Unified Field Theory and the Hierarchical Universe

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Abstract

Everything from the smallest particle to the grand universe is constructed by Torque Grids. The grand structure of the universe is made up of infinite hierarchical Torque Grids; this theory falsifies Big Bang Theory (BBT) and Black Hole Theory. A Torque Grid is $10^{-25}$ times smaller than an atom, and our universal Torque Grid size is $4.98 \times 10^{26}$ m. The Universe is timeless. The configuration of Spiral Arm Galaxy can also be explained by Unified Field Theory.

Keywords: Unified Field Theory, Theory of Everything, Black Hole, Einstein, BBT


1. Introduction

Unified Field Theory (e.g. [1,2,3,4,5]) will be an important theory in Astronomy. BBT is repudiated by the discovery of Huge Large Quasar Group (e.g. [6-16]) (e.g. Figure 1). The “Non-scattering photon electron interaction” (e.g. [4]) will provide additional support for falsifying BBT (e.g. [17-108]).

This paper discusses the astronomic issues, such as the grand structure of the universe, Black Holes (e.g. [109-207]), galactic rotational curve (e.g. [207-232]), basis for BBT, and Thermal Dynamic Theory (e.g. [233-245]) in Astronomy.

Figure 1. Huge-LQG

2. Controversial BBT

2.1. Huge-LQG Contradicts BBT

The cosmological principle implies that at sufficiently large scales, the universe is approximately homogeneous.

The grand structure of Huge-LQG is non-homogeneous (e.g. [6]).

2.2. Remote Galaxies are Not Far Apart

Another important basis for the Big Bang is that remote galaxies are far apart.

Gravity lensing (e.g. Figure 2) makes some galaxies clearer, but it makes other Galaxies invisible.

Figure 2. Optical Illusion of Gravity Lensing

For a remote galaxy, the possibility of visibility from earth is inversely proportional to the distance from the earth:

$$A/L$$

Where A is a constant, and L is distance.

The more remote galaxies are, the less likely they are to be seen. The distribution of remote galaxies is same as nearby galaxies, but visible remote galaxies are further apart.

In Huge-LQG, galaxies are not far apart. It supports the previous optical illusion claim and effectively falsifies an important BBT claim that remote galaxies are far apart.

2.3. Las Campanas Redshift Survey

Las Campanas Redshift Survey (e.g. Figure 3) uses photon’s redshift as means to measure the distance,
moving speeds, and distribution of the galaxies. It concludes that the universe has large-scale homogeneity. The optical illusion leads to the wrong large-scale homogeneity conclusion. The redshift is mainly the result of non-scattering photon electron interactions (e.g. [4]). Therefore, redshift can not be used to explain the movements of the remote stars since electron photon interaction causes a bigger redshift than Doppler effects.

Can a gravity field of Black Hole (e.g. Figure 5) trap a photon? In order for gravity to trap a photon, the gravity force $\frac{GMm}{R^2}$ is greater then the reactive centrifugal force $\frac{mC^2}{R}$, or $\frac{GMm}{R^2} > \frac{mC^2}{R}$. It can be simplified to:

$$\frac{GM}{RC^2} > 1$$

When mass $m$ enters to gravity field of mass $M$ at radius $R$, the escape energy $\frac{GMm}{R}$ comes from the energy $mC^2$ (e.g. [3]). According to the law of energy conservation, the $\frac{GMm}{R}$ cannot be greater than the original mass, or $(\frac{GMm}{R}) = mC^2$. Therefore, gravity cannot trap a photon; otherwise, it will contradict the law of energy conservation. Therefore,

$$\frac{GM}{RC^2} < 1 \quad (1)$$

### 3.2. Universal Grid

If the universe has a constant density $d$ ($9.22 \times 10^{-27}$), then,

$$M = \left(\frac{3}{4\pi}\right) R^3 d$$

When $GM/RC^2$ in (1) approximately equals to one:

$$R = \left(\frac{C^2}{\left(\left(3/4\pi\right) dG\right)\sqrt{2}}\right)^{1/2} = 2.49 \times 10^{26} m$$

At the radius of $2.49 \times 10^{26}$ m, the universe reaches its gravitational limit. This limit has a few meanings:
1. If the universe is limited, the above radius is the radius of the universe.
2. If the universe is not limited, then, the above radius is the half resonance wavelength of universe.

UFT predicts that the universe is infinite in size and the Universal Grid size is twice as big as the gravitational limit:

$$4.98 \times 10^{26} m$$

The universal Grid is a Grid in the higher Torque Grid hierarchy. A Grid in any hierarchy has same energy density in its own universe.

The universe has no visible boundary. There will be no difference between being of the border and being inside the Grid.

### 3.3. Energy-Time-Space

The energy density in the universe decides the universe’s Grid size. The Torque movement speed is the same in any Torque hierarchy for an undistorted Grid. Grid size defines unit for space and time. Therefore, energy, space and time are inseparable.

