Appendix 47

The Tychos – Our Geoaxial Binary System

2 October 2021, 2:47 pm[1]

Eros and the Tychos: Love at first sight!

In Greek mythology, Eros is the Greek god of love and sex. His Roman counterpart was Cupid ('desire').[2]

What follows is the tale of my most cherished encounter during the course of my ardent Tychos research adventure: that with the tiny planet (or, if you will, near-earth asteroid/NEA), Eros. As we shall see, not only does Eros strenghten the Tychos model's tenets; it also provides definitive evidence of the untenability of the heliocentric theory. Firstly though, a brief summary of yesterday's astronomers' feverish quest to measure the Earth-Sun distance is in order:

There was enormous excitement among the late 19th-century astronomers as Eros was discovered on 13 August 1898. In the previous decades, humongous efforts had been invested in determining the all-important Earth-Sun distance. For example, only for the sake of observing Venus' 1874 transit[3] across the solar disk, France, England and the US had organized as many as 19 official expeditions around the world, some of which cost the lives of several sailors and astronomers.

Why all these frantic and titanic efforts, you may ask? Well, since Venus was thought to be the celestial body that passed closest to Earth, the idea was to measure its parallax vis-à-vis the Sun, and thus to finally determine its exact distance from Earth. In fact, both the close-passing Mars and Venus had been used for this purpose, yet there were ongoing controversies as to the accuracy of these observations. This is described in an essay by Edmund Ledger titled "The New Planet Eros", published in 1900:

> *"It was at one time hoped that this [the Earth-Sun distance] might be accurately determined in the case of Venus by observations made on those rare occasions when it passes in transit across the sun's disk. But the glare of the sun's light, the ill-defined edge of the sun's disk, and the atmosphere of Venus itself, combine to deprive such observations of the necessary accuracy. Apart from some other methods, involving long periods of time and highly complicated theoretical investigations in their use, attention was therefore next given to an attempt to obtain the distance of the planet Mars when it makes its nearest approaches to the earth. It was, however, found to be difficult to measure the exact position of the centre of its disk."*

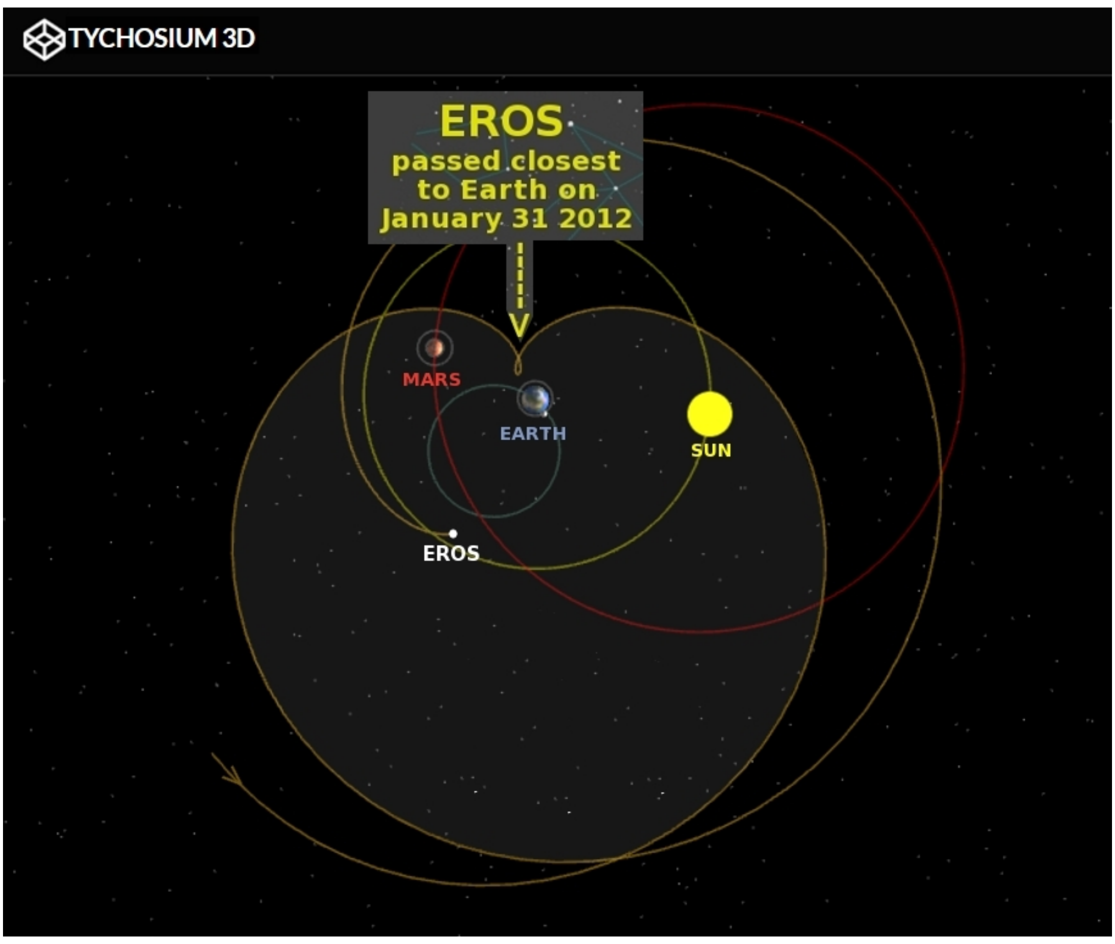
Enter Eros. When Eros was discovered by German astronomer Carl Gustav Witt at the Berlin Observatory on 13 August 1898, it was soon realized that it would pass much closer to Earth than either Mars or Venus. Edmund Ledger wrote:

