

Space Science Topics

Time Dilation Explained Simply

Time dilation is a concept from Einstein's theory of relativity. It tells us that time does not pass the same way for everyone. If someone moves very fast, close to the speed of light, time slows down for them compared to someone who is not moving. Imagine twins: one stays on Earth, and one travels into space at near light speed. When the traveling twin comes back, they will be younger than the twin who stayed on Earth! This is because moving very fast stretches time. Scientists have proven time dilation with experiments using very accurate clocks on fast-moving airplanes and satellites. Time dilation is real, and it affects things like GPS systems, which need to account for it to stay accurate.