Separation between London's and Manhattan's Cleopatra's Needles

There are two well known obelisks now called Cleopatra's Needles. These originally were once located in Egypt but were transferred to the Thames embankment in London (1878) and to the Central Park in Manhattan (1881). As the separation in years between their new re-erections was short, one might consider if there was a collaboration in the undertakings. Below the authors will show there was indeed collaboration and furthermore, the locations of the two sites were chosen one with the other. To do that, the architects and the builders, had to have formed precise concepts of where they were to be located relative to one another in the world.

Let us start with the London Cleopatra Needle first, as the site is fairly straight forward for us to comprehend its considered location during the late 1800s. The Airy Transit Circle at Greenwich was taken as the prime meridian and distances east or west of this meridian and north or south of its parallel within the London area were easily obtainable through local surveys. Based on the Thames embankment geodetic coordinates of today, one can fairly determine that in 1878 the site of the Thames Obelisk was considered to be at: 51.5080º N ; 0.11875º W

.We used an Ordnance map [1], to obtain coordinates, see Fig 1,

Although the coordinates of Manhattan's Cleopatra's Needle are also easily obtainable today, it is not an easy task to determine what the late 1800s learned fraternity considered its coordinates to have been. This was at a time when the distances across the Atlantic were based on the interval timings of star transits on either site of the ocean; then converting those timing intervals to longitude separations, based on that one earth day = 24 hours and the world-wide width of longitude is 360º.

The US created and used its own "Datum", i.e the responsible body chose as their reference site, a location in central continental US and determined first its locations coordinates (the documents however describing the methods used to determine them seem difficult to find), and from the site, the coordinates of other US sites were calculated. The latter procedure was mainly by using triangulation (of distances and their azimuths) across the country from the Meades Ranch site in Kansas. Meades Ranch's early coordinates varied by small amounts, but they were fixed in 1901. Following this fixing,

