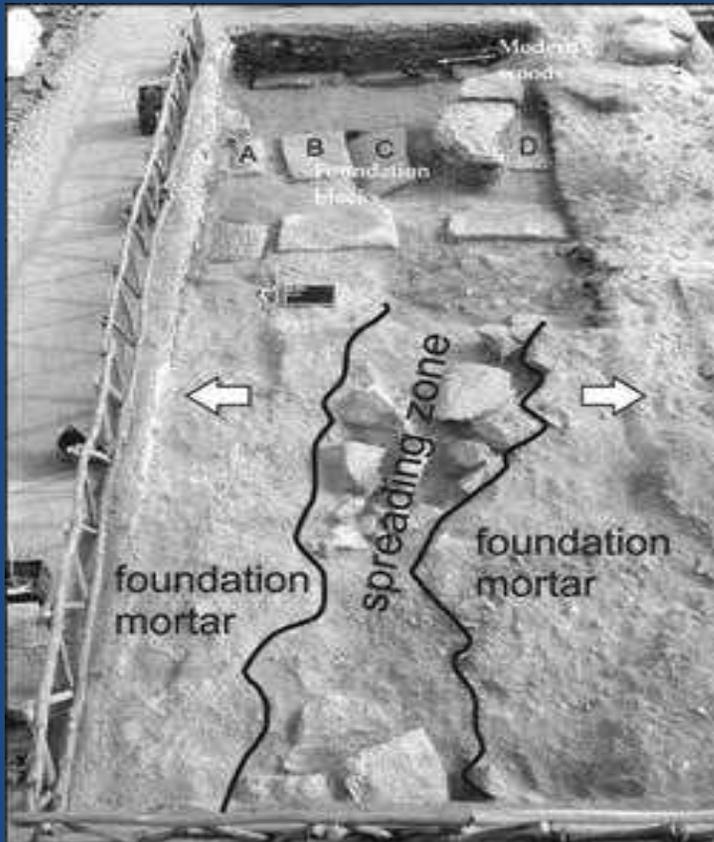


dike-cracks filled with sand

B: geo-radar survey profile identifying penetration of dike cracks to the depth of up to 3 m

C: dike-cracks cutting through the column base

*The slabs of the floor pavement that subsided forming an “amphitheater” contour, and the section of the sand blow structure.*



*Spreading crack in the lime and gravel mortar*

**The Colossi of Memnon and Amenhotep III Temple Conservation Project**

## Colossi of Memnon

Two large seated colossal statues made of white alabaster stood at the entrance to the Third Pylon in the Temple of Amenhotep III.(14th century BC)

