Elemental Mass Equilibrium in Stellar Metamorphosis

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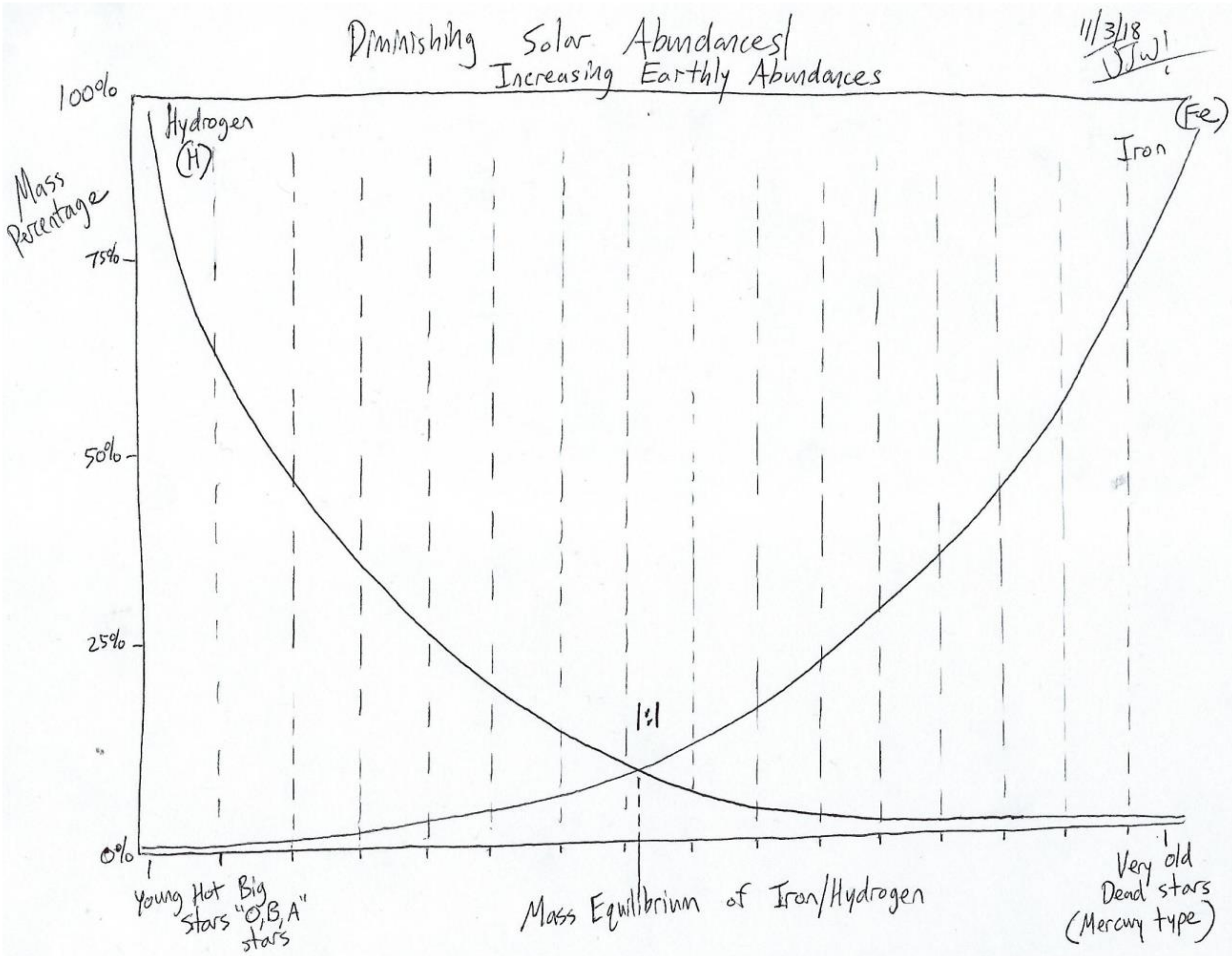
Abstract: A new concept is introduced to further expand the general theory. It is the concept of elemental mass equilibrium. When the star evolves the total mass of all its hydrogen will be equal to the total mass of iron, reaching what is called the elemental mass equilibrium point. All highly evolved stars have passed through this point. Explanation is provided with a hand drawn graph to illustrate the concept.

For this paper, we will use hydrogen and iron. Those that understand young stars realize that they are mostly hydrogen and helium. Those that understand stellar metamorphosis realize old stars are about 1/3 iron by mass, some more, some much less. What this means is that the total mass of hydrogen will equal the total mass of iron at some point in the star's evolutionary history. For simplicities' sake, let us say young stars have 99,999 tons of hydrogen, and 1 ton of iron. This means the young stars are 99.999% by mass hydrogen, and .001% by mass iron. The iron is barely on the map. So whether or not it synthesizes iron or collects it, doesn't matter. What is important to realize is that the percentages by mass are wildly different. Though, this changes. Over time the hydrogen is lost much more rapidly than the iron.

The hydrogen will be lost and move down to only 9,999 tons, which means that if the iron it had from the beginning is still there, and maybe has even collected some from interstellar space, it should be .01%. The star will continue to lose its hydrogen down to 999 tons, and since the iron will still be there (it is heavy and stable at high temperatures), it will then compose .1% of the star's mass. A further losing of its hydrogen the star at 99 tons, will be composed of 1% iron. This is the 1% threshold for iron to hydrogen by mass. After the one percent is reached, then the road to elemental mass equilibrium goes faster. The star then is only one more magnitude of hydrogen loss, to become only 90% of the mass of the star by elemental mass, and iron a full 10%. From here, the hydrogen mass loss will slow considerably and the percentages will move in favor of the iron slowly, and eventually the total mass of iron will match the total mass of the hydrogen on a 1:1 ratio inside the star. After it moves past the mass equilibrium point, the iron will then gain in higher percentages of the total mass of the star. This means that the oldest stars will have higher percentages of iron.

We cannot be too careful in classifying stars based on their spectrums though. As with old stars, the elemental abundances are hidden from spectroscopic surveys. From this graph, it should be apparent that the majority element in stars is iron, not hydrogen. Hydrogen was stealing the show for all of the 20th century because we could see it, now, not so much. Iron is much more important than astronomers realize. It is clear, the percentages of iron in stars is much greater than hydrogen, given they are understood as old stars and not the ancient Greek definition "planet". As stars age, their elemental abundances flip flop between heavy and light elements, as outlined in the principle of diminishing solar abundances.
http://vixra.org/pdf/1603.0422v1.pdf



It is important to realize we are dealing with a very different galaxy than what astronomers are teaching their students. Stars are not always shining and hot. They evolve to completely unrecognizable states that are full of iron and solid. It is too bad astronomers call the old stars "planets", even in 2018. This concept called mass equilibrium can be applied to many elements, but that is for later, it is only important to show that this can be measured, studied and developed in ways no astronomer has ever predicted or supported. Hydrogen and iron were selected because they have the widest range of mass non-equilibrium, as well this graph is not to scale, it is only to serve as an idea for future development and measurement of stars.