

# The truth about Tsunami of Alexandria 365 AD

By  
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The date 21 July 365 marked a profound turning point in the history of Alexandria city. Alexandria had been struck by earthquakes on more than one occasion but that which battered the metropolis and the neighboring cities in this day reached dimensions which had never before been experienced. Reference to historical accounts, a gigantic tsunami hit the coast and washed ships ashore onto the roofs of the houses. Centuries later this day was remembered in Alexandria as the day of fear. Was Alexandria destroyed by this tsunami and how the city survived after this earthquake? How famous landmark of Alexandria survived centuries after the earthquake? Many questions arise and many proposals were introduced by researches.

## Evidence of Tsunami of Alexandria in AD 365

Contemporary historians Ammianus (d. 395), John Cassian (d. 435) and Sozomenes (d.c.450) say that in Alexandria "*...the sea passed beyond its boundaries and flooded a great deal of land, so that on the retreat of the waters the sea-skiffs were found lodged on the roofs of the houses*". In the region of the lagoon of al-Manzala, east of the Delta between Damietta and Port Said, the Land previously rich became a desert: "*....the sea rose suddenly due to the earthquake, rushing over its limits, ruining all the villages, covering with salt the land which before was fertile...only villages on high ground survived*". The anniversary of this inundation, which was called the birthday of an earthquake, was commemorated at Alexandria by a yearly festival.

Later writers add that in Alexandria alone 50000 houses were flooded and 5000 people were drowned, ships were carried by the waves over the city walls and boats in the Nile were deposited on dry land about three and half kilometers from the river. The sea-wave had equally destructive effects in other large intermediate-depth shocks originating in the Hellenic Arc. Other ancient writers wrote about AD 365 earthquake like Libanius and St. Jerome

**Ammianus Marcellinus** (325/330–died after 391) who was a fourth-century Roman historian recorded the events about earthquake of AD 365. His work chronicled in Latin the history of Rome from 96 to 378, although only the sections covering the period 353–378 are extant. Amianos Marcellinos was visiting Egypt probably between 378 and 383 AD and he should be visiting Alexandria.

The following is an extract from Amianos Marcellinos writings, (in this printed issue of the book, the events were titled as the year 366 AD and not 365 AD)

*-15.....on the 21<sup>st</sup> of July, in the first consulship of Valentinian and his brother, such as are related in no accident fables or histories.*

*16. For a little before sunrise there was a terrible earthquake, preceded by incessant and furious lightning. The sea was driven backwards, so as to recede from the land, and the very depths were uncovered, so that many marine animals were left sticking in the mud. And the depths of its valleys and the recesses of the hills, which from the very first origin of all things had been lying beneath the boundless waters, now beheld the beams of the sun.*

*17. many ships were stranded on the dry shore, while people straggling about the shoal water picked up fishes and things of that kind in their hands. In another quarter*

## Tsunami Alexandria



**Fig. 1**-Alexandria Lighthouse erected 3<sup>rd</sup> century B.C. with estimated height of 115 to 135 meters, survived 365 AD earthquake and collapsed in the 14<sup>th</sup> century AD. (sketch drawn by archaeologist Hermann Theirsch 1909)

*the waves, as if ranging against the violence with which they had been driven back, rose, and swelling over the boiling shallows, beat upon the islands and the extended coasts of the mainland, leveling cities and houses wherever they encountered them. All the elements were in furious discord, and the whole face of the world seemed turned upside down, revealing the most extraordinary sights.*

*18. For the vast waves subsided when it was least expected, and this drowned many thousand men. Even ships were swallowed up by the furious currents of the returning tide, and were seen to sink when the fury of the sea was exhausted; and the bodies of those who perished by shipwreck floated about on their backs or faces.*

*19. other vessels of great size were driven on shore by the violence of the wind, and some were even driven two miles inland, of which we ourselves saw one in Laconia, near the town of Mothone, which was lying and rotting where it had been driven.*

(Ammianus Marcellinus: Roman History, Bk. XXVI. Ch. X., p.434)

### **Was Alexandria destroyed by the tsunami of AD 365?**

There is more than evidence that Alexandria was affected but not destroyed by Tsunami of AD 365. Investigation to the events made the author of this article to believe that there was more than one earthquake struck Alexandria within a short period of time.

In an investigation to historical and archaeological references we have the following:

