

Stellar Metamorphosis: Life Paradigm

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21 May, 2018
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Abstract: A new life paradigm made possible by the General Theory of Stellar Metamorphosis¹ (GTSM) is presented. Exploring the origins of life and its co-dependancy on astron² evolution.



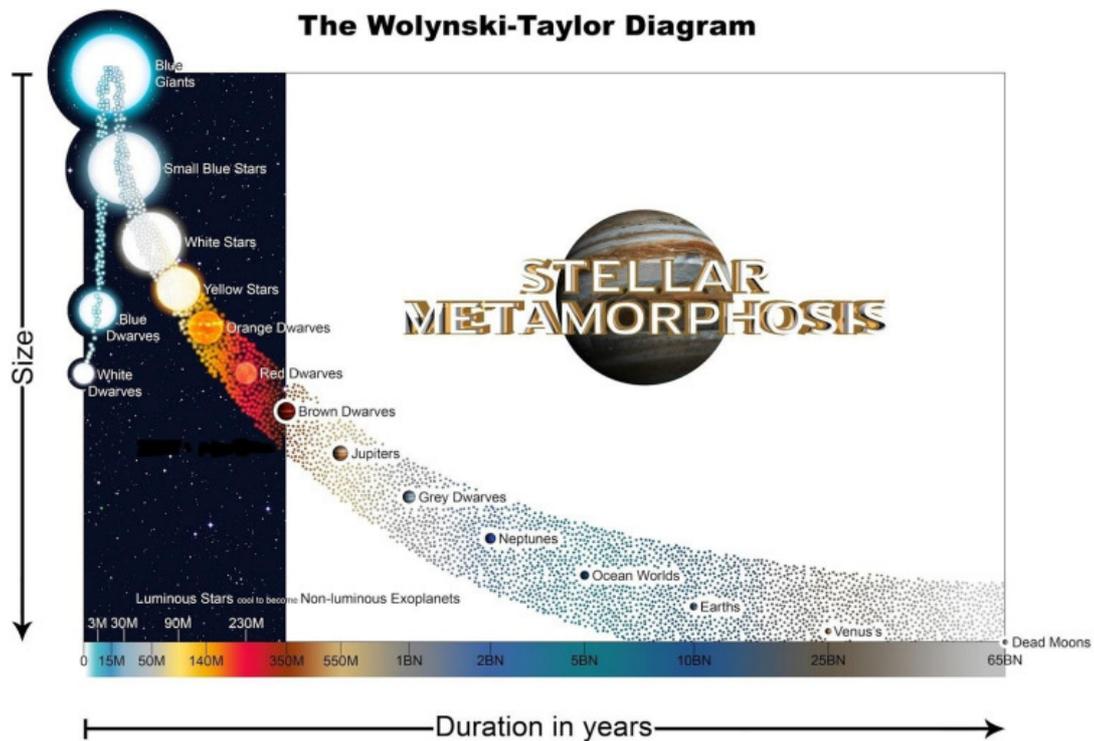
How much life do we expect is in our Universe at this moment? We do not know; the Universe is of an unknown size and extent. What about just our own galaxy? We currently only know there is life on Earth, nothing else. What can we say? We can suppose that the Universe is conducive to life, that life emerging is as normal as stars being born. It can happen and thus it will happen. Boldly stated; this universe is pro life, its systems, machinations and intangibles all operate to make life possible, to make life emerge.

This supposition is supported by stellar metamorphosis in many ways, but the most important one is the idea that any star can become a life hosting world, like any seed can sprout.

Not every seed will sprout and not every star will become a life hosting world, for this paper i will assume 1% of astrons become life hosting worlds, a very conservative percentage.

With this in mind we can make a minium estimate of the amount of life hosting worlds in our galaxy. We take that there are 100 billion stars. Our galaxy is said to be more than 10 billion years old, we will suppose that 10 billion years ago there were 100 billion stars as well. In GTSM it takes about 10 billions years to reach the life host stage, see the Wolyinski-Taylor diagram on the next page. That would mean with taking 1% from 100 billion, we have a minum of 1 billion life hosting worlds in our galaxy. That would be worlds with actual life on it. Current estimates from Nasa, due to all the new planet findings, is that there are 2 billion worlds capable of hosting life, so 1 billion with actual life is about 50%, those are good odds.

We now have a number of life hosting worlds, but where does life originate? What can we say about its genesis and development using GTSM?



In GTSM life originates on the astron itself, all elements needed for life are present from the birth of the astron, while cooling, molecules can form after the shining phase is over. The first life molecules (carbohydrates, lipids, proteins and nucleic acids) are formed from the gas to the liquid phase, with the liquid phase being the most important phase and especially the water world³. This type of world comes out of the recombination of hydrogen and oxygen, releasing a lot of heat, i discussed some of the chemistry in my paper from Neptune to Earth⁴. This heat has to go somewhere or be used or is crucial to a certain process. I state it also feeds the starting of the life cycle.

