

The models of Mars at Makkah in an ancient solar system model

Abstract

In the earlier papers in this series a model of the inner solar system has been discovered which has located scale models of the Moon, Earth, the Sun, Venus and Mercury. The formation geometry and location of the remaining inner solar system planet Mars has so far not been identified. In this paper I show that there are four primary models of Mars which are paired off into two groups each containing two models, the first pair being positioned according to the scaled long term average perihelion of Mars and the second pair being positioned according to the range of the planet at the moment of the 2729 BCE winter solstice. I show that each of the four Mars models has been built as a feature carved out of the earth rather than as a building and show that the four models form a coherent system with the same geometric features being present on each of the models. I show that the orbits of the two moons of Mars are principal parts of the constructions and identify a ground feature which is a model of the outer moon Deimos with its distinct shape used to delimit the model's perimeter. I then show that the locations of the whole of the inner solar system model's planets and moon's forms a surveying loop which can be closed off using a logical geometric construction between the location of the model of Venus and the fourth model of Mars and that this survey closure system also attaches perfectly to one of the world's most important religious locations. I conclude that the inner solar system model has been accurately reverse engineered and that it is a scientifically precise and pre-planned construction stretching over thousands of kilometers and connecting numerous historical and geographic features.

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The Great Pyramid papers

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The models of Mars at Mekkah in an ancient solar system model

In the previous papers in this series^{1,2,3} a 1:87500 model of the solar system that aligns to various ancient structures and land formations was discovered and analysed. The planets of the solar system from Earth to the Sun have been documented and the systems and methods used to determine the location of the ancient structures that align to the planetary positions can be used to determine the location of the model of the planet Mars. In particular the model of Venus has two distinct locations², one being the temple of Dendera where the long term average perihelion distance was modeled and the second being at the temple of Luxor where the range of the planet at the moment of the 2729 BCE winter solstice is modeled. The model of Mars uses the same format in its construction and therefore this paper is divided into three sections covering the starting location of the geodetic path and then the two separate models locations.

The primary purpose of the first model of Mars is to establish the starting location and the mapping system of the geometric path that is also used for the second model. An extensive analysis was undertaken using the information already obtained during the course of the work up to this point to attempt to establish whether the a model of Mars was positioned relative to the Earth or whether it was positioned as an absolute distance from the Sun model. Additionally it was not known during the analysis whether the long term average distances were to be used or just the range at the winter solstice, and so several lines of enquiry were pursued. A very good candidate for a model of Mars was eventually identified during this work and subsequent refining of the geometry and analysis of the ground location lead to the system being resolved.

The starting location on the Sun model

The system for the model of Mars starts at the Sun model that was identified in the earlier paper¹ as being at Snake island off the Ukrainian coast. Diagram R0 shows the Sun model required for the Mars system.

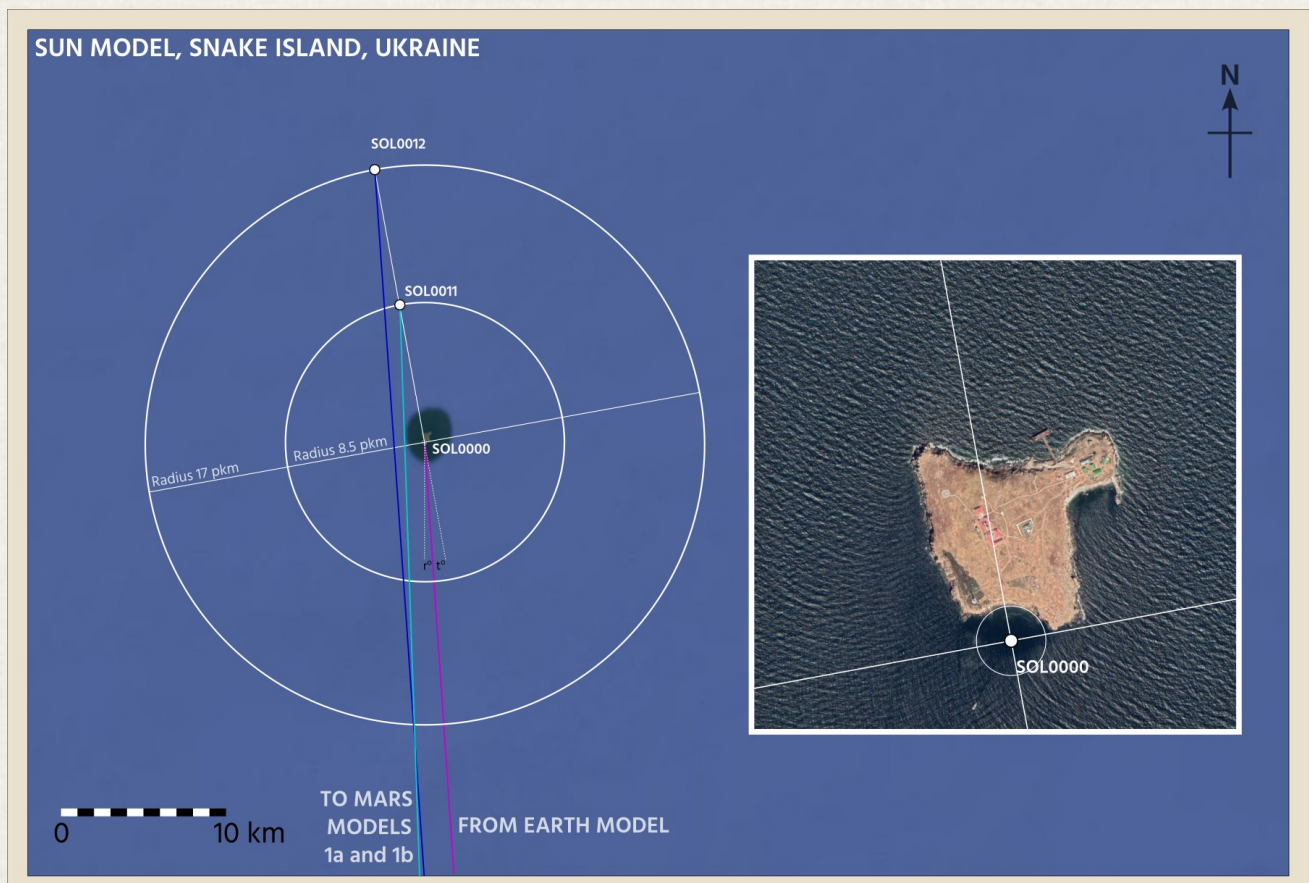


Diagram R0 - The Sun models containing the system start points for the Mars model.

In diagram R0 the Sun model is centered upon the point SOL0000 which is the location of the Sun model that was determined in the earlier paper¹ by balancing the Moon and Earth models. The inset drawing shows a more detailed photograph of Snake island with the Sun model's center point shown. On the main illustration the purple line shows the inbound line from the Earth model to the Sun model center point, and the blue and cyan lines show the outbound lines to the first models of Mars. The reason for there being two outbound lines is that within the first model of Mars there are actually two separate constructions of the planet, the first being a model of Mars with its outer moon Deimos and the second being a model of Mars with the orbit of its inner moon Phobos.

The Sun model has two circles, one with a radius of 8.5 perfect kilometers (pkm) and the second with a radius twice this size and thereby conforms with previous planet and moon models in the solar system model which have integer value diameters when measured in perfect kilometers. The rotation of the Sun model is an additional of the known obliquity of the Sun⁵ of 7.25 degrees plus the angle subtended between the reverse azimuth of the inbound line from the Earth model and a line running due south, these two angles being shown on the diagram as t° and r° respectively and therefore the rotation is applied in an anticlockwise direction. The three points shown in diagram R0 have the following GPS coordinates with appropriate tectonic plate shift applied to them

	Latitude (deg)	Longitude (deg)
SOL0000	45.25201715000379	30.203672917671977
SOL0011	45.32713398542989	30.183182064070685
SOL0012	45.402246142370686	30.16263697810738

The method of constructing the angles for the two outbound lines is shown in diagram R1, which is not drawn to scale.