> *"But in the case of Eros we meet with something utterly different and unexpected. A new planet has been discovered whose average distance from the sun is less than that of Mars; a planet which at times comes within a distance from the earth not much more than one third of the nearest distance within which Mars ever approaches it."*[4]

Today, Eros' closest passages to Earth (~0.17 AU) are estimated to be roughly 2 and 3 times closer than the closest passages of Venus (~0.3 AU) and Mars (~0.45 AU), respectively.

Eros is the largest member of a group of NEAs referred to as 'the Amor'.[5] In Latin, 'amor' means 'love', and 'Eros' was the Greek God of love. Why this peculiar nomenclature is interesting will soon become clear. As I studied the available data of Eros so as to integrate it into the Tychosium simulator, I noticed that Eros' closest near-Earth passages occur almost precisely every 81 years (around 31 January) at virtually the same place in our sky (note that this is reminiscent of Mars' 79-year cycle). Having gathered the known parameters of Eros (orbital size, speed, closest passages), I activated the Tychosium's 'trace' function for Eros and pushed 'Play'. That's when my jaw dropped. I think you can imagine me gasping in utter fascination at the shape traced by Eros' 'spirographic' orbit around our solar system.

That's right, ladies and gents: Eros traces a heart around Earth!



[1] https://cluesforum.info/viewtopic.php?f=34&t=1989&start=195#p2415771
[2] https://en.wikipedia.org/wiki/Eros
[3] https://en.wikipedia.org/wiki/1874_transit_of_Venus
[4] https://archive.org/details/essaysinastronom00newyrich/page/238/mode/2up
[5] https://en.wikipedia.org/wiki/Amor_asteroid

I then proceeded to adjust some of Eros' closest Earth passages by perusing the ephemeris data at the JPL website. Within a few hours of toggling, I was pleased to see that 'my Eros' (in the Tychosium simulator) was in excellent agreement with the JPL data. Here's a back-to-back comparison between the JPL and the Tychosium ephemerides of five Eros passages very close to Earth (1850, 1931, 2012, 2093, 2174). They make for a most spectacular match.

Eros' closest Earth passages (in 'opposition') at intervals of ~81 years.