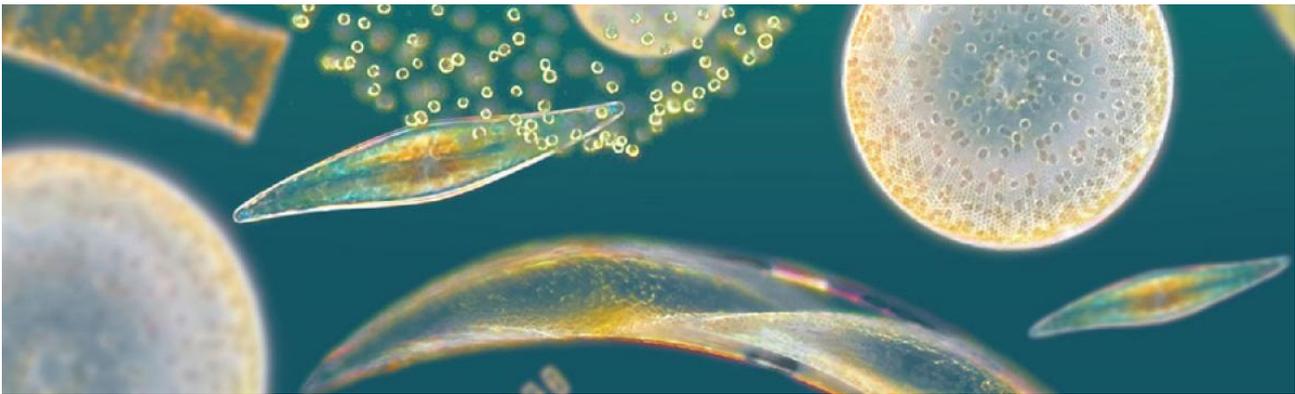
Generally the evolution of an astron is a dissipative event⁵ and the origins of life are connected to this. Support for this comes from biologist Jeremy England, his paper from 2013⁶ shows that life relies on a dissipative system, exploiting the energy from its surroundings or as as England states:

“basic thermodynamic constraints derived from exact considerations in statistical physics tell us that a self-replicators maximum potential fitness is set by how effectively it exploits sources of energy in its environment to catalyze its own reproduction. Thus, the empirical, biological fact that reproductive fitness is intimately linked to efficient metabolism now has a clear and simple basis in physics”

This discovery in biology is called 'dissipation-driven adaptation and self-replication', simply stated it just means that things tend to use the energy in their environment as best they can promulgating clumping and effient use of that energy, the entity that uses energy in the most efficient way will be the survivors or the most succesfull (in staying alive...). This applies to non living atoms/molecules and also to living cells as discovered by England. What is really important to note is the reliance of this dissipation driven process on a heat bath, it ties directly into the water world phase of GTSM, to show this, another quote from England:

“This means clumps of atoms surrounded by a bath at some temperature, like the atmosphere or the ocean, should tend over time to arrange themselves to resonate better and better with the sources of mechanical, electromagnetic or chemical work in their environments”

This new discovery conforms very well with GTSM and it makes our supposition at the beginning of this paper very likely, life is inevitable maybe?



Phytoplankton viewed through a microscope. © Dr Richard Kirby, www.secchidisk.org

Above picture is phytoplankton, it is an example of a form of life that uses the energy from its environment, they rely on the energy from our sun, with this energy they produce Oxygen.

They also inhabit a certain (top) layer of our oceans, a 'cline' and if we go to a water world which is much larger than our Earth and has larger water oceans but also more and different layers we have a recipe for complexer life or more advanced life.

In GTSM these layers are also called 'bioclines'⁷, only the top layers receive sunshine and the life that emerges their will reflect that, lower layers have heat from exothermic reactions and the the life that emerges their reflects that, there is also vertical mixing. In GTSM as the astron evolves and as this water world evolves and shrinks these 'bioclines' come closer together, that means that different types of life mix and every species has to adapt to their new environs the best they can. This is what life does, it uses the energy from its environment the best it can and adapts to changing circumstances.

With stellar metamorphosis we can see that it is not really life that evolves, it is the astron that evolves. Life adapts to the evolution of its astron, it is co-dependant to this evolving system.

Much more can be said about the intricacies of this adaptation of life to a changing world, i hope other biologists and physicists see this as an opportunity to investigate these ideas further and see if it supports their thinking, models and research or not. Or maybe it helps to have new keen insights that were not possible previously.

Et ipsa scientia potestas est

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