Space, and the Redshift Effect

5th November 2019.

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Abstract: Following on from the previous series of papers regarding the golden ratio algorithm for time [1-12], more specifically papers 11 [11] and 12 [12] in continuing with the explanation of the redshift effect, the idea of cosmology is measured with a new understanding of the redshift effect according to the golden ratio time-algorithm, namely the general description of the universe of stars according to the new appreciation of the redshift effect. To address this, first the idea of cosmology is introduced and what cosmology in contemporary terms seeks to deliver, and how such theories of cosmology have been arrived at. Secondly, the current problems in cosmology are discussed, namely any absences of theory that are required to explain observed data, and any absences of data that are unable to account for current theoretical models. Thirdly, a key flaw in modern cosmology central to the redshift effect is highlighted that appears to lead to all known cosmological and astronomical discrepancies faced by cosmology and astrophysics. Fourthly, a solution to this issue is proposed in line with the previous series of papers [1-12], namely the golden ratio time-algorithm as a new understanding of the redshift effect. Then, a new cosmological model is forwarded, after which anthropological evidence for this new cosmological model is presented. The standard for the cosmological model being presented in this paper is a standard that uses "all" astrophysical data with a cosmological theory that is complete, entertaining "no" assumption or "fixes" that have no astrophysical data.

Keywords: time; space; golden ratio; redshift; cosmology; stars; astronomical; dark matter; dark energy; metric expansion of space; doppler; big bang; Lambda-CDM; CMBR; inertia; gravity; quantum mechanics; standard model; electromagnetism; general relativity; light; uncertainty principle; quantum entanglement; galaxies; exoplanets; supernovae; Kuiper belt; Oort cloud; Planck; anthropology

1.   INTRODUCTION

Following on from the previous series of papers regarding the golden ratio algorithm for time [1-12], more specifically papers 11 [11] and 12 [12] in continuing with the explanation of the redshift effect, the idea of cosmology is measured with a new understanding of the redshift effect according to the golden ratio time-algorithm, namely the general description of the universe of stars according to the new appreciation of the redshift effect. To address this, first the idea of cosmology is introduced and what cosmology in contemporary terms seeks to deliver, and how such theories of cosmology have been arrived at. Secondly, the current problems in cosmology are discussed, namely any absences of theory that are required to explain observed data, and any absences of data that are unable to account for current theoretical models. Thirdly, a key flaw in modern cosmology central to the redshift effect is highlighted that appears to lead to all known cosmological and astronomical discrepancies faced by cosmology and astrophysics. Fourthly, a solution to this issue is proposed in line with the previous series of papers [1-12], namely the golden ratio time-algorithm as a new understanding of the redshift effect. Then, a new cosmological model is forwarded, after which anthropological evidence for this new cosmological model is presented. The paper is structured as such:

1. Introduction.
2. Principles of cosmology.
3. Problems with cosmology.
4. Determining the "general" problem.
5. Space, and the redshift effect.
6. Golden ratio cosmology.
7. Cosmic anthropology.
8. Conclusion.

It needs to be highlighted that "***any***" theoretical device explaining astral phenomena (in having the idea of "cosmology" as the centrepiece of astronomical observation), can only be that, namely a theoretical device; ultimately, science can only "choose" cosmological theory in the absence of our ability as a species to physically fly out to the stars, despite the EM transmission we receive as star-images. How should cosmology theories and models therefore be judged? The standard for the cosmological model being presented in this paper is a standard that uses "all" astrophysical data with a cosmological theory that is ***complete***, that entertains "no" assumption or "fixes" that have no astrophysical data. Nonetheless, the cosmological model presented here is still a **possibility** given the unreachability of the stars, unless of course there is convincing evidence regarding our behaviour as a species, an anthropological trait, that confirms such a cosmological model. Conversely, the idea for instance of "dark matter" and "dark energy" is "popular"; its mysterious, it designs a quest of research, it provides a sense of the unknown, even if it's an absolute fabrication of theory. Understandably, if it weren't for the forwarded ideas of dark matter and dark energy, there would be nothing to ***test*** "*rigorously*", even if the ideas of dark matter and dark energy are fictitious compared to our own local reality, as they have nonetheless been useful tools for scientific discussion. Nonetheless, the proposed model of cosmology in this paper shall avoid all the fictitious ingredients of contemporary cosmology theory, ingredients that do not exist "locally", refraining from using those particles and associated laws of physics that are considered to exist in the universe yet do not exist in this solar system, otherwise cosmology could be anything.

2.   PRINCIPLES OF COSMOLOGY

Cosmology is a branch of astronomy focussing on the nature of the universe. According to contemporary definitions, it is the scientific study of the origin, evolution, and eventual fate of the universe in the context of the theorised big bang, and thus a study of the scientific laws involved in 'that" proposed process. Different branches of cosmology range from physical cosmology to religious/mythological cosmology, the former dealing with the physical origins and evolution of the universe, the latter focussing on the "beliefs" central to "creation myths" and divine beings. Cosmology differs from astronomy in that cosmology investigates the Universe as a whole while astronomy investigates individual celestial objects. Modern physical cosmology is based on the Big Bang theory, which as a theory attempts to bring together observational astronomy and particle physics, currently requiring the use of the unproven ingredients of dark matter [13] and dark energy [14], altogether known as the Lambda-CDM model. Physics and astrophysics thus have played a central role in shaping the understanding of the universe through scientific observation and experiment, shaped through both mathematics and observation in an analysis of the whole universe as though each star represents a unique solar source like our own sun. The emphasis here in this paper will be on physical cosmology.

2.1   PHYSICAL COSMOLOGY

Physical cosmology is the branch of physics and astrophysics that deals with the study of the physical origins and evolution of the Universe and the nature of the large-scale Universe. Greek philosophers Aristarchus of Samos, Aristotle, and Ptolemy all proposed unique cosmological theories, although the geocentric Ptolemaic system prevailed until the 16th century when Nicolaus Copernicus, together with thereafter Johannes Kepler and Galileo Galilei, proposed the heliocentric system. In alliance with this cosmological model of Kepler, Isaac Newton with his Principia Mathematica based on celestial observations derived the law of universal gravitation, providing a physical mechanism for Kepler's laws while fixing previous issues of cosmological inquiry. A fundamental difference between Newton's cosmology and those preceding it was the Copernican principle, namely that the bodies on earth obey the same physical laws as all the celestial bodies, notably the planets. Giordano Bruno was the first to propose each point of starlight could be a distant sun, while insisting therefore that the universe is infinite and thus could have no "center", a philosophical position known as *cosmic pluralism.*

Modern scientific cosmology is usually considered to have begun in 1917 with Albert Einstein's publication of his final modification of general relativity in the paper "*Cosmological Considerations of the General Theory of Relativity*" to describe the behavior of the redshift effect regarding the light from galaxies. Consequently, physicists adopted a dynamic universal model; in 1922 Alexander Friedmann presented the *expanding universe* idea that presumed space to be expanding with matter. Subsequent modelling of this idea lead to the Big Bang model, proposed by Georges Lemaître in 1927, as supported by Edwin Hubble's discovery of the redshift in 1929 and later by the discovery of the cosmic microwave background radiation by Arno Penzias and Robert Woodrow Wilson in 1964. In all, these findings were considered enough to rule out competing models in successfully confirming the CMBR and redshift in stars with associated astronomical observations according to that proposed Big Bang model. As such, current physical cosmology holds that the universe is such a collection of unique solar systems who's collective life began with the Big Bang, followed almost instantaneously by cosmic inflation; an expansion of space from which the universe of stars is thought to have emerged 13.799 ± 0.021 billion years ago. As such, astronomical data considers the stars and all associated images to represent unique solar system realities, most commonly bunched

together in spiral clusters called galaxies, gravitationally bound systems of stars, stellar remnants, interstellar gas, dust, and allegedly dark matter. "Dark matter" though is still something of science fiction in our local reality here in this solar system, as there is still no evidence locally in this solar system for its existence. Galaxies nonetheless are considered to range in size from dwarfs with just a few hundred million stars to giants with one hundred trillion stars, each orbiting its galaxy's center of mass, commonly considered to be a black hole as the source of such an immense gravitational pull. With each star in each galaxy are considered to be "planets", "exoplanets", simply owing to the perceived "wobble" of the star suggesting the existence of another body displacing the normal centre of position of the star in question.