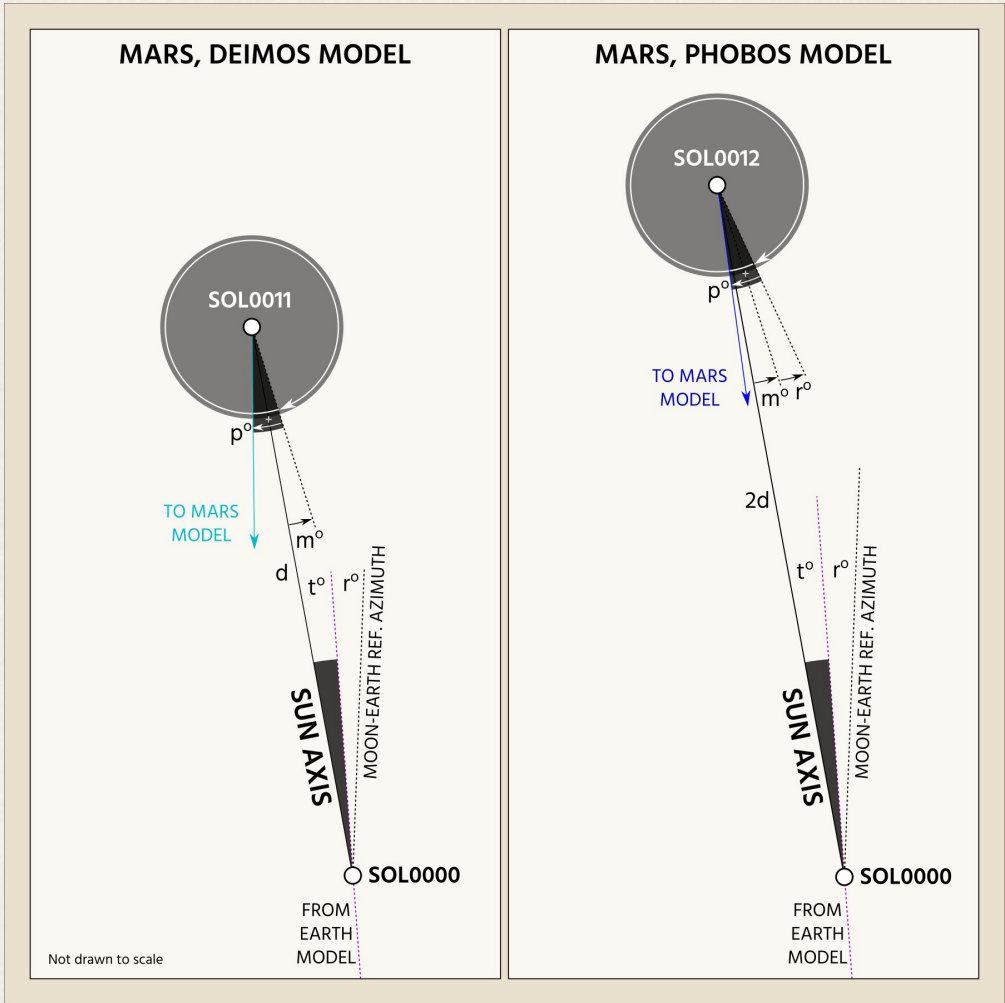


Diagram R1 - The outbound line angle construction for the first Mars models.

The angles r° and t° are the same as those in diagram R0. The line connecting the center of the Sun model at the point SOL0000 to the upper points SOL0011 and SOL0012 has a length of 8.5 pkm in the Deimos model on the left and 17 pkm on the Phobos model on the right, labeled as d and $2d$ respectively. The rotation angle p° is the same on both sides of the diagram and is determined from the average perihelion distance of Mars 206.650×10^6 km scaled to 1:87500 to give a distance in perfect kilometers of 2361.25013 pkm and then rotated by 365 pkm per radian to give a rotation angle of 6.46918 radians or 370.65662 degrees. Because this value is greater than 360 degrees it is shown on the diagram as a full revolution of a circle plus an arc segment of 10.65 degrees. The angle m° is the orbital inclination of Mars relative to the Ecliptic at the moment of the 2729 BCE winter equinox of 1.887 degrees, a value which has been calibrated from the ground features to which the models align.

Note that in the Phobos model of Mars on the right, an extra angle r° has been added to the reference line from which the rotation around the point SOL0012 is started. There is no reason from an astronomy point of view to add this angle, it is present because it separates out the two models at the end of the outbound lines and helps to authenticate that the ground features that comprise the two first Mars models have a rational design system behind them.

The first Mars model with Deimos moon

The location of the first model of Mars, formed from the geometry shown on the left side of diagram R1, is shown in diagram R2.

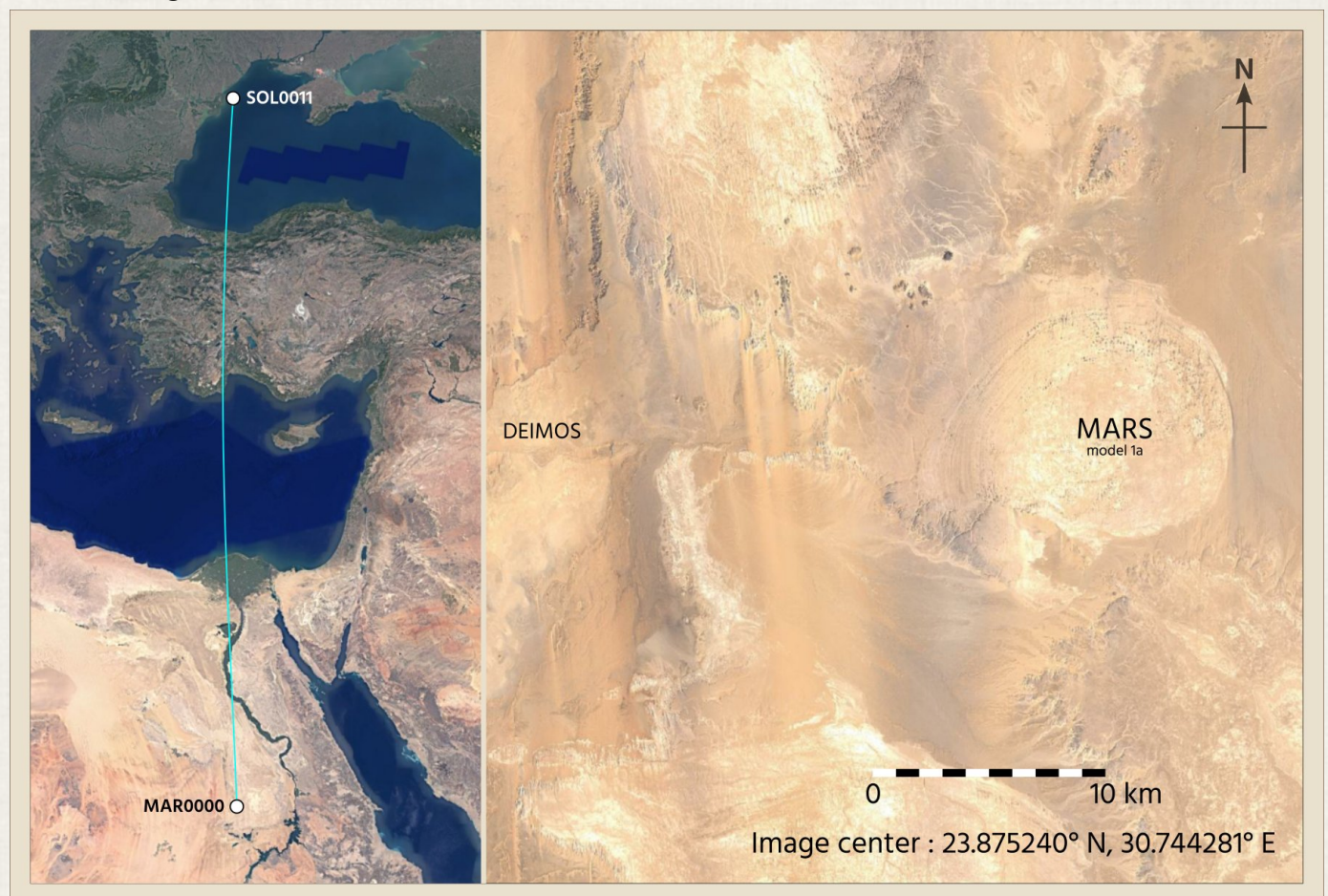


Diagram R2 - The location of the first model of Mars with the moon Deimos.

The left side of the image shows the geodesic line between the Sun and the Mars model and on the right of the diagram the massive circular ground structure, which is the model of Mars with a diameter of around 10 km, is clearly visible. The model of the moon Deimos is located to the west of the model of Mars and, at the resolution of the satellite image in diagram R2, is not distinguishable from the surrounding desert floor. Diagrams R3 and R4 show more detail of the model with the formation geometry applied.

