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# Dynamic Universe Model Applications into Prediction of Blue Shifted Galaxies, VLBI Applications and other New Possible Avenues....

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**Abstract**

Tensors are generally tough to understand interpret and appreciate. This is mainly because it is the number of equations that each tensor that will be subdivided into. The overall concept is difficult to comprehend. There is an additional headache, when tensors subdividing into differential and integral equations. Differential equations will not give unique solutions. Whereas Dynamic Universe Model gives a unique solution of positions, velocities and accelerations for each point mass in the system for every instant of time as its tensors subdivide into linear set of equations. This new method of Dynamic Universe Model is different from earlier mathematical methods. This can be used for solving general N-body problem. This method solved many unsolved problems earlier like Galaxy Disk formations, Missing mass in Galaxies, Pioneer anomaly, Non-collapsing Large scale mass structures, New horizons trajectory predictions etc. Now attempts to solve new problems like

1. Mathematical Prediction of Existence of Blue shifted Galaxies
2. Explaining Very long baseline interferometry (VLBI) observations

To support Dynamic Universe Model the we can find the following supporting observations

3. SN1987A- Neutrino emission (Supporting Existence of Blue Shifted Galaxies)
4. The first Redshifted Quasar 3C273 is blue shifted. (Supporting Existence of Blue Shifted Galaxies)
5. The most distant Quasar eso1122 found to have a Blue Shift of 0.110473 (Supporting Existence of Blue Shifted Galaxies)

## 1. Introduction

Tensors are generally tough to understand interpret and appreciate. This is mainly because it is the number of equations that each tensor that will be subdivided into. The overall concept is difficult to comprehend. There is an additional headache tensors subdividing into differential and integral equations.

We all know, Newtonian two body problem used differential equations. Einstein's general relativity used tensors which in turn unwrap into differential equations. Dynamic Universe Model uses tensors that will give simple equations with interdependencies. Differential equations will not give unique solutions. Whereas Dynamic Universe Model gives a unique solution of positions, velocities and accelerations for each point mass in the system for every instant of time. This new method of Dynamic Universe Model is different from earlier method of solving general N-body problem. This method solves many unsolved problems like

1. Galaxy Disk formation using Dynamic Universe Model (Densemass) Equations
2. Solution to Missing mass in Galaxies: It proves that there is no missing mass in Galaxy due to circular velocity curves
3. Explains gravity disturbances like Pioneer anomaly, etc
4. Non-collapsing Large scale mass structures formed when non-uniform density distributions of masses were used
5. Offers Singularity free solutions.
6. Non- collapsing Galaxy structures
7. Solving Dark matter or Missing mass in Galaxies, and it finds reason for Galaxy circular velocity curves. See 'The LUX: Large Underground Xenon experiment and the detector attached to the International Space Station DID NOT detect any 'Dark matter' till the end of OCT 2013 after a year of searching [6, 8, 9, 10, 11].
8. Blue shifted and red shifted Galaxies co-existence
9. Explains the force behind expansion of universe.
10. Explains the large voids and non-uniform matter densities.
11. Predicts the trajectory of New Horizons satellite.
12. Withstands 105 times the Normal Jeans swindle test
13. Explaining the Existence of large number of blue shifted Galaxies etc.

Only differences used between the various simulations are in the initial values and the time steps. The structure of masses is different. In the first 2 cases, I have used approximate values of masses and distances. In the third and fourth case, I have used real values of masses and distances for a close approximation. This is the Basic Theory of Dynamic Universe Model published in 2010 [1] The second book in the series describes the equations and SITA software in EXCEL emphasizing the singularity free portions. It explains more than 21,000 different equations (2011) [2] The third book describes the SITA software in EXCEL in the accompanying CD/DVD emphasizing mainly HANDS ON usage of a simplified version in an easy way. The third book contains explanation for 3000 equations instead of earlier 21000 (2011)[3]. A good introduction can be found in author's paper 'Introduction to Dynamic Universe Model' [5]

## 2. Mathematical formulation

Let us assume an inhomogeneous and anisotropic set of $N$ particles moving under mutual gravitation as a system, and these particles are also under the gravitational influence of other systems with a different number of particles in different systems. For a broader perspective, let us call this set of all the systems of particles as an Ensemble. Let us further assume that there are many Ensembles each consisting of a different number of systems with different number of particles. Similarly, let us further call a group of Ensembles as Aggregate. Let us further define a Conglomeration as a set of Aggregates and let a further higher system have a number of conglomerations and so on and so forth.