2.2   THE COSMOLOGICAL PRINCIPLE

Much like the "Copernican principle", the cosmological principle is the firmly held notion that the spatial distribution of matter in the universe is homogeneous and isotropic when viewed on a large enough scale, the thinking here being that known local forces are expected to act uniformly throughout the universe, and thus are expected **not** to deliver observable **irregularities** in the large-scale structuring through time of the matter field that was initially laid down by the proposed Big Bang model compared to our local laws. It's a simple way of acknowledging that the only fair way the universe can be measured is if the local scientific laws in this solar system are applied uniformly, namely that the universe is consistent and can be measured consistently. The general conclusion thus is that although celestial bodies have different qualities and processes of those qualities, as much as the earth is different to the sun, the basic laws of physics understood locally (in this solar system) are not violated between the celestial objects. The key assumption of modern cosmology therefore is that the cosmos is homogenous and isotropic, yet the idea of the redshift effect, put down to a proposed "metric expansion of space", does appear to violate our local laws of physics given there is no apparent metric expansion of space in our local (solar system) reality. Thus, if the explanation of the redshift is wrong, if the metric expansion of space is a fallacious proposal, then contemporary cosmology theory is in ruin.

2.3   REDSHIFT EFFECT

In physics, the *redshift effect* is a phenomenon detailing the state of electromagnetic radiation (such as light) from an object that has undergone an increase in wavelength; simply, *redshift* is an increase in wavelength and thus an associated decrease in wave frequency. Conversely, the opposite of a *redshift* is a *blueshift*, where wavelengths shorten and frequency increases.

Cosmology considers there to be three main causes of redshifts:

1. Objects are moving further apart from each other in space, as per the *Doppler* effect.

2. Space itself expanding, known as the *metric expansion of space* [15], causing objects to become more distant without changing their more local positions in space. As this is a unique phenomenon, it is known as the *cosmological redshift*. All sufficiently distant light sources (generally more than a few million light years away) show redshift corresponding to the rate of increase in their distance from Earth, known as Hubble's Law, presumably due to this metric expansion of space.

3. *Gravitational redshift* as a relativistic observed effect is considered to be due to strong gravitational fields that distort spacetime in presumably exerting a force on light and other particles.

There exist other physical processes that can lead to a shift in the frequency of electromagnetic radiation, including *scattering* and *optical effects*, yet the "metric expansion of space" (a condition **not** known locally in this solar system) forms the basis of the "big bang theory". If there were something else responsible for the redshift effect, something as simple as the natural process of light losing energy as it travels through space as a spherical wavefront, as highlighted in paper 11 ([11]: p12), then big bang cosmology and the metric expansion of space would fall apart as a theory. Is there any evidence for any such cracks in current cosmology theory to suggest that the current model is flawed?

3   PROBLEMS WITH COSMOLOGY

The previous section alluded to one key flaw in modern cosmology, namely that the "use" of the "metric expansion of space" principle defies the cosmological principle, as it is not an apparent feature of this local reality (solar system). There have been ways to fix this though; "*general relativity (GR) theory*" which prescribes that galaxies themselves are immune to the metric expansion of space within their own confines, suggests that the metric expansion only happens between galaxies. GR thus is still nonetheless an unproven "fix", as it cannot explain anything that happens locally that can be demonstrated other than suggesting, "there is no metric expansion here locally, yet there is elsewhere, and this is why", which is quite a trick of words. It's like saying, "although there is no dark matter locally, it does exist elsewhere, and it's dark because we can't see it". Yet what are some of the "specific" theoretical problems (with associated observational errors) with what has become contemporary cosmology theory?

3.1   *Time and Space*:

    3.1.1   *Time v spacetime*: In quantum mechanics time is universal and absolute, yet in general relativity time is one component of four-dimensional spacetime whereby the flow of time changes depending on the curvature of spacetime and the spacetime trajectory of the observer; this difference leads to theoretical discrepancies regarding the behaviour of light in the execution of these competing models.

3.2   *Light*:

    3.2.1   *Standard model v relativity theory*: the standard model has trouble in explaining the wave nature of light resulting in an ad-hoc interpretation of phenomena beyond the mere redshift of stars.

    3.2.2   *Diffuse interstellar bands* [16]: what is responsible for the numerous interstellar absorption lines detected in astronomical spectra?

    3.2.3   *Supernovae*: What is the exact mechanism by which an implosion of a dying star becomes an explosion as per "supernovae"?

    3.2.4   *High energy cosmic rays*: How do some cosmic rays appear to possess energies that are impossibly high, given that there are no sufficiently energetic cosmic ray sources near the Earth? Is there a type of magnification in play?

    3.2.5   *Magnetar magnetic field:* What is the origin of the magnetar [17] magnetic field?

3.3 *Mass*:

    3.3.1 *Dark matter*: the need to use "dark matter", a substance that does not exist in our local reality, to explain how galaxies are kept together in the context of the metric expansion of space.

    3.3.2 *Galaxy rotation problem*: is dark matter responsible for differences in observed and theoretical speed of stars revolving around the centre of galaxies, or is it something else?

3.4 *Energy*:

    3.4.1 *Dark energy*: The need for dark energy to explain the observed accelerated expansion of the universe based on redshift calculations of galaxies, namely that the further galaxies are away the more redshift in play, a "missing" energy, an unaccounted for energy, that requires an "extreme" amount of energy to fit the equations, to the factor of 10^{123}.

3.5 *Shape*:

    3.5.1 *Axis of evil*: Some large features of the microwave sky at distances of over 13 billion light years appear to be aligned with both the motion and orientation of the solar system (known as the "Axis of evil" [18], putting the solar system apparently at the centre of the universe.

    3.5.2 *Sizing issues*: The largest structures in the universe are larger than expected, as current cosmological models say there should be very little structure on scales larger than a few hundred million light years across, due to the expansion of the universe outweighing the effect of gravity. Is perhaps light being magnified?

    3.5.3 *Kuiper cliff* : why does the number of objects in the Solar System's Kuiper belt [19] fall off rapidly beyond a radius of 50 astronomical units?

There are many more problems associated to the above, likewise issues that do not juxtapose well with the current cosmological model, to the point that no one theory in the current cosmological model sits well with all other phenomena, not to mention that dark matter is unknown, dark energy is unknown, that metric inflation is a general albeit specific process while holding a vast swathe of specific phenomena that betrays the basic premise of metric expansion (including general relativity), which makes it perplexing how a myriad of bespoke theories can be all used together as though a part of the one cosmic model when they all represent a different purpose other than used in the context of a "fix" with the aim of upholding the idea of the redshift being due to a metric expansion of space. Simply, the problems of cosmology theory are broad and specific enough to be of concern, as they encompass a wide swathe of principles in physics that even appear to challenge the nature of the stars being in fact real, especially in considering that there is no local evidence for the metric expansion of space, and that the standard model and general relativity fail to see eye to eye regarding the nature of light, together with the idea of the "axis of evil" which suggests that the solar system is the centre of what could be an "apparition" of stars "beyond" the "Kuiper cliff" given the stars themselves as a phenomena (and their association to each other) each appear to be grossly magnified regarding their behaviour and association to each other to a scale that is nothing short of bewildering.

4   DETERMINING THE "GENERAL" PROBLEM

According to contemporary cosmology theory, the redshift effect explained per the metric expansion of space leads to the conclusion that reality would have come into existence via an explosion, an explosion which it

seems is continuing at an accelerating rate, as evident by the redshift effect when viewing the most distant stars, while presuming the scaling of the measurement of time and space is continuous. That's the nutshell of cosmology, namely reality started from virtually nothing, then there was an explosion that brought reality into being (time and space and matter), and it's still exploding as evident by the redshift of light perceived in the stars, the more distant stars being more distantly redshifted along our line-of-sight observation of these more distant points of light, and that the explanation of space furthest out in space exceeds the speed of light (superluminal space).

