

Lord Kelvin's Earth: A Correction in the Age of Exoplanets

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Abstract: Kelvin's Earth cooling timeframe makes sense only when a major assumption is exposed. Of course if Earth started as molten would only take 20-100 million years to cool to its given state, but the Earth did not start off as molten. Explanation is provided.

The following is cut and paste from a document to prove that it exists.

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Kelvin's age of the Earth paradox revisited

Frank D. Stacey

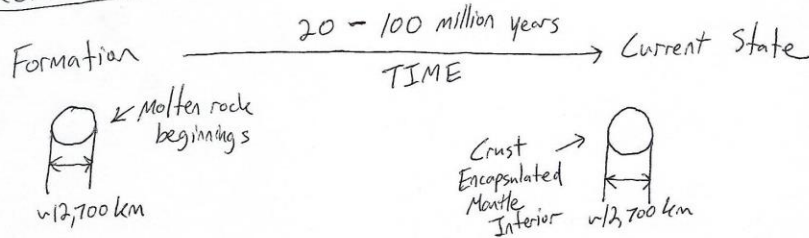
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After more than a decade of study of Earth's internal heat and implications for its age, *Kelvin* [1863] published a calculation of thermal diffusion from a progressively thickening crust on an initially molten Earth. His conclusion that Earth would have reached its present state after no more than 100 Myr, later reduced to 20 Myr, imposed a strait jacket on studies of the Earth's evolution that cramped geological thinking for the rest of the century [Burchfield, 1975]. Known sedimentary Kelvin, Lord (William Thomson), On the secular cooling of the Earth, *Philos. Mag.* 25, 1-14, 1863.
Burchfield, J. D., *Lord Kelvin and the Age of the Earth*, 260 pp., Sci. Hist. Pub., New York, 1975.

Firstly, pay attention to the writing. An initially molten Earth was Kelvin's starting point. Keep that in mind. I have hand written the explanation below.

Kelvin's Earth

4/1/18 JSW



★ He's mostly correct. If the Earth had molten rock beginnings then to get to its current state would only take 20-100 million years. Since we have evidence that the Earth is actually many billions of years old, it should have occurred to scientists that:

A: There is a mechanism that would prevent rocks (molten) from cooling and

B: they are using an assumption that is preventing them from understanding what the Earth actually is.

ANSWER!

A: A large (extremely large) atmosphere kept any molten material from cooling and solidifying, due to extreme gravitationally induced pressure

B: They are assuming Earth had molten beginnings ONLY, when in fact it is the core remains of a gas giant, which is in turn the cooled off stages of a star itself.

Basically Kelvin was calculating the age of the Earth by determining how fast it would have cooled off, given it started as molten. It did not start as molten though, it started as plasmatic, then gaseous, then liquid (molten). It is an incredibly evolved star, not a giant cooled off rock. So he was both correct and wrong at the same time. So where do we go from here? Well, we could calculate the rate at which mass is lost, and that would ease the internal pressure up causing the star to cool at faster/slower rates internally. If I had to take a stab at it, the puffed out hot Jupiters (closely orbiting gas giants) are allowing for their internal regions to cool off faster, and stars that do not orbit very closely to hosts can remain hot for extremely long periods of time, because the gravitational pressure keeps them that way. So it is quite a strange idea. It is the stars that orbit extremely close to hotter hosts that are cooling off faster, regardless if they are called "hot", and have thousand degree surface temperatures caused by their hosts.

So in essence, Lord Kelvin was not "wrong", he was just ahead of his time and he didn't even realize it. He was trying to force an assumption upon the calculations, before Earth had a real evolutionary history mapped out. He just did not know what Earth actually is. The imposed "strait jacket" was in the hidden assumptions already accepted as fact.