JPL/NASA	1850-Jan-31	RA 10h12m	DEC -04°05	AU 0.1701
Tychosium	1850-Jan-31	RA 10h13m	DEC -01°59	AU 0.1705

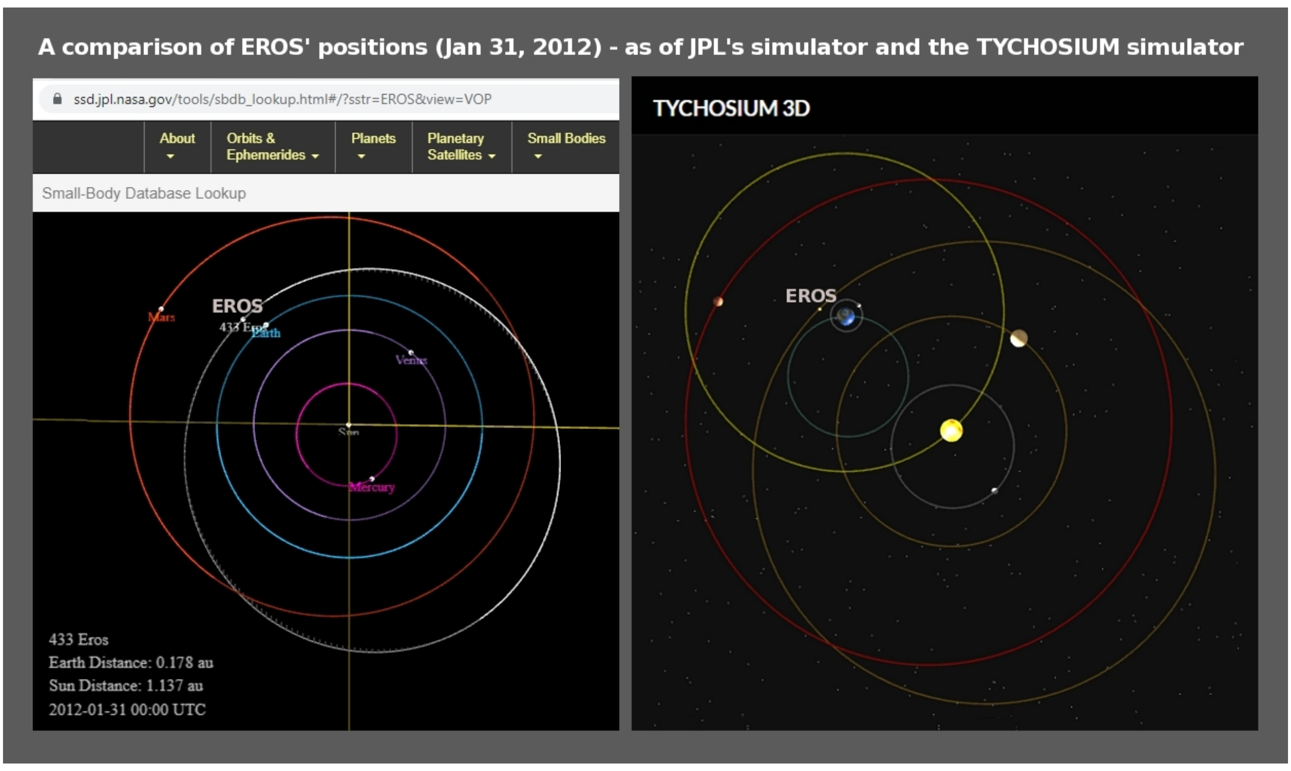
JPL/NASA	1931-Jan-31	RA 10h24m	DEC -04°02	AU 0.1741
Tychosium	1931-Jan-31	RA 10h23m	DEC -03°13	AU 0.1743

JPL/NASA	2012-Jan-31	RA 10h33m	DEC -04°48	AU 0.1786
Tychosium	2012-Jan-31	RA 10h33m	DEC -04°17	AU 0.1788