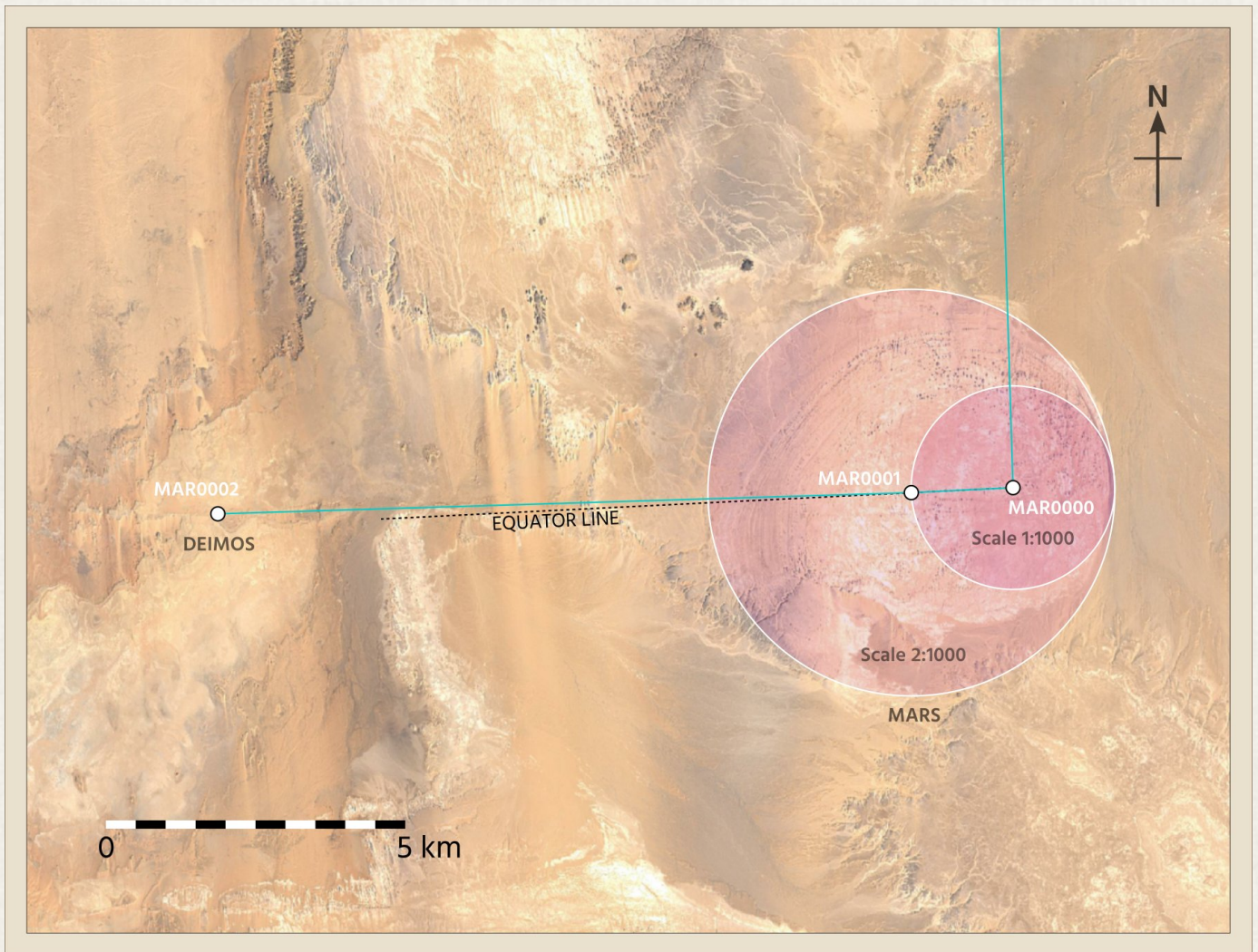


Diagram R3 - The geometric construction of the first model of Mars with the moon Deimos.

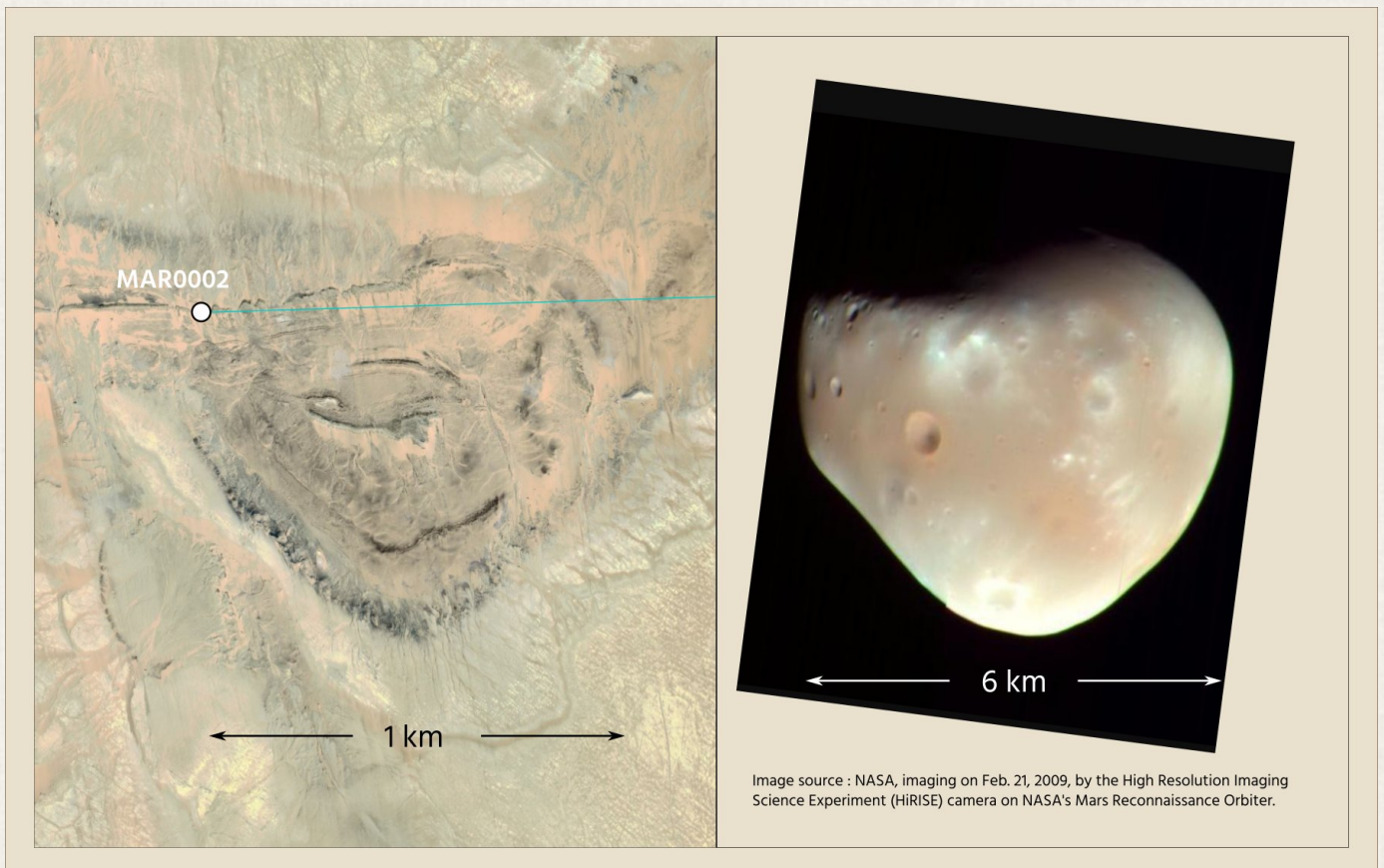


Diagram R4 - The model of the moon Deimos alongside a photograph⁴ of that moon.

In diagram R3 there are two models of Mars drawn, one being a 1:1000 scale model of the planet which therefore has an equatorial radius of 3.3962 km and a second model twice the size of the first. The two models are connected together in a similar manner to the way in which models of Mercury were connected together in the previous paper³. The azimuth of the equator of the two Mars models is calculated by taking a line perpendicular to the reverse azimuth of the inbound geometry line from the Sun model and then adding to that, in an anticlockwise direction, the orbit inclination of Mars to the Ecliptic of 1.887 degrees. The models are therefore drawn with no planetary axial tilt to the plane of the orbit and are geometrically correct but technically astronomically incorrect, a mechanism used to show that there must be more models of Mars.

The point MAR0000 is at the center of the smaller Mars model and the point MAR0001 is at the center of the larger model. The Deimos line starts in the center of the larger model, is scaled at 1:1000 and therefore the line from the point MAR0001 to the point on Deimos MAR0002 has a length of 23.459 km. The azimuth of this line is that of the Mars equator plus the angle of the orbit of Deimos of 1.79 degrees.

Remarkably, the Deimos moon has been modeled into the desert floor and is a representation of the visual appearance of the moon when viewed from outside its orbit. Diagram R4 shows the ground construction and an image of Deimos taken from NASA documentation. Because Deimos' rotation period is identical to its orbit period the same side of the moon is always facing into the planet Mars and therefore *any* image taken of this moon from outside its orbit will always be similar to that seen in the diagram.

The first Mars model with the Phobos moon orbit

The reason that a second model of Mars with the orbit of the Phobos moon marked on it was discovered is because on the previous model just explained it was impossible to locate a ground feature which represented Phobos. Because the ground construction of Deimos is so impressive it was deduced that the model of Phobos must have a similar high quality of ground construction. Diagram R5 shows the location of the Phobos orbit Mars model, approximately 60 km east of the previous model.



Diagram R5 - The location of the model of Mars and the orbit of the moon Phobos.

Diagram R6 shows the same area with the geometry overlaid.

