

## TANAKH'S METAPHORS WISDOM PURPOSIVE CUES FOR BIG BANG, UNIVERSE, LIFE, MIND WISDOM ORIGIN AND EVOLVE

SOME NEW IDEAS ON KEY TANAKH'S METAPHORS HINTS PARALLELS TO BIG BANG (BB), IT EVOLVE INTO UNIVERSE WITH LAWS BIO-FRIENDLINESS

1) The metaphor upon beginning of time and space, is in kind with with the working BB theory.

2) The metaphors of unformed (chaotic, e.g. Job 26:7) start of Universe, goes along with modern conceptions of its chaotic origin.

3) The metaphors and its sages commentaries, of a *void earth*, with *darkness (fire) ...and a (awesome-GNB) wind of God sweeping over (a non-controlled raging ocean-GNB), and regarding the thesis' 2) 'chaotic start', remotely seems to 'chaotic quantum fluctuations'(as if 'In beginning... fluctuation')*, a *presumable preferable force of origin and evolve of the Universe, its laws, that partly converts in bio-friend towards life.*

4) *God's commands information metaphors upon stage - wise creation of the Universe and Life, parallels universal purposive emergent information upon stages of a built reality of Universe.*

5) *A remarkable parallel of the metaphor of the Genesis opening narrative "darkness"(dark fire, fire), and latest cosmologists affirmation that about 90% of the Universe content is a mystical dark energy and matter.*

6) *In the beginning was created "darkness" (dark fire, fire energy) , that does " not fail", could serve as a prototype for Law of conservation of energy.*

7) *The narrative of Job(26:7) - "He it is who stretched out Zaphon (heaven) over chaos...", parallels the expansion of our Universe.*

8) *Presumable Maimonides interpret of the Gen.1:2 words "unformed", "darkness", and the "wind from God sweeping over the water" (regarding also the consideration of thesis 3), as creation of chaotic elements, parallels to origin due fluctuation of quarks( elementary particle) in liquid plasma, in huge hot (like fire) primordial soup.*

9) *Tanakh's metaphor of purposive wisdom parallels our idea that an apt purposive agencies ( energy, information) guidelines are etched into abiotic BB - primordial Universe as orients for its laws conversion in bio-friend, e.g. for evolve human mind wisdom, framers the laws, and own humanity.*

*Tanakh's narratives cited in accord with "Tanakh: the Holy Scriptures" of The Jewish Publication Society, Philadelphia - Jerusalem; 1985 , seldom - GNB (Good News Bible, Today's English Version of Old Testament, Collins/Fontana, 1982.*

### **THE LATEST EVIDENCE FOR THE BIG BANG (BB) THEORY**

Summing the contributions of world's leading researchers in quantum cosmology, Vass Rudy in his edited book at March 2009 (Springer), concluded that Big Bang (BB) model is now both theoretical and empirical well established. Yet the very beginning of our Universe still is mystical.

Remarkably, that this days also started the long awaited BB experiment, planed to exert on the most complicated device - CERN Large Hard Collider, the most mighty subatomic particles machine, artificially imitating the primeval conditions of BB.

The results of the recent conference dedicated to the refined data of Wilkinson Microwave Anisotropic Probe (WMAP) found at February 2006, where Charles Bennett, the principal investigator for the space-borne WMAP expedition, reported on new convincing evidence for the Big Bang (BB) theory. His team ultimately succeeded to transpire in the first trillionth of second of the universe recording the difference in brightness variants of WMAP, launched by NASA in 2001.

He with noted colleagues - astronomer (David Spergel, Lyman Page), for the first time penetrated the mystery fog of the first moments of the origin of the Universe. Bennett inference is "we have new evidence that the Universe went from microscopic to astronomical in the wink of an eye" (in O'Hanlour, Discovery News, March, 16, 2006; in B. Schwarzschild, Physics Today, May 2006; in L. Krauss, R. Scherrer, Scientific Am. March, 2008).

Lary O'Hanlour validates the appropriated news of the WMAP team also as a convincing evidence for BB. Bertram Schwarzschild published an extended paper on the novelties of "New Cosmic Microwave Background Results (that) Strengthen the Case for Inflationary BB Cosmology".

Moreover, in a review upon the proper breakthrough Gary Hinshaw of the NASA Goddard Flight Center in Maryland, US, hold up that by the approach of developing a photon polarization signals applied in CMB, the inflation theory passed a number of very significant test, and now under the corner the detection of gravity wave background signals, that would be another notion in the BB theory (Physics World, May 2006).

Strikingly, that now hit the headlines speculations descending from Brookhaven's research results that the Big Bang originated in a fabric of a superfluid space-time (in M. Chown New Scientist, June 10, 2006). Very notable is also the motto of this magazine cover page - "Liquid Universe".

For us, however, is impressing the recent deduction of Steven Hawking, the admitted heir of Einstein's wisdom, that with the BB begins space and time. With that rethought of the "Origin of the Universe", he shared in a Robert Oppenheimer Lecture at March 16 (2007), that "we are product of quantum fluctuation in the very early universe. God really play dice".

The General Relativity predict how the universe would emerge from BB from a period of high, even infinite curvature singularity. However, at Planck size, a billion trillion of a centimeter, only quantum physics run. Thus, for understanding the origin of the universe we have to combine General Relativity and quantum physics regularities determined by laws of science. Besides, he recall his and Jim Hartle hypothesis on a spontaneous quantum fluctuation creation, a bit like the formation of a bubble of steam of boiling water. Ultimately he bet a question if inflation beginning of the universe is a law of nature ?

In another meeting Hawking leading a general colloquium before an audience of 850 students, more convincingly admitted that the universe began in a BB. Even so, much still remain to be understood by studying the CMB radiation - the rudiments of primordial structure of the universe (CERN Courier, November 1, 2006)

*PECULIARITIES and HARDSHIPS of TRANSLATION and INTERPRATION of BIBLE*  
- (e.g. GENESIS)

Preliminarily, suitably also to put attention that the Bible, and particularly the

Hebrew, which the opening verses of Genesis, had been composed in ancient Hebrew that was limited in its lexicon (Ira Maurice Price "The Ancestry of Our English Bible", third revised edition, 1956).

Moreover, ancient Torah scrolls not only were vowels and punctuation missing, as also the spaces between separate words, that bring about ambiguities at the level of letters, words, verses and chapters. Thus, the meaning in the Torah is often ambiguous (in R. Ellis, Quarterly J. Jewish Life Thought, March 22, 2002).

Besides, Nachmanides, issuing from the apt hardships, contemplated that the secrets of creation are hidden in text of Torah, that consists of fifty gates, or degrees of understanding and interpreting each its words and letters (Commentary of Torah, Genesis).

Furthermore, the authors of the texts were challenged to "speak in the language of man", in a diapason from actually tribe of just - freed and already illiterate, naive slaves, till the enlightened humans of the modern civilizations.

Believable that to such titanic task were to held good only by spiritual and illuminated mind elite of the ancient Israelis, highly sensible to inspiration of an imagined God, a some wisdom code's emergence information force - a unique God, that perhaps even was discovered by them (Dennis Prager, a lecturer of Jewish history and religion in the college of Brooklyn, an editor of magazine Ultimate Issues, and Joseph Telushkin, rabbi and an acclaimed prolific writer on Jewish Literacy. "Nine Questions People Ask About Judaism", 1975, 81; Nelson rabbi PhD, "Judaism, Physics and God", 2005,6, Neil Gillman, rabbi and professor of Jewish Philosophy at the Jewish Theological Seminary of America, in Nelson 2006).

Such selected Great minds of the Israelis had has written the Tanakh mostly in the form of brief concise poetic and narrative sayings with a preponderancy of metaphors, parables and allegories.

In this frame is striking the recognition of Randel Helms, a Bible Scholar and professor of English at Arizona State University in Temple AZ, in her work "The Bible Against Itself: Who Wrote the Bible and Why it Was written"(2006). She tells "How first and second Century Christians interpreted the Hebrew Bible in a new way to change it into a book that had "really" been written about Jesus" (a review in e - Skeptic, December 13, 2006).

The aforesaid compressed sayings in the Hebrew Bible overlap with the claim of professor Hugh Ross in his debate with the agnostic and ardent skeptic - Michael Shermer (Edge, 2002), "the early Hebrew had a limited, so words were used to many things".

In the same time the language is very dynamic and plastic, whose principle is rather turned to explain an action than its real literal meaning that spring of its written frame. So is known that the meaning of Tanakh and Torah sayings is interpretable in four ways: 1) literal meaning - *Pshat*(P) ; 2)Hint - *Remez* (R); 3) Metaphor - *Drash* (D); 4) Secret - *Sod* (S). Of these Hebrew first letters arose the popular in Torah abbreviation PaRDeS - garden, viz. paradise (in Susan Schneider, is "Evaluating Creationism Torah Solves the Problem of Missing Links", 1984).

Besides, "Because there are seventy faces to the Torah", to every its expression are possible variable interpretations (Rabbi Kalonymos Kalmish Shapiro "Sacred Fire", 2000).

*All this turns to a hard problem for translators of Tanakh, encompassing in English. Nevertheless, several modern scientists, philosophers and theologians endeavored to find parallelisms between the pictured Big Bang events as cosmology predictions, and the hinted insights wisdom metaphors of the composers of first chapter of Genesis and other parts of the Bible, and its commentaries (cf. below).*

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**THE PILLARS of the BIG BANG (BB) THEORY are:**

- *"Beginning"*; - *Energetic chaos and Quantum fluctuation*; - *Equation  $E=mc^2$* ; - *Singularity*; - *Creation of nothing*; - *Aquatic quark - gluon plasma*; - *Expansion, including instant inflation and acceleration era*; *Cosmic Microwave Background(CMB) radiation.*

*Mostly about them were hinted in the purposive wisdom metaphors of Tanakh (in an intuitive interpretation of human mind's consciousness wisdom).*

### **"BEGINNING"; TANAKH'S METAPHORS**

The BB theory assumes a concurrent spontaneous beginning of space of a Universe and time from a void (viz. zero space and time). Presumable, that a primordial wisdom - a metaphor of God's acts, whose purposive agencies (energy, information), etched in abiotic Universe.

In some sense a similar view expressed Rocky Kolb (1998), a founder director of NASA/Fermilab Astrophysics Group, Professor Astrophysics, that quantum events written on "the Universe, the substratum of all existence, as also the idea of P. Davies (2006,7), on a "Principle of Live" or "Principle of Mind", that also inscribed in BB - primordial Universe.