JPL/NASA	2093-Jan-31	RA 10h40m	DEC -06°30	AU 0.1824
Tychosium	2093-Jan-31	RA 10h41m	DEC -05°15	AU 0.1837

JPL/NASA	2174-Jan-31	RA 10h50m	DEC -06°17	AU 0.1889
Tychosium	2174-Jan-31	RA 10h51m	DEC -06°19	AU 0.1885

To understand how this agreement between the Tychos and the Copernican model is even possible, considering the wholly different 'spirographic' planetary motions in the Tychos model, it should be remembered that Eros makes its closest passages to Earth every 81 years, returning to very much the same celestial position in both simulators. Here is a comparison between the 'static' views of Eros' position on 31 January 2012, as depicted by the JPL simulator and the Tychosium simulator:

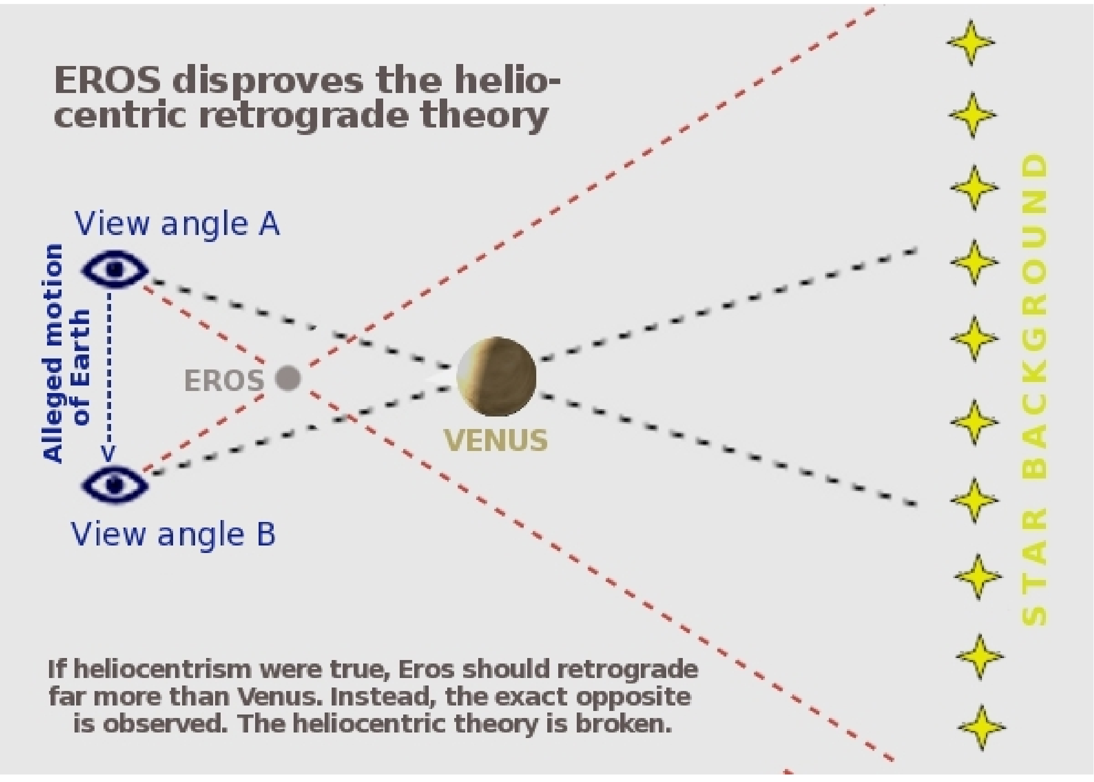


We shall now look at the most peculiar aspect of Eros' observed behavior in the skies.

> *"Unlike most objects in the solar system, it [Eros] never appears to be retrograde (back-track across the sky)."*[6]

The above statement from Wikipedia is not quite true. As Eros passes closest to Earth, it will indeed back-track a little: ~20 min of RA on average and sometimes as little as 5 min of RA. Now, remember: the Copernican model's proposed explanation for periodical retrograde motions is that, as Earth overtakes Mars (or as Venus overtakes Earth), the planet will appear to back-track across the sky for several weeks (and for up to 1 hour+ of RA) due to an optical parallax illusion caused by the shifting viewing angle of the planet in relation to the starry background.