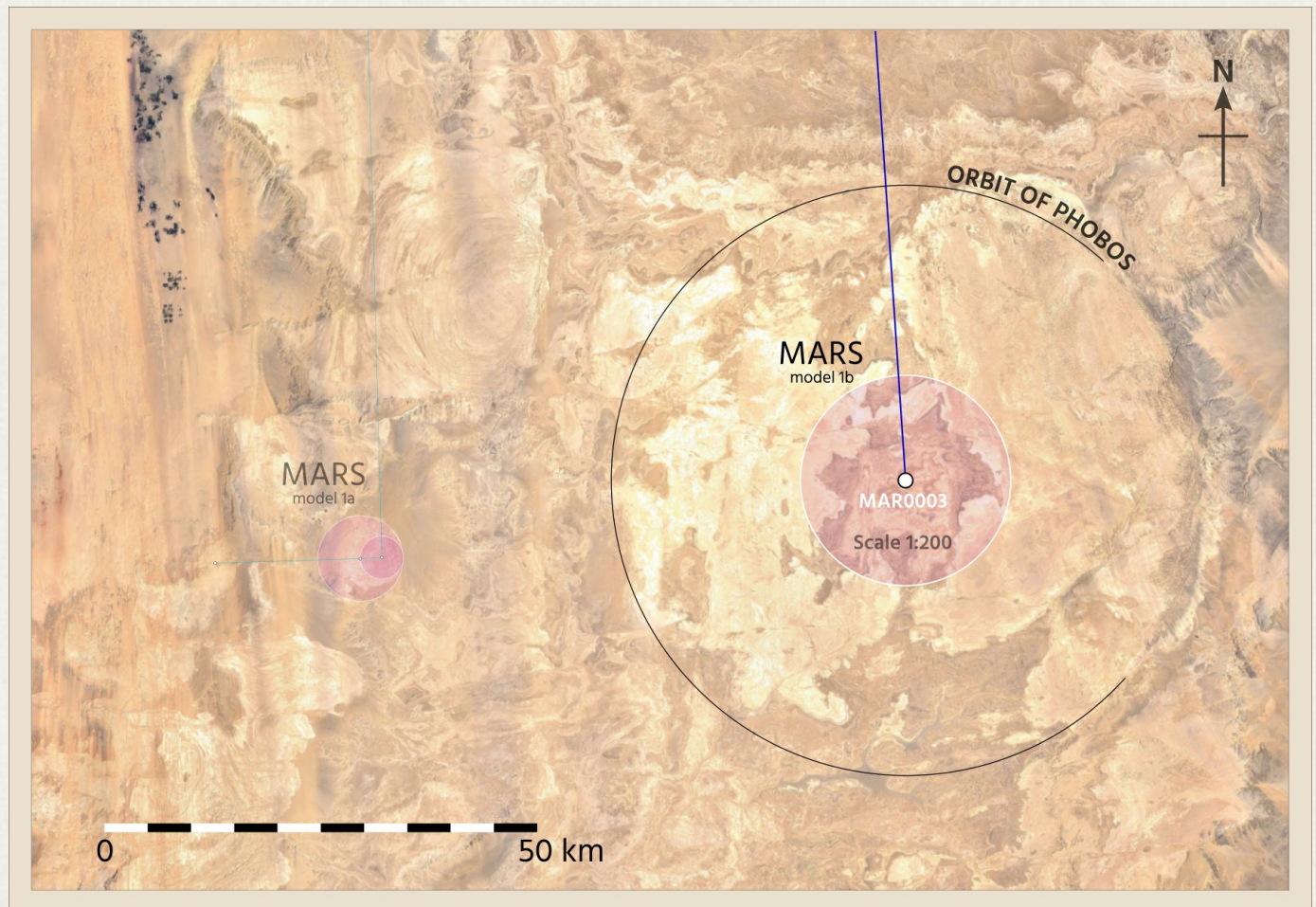


Diagram R6 - The geometry of the model of Mars and the orbit of the moon Phobos.

In diagram R6 the model of Mars is a 1:200 scale model and therefore has an equatorial radius of 33.962 km and the orbit of Phobos is at the same scale and has a radius of 46.8807 km. The orbit has been drawn on the diagram as an incomplete circle so that the ground features that make up the remaining part of the circle can still be seen, and the missing arc is one quarter of the circle.

The second pair of models of Mars

The first models of Mars were positioned using the long term average perihelion value of the planet and the second model of Mars is constructed from the range of Mars from the Sun at the time of the winter solstice 2729 BCE. In previous models the starting range has been the NASA DE441 ephemeris value for the planet however this ephemeris table does not give data for Mars earlier than the year 1600 and so it is necessary to extract the data from the DE431 table which covers several millennia either side of the year 2000. Doing so yields a value of 244.3832958×10^6 km which can then be scaled down to the 1:87500 scale of the solar system model, transposed into perfect kilometers and the corresponding 365 pkm per radian angular measure computed.

The starting point of the second Mars model is the center of the Sun, SOL0000, as marked on the inset diagram R0 and which is the end point of the geodesic line from the Earth. It is the principal Sun point and requires no adjustment of any type when used in the second Mars model's geometry, which becomes significant when the geometry becomes fully developed.

Diagram R7 shows the location of the end point of the geodesic line that marks out the second Mars model, situated in Saudi Arabia a few kilometers to the east of the city of Makkah.



Diagram R7 - The second model of Mars calculated from the winter solstice range 2729 BCE.

The end point of the line, labeled as MAR0004, is positioned at the center of a quite clear circular ground feature and to the north east there is a second distinct circular ground feature. These two locations are where the second pair of Mars model are located and a comprehensive analysis of the distances and angles between these features allows the geometric system to be reverse engineered. Diagram R8 shows the principal geometric features of the two Mars models.



Diagram R8 - The geometry of the second models of Mars.

The first of the circular ground feature at the point MAR0004 is cleverly designed as it is a 1:2000 scale model of Mars with the orbit of Phobos, the orbit fitting the ground feature. This means that unless the first models of Mars have been solved you are unlikely to be able to identify this circular feature's dimension origins. The equator is set at an angle of Mars' axial tilt of 25.19 degrees relative to the reverse azimuth of the inbound line from the Sun model.

The line marked as d on diagram R8 is the radius of the orbit of Deimos scaled at 1:500, is set at an angle of exactly 40 degrees to the equator line of the western Mars model, terminates on a hill top and is drawn to the focal point of a 1:1000 elliptical scale model of a Mars polar cross section with an equatorial radius of 3.3962 km. This model then has a 3.65 pkm orbit drawn around it to fit the ground features and is being shown in the architecture as significant. The details of the two models are shown in detail in diagram R9.

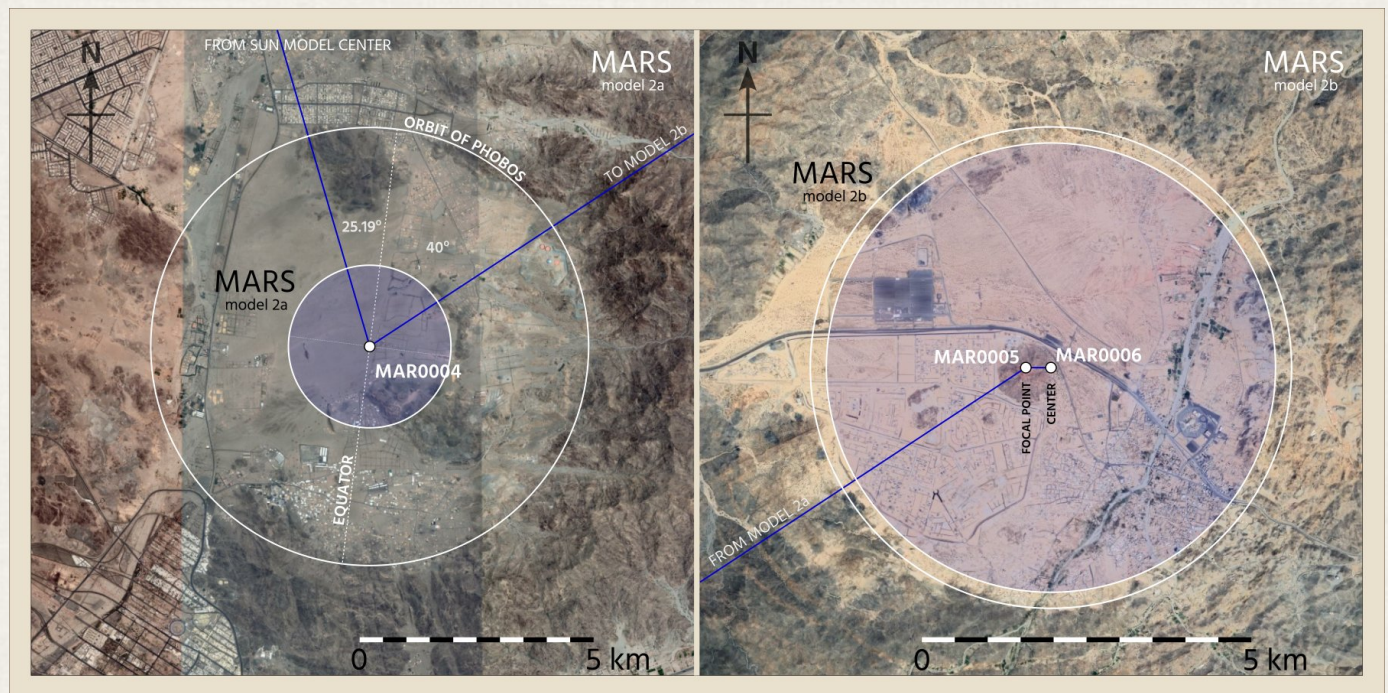


Diagram R9 - The details of the second pair of Mars models.

The two models and angles within the geometry were refined during the analysis work and then, as with all previous construction systems, the details were fed back into the start of the system until all the points and angles were resolved. The details shown in the diagram R9 are the fully resolved details that were calibrated after the final section of analysis was completed.

Closing the surveying loop

The full inner solar system model appears now to be complete with the Moon, Earth, The Sun, Venus, Mercury and Mars all now present on the system. The geometric and geodetic construction stretches from Libya and Egypt, up to the Ukraine, down to Luxor and now to Saudi Arabia. If the model is correct and all of the model locations are surveying points of the architects system which represent the inner solar system bodies then, with the level of sophistication shown in the work it would be remarkable if the surveying points did not form a closed survey loop, because this is the standard scientific practice in surveys and allows for errors in the system to be identified. An additional benefit when the survey points are presented in a puzzle such as the one seen here is that by closing the surveying loop it would then be possible to verify that the whole system was correct, which is a highly significant point when dealing with a new phenomenon which requires scientific corroboration of the work.

Diagram R10 shows a high altitude view of the ground modeling of the inner solar system on which the principal surveying points of the planets are marked.