An analogous purposive Principles as a "Ultimate", imprinted in BB - primordial universe, offered such authorities as Edward Wilson, deserved and prolific biologist and ecologist, merited with National Medal of Science, and Nicolas Short, a chief educator of NASA Institute Goddard.

- One of more popular suggestion that a trigger of BB could be rather a "Superforce"(cf. below), than a "Singularity"(cf. below). , a mathematical notion of infinite point, that physicists tempts to avoid. Springing of a suited propositions Davies ("The Goldilocks Enigma", 2006,7), speculates that just a some "cosmic egg" provoked a blast in a BB, firing an immense energy potential and primordial initial scarce information necessary only for fuzzy laws of an abiotic primordial BB - Universe.

The opening narratives of Genesis is relevantly to beforehand with the conclusive assertion of Proverbs (8:22) - *"The Lord created me (wisdom) at the beginning of his course As the first of his works of old "*, and also of Jeremiah (10:12) - *"... Established the world by His wisdom..."*.

Consequently, the creation of the world preceded wisdom's purposive guide, that sides our idea on a purposive primordial wisdom as a metaphor of God's acts of creation. Due a wisdom's purposive agencies - energy and information arose an abiotic Universe, and its unfix laws converse bio - friend.

The MIT educated astrophysicist an Orthodox theologian and physicist Gerald Shroeder in his recent "Project of Genesis "Day one"(Tothesource, website, March 1, 2006), speculates that Genesis "First day" is issuing from the beforehand above multi -faceted meaning of Torah, e.g. Genesis, actually is to understand as the "Day One", and "*Breyshit*" deeper meaning - "with wisdom God".

A radically another interpretation to the word "*Breyshit*" submitted professor R. Ellis (2002, Massachusetts University), regarding that the ancient Torah scrolls were missing vowels, punctuations and spaces between individual words (cf. above). This permitting various versions of interpretation of pertinent key word of Gen.(1:1). He claimed on an opportunity to read the word "*Bereyshit*" than "In his head God will create himself (along with the heaven and the earth)". More explicitly it may sound as "In the beginning" God started with creation of itself [namely from his "head's" wisdom, i.e. Torah], concurrently with creation his "home" - the Universe.

The proper interpretation of Ellis was prompted to him by the noted Orthodox

rabbi S. Perlmutter, indicating that by the adequate replacing of the letters in the Hebrew word "*Bereyshit*", forms the foresaid proper subversive interpretation, that God and the Universe started at a time.

Notable also the claim of RASHI that the events described in Genesis 1 had no chronological value (commentaries of Rashi, Jerusalem, *Gesher Ha-T'shuva* ed. in Russian, 1990). He considered that the succession of verses does not represent the actual rank of events at Creation. Nicholas Short (2000) also perceived the suitable sayings of Genesis rather than a formula of origin of the Universe .

***GOD'S WORDS COMMANDS METAPHOR-WISDOM, its PURPOSIVE INFORMATION upon CREATION of the UNIVERSE of NOTHING***

In Gen.(1:2-3) findable some metaphors, which the composers of Genesis and its commentators as Maimonides used than hints upon *creation of nothing (ex nihilo)*.

In Gen.(1:3-27) narratives sounded God's words information commanded upon a stage - wise creation of the Universe and Life, that is comparable with an universal information - builder of the reality of Universe and Life

Maimonides underlined that only to the totality of the Creation, viz. the heavens and earth, comprises the "Universe", Tanakh employs the verb *bara*", a process of producing a thing from nothing that has been "previously in a state of potentiality"(Guide, p.2, ch. 13.17). In so doing Maimonides pointed out that the term "earth" of the opening verses of Genesis, includes all the elements of its building blocks( Guide, p.2,ch.30).

He (Guide, p.2, ch.17), contemplated that in Gen.(ch.1:2) by the verse "*being unformed and void*", had been already hinted upon birth of the Universe than a critical moment of transition of a state of potentiality to "all actual genesis". And thus he concluded "that God created it from nothing ...that all things are produced of it...", a starting point of the "transition from potentiality to reality".

Impressing is also the translation and interpretation of the Hebrew word "*vavohu*" (void) - Gen.(1:2), and of "*Bohu*" (in it is a substance of unique potency - *Kiddushim* 40b, a treatise of the "*Mishnah*", a code of Jewish law prepared by Rabbi Judah ha-Nasi about 200 C.E. ).

That overlapped with the commentary of the "*vavohu*" of Norman Lamm, a professor of Jewish philosophy in the Yeshiva University. He envisages the word's meaning than formless primitive stuff of the world (Challenge,2000).

Remarkable also a plausible suggestion of Henry Morris, Ph.D. the president of Institute for Creation Research, that in the "*beginning*" from a certain preexistent primordial "nothing" due to the existence of infinite energy and unlimited information arose the infinitesimal virtual particles ( Science and Spirit,v.33, January - February,2006).

Notable, that Hebrew word "*rachephet*" translatable as "sweeping", or is now preferred to translate as "brooding" (J.P. Green "The Interlinear Bible", in "Accuracy in Genesis"; Yahoo ww.accuracy.genesis.com ). The translated word was chosen descending from its analogy to a meaning of a "brooding" hen, in that the Lord God created the "egg"[?, our note], a primary substance of all elements required to develop our amazing universe.

In this context P. Davies (2006, 2007, ), suggest on existing "for all eternity" of a point of density (a singularity), " a structureless, sizeless cosmic egg that suddenly bang !".

In this light is also the considerations of rabbi David W. Nelson(2006), that the debatable idea of Creation *ex nihilo* was and while is under question. The Latin translation of this expression is "out of nothing", or from certain preexisting, chaotic and unknowable matter.

Noteworthy, the pondering of the renown atheist and skeptic Michael Shermer, that at a debate with the progressive creationist professor Hugh Ross, "noted that some scientists think a quantum fluctuation created the Universe and this quantification had no cause". Moreover the eminent pessimist of science Martin Gardner on that in progress hypothesis, liked it to the range of speculations that smell than "mysterian mystery". Hence, Shermer had been perforced to recognize that the origin of the Universe "may be unknowable to us. This is not an argument for or against God"( in Shermer - Ross Debate, *e-skeptic*, April 4, 2002).

For the matter Keith Ward, the Gresham professor of Divinity at Gresham College, London, conceded that a very complex, finely tuned and balanced "nothing" of a highly contingent universe is needed a Creator ("One World", 1996).

To that province is to set up the recent speculation of the astrophysicist and trained to be a priest Bernard Haisch, a long - year ex-scientific editor of the *Astrophysics J.*, and a Principal Investigator in several NASA research project, and now at Lookheed Martin Solar and Astrophysical Laboratory. He imagines a God - a lawgiver of the laws of physics, and inspired by that divinity, the authors of the Bible insight was that the Creation started from "nothing"(monograph "The God Theory", 2006; article in "Dream Manifesto" (January 22, 2007), an interview to Tikkun (March 28, 2007).

Further, in a talk with Tom Huston of *What is Enlightenment?* magazine (July, 2008), Haisch proposes that consciousness play a central role in the origin of the universe, as the universe is a product of consciousness, conscious intelligence. He suggest that a starting evidence is the quantum physics of Anton Zeilinger's (2007) team of Vienna University, that pinpoints the idea of consciousness, a necessary factor in resolve of quantum events, that consciousness acts as a fundamental creator of reality.

The humans observing the universe lead to a collapse of quantum problems in concrete reality with our consciousness. Moreover, the preexisting intelligence is both beyond space, time and universe, but lives deeply in it, entirely into all life species, and its possessor of consciousness - the human mind. In the underground of the apt universe is a purpose of higher consciousness, higher wisdom, or so called God of experience reality of some infinite potentiality.

And ultimately, the conscious in all of us, that will return to the fountain of intelligence that made the universe in the first place. We are simply sparks of a huge bonfire of consciousness, and ultimately we return to be the source.

Strikingly, that the view of Haish, at large, overlaps with that of John Haught, and Keith Ward, an Anglican Priest, Regius professor of Divinity Emeritus at Oxford, and both theology philosophers. Haught in his book "Is Nature Emerge" (2008), claims that the "universe is fulfilled with mind wisdom", and Ward in his two recent monographs - "Re - Thinking Christianity" (2007) and "The Big Questions in Science and Religions" (2008), discuss the crucial issues of science and religions in its reciprocity. There the latter spring from promised ways of adapting Christianity to latest science advance, and also to the constantly changing world, that is so controversial, liberal, and contrasting. In that rethinking process he introduces his ground - breaking theological philosophy.

Ward underscores that "There are no objective values that would exists independently of human beings", and "there are universal laws of nature, or the universe is comprehensible due mathematical intelligence". More elegant mathematics plays a role in quantum theory, depicting the real world.

Ultimately, the universe is governed due a purposive Supreme Consciousness or Supreme Wisdom made by a person who is wise. To the point also Stuart

Kauffman's, the Director of Institute of Informatics ( University Calgary , Canada), posits is that the purposive wisdom of human being "Reinventing the Sacred" (2008, a title of his book), a natural divinity symbolizing the emergent creativity of nature's reciprocity with the wise man.

To the matter, notable is the "shocking statement" of Freed Heeren (1995), that "among all ancient peoples, only the Hebrews got their cosmology right", believing in an "omnipotent God who gave the universe its beginning, from "nothing".

Remarkable also the topic of the Venice Summer School on Science and Religion of 2008, namely "God and the Language of Nature", under the tutorship of Rev. Sir John Polkinghorne, a former quantum physics physicist, and Owen Gingerich, astrophysicist (Cosmos.asu.edu.). This is in kind with the popular expression of Zeilinger (2004), that "In the beginning was the word of God". It is very symbolical that God's words commands that built the nature, i.e. world, actually by his "language information". That overlap with the speculation of Francis Collins (2006), the head of National Human Genome Res. Inst., that Logos is equivalent to "In the beginning was the word "(Logos).

#### UNIVERSAL PURPOSIVE INFORMATION, and its DRIVER-ENERGY BUILT the - UNIVERSE and LIFE

In a series of works we found convincingly evidence upon the key role of primeval information in the building of self - complexes of the Universe and Life.

Between the pioneers of information science are Joseph Gruska, professor of the Masaryk University in Brno, that already since the 1940 years tempted to converge quantum physics and information processing science, two wisdoms to understand the universe. He compared a pattern "mind and matter" and its mirror "information" and "matter" (in Francya Rabiof Information Society of European Commission, online , May 28, 2008).

The more prolific and extensively researching the realm of information science is the internationally acclaimed theoretical physicist Anton Zeilinger, the winner of the first Isaak Newton communication Award in January 24 (2008), of the Institute of Physics for evolve the promised field of quantum information. He is the Director of Institute of Quantum Optics and Quantum information.

