

The planet Mercury at Athens in an ancient solar system model

Abstract

In the previous papers in this series a 1:87500 model of the inner solar system has been established with the Moon, Earth, Sun and Venus having being modeled and correctly aligned to the ancient monuments and ground structures that represent each of the celestial bodies. The location of the corresponding model of Mercury has not yet been established. In this paper I show that when the range of Mercury at the winter solstice of 2729 BCE is measured relative to the range of the Earth at the same moment in time and the resulting distance modeled on a 1:87500 model of the solar system, the location of a scale model of the polar cross section of Mercury can be found at the Acropolis in Athens in the theatre of Dionysus. I show that the model conforms to those previously seen in the system by identifying the ground features of the corresponding models that are half and twice the size. I explain how many astronomical features of Mercury, such as its orbital eccentricity and its long term average perihelion distance, have been built into the identified models. I also show that the starting point of the line that connects the Earth model to the model of Mercury requires a 24 kilometer radius circle to be placed around the center of the Earth model and show that the low relief sculpture of the zodiac found within the temple of Dendera is designed from the circular and elliptical geometric features found on the Earth model in Cairo.

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The Great Pyramid papers

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The planet Mercury at Athens in an ancient solar system model

In the previous papers in this series^{1,2} a 1:87500 model of the inner solar system has been established with the Moon, Earth, Sun and Venus having being modeled and correctly aligned to the ancient monuments and ground structures that represent each of the celestial bodies. In this paper the model of Mercury is identified which is attached to the model of the Earth located over Cairo and which is positioned in the same manner as the previous model of Venus: the range of Mercury is taken relative to the established range of the Earth at the moment of the 2729 BCE winter solstice and is then scaled down and plotted at an angle of 365 perfect kilometers (pkm) per radian relative to a starting reference line in Cairo.

Diagram Q1 shows the geometry of the starting point on Cairo which is positioned on a newly created 24 perfect kilometer radius circle that is centered on the previously established Earth center point labeled GEO0000.