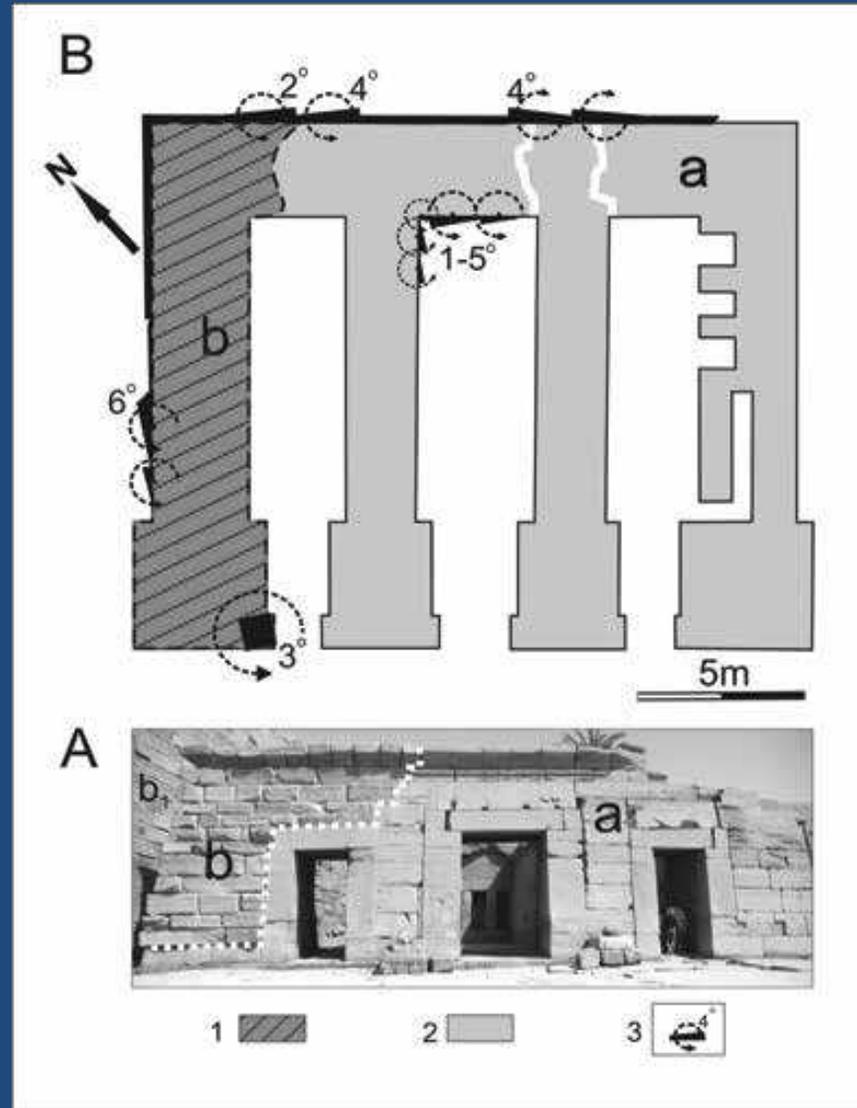
Blocks from the pedestal of the statue were torn away from their place and lay on its southern lateral side in rotated position. The three lying parts of the colossal statue along with the pedestal blocks indicate a clear clock-wise rotation This might have happened only under a strong earthquake impact.



## Earthquakes impact on The Triple Shrine of Seti II in the First Pylon of the Karnak Temple

*Results of archeo-seismological inspection of the Triple Shrine of Seti II near the First Pylon of the Karnak temple.*

*A: photo of the temple façade;  
B: layout of the temple. a: the original eastern part of the temple built of red quartzite (2);  
b: repaired western part of the temple built of crudely processed sandstone (1);  
b1: wall of the First Pylon built of the same sandstone as the western part of the temple*



## Earthquakes evidences at Dahshour in the middle kingdom

Metropolitan museum of art mission

Metropolitan museum of art mission

They found earthquakes damage at the following monuments :

- Senwosret III complex
- The mastaba of Nebit
- The mastaba of Khnumhotep
- Amenemhat III pyramid



Damaged on the right side walls of the burial chamber of Amenemhat I at Lisht



fallen casing blocks of the Mastaba of Nebit at Dahshour

## The Egyptian Earthquake of October 12, 1992 effects on antiques and Islamic monuments.

The earthquake of October 12, 1992 did cause damage to some of the Islamic monuments, such as cracking in the walls, arches and domes; leaning of minaret towers and corresponding failure of the interface between the minaret towers and the rest of the mosque structure; and partial or total collapse of the tops of the minarets.

These differential settlements have resulted in sizeable cracking in the walls of several mosques and leaning of minarets.

anyway **212** of **560** monuments in Cairo were reportedly damaged although none destroyed.



Sabil And Kuttab of Sultan Qaitabay



- Complex of Sultan al-Ashraf Qaytbay in the Eastern Cemetery or the Mamluks' Desert.