Zeilinger already in 1949 published a review in Physics Foundations on the crucial role of information as a base of the Universe. He argued that the transfers of information - particles spins clockwise move up and down registering the amount of information bits, that are the building blocks of the Universe.

That prompted Hans Christian von Bayer, the Cancellor Professor of Physics at the College of William and Mary. to a paper under the title "In the beginning was a Bit" (New Scientist, February 17, 2001). There he propagated the novel ideas of Zeilinger about the global role of information and its energizer and register role due the kinetic mechanism of spinning particles. That predict a breakthrough in quantum information.

Then Bayer published a monograph "Information: the New Language of Science" (2003), where he argued that information are the builder of atoms, molecules, space - time, Universe and its laws , complexes increase of cosmic structures and life, embodying ourselves.

In his further works Zeilinger developed own original notions, partially in a framework of Wheeler's catch -word "It from Bit", where he even it compared with the cited above biblical popular expression " In the Beginning was the Word" ( in 'Science and Ultimate Reality', J. Barrow et al. eds, 2004). In another works Zeilinger underlined that the observers, resonating to information of environment makes the reality of the Universe, life and ourselves ( " Von Einstein zum

*Quantumcomputer, Wirklichkeit and Information in der Quantumwelt"*, 2006: "Notwendigkeit für eine offene Welt", Picus, 2007: Markus Aspelmeyer, Zeilinger, "A Quantum Renaissance", Physicsworld.com, July 1, 2008).

In his turn Rev. Sir John Polkinghorne, in recent books drew the attention that an input of pure universal information generated the world, does not violating the law of conservation of energy. On that idea he was inspired by divine words information, and the current its interpretation in the frame of David Bohm's (1997, 2003) idea upon an active information that order and organize all in the world ("Science and the Trinity", 2004; "Quantum Physics and Theology: An Unexpected Kinship", 2007).

P. Davies ("The Fifth Miracle", 1999), suggested that information is a global rather than a local physical quantity. That meaningful information emerged in a course of self-complexifying. Moreover the self-complexifying of mind, perhaps, is written in the laws of nature.

Further, he in the book "The Origin of Life" (2003), and in an essay "Quantum Recipe for Life" (Nature, v.437, p.879. 2005), underscored that due a quantum information is enabled an algorithmic self-complexifying. What concerns to the live cell, it is regarded as a "computer - an information processing and replication system of astonishing precision. Davies even imagined a some atomic Adam, as a quantum replicator, that from a primordial - soup pick up building blocks for self-complexifying of live entities, embracing the human being and its intelligence. Davies assumes that for scientist is while not clear the nature of the laws that creates order out of chaos, namely "the source of creativity".

Accordingly he imagine such laws as undiscovered, emergent or overarching principles, regarding that it works to evolve clod-like particles in organized complexity. On reason given Davies hypothesized a "principle of increasing complexity", called the fourth law of thermodynamics.

In an another publication in New Scientists (October 29, 2005), Davies claimed that cosmic creativity's small branch is a self-complexity also of the life.

Generally, the immense creativity potential "was forged in the big bang. Once sentient beings like us emerged, a whole new phase of creativity came with it". Hence the human being refashioning the world due still undiscovered, emergent laws.

What concerns the apt as yet undiscovered nature of laws of the Universe and biogenesis is while known that its accuracy is far of sufficiency of information. Consistently to Rolf Landauer, the father of information science, such laws uncompleteness is related to a lack a sufficient information, then for it making complete necessary more bits information than the Universe's upper limit 10 of the power 120.

Davies (2007, 2008), explains that the observable Universe is limited because the finite of speed of light that leads to an existence of an horizon, a some border for information, which power is limited by Universe age. Since the start of BB, Seth Lloyd, one of leading experts in information sciences, calculated the power of information processing until now increased to a 10 to the power in 122.

Eventually, in the past of the early Universe the limit was essentially smaller. Regarding that the core of laws are mathematical equations requiring infinite information to its specify, the lack of sufficient information at BB, the laws were seriously fuzzy. With the climbing of information the laws focused and homed.

However, the flaws in the laws open enough a wiggle room for the universe to evolve its laws bio-friendly. Anyway. remained unsolved the question the Universe's laws nature come from?



Davies concedes that currently governing views - the laws of God, an unexplainable to us, as well the laws of physics are ingenuous unexplainable, i.e. emergent. He recalls that the eminent astronomer Fred Hoyle envisioned that "super - intelligent has monkeyed with physics", and Davies goes along with a view that we never explain the laws by divinity, or physical, and the answer is findable in nature ("The Goldilocks Enigma",2006; ).

He shares with the view 'Is the universe actually made of information'. He explains that information is an abstract notion, a 'yes - or - no'. Springing from this, he suggest that information 'is the irreducible kernel of existence'. That is consistently with John Wheeler's, and also of Hans von Bayer's (2003, cf. above) idea that 'information give rise to every - particles, force fields, space - time, even ourselves'. To an observer is settle out a central role of an observer of quantum outcome in our participatory universe, where the reality arises from posing yes - no questions.

This leads to the idea of an existence a some cosmic computer, viz. a cosmic processor of information, that emerge with the Universe, being inherent in it.

In a talk of Davies with the journalist Steve Paulson of Templeton Cambridge Journalism Fellowship in Science and Religion (Salon.com, July 3, 2007), the former underlined that people are not a result of a cosmic accident .

but of " laws of the universe that grant out lives meaning and purpose. We are meant to be here". He suggest that the laws are imprinted on the universe at the start of BB. Thereby, the laws of universe emerged with the time of BB.

Issuing from the strong anthropic principle, Davies claims that the observer are in the central position, and hence dictating how the universe is optimally to put together for giving the mind and consciousness a general role in the great schema of the universe.

Thus, the emergence of life and observer causes the universe to have the laws that it does, and regardless that life and observer emerged later on in the universe, they have some responsibility how the laws started and the their state at the beginning, in kind with Wheeler's "participatory universe". Obviously, the laws of physics 10 billions years ago were different from that of our time.

Besides, the cosmologists draw the attention that in accord with the quantum physics, you can't the quantum state in the past to separate from the nature or quantum in the present. As usually it consists of many quantum histories what will inevitably influent the existence of life, and a observer will select a subset of the laws of physics bio - friend for the emergence of life. At the start out of a primordial universe they were deeply vague and fuzzy and focusing down over time, leaded by (wisdom) of meaning and purpose.

Consequently, the universe follow an inherent script and the laws of physics due information processing, orient by a particular type of teleology.

Notably, that Davies in an interview to the Indian National Newspaper " The Hindu", Online magazine, of June 27 (2007), believes that the laws are more like a computer software - programming information being run on a grand cosmic computer that emerged with the BB, being inherent in it.

It is evaluated that Davies was the first to speak that modern science is greatly affected by monotheistic religion, searching for singular answer, replacing philosophy with anthropocentric arguments, that may be a step forward in thinking.

To the point, Davies about the aforesaid principles of search the issue " What are the laws of physics ? ", lectured at NIST, Gaitherburg, Maryland (October 31,2008). In that lecture he for the first time shared on the role of a

quantum "weak measurement", in generalization of the exponential decay and synthesis of laws of complexifying in the past and future (in [cosmos.asu.edu/events](http://cosmos.asu.edu/events)).

In an online site leading by Davis ([Beyond.asu.edu/research](http://Beyond.asu.edu/research)), posted an essay "Foundations of quantum mechanics and quantum biology", where he tackles generally with two new approaches in the research of peculiarities of laws of evolve of the Universe and live.

The first approach is related to the approach that developed Yakir Aharonoff and his group, viz. the "weak measurement" of quantum physics, a novel formulation of the quantum information theory that allows both forward and backwards in time analysis. That opens a new way for thought and real experiments. By exerting weak measurement in the intervening interval, amazing a paradoxical results are obtained, e.g. a particle can exist in one place, but the properties such as electric charge can be in an another,

Moreover, in the special literature we found evidences that the performed by quantum weak measurements reveals a some feed - back between the past events of origin of the Universe and nowadays, called quantum post - selection. That phenomenon is really a quantum physics one where the deeply past Universes processes are inherently linked with present one, as in quasi - signalization event. On behalf of that post - selection phenomenon the human mind wisdom due intuition and knowledge/science logical analysis, get the potential to shape the laws of Universe, particularly its bio - friendliness.

The other novel approach that Davies, in the mentioned above online report is an application of quantum physics in biological systems. He claims that a live cell made up of multiple little nano - machines of various levels, rotors, chains, motors. That agencies are sufficient tiny for run important quantum effects, to play a key role in accord with quantum laws.

Thus the Universe and life is ordered in an intelligent, rather in a wisdom way, whose refinement is the emergent laws core mathematical rules that govern all natural events.

In a talk to Lateline of September 9 (2008), Davies concedes that at 10 to the power minus 43 sec. - Planck time, when did the universe come to exist , and was there anything before it will illuminate.

On the relation of quantum information and entropy, namely Second Law of Thermodynamics, lectured Charles Bennett, the leader of WCMB experiment, professor of astrophysics at Massachusetts Institute of Technology (MIT), at Location Broad Institute (posted on MIT World, October 4, 2007).

He shared with his exploration upon a linkage of entropy and quantum information, that is reducible to qubits, a two - state system of superposition, such as polarized photons, due to which his team succeeded to get information on the very yearly events of BB (cf. above).

Besides, Miguel Rubi, a physics professor (the University of Barcelona), Humbolt prize winner for contributions to nonequilibrium thermodynamics, reported on his research upon the way from the conversion of a state of non-equilibrium chaos to order, and relation to it quantum information(Scientific Am., November, 2008).

Even so the most ardent apologetics of the idea of cosmic computer is Seth Lloyd, now the Director of the Center for Extreme Quantum Information Theory (Massachusetts Institute of Technology, MIT, Cambridge, US.

His smart and sometimes shocking ideas are largely fired in his best -seller "Programming the Universe: A Quantum Computer Scientist Takes On the Cosmos" (2006). There he "advocates a new paradigm" by positing the universe

to be a gigantic quantum computer machine that processes information.

He also focus the attention that around generates entropy, that is universal, increasing a bumping and jostling of particles, a background of entropy in the world around, creators of information, The suited information ascends to the rules of quantum physics, that at start of BB were fuzzy.

The prevailing scientific philosophy of Lloyd is that the universe operates like a clockwise agency in virtue of qubits and each piece determines in movements of every other pieces. Accordingly plugging the right number of information qubits into the right equations could in principle predict the picture of the cosmos with unlimited precision.