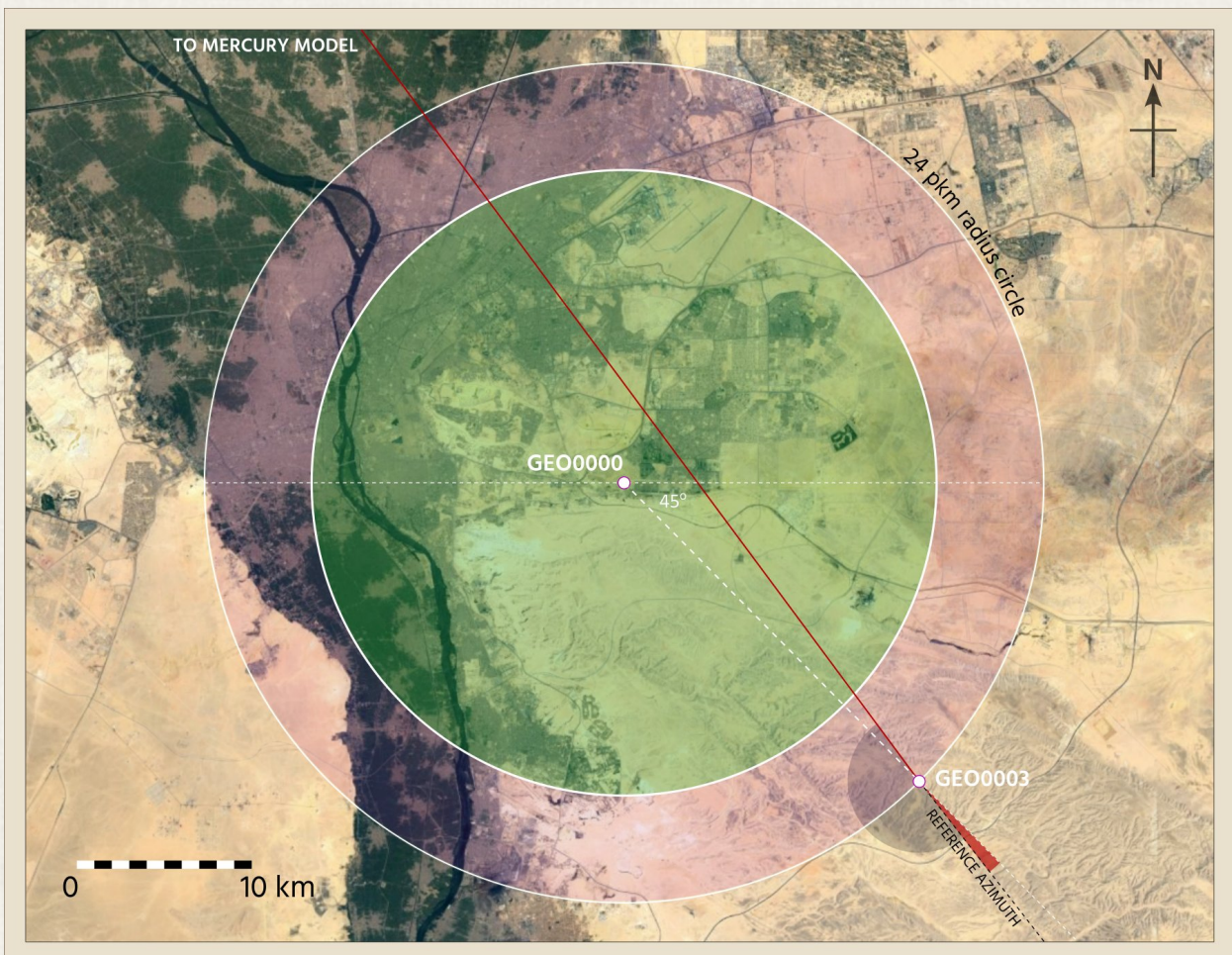


Diagram Q1 - The starting geometry of the Mercury model in Cairo.

The point GEO0003 is positioned 45 degrees clockwise from the central diameter line of the Earth which is set at an azimuth of 90.2665804 degrees, that being the reverse azimuth of the line from the Moon to the Earth that was established at the outset of the inner solar system model's construction¹. At the point GEO0003 there is an additional angle added to the system which is the inclination of the orbit of Mercury to the ecliptic, which is shown by the red triangle in the diagram, and which establishes the reference azimuth from which the line to Mercury is rotated. The line to Mercury is drawn as the red line running to the top left of the diagram and the line's length is 47348363.000 pkm full size, 1157.0641 pkm scaled down and therefore has a rotation angle of 3.170038 radians at 365 pkm per radian. This angle is shown on the diagram by the grey arc starting at the reference azimuth and around the point GEO0003. The resulting azimuth of the line to Mercury is 323.392082 degrees. The end point of the line to Mercury is shown in diagram Q2 which is located to the east of the theatre of Dionysus at the Acropolis in Athens. 2