Now for the start, let us assume a set of $N$ mutually gravitating particles in a system. Let the $\alpha-$th particle has mass $M\alpha$, and is in position $x_\alpha$. In addition to the mutual gravitational force, there exists an external $\phi_{\text{ext}}$, due to other systems, ensembles, aggregates, and conglomerations etc., which also influence the total force $F\alpha$ acting on the particle. Here in this case, the $\phi_{\text{ext}}$ is not a constant universal Gravitational field but it is the total vectorial sum of fields at $x_\alpha$ due to all the external to its system bodies and with that configuration at that moment of time, external to its system of $N$ particles.

$$\text{Total Mass of system} = M = \sum_{\alpha=1}^{N} m_\alpha \tag{2}$$

Total force on the particle $\alpha$ is $F\alpha$, Let $F\alpha\beta$ is the gravitational force on the $\alpha-$th particle due to $\beta-$th particle.

$$F_\alpha = \sum_{\alpha=1,\,\alpha\neq\beta}^{N} F_{\alpha\beta} - m_\alpha \nabla_\alpha \phi_{\text{ext}}(\alpha). \tag{3}$$

Moment of inertia tensor

Consider a system of $N$ particles with mass $M\alpha$, at positions $X\alpha$, $\alpha = 1, 2, \ldots N$. The moment of inertia tensor is in external back ground field $\phi_{\rm ext}$.

$$I_{jk} = \sum_{\alpha=1}^{N} m_\alpha x_j^\alpha x_k^\alpha. \tag{4}$$

Its second derivative is

$$\frac{d^2 I_{jk}}{dt^2} = \sum_{\alpha=1}^{N} m_\alpha \big( \overset{00}{x_j^\alpha} + x_k^\alpha + \overset{0}{x_j^\alpha}\, \overset{0}{x_k^\alpha} + x_j^\alpha\, \overset{00}{x_k^\alpha} \big) \tag{5}$$

The total force acting on the particle $\alpha$ is $\hat{F}$ and is the unit vector of force at that place of that component

$$F_j^\alpha = m_\alpha \overset{00}{x_j^\alpha} = \sum_{\beta=1,\alpha\neq\beta}^{N} \frac{G m_\alpha m_\beta (x_j^\beta - x_j^\alpha)\, \hat{F}}{|x^\beta - x^\alpha|^3} - \nabla\phi_{{\rm ext},\,j} m_\alpha. \tag{6}$$

Writing a similar formula for $F_k^\alpha$

$$F_k^\alpha = m_\alpha \overset{00}{x_k^\alpha} = \sum_{\beta=1,\alpha\neq\beta}^{N} \frac{G m_\alpha m_\beta (x_k^\beta - x_k^\alpha)\, \hat{F}}{|x^\beta - x^\alpha|^3} - \nabla\phi_{{\rm ext},\,k} m_\alpha. \tag{7}$$

or

$$\overset{00}{x_j^\alpha} = \sum_{\beta=1,\alpha\neq\beta}^{N} \frac{G m_\beta (x_j^\beta - x_j^\alpha)\, \hat{F}}{|x^\beta - x^\alpha|^3} - \nabla\phi_{\rm ext}. \tag{8}$$

and

$$\overset{00}{x_k^\alpha} = \sum_{\beta=1,\alpha\neq\beta}^{N} \frac{G m_\beta (x_k^\beta - x_k^\alpha)\, \hat{F}}{|x^\beta - x^\alpha|^3} - \nabla\phi_{\rm ext}. \tag{8a}$$

Lets define Energy tensor (in the external field $\phi_{\rm ext}$)

$$\frac{d^2 I_{jk}}{dt^2} = 2\sum_{\alpha=1}^{N} m_\alpha (\overset{0}{x_j^\alpha}\, \overset{0}{x_k^\alpha}) + \sum_{\alpha=1,\alpha\neq\beta}^{N} \sum_{\beta=1,\alpha\neq\beta}^{N} \frac{G m_\alpha m_\beta \{(x_k^\beta - x_k^\alpha))\, x_j^\alpha + (x_j^\beta - x_j^\alpha))\, x_k^\alpha\}}{|x^\beta - x^\alpha|^3}$$

$$- \sum_{\alpha=1}^{N} \nabla\phi_{\rm ext} m_\alpha x_j^\alpha - \sum_{\alpha=1}^{N} \nabla\phi_{\rm ext} m_\alpha x_k^\alpha. \tag{9}$$