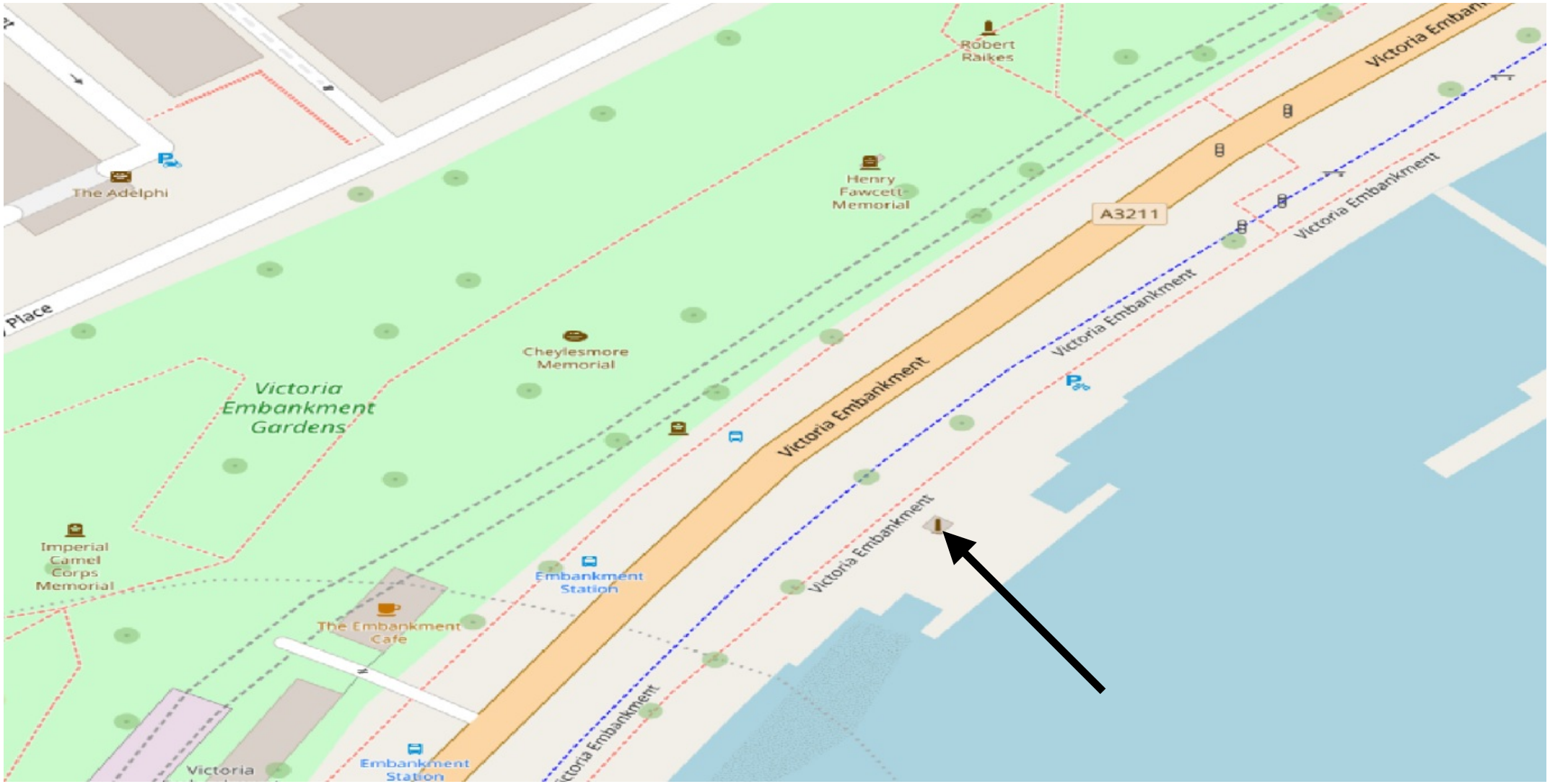
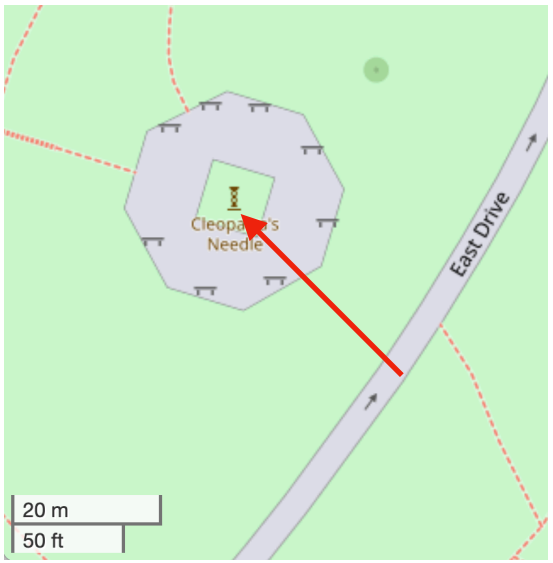
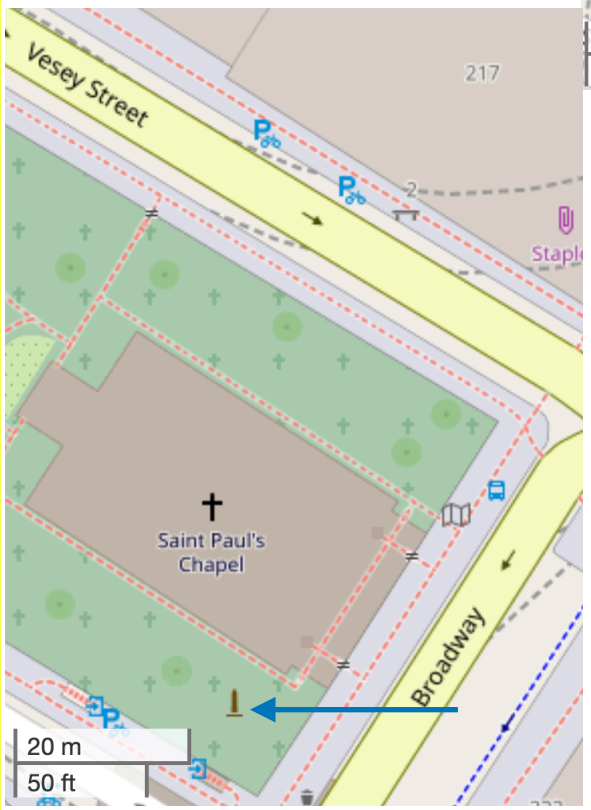


Fig. 1: Location of the Thames Cleopatras Needle
(QGIS and OpenStreetMap Contributors)
High resolution map : http://www.ancientcartography.net/London-Needle.pdf


Hudson River
East River
QUEEN
BROOKLYN


Cleopatra's Needle
East Drive
20 m
50 ft


25th Street
Porcelanosa
General Worth Square
Broadway
5th Avenue
Jemmy's Dog Run
20 m
50 ft


