

# Explained in 60 Seconds

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## Dark Matter

Dark matter is, mildly speaking, a very strange form of matter. Although it has mass, it does not interact with everyday objects and it passes straight through our bodies. Physicists call the matter dark because it is invisible.

Yet, we know it exists. Because dark matter has mass, it exerts a gravitational pull. It causes galaxies and clusters of galaxies to develop and hold together. If it weren't for dark matter, our Galaxy would not exist as we know it, and human life would not have developed.

Dark matter is more than five times as abundant as all the matter we have detected so far. As cosmologist Sean Carroll says, "*Most of the*

*Universe can't even be bothered to interact with you.*" Whatever dark matter is, it is not made of any of the particles we have ever detected in experiments. Dark matter could have — at the subatomic level — very weak interactions with normal matter, but physicists have not yet been able to observe those interactions.

Experiments around the world are trying to detect and study dark matter particles in more direct ways. Facilities like the Large Hadron Collider could create dark matter particles.

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At a distance of nearly four thousand kilometres Saturn's moon Iapetus looms into view in this incredible new image from the NASA/ESA *Cassini-Huygens* mission. Bright regions show areas where ice has been uncovered by impacts on the sides of these colossal mountains which rise up a staggering ten kilometres from the icy moon's surface. Credit: NASA/JPL/Space Science Institute