Lets denote Potential energy tensor $= Wjk =$

$$\sum_{\alpha=1,\alpha\neq\beta}^{N} \sum_{\beta=1,\alpha\neq\beta}^{N} \frac{G m_\alpha m_\beta \{(x_k^\beta - x_k^\alpha))\, x_j^\alpha + (x_j^\beta - x_j^\alpha))\, x_k^\alpha\}}{|x^\beta - x^\alpha|^3} \tag{10}$$

Lets denote Kinetic energy tensor $= 2K_{jk}$

$$= 2\sum_{\alpha=1}^{N} m_\alpha(\overset{0}{x}{}_j^\alpha\,\overset{0}{x}{}_k^\alpha). \tag{11}$$

Lets denote External potential energy tensor $= 2\phi_{jk}$

$$= \sum_{\alpha=1}^{N} \nabla\phi_{\text{ext}} m_\alpha x_j^\alpha + \sum_{\alpha=1}^{N} \nabla\phi_{\text{ext}} m_\alpha x_k^\alpha. \tag{12}$$

Hence

$$\frac{d^2 I_{jk}}{dt^2} = W_{jk} + 2K_{jk} - 2\phi_{jk}. \tag{13}$$

Here in this case

$$F(\alpha) = \sum_{\beta=1,\alpha\neq\beta}^{N} F_{\alpha\beta} - \nabla_\alpha\phi_{\text{ext}}(\alpha)\, m_\alpha = \sum_{\beta=1,\alpha\neq\beta}^{N} \frac{G m_\alpha m_\beta (x^\beta - x^\alpha)}{|x^\beta - x^\alpha|^3} - \nabla\phi_{\text{ext}} m_\alpha \tag{14}$$

$$= \{\overset{00}{x^\alpha}\,(\text{int}) \,-\nabla_\alpha\phi_{\text{ext}}(\alpha)\}\,\mathrm{m}_\alpha. \tag{15}$$

$$\overset{00}{x^\alpha} = \sum_{\beta=1,\alpha\neq\beta}^{N} \frac{G m_\beta (x^\beta - x^\alpha)}{|x^\beta - x^\alpha|^3} - \nabla\phi_{\text{ext}} \tag{16}$$

We know that the total force at $x(\alpha) = F_{\text{tot}}(\alpha) = -\nabla_\alpha\phi_{\text{tot}}(\alpha)\, m_\alpha$

$\Rightarrow$ Total PE at $\alpha = m_\alpha\phi_{\text{tot}}(\alpha) = -\int F_{\text{tot}}(\alpha)\, dx$

$$= -\int \Big\{ \sum_{\beta=1,\alpha\neq\beta}^{N} \overset{00}{x}{}_{\text{int}}^{\alpha}\; m_\alpha - \nabla_\alpha\phi_{\text{ext}}(\alpha)\, m_\alpha \Big\}\, dx$$

$$= \int \sum_{\beta=1,\alpha\neq\beta}^{N} \frac{G m_\alpha m_\beta (x^\beta - x^\alpha)}{|x^\beta - x^\alpha|^3}\, dx - \int \nabla\phi_{\text{ext}}\, m_\alpha\, dx \tag{17}$$

Therefore total Gravitational potential $\phi_{rmtot}(\alpha)$ at $x(\alpha)$ per unit mass

$$\phi_{\text{tot}} = \phi_{\text{ext}} - \sum_{\beta=1,\alpha\neq\beta}^{N} \frac{G m_\beta}{|x^\beta - x^\alpha|}. \tag{18 - s}$$

**Lets discuss the properties of $\phi_{\text{ext}}$**

$\phi_{\text{ext}}$ can be subdivided into 3 parts mainly; $\phi_{\text{ext}}$ due to higher level system, $\phi_{\text{ext}}$ due to lower level system, $\phi_{\text{ext}}$ due to present level. [Level : when we are considering particles in the same system (Galaxy) it is same level, higher level is cluster of galaxies, and lower level is planets and asteroids].

$\phi_{\rm ext}$ due to lower levels : If the lower level is existing, at the lower level of the system under consideration, then its own level was considered by system equations. If this lower level exists anywhere outside of the system, center of (mass) gravity outside systems (Galaxies) will act as unit its own internal lower level practically will be considered into calculations. Hence consideration of any lower level is not necessary.