The general platform harbouring the current model of cosmology broadly encompasses two key issues:

(I)   The presumed metric expansion of space *cause*.

(II)   The presumed associated redshift *effect*.

One thing is real, and that is the redshift effect, ***yet is*** the "cause", the metric expansion of space, the real "cause"?

To answer this, the "***idea***" of the metric expansion of space needs closer inspection, namely how it became a used model descriptor, and here the issue lies with "relativity theory". This was explained in paper 8 ([8]: p4-8) and paper 12 ([12]: p5-10). There, the idea of "inertia" was localised as the key problem for relativity theory, namely the ability to stand outside of a system and seek how that natural state can be disturbed, and to then generate a science prescribing the "underline disturbance of a natural state" as a science of ***inertia***, which lead to the notion of "spacetime" per relativity theory. In paper 12 ([12]: p9) the idea of a snake chasing its tail was presented as a summary of relativity theory, namely how Einstein used a process of calculation that ***negated*** the initial process of "***line***" of sight and "***line***" of inertial influence to result in "***curved***" spacetime, like a snake chasing its tail; *"line of sight" logic upon the cause-effect vehicle of "line of sight" inertia while reaching conclusions that are no longer "line of sight" compatible*. Essentially, the conclusion GR and SR reaches regarding gravity and space and the effect of light thereof is that the initial premise of the "line" of sight of relativity using the "line" of sight of inertia is no longer valid owing to the result of the curvature of spacetime, and thus the theory of GR and SR is always incomplete, can only be, despite forming the basis for contemporary cosmology theory as per the utilisation of the metric expansion of space and how general relativity is exclusively used to explain how the phenomena of galaxies, of stars bunched as galaxies, as they appear, are allegedly held together; clearly, GR is a "fix", a well-worded one, to support a "metric expansion of space".

GR is not the real crime though, it's "inertia" theory. Imagine being asked to survey farmland by picking up each grain of dirt, each rock, small and large, and measuring its potential trajectory when thrown from one end of the field to the other at varying speeds and trajectories, with the aim of measuring the whole field through big-data dirt analysis of the doppler effect, how it is all held together, based on a theory of the collective *inertial* trajectories from Lorentz transformations and how gravity would "in the theory based on all those trajectories" keep the field together. That's cosmology using *inertia* theory with transformation equations. In inertial theory ***locally***, that's fine, yet as the theory becomes more involved with the field forces, it becomes apparent that "inertia" becomes insufficient as a "way" to explain mass and thus gravity, and thus the entire shape of the natural reality of stars, simply because an "ultimate" theory doesn't complement the idea of "changing" mass and its location (as per inertia) yet "abiding by" the more fundamental field forces at play.

The solution for cosmology is to remove the use of "inertia" as a tool of inquiry, and to then use another form of measuring, another process of measuring objects using time and space alone, objects in the context of time and space alone; if time and space can only be measured using something else other than what they are compared to each other, that "thing" would have to be unnatural, not of time or space, and thus a resistance to what is natural, and thus, as demonstrated, "inertia". To rectify this, the only solution is to have space be the measurement platform for time and time be the measurement platform for space, and thus avoid mixing the two ideas as "spacetime". This process of logic was presented in paper 8 ([8], p4-8) and paper 12 ([12]: p5-10) where the idea of space as a "nothing"

became the construct of an "immediate" field force, whereas conversely light became as the "constant" field force propagation of "c", paper 2 ([2]: p12-13). Applying this concept of space into paper 2 ([2]: p3-11) regarding the phi-quantum wave-function, as initially paper 1 ([1]: p12-15) regarding the Rydberg equation, it became apparent that the idea of the electron "shell" would be a "shell" by virtue of the electron particle potentially existing anywhere in a virtual spherical orientation from the nucleus of the atom, if not everywhere on that shell, as presented in paper 12 ([12]: p8). This would logically give rise to the idea of the spherical wavefront of light beyond the atom as an electron jumps from a higher energy shell to a lower energy shell. Simply put, light can only propagate outwards spherically from the atom at a speed of "c", as a wave through "0" space. This does not discount the idea of ionised particles that can be knocked from the atom seemingly in a reverse process, as per the photoelectric effect, yet light released from the atom would be a wave despite its source of propagation being a particle, namely a spherical wavefront of light that must obey certain protocols of energy maintenance via its propagation as a spherical wavefront. What are these protocols though?

To address this matter of the propagation of light, there are issues presented in paper 11 ([11]: p12) regarding the proposed nature of the redshift effect in line with a spherical propagation of light. For, in upholding the notion of the spherical advancement of light as a wave, as per figure 1, it becomes obvious that if the idea proposed in paper 11 ([11]: p12) of a natural redshift were upheld as a process of pure energy loss in the form of the redshift effect, there would be a **disproportionate** natural redshift of light, in that as the energy per surface area of an advancing wavefront becomes less the larger the surface area wavefront becomes, given energy must be conserved, and thus with a fall in energy there must be a fall in frequency, and thus increase in wavelength; the redshift effect, the "true" redshift effect would be quite large.
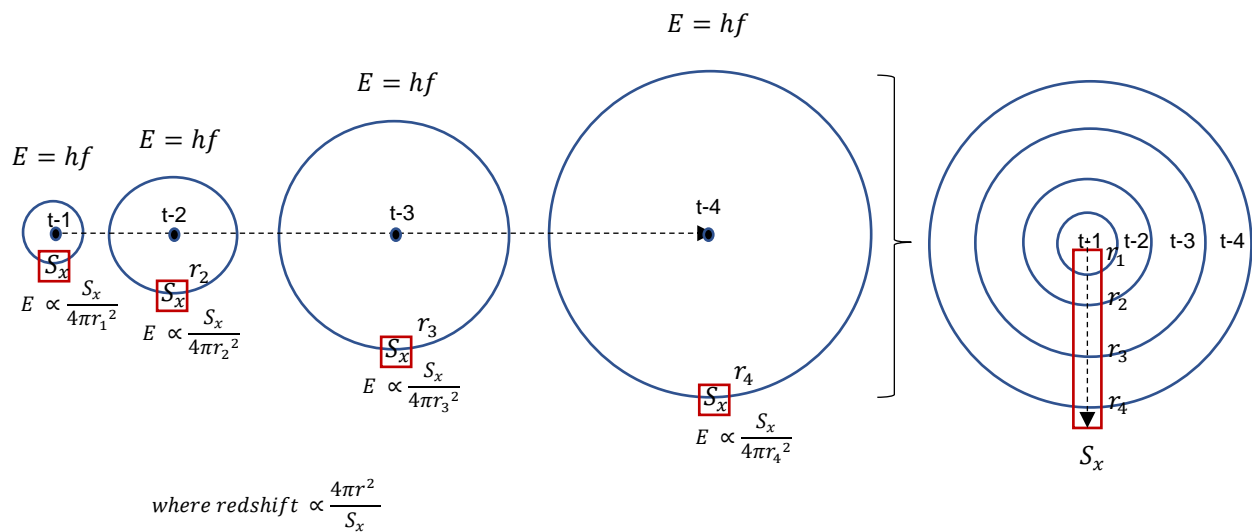

Figure 1: spherical wavefront of light as a constant $E = hf$ progression whereby as the surface area of the wavefront increases a constant region of surface area S_x on that advancing wavefront would represent a decreasing level of energy; the question is, "is this a part of the redshift effect, namely $E = hf$?".