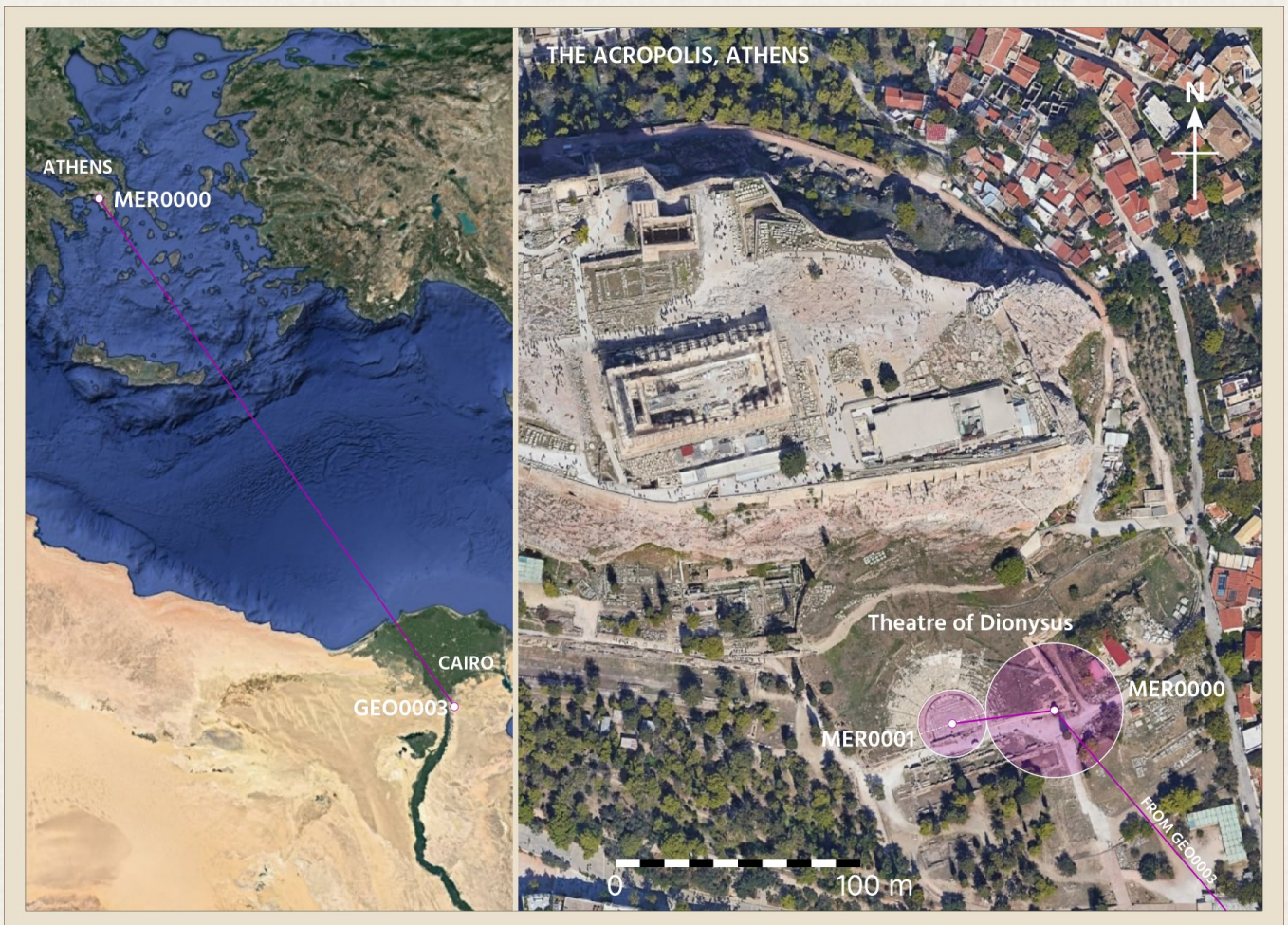


Diagram Q2 - The model of Mercury at the Acropolis in Athens, Greece.

The precise alignment of the two Mercury models shown in diagram Q2 can only be established once the whole inner solar system model is complete, including the Mars model which is covered in the next paper in this series, at which time it can then be seen that the primary line from the Earth to the Mercury model cannot pass through the center of the theatre of Dionysus. The alignment details are shown in diagram Q3.



Diagram Q3 - The theatre of Dionysus and the Mercury model alignments

another circle arc cut out from it, marked with the small white arrows. This is part of the circle of another model of Mercury which, logically, is a model of the planet at aphelion. The radius of the model is the line length from the point MER0000 to MER0001 scaled up by the ratio of the average aphelion range relative to the average semi-major orbit axis length, 1.2057. This model uses a similar double center point as the previous model but this time the distance used is the focal length of the planet's polar cross section ellipse as a proportion of the equatorial radius, this ratio being applied to the model's radius, as shown in diagram Q5.

