

# Laws of the Universe with Dark Matter & Dark Energy

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**Abstract** Hubble discovered that the universe is expanding. In addition, Olbers' paradox is resolved by the fact that the universe is expanding and what is causing that is dark energy, which means that distant light has not yet reached us. In addition, dark matter is causing the gravitational force. However, the explanation of cosmic microwave background and the correct explanation of dark matter are not concluded yet. Here I show that the dark matter theory is correct in a different way. Dark matter is at the end and background of the universe making night sky dark. In simple terms, the universe is dark because it has dark molecules of matter at its boundaries. In addition, light speed is the fastest speed, if a far galaxy is at the end of universe, we will not see it in the big bang (early universe) or we will not see it in any time or we will see it in its time as we see all galaxies of the universe in cosmic microwave background. The cosmic microwave background is explained further in the paper. It is believed that the role of magnetic field proved that it is powerful in attraction force of any object in space.

**Keywords** Expanding universe, Dark matter, Dark energy, Magnetic field, Gravity

## 1. Introduction

### Olbers' Paradox

Why is the night sky dark? the paradox is resolved by the fact that the universe is expanding, which means that distant light has not yet reached us" [1].

### Hubble Law and Expanding Universe

The astronomer Edwin Hubble discovered in the 1920's that the Universe is expanding and that this expansion occurs at the same rate throughout space by analyzing the spectra of distant stars. He found that there is a linear relationship between the redshift in the spectrum of a star and its distance. This linear relationship is called Hubble's law and applicable to all stars sufficiently far from Earth [2].

### Dark Matter & Dark Energy

Dark matter is causing the gravitational force, its gravitational effects are necessary to explain the rotation of galaxies, the motions of clusters, and the largest scale-structure in the entire Universe [2]. In addition, dark matter is invisible [2].

Dark energy is causing the expanding universe, dark energy is the name given to the mysterious force that is causing the rate of expansion of our universe to accelerate over time [2].

### Magnetic Field & Magnetic Force

In addition, my theory on magnetic fields said that instead of the expression of gravity and gravitational force, we can

use words of magnetic field or magnetic force in the solar system or between objects in space that generates the controlling motion of any object in a system. The magnetic field is forming the model or the structure of the solar system [3].

If there is gravity for the Newtonian gravity, the sun collisions with the earth in arbitrarily movement or randomly and there will not be a well-defined model of the solar system which does not happen [3]. If there is gravity, the objects fall with different speeds because of different masses in Newton's gravity equation [3].

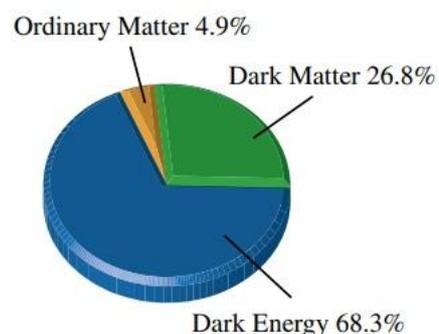


Figure 1. Composition of the Universe as determined by the Planck satellite [2]

## 2. Results & Discussion

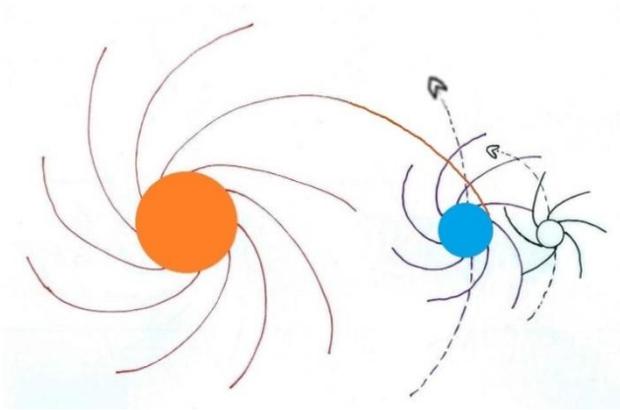
Concomitant to the previous study I suggest that the role of dark matter in gravitational force is not considered when we acknowledge the magnetic field and force of the galaxies, and existence of dark matter at the boundary of the universe (see figure 2 & 5). The explanation of cosmic microwave background is explained in the paper.

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**Figure 2.** Diagram shows how the motion and magnetic field of the sun controls the motion of the earth and the earth controls the motion of the moon and so on [6,7]



**Figure 3.** Model of spiral galaxy has spiral arms represent magnetic field and gravity

The arrangement of dust in a spiral galaxy proves the existence of magnetic field in the galaxy for attraction of objects and controlling motion of stars and planets [6] (see figure 2, 3 & 5). The magnetic field of a galaxy is like magnets are attracting objects to them. If a galaxy has magnetic field, there must be attracting force for stars and planets.

