Dark Matter Enigma

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There is about 25% of dark matter, about 5% of visible matter (anything that we can see) and about 70% of dark energy in our Universe. Scientists had come up with several candidates of dark matter. You can Google or do a search in Youtube regarding "dark matter", and you will find lots of materials about dark matter.

But what I am going to tell you here is what I have found out recently in 2017, that most elliptical galaxies do not have a dark matter halo. Please read this paper "Do elliptical galaxies have dark matter halos", written by Erika Nesvold. At the end of her paper, she is questioning: why would there be dark matter halos around spiral galaxies but not around elliptical galaxies?

To answer the above question, we should look back how black holes come about, when the Universe was about a few hundred million years old, between 100 and 500 million years after the big bang, when the first generation stars were born. Most of these stars are massive, ranging from 100 to 1000 solar masses (100 to 1000 times the mass of the Sun), and their life time is pretty short as a few million years, then they collapsed gravitationally into black holes. In fact the lifespan of stars depends on its mass, the more mass it has, the shorter is it lifespan. Please check out this article "The Life Cycles of Stars: How Supernovae Are Formed" in NASA website.

Now imagine that we have a special experimental balloon filled with water, and a rod is attached to the middle of the balloon, as

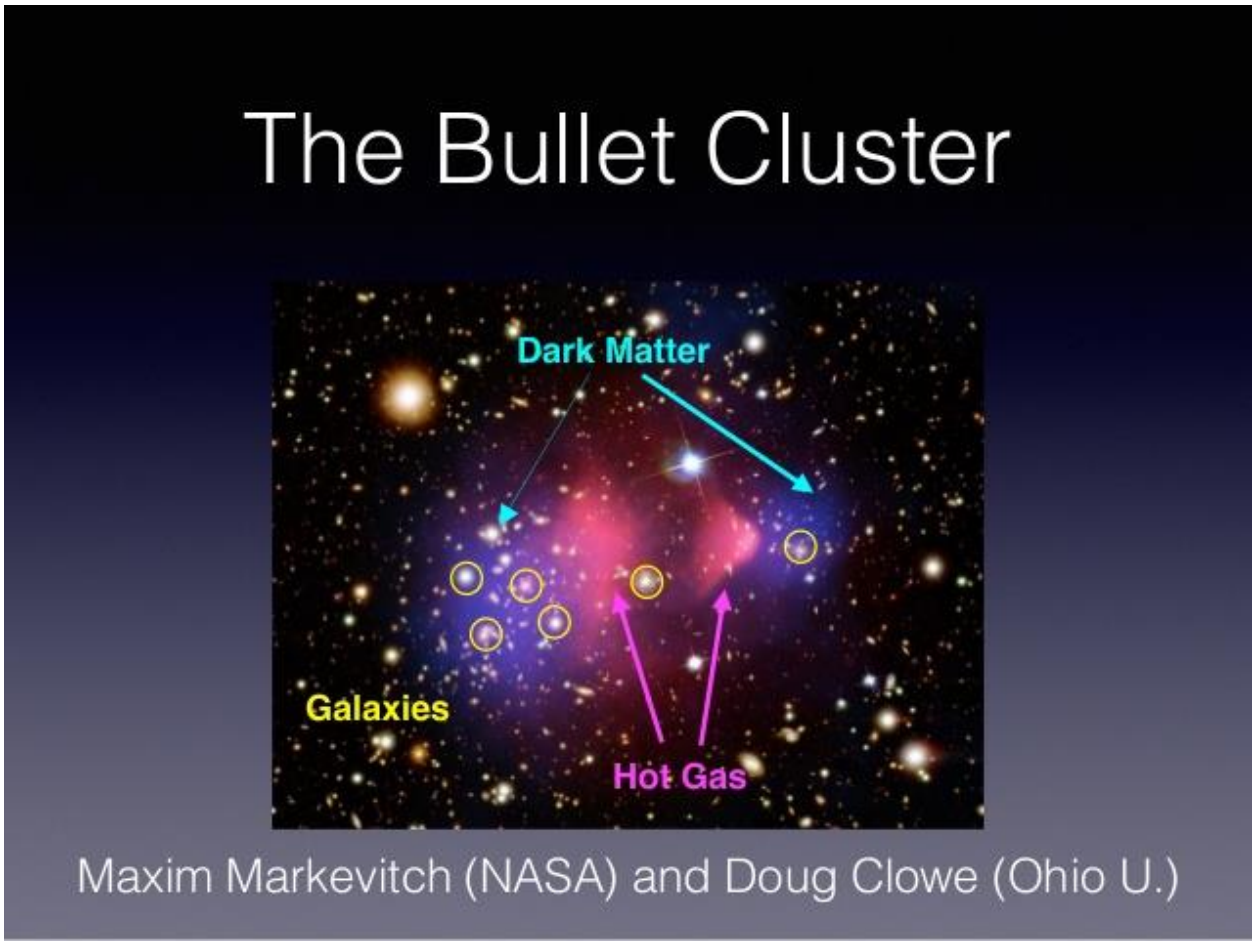
the balloon is rotated through the rod, we will see that the balloon will start to flatten as the rotation speed increases.

If my reasoning is correct, in every spiral galaxy there is a spinning black hole. Space-time is being drag toward the spinning black hole, because of Lens-Thirring Effect or Frame Dragging. The interstellar medium surrounding the black hole is being dragged and flattened, and spiral arms starts to form during the process of flattening. Therefore the spiral arms of spiral galaxies are the result of Frame Dragging, and most star formation also took place in the spiral arms. Please see http://www.astro.sunysb.edu/rosalba/ast101/LECT16.pdf

You can also see this spiral structure when water started to drain out from your kitchen or bathroom sink. A better spiral effect can be seen when the drain hole is in the middle of the sink.

Most elliptical galaxies do not have a spinning black hole, therefore Frame Dragging does not apply to elliptical galaxies. This is why most elliptical galaxies have older population of stars.

In the second part of this paper, I would like to talk about the Bullet Cluster, as you can see the illustration here below.



Many of us are wondering why the Bullet cluster are divided into two parts, where majority of the observable mass, which is the gas is lagging behind the stars and galaxies with dark matter. This really defies common sense. Normally we would think that the dark matter should have been together with the majority of the observable mass. Obviously it is not! Then the question is, why is it doing this? We have now learned that most spiral galaxies have a dark matter halo. Does this suggest that the Lens-Thirring Effect or Frame Dragging which is created by the spinning black hole could have effect on dark matter, and does dark matter stick together on the spiral galaxy through the spinning black hole?