Lloyd is convinced that the universe is a quantum computer, whose computation are *the movement of information that define the word we express in bits*. He even dubbed it as "*bit of creation*", that from a formless universe generated such a complex world. An apt evolution is based on his idea that information always lead to a more information. New information and new complexity are born all the time.

Apparently the world of Lloyd is hard-wired for complexity, that lead to eventual emergence of DNA, sex, consciousness that practically are inevitable. And that all seems on the border of metaphysics.

In the recent essay (Physicsworld.com, October 31, 2008), entitled "The Digital Universe", Lloyd argues that information and computation lies in the heart of physics laws. The physical quantity called entropy is in fact information, and every particle carries its bits. When two particles collide, its *information bits in an interplay with created energy* serve to understand any physical process.

Further, he underscores that the emergent theory of quantum information enables us to understand many of the known features of quantum gravity in terms of information, and information even in the condition of a black hole isn't failed. Thus, Lloyd assumes that *entropy/energy and information are the moving agencies of origin and evolution of the universe*.

Nevertheless, derives the question the source of energy come from?

- Hawking ("A Brief History of Time", 1988), pondered that the matter in the universe is made out of positive energy. Considering that this matter is attracted itself by gravity, the latter has negative energy. As our universe is approximately uniform in space "the negative gravitational energy exactly cancels the positive energy represented by matter", and thus the total energy of the universe is zero".

Furthermore, in Davies' "The Goldilocks Enigma" (2006), under the title "The universe might weigh nothing!", the problem was discussed more extensively.

He sprang from Einstein's equation  $E=mc^2$ , that all the mass of structures of the universe, including the heat energy of the CMB, and magnetic fields works also as energy. Regarding that only the gravitational energy is negative as it attract all the mass and energies that fails to attract mutually, is calculated due  $E=mc^2$  that the mass of all the galaxies attracted by gravity is minus 10 to the power 50 tones, which is roughly equal to the mass of the structures of universe, that hence is accepted as positive. Consequently, the two opposite mass - energies cancel each other, and thus the net mass of the universe zero!

The considerations was backed also through the satellite expeditions of WMAP, is found that the space is flat (that estimated within a 2 percent accuracy), and understandable that "the universe contains no net mass".

Laurence Krauss, that now moved to Arizona State University to lead a new program on "Origins", with a very wide range of exploration, from emerged knowledge on origin of the universe till the evolve of humanity. In a paper "The

Free Lunch That Made Our Universe" (New Scientists, November 28, 2008), he admitted that a cancel of positive energy of elementary particles with a negative energy of attraction of gravity resulted a state of zero of the total energy, that modes a flat universe. Thus is solved the issue of origin of the universe from "nothing".

He also claims that the term vacuum energy "reemerged to play a central role in 21st -century physics", providing the key of moving "to a deeper understanding of space, time, and gravity", and even as a guide to quantum gravity.

The destiny of our Universe is tied to the positive, or negative features of vacuum energy. A domination of positive vacuum energy in our flat universe will it expend with an increasing rate, whereas by a domination of a negative vacuum energy the universe will collapse. Descending from general gravity, the only thing that push the acceleration of the universe maybe a weird antigravity force, rather as an energy of nothing of quantum vacuum, rather in a guise of dark energy.

Another version of guess upon creation the Universe of nothingness concerned with the start of the speculation of an "fluctuating universe", put forth by the illuminated generator of plausible ideas - John Wheeler. He deliberated that the geometry of this phenomenon does had been arisen at the "era of Planck", viz.  $10^{-43}$  of the power minus 43 sec., since in such almost "zero" time, was launched a quantum physics process with fluctuations in a vacuum of space-time fabric of writhing randomly of virtual particles. They are constantly created and destroyed making a space-time pattern convoluted and foamy ( J. Wheeler "Geons, Black Holes and Quantum Foam" 1998; Amarendra Swarup, New Scientist, February 18, 2006). As a result of the moving effect of such particles-pairs and its interaction were generated a virtual potential energy, so-called scalar field.

Davies also draw the attention on a loophole of the acausal origin of BB. His suggestion emerges from quantum physics uncertainty that states the position, momentum and energy of particles governed by unpredictable fluctuations. These suited conditions open the way for a Universe to come into existence from nothing spontaneously as a result of quantum fluctuation ( The Goldilocks Enigma, 2006,7).

*Summarizing, the offered review, and especially of Zeilinger, Davies, and Lloyd sustain our idea about the key role of purposeful information and energy, etched at BB, in generating an abiotic Universe and its primary fuzzy laws, orient towards bio - friend one, for evolve human mind wisdom, the shaper of the laws.*

**TANAKH'S METAPHORS of GOD'S INSPIRED INFORMATION upon CHAOTIC - QUANTUM FLUCTUATION(an intuitive interpretation of human mind's wisdom)**

Upon chaos was already mentioned in Job (26:8), namely "*He it is who stretched out heavens over chaos...*". In common was also Maimonides, commentary on the verses of Gen. ( 1:3) -"*the earth being unformed ...*". He conceived that "*At first this Universe consisted of a chaos of elements... and (its mover) energy of light and darkness (fire)...fixed on the first day of the Creation*"(in M. Friedlander, "Analysis of the 'Guide for the perplexed", p.2, lii,1904). Actually, at a time correspondently to the Genesis verses 1:2, than as power agent was rendered darkness or fire (Deut.5:20-21). The former comparison was backed by the commentary of Maimonides that *hoshek* is dark fire, and it is one of elements created in the beginning (Guide, p.2, ch.30).

The Glossary of Hebrew Terms of the edition "Challenge", of Aryeh Carmell and Cyrill Domb (1976, 2000) of the Association of Orthodox Jewish scientists, the Gen. ( 1:2 ) "*Tohy Vavohu*" is translated as primeval chaos, and in the same issue of Challenge, Alvin Radkovski, a professor of nuclear engineering at Tel-Aviv and

Ben-Gurion Universities, contemplated that BB begins with "chaos" under the influence of a primeval light energy effect.

Consequently, the metaphor of Genesis "*unformed*", and Job's refinement as a chaos, may serve than a prototype of rabbi Nelson's (2006), science metaphor of God - "chaos theory".

In relation to the notion of "quantum fluctuation", we find for acceptable to parallel it to an ancient metaphor "chaos" as a disorder, and "*a wind from God sweeping over the water*"(Gen.1:2). According "The Merriam Webster Dictionary" (1998), the meaning of "sweep" is to move over with speed and force, hence a condition sufficient to push fluctuation. Besides, Timothy Ferris in his "The Whole Shebang" (1997), rendered the quantum vacuum as a frothing sea of activity and thus "we find quantum fields roiling the vacuum like *winds across water*".

In special literature we found also a linkage of quantum fluctuation with the chaotic disorder of entropy, regarding that it serves as both a measure of disorder in a physical system, and amount of information about the microscopic motion of particles (Lee Smolin "Three Roads to Quantum Gravity", 2001).

For the matter Wojciech DeRoeck underlined that along to him several other authors discussed the issue of extension of the fluctuation of in the theorem for the entropy production (*Comptes Rendus Physique*, v.8, issue 5-6, p. 674, 2007).

A striking analogy with forenamed Gen.(1:2), is the relation of chaos to entropy and quantum fluctuation. In some sense it is in kind with metaphors of Hawking (2002) - "the origin of the Universe as like the formation of bubbles of stream in boiling water". That metaphor Hawking once more repeated in his lecture on "Origin of the Universe" in a Robert Oppenheimer lecture at March 3 (2007). Quite in the same guise expressed professor of nanoscience Chris Binns( the University of Leicester), "...our observable universe as a mass of waves on top of an ocean"("What Lies Beneath the Void", eBulletin, February, 2007).

Furthermore, the same thought of authors of Genesis, was more expressively translated by GNB of the American Bible Society, notably "*The raging (furiously angry) ocean that covered everything was engulfed in total darkness and the power or an awesome wind of God was moving over the water, viz. the raging ocean*". The latter translation depicts more suitable conditions featuring a machinery of "quantum fluctuation".

Notable also the comments of RASHI (c.1040 -1105) that the heavens was created from fire and water, as in Hebrew heavens is *shamaim*, (*a*)*maim* is water and prefixing in the *sh* a letter "e" is decoded the word fire, namely *esh* (in Tanakh with commentaries of RASHI, ed. *Gesher Ha-T'shuva*, Jerusalem, 1990 ).

Impressing also a commentary of Rashi, that in the beginning were fire [of *darkness*] and water [cosmic], a medium of the modern fluctuating space. That also coincides with recent data on a liquid-like consistence of the Universe at its very origin (cf. below).

The commentary was not far from the popular description of Kabbalah of a "Creator - the source of all positive energy"( P. Berg "Kabbalah for the Layman", 1985). That just coincides with our evaluation the equation of the law of conservation of energy ( $E=mc^2$ ) as "God equation" that heralds that God's creative wisdom force propel all in the world, encompassing quantum fluctuation.

Strikingly, that on an appropriate relation of God's energy to the phenomenon of quantum fluctuation conceded also Sir Polkinghorne, an Anglican priest (2004), astronomer Hugh Ross, the founder of on-line net "Reason"(2005), and Nicolas Short (2000), PhD, an emeritus educator of "Remote sensing tutorial" NASA Goddard Center.

***QUANTUM FLUCTUATION, a (CHAOTIC)FORCE ,e.g. "SUPERFORCE", and DARK - ENERGY-FEASIBLE TRIGGERS of BB, SELF-GROWTH of the UNIVERSE, LIFE***

Exists quite a consensus that the origin of the Universe took place in a framework of chaos at the Planck scale (i.e.  $10^{-43}$  -  $10^{-33}$  sec.), with a brake of the fundamental laws of physics. That draws towards a chaotic quantum fluctuation era in a false vacuum sea of virtual mass- and massless particles (fractional subparticles, i.e.  $1/3$  electrons) pairs, that instantly annihilates, pop up and disappear. The process originates a huge energy ( J. Wheeler, A. Linde, P. Davies, S. Lloyd, D. Bohm, L. Krauss, I. Barbour, R. Collings, etc.). Ever so up to now is discussable the primal source of energy that triggered a chaotic quantum fluctuation.

Ever so, several respectable physicists and philosophers argues that the conceivable triggers of the Big-Bang - primordial Universe, and even life are quantum fluctuation (with its chaotic component, and its acme -"superforce" ), along with the cosmological constant, e.g. its dynamic component dark energy.

This viewpoint radical expression is "*In the beginning , quantum fluctuation*".

