

Subject: Science

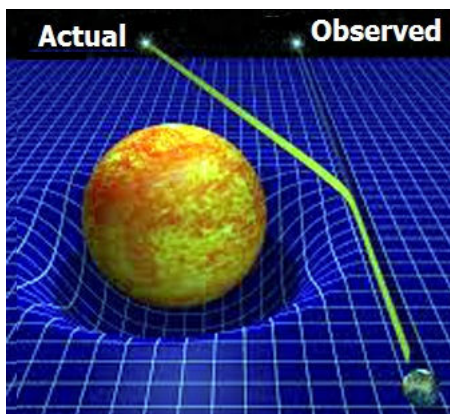
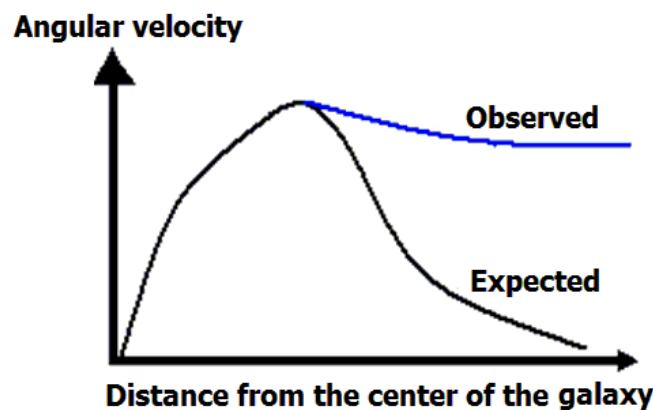
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Dark Matter versus Plasma

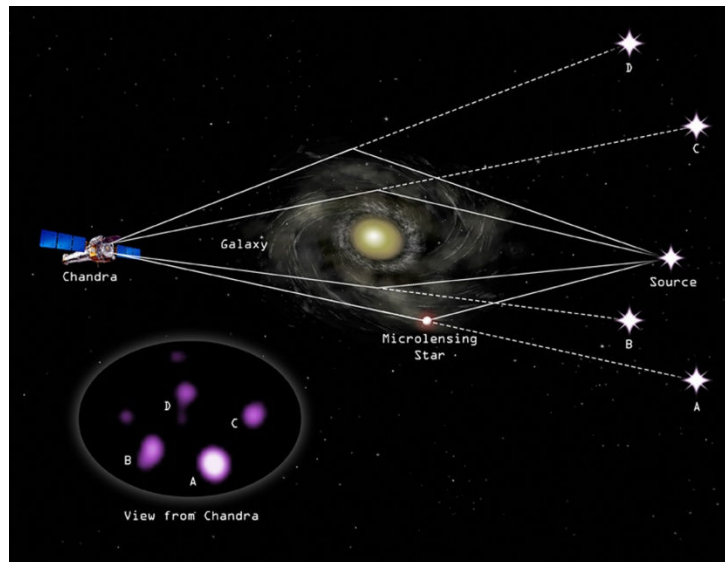
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Plasma is one of the fundamental states of matter and is constituted of free electrons and ionized charge carriers (1). This makes plasma electrically conductive and can form beams or filaments. Plasma is the most abundant form of ordinary matter in the universe and is not what scientists claim as an unknown "**Dark Matter**".

Dark Matter is different than ordinary matter and its properties are inferred from its gravitational effect on visible matter (2). Dark matter was postulated in order to account for the observed discrepancy in the angular velocities of galaxies. According to the universal law of physics known as the "**angular momentum conservation**", the angular velocity of rotating bodies varies according to the distance to the rotation center. One can observe this effect in the faster rotation of an ice skater as he/she brings his/her arms close to the vertical axis of rotation. But this is not observed in the rotation of galaxies. Below we see the discrepancy between the expected and the observed angular velocities of galaxies.

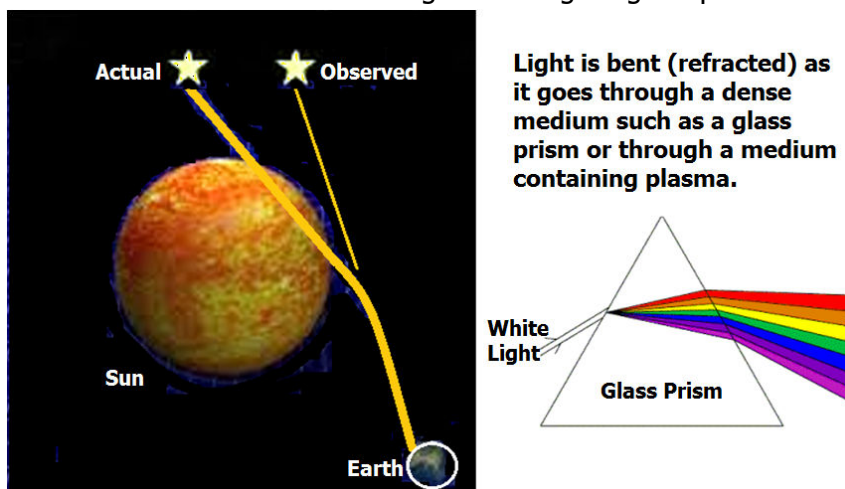


Another observation that is accepted by the mainstream cosmologists to confirm the existence of Dark Matter is the **gravitational lensing**. This effect is based on the General Theory of Relativity proposed by **Albert Einstein** (1879 – 1955). According to this theory, a massive stellar object bends the space-time structure of the universe and a light ray traveling close to the galaxy follows a curved path called a "geodesic". **Arthur Eddington** (1882 – 1944) confirmed this claim by observing a star behind the sun during a full eclipse. This effect is shown in the drawing on the left side. Another similar observation is drawn below.



Chandra is a space telescope launched on July 23, 1999. Its purpose is to observe the x-ray emission of stars and galaxies. Chandra observed that the light (x-rays) from a single star behind a galaxy created multi images, as shown inside the ellipse above.

But, such effects can be explained with the existence of plasma around stellar objects, without the need to postulate an ephemeral Dark Matter. Plasma is abundant inside galaxies, in intergalactic regions and in all stars, including our sun. It is semi-transparent and can refract light that passes through it. Refraction is due to the difference of density between two media. Below we see how light could be refracted by the solar plasma and how it will disperse in seven different colors as it goes through a glass prism.



The same effect happens when x-rays pass through a galaxy containing plasma. It is my claim as well as the claim of the model called **Electric Universe** (3) that Dark Matter is not needed in order to explain such effects. Moreover, we can say that electricity and the electromagnetic force plays a more significant role in the universe than the generally accepted gravitational force.

References:

- (1) [http://en.wikipedia.org/wiki/Plasma_\(physics\)](http://en.wikipedia.org/wiki/Plasma_(physics))
- (2) http://en.wikipedia.org/wiki/Dark_matter
- (3) http://www.electricuniverse.info/Electric_Universe_theory