Vesey Street
217
Saint Paul's Chapel
Broadway
20 m
50 ft

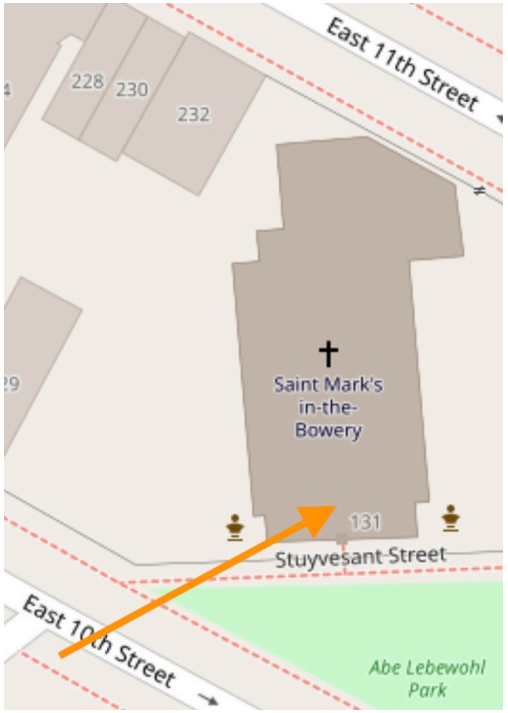

East 11th Street
228
230
232
Saint Mark's in-the-Bowery
131
Stuyvesant Street
East 10th Street
Abe Lebewohl Park

Fig. 2: Locations in Central Park (Mid Manhattan) of Cleopatras Needle (red circle/arrow) & the Emmet Obelisk in lower Manhattan (blue circle/arrow) & the General Worth Monument (located between the other two (green circle/arrow). Individual site maps. St Marks Church Steeple located at the orange arrow:

(Main map: dreamstime.com :dreamstime_xxl_56700920.jpeg).
High resolution map:
http://www.ancientcartography.net/Manhattan-2.pdf

Meades Ranch became the reference location for the US accepted geographical coordinate reference system in 1927, known as NAD27. The fixed coordinates of Meades Ranch were: 39°13’26.686"N ; 98°32’30.506"W.

The authors used a 1891 map of Harlem, Note 2, which we temporarily superimposed over a GoogleEarth image of Central Park to pinpoint the location of Cleopatra's Needle on the 1891 map. Following that, we obtained coordinates which we used together with the Clarke 1866 ellipsoid earth model, to replicate calculations as to the separating distance (orthodrome) between London's Cleopatras Needle and the proposed site for the Manhattan's Cleopatras Needle; that distance was 3466.380 miles (= D), (see Table 1).

Why might the distance D be of importance? To understand this, one has to recall that there are other obelisk-like structures located in Manhattan (and not all transferred from Egypt). One can go back prior to the erection of the Cleopatra Needle, by almost 50 years to the year when a cenotaph (an obelisk like-structure, a sculpture made by a Mr. Preece) was erected in 1832 on the southern side of St. Pauls Chapel in lower Manhattan and dedicated to a Thomas Addis Emmet, an Irish immigrant. The distance (northeastwards) from this cenotaph (the Emmet Obelisk) to Cleopatra's Needle is 5.25651 miles (= d), see Fig. 2. (There is another obelisk located between the two which will be described below.).

Ratio of the distances

Now comes the interesting part. Recalling the Clarke 1866 distance between the Thames' and Central Park's Cleopatras Needles = D and the distance = d between the Emmet obelisk and Cleopatras Needle, the ratio of those distances, d/D = 0.0015164. The authors propose that the Central Park emplacement of Cleopatra's Needle was based on the ratio d/D.

And $0.0015164 = 1.84/10.666^3$.

	Clarke 1866	Model	
Needle location	**Latitude (N)**	**Longitude (W)**	**Azimuth of other site**
Thames	51.5080º	0.11875º	288.4180º
Central Park	40.780447º	73.965484º	51.2928º
		3466.380 (Miles)	**Orthodromic Separation (D) <====**

Table 1: Separation (D) between the Thames and Central Park Cleopatras Needles using the Clarke 1866 Earth Model.
The coordinates are those applicable to 1873 & 1889.

Comments on the denominator and numerator values.

The 10.666^3 in the denominator can be understood to be a specifically derived value; it uses the Number of the Beast as its decimal part and 10 as its integer part, and then the full value is cubed.

The numerator 1.84 may seem to be an unusual value, but its sacred (esoteric) basis will be explained by the authors in a forthcoming book.