That maxim was offered such acclaimed authority as Edward W. (Rocky) Kolb, the founder director of NASA/Fermilab Astrophysics Group at the Fermi National Acceleration Laboratory, Professor of Astronomy at the University of Chicago, in his paper "Planting Primordial Seeds" ( Astronomy, v.26, , p.42, 1998). In another review he spoke about an "primordial soup".

On the eminency of Kolb as a creative physicists evidence, that in 2007 he was honored as Arthur Compton Distinguished Service Professor in his University.

Wheeler explained that the chaos disorder works in conditions of the minuscule scale of Planck parameters that eliminates the origin and exertion of any regularities, including the effect of gravitation force (J. Wheeler "A Journey into Gravity and Space-time", 1990). That leads to an amalgam of chaos and choice.

In that province was also the key idea of the book of the Nobel prize - winner Ilya Prigogine and Isabella Stenger "Order Out of Chaos" (1984).

A special chapter to "Chaos" was dedicated in Davies best-seller "Cosmic Blueprint: Discoveries in Nature's Creative Ability to Order the Universe"(1988, 2004). In these works were argued that a *chaotic non - order is a source of entropy's high energy - the propeller of information about plausible paths of ordering.*

Whereas Richard Collings, a professor of biology at Olivet Nazarene College, in his book "A Random Universe" (2005), speculated that God created the universe through a random design towards a purposeful its evolve. As is known randomness is a special case of a *chaotic order* (D. Bohm, D. Peat, "Science, Order & Creativity, 1987).

The renown philosopher Ian Barbour considers that the universe are a combination of contingency and intelligibility, the way to unexpected forms of rational order (in "Physics, Philosophy and Theology", Russell et al. eds. 2000).

At heart, the start of the Universe, viz. BB was governed through chaotic disorder at the Planck era, hence the chaos era is believable linked to a Planck era (at  $10^{-43}$  of the power minus 43 sec.), and *quantum fluctuation*. Moreover, Davies (2006,7), draw the attention that vacuum fluctuation is conceded as crucial to a comprehension the core of dark energy and antigravity, the key of the future of our Universe. Further, he suggests that regarding that quantum fluctuation works in the realm of atom scales and considering that the registered cosmic ripples is explainable as quantum fluctuation, and thus that atomic - scale fluctuations inflates and "writ largely on the sky".

Just as a result of quantum fluctuation took place a steady process of popping out of virtual particles of nothing to space-time vacuum and immediately

their disappearing, as also an intensive particle pairs (viz. electron - positron) annihilation. That process emerges as a subject of origin of high energy, the trigger of origin of real particles of matter and forces.

Lawrence Krauss and Michael Turner quite recently blazed a trail that the empty vacuum space is not really void, as virtual particle - antiparticle pop out the vacuum for a split of minute, traveling for short distances and then disappear, consequently by such way oscillates. That is the royal road to quantum fluctuation. Anyway the fluctuation directly is not observable (Scientific Am., September, 2004; Krauss, 2008, cf. above).

In Martin Bojowald (Institute for Gravitation and Cosmos, at Pennsylvania State University), original theory of origin of the universe as a big bounce triggered by an unimaginable energy of quantum fluctuation (Scientific Am., October, 2008). He insists that our universe represented an emergence event that started from an almost unnatural space - time random (chaotic) Brownian motion of a quantum state - a "world in highly fluctuating turmoil". Besides, the fluctuations before and after the BB were of a different rate.

The quantum fluctuation of the universe is surrounded by a chaotic field ( Phillip Soulier et al. ScientificCommons, 2008). Experimentally was shown that quantum fluctuation regulates the rate of chaos, correspondently it enhance or suppress in a squeezed state system ( Bambu Hu et al. arXiv.org - chaos - dyn//9802011v1, submitted February 12, 1998). However, Zhang et al. found that global chaos is suppressed by quantum fluctuation in low - spin system ( Phys. Rev. A, v.42, p.3646, 1990), and Ed. Nasche (Frankfurt Institute Advanced Scientific Res. University), suggested that chaos may play a guiding principle for comprehend how quantum fluctuation gives rise to particle physics and ultimately our universe (Chaos, Soliton & Fractals, v.36, issue 5, p.1183, 2008).

In some other works we found a relation of entropy's chaos with quantum fluctuation. So, by several researchers had been conformed the relation of entropy disorder production with quantum fluctuation ( Orłowski Arkadiusz, Phys. Rev. A, v.56, issue 4, p. 2545, 1997; Y. Jack Ng, Entropy, v.10, p.441, 2008). Thus, Arkadiusz showed that information entropy can be useful as a tool for more practical quantum physics events, and Ng, claims that due quantum fluctuation, space - time is foamy on small scales, which degree of foaminess principle prefigured in the physics of black hole entropy.

Moreover, is proved that in an unequilibrium system, the entropy production satisfy a fluctuation theorem symmetry of a quantum mechanical system (in Non-linear phenomenon in complex system, 2007, v.10, p.102).

Thus, the core of a quantum vacuum that moved the origin of the Universe, was it spontaneous chaotic fluctuation. Complementary *springs the question - the primary source of the fluctuating vacuum came from ?*

From quantum fluctuation (primordial) arises a " vacuum energy", acting as a source of dark energy (in a Workshop 2004, web.cern ). In that context Einstein's famous idea of a Cosmological Constant (CC), now is presumable as a of reservoir which stores energy of the vacuum ( Dr. Jim Lochner, NASA's Imagine the Universe, September 26, 2008).

The most simple explanation of the process is that at the Planck era had been broken all physical laws that triggers a chaotic quantum fluctuation.

To the point, above we referred some literature on the existence of a link between chaos of entropy and quantum fluctuation.

Most of scientists accept that quantum fluctuation is genuinely spontaneous and intrinsic to nature at its deepest level.

Still the latest explanation of the term quantum fluctuation introduced the

illuminated relatively young cosmologists Andre Linde, professor of physics at the Stanford University, one of the founder of the popular direction "inflationary cosmology". In a report at the annual meeting of American Association for the Advance of Science of 2006, an interview to Physorg.com titled "Universe Offers 'Eternal Feast'", and on his personal site of his University (2008), he told that "quantum fluctuation in the fabric space-time" of the universe(s). Its machinery are the diverse peaks and valleys of fluctuation forming an energetic landscape of energy driving expansion of the universe. By suitable oscillation is caused a hot BB. Thus, this preceding stage of inflation is what made the bang so incredibly big. He claims that quantum events originates all around. Some of such small quantum changes caught up as chaotic quantum fluctuation of inflation, that is also of solve of CC problem.

In the earlier works, he even discussed the issue of fractals in relation of a self-reproducing universe(s) through quantum fluctuation. In result of the competent quantum process originates varies types of universes domains (mini-universes), in a shape of fractals, instantaneously at the BB. And generally, as was referred above, our universe is a huge fractal, and in its super large scale render a complicated fractal structure. He (1990, 2004) conceded that our universe is an eternally growing fractal producing machinery due quantum effects like quantum fluctuation.

However, in a recent talk of Linde with Tim Folger, a noted science writer, in the Stanford University Campus at November 10 (2008), he claims that not life is central, but the universe is adapting to us, and dark energy appears "calibrated for stars, galaxies and us. That calibration for life and universe seems the greatest mystery of physics (Palo Alto, California, online).

With that province explicitly tackled also the mentioned above Rocky Kolb in his works "A Recipe of Primordial Soup", "The importance of Nothing"(www.counterbalance.net/cq-kolb/noth-frame.html), in the "Dark Energy: Seeking the Heart of Darkness" (Space, February 16, 2007).

In the former research Kolb theorized that a Superforce, the unity of all known forces at a temperature far exceeding the potency of every accelerator, and that huge force run near the beginning of early universe, since the instant of the BB. About 10 of the power of minus 43 sec. after BB gravitational force detached from others, and only at 10 of the power minus 20, detached the electromagnetic force (with its particles photons) from the weak nuclear force. He also underlined that the tremendous potential of energy released at the moment of BB exerted a hot primordial soup.

About "Nothing" as a source of laws of nature, Kolb ponders that it has a high potential of energy, that is hidden under a deep and profound unifying symmetry of fundamental forces

In the latter work Kolb focused on search the matter of "dark energy", which simplest solution is the Cosmological Constant (CC) - an expression of space-time energy, that was formulated due Einstein's famous equation of General Relativity, as a weird form of energy, now excepted as a vacuum energy. The main conundrum of that vacuum energy amount, in accord with quantum physics is 120 orders of magnitude larger than needed for acceleration of expanse of universe. However, the phenomenon of supersymmetry cancels out it completely.

Notable, that a team under the astronomer Adam Reiss of the Space Telescope in Baltimore (Maryland), at November 2006, detected that dark energy influence already nine billion years ago (arXiv.org/abs/astro-ph/0611572). That rules out the suggestion that a some "quintessence force" that as CC pervades the universe, but changes very rapidly.



In recent Kolb and Joe Lykken, particle physicists, record under the title "The Dark Site of the Universe", at the Natural Museum (Washington) of September 24 (2008), underscored that issuing of latest WCMB decoding data, the Universe is so inhomogeneous that by an unknown way, presumable dark energy changes the expansion ambiguously, not uniformly. Lykken is also in common with Kolb, that dark energy of vacuum energy is identical with CC.

In his turn the smart cosmologist J. Ambjorn et al. (Phys. Lett. B, v.641 (1), p. 24, 2006), simulating (computer) their promised model of self-organizing quantum universe, showed that quantum fluctuation promotes an emergence, a background of an inherent theory of Causal Dynamical Triangulations (CDT). Besides, quantum fluctuation in many ways is more natural to fix rather the boundary than the length of CC.

In their explicit introduction to the CDT theory (Scientific Am., July, 2008), is demonstrated that at the very start of the universe in its empty state, the gravitational quantum fluctuation may have been very enormous. In that state when matter is barely registered, quantum fluctuation is like "a tiny raft tossed on a roiling ocean". The authors claims that on such shorter scales of space-time quantum fluctuations become so strong that break down the classical geometry, and the number dimensions from classical four drops to a value of two dimensions. In a suited state the universe becomes self-similar with scalar patterns.

As a necessary agency for the work of the CDT model they introduced CC, than an immaterial substance that space contains as a single form of energy that observational was substantiated.

Meanwhile, we succeeded to pick out an additional series of publication that evidence on an existence of a direct relation of quantum fluctuation to CC.

So, in the monograph of Dr. Sten Odenwald, "Pattern in the Void" (2002), a known NASA expert in astronomy, that argued that quantum fluctuation is the source of CC. The reviewer of work Frank McCormick (Williamstown, VJ, US), generalized the ideology of the author as "Wisdom of the Void" (2004).