To note is that **as** the spherical wavefront of light moves in time, **as** r_1 extends to r_2, to r_3, to r_4, the surface area of the wavefront would increase by a factor of $4\pi r_1{}^2$, $4\pi r_2{}^2$, $4\pi r_3{}^2$, and then $4\pi r_4{}^2$. Yet for a fixed surface area slit of light along channel aperture S_x, the light from t_1 to t_4 has undergone a decrease in energy, from $E \propto \frac{S_x}{4\pi r_1{}^2}$ to $E \propto \frac{S_x}{4\pi r_4{}^2}$, and this decrease in energy given $E = hf$ would "**presumably**" be constant for each spherical

progression, would need to incur a "decrease" in frequency, in f, for that S_x reference on the spherical wavefront. This presents an obvious problem though, in that a redshift of $z = 12$ would accord to the following equation:

$$\frac{4\pi r_2{}^2}{s_x} - \frac{4\pi r_1{}^2}{s_x} = 12 \tag{1}$$

If r_1 is set at the value of "1" as a basic standard, the equation then becomes:

$$4\pi r_2{}^2 - 4\pi = 12s_x \tag{2}$$

$$r_2{}^2 - 1 = \frac{3}{\pi} s_x \tag{3}$$

$$r_2 = \sqrt{\frac{3}{\pi} s_x + 1} \tag{4}$$

Obviously, the wavefunction of light beyond the atom would not need to move very far to r_2 if s_x is a very small number, as it needs to be, to incur a proposed redshift of "12". So clearly an important issue is missing from this process of reasoning, namely that $E = hf$ **does not deploy well** outside of the atomic reference, and so there must be a reason for that. The real question as observed data suggests is how the frequency and wavelength of light as a spherical front can be ***maintained*** over relatively large distances while still acknowledging the principle for light of $E = hf$ for the atomic reference, and still, as according to paper 11 ([11]: p12), allow for the redshift to effect itself through this process in a metered fashion as though "h" is variable as light propagates through space to keep the frequency and wavelength relatively constant. Clearly there is a principle in play that keeps light with a relatively fixed wavelength and frequency, to a point though it would seem, and what point, what level of redshift, would that be and why.

5   SPACE, AND THE REDSHIFT EFFECT

In being consistent with the theme of logic here, namely the golden ratio algorithm for time, and associated papers [1-12], the Planck equation for the atom was derived in paper 3 ([3]: p3):

Thus, the following equation would suit:

$$e_c \cdot f = E \cdot \left(\frac{c}{19.8}\right)^2 \tag{1}$$

Now, if we change the equation to look like this $E = e_c \left(\frac{19.8}{c}\right)^2 f$, then $e_c \left(\frac{19.8}{c}\right)^2$ is by our knowledge of the Planck equation $E = hf$ [8] the value for h. Is the value the same? The value $e_c \left(\frac{19.8}{c}\right)^2$ is $7.0163 \cdot 10^{-34} \, Cm^{-2}s^2$. This value is slightly higher than the value for h ($6.626 \cdot 10^{-34} \, Js$) as we didn't factor in the notion that 19.8 is a _held_ level within the atom, and when the "19.8" (21.8) standard is lifted from fine structure atomic axiom *forceps* between the electron and the proton, then the value should drop 0.5 points on the fine structure gradient to 19.3, the same value the $\frac{-1}{\varphi}$ was initially "out" in the initial modelling ([2]; p11, fig15). We now get a perfect result as $e_c \left(\frac{19.3}{c}\right)^2 = 6.626 \cdot 10^{-34} \, Cm^{-2}s^2$ albeit using a different set of dimensional variables. Thus, once again it can be confirmed that the Planck scale is considered inoperable as a scale, for we have found that the Planck scale is well below, much smaller, than the most fundamental level of the atomic and elementary particles. The problem it seems is that the Planck constant was too simple in being a sole constant in attempting to join the energy of a photon with its frequency.

To note is that the term "forceps" is used in the context of that described process and why that Planck scale analogue works on that level and only on that "atomic" level. Beyond the atom is therefore is a different process, as those "forceps" no longer apply for the propagation of light beyond the atomic scale. <u>What process *does* apply therefore?</u>

If it can be granted that the **atomic** scale is as $E = hf$ for light, then beyond that scale would exist a new scale for "h", logically a "*variable*" value of "h" all the way to a certain level. To *what* level though? According to the logic of the papers, to the level of $E = f$, where energy is equivalent to time, and in this case time as s^{-1}. Consider from "*Time as Energy*", paper 5 ([5]: p8-9):

There is still more significance to equations 10 and 11 from paper 4 [4]. We know that the emergence of time from the atom as t_B and t_A is an entropic process. We also know that $t_B{}^2 = t_A$. Thus, $t_A = \frac{21.8}{N_A}$ would hold true. Yet, we are proposing that the emergent feature of energy of t_A is carried by $\frac{1}{t_B^2}$, not $t_B{}^2$. If $\frac{1}{t_B^2}$ is energy release, entropy, $t_B{}^2$ as t_A could only represent the inverse, energy storage, enthalpy, such that $\frac{1}{t_B^2}$. $t_B{}^2 = 1$ (t_N), as what could only be a steady-state situation. Consider figure 2 (using Fig.1 template) that explains the enthalpic and entropic layers of the atom:
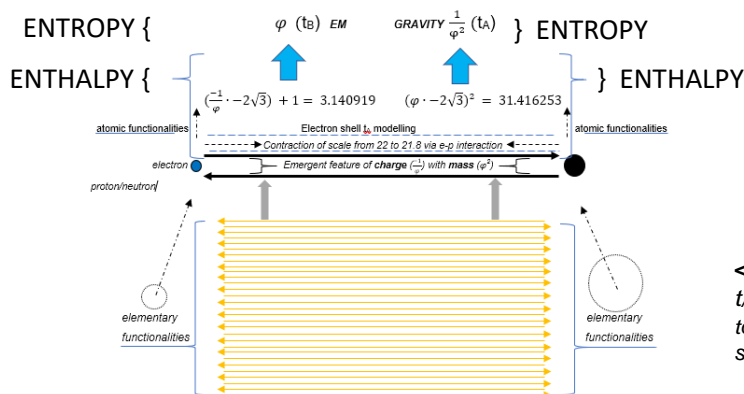
< PAPER 5[5] > Figure 2: *Note that $t_B{}^2$ as t_A would represent a feedback mechanism to the atom on this elementary particle scale.*

Generally, the emergence of time from the atom is entropic, as φ and $\frac{1}{\varphi^2}$ .Temperature as we know through experiment is a form of energy. There exists an equation $k = \frac{R}{N_A}$ where k is a physical constant relating the average kinetic energy of particles in a gas with the temperature of the gas, and where R is the gas constant [9]. If therefore k (joules per kelvin) $= \frac{8.3}{N_A}$, then $2.63\ k = \frac{21.8}{N_A}$. If we consider t_B here as an entropic process, we are considering time "before" as the emergent feature of energy. Thus, "2.63" would represent the value of kelvin of our theorised and calculated cosmic microwave background radiation (CMBR) where the energy measured in joules would represent t_A (time as energy). The experimentally measured value is ~2.7 kelvin (~2.5% error). Note that t_B is a past event and thus takes the characteristics of an "initial event", and in this case here as a form of quantised energy as t_B on the emergent entropic energy level of manifestation; we know the process here via this theory as a condition of time itself, not necessarily as the idea of an initial (past) explosion. Yet we must consider that in using t_B we must invoke a steady-state situation in considering t_A. Thus, this t_B process, to link with the condition of time as a t_A event, can only do so in providing for the enthalpic φ^2 level of the atom, which on the atomic level is a value of "*$12\varphi^2$*", and thus in one sense "*$12\varphi^2$*" could be required from t_B on the emergent energy (entropic) level to fulfil this steady-state event (figure 3, using fig.1 template).

