

The Finely Tuned Parameters of the Universe: Barrow & Tipler, in their standard treatment, [The Anthropic Cosmological Principle](#), admit that "there exist a number of unlikely coincidences between numbers of enormous magnitude that are, superficially, completely independent; moreover, these coincidences appear essential to the existence of carbon-based observers in the Universe," and include the wildly unlikely combination of:

- the electron to proton ratio standard deviation of 1 to 10,000,000,000,000,000,000,000,000,000,000,000,000 (37 0s)
- the 1-to-1 electron to proton ratio throughout the universe yields our electrically neutral universe
- the electron to proton mass ratio (1 to 1,836) perfect for forming molecules
- the electromagnetic and gravitational forces finely tuned for the stability of stars
- the gravitational and inertial mass equivalency
- the electromagnetic force constant perfect for holding electrons to nuclei
- the electromagnetic force in the right ratio to the nuclear force
- the strong force (which if changed by 1% would destroy all carbon, nitrogen, oxygen, and heavier elements)
- all electrons in the universe are identical as are all instances of each fundamental particle
- etc., etc., etc. (including the shocking apparent [alignment of the universe](#) with the orbit of the Earth)

The Whopping Physics Coincidence: NewScientist [reports](#) about gravity and acceleration that, "a large chunk of modern physics is precariously balanced on a whopping coincidence" for, regarding gravitational and inertial mass, "these two masses are always numerically exactly the same. The consequences of this coincidence are profound..."

* **The Finely Tuned Parameters of the Solar System** include:

- Our Sun is positioned far from the Milky Way's center in a galactic goldilocks zone of low radiation
- Our Sun placed in an arm of the Milky Way puts it where we can discover a vast swath of the entire universe
- Earth's orbit is nearly circular ([eccentricity](#) ~ [0.02](#)) around the Sun providing a stability in a range of vital factors
- Earth's orbit has a low inclination keeping its temperatures within a range permitting diverse ecosystems
- Earth's axial tilt is within a range that helps to stabilize our planet's climate
- the Moon's mass helps stabilize the Earth's tilt on its axis, which provides for the diversity of alternating seasons
- the Moon's distance from the Earth provides tides to keep life thriving in our oceans, and thus, worldwide
- the Moon's nearly circular orbit (eccentricity ~ 0.05) makes its influence extraordinarily reliable
- the Moon is 1/400th the size of the Sun, and at 1/400th its distance, enables educational perfect eclipses
- the Earth's distance from the Sun provides for great quantities of life and climate-sustaining liquid water
- the Sun's extraordinary stable output of the energy
- the Sun's mass and size are just right for Earth's biosystem
- the Sun's luminosity and temperature are just right to provide for Earth's extraordinary range of ecosystems
- the color of the Sun's light from is tuned for maximum benefit for our plant life (photosynthesis)

- the Sun's low "metallicity" prevents the destruction of life on Earth
- [etc.](#), etc., etc.

From Real Science Radio..RSR

British astrophysicist Paul Davies wrote, "There is now broad agreement among physicists and cosmologists that the universe is in several respects 'fine-tuned' for life. ...carbon, and the properties of objects such as stable long-lived stars, depend rather sensitively on the values of certain physical parameters... it is fine-tuned for the essential building blocks and environments that life requires." And, "There is for me powerful evidence that there is something going on behind it all....It seems as though somebody has fine-tuned nature's numbers to make the Universe....The impression of design is overwhelming."