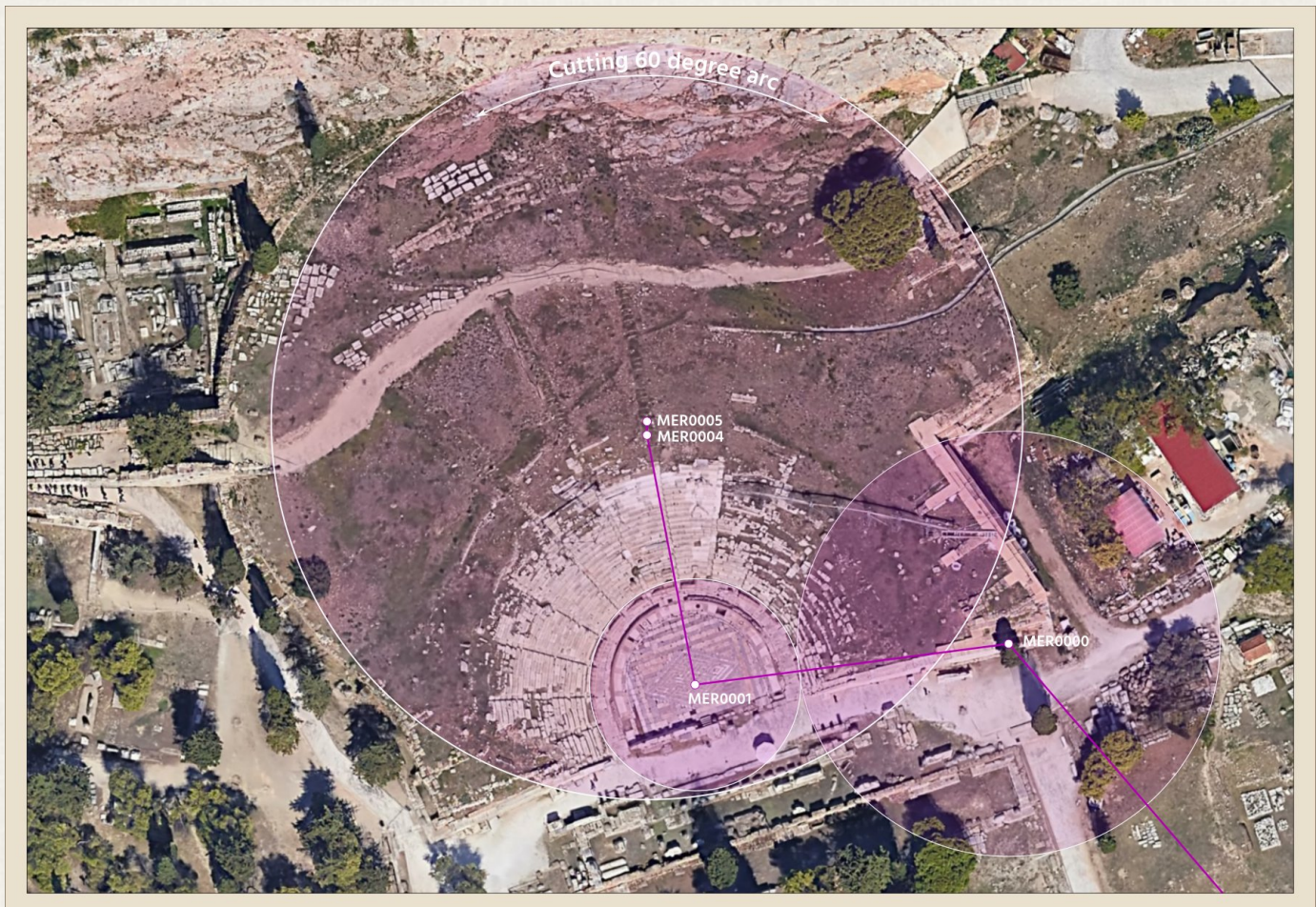


Diagram Q5 - The aphelion model of Mercury and the hillside cutting alignment.