It is believed that dark matter is visible and it is at the end, edge and background of the universe making the sky dark at night. Dark matter is making boundaries of the universe dark. There is a dark matter that wrap the entire universe (see figure 3 & 4).

The light blue color of day happens because sun light reacted with atmosphere of earth and the dark color of the universe making color of the day light blue. Without atmosphere of earth, we will see our sky dark in day and night as we see the universe in vacuum in day and night dark. It is believed that the role of dark matter is powerful in dark light in the cosmos as we see all the universe dark.

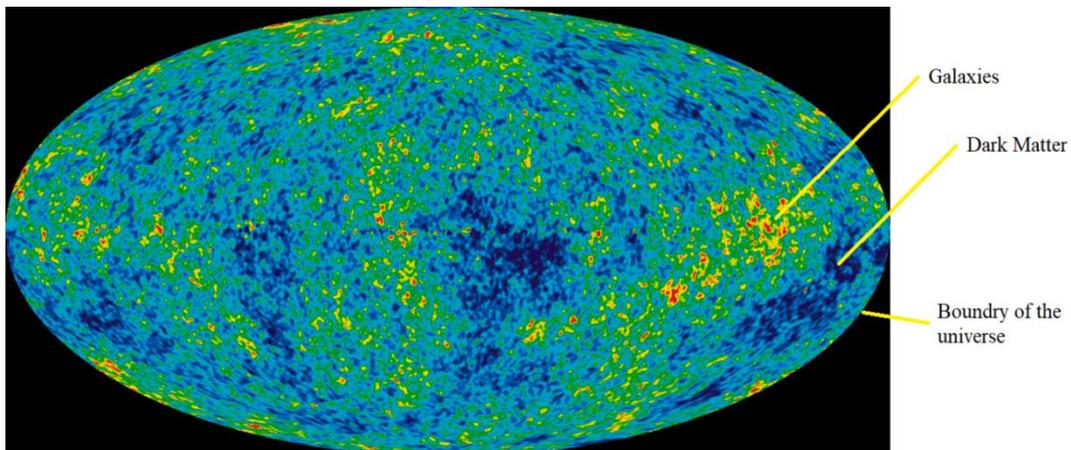
The role of magnetic field proved that it is powerful in attraction, moving and controlling motion of bodies and planets in space. The next equation is the equation of magnetic force  $F_m$

$$F_m = \frac{p_1 \cdot p_2 \cdot v_2}{x}$$

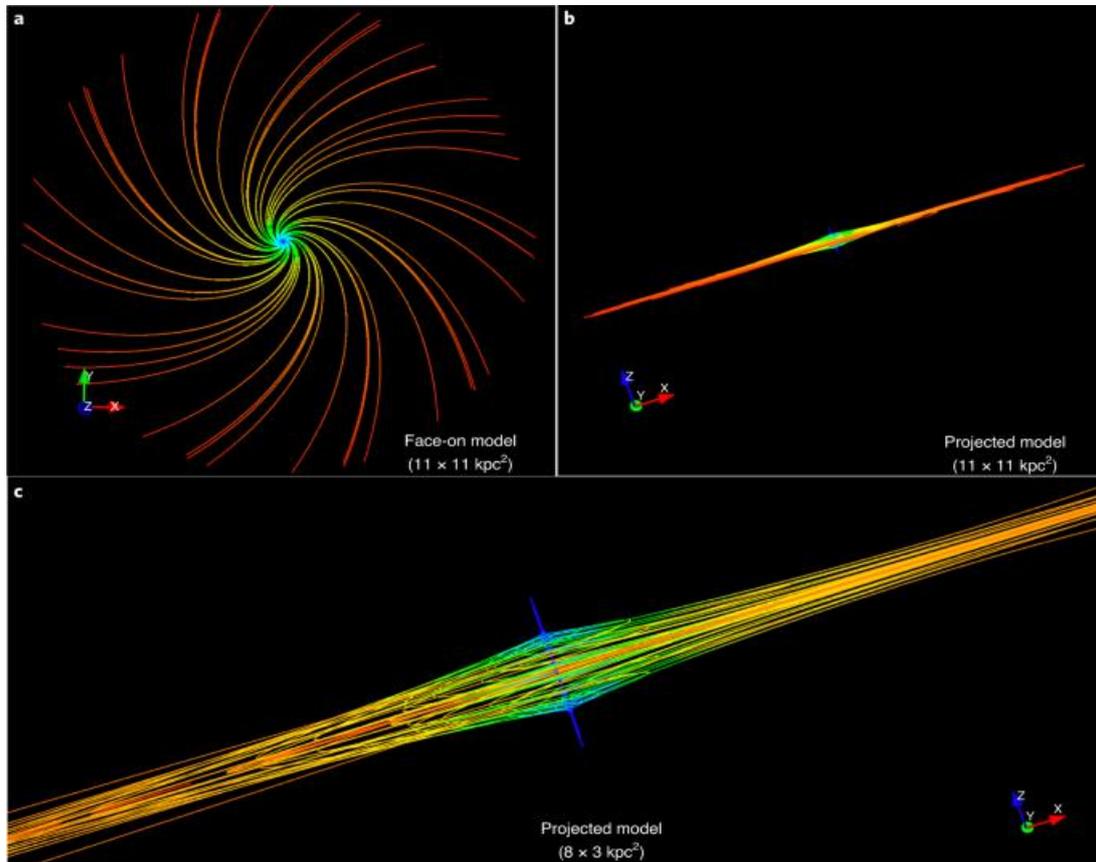
If Magnetic force  $F_m$  increases, the distance  $x$  decreases (inversely proportional relation). If density of the sun  $p_1$  increases, magnetic force  $F_m$  increases (proportional relation). In addition, if density of the earth  $p_2$  increases, the attraction force  $F_m$  increases (proportional relation). If Magnetic force  $F_m$  increases, the velocity of the earth  $v_2$  increases (proportional relation).

