

Cosmic Design in a Nutshell

Many physicists and cosmologists have inferred intelligent design of the universe based upon the highly specified laws of nature which allow for life. Essentially, the universe appears “fine-tuned” and designed for life. These are called “anthropic principles.” As famous physicist Paul Davies explains:

“Taken together they [anthropic principles] provide impressive evidence that life as we know it depends very sensitively on the form of the laws of physics, and on some seemingly fortuitous accidents in the actual values that nature has chosen for various particle masses, force strengths, and so on.”

The temptation to believe that the Universe is the product of some sort of design, a manifestation of subtle aesthetic and mathematical judgment, is overwhelming. The belief that there is "something behind it all" is one that I personally share with, I suspect, a majority of physicists.

“If we could play God, and select values for these natural quantities at whim by twiddling a set of knobs, we would find that almost all knob settings would render the universe uninhabitable. Some knobs would have to be fine-tuned to enormous precision if life is to flourish in the universe.”

Spiral Galaxy Picture from <http://hubblesite.org/newscenter/archive/1999/25/>

In fact, numerous precise mathematical relationships must exist in order for life to be possible. These include the strong nuclear force, the force of gravity, the rate of expansion of the universe, the masses of fundamental particles, and the speed of light. Indeed, the initial entropy of the universe must have been fine tuned to one part in $10^{10^{123}}$! Logic suggests that this is a remarkable coincidence, the result of multiple universes (where all possibilities exist) or indicative of intelligent design.