Another prolific and resourceful theoretical physicist G.E. Volovik, of University Turku (Finland), issuing from the realm of condensed matter, argued that the thermodynamic fluctuation of CC is much bigger than zero, and could be the source of dark matter (*Zhurnal Eksperimentalno Teoreticheskoy Fiziki*, v.80, No 7, p.531, 2004, M., in Russian; Springer Link, February 18, 2006).

In kind with a review upon evolution of observable structures of the Universe, offered by Jonathan Knight, a scientific writer (Nature, v.423, p.376, 2003), was accentuated that quantum fluctuation (of the scalar field), runs at the beginning of BB.

For the matter, in FAQ/Tutorial (updated September 10, 2006), Dr. Edward L. Wright explained that Supernova 1a brightness with redshift near  $z=1$ , and WCMB combined with Hubble constant, evidence that CC is a cylinder filled with a "Vacuum" containing quantum fluctuation. In the same FAQ Sten Odenwald (2006), convinced that the laws of quantum fluctuation existed prior to the BB, (that beg a question).

In kind is the considerations of Dr. Stephen Alexander (Penn State Eberly College of Science), in a framework of "Theorists Questions in Cosmology", online, January 1 (2006), suggested that CC have contributions from vacuum fluctuations of all quantum fields.

Consistently to Edgar Gunzig (2006), honorary professor of the University Libre de Bruxelles (website), the central player - quantum vacuum, the site of uncontrolled activity of constant quantum fluctuation, that possess a non-zero energy (in contrast the traditional vacuum), associated with all proper fluctuations.

An interaction of fluctuations with particles, creates matter, that in turn forms space. An interplay of the quantum fluctuation of the vacuum, and the expansion of the space, give birth of the universe.

The astronomer and attacking atheist, professor Victor Stenger, the author of a shocking Book "A Fail of God", (2006), underlines that many scientists, encompassing himself, accepted the vaguely described observational matter as quantum fluctuation (Stenger's website, posted May 30, 2007).

*On the whole the offered review lead us be prone to assume that imaginable triggers of BB and (self) organization of Universe, Life and its apex, human mind, are an interaction of quantum fluctuation, "Superforce" and CC(dark force) .*

#### **TANAKH'S METAPHORS-oblique HINTS on a " SUPERFORCE"/"SINGULARITY"**

The ancient authors of Tanakh imagined that primordial building elements of the world were in state of potentiality, or even in an inert state and the power or the spirit of the Almighty triggered it to push in multiple movements (the classical commentaries of Hebrew Bible, "Soncino" print of the Hebrew Bible, 15-16th centuries).

As concerning the notions *superforce* and its component gravitation force that push an instant *singularity* and accordingly may pretend as a primary huge energy, whose source is imaginable a "dark fire" (*hoshek*, Gen.1:2, cf. above).

*The ancient authors of Genesis, naturally doesn't differentiated the now known fundamental forces. Still is guessable that they had been inspired on an existing of a unique energy as "dark fire", with immediate fractionation of it a light energy ("Let there be Light", Gen.1:3), i.e. electromagnetism and its particle - photons.*

Credible that the eminent interpreter of *opening verses of Genesis*, Nachmanides (1194-1270), proceeding from ancient interpretation of Mishnah, perceived *that the world really had been evolved from a substance of unique potency "no larger of a grain of mustard"*, a tiny speck packed with huge creative energy and matter, i.e. like modern notion of Superforce /*singularity*( Commentary on the Torah, Genesis 1:1-4). The inference of the sage was expressed just "in a language of man".

In this context rabbi Simon contemplated an origin of the universe of a "one single grain" (Challenge,2000).

Whereas Maimonides (Guide, p.2, ch.17), contemplated that a starting point of the birth of the Universe than a critical instant of transition of a state of potentiality to "all actual genesis". And thus he concluded "that God created it from nothing ...that all things are produced of it...", a starting point of the "transition from potentiality to reality".

Rabbi Nelson ("Judaism, Physics, and God", 2005,6), the notion of "singularity" catches quite metaphysically as the root of the universe, issuing from the capital Judaism statement in Torah - "*Hear, O Israel! Adonai is our God, Adonai is one!*" (Deut.6:4). In his modern version of a metaphor it sounds as follow: "Listen, O Israel, Adonai is our God, *Adonai, the Singularity!*". At hearth, is impressing the monotheists envisages of God whose oneness symbolizes a single starting point of time, space and information.

Another plausible sacred metaphor for singularity introduced by Nelson is '*Hamakom*', viz. "place" of the world (Bereshit Rabbah 68:9). Its synonym is "the omnipresent", namely an unlimited "space". Nelson even is just putting in the metaphor a new meaning: God - the *generative singularity*, the birth place of all space.

Though we are more favored with the latter term, but as equivalent to this general term, is plausible to show "the place" manifestation in a guise of

primary energy - darkness, i.e. fire and light, expressed in the fundamental law of conservation of energy, the energizer of world processes, including its organization.

Correspondently, already the medieval sages and even modern Orthodox Bible researchers, beyond Nelson, also are approaching to the thought on a "*singularity's*" starting point of origin of the Universe through a Big Bang event.

Notable that the agnostic P. Davies ("God & the New Physics", 1983), pondered that singularity serves as some interface between the natural and the supernatural, and it is the nearest thing that science has realized of the sphere of supernatural agent. The idea he maintained descending from the consideration that at the singularity point the gravitational force, and the density respectively is infinite that "imply the existence of some sort of outward force to overcome the enormous gravity"(also in "The Mind of God", 1992,2001).

G. Schroeder, PhD, a physicist and researcher of Judaism, in his "Genesis and the Big Bang" (1991), conceived the nascent Universe as a compressed, squeezed into a speck of space. The author along with Nobel -prize winner of physics S. Weinberg, and many others, accentuated that at the birth period of the Universe its starting point had a unique huge temperature about 10320 degrees Kelvin. Such temperature and hyperhigh pressure rendered the starting singularity as a *pure* energy. Thus, it perhaps correlates with the Hebrew Bible's notion of dark "fire" energy.

*Eventually, we perceive a definite correlation between aforesaid initial Superforce/singularity of the acclaimed classic BB theory, and Torah's commentators hints that at the starting position of Creation of the Universe it was extremely concentrated like a grain of mustard, i.e. a tiniest imaginable speck of space-time and an interchangeable energy - matter source.*

Whereas, the pondering of Roger Penrose ("The New Mind of Emperor", 1989), evidences on an infinite of a mathematical singularity without the laws of physics, i.e. that isn't informative. And he beg a question does the singularity provides any religious insight.

#### THE CORE OF "SUPERFORCE" / "SINGULARITY"

For us is more reasonable to concede as a trigger of BB, i.e. primordial Universe a some "Superforce" than a mystic "Singularity", a "*boundary to moments (of time) and places*" (P. Davies, 2006,7), and an infinite mathematical notion, that by physicists usually is avoidable.

This extremely hypothetical insight on a "superforce" is grounded upon other supertheories - supersymmetry (including the notion of supergravity and superstrings, that are waiting for testing at the future supercolliders (Davies,2006).

Even so, Pierre Luminet, the director of research at CERN, astrophysicist at the laboratory of the Universe and the Observatory of Paris-Meudon, and the co-author of the book "The Infinity"(with M.Lachize-Ray, 2005), spoke that just in few instants at about 10 to the power minus 43 sec. governed a "universal superforce" uniting the proper four fundamental forces. That are: gravitation, electromagnetism, and so - called strong and weak nuclear forces. Than at once decoupled gravitational force as a negative energy of infinitely warped and dense space- time (*La Recherche*, October, 2005).

On a "gravitational field that carries negative potential energy density and fills an ever - enlarging region of space" pondered also J. Guth and J. Kaiser(Science, v.307, p.884, 2005). In the suitable Planck era the temperature were hyperhigh (10 of the power of 32 Kelvins). The energetic seeds of *gravity* played a preponderant role in the phenomena of "*superforce*" or *singularity*.

The most accepted speculation that "singularity" was a product of

concentration of all the gravity rendered as a curved space-time that framed as infinite dense single point (Abhay Ashtekar et al., Pennsylvania State University, Phys. Rev. Lett, v. 96, p. 141301, 2006).

In that pre-BB singularity point's gravity basically shredded the space-time fabric to a scale of an subatom, or even to an infinite point (Davies, "Superforce", 1984). Thus the Universe's mass was created out of itself contained gravitational and scalar fields (potential energy fields of energy equivalent to mass), A. Linde Scientific Am., November (1994).

Robert Matthews, a visiting reader in Science at Asian University (Birmingham, UK), in his review "Timelines of the Universe" (Guardian, April 26, 2008), pointed out that at the *10 to the power minus 43 seconds*, viz. Planck era, ran a "Superforce", an amalgam of all fundamental forces. In that case the Universe from BB, until size of the Planck scale there is no time or space, and that era dubbed as a quantum foam. In this era closest for to the absolute start of the universe, is suggested to be incredibility hot, dense and turbulent, with the very fabric of space and time turned into a rolling confused swamp.

At the *10 to the power of minus 35 seconds*, in the so-called Grand Unification Era, the Superforce begins to break apart into its aforesaid force components known currently. Around this time so-called inflationary energy triggers a dramatic burst of expansion the universe from smaller than subatomic particle to far larger than the cosmic volume observable today.

At the *10 to the power minus 32 seconds* ran the process of primordial wrinkles on space-time. To the point tiny quantum fluctuation made some region of the Universe slightly denser (Nature.com/nature/journal/v/445, p.366).

Remarkable, that a research of development a theory that unify the aforesaid four fundamental natures forces is the challenge for the 21st century.

The guru of theoretical physics and the immense source of creative ideas John Wheeler, in his turn introduced a catch-word "quantum gravity", for a hypothetical framework that unify the uncertainty of quantum fluctuation and gravity. It is suggested that primeval eras worked at conditions of quantum gravity, the Holy Grail of the foremost physicists efforts to gets to it (Wheeler, 1990).

### *GRAVITATIONAL FORCE*

Calculations showed that in a proximity to 10 of the power minus 43 seconds after the start of the fireball of BB from the superforce firstly fractionated the gravitational force, and it by huge potential energy launched the *singularity's*, boundary point of a hardly curved space-time.

Laurence Krauss and Michael Turner, a renown theoretical physicists, pointed out that in terms with the general relativity all forms of energy, even that of nothing, viz. quantum fluctuation, serves as a source of gravity, so the same as the real particles of matter with their genuine spins magnetic effects (Scientific Am. September 2004). At a time Krauss claims that generally the nature of gravity as yet is actually not completely understood, regarding the posits of general relativity gravity is the core of space-time (Krauss, Conference at St. Tomas, Virgin Islands, 2006).

