

Lunar capture theory from the point of vortical celestial mechanics

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Attraction of two planetary vortices of different spins
allow lunar capture to proceed less dramatic

Theory of lunar origin is actual problem in planetary science. Giant-Impact hypothesis (Daly, 1946; Hartmann and Davis, 1975, Canup and Asphaug, 2001 and others) used Mars-size hypothetical planet Theia which could create the Moon in collision of early Earth. We can feel from Zhang *et al* (2012), Asphaug (2014) and Barr (2016) however, that physical and chemical properties of the Moon cannot be explained by single impact of the Earth. Extreme catastrophic scenarios (Wang and Jacobsen, 2016), which has been proposed in order to save Giant-Impact hypothesis are at odds with facts, that 1) Earth had never been completely melted and 2) Earth's interior contains hydrogen and helium.

Lunar capture theory is not discussed by professionals now. As *Windows to the Universe* tells us: “One sign that a moon is really a captured asteroid is that it has a non-spherical shape, or looks more like a potato than round like our Moon. Another sign that a moon may be captured is if it orbits in a direction opposite to that of the mother planet. An example of a moon of this kind is Neptune's moon Triton.

The Earth's Moon is both rounded in shape and orbits with Earth. These are the most direct pieces of evidence that the Moon is not a captured object”.

Mother Nature Network tells us that “The holes in this theory range from suggestions that the moon would have eventually broken free from Earth's gravity because Earth's gravity would have been massively altered by catching the moon”.

Evidence, as we can see, is not very convincing and has sense only within current wrong model of celestial mechanics (cf.Mathis, 2010).

Within Cartesian celestial mechanics, lunar orbit origin could be imagined such way:

1. Attraction of two spinning partially melted rocks (the Earth and the Moon) (which formed in on region of space)- two vortices with opposite spins (fig.1).

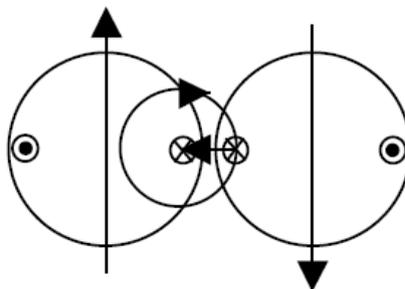


Fig. 1 Attraction of opposite spinning bodies. Image credit: DeMees, 2003

2. Stabilisation of Moon's orbit by tidal forces, gravity and certain shift of Earth's rotation axis (fig.2). Due to mass differences, Moon could have counterclockwise spin around the Earth initially.

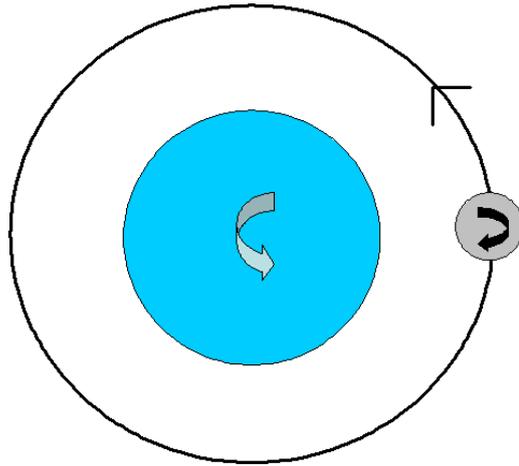


Fig.2 Possible initial orbit of the Moon with opposite self rotation direction.

3. Slowing down clockwise self rotation of the Moon. During this process heat is developed, which gradually ceased. That's way Moon possess unexplained internal heat even today. Lunar tides are caused by "tidal forces", not very sensitive to lunar self rotation speed.

Thus lunar capturing process could proceed by it's slower orbital speed- and typical objections to capture theory are lifted.

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