DEFINITION STATION

… the strangest and most speculative scenario, as the universe expands ever faster, all of gravity's work will be undone.

Clusters of galaxies will disband and separate. Then galaxies themselves will be torn apart.

The solar system, stars, planets, and even molecules and atoms could be shredded by the ever-faster expansion.

The universe that was born in a violent expansion could end with an even more violent expansion called the Big Rip.

From: http://hubblesite.org/hubble_discoveries/dark_energy/de-fate_of_the_universe.php#the_big_rip

Before the discovery of dark energy, scientists had two models of how the universe's expansion would work.

In one scenario, there would be enough matter in the universe to slow the expansion to the point where, like the baseball, it would come to a halt and start to retract, everything crashing back together in a "**Big Crunch**."

http://hubblesite.org/hubble_discoveries/dark_energy/de-fate_of_the_universe.php

In the other scenario, there would be too little matter to stop the expansion and everything would drift on forever, always slowing and slowing but never stopping — like the spaceship.

The galaxies would drift apart from each other until they were out of view.

The universe would continue growing larger as countless generations of stars faded and died out. It would end in a vast, dark, and cold state: a "Big Chill," if you will.

If space has no curvature (i.e, it is flat), there is exactly enough mass to cause the expansion to stop, but only after an infinite amount of time.

Thus, the universe has no bounds and will also expand forever, but with the rate of expansion gradually approaching zero after an infinite amount of time.

This is termed a flat universe or a Euclidian universe (because the usual geometry of non-curved surfaces that we learn in high school is called Euclidian geometry).

http://starchild.gsfc.nasa.gov/docs/StarChild/questions/question35.html