- Noteworthy, that P. Davies argues that induced by the gravitational force instability of thermodynamics entropy too "is a source of information" (The Fifth Miracle', 1999; "The Origin of Life", 2003).

Besides, is proposed that a gravitational field is a shimmering cloud of gravitons, its carriers. Adequate gravitons with an intimate spin 2 that pop out of a cloud, in kind with Heisenberg's Uncertainty Principle, travels as packets of space-time curvature at the speed of light (Odenwald, 2002, cf. above).

Riccardo Scarpa of the European Southern Observatory in Santiago, Chile

and his colleagues observed that the stars in globular clusters have a higher speed of movement than Newton's classical gravity theory predicts. They ponder that the phenomenon is explainable by the theory of modified Newtonian dynamics (MOND) offered 20 years ago by Mordehai Milgrom (Weizmann Institute in Rehovot, Israel).

Jacob Bekenstein (Hebrew University of Jerusalem, Israel) at present showed that MOND predicts the reality of pulsars, black holes and even BB (in Marcus Chown, 2005 ; in G. Shillings, Scientific American, November, 2007). In another paper Chown (New Scientist, January 22 2005), was told about Bekenstein's elegant loop-hole for introducing the effect of MOND, i.e. declining gravity linearly with distance, and concurrently preserving the conventional gravitation that is inversely proportional to the square of the distance.

#### ***ELECTROMAGNETISM RADIATION(PHOTONS)- its GENESIS METAPHOR- LIGHT***

As against of gravitation that only attract between any matter, the force of electromagnetism acts both attractive and repulsive between matter than carriers of electric charge. At the instant of an explosion of a superforce/singularity point in a fireball of BB, had been arisen a uniform brew of random radiation, that accompanied the inflation episode. In such radiation - dominating era subsequently pop out and off virtual particles that condensed out of radiation "like water droplets in a cloud of steam" (George Musser, staff editor of the special report: "Four Keys for the Cosmos", Scientific Am. February, 2004).

Strikingly, that among the invited papers to that special report a paper of Wayne Hu (the University of Chicago) and Martin White (the University of California, Berkeley), started with the sentence "*In the beginning, there was light*", as a deduction of the recent cosmic research results, in particularly of the information carried by photons of the cosmic microwave background (CMB), that registered it 400.000 years after the BB radiation. They explained that at the emergence conditions of the early universe, highly ionized matter moved as radiation trapped within it like light in a dense fog. Hu and White( 2004), issuing from the CMB results, also pointed out that in the very early Universe had been developed as a tightly coupled system of photons , electrons and protons featured as a single gas, in which owing the radiation energy of photons the electrons were scattered like ricocheting bullets.

This resulted a variety of light (photons) and sound waves, registering the information upon geometry, and the density disturbances at the first moment of origin of the Universe.

Notable that Musser ( 2004), deliberated that in reality , the theory of BB yet don't have any information about the moment of creation, "which is a job for quantum physics (or metaphysics)". On the whole 95% of the celestial information is related to light photons (Nick Strobel Astronomy News, May 2006).

On the predominant role of light and especially its speed into macroscopic and microscopic world certifies, for one thing, that in the fundamental equation of Einstein on the interchange of energy and mass the dominant component is the speed of light in quarter, namely  $E=mc^2$ . Further, the basic units of measure in a quantum theory of gravity - the Planck units, is a unique combination of speed of light, Planck's constant and Newton's gravitational constant. In the Planck time is measured the time at which the size of the universe was the Planck length, viz. the time it takes light to travel the Planck length. The another basic constant - the fine cosmological constant - alpha constant embody also the value of speed of light.

To the matter, is acceptable that the carriers of electromagnetism, i.e. laser's light - photons are the most comfortable transmitters of information, embodying the BB events.

Einstein in Princeton, drew the attention that at a base of all these unique

scientist's thoughts resonated to the role given by the composers of Genesis to light as a primary energy source (in Max Jammer "Einstein and Religion", 1999, 2002). The author, an Emeritus Rector of Bar-Ilan University, Israel, underlined that after Maxwell Einstein gave light a primary place in his theory on space-time. Thus light (electromagnetism) has a unique physical and metaphysical status for studying the universe, as it is accepted an ultimate factor.

In this framework noteworthy, that in a special report of Scientific American, February (2004), under the title "Four Keys to Cosmology", the staff editor George Musser actually reminded the saying of Gen (ch.1:2), than "*the universe was without form and void*". And the BB is best perceivable as evolving process out of chaos to order through inflation whose moving energy was an uniform brew of radiation that varied in utterly random way.

#### **TANAKH'S METAPHORS HINTS on the LAW of CONSERVATION ENERGY**

What about the origin of a Law of conservation energy, imaginable that as an indirect cue to it, could serve a narrative of Gen.(1:2) on a "*darkness*", that is decoded in Deut. as dark "fire", and of Gen.(1:3) - "*Let there be light*". Thus, an origin of such primordial energy, that turned constant, was pushed at the first day of Creation by an acausal ultimate principle - God. That was maintained through an inference of Kabbalah - God symbolizes all the positive energy of the world (M. Laitman, 2005).

It must also to recall Rashi's interpretation of the Genesis opening narrative "In the beginning God created heaven...", i.e. in Hebrew "*Shomaim*" (heaven). As recalled above that by complementing this word's first letters "sh" with a prefix of a Hebrew letter "e", formed the Hebrew words "esh" (fire) and "maim" (water(s)). Correspondently, could be proposed that proper "fire" served the cornerstone of energy's conservation.

Hence from the first moments of creation emerged an energy source that was constituted as an eternal attribute of the Universe and energizer of primal, universal information. A further metaphor descends of Gen.(2:1) - "*The heavens and the earth were finished, and all their array*". Consistently, authors of Genesis through suitable metaphors predicated a finish of Creation and underlying building factors - energy and matter.

The law of conservation of energy and mass by some way parallels Isa.(40:26) - "*... Not one fails to appear*". Moreover, the word "*Not... fails...*", in Hebrew sounds more exactly in Nehemiah (9:6), as "*mchayeh*", that means to keep from decay or preserve. In tune to that Hebrew word was "preservest" in its English translation of the Holy Bible (HB).

*In such bold interpretation we dare to find metaphors of ancient authors amazing intuition. From our view that can serve as a hint on a credible role of God's unique creative wisdom power - energy (a divine metaphor) in pushing as though his words sounds information that guide and propel the world.*

*A counterpart of that Tanakh metaphors could in some sense be related to the modern fundamental equation  $E=mc^2$ , the interchange of energy and matter under a guide of the constant of light (energy) speed (i.e. "C"). A genuine Godlike equation !*

#### **A UNIVERSE ENERGETIC MACHINERY-the LAW of its CONSERVATION, and INTERCHANGES( $E=mc^2$ )**

The central postulate of physics approved experimentally is the Law of conservation of energy (or its equivalent mass, preserved energy), that is an energy that can be neither created nor destroyed (Einstein, 1905; Hawking, 1988).

Besides, Einstein's equation -  $E=mc^2$ , is qualified than the "greatest equation in physics"(S. Singh, 2005); R. Lasky, (Scientific Am., April 2007).

The presented considerations drives us evaluate the apt Einstein's equation as a key governor of information, its fuel - the energy and its transporter - the mass and force particles (subatomic components, and light photons, respectively). In this respect the forenamed equation deserves even to be coined as *God's one*, analogously as dubbed Einstein's "Cosmological constant" -CC (Lambda, Powell,2002).

By the way a multinational team had recently approved the highly preciseness of Einstein's brilliant equation (K. Krieger, New Scientist, March 4, 2006).

At present almost exists a consensus that the law of conservation of energy encompass also a conservation of angular momentum, viz. spin and information (S. Lloyd, 2006, L. Susskind, 2006, P. Davies, 2006, etc. ).

Seth Lloyd evaluates the equation as does not only a machine of interchange of energy, but in this process *dominates along to a factor energy, also information*.

#### **TANAKH'S METAPHORS PARALLELES of INSTANT EXPANSION**

An indirect correlative hint upon the presumable force that triggered *an instant inflation of the Universe, we found in Gen(1:2) metaphor "...and the wind from God sweeping over the water"*. In GNB the same fragment of the verse about the suggestible moving force of a momentary inflation was expressed more explicitly, namely *"... the power of God, or awesome wind was moving over the water (of the ranging ocean)"*, cf. above.

That is in common with the adequate commentary of Maimonides (Guide, p.2, ch.30), that the term *"ruah Elohim"* from the pertaining verse of Genesis, regarding its Hebrew meaning is "air of God", still it is unique being described here as in motion (*merahefet*), that rather moved the creation of the Universe, encompassing rather also the unknown to that time inflation.

The physicist G. Schroeder (1991), also relates the "wind" of opening verse of Genesis directly to inflation of that Universe.

In relation to expansion of the Universe in the Hebrew Bible we find such parallelisms: *"... Who spread out the skies like gauze, Stretched them out like a tent to dwell in"*, *"...My own hands stretched our the heavens,..."*, subsequently (Isa. 40:22, 45:12), and *"Who by Himself spread out the heavens,..."*, *"He it is who stretched out Zaphon (used for heavens) over chaos,..."*, respectively (Job 9:8; 26:7).

Fred Heeren submit that the Young's concordance defines the word *"raqia"* indeed as expanse but the verb *"raqa"* as "to spread out or over" ("Show Me God", 1995). Consistently Heeren points out that for telling about the activity of God in stretching out heavens, in Hebrew are used both the verbs *"raqa"* and *nata*, that certainly does not contradict the modern cosmology on the event of expansion.

#### **INSTANT INFLATION and IMPETUOUS EXPANSION of the UNIVERSE**

It is suggested that the fragmentation of a superforce unity occurs at 10 of the power 35 sec. Within that time the space-time grown to macroscopic scales on the order of a meter, and the propelling force of such dramatic growth maybe gravity (A. Guth, M. Kaiser, 2005). It press the proper rapid expansion of the Universe, as a cosmic fireball just since a fraction of a second after the Big Bang.

In this context Ch. Bennett (in O'Hanlour, Discover News, March 16,2006) explains that due to such accelerated expansion the Universe enlarged 60th times from a start of expansion, that framed it neatly flat. The author pointed out that

an arose of the Universe from a simplest form of inflation predicts primordial gravitational fluctuations, with equal its potential fluctuations on all scales. Moreover, inflation could move also gravitational waves.

