

Self-Sterilization vs. Host Sterilization in Stellar Metamorphosis

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Abstract: In stellar metamorphosis a star can self-sterilize while keeping its atmosphere, or become sterilized by a host. This is in reference to life, as stellar metamorphosis is a life centered worldview, in that stars cool and evolve, forming life on them.

Self-sterilization of life on a star happens in the beginning and ending stages of a star's evolution. Self-sterilization happens when the star is too hot when it is younger, and when the atmospheric composition becomes too toxic for life, or does not possess the feedback mechanisms to sustain it. We can see examples of this self-sterilization in various objects in our solar system. The Sun is clearly too hot, Jupiter is too toxic (but will change), Earth is just right, Venus is too hot and does not possess the feedback mechanisms such as a carbon or water cycle. Cycling atmospheres, low toxicity (or at least the organisms ability to handle the specific type of toxicity), stable temperatures that are lower than the boiling point of water, etc. are all essential to the star not self-sterilizing. It should be noted that self-sterilization is longer term as well, and in many cases of dead stars, completely permanent. Thus Mr. Musk wanting to visit Mars is a dead end endeavor, because it is completely self-sterilized.

There is a window of opportunity for a star to host life, and inside of that window life can be partially sterilized by a hotter host. This is noted that even during a host-sterilization event (extinction) event, not all the life is killed, it regains traction in a new form, and evolves to meet the changing characteristics of the star. Therefore it is actually expected to see lifeforms in the fossil record that are not only different for evolutionary reasons, but that their evolutionary pressures are present because of the environment being vastly different as well, for long periods of time (but not permanent). Host-sterilization would be similar to completely removing a couple different types of species, and seeing what happens as their ecosystem changes to adapt to the new conditions of predation, mobility, availability of resources, etc. Host sterilization therefore is not actually a real sterilization, but of a star dramatically changing atmospheric composition as it adapts to new orbital characteristics. As well, host sterilization is not permanent, the atmospheric composition and feedback loops might go right back to how they were, similar to shaking up a snow globe and watching the flakes settle right back down to the bottom.