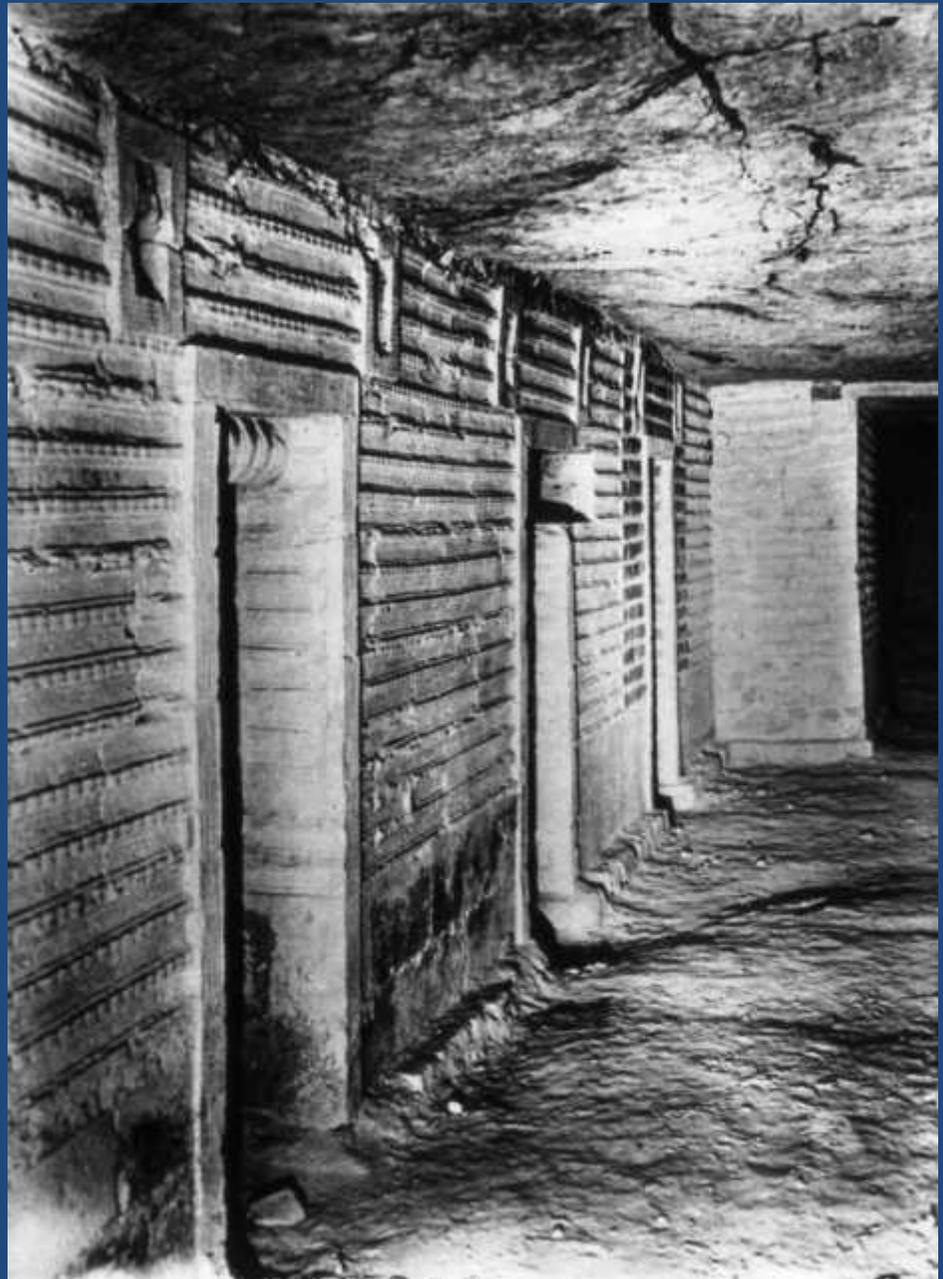


Stone replacement. Hospital of Sultan Al-Mansur Qalawun



El-Sennari House

## The Step Pyramid of Djoser at Saqqara,





## **Case study**

**For Egyptian archaeologists It is very difficult so far to deal with this kind of search , We still miss the skill of working as a team work ,**