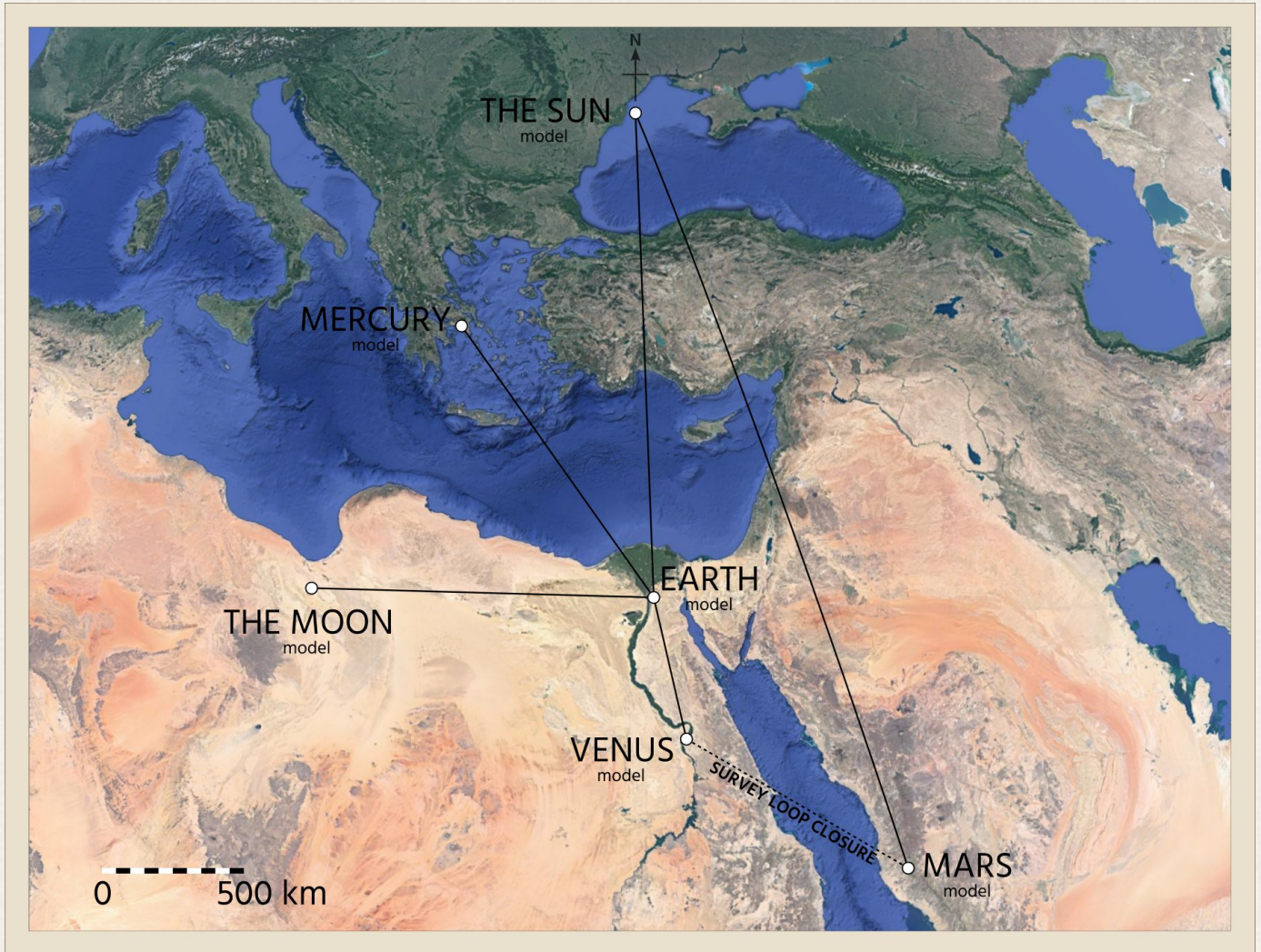


Diagram R10 - The inner solar system surveying points.

The only candidate for closing the surveying is a line construction between the planet model of Venus in Luxor and the Mars model in Makkah, and so this concept was investigated and the remarkable survey closure system was identified. Diagram R11 shows the start of the surveying loop closure line in Luxor.

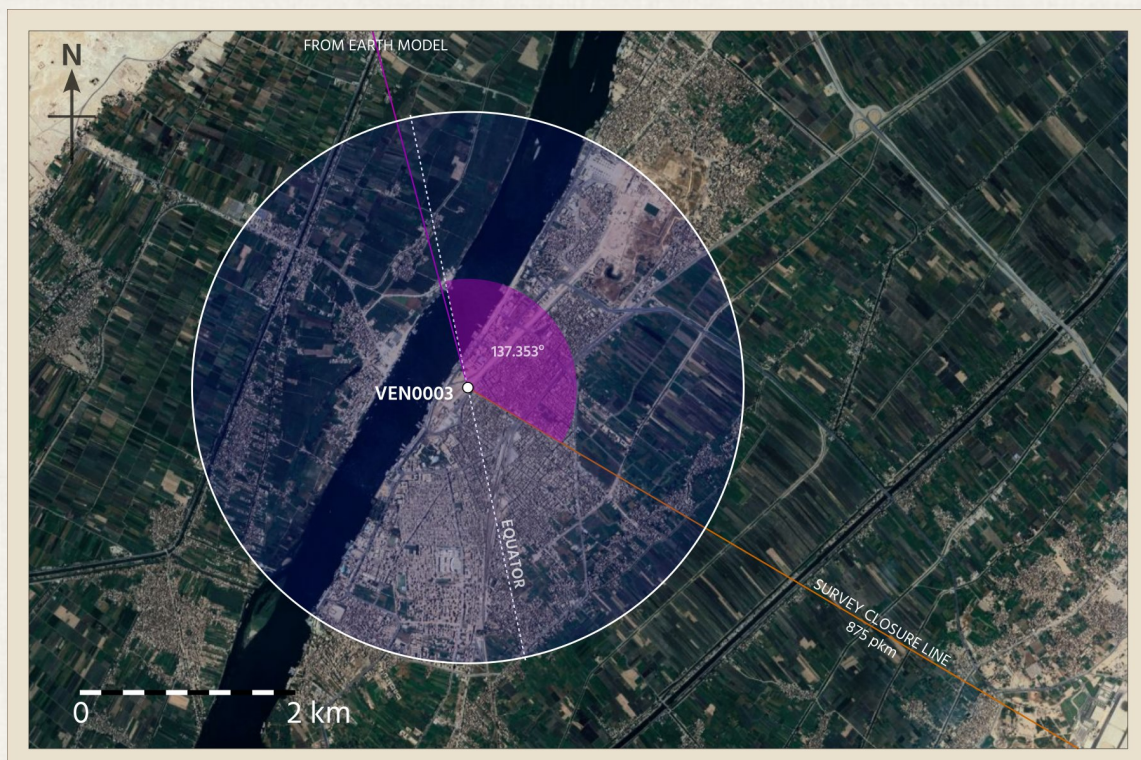


Diagram R11 - The start of the survey closure line in Luxor.

The survey closure line has an entirely logical length. As has been seen on numerous occasions the inner solar system survey has a scale of 1:87500 and so the closure line length has been selected as being 875 pkm within the design. The rotation of the line is the same as all previous line rotations, one radian for every 365 pkm of line length, and therefore the resulting angle of 137.353 degrees can be measured from the equator of Venus that was established accurately in the earlier paper² and the resulting line is shown on diagram R11 in orange making its way towards Makkah in Saudi Arabia.

The other end of this line is shown in diagram R12.

