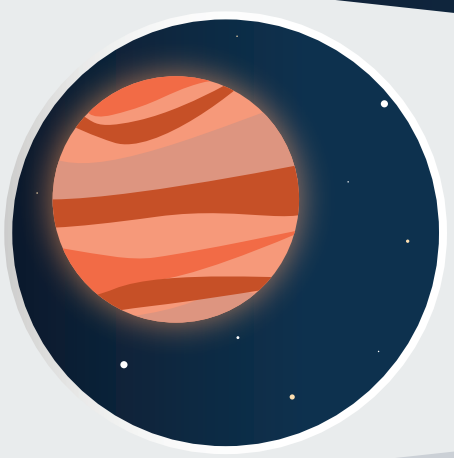
Einstein's General Relativity and Your Age

Einstein's theory of general relativity means you age very slightly slower or faster at places with stronger or weaker gravitational fields due to your distance from a massive object nearby. Here's how your age would change* if you spent 30 years at the following locations instead of at sea level on Earth:



Jupiter

Your age minus 18.4 seconds

The Moon

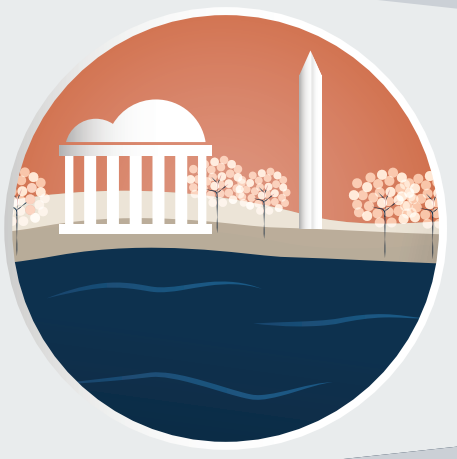
Your age plus 629 milliseconds
(thousandths of a second)

Mount Everest

(8,848 meters or 29,000 feet above sea level)
Your age plus 0.91 milliseconds
(thousandths of a second)

Boulder, CO

(mile high)
Your age plus 0.17 millisecond

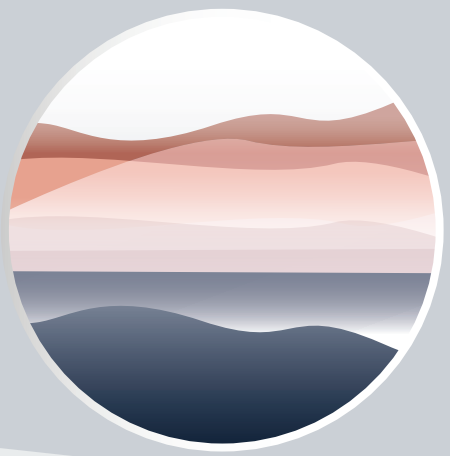


Sea Level

(The lowest elevation on the Earth's surface on dry land, equivalent to the banks of the Potomac River in Washington, DC)
Your age

Dead Sea

(422 meters or 1,385 feet below sea level)
Your age minus 44 microseconds
(millionths of a second)



Challenger Deep

(Deepest surveyed point in the world's oceans, about 11,000 meters or 36,000 feet deep)
Your age minus 1.1 milliseconds

*These calculations assume that the gravitational body in question (Earth, Jupiter, or the moon) is the only mass present.

www.nist.gov | NIST National Institute of Standards and Technology U.S. Department of Commerce