The Tychos – Our Geoaxial Binary System

15 September 2019, 6:55 pm[1]

The exeligmos explained

Our Moon has an important 54.09-year cycle known as the "exeligmos". Here's how the Wikipedia describes it:

> *"An exeligmos (Greek: ἐξέλιγμος – turning of the wheel) is a period of 54 years + 33 days that can be used to predict successive eclipses with similar properties and location. For a solar eclipse, after every exeligmos a solar eclipse of similar characteristics will occur in a location close to the eclipse before it. For a lunar eclipse the same part of the earth will view an eclipse that is very similar to the one that occurred one exeligmos before it."* [2]

In other words, one could say that the exeligmos is the "master cycle" of the Moon's complex dance around Earth, at the completion of which the Moon returns facing/blocking the Sun in a similar manner as 54.09 years earlier.

No one really knows why this 54.09-year cycle exists, nor much less what causes it. Copernican astronomers can only acknowledge its existence as a matter of fact since it has been observed for millennia, yet no specific cause for the occurrence of the exeligmos has ever been put forth in the astronomy literature.
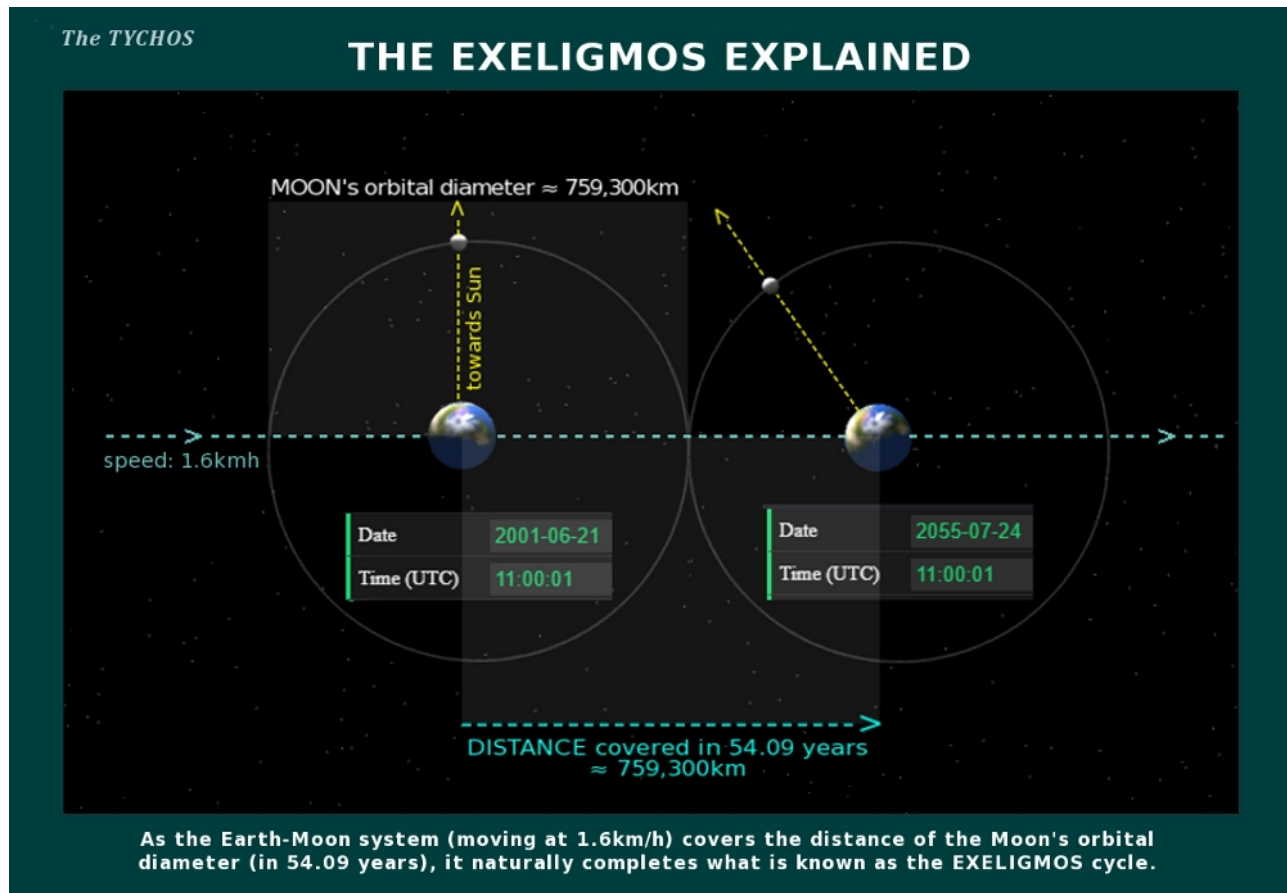
We shall now see how the Tychos model can provide a most logical elucidation of the peculiar kinematics responsible for the exeligmos cycle, i.e. the reason for its very existence. But first, I will have to remind the reader of some basic figures related to the Earth-Moon system, as proposed by and computed within the Tychos geo-heliocentric model, in addition to some generally accepted values of the Moon's orbital dimensions:

In the Tychos, Earth (along with its satellite, the Moon) moves by 14,036 km every year along its PVP orbit, the circumference of which is an estimated 355,724,597 km. The Earth-Moon system proceeds in a "clockwise" direction, as opposed to the "counter-clockwise" direction of all the main bodies of our Solar System, completing one revolution around the PVP orbit in 25,344 years. The Moon's mean perigee (as it passes closest to Earth) is known to be about 355,000 km, whereas its mean apogee (as it passes furthest from Earth) is about 404,300 km. Based on this, we can estimate the Moon's "mean orbital diameter": approximately 355,000 km + 404,300 km = 759,300 km.

