

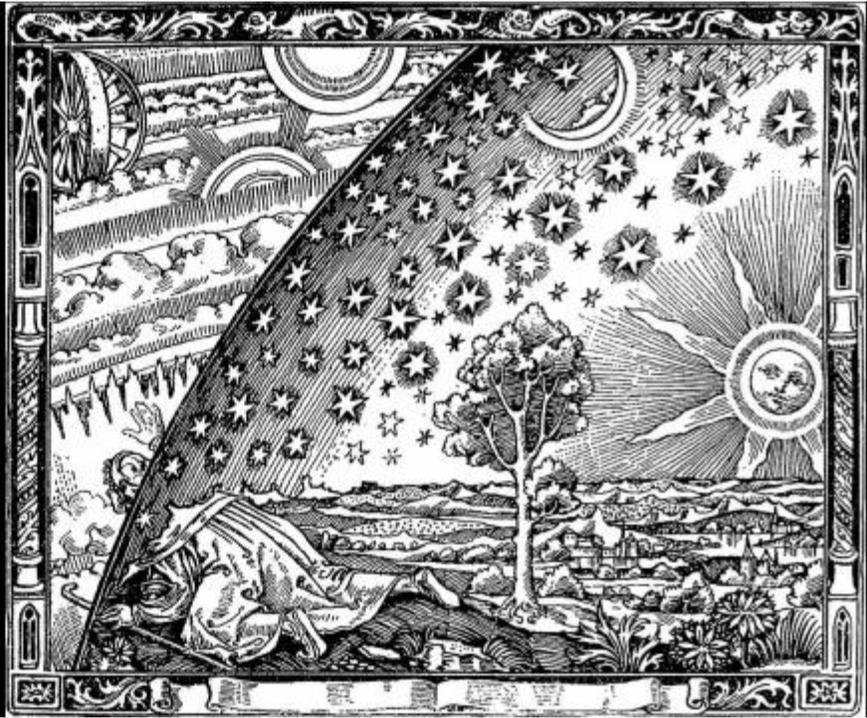
Black Holes Under the Stars - Introduction

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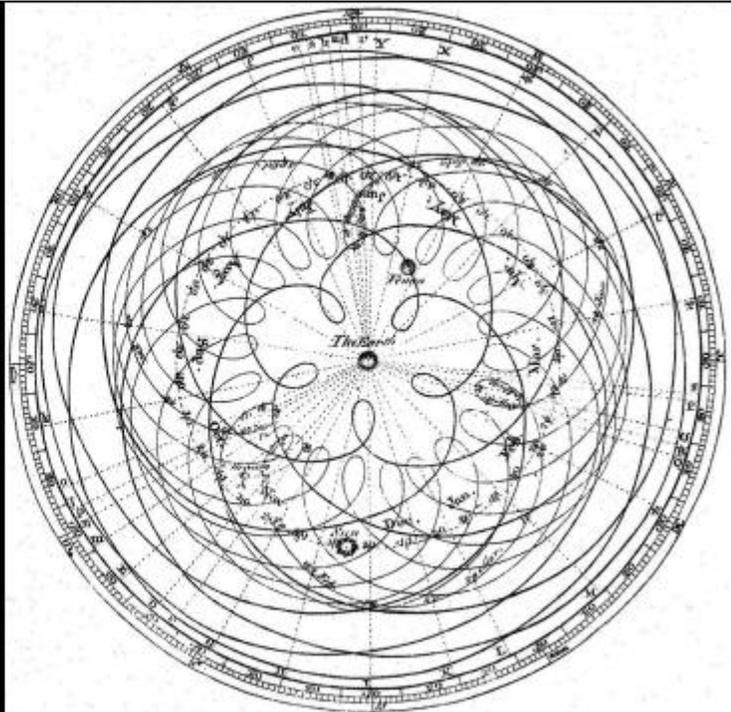
Dreaming may be wonderful, but being awake, that's where the real wonders are beginning. Growing up becomes an open door to what one can't even imagine yet.