**SYSTEM - ENSEMBLE**

Until now we have considered the system level equations and the meaning of $\phi_{\rm ext}$. Now lets consider an ENSEMBLE of system consisting of $N_1$, $N_2 \ldots N_j$ particles in each. These systems are moving in the ensemble due to mutual gravitation between them. For example, each system is a Galaxy, then ensemble represents a local group. Then number of Galaxies are $j$, Galaxies are systems with particles $N_1$, $N_2 \ldots N_j$, we will consider $\phi_{\rm ext}$ as discussed above. That is we will consider the effect of only higher level like external Galaxies as a whole, or external local groups as a whole.

**Ensemble Equations (Ensemble consists of many systems)**

$$\frac{d^2 I^\gamma_{jk}}{dt^2} = W^\gamma_{jk} + 2K^\gamma_{jk} - 2\phi^\gamma_{jk}. \qquad (18-\mathrm{E})$$

Here $\gamma$ denotes Ensemble.

This $\phi^\gamma_{jk}$ is the external field produced at system level. And for system

$$\frac{d^2 I_{jk}}{dt^2} = W_{jk} + 2K_{jk} - 2\phi_{jk}. \qquad (13)$$

Assume ensemble in a isolated place. Gravitational potential $\phi_{\rm ext}(\alpha)$ produced at system level is produced by Ensemble and $\phi^\gamma_{\rm ext}(\alpha) = 0$ as ensemble is in a isolated place.

$$\phi^\gamma_{\rm tot}(\alpha) = \phi^\gamma_{\rm ext} - \sum_{\beta=1,\alpha\neq\beta}^{N^\gamma} \frac{Gm^\gamma_\beta}{|x^{\gamma\beta} - x^{\gamma\alpha}|}. \qquad (19)$$

Therefore

$$\phi^\gamma_{\rm tot} = \phi_{\rm ext}(\alpha) = -\sum_{\beta=1,\alpha\neq\beta}^{N^\gamma} \frac{Gm^\gamma_\beta}{|x^{\gamma\beta} - x^{\gamma\alpha}|}. \qquad (20)$$

And

$$2\phi_{jk} = -\frac{d^2 I_{jk}}{dt^2} + W_{jk} + 2K_{jk} \qquad (13)$$

$$= \sum_{\alpha=1}^{N} \nabla\phi_{\text{ext}}\, m_\alpha x_j^\alpha + \sum_{\alpha=1}^{N} \nabla\phi_{\text{ext}}\, m_\alpha x_k^\alpha. \tag{21}$$

**AGGREGATE Equations (Aggregate consists of many Ensembles)**

$$\frac{d^2 I_{jk}^{\delta\gamma}}{dt^2} = W_{jk}^{\delta\gamma} + 2K_{jk}^{\delta\gamma} - 2\phi_{jk}^{\delta\gamma}. \tag{18 – A}$$

Here $\delta$ denotes Aggregate.

This $\phi_{jk}^{\delta\gamma}$ is the external field produced at Ensemble level. And for Ensemble

$$\frac{d^2 I_{jk}^{\gamma}}{dt^2} = W_{jk}^{\gamma} + 2K_{jk}^{\gamma} - 2\phi_{jk}^{\gamma}. \tag{18 – E}$$

Assume Aggregate in an isolated place. Gravitational potential $\phi_{\text{ext}}(\alpha)$ produced at Ensemble level is produced by Aggregate and $\phi_{\text{ext}}^{\delta\gamma}(\alpha) = 0$ as Aggregate is in a isolated place.

$$\phi_{\text{tot}}^{\delta\gamma}(\alpha) = \phi_{\text{ext}}^{\delta\gamma} - \sum_{\beta=1,\alpha\neq\beta}^{N^{\delta\gamma}} \frac{Gm_\beta^{\delta\gamma}}{|x^{\delta\gamma\beta} - x^{\delta\gamma\alpha}|}. \tag{22}$$