Logically therefore, as light propagates through space, the ***ultimate*** feature to be reached would be $E = f$, as $E = \frac{1}{\varphi}$ (the electrical feature of the golden ratio equation for time) where $h = 1$. The paper *Phi-Quantum Wave-*

function Crystal Dynamics [4] was essentially a description of quantum mechanics and associated Standard Model as applied to the golden ratio equation for time. The suggestion here upon that basis is that quantum mechanics only applies to the atom, not the behaviour of light through space, as the idea here is that "h" needs to be "variable" beyond the atom. Let us therefore use the new Planck equation for light beyond the atom as follows:

$$E = h_x f \tag{5}$$

Here with equation 5, E is still the energy of light, yet "h" is no longer fixed, yet variable as h_x from the standard value of $h = 6.626 \cdot 10^{-34} \, Cm^{-2}s^2$ to a value of "1", as per beyond then atom and this as light through space. The question now therefore is, "*how far does light have to travel to have "h" become a value of "1"?*" We need simply apply the concept of the propagation of light according to a spherical wavefront, of $4\pi r^2$ (as per fig1) with the aim of finding a factor of that spherical wavelength that matches the Planck constant, h, as an inverse relationship, to incur $h_x = 1$, as per the following equation:

$$4\pi r^2 = \frac{1}{h} \tag{6}$$

And thus given $h = 6.626 \cdot 10^{-34} \, Cm^{-2}s^2$:

$$r = 1.1 \cdot 10^{16} \, m \tag{7}$$

Given an astronomical unit is $1.495\,978\,707 \times 10^{11} \, m,$ then:

$$r = 73{,}500 \, au \tag{8}$$

This equates to ~1.60 light years, which brings this end-zone phenomena right into the "Oort cloud" [20], a theoretical cloud of predominantly icy planetesimals proposed to surround the Sun at distances ranging from 2,000 to 200,000 au (0.03 to 3.2 light-years), thought to be divided into two regions, one a disc-shaped inner Oort cloud (or Hills cloud) and the other a spherical outer Oort cloud, both regions beyond the heliosphere, well-beyond the Kuiper belt (by a factor of 1000 compared to distance from the sun), into interstellar space. Consider the following diagram:
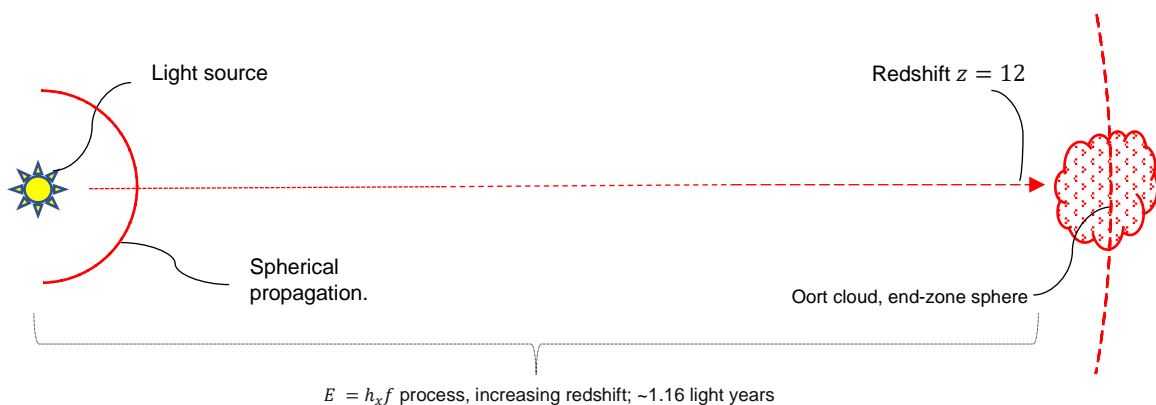

Figure 2: a universal scale from a source of light as the sun outwards in a spherical wavefront of light a distance of $h_x = 1$ according to equations 5-8; the proposal is that the limit as $h_x = 1$ represents a reflection point of light, an end-zone for matter, as the Oort cloud.

It would therefore seem there would be an ***absolute*** limit to how far light could travel, governed by $E = h_x f$ when h_x becomes "1". Associated to this would be the idea of the CMBR, the cosmic microwave background radiation, what was accounted for in the same paper ([5]: p9-10):

> With this steady-state model, we are suggesting that the CMBR and associated temperature represents a continual energy "creation"/emergence through time, but more to this, that this creation is associated to the gauge invariance we find in reaching the Avogadro number and associated mass-compression of the emergence of the phi-quantum wave-function. Thus, as time develops, the energy of a system gets less along with distance-squared, yet it does so in the vast context of a gauge fractal invariance (symmetry) of time seeking to perfect itself as π in producing the effect of energy itself, as the "atomic"-based CMBR. Thus, the question of "where does energy come from in the system" can now be answered; with the gauge invariance of time seeking to perfect itself as an ultimate **π**-wheel of time. Simply, along with decay there would be the emergence of energy as the CMBR. Ultimately the logical deduction is a steady state system. Figure 4, as an extension of figure 3, highlights this process.

< **PAPER 5 [5]** > **Figure 4**: φ^2 >>> $12\,\varphi^2, \varphi^2$ >>> $(\varphi \cdot -2\sqrt{3})^2$, a process of the CMBR.
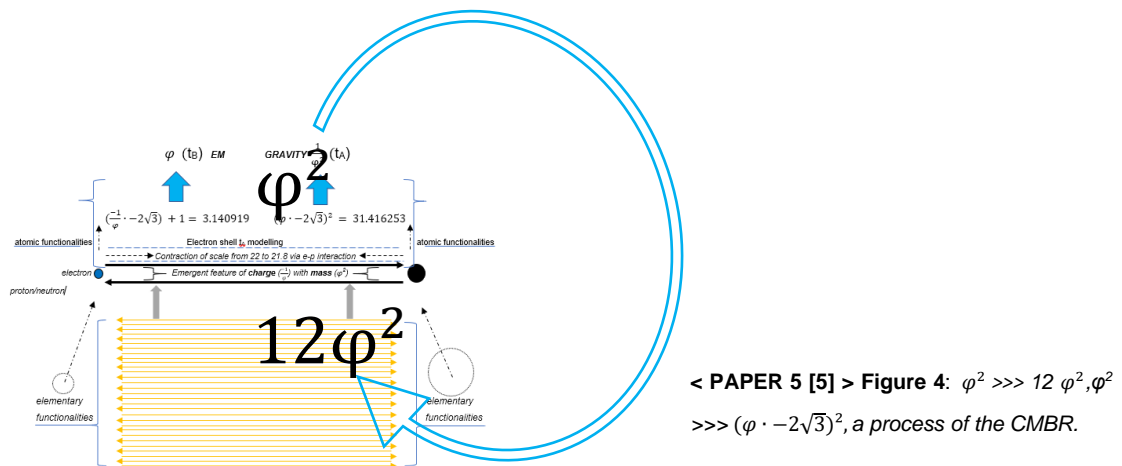
Here, the CMBR would be associated to this "12" factorial process, and thus redshift effect, which is a logical deduction, as the equation $E = h_x f$ is still in play, as with a decrease in the value h there is an increase release of energy along this process "as" the redshift effect producing the CMBR. In paper 6 ([6]: p10), this was followed up as follows:

> …,***yet*** as the theory has presented here in this series of papers [1-5], as per papers 4 and 5 [4-5], more specially paper 5 ([5], p10-11, fig4-5), there is the idea of the "12" factorial, of φ^2 (CMBR) upon the general $12\varphi^2$ atomic manifold, that dynamic of energy transfer, a more logical contender for the process of the red-shift effect and associated transfer of energy via light as it travels through space along a spherical wavefront, which shall be further explained in a later paper. Nonetheless, a part of this red-shift feature would be other features demonstrative of the elementary particles and their own processes (which shall also be reserved for a subsequent paper), giving the astrophysical nature of stars their real granularity of appearance.

This 12-fold rise of energy is considered as the redshift factor "12", how in light becoming a factor of 12 longer gives off a factor of "12" in energy according to the scaled equation of $E = h_x f$. In paper 6 ([6]: p5), the idea of an "end-zone" was presented:

The matter-decay region would represent what can be termed an "end-zone" region where entropy takes its full effect, a region with the least matter, somewhere just beyond what we would consider to be the Oort cloud "disc" [6]. "Time" (per the first principals of the golden ratio algorithm for time for space [1]) moves from t_B to t_A. Along with this is the passage of light, and as we know along with this is the emergence of gravity, and thus a general gravitational movement away from the Sun, despite the obvious overpowering feature of gravity of the mass of the Sun itself. The question is, "how would this manifest in the solar system"?

