

Gaia in one minute

What's the big deal about Gaia?

Dara Ó Briain:

The Gaia satellite is going to take a census of 1 per cent of the stars in the Galaxy.

Which at first sight doesn't seem very much.

But, on closer examination, 1 per cent of the Galaxy is a billion stars.

Which is a lot more than a six thousand that we can see with a naked eye.

And Gaia is not just going to be counting them.

It will be measuring the Doppler shift to check their speeds, mapping their positions, measuring their distances from us using a technique called parallax, taking their temperatures and working out what they're made of.

So from now on, when we study the Galaxy, it will be like when someone incredibly short-sighted putting on a pair of glasses for the first time - and 3D glasses at that.

And, once we know the speeds and distances of the stars, we can tell the difference between how much we think the Galaxy should weigh and how much it actually does weigh.

And, therefore, how much other stuff must be there as well.

Whether it's dark matter or something else.