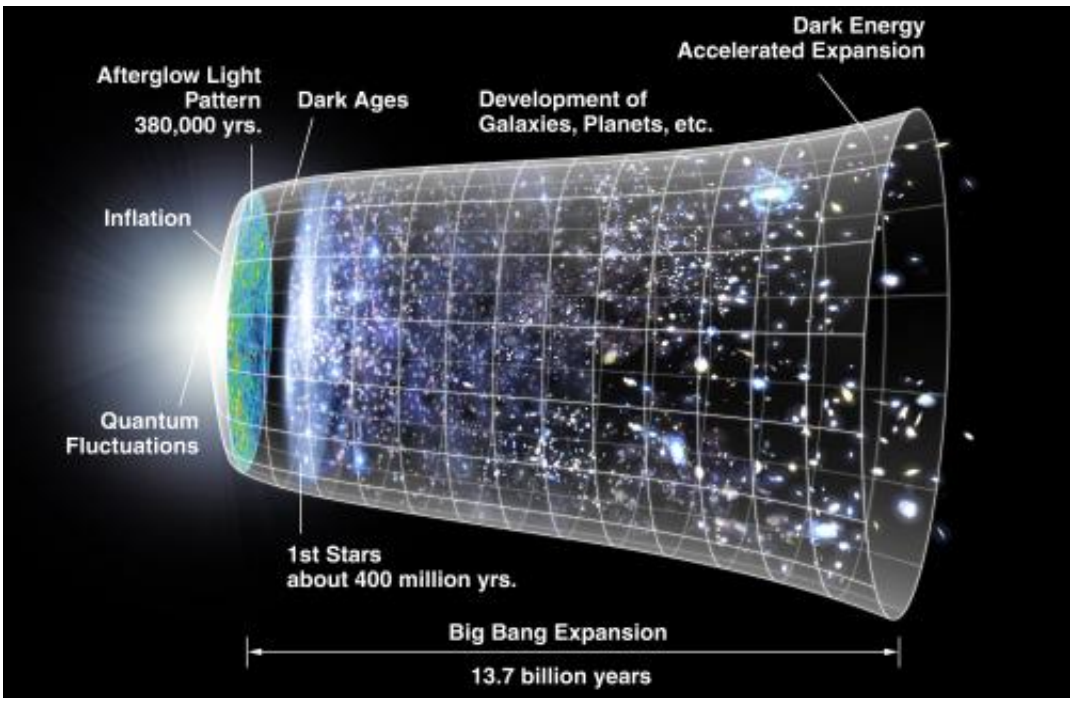
Astrophysicist suggests life may have existed shortly after Big Bang

December 11 2013, by Bob Yirka



Time Line of the Universe. Credit: NASA/WMAP Science Team

(Phys.org) —Theoretical astrophysicist Abraham Loeb of Harvard University has uploaded a paper he's written to the preprint server *arXiv*, in which he suggests that conditions shortly after the Big Bang may have been just right for life to appear in some parts of the universe—for just a short time.

Loeb notes that according to theory, 15 million years after the Big Bang,

the entire universe would have been warm enough to support life due to the cooling of superheated gases that eventually led to what scientists believe is cosmic microwave background (CMB). Today, it's very cold of course, (2.7 Kelvin), but not long, relatively speaking, after the Big Bang, the temperature would have been closer to 300 Kelvin—more than warm enough to support life if there were a place for it to appear. And that Loeb suggests, might have been possible as well. He notes that it would have been possible for rocky planets to have existed at that time too—in places where matter was exceptionally dense. Because of that, he believes it's possible that all of the pieces necessary for the appearance of life might have been in place in some parts of the universe, for approximately two or three million years—enough time for the initial brewing that could have led to the development of microbes of some sort.

Of course, if it did happen, that life would not have lived long enough (2 to 3 million years) to evolve into anything complex—it would have been snuffed out as the CMB cooled—happening as it would have before stars would have had enough time to form and emit heat of their own. Thus, no evidence would have been left behind, which means Loeb's theory can never be proven. If it could, that might upset another principle regarding the universe—the anthropic principle—which suggests that all of the things that needed to happen in the universe for us to be here today to observe them, exist because we are here to observe them. If life existed and died out before we arrived, it would not have been sophisticated enough to know that it existed, much less observe conditions in the universe that led to its existence. And that would mean the anthropic principle might just be an idea that exists because we have nothing better to explain how and why we are here.

More information: The Habitable Epoch of the Early Universe, arXiv:1312.0613 [astro-ph.CO] arxiv.org/abs/1312.0613

Abstract

In the redshift range 100