**Could this conference be a sign of hope for such research?**

**We hope that we can start a team work consists of :**

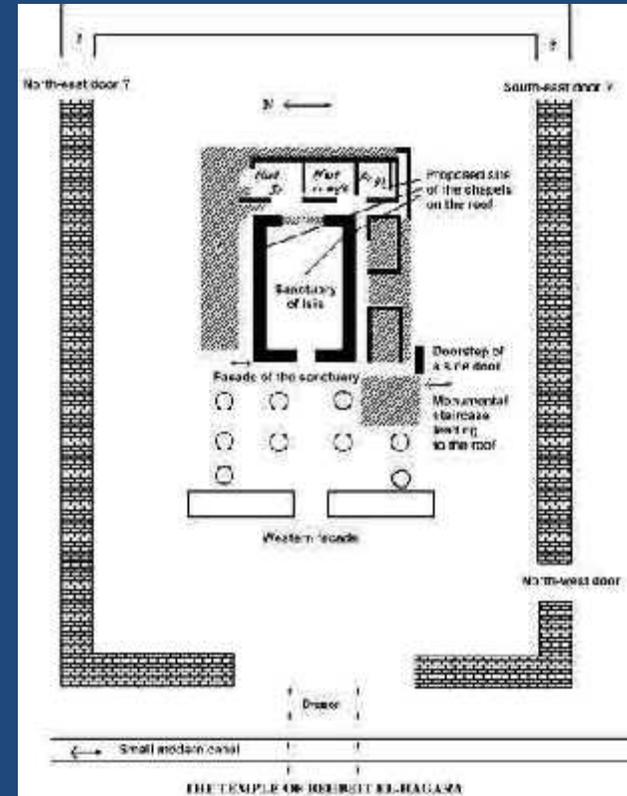
**archaeologists , specialists in remote sensing, seismologists, geophysical survey , And geologists ,**

**And we have this chance in the site of The temple of Behbeit el-Hagar**

## The temple of Behbeit el-Hagar

Behbeit El Hagar is an archaeological site in Lower Egypt. It contains an ancient Egyptian temple for the goddess Isis.

According to Arnold<sup>17</sup> the earthquake dated to 27 BC caused strong damages in the area of Thebes, Approximately in the same time, the same or another earthquake destroyed the Iseum (Behbet al-Hagar) in the Delta. The distance between the Temple of Amenhotep III in ancient Thebes and the temples of Behbet al-Hagar located in the Nile Delta, makes up 600 km .



No earthquake, even the most catastrophic one, is capable of causing destruction over an 600 km large area. It is extremely difficult to suggest occurrence of two strong earthquakes within one year in Egypt, Two destructive earthquakes located 600 km far one from another and happening within a year are extremely unlikely even in countries with very high seismic activity.

**The site and its monument are now completely ruined. The temple was dedicated to the family of Osiris by the last Egyptian pharaoh, Nectanebo II. Then Ptolemy II and Ptolemy III completed the decoration of the temple. This covers a period from 360 to 221 BC .**







Salt inside the hypostyle hall.



**The history of the building itself is controversial. It is very important to determine when the main Temple was destroyed ? and to establish how such a building could come to be in such a wrecked condition?**

**For geological reasons, is the building too heavy for the ground?  
As a result of repeated earth tremors, earthquakes being historically known in antiquity?**

**There are many questions to answer**

**One conclusion is evident:**

**if the whole site is not excavated soon, its history (both prior to the building of the temple and after its destruction) will be lost forever.**

**The site, as it is now, is a scientific challenge for many specialists such as geologists, hydrologists, seismologists, topographers, archaeologists and architects. It holds many answers for the scientific world and if we do not wish to lose an important chapter of the history of the Mediterranean civilization involving Egyptian, Greek and Roman cultures, the site urgently needs the help of many specialists**

**Thanks for  
your attention**