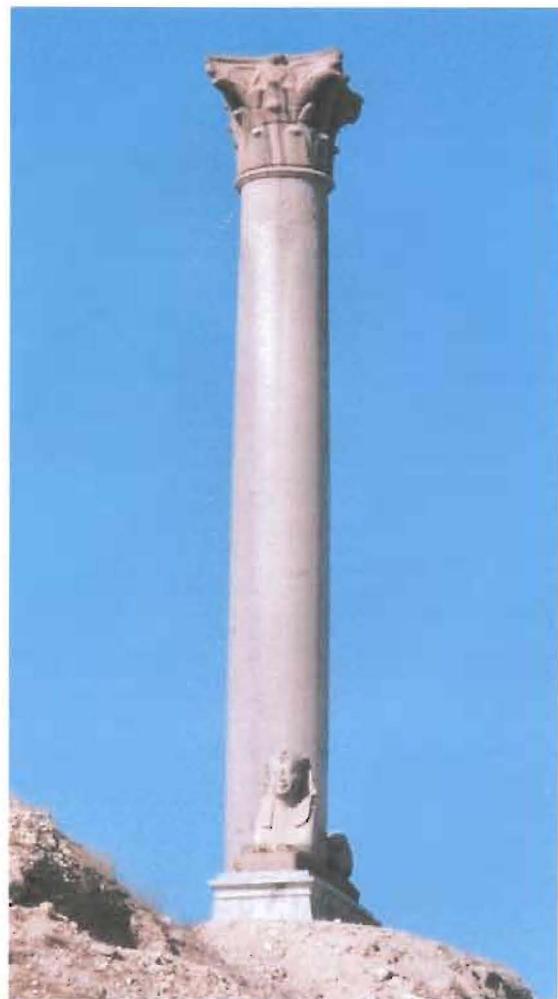
**First: Miracle of St Athansius:** The following were written in the chronicles of John, Bishop of Nikiu (7<sup>th</sup> century) under the events of the year 366,

*21. And in those days there appeared a miracle through the intervention of the apostolic S. Athanasius, the father of the faith, patriarch of Alexandria. 22, When the sea rose against the city of Alexandria and, threatening an inundation, had already advanced to a place called Heptastadion, the venerable father accompanied by all the priests went forth to the borders of the sea, and holding in his hand the book of the holy Law he raised his hand to heaven and said : 'O Lord, Thou God who liest not, it is Thou that didst promise to Noah after the flood and say : "I will not again bring a flood of waters upon the earth".' 23. And after these words of the saint the sea returned to its place and the wrath of God was appeased. Thus the city was saved through the intercession of the apostolic S. Athanasius, the great star.*

By review to above mentioned extract, we realize two things which make us believe that there was more than one earthquake struck on AD 365 within a short period of time. The first reason is how Pope Athanasius predicted the earthquake and expected sea rose against the city and gathered with priests on the sea shore to pray to God to stop its destroyable effect. The more reasonable is that there was a series of earthquakes with less magnitude followed the first powerful one of AD 365 and Pope Athanasius and scientists of Alexandria were aware that such earthquakes will be followed by sea tidal waves. There must be a warning signal to an earthquake about to start or a signal of some kind which pushed them to hurry to the sea shores and pray to God to stop the tidal waves destroyable effect. Second, we realize that the events were dated by 366 and not 365 which could be explained by one year separates two earthquakes or it is a mistake of the translator or author of the chronicles.

### **Second: Famous landmark of Alexandrian survived the Tsunami of AD 365**

It is worth mentioning that the famous landmark of Alexandria survived after the great earthquake of 365. The lighthouse of Alexandria is one of the world's longest-serving functional monuments. No fewer than seventeen centuries passed between its construction and its collapse (3<sup>rd</sup> c B.C to 14<sup>th</sup> c AD) during which time it served as a



**Fig 2**-Pompy's Pillar-monolithic piece made from Aswan Granite 30 meters height, erected AD 291 in Alexandria and survived AD 365 earthquake. It was appeared in maps drawn by travelers even until the 14<sup>th</sup> century



**Fig 3-**A political map showing the countries of the Mediterranean Sea as they are today.

guide to sailors approaching the coast of Egypt. During the course of almost two millennia it experienced many vicissitudes, and when one considers to what degree its position exposed to the winds, to storms (which can be very violent at Alexandria) and even to tidal waves, like the one which affected the eastern Mediterranean in AD 365, and becomes convinced that it was an exceptionally well constructed building.

Pompey's pillar is a monolithic piece made from Aswan granite is the biggest such monument in the Greco-Roman world. The shaft is 30 meters (98 ft) high and has a diameter of 2.7 meters (9ft) at the base and 2.3 meters (7.5 ft) at the summit. It stands on a high base with a molded profile, which appears to rest on a collection of refurnished building.

The name Pompey's pillar is a misnomer, invented by travelers, as it is believed that it was erected in AD 291. A large inscription on the west side of its base informs us that it was dedicated to the Emperor Diocletian by Publius, the Prefect of Egypt at the time, after the Emperor's violent reception of the city. The column was used to certain as a landmark by seafarers arriving at Alexandria. It appears on all the maps drawn by travelers, even on the oldest such as that of the naturalist Pierre Belon from Le Mans (fourteenth century).

According to De Cosson with reference to Captain H. Lyons (Preliminary list of earthquakes recorded in Egypt in the Cairo Scientific Journal, Vol. 1.i. p.177), the earthquake which did considerable damage in Alexandria in the fourth century, on four occasions in 312, 358, 365, and 396, probably caused some destruction in Mareotis also especially in the great earthquake of A.D. 365.