The angle of the principal line from the stage center point MER0001 to the point MER0004 is 10 degrees west of north plus the long term average semi major axis length of Mercury's orbit / 10^9 giving the angle as 10.57909 degrees or an azimuth of 349.42091 degrees and perfectly matches the angle of the walkway between the seating of the theatre and the associated extension of this onto the hillside above.

These models of Mercury are absolutely precise astronomical scale models and the whole of the Mercury model system, starting from the angle adjustment on the Earth model, was very difficult to find. This was partially due to a design feature at the Acropolis which is worthy of note as it shows the methods of concealment that are employed in the architectural design. Diagram Q6 shows a scale model of *Mars* and its moons overlaid onto the Acropolis.

The scale of the model is 1:113000, the two moons are connected to each other on a single axis line and Mars is marked off on this axis line at its correct position. A line taken from the center of the Parthenon perpendicular to its southern wall can then be drawn precisely to the Mars marker on the line connecting the two moons. Additionally the internal dimension of the Parthenon resembles the diameter of the scale model of Mars that sits within it.



Diagram Q6 - A 1:113000 scale model of Mars and its moons overlaid onto the Acropolis.

This model of Mars is deliberate and serves two purposes. The first is to hide the model of Mercury. Having identified this model of Mars you would not then imagine that there is another planet model at the same location. The second is to help set up the models of Mars which are explained in the next paper in this series because they are constructed using extensive reference to the radii of the moons Deimos and Phobos.

At the outset of the Mercury model system the model of the Earth required an additional 24 pkm radius circle adding to it and this circle has further detail concealed within it. The composite model shown in diagram Q1 has the principal $1:333\frac{1}{3}$ scale Earth ellipse that was used in the formation of Venus in the previous paper and the 24 pkm radius circle used for the Mercury modeling and is a duplicate of the Dendera Zodiac model seen in the previous paper³. A comparison of the Earth model in Cairo and the Dendera Zodiac is shown in diagram Q7.

As can be seen the Earth model and the surrounding circle from Cairo match the inner and outer circles of the Dendera Zodiac, noting that the inner circle on the Dendera Zodiac must therefore be an ellipse and not a circle. The outer circle on the Dendera Zodiac is one perfect meter in radius and the outer circle of the Earth model is 24 perfect kilometers therefore the Dendera Zodiac is a 1:24000 model of the Earth model over Cairo in addition to being a model of the night sky at the winter solstice of 2729 BCE.

The location of Giza, on the western side of the outer circle on the ground map is matched on the Dendera Zodiac by the damaged piece of the sculpture on the left side where there is a small portion of the sculpture missing, indicating that the missing part of the zodiac can be found at the Giza plateau.