Our observations of Eros' trajectory highlights the problem with this explanation. As we saw earlier, Eros passes Earth at only half the distance of Venus. Thus, if our planets' retrograde motions were caused by such angular shifts, this would violate the basic laws of parallax and perspective: Eros should be observed to retrograde against the starry background much more than Venus. As always, a picture speaks more than a thousand words:



Note that the speed differential between Earth (~30 km/s in the Copernican model) and Venus (~35km/s) is virtually identical to the speed differential between Earth (~30 km/s in the Copernican model) and Eros (~25 km/s). In both cases, the speed differential is 5 km/s. Hence, one cannot argue that Eros' observed minuscule retrograde is due to some speed differential issues.

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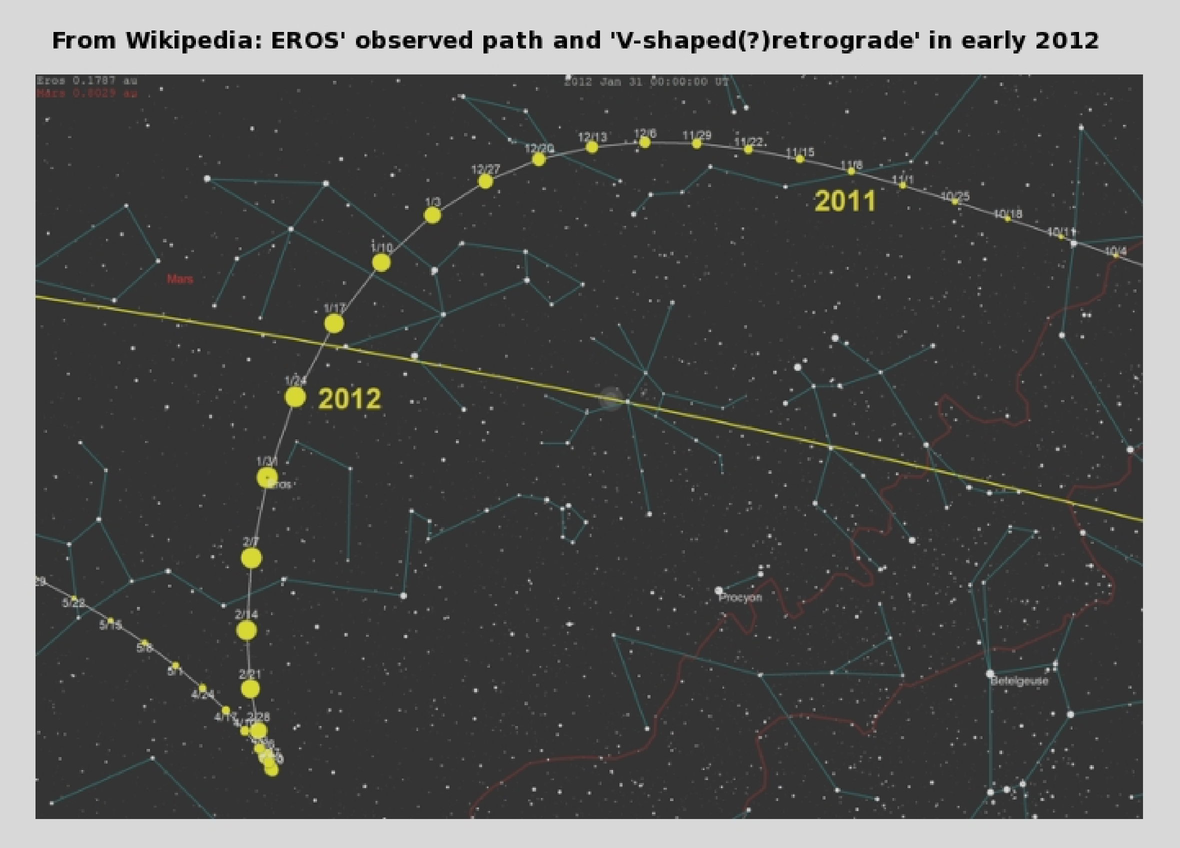
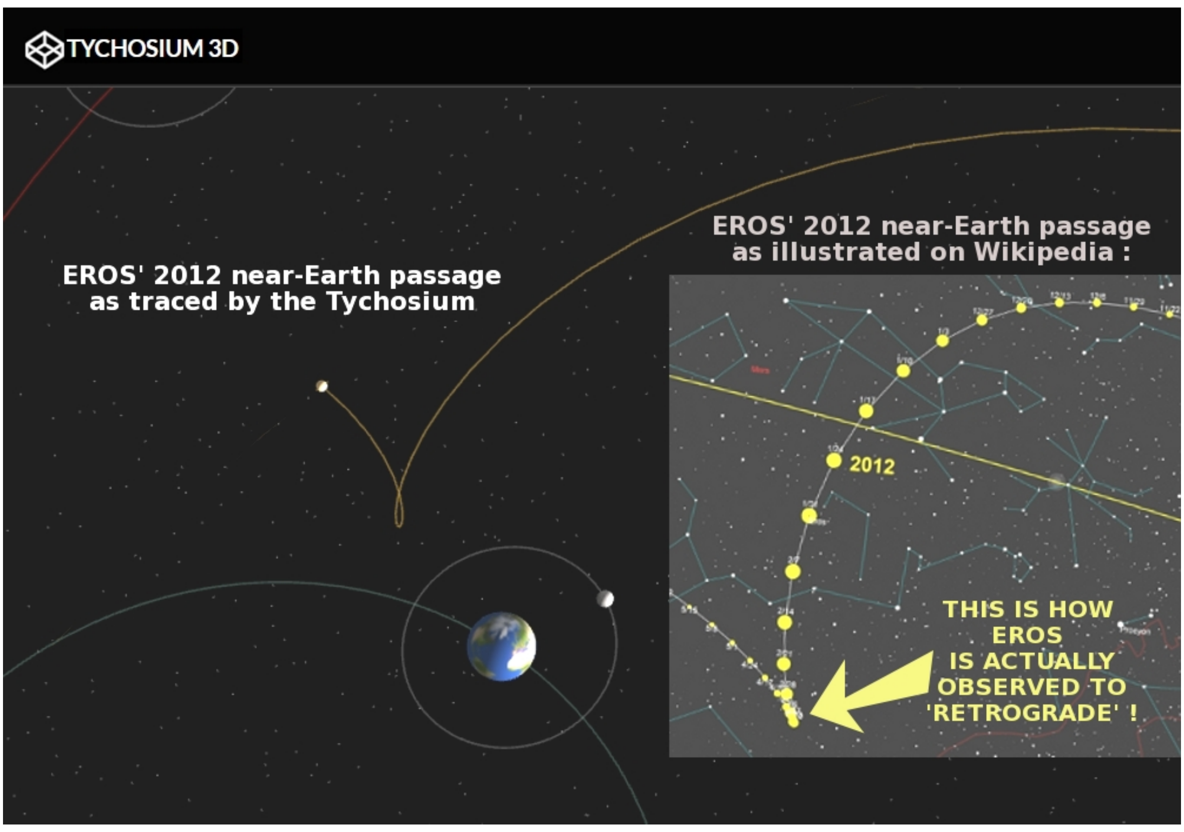
[6] https://simple.wikipedia.org/wiki/433_Eros

You may now be curious to know exactly how Eros is empirically observed as it transits closest to Earth. Once more, Wikipedia provides us with a handy illustration:



