









- Stephen Hawking: if the rate of the universe's expansion one second after the Big Bang had been smaller by even one part in 10¹⁵, the universe would have re-collapsed.
- P.C.W. Davies: The odds against the initial conditions being suitable for star formation is at least 10¹⁰²¹.
- P.C.W. Davies: A change in the strength of gravity or the weak force by one part in 10¹⁰⁰ would have prevented a life-permitting universe.
- Roger Penrose: Odds of the Big Bang's low entropy condition existing by chance are on the order of one out of 10¹²³⁰.
- There are around 50 such quantities and constants present in the Big Bang that must be fine-tuned in this way if the universe is to permit life.
- ➡ Not just must *each* quantity be fine-tuned, their *ratios* must also be fine-tuned.

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