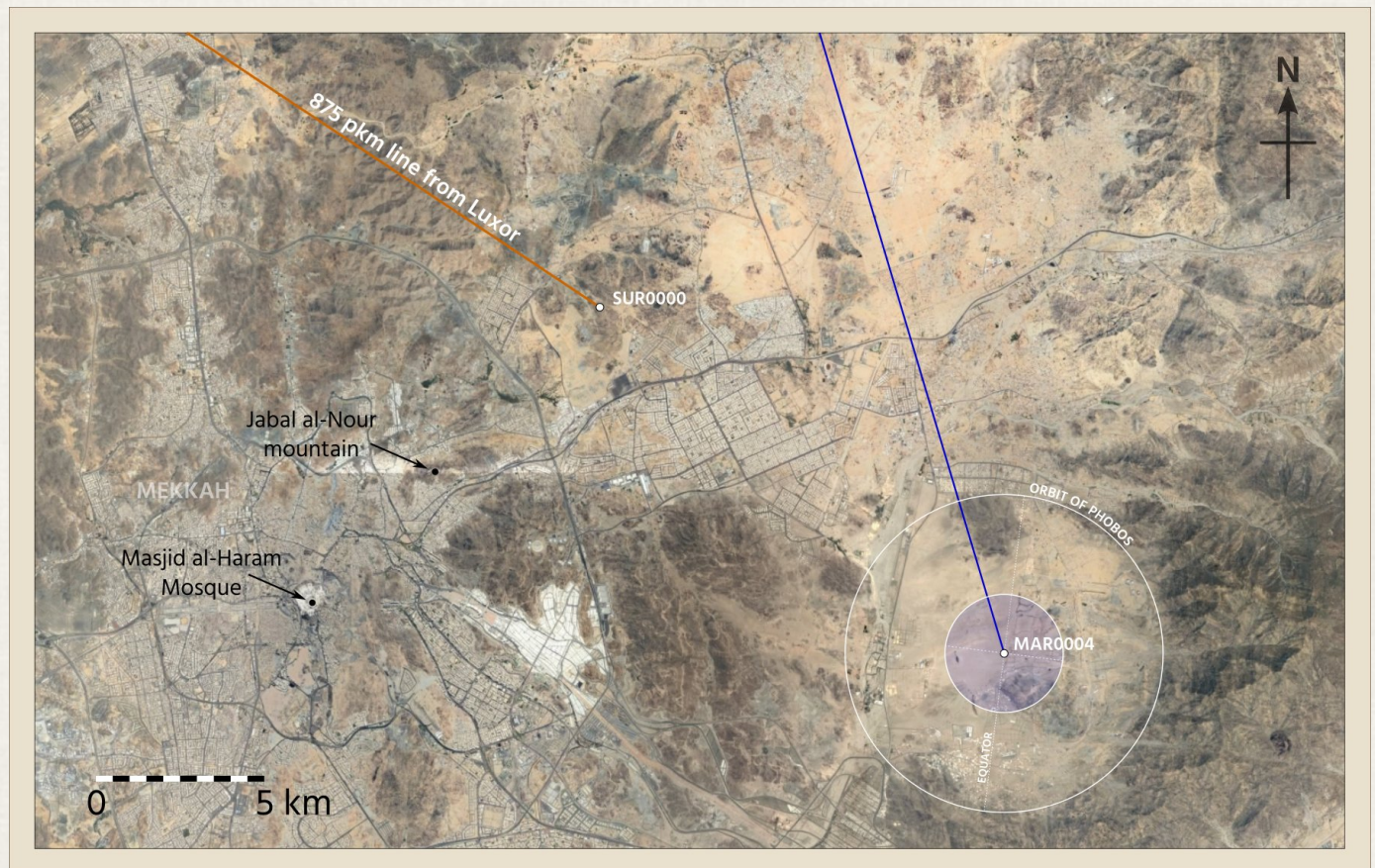


Diagram R12 - The end of the survey closure line in Makkah.

The survey closure end point, shown at the end of the orange line and labeled SUR0000 in diagram R12, terminates about 10 km north east of the center of the city of Makkah and on first appearances does not appear to connect to the established location of the model of Mars shown on the right side of the diagram.

It would be simplistic to not recognise the fact that Makkah is home to one of the world's largest religions and therefore the two most important Islamic locations in Makkah are also shown on the diagram. Masjid al-Haram mosque is the location of the stone building al-Ka'ba al-Musharrafa around which Muslims walk during their pilgrimage to Makkah and into the eastern wall of which the Black Stone is set. Jabal al-Nour is the mountain to the north east of Makkah where the Islamic prophet Muhammad received his first revelation of the Quran from the angel Gabriel.

Simple analysis of these locations shows that they fall on a 45 degrees line that aligns with the survey closure end point and subsequent analysis shows the alignment to be highly significant. The distance from the survey point to the mountain location is 7 pkm and the distance from the mountain location to the mosque is 5 pkm. The two religious locations form two of the points on the survey closure mechanism with a third point situated 8 pkm along the same line but in the opposite direction. The remarkable final result is that shown in diagram R13 in which the three line lengths of 8, 7 and 5 perfect kilometers are the numerals of the number 875, that also being the length of the survey closure line from the model of Venus in Luxor.



Diagram R13 - The termination of the survey closure line in Makkah.

The line in diagram R13 that connects the points together is angled at exactly 45 degrees south of west and does not use the east reference line offset of the Moon-Earth system from earlier in the inner solar system model and is therefore the first line of the whole system that is using the Earth's northerly direction as an inertial reference frame line.

When the northerly most point, SUR0005, is connected to the south pole of the model of Mars, as shown in diagram R14, the survey closure is complete.

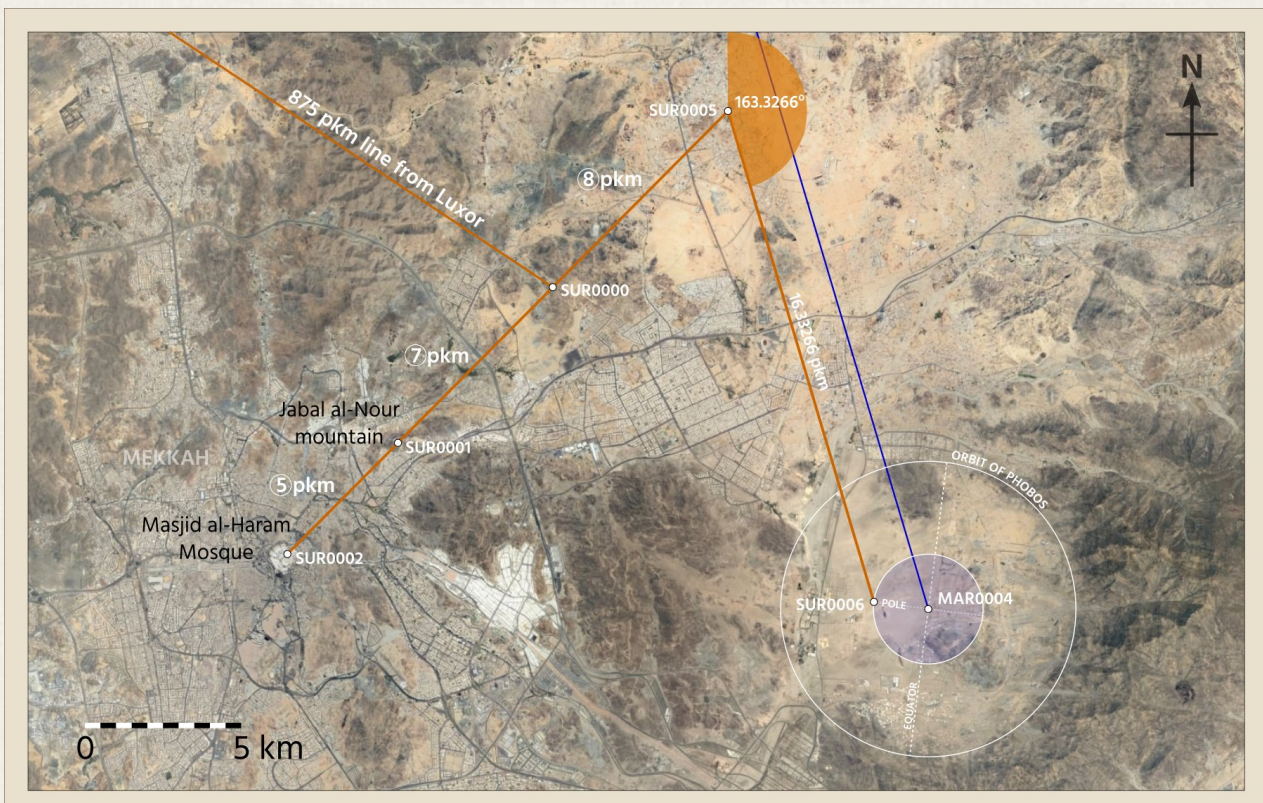


Diagram R14 - The closing line of the surveying system.

This line has a length in perfect meters that has the same sequence of digits as its azimuth in degrees, the line length being 16.33266 pkm and the azimuth 163.3266 degrees. This results in the reverse azimuth of the line at the point SUR0006 located on the south pole of the Mars model having a value of 343.522 degrees which is identical to the reverse azimuth of the blue line on the diagram which starts at the Sun model and terminates at the center of the Mars model.

In order to get these two reverse azimuths to be the same value the system needs to be calibrated by making small adjustments to two values. The range of Mars needs adjustments making to it, which in turn also changes the azimuth of the blue line, and tiny adjustments to the calibration line length and matching azimuth also need to be made. The resulting points in the calibrated system have the following GPS coordinates with appropriate tectonic plate shift applied

	Latitude (deg)	Longitude (deg)
SUR0005	21.55246452098915	39.962830545871526
SUR0006	21.41083606051474	40.00760929597223
MAR0004	21.40899834473139	40.023771739906465

The axial tilt of the model of Venus in Luxor does not need to be part of this calibration system because there is a precision alignment within the survey closure system that shows that it must already be correctly evaluated.

The alignment with the Kaaba

The Kaaba is the stone building inside the Masjid al-Haram mosque which dates back at least to the time of the foundation of the Islamic faith. The alignment of the geometric system to the Kaaba is fascinating because it only uses previously seen geometry and can be used to confirm the validity of the survey closure line from the temple of Luxor. The alignment to the Kaaba is shown in diagram R15.

