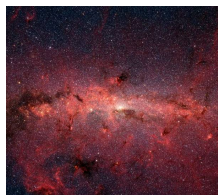


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By: Tudor Vieru, Science Editor



A picture of Milky Way's galactic core, taken in infrared wavelengths by the Spitzer Space Telescope
Wikimedia Commons / NASA

[Astronomical Theories Need Reshaping](#)

That's what some experts believe

Over the last 20 years or so, astronomers have been continuously looking for the mysterious dark matter, the force that some believe is the engine of the Universe. The vast majority of astrophysicists consider that the stuff is what drives galaxies into clusters and what keeps them in place, providing a scaffolding of sorts for the entire Cosmos. However, despite all the studies that have been dedicated to finding it, it has remained hidden, and an increasing part of the community is now beginning to wonder if it actually exists.

The main problem with dark matter is that many astronomers rely on it to explain otherwise unexplainable things or phenomena that are or were identified during telescope studies of our galactic surroundings. Still, even if the elusive matter exists, it may still not be able to explain everything that falls short of being explained by conventional cosmology theories. Gravity is the best example, and some physicists now believe that Newton's theories are wrong, but not in that they do not explain gravity as it happens on Earth, but rather because they are incomplete. As a result, many other alternative explanations have appeared over the last five to ten years.

"Maybe Newton was indeed wrong. Although his theory does, in fact, describe the everyday effects of gravity on Earth, things we can see and measure, it is conceivable that we have completely failed to comprehend the actual physics underlying the force of gravity," Professor Dr. Pavel Kroupa, who is based at the Argelander-Institut für Astronomie (AifA), at the Bonn University in Germany, argues.

In addition, experts are now having an increasingly hard time matching theoretical models to the realities telescopes picture every day. For example, models predict that thousands of dwarf galaxies - containing up to only a few thousand stars - may revolve around all large ones, such as the Milky Way. But sky surveys have thus far revealed only 30 such formations, which are also arranged in a very weird pattern, in that they form a disk around our galaxy.

According to models, this shouldn't happen, because the dwarf formations should have been distributed uniformly around the Milky Way. Still, they are all in similar planes, and, furthermore, seem to orbit our galaxy in very much the same way planets orbit stars. "First of all, there is something unusual about their distribution; the satellites should be uniformly arranged around their mother galaxy, but this is not what we found," Kroupa adds. Details of the finds are published in a recent issue of *The Astrophysical Journal*.

"The only solution would be to reject Newton's classical theory of gravitation. We probably live in a non-Newton universe. If this is true, then our observations could be explained without dark matter," the expert shares. "The authors of this paper make a strong argument. Their result is entirely consistent with the expectations of modified Newtonian dynamics (MOND), but completely opposite to the predictions of the dark matter hypothesis. Rarely is an observational test so definite," University of Groningen Astrophysicist Bob Sanders concludes.