Therefore

$$\phi_{\text{tot}}^{\delta\gamma}(aggregate) = \phi_{\text{ext}}^{\gamma}(ensemble) = -\sum_{\beta=1,\alpha\neq\beta}^{N^{\delta\gamma}} \frac{Gm_\beta^{\delta\gamma}}{|x^{\delta\gamma\beta} - x^{\delta\gamma\alpha}|}. \tag{23}$$

and

$$\phi_{jk}^{\gamma} = \sum_{\alpha=1}^{N^\gamma} \nabla\phi_{\text{ext}}^{\delta}\, m_\alpha x_j^{\delta\alpha} + \sum_{\alpha=1}^{N} \nabla\phi_{\text{ext}}^{\delta}\, m_\alpha x_k^{\delta\alpha}. \tag{24}$$

**Total AGGREGATE Equations :(Aggregate consists of many Ensembles and systems)**

Assuming these forces are conservative, we can find the resultant force by adding separate forces vectorially from equations (20) and (23).

$$\phi_{\text{ext}}(\alpha) = -\sum_{\beta=1,\alpha\neq\beta}^{N^\gamma} \frac{Gm_\beta^{\gamma}}{|x^{\gamma\beta} - x^{\gamma\alpha}|} - \sum_{\beta=1,\alpha\neq\beta}^{N^{\delta\gamma}} \frac{Gm_\beta^{\delta\gamma}}{|x^{\delta\gamma\beta} - x^{\delta\gamma\alpha}|}. \tag{25}$$

This concept can be extended to still higher levels in a similar way.

**Corollary 1.**

$$\frac{d^2 I_{jk}}{dt^2} = W_{jk} + 2K_{jk} - 2\phi_{jk}. \tag{13}$$

The above equation becomes scalar Virial theorem in the absence of external field, that is $\phi = 0$ and in steady state, i.e.

$$\frac{d^2 I_{jk}}{dt^2} = 0, \tag{27}$$

$$2K + W = 0. \tag{28}$$

But when the N-bodies are moving under the influence of mutual gravitation without external field then only the above equation (28) is applicable.

**Corollary 2.**

Ensemble achieved a steady state, i.e.

$$\frac{d^2 I^{\gamma}_{jk}}{dt^2} = 0, \tag{29}$$

$$W^{\gamma}_{jk} + 2K^{\gamma}_{jk} = 2\phi^{\gamma}_{jk}. \tag{30}$$

This $\phi_{jk}$ external field produced at system level. Ensemble achieved a steady state; means system also reached steady state. i.e.

$$\frac{d^2 I_{jk}}{dt^2} = 0, \tag{27}$$

$$\Rightarrow \qquad W_{jk} + 2K_{jk} = 2\phi^{\gamma}_{jk}. \tag{31}$$

**Explanations of above concepts as given in abstract**

**1. Mathematical Prediction of Existence of Blue shifted Galaxies** announced in 2004 in Dynamic Universe Model came true. Dynamic Universe Model simulations predicted the existence of the large number of Blue shifted Galaxies in 2004 itself, i.e. more than about 35 $\sim$ 40 numbers known at the time of Astronomer Hubble in 1930s. It was confirmed by Hubble Space Telescope (HST) observations in the year 2009. Today the known number of Blue shifted Galaxies is more than 7000 scattered all over the sky and the number is increasing day by day. In addition Quasars, UV Galaxies, X-ray, $\gamma-$ Ray sources and other Blue Galaxies etc., are also Blue shifted Galaxies. Out of a 930,000 Galaxy spectra in the SDSS [7] database, 40% are images for Galaxies; that gives to 558,000 Galaxies. There are 120,000 Quasars, 50,000 brotherhood (X-ray, $\gamma-$ray, Blue Galaxies take out full data for full claim) of quasars, 7000 blue shifted galaxies. That is more than 31.7% of available Galaxy count are Blue shifted. Just to support Bigbang theory, we are neglecting such a huge amount Blue shifted Galaxies. It appears it is a Godly Devotion to Bigbang cosmologies!

A paper titled 'No big bang and general relativity: Proves DUMAS (dynamic universe model of cosmology a computer simulation)' with CODE: DSR894 was submitted to JOURNAL: "Physical Review D (D15)" on 24 May, 04.

The actual ratio of Red shifted to Blue shifted Galaxies will depend on

1. Universal Gravitational Force acting on each Galaxy at that instant of time,
2. The position of the observer in the Universe
3. The actual point mass distribution in three dimensions at that instant of time. This ratio can never be 50:50. Full details are available in the author's book 'Dynamic Universe Model: Blue Shifted Galaxies Prediction Published (ISBN 978-3-8484-1382-9)' [4].