Dreams
of an Earth
that is flat

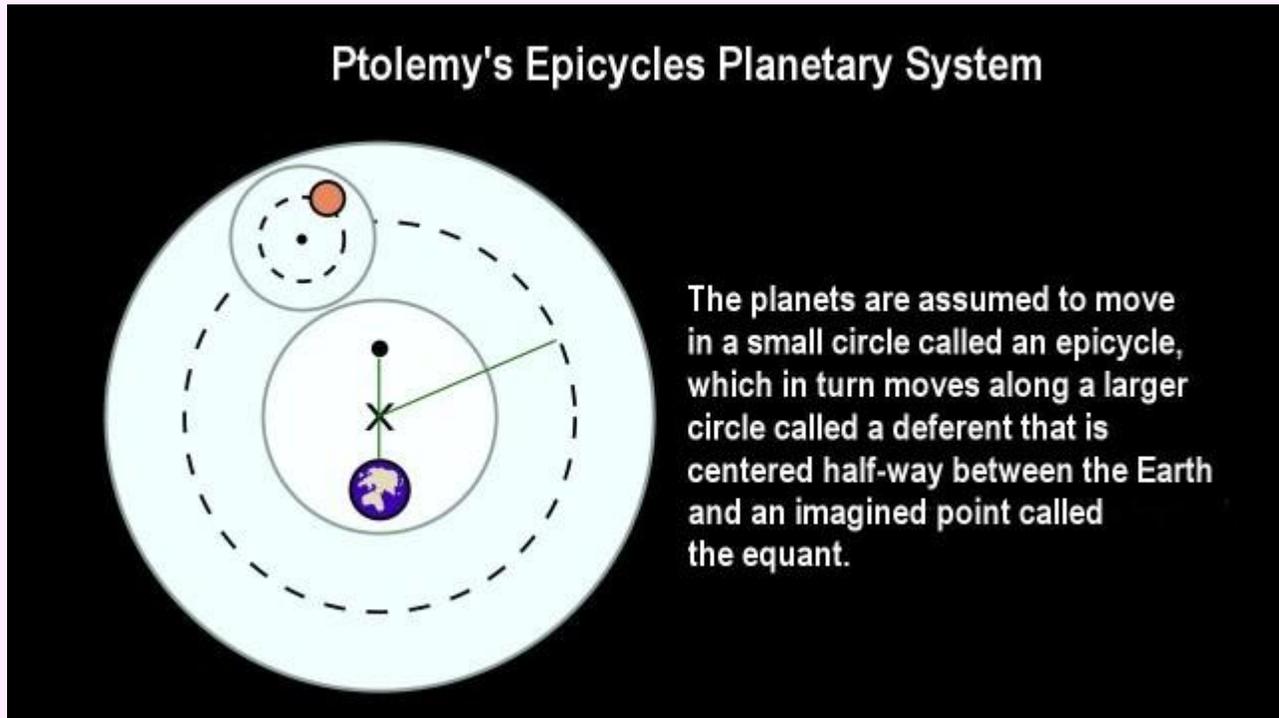


In growing up, the Flat-Earth concepts fell by the wayside. They did so for many and were forgotten. The Flat-Earth club attracts almost no one anymore.

Dreams of
Epicycles
that don't exist



The epicycles too, don't excite scientists anymore.



It took a long time though, in astronomy, for the Epicycles Theory to be laid aside that Ptolemy had invented. With its dreaming of epicycles, science had kept itself in chains for 1,500 years. We now laugh about the silliness of believing in effects for which no cause actually exists, or can exist.

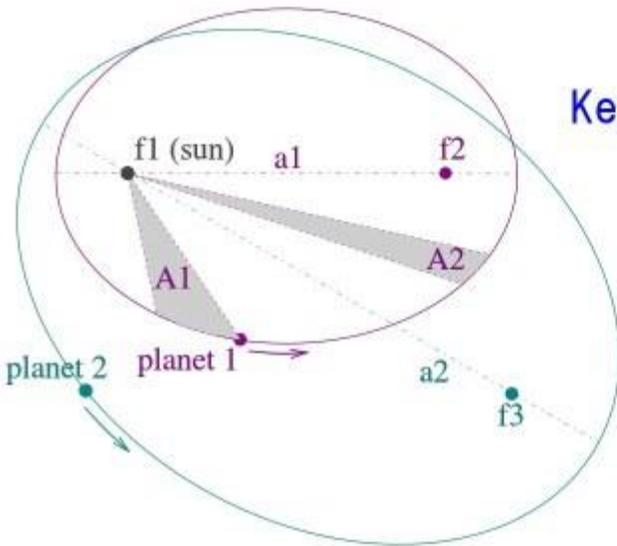


Ptolemy

being guided by philosophy

Margarita Philosophica by Gregor Reisch, published in 1508

The epicycles were invented to twist the astrophysical evidence to support the doctrine that all orbits in the heavens must follow the path of perfect circles; because of the circle is a perfect geometric form, fit for the heavens that are obviously perfect . It took humanity 1,500 years to break itself out of the box of this doctrine.