The confirmation of diagram in (figure 2) and my theory about existence of magnetic field of the sun, planets and galaxies in attraction of objects and controlling motion of them is discussed in the paper “The magnetic field across the molecular warped disk of Centaurus A” published by Enrique Lopez-Rodriguez (see figure 5).

Enrique said in his paper that “Our observations also suggest the presence of small-scale turbulent fields, whose relative strengths increase with velocity dispersion and column density. These results have strong implications for understanding the generation and role of magnetic fields in the formation of galaxies across cosmic time” [5] (see figure 5).



**Figure 4.** Cosmic Microwave background & boundaries of the universe. The shining points represent galaxies and dark points represents dark matter (source. Wikipedia)



**Figure 5.** The magnetic field across the molecular warped disk of Centaurus A. a–c, The B-field morphology within the  $11 \times 11 \text{ kpc}^2$  region, from a face-on view (a), at the inclination and tilt angle as inferred from our model (b) and within the central  $8 \times 3 \text{ kpc}^2$  (c) are shown. The XYZ axes are shown for each panel. A fake colour map has been added to distinguish the B-field lines as a function of the distance to the core [5]

In my point of view, dark energy is not existed in our universe because it is believed that the universe is not expanding. Edwin Hubble studied a small part of the universe that is expanding, but maybe there are other parts of the universe that is shrinking or moving in other directions.

The Olbers' paradox is not considered when we acknowledge the existence of dark matter at the boundary of the universe and not all the universe is expanding.

Until now there is no evidence on the existence of dark matter and dark energy between galaxies as scientists said before. However, my explanation of existence of dark matter in the boundary of the universe in cosmic microwave background surely gives more precise information for it.

It is believed that the theory about a powerful telescope can detect the light from galaxies that existed during the early period of the universe and the big bang is not correct because as we can see from cosmic microwave background, the universe is already formed with galaxies and there is boundary that contains the universe and these galaxies.

### 3. Materials and Methods

The paper is published along with NASA's James Webb Space Telescope launch in December 2021. Many information and data that are discussed and concluded in this

paper, James Webb Space Telescope observations will able to support them.

### 4. Conclusions

In conclusion, it is believed that not all the universe is expanding, and the dark energy and its role in expanding of the universe does not exist. In addition, it is believed the existence of dark matter at the edge of the universe making all the universe dark at night and light blue at day. Also, it is suggested the existence of magnetic field for attraction of objects in galaxies.

### REFERENCES

- [1] Belal E. Baaquie, Frederick H Willeboordse. *Exploring Integrated Science* (Taylor and Francis Group LLC, 2010).
- [2] Belal E. Baaquie, Frederick H Willeboordse. *Exploring the Invisible Universe from Black Holes to Superstrings* (World Scientific Publishing Co., 2015).
- [3] O.K. AbouEassa. Commentary on Waves Especially Gravitational Waves and General Relativity. *International Journal of Theoretical and Mathematical Physics*, vol. 10 no. 5 (2020).

- [4] Osama Khalil. The Relation between Gravity and Time 2 (Review Article). *International Journal of Theoretical and Mathematical Physics*, vol. 10, no. 1 (2020).
- [5] Enrique Lopez-Rodriguez. The magnetic field across the molecular warped disk of Centaurus A. *Nature Astronomy*, vol 5 (2021).
- [6] Osama Khalil. Theoretical Atomic Model and the Theory of Everything. *International Journal of Physics*, vol. 5, no. 3 (2017).
- [7] O.K. AbouEassa. The Relation between Gravity and Time. *International Journal of Physics*, vol.7, no.1 (2019).

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