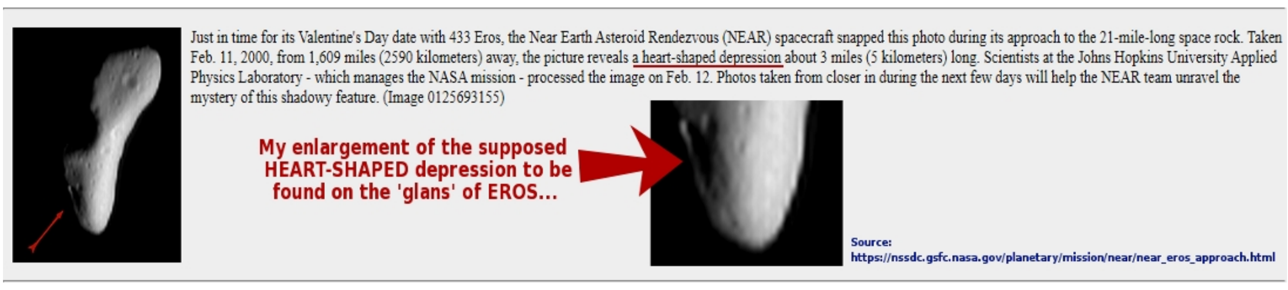
You will admit that, when viewed in the Copernican model, Eros' trajectory, with its abrupt, V-shaped retrograde pattern, is quite bizarre. How can this possibly be reconciled with what would be a simple, linear 'overtaking maneuvre' on the part of Earth? Surely, something else is going on?

Once again, the Tychosium simulator can show us precisely why Eros is observed to behave in such a manner as it passes closest to Earth:



In conclusion, it is the heart-shaped orbital trajectory of Eros (as of the Tychos model) that causes the peculiar and minuscule V-shaped 'retrograde' pattern. All the planets, comets and NEAs revolving around the Sun are clearly attached to it by some magnetic force, analagous to a yo-yo string. It is the length and speed of this string that determines the variable shapes of our planets' orbital, spirographic paths and their variable retrogrades. After all, there's really nothing magical or otherworldly about this apparent 'action-at-a-distance': here on Earth, we can all make small magnets levitate and rotate (just by a little finger push) around a larger 'mother magnet', as if attached by invisible yo-yo strings. Of course, what remains to be understood is just what ethereal forces (i.e., that little finger push) have set all of our universe's celestial bodies in motion and how they are kept rotating in such constant and 'clockwork-like' manner, century after century.

As an anecdotal epilogue to this Appendix, I'd like to share a hilarious tale concocted by the ever-so-imaginative NASA scriptwriters. You see, NASA claims to have landed a probe upon Eros back in February 2001, as it found itself at 2 AU (i.e. twice the distance to the Sun). As their story goes, the probe would have landed just around Valentine's Day (14 February). Apparently, this silly NASA fairy tale wasn't deemed to be complete without the even sillier claim that the probe had captured fairly sharp photographs of Eros from a distance of 2,590 km (i.e. roughly the distance between Stockholm and Rome). Now, and here's the kicker: these alleged photographs would have revealed a distinct heart-shaped depression on the very tip of the dildo-shaped Eros. Yup, folks! You gotta love it!


Just in time for its Valentine's Day date with 433 Eros, the Near Earth Asteroid Rendezvous (NEAR) spacecraft snapped this photo during its approach to the 21-mile-long space rock. Taken Feb. 11, 2000, from 1,609 miles (2590 kilometers) away, the picture reveals a heart-shaped depression about 3 miles (5 kilometers) long. Scientists at the Johns Hopkins University Applied Physics Laboratory - which manages the NASA mission - processed the image on Feb. 12. Photos taken from closer in during the next few days will help the NEAR team unravel the mystery of this shadowy feature. (Image 0125693155)

Eros is now integrated in the Tychosium simulator. To open it, go to the 'Planets' menu and check the 'Eros' box. Then, in the 'Trace' menu, activate the orbital tracing by checking the 'Eros' box. Push the 'Run' button and you will see Eros' lovely spirographic orbital motions.[7]

[7] https://codepen.io/pholmq/full/XGPrPd