### 3.4. Hierarchy Ratio Constant

The Torque Grid size $D$ times $N$ is the universe Grid size. The universe Grid size times $N$ is the Grid size of the next level Grid above the universe. For the same reason, the Torque Grid size divided by $N$ is the size of Torque Grid one level lower than the Torque Grid. Based on the density of universe known today:

$$N = \left(4.98 \times 10^{26}\right) / \left(2.2856509 \times 10^{-35}\right) = 2.1788 \times 10^{60}$$
3.5. Possible Location of Our Universe

Our universe is most likely a Grid in the vacuum at the higher Torque Grid hierarchy.

The density of the universe is $9.22 \times 10^{-27}$. At any Grid hierarchy, the energy density is the same. If a Grid is randomly picked, the possibility of not being in the vacuum is $9.22 \times 10^{-27}$. This prediction is purely based on statistics.

4. Torque Grid Hierarchy

4.1. Hierarchical Diagram

Parent Grid is $N \times (2.1788 \times 10^{60})$ times bigger than child Grid. Under Logarithmic scale, the hierarchy diagram for Torque Grid Hierarchy will be:

![Figure 6. Torque Grid Hierarchy](image)

4.2. Twisting Directions

In the above hierarchy (e.g. Figure 6), R is right handed Torque, L is left handed Torque. Child Grid and parent Grid have different Torque (twisting) directions.

The nature of twisting motion decides parent and child direction.

Assume that child and parent have same twisting direction. As twisting motion creates a distortion from parent to child:

$$d = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$$

v is twisting speed.

Based on UFT (e.g. [5]), for n level hierarchy, the accumulated distortion is $d^n$. Since n is unlimited, $d^n$ is diverging.

Therefore, child and parent should have different twisting motion to stay converged.

A simple analogy can explain the parent and child Torque relationship:

![Figure 7. Parent and Child Grids Resemble Rope and Fibers](image)

If you twist string tight and fold it into half, the two folded half-string will twist together in opposite direction and form a new string twice as thick. A short rope can be created by repeating the above process.

The rope (e.g. Figure 7) helps us understand opposite twisting of parent and child Grids.

4.3. Characteristics of Neutrinos

The Torque hierarchy can be used to explain characteristics of neutrinos.

Neutrinos’ resonance size is less than or equals to $137^{th}$ Grid size (e.g. [3]), different from photon which has single Grid resonance size. The movement of neutrino is based on the smaller Torque Grid one hierarchy lower than normal Torque Grid. The lower hierarchical Torque Grid has left twist motion. Internally, neutrinos twist left while photon twists right. It makes neutrinos and photon unable to interact with each other.

Four fundamental forces are based on resonance of same torque movements. Different forces have different resonance conditions.

UFT predicts that neutrinos can be scattered by particles.

5. Configuration of Galaxy

5.1. Galaxy Energy Distribution

The gravity field is the result of energy distortion on the grid. In our classical definition, force times distance is energy. The gravity for unit mass multiplied by the average distortion is the gravity field’s virtual energy.

When the unit mass with wavelength L is in a sphere with radius r, the average distortion s on the sphere is the total distortion divided by the area of the sphere.

$$ds = (D / L) dr / (4 \pi r^2)$$

D: Torque Grid size
Based on the Planck equation, for unit mass:

$$1 * c^2 = h / L$$

$$ds = (Dc / L) dr / (4 \pi r^2)$$

F is the total virtual gravitational force between the two objects with the same mass M:
Virtual Energy is defined as the amount of virtual force multiplied by the distortion value:

\[ dE = 4\pi GM^2 \frac{Dc}{h} dr / (4\pi r^2) \]

When two celestial objects with the same mass M are pulled part by dr, their energy increases. Each object shares half of the energy increment. When the energy increment equals to virtual energy change:

\[ dE = \frac{GM}{h} dr \]

Simplify the above equation by defining a new constant \( g \),

\[ g = \frac{2hc}{GD} = 2.63912 \times 10^{20} \text{ kg/m} \]

The solution of the differential equation is,

\[ M g r = \frac{1}{2} M g r_0 \]

Or:

\[ M = gr \]

The above equation is based on assumption that the virtual energy equals to actual energy. Since the Torque distortion represents the space-time-energy change, therefore, the actual energy allocation resonances with virtual energy as follow:

\[ P M = Q gr \]

P and Q are both non-zero positive integer. Assume Q/P = K,

\[ M = K gr \]
6. Conclusions

1. The firmament of the universe is a Torque Grid with Left handed Torque.
2. The smallest unit in our universe is a Torque Grid which is a small universe that resembles to our universe.
3. The Torque Grid hierarchy is our universal hierarchical structure.
4. The Spiral Arm Galaxy structure is the result of energy and virtual energy resonance.
5. “Black Holes” can not trap photons.
6. Matter can be converted into electro-magnetic waves in “Black Holes” and released into space. This process makes the universe timeless.

References

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