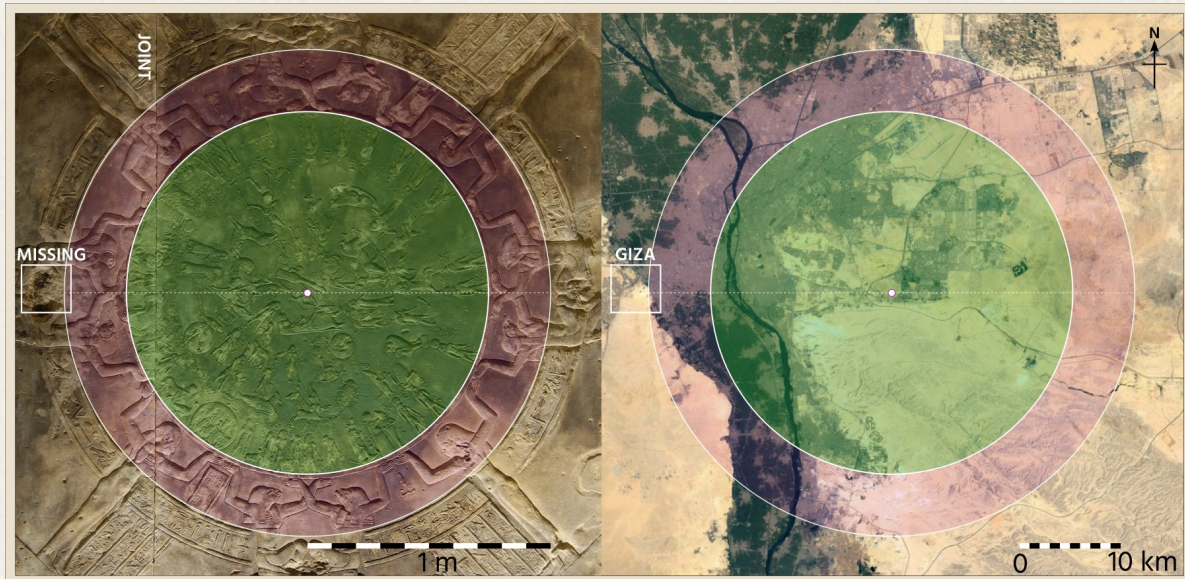


Diagram Q7 - A comparison of the Earth model and the Dendera Zodiac.

The zodiac sculpture is carved onto two pieces of stone and the joint between them, shown on the left image in the diagram, is a representation of the river Nile which cuts into the inner green circle on the sculpture at the same point that the Nile does on the ground map.

Appendix

pm	Perfect meter. One 10 millionth of the distance from the North pole to the equator on the WGS84 reference ellipsoid of Earth. The conversion factor between meters and perfect meters is $1 \text{ pm} = 1.00019657308809 \text{ m}$
pkm	Perfect kilometer. 1000 perfect meters.

Tectonic plate movement

The geodetic calculations performed during the work for this paper were done on the Earth's WGS84 reference ellipsoid at the base date of Jan 14 2729 BCE with no tectonic plate movement applied to the points. On all diagrams in this paper all points on the geometric plots have had tectonic plate movement between the base date and the date February 26th 2018 applied to them using the mm/yr plate movements listed by the EarthScope Consortium on their interactive plate movement calculator (<https://www.unavco.org>) using the *terminating* point on each individual geodesic line as the reference coordinates for the plate movement that is applied to *both* end points of that line.

Supplementary material

The data points and associated geodetic mappings for the inner solar system model are contained within a Google Earth application kml file. Each point in the file contains the high precision coordinates of the point as it was calculated by the software and a description of how the point and line from the previous location has been formed, listing both the numerical logic and the astronomical reference to which the point is associated. The file is available to download at the following URL:

<https://www.thegreatpyramidpapers.com/documents/kml/InnerSolarSystem.kml>

That kml file was produced on a piece of bespoke software which was designed and developed to create complex geodetic paths across the WGS84 reference ellipsoid specifically to solve the puzzle outlined in this and previous papers in the series. It was deliberately written in javascript to integrate into a webpage interface so that the underlying code could be examined. The fully functioning interface is available at the following URL:

<https://www.giza-plateau.com/PathCreator.html>

The file type that this programme uses is also bespoke and called '.gpf' or a Giza Pyramid File. Saved files can be loaded into the software using the available selection box on the webpage and the inner solar system model is available in this list under the name 'Inner solar system'. The interface also includes the ability to load any of the previously saved individual locations listed on the inner solar system model into the starting point of a new path, allowing the user to create new path systems and investigate further into the subject.

The calculations for the solar system model's astronomy were performed in a spreadsheet which is provided as supplementary material for reference and cross checking purposes

https://www.thegreatpyramidpapers.com/documents/ods/Solar_system.ods

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