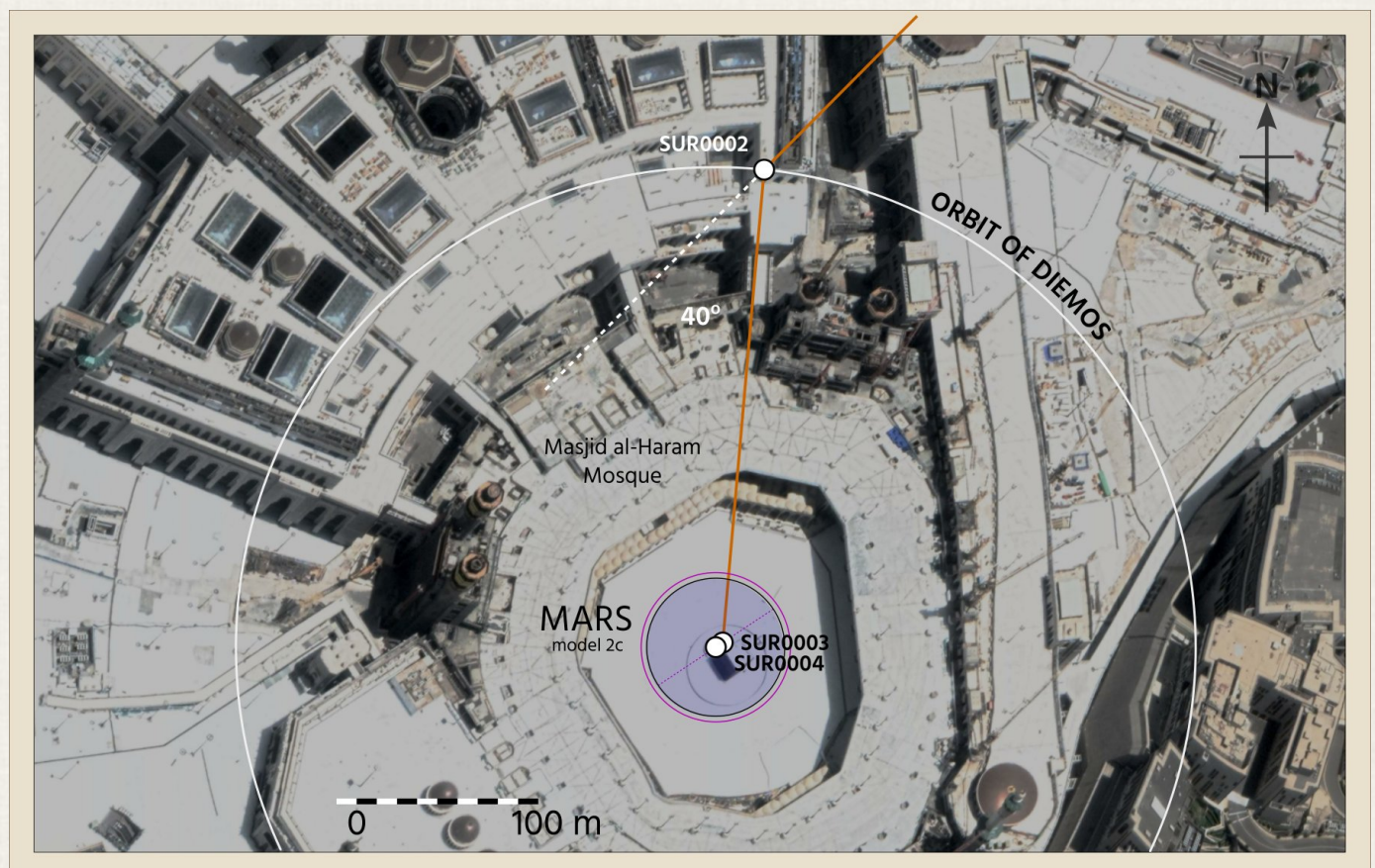


Diagram R15 - The alignment of the survey closure line with the Kaaba.

The survey closure point SUR0002 at the top of the image represents a point on the orbit of the outer moon Deimos at a scale of 1:100,000, from which a model of Mars at the same scale with a radius of 33.762 m can then be constructed with its angular location set at exactly 40 degrees from the reverse azimuth of the line to the point SUR0002. If you look back at the model of Deimos on diagram R8 you can see that the two construction methods are identical and therefore the point SUR0003 on diagram R15 must be one of the focal points of the elliptical polar cross section of Mars. The point SUR0004, which is the center of the Mars model, can then be drawn onto the diagram by scaling the focal length down giving a distance of 3.68 meters from the previous point. The azimuth of the model's equator is the reverse azimuth of the line to the point MAR0005, shown in diagram R8, of 236.919159 degrees to which the Kaaba's walls are aligned.

Because the formation of the Deimos moon orbit is designed in the same manner as that of diagram R8 then the diagram of the Masjid al-Haram mosque geometry needs to be completed by adding the 36.5 perfect meter outer circle around the model of Mars, as shown by the purple circle on diagram R15.

The satellite image shown in diagram R15 is unusual because it was taken in May of 2020 at the start of the world wide Covid pandemic and there are no pilgrims inside the mosque, meaning that the ground features of the mosque's floor are visible on the image. The dark offset circle that is contained within the model of Mars on diagram R15 is the mosque floor.

The details of the final two points of the survey closure line within the Kaaba are shown in diagram R16.

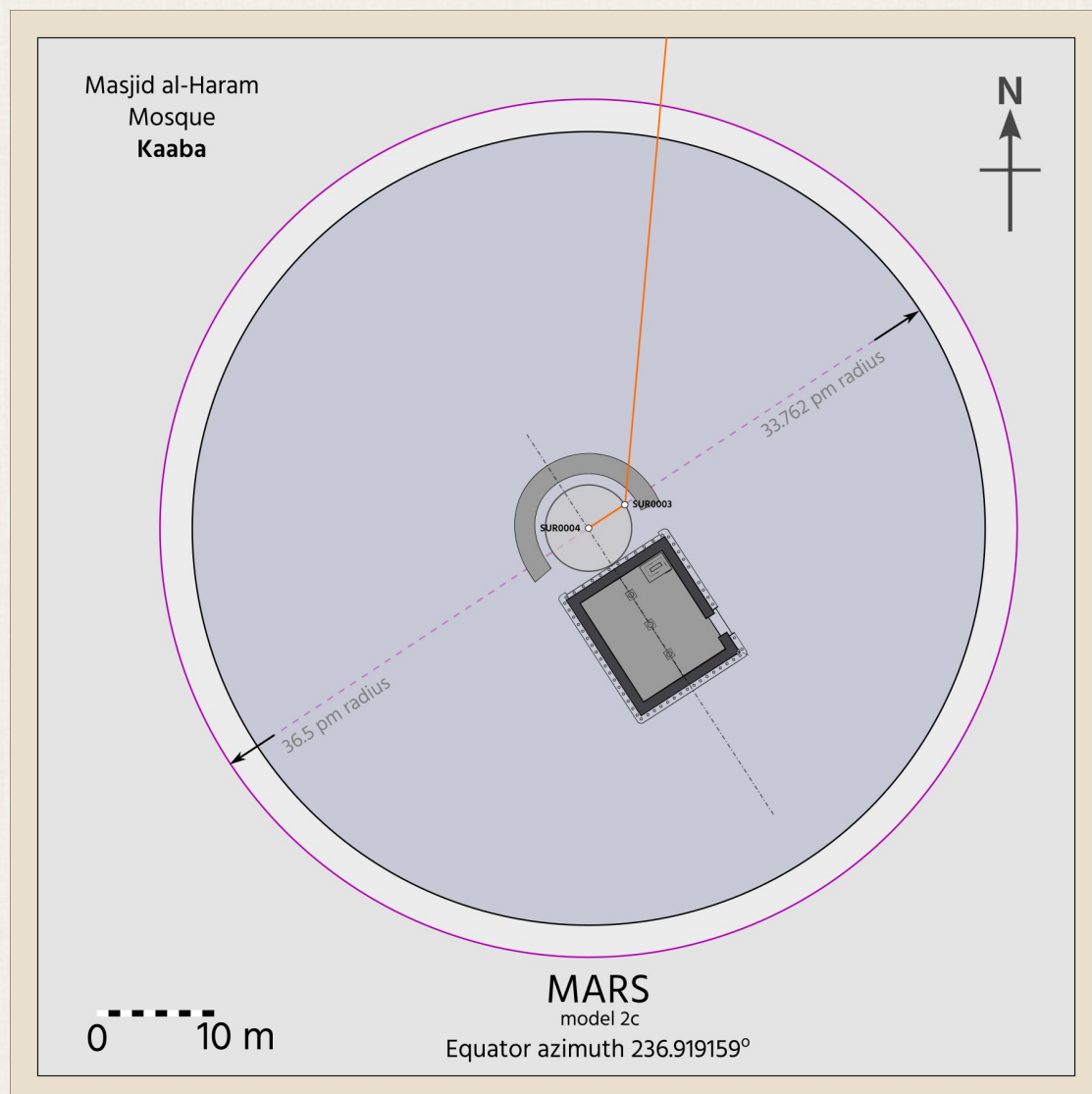


Diagram R16 - The detail of the survey closure line with the Kaaba.

The point SUR0004 is the center of the model of Mars and the circle that is drawn within the dark grey stone arc is the locus of the focal points of the model of the planet on which the point SUR0003 falls. There is a significant amount of symbology in the completed structure.

The final adjustments

When the calibration of the system as described above was initially performed it was not possible to close the surveying without making large and unrealistic alterations to the range of Mars at the winter solstice of 2729 BCE. The closest distance that the point SUR0006 could be placed to the south pole location on the Mars model was around 11 meters whilst keeping the range within an hour or so of the DE431 value. Because none of the component parts of the inner solar system have any significant errors in them after a diligent analysis of each node of the surveying it was realised that the Mars models were all dependent upon the position of the Sun center and that had been aligned using a digital edit on the satellite image⁶ where a small boat has been inserted to the south of Snake island. The angle and line length to the boat were of exactly the same construction as the calibration line at the end of the survey closure where on each line the length of the line and the azimuth of the line were identical.

