

# Stellar Metamorphosis: Potassium

Jeffrey J. Wolyński  
Jeffrey.wolyński@yahoo.com  
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Rockledge, FL 32955

**Abstract:** Potassium is present in young, middle aged, old and dead stars. Its atomic symbol is K. The main point of this paper is to note that potassium concentration increases per unit mass as the star evolves. This means that stars which reach the point of being able to not only create life, but to host it, will have larger concentrations per unit mass of potassium. The potassium increases concentration in youthful stages, then combines to form salts and the beginnings of life, then the left over remains get locked in the crust as rocks/minerals. This is due to mass dependent fractionation as well as potassium's high reactivity and ability to form ionic salts.

A 70 kg adult man is composed of approx. 135 grams of potassium. This is about .19% by mass of potassium in an adult man. It is a reactive element and only occurs on an evolved star in ionic salts, meaning it shares electrons with other atoms. It is never found in its pure form on highly evolved stars such as the Earth, as is gold, or silver. On young stars such as the Sun, potassium is in very low concentration, but as the star evolves the potassium concentration increases significantly. This is important because as the star evolves it forms life, and potassium is necessary for the function of all living cells. It is the main intracellular ion for all types of cells, while having a major role in maintenance of fluid and electrolyte balance. It is present in all plant and animal tissue.

Concerning the General Theory, potassium's increase in concentration towards the central regions of the star therefore signals the location for where the star can form life. An area in the star where fluids and electrolytic material becomes balanced is the proposed location for the beginnings of life. This obviously follows from the biologically confirmed role of potassium having a major role in maintenance of fluid and electrolytic balance for proper nerve function and other biological processes. As well, older gas giant stars that sit closer to their hosts (called Hot Jupiters by the dogma) can have inner elements that were settled out convected back to the surface in larger quantities. This explains why potassium is so hard to detect on gas giant stars that do not sit close to a host, of course our technology will improve though and potassium as all other elements in evolving stars mislabeled "planet" will be detected.

Potassium on the most evolved stars such as Earth will be impossible to detect spectroscopically from light years out, as the potassium will be in plant/animal matter as well as compose rocks and minerals. We can infer the presence of potassium in rocks, minerals, plants and animals though as those are the main locations of potassium on the Earth. It does not freely float in the thin atmosphere of the

Earth in any significant quantity as does nitrogen or oxygen gas. So to back up the statement from earlier, the gas giant does form the beginnings of life in areas of higher potassium concentration in their thick atmospheres, but that is only the beginning. This is not to say people are floating about in the high atmosphere of a gas giant exactly where potassium is found, as the temperatures are too high in many cases, and the atmosphere is extremely toxic and turbulent. Life is essentially born from fire and electrical processes, as can be reasoned as the metabolic processes that keep us alive radiate, convect and conduct heat, and conduct electricity.

Both potassium and sodium form many ionic salts that conduct electricity and heat in the interiors of intermediate aged stars, and they both increase in concentration as the star evolves, cools down and loses mass and its thick hydrogen/helium atmosphere. The potassium though that composes life currently on the Earth, was much more abundant though, as much of it has already crystallized into rocks and minerals along with other elements. We are just viewing the end result. What I mean is that the abundance of potassium to form life was much higher, say 10,000 times what is currently in plant and animal material. Earth's potassium was much more readily abundant than what it is now, when it was a gas giant, but this is okay. The conditions on Earth, with its solid crust, low atmospheric pressure and what-not are essential now for life, but it wasn't always like this. When life was beginning to form, the majority of the potassium now locked up in crystalline form in the crust was readily available for chemical reactions of all sorts to take place. Earth wasn't always this hospitable for life, nor did life begin forming on Earth in Earth's current state. It was vastly more violent, massive and toxic in ways we can directly observe in objects such as Neptune and Jupiter, and even the Sun at Earth's earliest stages of evolution. More work will be done to elucidate the fact that primeval potassium on the Earth was in its completely ionized form at one point, but this paper will do for now to make sure some more reasonable astronomers realize Earth is an ancient star. Astronomers have to stop labeling the old stars "planets". They are the same damn objects!