### **Geological studies and excavations supporting the idea that more than one earthquake struck Alexandria in a limited period of time:**

-An aës 3 of the first years of the Valentinianus and Valens reigns (364-367) found in the stratigraphic essays in one of the destroyed buildings in the second half of the 4<sup>th</sup> century, made an evidence that the event that had upset the Tripoli city's life was to be dated after the middle of 364. (Tripoli is located to the west of Alexandria and on the African northern coast of the Mediterranean)

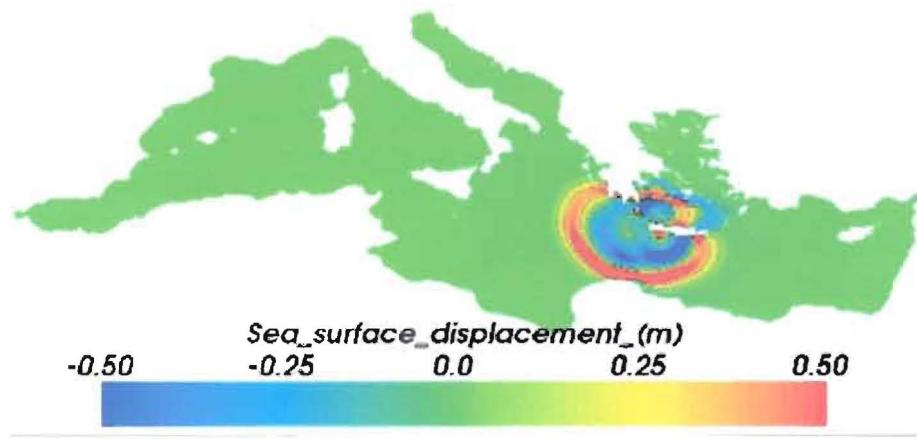
According to Di Vita, 1990, following excavation data and a methodical inquiry into all the *raports de fouilles*, he concluded that in 356 it was not only a limited tsunami in the Central Mediterranean, but a series of earthquakes of such intensity and so close in time that they were to be remembered as a unique event. A twin event, or almost, upset the Mediterranean basin in Oct 1856.

### **Geological evidence of A 365 earthquake caused Tsunami:**

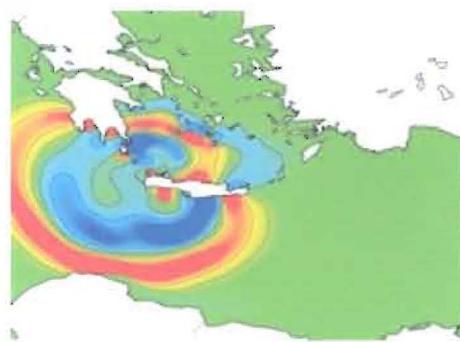
The location and tectonic setting of this earthquake have been uncertain until now. However, it is believed that the major earthquake struck in the Hellenic Arc, over 900 km northwest of Lower Egypt, was responsible for a catastrophic sea-wave that played havoc with coastal settlements on the Nile Delta.

Beth Shaw of the University of Cambridge in England, lead author of a study published in *Nature Geoscience* in 10 March 2008, published a study about the 365 AD earthquake proposing that massive earthquakes—greater than magnitude 8—may strike the Mediterranean roughly every 800 years based on their analysis study. They new measured the remains of corals, algae, and other sea life that run in a band along the coast of Crete.

The study present evidence from radiocarbon data and field observations that western Crete was lifted above sea level, by up to 10 m, synchronously with the AD 365 earthquake. The distribution of uplift, combined with observations of present-day



**Fig 4-**A map depicts the Mediterranean Sea (green) and the degree of sea-level displacement caused by a tsunami like the one that wracked the region in A.D. 365. A new study suggests that such tsunamis are relatively frequent in the region, striking perhaps as often as every 800 years. *Map by M. D. Piggott, G. J. Gorman, and C. C. Pain/Nature Geoscience*



**Fig 5-** Simulation for the tsunami produced in the Mediterranean by the AD 365 earthquake centered in Crete Island. The map drawn by of Beth Shaw and professor James Jackson, University of Cambridge

seismicity, suggest that this earthquake occurred not on the subduction interface beneath Crete, but on a fault dipping at about 30° within the overriding plate. Calculations of tsunami propagation show that the uplift of the sea floor associated with such an earthquake would have generated a damaging tsunami through much of the eastern Mediterranean. Measurement of the present rate of crustal shortening near Crete yields an estimate of ~5,000 yr for the repeat time of tsunamigenic events on this single fault in western Crete, but if the same process takes place along the entire Hellenic subduction zone, such events may occur approximately once every 800 year.

#### **Are there more than an earthquake:**

Historians continue to debate the question whether ancient sources refer to a single catastrophic earthquake in 365 AD, or whether they represent a historical amalgamation of a number of earthquakes occurring between 350 and 450 AD. The interpretation of the surviving literary evidence is complicated by the tendency of late antique writers to describe natural disasters as divine responses or warnings to political and religious events.

The relatively numerous references to earthquakes in a time which is otherwise characterized by a paucity of historical records strengthens the case for a period of heightened seismic activity. Kourion on Cyprus, for example, is known to have been hit then by five strong earthquakes within a period of eighty years, leading to its permanent destruction. Additional evidence for the particularly devastating effect of the AD 365 earthquake is provided by a survey of excavations which document the destruction of many late antique towns and cities in the Eastern Mediterranean around 365 AD.

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