The azimuths of each orthodrome from the other's Needle using the Clarke 1866 earth model are also worth a comment; The azimuth of the Manhattan Cleopatras Needle from the Thames Cleopatras Needle = $10^{1.53}/1.84$ degrees (North of West), Note 3. One notes the re-use of 1.84 and one can also recognise in 1.53 as being one-hundredth of the 153 miraculously caught fish in Revelation (another sacred value). The azimuth of the Thames Cleopatras Needle from the Manhattan Cleopatras Needle, Note 4.

As indicated above, there is another obelisk in Central Manhattan, the General Worth Monument, a 51 ft. Quincy granite obelisk erected in 1857 in Worth Square at the intersection.of Broadway and 5th Avenue. It was designed by James Goodwin Batterson and erected as a memorial to William Jenkins Worth. Published literature, including text in a book, have suggested that the 3 Obelisks, the Emmet Cenotaph, the General Worth Monument and the Central Parks Cleopatras Needle are misaligned and that misalignment mimics an alignment seen within the Orion Belt stars. That assertion is clearly incorrect. Obtaining coordinates of the three obelisks from OpenStreetMap, (or other sources) one can realise that they are essentially in alignment; (if the Worth Monument was moved by less than 1 m to the west they would be in alignment; the latter distance is based on the precision and correctness of the coordinates of the three obelisks and the result may well be that they are aligned along an orthodrome.

The distance separating General Worth Monument from the Emmet Cenotaph = 2.42705 miles and the distance separating Cleopatras Needle from the General Worth Monument = 2.82946 miles. Ratio of distances = $\sqrt{1.360}$: 1.0 Note 5.

Although the Thomas Addis Emmet obelisk is located in the grounds of St. Paul's Chapel, the oldest church in New York, (consecrated in 1766), Thomas Emmet himself is buried in the grounds of the second oldest church in New York, St. Marks-in-the-Bowery, (consecrated in 1799). the Emmet Obelisk lies at a distance from the Steeple of St. Marks (erected in 1828), equal to the cube root of 5.4 miles, Note 5. The perimeter of the triangle formed by St. Marks with the Emmet Obelisk and the Worth Monument is $10^6/(184 \times 967)$ miles, Note 7. We note again the use of "184" and a value, "967", which will be encountered in

our forthcoming book.
The difference in azimuths at the Emmet Obelisk of the St. Marks steeple and the Worth Monument = 27/100 radian Note 8.

Conclusions:
Not only were the Thames' and Manhattan's Cleopatras Needles erected only three years apart, their exact placements show the ratio of their distances (the separation between Central Park's Cleopatras Needle and the Emmet obelisk to the separation between the two Cleopatras Needles) can be expressed by a simple sacred (esoteric) ratio. The implication is that there was a further and deeper relationship underpinning both projects.

1 The coordinates of the Thames Cleopatra Needle were 51.5080º N ; 0.011875º W
From an Ordnance map, Six inches to the Mile, Middlesex Sheet XVII surveyed 1868 to 1873.
2 From USGS map: NJ_Harlem_472515_1891_62500_geo.pdf ; surveyed 1889.
3 18.4180º N of W = $10^{1.53}$/1.84º N of W. A more precise formula may be:
18.4180º N of W = 2 x 0.328 x $(7/10)^2$ radian N of W, where 0.328 = lunar sidereal year in days/1000.
4 51.2928º E of N = T^{th} root of ln(0.14) radian where T = 1776 years but expressed in centuries. And 0.14 = (2 x $7/10^2$) is the number of degrees of precession over 10 years; the natural logarithm of 0.14 was used as a fraction of a radian.
5 A ratio of $\sqrt{}$1.360**:**1.0 might seem to be an odd value for the authors to propose. But we consider that learned men often used the decimal part of a number as a sacred value (here the decimal part, 0.360. is representative of the 360º in a circle) and added as a leading value, a low integer (commonly 1 as used here) to obtain a suitable value for a distance.
6 Distance = 1.754275 miles = $5.4^{1/3}$ miles.
7 Distance = 5.62 miles = 10^6/(184 x 967) miles.
8 Azimuth of St. Mark's Steeple from Emmet Obelisk = 41.377º E of N.
Azimuth of Cleopatra's Needle from Emmet Obelisk = 25.906º E of N.
Δ between azimuths = 15.471º = 27/100 radian.
(We used azimuth of Cleopatra's Needle from Emmet Obelisk (assumed to be along same orthogonal line) rather than the Worth Monument, because of the uncertainty of the latter's longitude, see text).

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