Because the satellite image is a current day image then the modern day interpolation of the tectonic plate movement for Snake Island had been added to the geodetic path points of the inner solar system model at that location to perform the alignment to the boat, and therefore the reason that the surveying system would not close had to be because the tectonic plate movement being used in the software was incorrect. Knowing that at the Great Pyramid of Giza the boat pits had been used to allow the tectonic plate movement to be determined⁷ it was correctly surmised that the digital boat to the south of Snake Island served the same purpose. An additional analysis was carried out at this location after which the whole

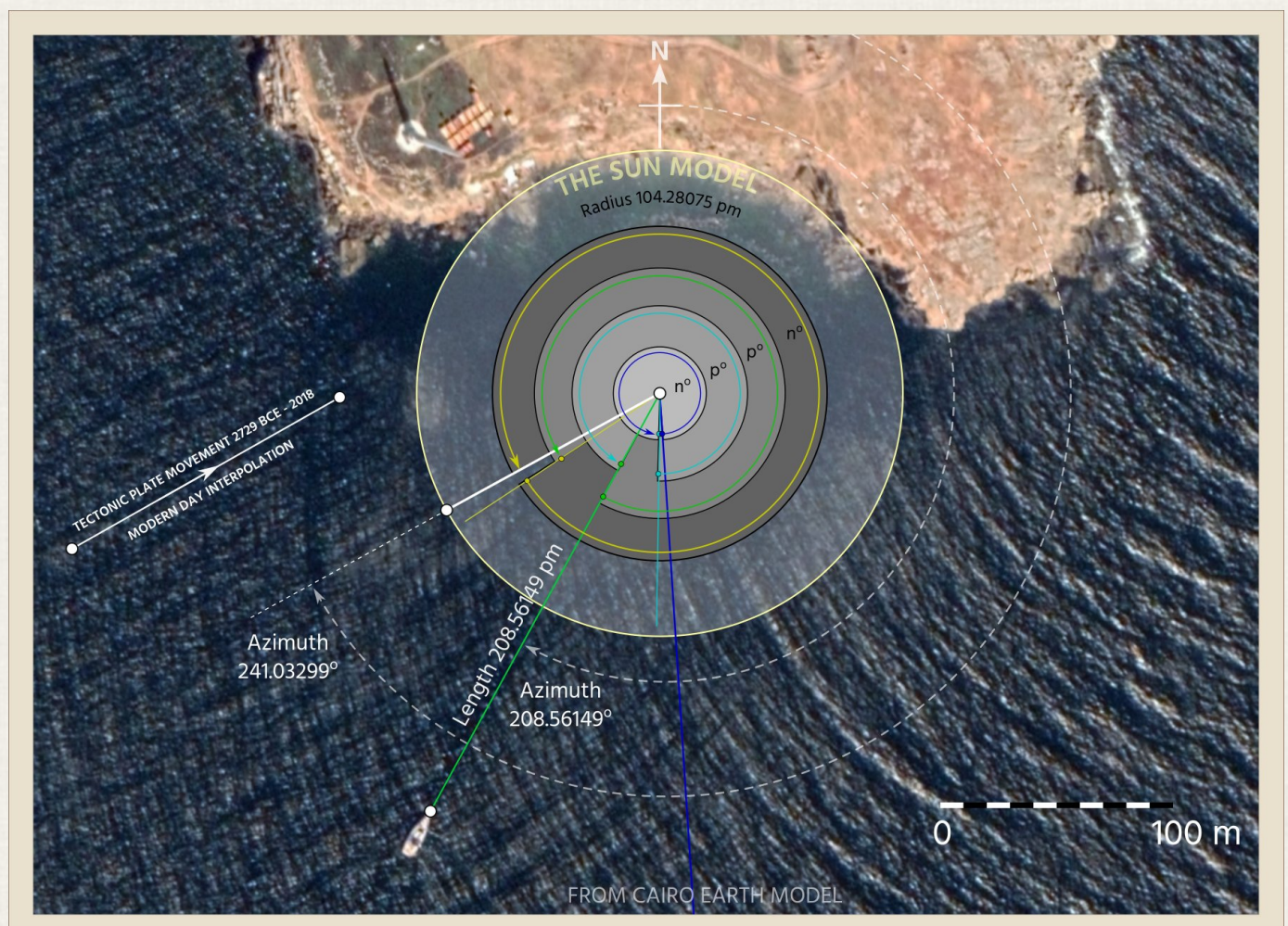


Diagram R17 - The tectonic plate shift at Snake Island.

inner solar system model starting at the initial Moon location had to be recalculated, finally allowing the survey closure point SUR0006 to nearly perfectly align with the south pole of the Mars model. The second analysis of Snake Island is shown in diagram R17.

The principal feature of diagram R17 is that the white radius line of the Sun is the line of the tectonic plate movement between 2729 BCE and the date of the satellite image's acquisition, August 2016. The length of the line is 104.28075 pm and it is set at an azimuth of 241.03299 degrees and gives the plate movement as 10.64358007 mm/yr north and 19.22762770 mm/yr east.

The modern day calculation of the line of the tectonic plate movement is shown on the left side of the image and is taken from the EarthScope Consortium interactive plate movement calculator (referenced in the appendix). This value has been calculated by taking modern GPS ground movement values and interpolating the data to give a long term absolute value and this is where the error in the system is located. As can be seen on the diagram the two white tectonic plate movement lines are of almost identical azimuth and differ in length slightly.

The circular constructions on the diagram show how the angles have been calculated. Starting from the reverse azimuth of the blue line from the Earth model in Cairo and working anticlockwise the inner most angle marked as n° , which is the longitude of the ascending node of the Moon at the 2729 BCE winter solstice, is deducted from the azimuth. The angle p° , the argument of perifocus of the Moon at the winter solstice 2729 BCE, is deducted from the resulting azimuth which gives the boat image's azimuth. The angles p° and n° are then deducted once more to give the azimuth of the tectonic plate movement line.

The boat is positioned relative to the blue inbound line and Sun center point at twice the distance and half the angle of the white tectonic plate movement line. The length of the line to the boat in perfect meters is identical to its azimuth in degrees, and since the azimuth is calculated from the astronomy data and the reverse azimuth of the inbound line then the length is known to a very high level of precision. The length and angle of the tectonic plate movement line is therefore of the same accuracy.

Beyond all reasonable doubt the image of the boat has been digitally edited onto the 2016 satellite image with the intention of quantifying the exact tectonic plate movement of Snake Island since the winter solstice of 2729 BCE by the same architect that was responsible for the construction of the inner solar system model 4750 years ago. The only purpose of carrying out this digital edit is to allow the survey closure system to be resolved *by us* because the geodetic inner solar system model did not require this information at its time of construction and design.

When the whole system from the Moon model onward was then re-calculated there remained a tiny error in the alignment with the Kaaba of just a meter or so. Because by this stage the whole of the system was comprehensively understood and the effect of small errors could be mentally visualised, it was realised that the direction of the remaining error must be coming from axial tilt of the Moon which dictates the azimuth of the equator line of the Earth model over Cairo. The error of a meter or so in Makkah related to an increase in the azimuth of the Earth model's equator of about 0.02 of a degree, and the related axial tilt of the Moon was taken from the surveying across Africa to Niako in Mali, shown in the earlier paper⁸.

This system was re-analysed and it was realised that when the Moon model that is used in the inner solar system model was formed it was shown as being a flat image of the Moon's surface that had then been flipped upright⁹ during the design of the system. The opposite therefore needed to be done to the Moon reference point in Mali and diagram R18 shows this final adjustment to the inner solar system model.



Diagram R20 - The final adjustment to the inner solar system model in Mali.

The point TA-2 is the new moon center point that is added to the system when the point TA-1 is taken as being the center of an upright flat model of the Moon's surface which is then folded down flat. The distance to the point TA-1 from the true anomaly reference point on the model of the Earth is 4555747.618 perfect meters and the distance to the point TA-2 is 4573128.963.

The correct axial tilt of the Moon at the moment of the 2729 BCE winter solstice that needs to be used in the inner solar system model is therefore 4.57312896348953 degrees. Using this value in the tilt of the Earth's equator fully corrects the the inner solar system model's survey closure line alignment with the Kaaba, allowing the precision that is shown in diagram R16 to be achieved.

Conclusions

The complexity and perfect logic of the geodetic geometry system shown in this paper and those preceding it precludes any possibility that the system's astronomical alignment points are coincidental and it can be concluded that the design is intentional. By the same logic, the complexity of the system rules out the possibility that the I as the author of this paper could have forced the points in the models to all conform to a system which I had retrospectively designed as the complexity is far beyond that which I could achieve. In addition to this the whole system is aligned to the modern GPS coordinate system yet the known radio carbon dating of the Great Pyramid, as an example, proves that the system was built and designed 4750 years ago. The use of natural land features within the system shows that the architectural design is not limited to buildings and that the geographic features have also been constructed as part of the architecture and to a massive scale, with Snake island for example having being perfectly crafted to the inner solar system's geometric requirements.

There must exist, either off the planet or outside our current understanding of the physical realm of the world, an entity, society or being which is responsible for the architectural system and that entity must have had access to future data at the time of construction and has deliberately chosen to link the inner solar system model to the primary location of one of the great religions of the world. The scientific nature of the system is beyond question with the mathematics and physics knowledge required to design it being explicitly displayed within the architecture whilst at the same time the religious aspect of the design is an integral part of it. From a technical perspective it would not be possible to work out the alignments of the system by starting at the religious end of the path because that would require reverse azimuths to be used throughout the analysis and would be impossible to achieve whereas the scientific approach starting at the Moon model ensures that forward azimuths are used which enables the system to be decomposed into its component parts. However the final part of the scientific system, which is the precision alignment to the Kaaba, can only be realised by reference to this religious location leading to the conclusion that religious aspect is the vital and concluding part of the scientific design.

The scientific and theological debate that needs to be had as a consequence of the inner solar system map existing will be immense. There is also an outer system model which exists and preliminary analysis of this system shows that it connects to a principal Hindu temple in south east Asia and also to a series of locations with modern significance, so that debate needs to be had in the context of our understanding of the system currently being incomplete.

This system has been built to bring people together. The locations on the model are spread around the numerous countries of the world, the system will require international cooperation to fully solve, and will connect scientific, religious and political minds alike.

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. The tectonic plate movement of Snake Island is taken from the inherent geometry of the model at that location.

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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