

Offered Title: What If?

So, what if things were just an itchy-bitsy different way back when it all started? You know, when an infinitely dense bit of space/time expanded like God blowing a soap bubble. We call that inflation, happening just after the big bang.

What if conditions were ever so slightly different, say the nuclear efficiency of hydrogen fusing into helium (this is what powers stars). Hydrogen's nuclear efficiency is currently measured as .007, so about 0.7% of hydrogen's mass is converted into the energy powering stars like our Sun. What would happen if this efficiency were .006 or .008? At .006 hydrogen does not efficiently fuse into helium, so, very few stars, and many ginormous balls of hydrogen. At .008 hydrogen would fuse too efficiently, and stars would have aged so quickly we would be left with a bunch of neutron stars, black holes, brown, red, and white dwarfs. Those universes would be very different from the one we currently admire. Theoretically.

I'm talking about something very controversial, perhaps metaphysical.

The Anthropic Principle (AP).

Arthur Schopenhauer in 1818 introduced the concept of our universe as invented by a metaphysical will, not God, but still designed for life, for us.

The term "Anthropic Principle" was introduced in 1973 by theoretical astrophysicist Brandon Carter at the Krakow Symposium honoring Copernicus's 500th birthday. His thinking was that "Although our situation is not necessarily central, it is inevitably privileged to some extent." Carter's ideas started the long-standing question...why our universe's conditions are just right for us to exist. He developed two versions, the "Strong" and the "Weak" anthropic principles (SAP and WAP). The main difference between them is WAP allows for "privileged spacetime locations" or places within our universe where life/intelligent life can arise and thrive. The more controversial SAP requires all fundamental forces and constants conditions to exist "tuned" for life to emerge anytime, anywhere. However, Carter suggests SAP sets up the necessity of a multi-universes model for our existence to count as a possible outcome, since the SAP has so many absolute and specific conditions.

So, according to SAP our universe is one of or maybe the only lucky universe with life, and us to enjoy it!

As I said, the AP is controversial. There are several variants of the AP now, as a few other theoretical physicists have put their quarters on the pool table, looking for a chance to sink the eight ball, and find the holy grail of our existence. Good luck.

One of the controversial aspects is whether carbon is the only possible basis for life. The AP seems to focus on carbon-based life to the exclusion of other elements, such as silicon as building blocks.

Things could have been sooo different. What would it be like? As it's supposed to, I guess.

What's in the Sky?

June 6; dusk; west: The Moon is in Cancer and just above the horizon with M44 4 degrees south-southeast. Use binoculars.