

Predictions of New Quantum Gravity Theory

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Introduction:

A number of theories of gravity have been developed by many physicists to explain the different unsolved problems in physics. None of them is able to explain all the observed unsolved problems like perihelion precession of mercury, precession of orbits of stars near super dense bodies (black holes), galaxy rotation curve, accelerating bodies after super nova explosion and few others. A new theory of quantum gravity has been developed by me. This theory explains many of the unsolved problems in the field of gravity. The figure 1 given below shows the relation between the force of quantum gravity (F) and the distances between the bodies(r). The force of quantum gravity is shown by blue colored continuous line. The Newtonian force of gravity is shown by red colored continuous line.

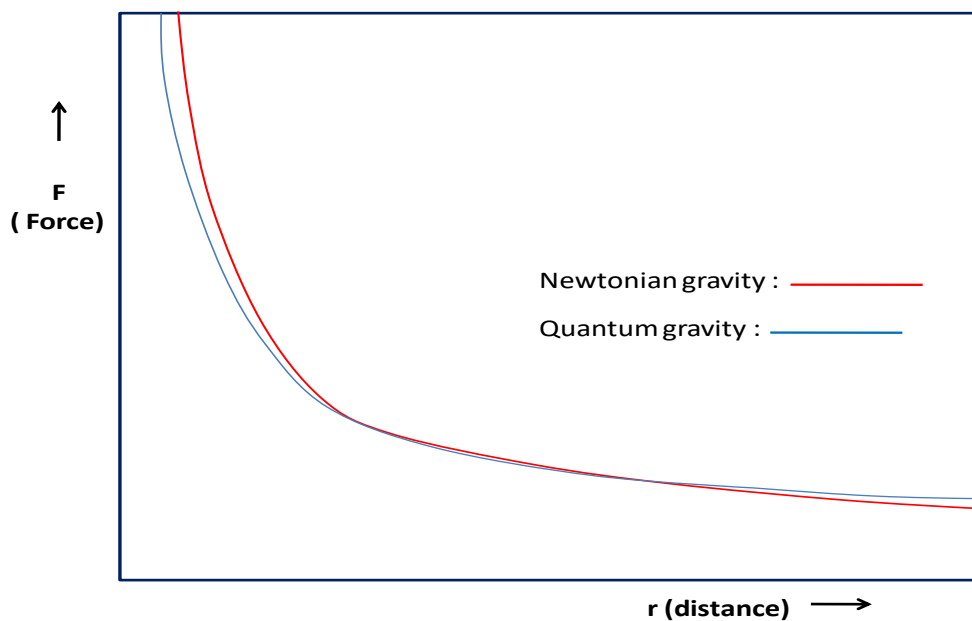


Figure : 1

Predictions of New Quantum Gravity

The predictions of New Quantum Gravity theory are as given below.

- 1) At extremely short distances the actual force of gravity is less than the Newtonian force of gravity. The rate of increase in force is less than

Newtonian force. Infinite force of gravity at any point is not possible. There is no singularity. The force of gravity is finite when the distance between bodies reaches zero.

- 2) At average distances from the centre of bodies, the force of gravity is similar to Newtonian force. But the force of gravity is slightly less than the Newtonian force.
- 3) At very large distances from the centre of bodies the observed force of gravity is more than the Newtonian force of gravity. The force of gravity increases as the distance from the centre of bodies increases.

Evidences of prediction:

In order to check the validity of any theory there should be sufficient number of natural phenomenon existing in the universe confirming the various predictions made by the theory. This criterion is also applicable to new quantum gravity. In order to check the validity of this theory there must be different natural phenomenon confirming the various predictions made by theory. There are different natural phenomena occurring in the universe confirming the predictions made by theory. Few examples are discussed as given below.

- 1) **Perihelion precession of mercury: - According** to the predictions, at extremely short distances the actual force of gravity is less than the Newtonian force of gravity. The rate of increase in force is less than Newtonian force. The perihelion precession of mercury is natural phenomenon occurring in the universe. The perihelion precession can be explained by using this theory. The reduction in gravitational force at short distances is the main reason for the perihelion precession of mercury.

2) Precession of stars orbiting the super dense bodies (black holes):-

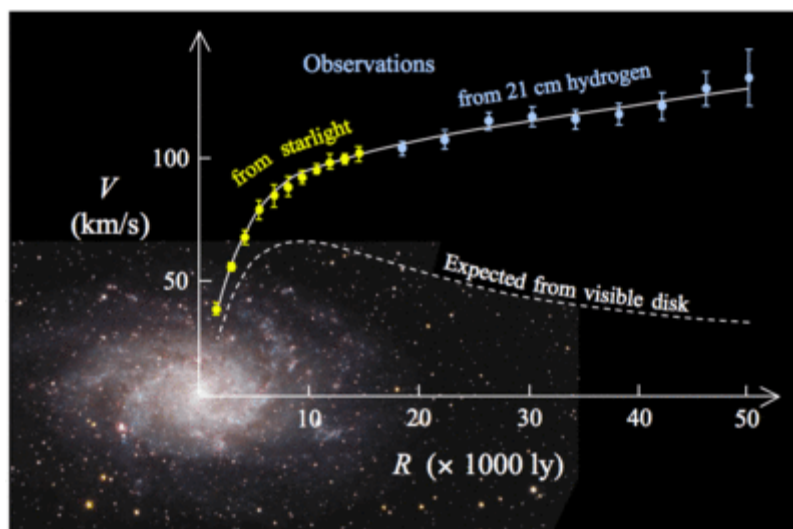
The rotation orbits of stars rotating around the super dense bodies (black hole) precess at a certain definite rate. The reduction in force of gravity at short distances is the main cause of such precession.

3) Accelerating bodies after super nova explosion:

It has been observed that after super nova explosion the bodies were moving at speeds higher than that calculated by

Newton's laws or theory of general relativity. This can be explained by new theory. After supernova explosion the bodies are at relatively shorter distances from each other. The force of gravity between them is less than that of Newtonian force. The less gravitational force exerts less force on each other. The deceleration of bodies due to gravitational force is less. The resultant velocity of bodies is more than that calculated by Newtonian laws or theory of general relativity. There is no need of dark energy to explain this kind of explosions.

- 4) **Rotation curve of galaxy:** - The galaxy rotation problem is the discrepancy between observed galaxy rotation curves and the theoretical prediction, assuming a centrally dominated mass associated with the observed luminous material. When mass profiles of galaxies are calculated from the distribution of stars in spirals and mass-to-light ratios in the stellar disks, they do not match with the masses derived from the observed rotation curves and the law of gravity. A solution to this problem is to hypothesize the existence of dark matter. Scientists are trying to prove the existence of dark matter for many years. But still today dark matter has not been observed to exist.



The galaxy rotation problem can be explained by new quantum gravity theory. According to theory, the force of gravity is more than the Newtonian force at very large distances. This increase in the force of gravity increases the orbital velocity of stars rotating at very large distances from the centre of the galaxy. The orbital velocity of stars or any other body increases according to new quantum gravity as the distance from the centre of the galaxy increases.