## 2. Explaining Large variation in the Gravitational bending results of VLBI.

In this, the effect of Universal Gravitational Force is calculated on a Radio Photon by using a singularity free and collision free N-body problem solution called Dynamic Universe Model. Here the capabilities of this Dynamic Universe Model are extended into micro world i.e. to light photons and Radio wavelength photons and Neutrinos etc. By doing so a real world Very long baseline interferometry (VLBI) observations are explained. The VLBI techniques give gravitational bending results in a wide range of values. Now Dynamic Universe Model explains reason for such variation. The basic difference is that where present day Physics considers gravitation effects of only Sun or the main gravitating body only, the Dynamic Universe Model considers Gravitational effect of Sun, Planets, Globular clusters, Milky-way, Local systems etc., and finds the Universal gravitational force vector at that instant of time for that configuration of the Universe.

The present day Physics considers gravitation effects of only the main gravitating body, whereas Dynamic Universe Model considers the Gravitational effect of Sun, Planets, Globular clusters, Milky-way, Local systems etc., and finds the Universal gravitational force vector at that instant of time, for that configuration of the Universe.

*Can the gravitational effect of Universe be neglected near Sun? Tide caused by Sun and Moon in oceans - We observe high tide and low tide in the mornings and evenings, or on full-moon-day and no-moon-day. These tides are caused by gravitation of Sun and Moon only. So we can not neglect gravitation effect of Sun and Moon on Earth. For better accuracies we have to consider planets also.*

*Large variation in the Gravitational bending results of VLBI: Very long baseline interferometry (VLBI), in the field of Radio astronomical observations of quasars, Galaxies etc. This variation is clearly visible when the solar gravitational bending/deflection angle is plotted against Solar Elongation angle.*

Shapiro et al., 2004 [15]: 'Measurement of Solar Gravitational Deflection of VLBI data of Radio waves'. Their data set consists of measurements, each of 24-hour session observations ("experiments"), totalling about 2500, spanning over the years 1979-1999 (for 87 VLBI sites and 541 radio sources). Differences between global estimates of $\gamma$ in fig 3 .... clearly indicates the variation in the Gravitational bending angle of radio waves.

Ojars J. Sovers et al (1997) [16]: also mentioned in their results about such variation. They gave a detailed description of different experiments, a good history and the experiments that gave higher accuracies for angular positioning, for point-like extragalactic radio sources at the sub-milliarcsecond (nanoradian) level.

E. Fomalont et al in Apr 2009 [17]: observed position changes with respect to session and Frequency in their paper. These due to Universal Gravitational force

**3. SN1987A- Neutrino emission** from supernova before the star bursts' is an important discovery, when viewed from 'Dynamic universe model of cosmology' point of view. In OMEG05, we have successfully presented the reasons for calculation error called 'missing mass' in an inhomogeneous, anisotropic and multi-body Dynamic universe Model, where this error is not occurring. But there are some new voices that say about generation of some flavors of neutrinos during Bigbang. We find from SN1987A Neutrino generation covers all flavors. Remaining flavors of Neutrinos are generated from sun and stars. This covers the whole spectrum. This paper covers all these aspects.

## 4. The first Redshifted Quasar 3C273 is blue shifted.

The author Schmidt in 1963 published the first paper on a quasar declaring it as red shifted [1]. He said:

*"Spectra of the star were taken with the prime-focus spectrograph at the 200-in. telescope with dispersions of 400 and 190 Å per mm. They show a number of broad emission features on a rather* **blue continuum**. *The most prominent features, which have widths around 50 Å, are, in order of strength, at 5632,*

*3239, 5792, 5032 Å. These and other weaker emission bands are listed in the first column of Table 1."*

He concluded that this quasi stellar object now well known as Quasar. It is the nuclear region of a galaxy with a cosmological red-shift of 0.158, corresponding to an apparent velocity of 47,400 km/sec. The distance would be around 500 megaparsecs, and the diameter of the nuclear region would have to be less than 1 kiloparsec.