Here in this paper such an end-zone is considered to be consistent with the maximum redshift field of influence, associated to not only the "envelope" of the spatial field with time, yet how that energy from time as $E = f$ would be reabsorbed into matter, into what can only be described as "black bodies" [21], a body that absorbs all incident electromagnetic radiation, regardless of frequency or angle of incidence. How though does this fit with the current cosmological model and those associated astronomical distances of supposed stars? What are the stars if light from the sun is bound by this distance of $E = f$? The question now therefore is, "*does astronomical data fit this new model for the redshift effect*"?

6   GOLDEN RATIO COSMOLOGY

In this series of papers on the golden ratio algorithm for time [1-12] the key papers in which a model for cosmology was presented were papers 5 ([5]: p10-13), 6 ([6]: p5-12), and 8 ([8]: p15). Here in this paper the redshift effect is now being granted as a maximum value of $z = 12$ accordingly with an end-zone measured at roughly 73,500 astronomical units as per eq.8. Another feature to note according to paper 6 ([6]: p7) is how this end-zone would behave, namely a massive "quantum entanglement" scheme of *fractal* "reflection":
:

> Everything now gets very complex at this "end-zone" of time and space; each reference of space around/outside this Plane-X region is defined as 0-scalar space, meaning that each point of light on the Oort cloud plane would be in a golden ratio <u>quantum entanglement</u> relationship potentially with the Plane-X reference, simply because space no longer has its own unique reference at this outside region in the absence of time (light), leading to the development of vast networks of "immediate" quantum relationship networks of points of light in that uniform 0-scalar space manifold. <u>This feature of light via this quantum entanglement feature in the final right-angle (to the Oort cloud) plane would thus have to echo itself inside the entire 0-scalar system as a feature of "time", as much as the atomic scale was scaled up as fractal non-invariance, it could be thought of also as scaling down from a universal level to the atomic;</u> and this feature would make it possible for "c" violations (faster than light interactions, as per quantum entanglement) for any region of space with the golden ratio algorithm for time considered.

This is an important principle, as it suggests how space would represent a type of "cast" of itself, a signature of itself based on what would determine its overall "shape", a "signature" that would "echo" as a spatial and thus gravitational "cast" of itself "within itself" in a temporal golden ratio footprint (Fibonacci sequence) spiral format. The idea here is the "cast" of the Oort cloud would have that same general cast of itself represented anywhere at any location on that end-zone Oort cloud perimeter region, resulting in a general location of mass all the way from dust particles to the atom via that gravitational cast based on its overall shape (and in the case here, a "solar system" cast-shape) as presented in paper 6 ([6] p7-9, fig4-6). This was further explained in paper 12 ([12]: p10):

> The conclusion therefore reached in use of this upgraded definition of space *as nothing* and time *as the golden ratio algorithm* is that everything would exist in a universal mass-gravity immediate balance, the only feature of flux being light-time and the necessary uncertainty in play there on the quantum level owing to the nature of space. Moreover, the

idea of gravity being an "immediate" force grants it "*super-elementary*" status, upon which light would operate, presenting the case that "in the beginning was nothingness", which would be correct in one dimension of thought, namely if space is everywhere, and gravity effects through space "not" as cause and effect, "inertia" cannot be as "gravity" yet a "way" of looking at simple gross events of cause and effect regarding observation. Simply, for mass to incur an effect on another mass as though immediately, the idea of mass would also suggest it is a part of an immediate shape of space and time, a general shape that it is everywhere, if not eternal, as much as space would act as the immediate relationship between the attractive effect of mass in space keeping that shape of reality in effect, without end. The issue therefore of causality can be neatly summarised by focussing on this process of space, and how that would relate with mass, gravity, upon which light would play its role. It could be argued that if mass attracts itself without end, what keeps the planets separated, and furthermore why would not everything collapse into to a central mass construct? The answer to this was alluded to in paper 11 ([11]: p12-13) regarding the behaviour of light as it passes from a central light source, namely developing a singularity through the redshift-effect of light in space, and thus as it would seem a type of "nothing shell" effect of space in the outer limits of light, as though stretching everything out, preventing a collapse of mass in space.

This "signature" of space and thus gravity, as gravity was proposed in paper 12 ([12]: p7-9) being related to the feature of space, as a type of gravitational "echo" for those end-zone regions and associated mass-particles, would thus be "***played***" by gravity in a type of "solar system cast" (SSC) manner.

Thus, four basic steps to consider here for the new cosmological model:

(i)   the process of the redshift as a spherical wavefront (fig2).

(ii)   the length of the redshift ($z = 12$) and dimension of that end-zone (73,500 au), equation 8.

(iii)   the process of matter decay to the end-zone, to the basic atomic level ([6]: p5-7).

(iv)   and the "behaviour" of that endzone with respect to the entire 0-space system at that end-zone region, as the idea of a solar system "cast" (SSC) for space in any region on that perimeter.

The task therefore of generating the golden ratio cosmological model is one of putting together the pieces, the principles at play, of a new jigsaw puzzle of key principles, principle logically derived, yet a jigsaw puzzle that must not only match known astronomical data, yet address all the problems of contemporary cosmology. Therefore, a list of the basic principles of the golden ratio cosmological model must be be presented, intrinsic to the above four basic principles, addressing current data and contemporary cosmological issues of theory.

6.1   GOLDEN RATIO COSMOLOGICAL PRINCIPLES

6.1.1   THE 0-1 DUALITY OF SPACE AND TIME
- The fundamental tenet of the golden ratio time-space reality is the basis of light as "c" representing a constant value, as light travelling through a pure vacuum of space, space as the value of "0", a feature which enables the force of gravity to be "immediate" ([12]: p7) and the propagation of light to be set at "c" ([2]: p13).

6.1.2   SPHERICAL PROPAGATION OF LIGHT
- A key feature of the "golden ratio" cosmology is the source/cause of the redshift, namely as per the $E = h_x f$ equation.

6.1.3   END-ZONE MAXIMUM REDSHIFT VALUE OF "12" ($z12$)

- The conclusion reached in papers 5 ([5]: p9-12) and 6 ([6]: p10) is that the maximum redshift value would be a value of "12" as associated to the CMBR.

6.1.4 SOLAR SYSTEM "CAST" (SSC)

- This end region would be the overall "shape" of space that would echo as a gravitational signature, as a Solar System "cast" (SSC) that would represent a feature of space echoed through the entire system to the atomic level at the end-zone region ($z12$).

6.1.5 QUANTUM ENTANGLEMENT

- The feature of space being "0" in alliance with light as "c", and yet more importantly in alliance with the "golden ratio" algorithm "feature" of time, creates the effect of an *immediate bridge* through space for features of light of that golden ratio expression of time in space ([12]: p8), as a temporal effect of the golden ratio Fibonacci sequence.

6.1.6 NEBULAE (MASS DISINTEGRATION WITH REDSHIFT PROCESS)

- This redshift effect as a process of light per surface area becoming less energised as a wave would represent a process of "energy release" towards an end-zone region of $z = 12$ ($z12$) associated to a process of "mass disintegration", as per paper 6 ([6]: p5), providing the effect of illuminated particle matter and dust throwing off the effect of stars when behaving in a SSC context.

6.1.7 BLACK HOLES (Z12 BLACK-BODY REGIONS)

- The idea of the $z12$ region would represent a process of light-energy absorption; mass would appear as a type of black body (absorbing energy) entity, around which debris would disintegrate towards in an SSC manner.

6.1.8 STARS

- The idea of "mass-disintegration" at the $z12$ region would enable the process of release of quanta from mass undergoing the process of disintegration towards the $z12$ region of varying redshift in an SSC manner.
- Light from this debris would thus also propagate back to the solar reference (sun) from these points of debris origin, light that would feedback to the solar reference (sun) in a $\varphi^2 > 12\ \varphi^2$ manner, and thus produce the effect for the redshift.

