

# Astrophysicists apply new logic to downplay the probability of extraterrestrial life

July 27 2011, by Bob Yirka

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David Spiegel and Edwin Turner of Princeton University have submitted a paper to *arXiv* that turns the Drake equation on its head. Instead of assuming that life would naturally evolve if conditions were similar to that found here on Earth, the two use Bayesian reasoning to show that just because we evolved in such conditions, doesn't mean that the same occurrence would necessarily happen elsewhere; using evidence of our own existence doesn't show anything they argue, other than that we are here.

The Drake equation, developed in 1960 by Frank Drake uses probability and statistics to derive the possibility of life existing elsewhere in the universe. The data for it comes from observations of the known universe, i.e. the number of stars and solar systems that can be seen, the number that are thought likely to have conditions similar to our own, etc. It's this equation and its results that drive much of the belief that there surely must be life out there; hopefully, intelligent life.

The problem with all this though, is that so much of it is based on assumptions that have no real basis in reality. As Spiegel and Turner point out, basing our expectations of life existing on other planets, for no better reason that it exists here, is really only proof that were are more than capable of deceiving ourselves into thinking that things are much more likely than they really are.

The two argue that just because intelligent life occurred rather quickly here on Earth, once conditions were ripe, giving rise to the people we are

today, that doesn't mean it naturally would on another planet just like ours in another place in the universe. There are other factors after all, that could have contributed to us being here that we don't yet understand. So, it might be surmised, (though the authors themselves don't actually mention the Drake equation) deriving numbers from an equation such as that put forth by Drake, only serves to bump up our belief in the existence of other alien life forms, not the actual chances of it being so.

When taken at face value, some might conclude that such arguments hold no more logic than arguments for the existence of God, i.e. it's more about faith, than science.

At any rate, most would agree that the only concrete way to prove whether there is life out there or not is to prove it, by finding it.

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