**The First Redshifted Quasar 3C273 is that Blue shifted?**

The Table 1 shown below embeds the table 1 of Dr Schmidt in the first 4 columns. The remaining columns show how the quasar is blue shifted for the same wavelengths. I.e., the same wave lengths of his observations were used in this paper to show this same quasar 3C273 is Blue shifted. To support further on this, the spectrum observations made by other three more authors were also discussed in this paper. The checking of the first Redshifted Quasar 3C273 for a possibility of blue shift was tried mainly because of the observation of Dr. Schmidt saying this Quasars 3C273's spectrum is in the "blue continuum" [1]. The Quasars are known for some of the irregularities in the spectrum like some spectral lines match exactly with the some elemental lines with some blue / redshift ratio while some other prominent lines don't match for the same ratio.

Basically many astronomers in their published papers said that sodium line, Carbon line CIV etc., are blue shifts other lines. There are observed variation in quasars in the lines w.r.t other lines in the known spectrums. If the quasars are taken as blue shifted such variation will be very very less or even cease to exist. To explain such phenomenon Bigbang based cosmologists take the help of million light years length of sodium with a velocity of jet at 50000000 meters/second in the case of this 3C273. How such length of sodium can exist I don't know.

Many of these papers talk about such blue shifts. These references can be found at ADS. For this, go to ADS search page try searching title and abstract with keywords "Blue shifted quasars". If you search with "and's i.e., 'Blue and Shifted and Galaxies" [use "and" option not with "or" option] you will find 248 papers in ADS search. I did not go through all of them. Some of the papers will be discussed here later in this paper.

In the Table 1, in addition to the original values given by Dr. M. Schmidt, four new columns were added. These columns show the possible blue shift of

'(- 0.143122)' of the Quasar 3C273 and the resulting wavelengths after the blue shift. SDSS [7] website gives different possible wavelengths in angstrom units in their webpage on 'Algorithms - Emission and absorption line fitting' [14]. These wavelengths were chosen as they will be more authentic and accurate. Please note there are some slight differences in the numerical values in wavelengths as given by Schmidt and SDSS [7] webpage.

| Table 1. Wave-lengths and Identifications as given by Dr. M. Schmidt | | | | Table 1: Observations in this paper | | | |
|---|---|---|---|---|---|---|---|
| $\lambda$ | $\lambda/1.158$ | $\lambda_0$ | | $\lambda/0.856878$ | | $\lambda_0$ from SDSS | |
| 3239 | 2797 | 2798 | Mg II | 3780.00 | H_theta+19 | 3799 | |
| 4595 | 3968 | 3970 | Hg | 5362.49 | Mg+186 | 5177 | Note 1 |
| 4753 | 4104 | 4102 | H$\delta$ | 5546.88 | Mg+370 | 5177 | Note 1 |
| 5032 | 4345 | 4340 | H$\gamma$ | 5872.48 | Na-23 | 5895 | |
| 5200-5415 | 4490-4675 | | | 6068-6319 | Na-OI Na-OI | | |
| 5632 | 4864 | 4861 | H$\beta$ | 6572.70 | H_alpha+8 | 6565 | |
| 5792 | 5002 | 5007 | [O III] | 6759.42 | SII+27 | 6732 | |
| 6005-6190 | 5186-5345 | | | 7008-7223 | blue continuum | | |
| 6400-6510 | 5527-5622 | | | 7468-7597 | blue continuum | | |

Note 1: Later measurements of this QUASAR 3C273 at wavelengths 4595 and 4793 show dips or flatter curves instead of peaks (absorption spectra instead of emission spectra).

## 5. The most distant Quasar eso1122 found to have a Blue Shift of 0.110473 (Supporting Existence of Blue Shifted Galaxies)

### 5.4.1. Introduction

The most distant Quasar eso1122 (ULAS □ J112001.48+064124.3) with a comoving distance of 28.85 billion light-years and the first quasar discovered beyond a redshift of 7 is blue shifted. Here we will see how this Quasar is Blueshifted by 0.110473. [12,13]

### 5.4.2. Calculations for Quasar eso1122

A telescope that operates at infrared wavelengths, which is at longer wavelength and lower energy than visible light, discovered the quasar ULAS J1120 + 0641. The UKIRT Infrared Deep Sky Survey (UKIDSS), using the UK Infrared Telescope located in Hawaii, revealed this Quasar eso1122. I am not going into the technical and news details of this very much popular and well-publicized Quasar eso1122. Some good amount of technical details is available in Wikipedia [1]. News and announcements are available at ref [12]. Chris Willott, in Nature, gave a good technical paper in 2011 see ref[13]. The frequency spectrum and additional news can be seen from Gemini observatory. The absence of significant emission blueward of a sharp break at $\lambda = 0.98\mu m$ confirmed ULAS J1120+0641 as a quasar with a preliminary redshift of $z = 7 : 08$ by the mainstream physics.