Kepler's three laws of planetary orbits

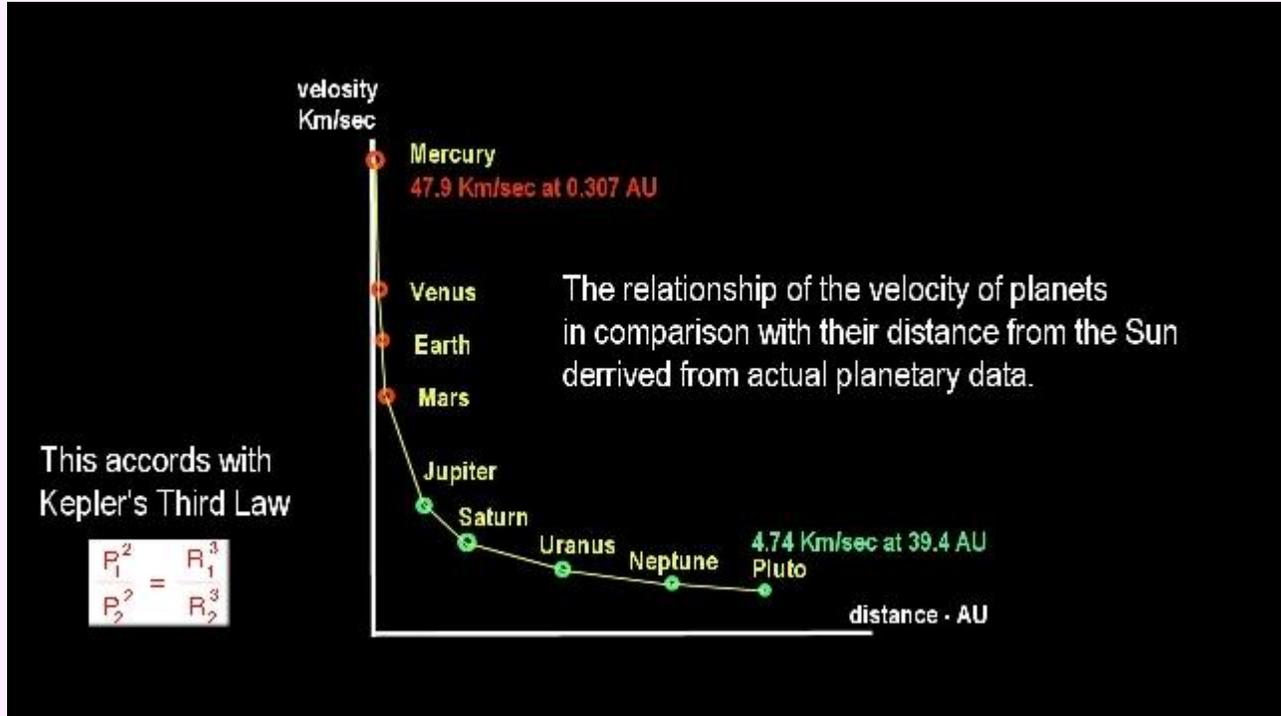
- (1) The orbits are ellipses, with focal points f_1 and f_2 and f_3 respectively.
- (2) $A_1 = A_2$, both in area and in transit time.
- (3) The total orbit times for planet 1 and planet 2 have a ratio $a_1^{3/2} : a_2^{3/2}$.

"Kepler laws diagram" by Hankwang - Licensed under CC BY 2.5 via Commons

A step towards freedom was taken when Johannes Kepler discovered the principles of gravity and its interaction with mass and velocity in orbital dynamics, the door was opened by this for the acceptance of elliptical orbits.

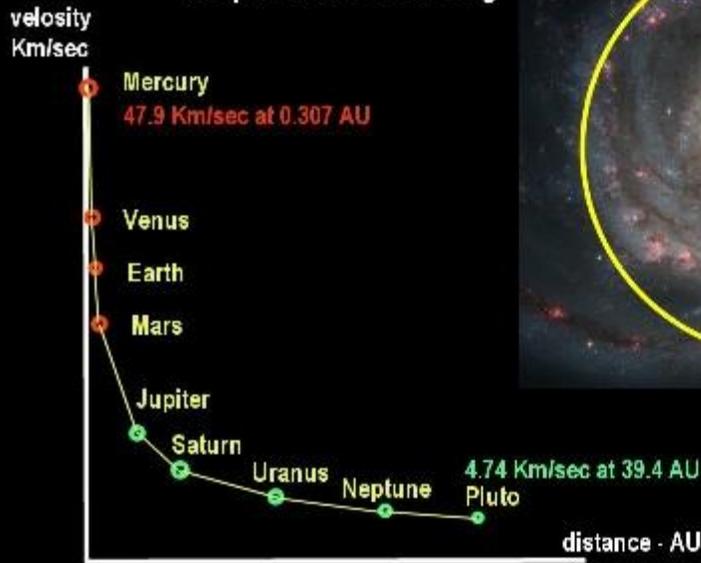


The dreaming about epicycles suddenly ended. It ended, regardless of the fact that many great men in astronomy had sung the epicycles song and had based their lifework on it, which thereby turned out to be incorrect.



The laws that Kepler had discovered match perfectly the orbital characteristics of the planets. With this, the old doctrines were scrapped. Astronomers were suddenly interested in discovering how things really work. At least some were.

The impossible doesn't happen Kepler would say



250 Km/sec at a distance of
3,200,000,000 AU
(re. the outer rim of the Milky Way)

The gravity required to maintain
an orbit at this velocity and distance
is not physically possible

Some remained dreaming of course, even while in dreams, nothing ever gets resolved.



The science-dreaming has become so extensive in modern time that the exploration of it covers a wide field. The result of it became a rather lengthy video presentation.



In order to make the wide range of the aspects more accessible, I have provided the long presentation also separated by topics into the form of a 12-part series of individual videos.

Both forms are available.

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