

Stellar Metamorphosis: An Alternative to the Giant-Impact Hypothesis for Moon Formation

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Abstract: An ad hoc proposition was made by scientists to form the Moon. In it, they state that the Earth was hit by an incredibly massive object, which then the moon formed out of as a giant blob of shrapnel. They hypothesized that in order to create the Moon, another object called Theia was needed which is of course an object that has never been observed, as well as a process that has never been observed. Alternatively, if stellar metamorphosis is used, the Moon can be explained as well as Venus's lack of one, in accordance to the observations found in the age of exoplanets.

For those new to the general theory, planets and moons are older highly evolved, evolving and dead stars and stellar remains. Using this we only need Earth and the Moon to explain. What happened is that when Earth was a much hotter, bigger star, it captured the Moon, which was already formed, though had significantly more rocky material. It was probably a bit bigger than Mars when it was grabbed by the Earth. It caused the pre-existing moon to form lava lakes on the near side while disintegrating and simultaneously caused it to experience lots of cratering on the far. The Earth kept it in its torturous orbit for hundreds of millions of years, easily with an orbital year of 1 day, or shorter, as the Earth cooled down to orange dwarf, then to red dwarf, then to brown and finally became a half-billion year old star similar in appearance to Jupiter.

The moon then continued to orbit the Earth rather closely but began moving away slightly as the Earth lost considerable amounts of mass. As the Earth's mass was lost, the tight lunar orbit loosened up, and the moon slowed down and moved away from the Earth slightly. The moon continues to move away from the Earth to this day and will one day eventually completely break free. In short, the Moon's lava side was caused by the Earth keeping it lava. The evidence for the Moon's features can now be re-interpreted in accordance with the General theory.

1. Earth's spin and the Moon's orbit have similar orientations.

(When the Moon was captured by the Earth, the Earth's rotation and huge mass caused the Moon to take up the same orientation over time.)

2. Moon samples indicate that the Moon's surface was once molten.

(When the Earth was a much younger, hotter, bigger star it kept the Moon's surface molten on the near side.)

3. The Moon has a relatively small iron core.

(The Moon formed somewhere else, not in orbit around the Earth, because the Earth captured it).

4. The Moon has a lower density than Earth.

(When it was forming inside an evolving gas giant, that gas giant had its huge atmosphere ripped away quickly, so that not much heavy material could deposit as opposed to Earth, this also means the Moon could have at one point been Earth's "hot Jupiter", which are observed in the exoplanet data).

5. There is evidence in other star systems of similar collisions, resulting in debris disks.

(Debris disks/protoplanetary disks are made in collision events, not Moons or small planets).

6. Giant collisions are consistent with the leading theories of the formation of the Solar System. (Giant collisions result in debris disks, as stated in #5, they do not create planets.)

7. The stable-isotope ratios of lunar and terrestrial rock are identical, implying a common origin.

(When the Moon was orbiting Earth and being ripped apart, a large portion of the exact isotopes the Earth is composed of entered into the Moon's atmosphere and lava over hundreds of millions of years, mixing and giving the appearance of a common origin. The Moon was absorbing the Earth's ejected solar wind at an extremely close distance.)

Questions the giant-impact hypothesis can not answer are answered as well.

1. Why is the moon missing lots of volatile elements?

(It technically is not, many volatile elements have combined into rocks and minerals far in the Moon's past when it was forming inside of a gas giant. This means the water is still in there, only underneath the surface, as well, the Earth's intense irradiation when it was a hotter younger, bigger star ripped any and all of the atmosphere away quite violently. This would have happened regardless of the Moon's adopted size, as a hot Jupiter or a tiny bit more massive rocky Moon).

2. Why does Venus not have a similar Moon?

(Venus does not host a Moon because all the larger objects that used to orbit it have ejected themselves. Venus is vastly older than the Earth, and comparable Moons more than likely orbited it. Venus's lack of a large Moon is Earth's eventual fate. In fact, Earth possessing a large moon is direct evidence Earth was much more massive, and Venus's lack of a Moon is direct evidence Earth is going to lose its Moon.)

3. The iron oxide (FeO) content (13%) of the Moon, intermediate between that of Mars (18%) and the terrestrial mantle (8%), rules out most of the source of the proto-lunar material from the Earth's mantle.

(This is because the Moon, Earth and Mars have their own complete evolutionary history, of course the iron contents are going to all be different, they are not related to each other by formation.)

4. If the bulk of the proto-lunar material had come from an impactor, the Moon should be enriched in siderophilic elements, when, in fact, it is deficient in those.

(This again, is because the Moon had its own complete evolutionary history up until the point Earth captured it.)

5. The Moon's oxygen isotopic ratios are essentially identical to those of Earth. Oxygen isotopic ratios, which may be measured very precisely, yield a unique and distinct

signature for each solar system body. If a separate proto-planet Theia had existed, it probably would have had a different oxygen isotopic signature than Earth, as would the ejected mixed material.

(Not only does this show Theia did not exist, it shows that when the Earth was a much, much larger star, its oxygen was being ejected in large quantities from its solar wind, mixing in with the Moon's lava, making the finger print look exactly the same. If you want to find the Moon's actual isotopic finger print, you have to drill deep into it far below where the Earth-Star could not irradiate strongly.)

6. The Moon's titanium isotope ratio ($^{50}\text{Ti}/^{47}\text{Ti}$) appears so close to the Earth's (within 4 ppm), that little if any of the colliding body's mass could likely have been part of the Moon.

(The fact that isotopic abundances match is not a mystery, as explained in #5 above.)

To conclude, Earth was vastly larger, hotter and bigger when it captured the Moon. It is best to look at it with the general theory as a rough guide.