In the following table on Quasar eso1122, there are two parts. In the first part, the first column shows the observed wavelengths in the published spectrum of the quasar. The second (Middle) column shows the calculated wavelengths after a ratio 8.052. The nearest of atomic spectra lines that can be identified are given in the third column for the wavelengths in the second column.

| Quasar eso1122 (ULAS J112001.48+064124.3) | | |
|---|---|---|
| Published Red shift | | |
| Observed wavelength (Å) | Wavelength at ratio = 8.052 (Å) | Nearest line name |
| 9788.57484 | 1215.67 | Ly alpha |
| 9991.00212 | 1240.81 | N V |
| 11271.1896 | 1399.8 | Si IV+O IV] |
| 12476.41296 | 1549.48 | C IV |
| 14955.7848 | 1857.4 | Al III |
| 15368.8524 | 1908.7 | Si III]+C III] |
| 22535.1324 | 2798.7 | Mg II |
| | | Inverse |
| | | Blue shift |

In the second part of the table, the calculated blue shifts are shown. These lines are taken from NIST database. We can see from the table that these lines give a better fitment, than the published redshift of the quasar. The forth column gives the wave length after a ratio 1.124193 in angstrom units. Ion wavelength names and their actual Ritz wavelengths are shown in the next two columns. The last three columns are given here for reference purposes only. They show the upper and lower confidence level of spdf atomic distribution.

| Quasar eso1122 (ULAS J112001.48+064124.3) | | | | | |
|---|---|---|---|---|---|
| Calculated blue shift in this paper http://physics.nist.gov/PhysRefData/ASD/lines_form.html | | | | | |
| Wavelength at ratio = 1.124193 (Å) | Ion | Ritz Wave-length Air (Å) | Lower Level Conf., Term, J | Upper Level Conf., Term, J | TP Ref. |
| 11004.24484 | O IV | 11 002.9 | 2s2p(3P$^o$)4p | 2s2p(3P$^o$)4d | T5109LS |
| 11231.81212 | O III | 11 235.44 | 2s22p(2P$^o$)4p | 2s22p(2P$^o$)4d | T5376LS |
| 12670.9896 | Si III | 12 667.67 | 3s6g | 3s7f | T6298c4 |
| 14025.89296 | Si I | 14 026.476 | 3s23p3d | 3s23p5p | T6066LS |
| 16813.1848 | N I | 16 813.815 | 2s22p2(3P)4p | 2s22p2(3P)5d | u18,LS |
| 17277.5524 | Mg XI | 17 359 | 1s5s | 1s5p | T5231c4,LS |
| 25333.8324 | Si II | 25 299 | 3s26p | 3s27s | T6527c4,LS |
| 0.889527176 | | | | | |
| 0.110472824 | | | | | |

In the last two rows in the table the value of inverse is shown which is (1/ 1.124192747 = 0.889527176) [Note: incidentally 1/0.124192747=8.052] and the value of Blue shift for the quasar is (1- 0.889527176 = 0.110472824). Hence, we can say the Quasar eso1122 is Blue shifted by 0.110473. Here I tried with the concept that all the frequencies are Blueshifted in the observed spectrum compared with any part of full electromagnetic spectrum instead of just some particular wavelength lines.

## Discussion

For any further correspondence or for discussion with author regarding availability of his books or papers, anybody may please contact him at 'snp.gupta @gmail.com' or see his Blog 'http://vaksdynamicuniversemodel.blogspot.in/'.

## Conclusion

New Tensor math called Dynamic universe model has many applications. Many unexplained phenomena are explained with this single formulism. Additionally two predictions of Dynamic Universe model came true. They are 'Existence of Blue Shifted Galaxies' and 'No Dark matter'. The first one 'Existence of Blue Shifted Galaxies' predicted in 2003, supporting evidence was found by Hubble space telescope in 2009. Here we show more supporting evidence by showing two quasars 3C273 (The First quasar) and ESO 1122 (the most distant quasar) are blue shifted. similar exercise can be done for the other quasars also. For the 'Dark matter' case, the LUX: Large Underground Xenon experiment and the detector attached to the International Space Station DID NOT detect any 'Dark matter' till the end of OCT 2013 after a year of searching.

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