Since we know that, after each exeligmos (54 years plus ~1 month) a solar or lunar eclipse will occur on the same spot of Earth, and since the Earth-Moon system covers 14,036 km annually in the Tychos model, we can easily compute how much it will have moved along the PVP orbit in such a period:

14,036 km x 54.09 y ≈ 759,207 km

This is of course very close to 759,300 km, i.e. the approximated mean orbital diameter of the Moon. Let us now see what this would look like in the Tychos model. As ever, an image speaks more than a thousand words:

As the Earth-Moon system (moving at 1.6km/h) covers the distance of the Moon's orbital diameter (in 54.09 years), it naturally completes what is known as the EXELIGMOS cycle.

One can thus most intuitively envision why the exeligmos cycle exists: it is the natural kinematic consequence of the Earth-Moon system's 1.6 km/h motion. Every 54.09 years, the two of them will cover a distance equal to the Moon's orbital diameter and, therefore, the Moon will return to an Earth-Moon-Sun alignment similar to the one 54.09 years earlier. Simple as that.

To be sure, the Copernican/Keplerian heliocentic model has no causal explanation whatsoever for the occurrence of the exeligmos. On the other hand, the Tychos model can in the simplest imaginable manner illustrate just why the exeligmos cycle exists.

Lastly, let us doublecheck whether the Tychos model can mathematically reconcile the exeligmos with the proposed duration of the Tychos Great Year (25,344 solar years). As mentioned above, the estimated circumference of the PVP orbit is 355,724,597 km, and in the Tychos the distance covered by the Earth-Moon system over one exeligmos is an estimated 759,207 km. This means that the number of exeligmoi occurring over a Tychos Great Year will be:

355,724,597 km / 759,207 km ≈ 468.55

---

[1] https://cluesforum.info/viewtopic.php?p=2412753#p2412753
[2] https://en.wikipedia.org/wiki/Exeligmos

If we now multiply this number by 54.09 we obtain 25,343.8695 years, or almost precisely 25,344 years—the duration of the Great Year as proposed by the Tychos.

In any event, only the Tychos model can provide a causal explanation for the very existence of the Moon's exeligmos cycle. In the Tychos, the exeligmos cycle of 54.09 years turns out to be a direct consequence of Earth's orbital speed of 1.601169 km/h, since Earth will cover the Moon's orbital diameter in a 54.09-year time period. The odds of all this being sheer coincidence are, if I may say so, astronomically small!

The topic of the Moon's exeligmos cycle was briefly treated in my book on the Tychos model.[3] The below graphic from the book may help visualize the concept from another angle:
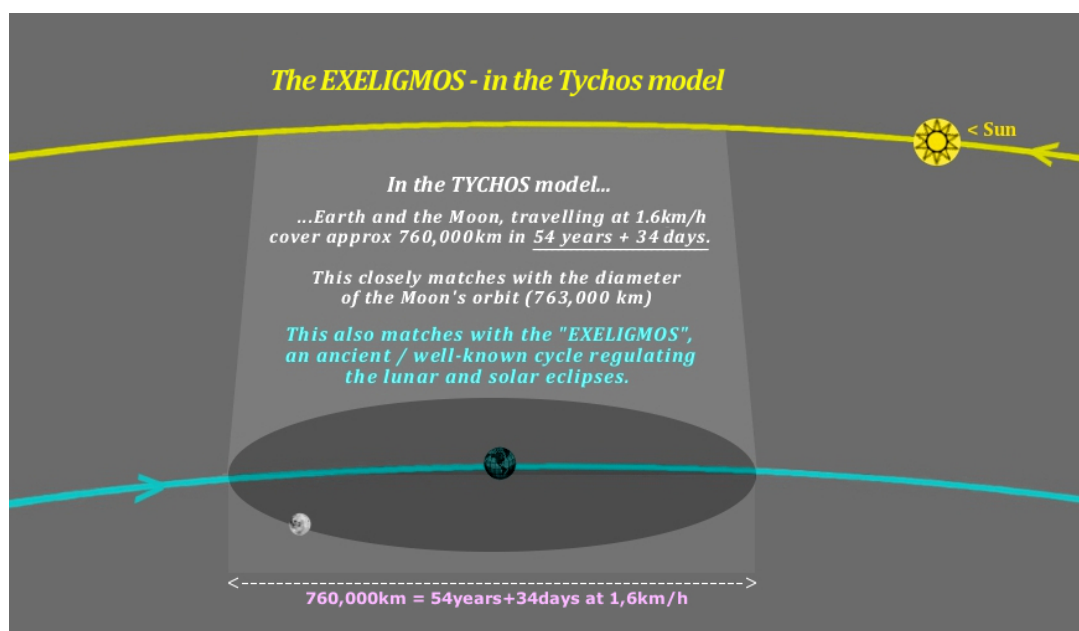
It seems intuitively logical that an exeligmos cycle is completed when Earth and the Moon have together covered a distance practically equivalent to the Moon's orbital diameter.

---

[3] https://www.tychos.info/the-tychos/