6.1.9 GALAXIES (SOLAR SYSTEM IMAGE BUNCHING)

- In between the solar reference (sun) and debris seeking $z12$ black bodies would represent a variety of levels of redshift and thus varying stages of debris complexity and decay, associated to various points of light converging on $z12$ "black-body" regions, much like a type of cosmic "tree" branching, linking light between each branching point as a new $z12$ blackbody source.
- With each region of mass decay into particles would be the effect of a type of SSC gravitational "bunching" effect of debris toward any $z12$ region.

6.1.10   SUPERNOVAE
- The $z12$ region would logically have the ability to emit/reflect light when going beyond the $12\varphi^2$ level of energy absorption required.

6.1.11   COMETS
- The Oort cloud would represent the natural region of "reflection" for debris not attracted to specific $z12$ locations, or more logically debris too large to disintegrate, given this region would be an "end-zone" and thus for fine particle matter, a phenomena known as "***comets***".

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The entire illusion of the stars thus becomes obvious, namely that around each clump of material emitting light as stars would be associated dust clouds and the like, seeming to surround a type of "black body" entity that from time to time may emit or reflect light. Another implication is that the further the stars would appear to be away (greater redshift) the less complex those stars would appear to be owing to the process of mass disintegration in play the closer to a black body source. The image of the stars through a telescope would therefore be like looking into a virtual atomic world of illuminated dust and debris, all the way to the atom, cast in an SSC gravitational fashion, and as a concept of a progression in time, this would develop into a "Fibonacci sequence" the basis of which is the golden ratio equation for time.

To now address the problems of contemporary cosmological theory:

3.1.1   *Time v spacetime: In quantum mechanics time is universal and absolute, yet in general relativity time is one component of four-dimensional spacetime whereby the flow of time changes depending on the curvature of spacetime and the spacetime trajectory of the observer; this difference leads to theoretical discrepancies regarding the behaviour of light in the execution of these competing models.*

Time and space are given a more exact relationship, a more precise and unique relativity to each other, requiring no proxy forms of measurement that contravene what is "natural" ([8]: p4-8)

3.2.1   *Standard model v relativity theory: the standard model has trouble in explaining the wave nature of light resulting in an ad-hoc interpretation of phenomena beyond the mere redshift of stars.*

The standard model is modified with phi-quantum wave-function as per paper 4 [4], and relativity theory is no longer necessary owing to problems with the idea of inertia and its employment in relativity theory as per paper 9 [9].

3.2.2   *Diffuse interstellar bands: what is responsible for the numerous interstellar absorption lines detected in astronomical spectra?*

The idea of light from the stars would be according to a spherical wavefront of light undergoing a change of frequency as it extends through space ($E = h_x f$), a graded redshift effect, as light travels through varying layered amounts of debris and thus refractive error.

3.2.3   *Supernovae: What is the exact mechanism by which an implosion of a dying star becomes an explosion as per "supernovae"?*

Supernovae would represent $z12$ bodies releasing light, simply owing to local over-exposure to light sources in the end-zone region.

3.2.4   *High energy cosmic rays: How do some cosmic rays appear to possess energies that are impossibly high, given that there are no sufficiently energetic cosmic ray sources near the Earth?*

Light from the stars are not "stars" as such, yet EM phenomena more local (Oort cloud), and central to atomic decay ([6]: p10-11, fig9).

3.2.5   *Magnetar magnetic field: What is the origin of magnetar magnetic field?*

The magnetic feature of the neutron is a natural event as explained in paper 2 ([2]: p19), and this as an event in the end-zone would appear as such.

3.3.1   *Dark matter: the need to use "dark matter" to explain how the appearance of galaxies is kept together in the context of the metric expansion of space.*

Dark matter is not required, as there is nothing required to hold galaxies together, owing to the SSC effect of space, and given what the image of galaxies would actually be (no actual solar systems clumped together)

3.3.2   *Galaxy rotation problem: Is dark matter responsible for differences in observed and theoretical speed of stars revolving around the centre of galaxies, or is it something else?*

Once again, the SSC effect of the gravity-signature of space.

3.4.1   *Dark energy: The need for dark energy to explain the observed accelerated expansion (de Sitter phase) of the universe based on redshift calculations of galaxies requires an "extreme" amount of energy, to the factor of 10123.*

The idea of the newly proposed redshift effect no longer requires the metric expansion of space.

3.5.1   *Axis of evil: Some large features of the microwave sky at distances of over 13 billion light years appear to be aligned with both the motion and orientation of the solar system (known as the "Axis of evil"), putting the solar system apparently at the centre of the universe.*

The solar system would in fact be the centre of the CMBR, as astronomical calculations suggest.

3.5.2   *Sizing issues: The largest structures in the universe are larger than expected, as current cosmological models say there should be very little structure on scales larger than a few hundred million light years across, due to the expansion of the universe outweighing the effect of gravity. Is perhaps light being magnified?*

The "sizing issue" is simply explained given the phenomena of stars described as magnified sources of decaying Oort cloud debris under the influence of the SSC signature of space.

3.5.3 Kuiper cliff: why does the number of objects in the Solar System's Kuiper belt fall off rapidly beyond a radius of 50 astronomical units?

The Kuiper belt would most logically be a type of asteroid belt from the break-up of a planet that was once like Neptune, and thus a type of "belt" orientation (like the rings of Saturn), and thus debris that would then eventually fan out into the Oort cloud end-zone via that process of mass-disintegration from the sun to the Oort cloud.

Understandably, without knowing this actual process of the $z12$ redshift, the stars when viewed through a telescope would be perceived as separate solar systems clumped into galaxies, galaxies that would have varying redshifts, suggesting a type of expansion of space owing to more distant objects appearing to be undergoing a greater redshift.

There is one interesting feature to the idea of this model of cosmology, namely that the end-zone region would represent a natural conscious mainframe, as presented in paper 10 ([10]: p12-13, fig11) where the idea of a greater spherical limit of time, and thus "end-zone", would represent a type of "construct" of consciousness:

Once again, as per the description of the basic wave-function of light regarding time and space as per papers 1-6 [1-6], there is a streaming process of golden ratio wave-function temporal sequences from the atomic level to an infinitely large level of sequences with the aim of perfecting π, as the ultimate streaming of temporal events. Yet, if space is the future, time as the past must always appear to be "***creating***" space, as what would "appear" to be a process of "***expanding***" space, despite the overall construct of time-space being stable as an overall equation, meaning there would be an ultimate barrier of/as time itself to space, as it would appear, a "front". And so, the idea of consciousness on this ultimate level according to time would actually look like time being "ahead" of space, as time, as it would appear, as *time-before*, would have happened *before* space, which as an event would technically come *ahead* of space itself in being *before* it. Let us refer to this feature as the *time epoch* (O), as per figure 11.
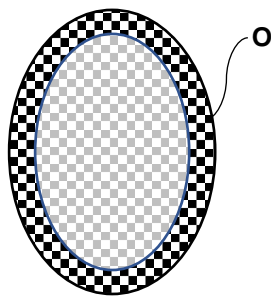
< PAPER 10 > Figure 11: *the time epoch (O).*

It is as though t_B as reason, as time, the *being of itself*, as the two possibilities of the golden ratio, is wound around space as the future, space as the Dasein, as though if time moves from inside to outside space, from zero to infinity, it must always be ahead of space according to the definition of time being always "before" "space" (space as *time-after*), and this by definition an "epoch". This is an interesting concept, as it's not the first time it has been considered.

Coupling this idea with space being "0" and thus a process of the SSC gravitational "signature" of space, it is entirely possible that the reality of the stars could effect the basic way we operate as a species, as we would exist within that cosmic space, and thus that sphere of influence effect the process of our relationship with reality, even with each other. What could that "cosmic anthropological principle" be?

