



In the night Sky: Galaxies

Colliding and merging galaxies

Philippa Smith:

In 2012 NASA astronomers announced that they could predict with certainty the next major cosmic event to affect our solar system: the titanic collision of our galaxy with the neighbouring Andromeda galaxy.

Actual collisions between stars are rare, as so much of a galaxy is empty space.

And collisions between galaxies take hundreds of millions of years to complete, and are driven by the effect of gravity.

Our galaxy, the Milky Way, is falling towards the Andromeda galaxy.

In about four billion years, these galaxies will collide.

What will this be like?

For one thing, the stars themselves won't collide – they are too sparsely distributed.

The galaxies will splash together, flinging some stars out in the process.

Eventually, in about six billion years, these galaxies will merge.

The combined system will settle down, perhaps resembling an elliptical galaxy.

But, as you can see, it doesn't end there.

Later the Triangulum galaxy, will also collide, and later merge, with the Andromeda/Milky Way pair.

But don't worry, the merger won't affect life on Earth.

By then our planet will have long since become uninhabitable!

In about four billion years from now, the Sun's luminosity will be too high for liquid water to exist on Earth.

At that time, the Andromeda galaxy will appear as large in the sky as either of the Magellanic Clouds do today.