6 GOLDEN RATIO COSMIC ANTHROPOLOGY

There is one thing that demonstrates humans as a species separate to other life forms on this planet, namely our use of science, not just our ability to develop our sciences, yet our *use* of science, the "way" we use science, as per technology, to almost seem to be "artificial", if not "unnatural". For instance, if we as a species have evolved as a process of adapting to our surrounding environment, then where indeed did our notions of the idea of the smart phone, of television, of the "internet" come from, of light being endlessly bounced to any potential reference anywhere on the planet through a 0-1 platform of transmission? Where did our notions of projecting our image endlessly through a myriad of devices the world over come from, where in nature, what feature in nature makes we as a species strive to perfect this feature of our social performance with each other? More fundamentally, why was it so logical for we as a species to create a type of artificial intelligence based on a 0-1 binary code of data processing? Is there evidence of human behaviour suggesting that we are "adapting" to a particular environment encouraging us with these skills? Where in nature for instance is a "binary code" that makes we as a species so affable with each other and through space and time in using a binary code to demonstrate our talents of using EM the way we do, beaming light/EM to other locations endlessly central to our personal identity, our casting? Paper 10 [10], *The Conception of Time*, detailed the nature of human adaptation and evolution ([10]: p7-9), and so the issue here is whether the human species has aimed to adapt to the stars in the only way possible, namely with science and technology using EM on a fundamental binary platform of time(1)-space(0). Consider the following points:

- **Anthropology** is defined as the scientific study of humans, human behaviour, and human societies through time. Of its many branches, social anthropology studies patterns of behaviour, cultural anthropology studies cultural meaning, including norms and values, linguistic anthropology studies the influence of language on social life, and physical anthropology studies the human biological development.

- **Adaptation** is a term used in the biological sciences considered as the dynamic evolutionary process that places an organism in its environment to enhance its evolutionary fitness, together with being a state reached by the population during that process, and as a process of a phenotypic or adaptive trait acquired through natural selection.

- **The modern binary number system**, the basis for binary code, was invented by Gottfried Leibniz in 1689 used 0 and 1 to find a system that converts verbal statements of logic into a pure mathematical code. A binary code represents text as computer processor instructions (or other data) using a two-symbol system often "0" and "1" from the binary number system; the binary code assigns a pattern of binary digits, bits, to each character, instruction, etc. In computing and telecommunications, binary codes are used for various methods of encoding data, for the storage and execution of data and commands respectively, conveyed via electronic processes.

The human species has exposed itself to the stars from the time it has been a species, initially presumably through sheer ignorance of what the stars could be, to a variety of mechanisms of regard, namely from using the stars to chart the land and seas, to belief systems in awe of the spectacle and mysterious nature of the stars, to considering that the stars can be explored as real solar system entities with planets. Is it possible we have developed as a species in a way that suggests we have "***adapted***" to the ***mechanism*** of the stars? Do we exhibit behaviour in our design of society that mimics the mechanism of the stars for instance, as according to the cosmological model proposed in this paper? According to the cosmological model presented here, do we have social mechanisms, sciences, technologies, and the like, that allow us to present ourselves as a particular casting, our personal casting, as illusions of light, projected through a vast network of electromagnetic waves, all upon on a fundamental process of a binary 0-1 platform? The answer is clear. One need merely consider the Internet, the smartphone, and the social media phenomena, for such evidence of seemingly "stellar" human adaptation to each other and the environment at large.

The suggestion being made here in this paper is that we as a species have been exposed to the stars to an increasing level of adaptation through time, as time moves forward, in the context of the model of cosmology supplied here as the golden ratio model, the more accurate cosmological model of the stars (the one without the magical fixes), and we have needed science and associated technologies to properly better "adapt to" the process of the stars, of that greater sphere of reality, despite in the process "getting the stars wrong" with magical notions. Although the understanding of the stars may have been wrong, our "*adaptation*" to the mechanism of the stars seems quite consistent with the mechanism of the stars, of EM being channelled through space extolling a specific signature of this solar system, everywhere, each to its own reference as an image in that Oort cloud mainframe region from particle-matter. Conversely, according to the current BBT model of reality, our adaptation to that model (BBT) of the cosmos would put us completely insignificantly in a vast universe as a potential "*one out of billions of possible life forms*" as a speck in time. Have we adapted to *that* BBT cosmology, developed as a species along *that* line of thought, *that* theme of purpose? The thinking is, "no", not *that* cosmological model, it is too miniscule a task, too insignificant a hurdle, as *that* cosmological influence would not be terribly difficult to adapt to, even on a good day. Nonetheless, our drive to explore the stars, to exist there, as though they are real, seems to have paradoxically been accompanied by our understanding of binary-logic computer technology, television, the Internet, Wi-Fi, and the smartphone, even though the cosmic model presented here suggests the stars are an illusion, as great as the greatest work of art as an illusion can be, as what only reality can provide, as a "live" transmission around the world over the Internet or a smartphone is similarly still the projection of an EM "illusion" in regard to a person's location in space and time.

7   CONCLUSION

Such is this new account of the redshift effect. Gone are the unnatural inertial transformation equations reaching illogical models for the nature of time and space. Gone also the idea that the atom sprays out linear pellets of photons as light as the standard model would consider, as it could only, given the standard model's focus is primarily on the particle nature of atoms and associated phenomena alone, saying very little about the nature of the propagation itself of light through space. Gone also the notion of needing a clock to measure time and a ruler to measure space, as rulers and clocks for measurement alone are illogical if time and space are meant to have more granularity than a ruler or a clock, than even the atom; time and space although different to each other would be related to each other with each facet, time and space, being a unique quality of reality, and therefore can only be considered a reference to each other, a measurement reference for each other, in that space "ultimately" is what time would measure and time "ultimately" is what space would measure. Once again, if time and space can only be

measured using something else other than what they are compared to each other, that "thing" would have to be unnatural, not of time or space, and thus fictitious, as demonstrated by the application of "inertia" [9].

Indeed, it could be argued that all the bespoke theories in cosmology theory aiming to keep the idea of the metric expansion of space afloat using "inertial" theory *as one theory*, yet failing, could amount to the idea that the stars in fact are "*not real*" yet represent an entirely different mechanism, and that issue has been addressed here in this paper, namely that the assumption that stars are real could in fact be invalid, which is the one obvious general deduction. In other words, if every account of the one general model and alleged event (big bang model and metric expansion of space) is specific to a certain phenomenon in failing to fit to the general model and this associated event, and thus no general model can be confirmed, there must be therefore <u>a common thread of every account being wrong</u>, and the only common thread here is either *"inertial theory and associated metric expansion of space"* **or** *"the assumption the stars are in fact real"*, **or both**, and how that would therefore interfere with an *otherwise* correct explanation of the redshift effect. That "*other*" explanation could only be the idea of space *not* expanding, being a "naught", a vacuum in the purest sense, and that light itself would be reducing its energy via frequency according to a spherical wavefront of $E = h_x f$.

One could use a telescope to look at the stars through two theoretical lenses, one being the redshift as the metric expansion of space, the other as the golden ratio algorithm for time and associated spherical wavefront of light propagating through 0-space. The observed data of the stars, what is observed, remains the same for both cosmological models, except one model is littered with numerous magical fixes and irregularities, while the other model accounts for everything with no magical fixes, one model would make us a speck of matter in a speck of time, while the other model more closely accounts for our behaviour as humans adapting to a greater environment. Which model is closer to fact than fiction? The thinking is that a lot more could be achieved in science in consciously understanding how and why we adapt to reality the way we do, especially in properly "acknowledging" what it is we seem to be adapting to.

The purpose of this paper and associated preceding papers [1-12] has been to return cosmology to **fact**, to be supplied with a theory that does **not** entertain "assumptions", assumptions as ingredients that have yet to be proven to exist, ingredients furthermore that cannot be proven in actual fact in our local reality. With the growing number of possible solutions to all the theories that exist, given all the theories that exist entertain gross amounts of theoretical assumption and conjecture, like dark matter and dark energy, a line needs to be drawn about what is known and what isn't known **as fact**, scientifically speaking, and to **dismiss what isn't known**, and that's no great crime, and **then** let theory and research develop from there. And if the theory that develops from there says, "well, looks like it will be a while before we prove, if ever, what we can see in our telescopes way off into the red-shift factor 12 of the star world", then let that realisation inch back to what we can discover as provable minus the magical fixes of theory.

Conflicts of Interest

The author declares no conflicts of interest; this has been an entirely self-funded independent project.

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