One of developers of the inflationary quantum cosmology theory Andrei Linde, reviewing the previous 20 years of it history, underlined that the quantum cosmology theory turned to the standard paradigm of the foremost cosmology. On its validity evidence such important positions: - a flat universe; - adiabatic metric perturbations; scalar perturbation (Class. Quantum Grav/v.18,p.3275, 2001; 2006).

*TANAKH METAPHORS OBLIQUE CUES of BIRTH PRIMORDIAL ELEMNTS LIKE  
- LIQUID PLASMA QUARK-GLUONS*

Naturally that naive ancient authors of the Scriptures were far from envisaging the details of elementary particles that only now are succeeded to discover. They could only deliberates that the primeval building were made of invisible substance .

However, by thoughtful analyzing the first narratives of Gen. (ch.1:1-3) from modern quantum physics stand point, we dared to guess that some its hints permits to find the primordial conditions for a birth of tiny genuine building subatomic blocks of matter than quarks and gluons.

Thus, in the mentioned verses were told and interpreted by sages that the Creation of the cosmos started in conditions of acting a dark fire (Maimonides, cf. above), that seemed to a fireball, and a "wind of God sweep with force over a water or as God's power ranging cosmic over ocean" (GNB, cf. above), viz. working in an aquatic, liquid - like plasma. There is relevantly also to recall the interpretation of Rashi of the opening verse of Genesis "Shomaim" (Heavens), that consists of the end word component "maim" (water), and by complementing the first two letters of the word with a prefix "-e", forms the Hebrew word "esh" (fire). On this base Rashi conceded that that already at the start of creation of the world God generated water and fire (cf. above). Just the optimal conditions for genuine elementary particle of quarks and its glue - gluons.

A some weird hint on our pondering may serve the Ps.(24:1, GNB)- "...laid its (world) foundations in the ocean depths".

In this aspect is striking the deliberations of Maimonides, namely "At first this Universe consisted of a chaos of elements, ( and its mover was energy of ) ...light and darkness (fire) "fixed on the first day of the Creation"(in M.Friedlander "Analysis of the 'Guide for perplexed', p.2 (lii), 1904).

In this framework was also demonstrative the peculiar description of imaginable conditions of a birth of elementary particles, found in Timothy Ferris monograph "The Whole Shebang" (1997), as "quantum fields roiling the vacuum like winds across water", cf. above). To that addible also the characteristic of Rocky Kolb, the NASA/Fermilab Astrophysics Group member, of the same conditions like "Primordial Soup", and "Primordial Seeds" of quantum fluctuation of origin a primordial Universe and its evolve.

Is also reasonable to consider that this birth process took place at Planck scale and in condition of quantum fluctuations and fantastic hot fireball,

- Plausible to contemplate that just in such unique conditions took place an origin of subatomic particles as fragmented electrons and singles quarks separated from gluons.

There is relevantly to recall once more the suggestion of Maimonides, that issuing of interpretation of opening narratives of Genesis, he resumed as "At first the Universe consisted of a chaos of elements...(moved due energy of ) light and darkness" (fire), cf. above. That was a sufficient adequate naive notion of the



authors of Genesis, and one of its popular experts, upon the offered process of birth of elementary particles in the apt prescience era.

*The LIQUID PLASMA of PRIMORDIAL ELEMENTARY QUARK-GLUON, and its PRODUCER-QUANTUM FLUCTUATION*

Recently was succeeded model of a birth of a genuine elementary particle of quark - gluon plasma at the Relativistic National Laboratory (RHIC) in Upton, N.Y.

There quite certainly, finally had been recreated the initial building blocks instantly after the Big Bang in the conditions of its fireball scenario.

As a result of colliding gold nuclei with a total of 197 protons and neutrons together at a fantastic speed, was produced a fireball in which temperature was higher than  $1,5 \times 10^{12}$  kelvin. Thereupon the RHIC researchers succeeded to break down the structure of nuclear matter. Most experts agree that by this way was discovered the primal stuff of cosmos - a plasma build of quarks and gluons (Christelle Roy "*L' Universe etait liquide*", *La Recherche, Mars, 2006*; Michael Riorgan, William Zajc, *Scientific Am. May, 2006*; T. Folger, *Discover, January, 2007*)).

The birth place of such plasma was a vacuum, so-called "false", consisting of quarks and gluons, the base of protons and neutrons, in a framework of a complex dynamic arena with twisting virtual particles that pop as pairs, then annihilate and disappear again. It actually appears as a churning fluid, 300 million times hotter than the sun, haunted by complex knots and twisting creatures (quarks, gluons, protons, neutrons, electrons). "The Word" (New Scientist, August 26, 2005), explains that the knots represents curling up gluon field, called instanton, regarding that they blink in and out instantly. Such twisting structures may break the chiral symmetry, when the quark with a left-handed spin turns to right-handed or v.v. Quarks passing through twisting instantons gain energy and became to 60 times more massive than intact one. Thus due to instantons the quarks comprise the mass of protons and neutrons, viz. the atoms.

Thomas Kirk, the associate laboratory director for high energy and nuclear physics at Brookhaven, one of the leading experimenters of aforesaid research and Johann Rafelski, the CERN physicist, are convinced that the got quark-gluon plasma, issuing from the strength interactions in it appears as the most ideal liquid ever observed, with properties 10-20 times more exact as a liquid-like water, actually with a zero viscosity (K. Adox et al., preprint at <http://arxiv.org/nuclex/0410003>(2005); B. Back et al. *Ibid.* (in the press); [i:10.1016/j.nuclphysa.2005.03.084](https://arxiv.org/abs/10.1016/j.nuclphysa.2005.03.084) (2005).

Besides, Edward Shuryak, the director of the Center for Nuclear Theory at Stony Brook University, N.Y., argued that the research evidence that the quark-gluon plasma is extremely dense that enables the quarks in the plasma show an synchronized group behavior and effectively interact strongly with each other and its massless glue - the gluons.

They assumed that when by chance two quarks collides the launched extreme energy is turned into matter in a such manner that a pair of virtual particles get enough energy for becoming real. Each of them flying in opposite directions dragging further the next pairs of particles out of vacuum. Hence such process run perpetually.

Shuryak claims that such thousands of particles actually move coherently as if "getting stuck in the plasma like flies trapped in honey", and it seems that from the time of the big Bang until 10 microseconds later, the universe was liquid (in Gefter, 2004).

Moreover, the vacuum, perhaps originate a fountain of new and even exotic particles built of odd combinations of quarks, including the “penta” quarks which perhaps are emerged in updated researches.

The Nobel-prize co-winner Franck Wilcek of 2005 for research in the quark problem, generalized the aforementioned RHIC research (in Nature, v.435, p.152, 2005). He also evaluated the got impressive evidence upon creation a qualitatively new state of matter in a guise of liquid-like plasma of quarks and gluons. Such changes of properties of “empty” space ran throughout the Universe in condition of a unique fireball in the first moments after BB. Besides, he adverts that in conditions of such huge temperatures of a fireball, opens the deep essence of the “world that is more symmetrical than our own”, regarding the vaporization of the created chiral condensate that became operative. Such events likely had propelled the epoch of inflation of BB.

Highly informative is also the review of Gordon Kane, a particle theorist physicist at the University of Ann Arbor about quantum fields, for one Higgs field. He argued that such fields mechanism are the source of mass-energy in the universe, referring to interchangeable mass and energy, in kind with Einstein’s  $E=mc^2$ . Thus, the source of about 4-5 percent of the researched matter of the Universe - protons and neutrons, obtain the energy from their elementary building blocks, the twisting spins of quarks and gluons. The quarks bound into protons and neutrons render its mass. However, the mass of the genuine elementary particles - quarks and electrons comes from the so far mystical Higgs field permeating the Universe. Yet the field unlike other quantum fields lack the spin property, i.e. its spin is 0 (Scientific Am., July 2005).

The intimate mystery of a break of the primordial symmetry at the birth of our Universe, was once more an instance on an ideal fine tune for its existence and life. Otherwise, due to annihilation of particles and antiparticles would be no our Universe and Life.

At the birth of the Universe the quark - antiquark pairs were massless, and they popped out of a quantum vacuum and at a glance disappeared.

However, owing to an event that the weak force, e.g. radioactive decay, that works slightly different upon matter and antimatter, that lead to it slight unbalance. Thus, few extra particles of matter survive, contrasting that every 30 millions of antimatter that disappeared (Helen Quinn New Scientist, April 11, 2008).

That unbalance is now convincingly shown on a primordial elementary particle - quarks, which key generator, as also of all matter is quantum fluctuation, that are shown due calculations of computer simulation by two parallel research groups (in Stephen Battersby, New Scientist November 20, 2008).

So, the physicists team of Christine Davies (The University of Glasgow, UK), found a heavy exotic quark particle called the B=c meson that contains only two quarks. In simulation calculations its are registered 200 trillions per second, and they converts in protons, constituting one percent of the latter.

Consequently, solid stuff is no more than a quantum vacuum fluctuation product.

#### *TANAKH METAPHORS alike INFORMATION of CMB*

The most popular metaphor to the emerged above metaphysics about the early Universe "signature", signals caught by the team of WMAP is "the fingerprints\_from the Maker" or "the fingerprints of God" whose pioneer was George Smoot, the leader of the COBE satellite team, and the Nobel - prize co-winner in 2006 for the discovered fluctuations (ripples) of CMB.

The cosmologist Joel Primack, in his turn then offered a catch - word

"The Handwriting of God", that resonates to the original verse of Ps.(19:2) -"*The heavens declare the glory of God, the sky proclaims His Handwork*". By the way his wife Nancy Abrams produced a CD track "The Handwriting of God", the only ballad ever composed about the cosmic background radiation descended from BB (Jerry Adler, a senior editor at Newsweek, Smithsonian, July 2006). The issue is also discussed in the book of Primack and Abrams "The View From the Center of the Universe" (2005).

The astronomer and founder of the movement "Constructive Creationism", Hugh Ross, also recently reissued his book "The Fingerprint of God" (2005).

The physicists Anton Zee (University California, Santana Barbara), and Stephen Hsu (University Oregon, Eugene ([ww archiv.phys.org/abs/physics/051002](http://www.archiv.phys.org/abs/physics/051002), December, 2005), and Gregory Benford ( California, Irvine, Nature, v.440, p.126, 2006), realized the suitable fluctuations (ripples) signals moved by vibrating energy, as a "message of the sky". So, the latter calculated that in the temperature fluctuations are coded 100.000 bits or 10.000 words. He perceived that message than the Old Testament, namely Hebrew Bible order to mankind.

Strikingly that L. Susskind, the noted theoretical physicist suggests that the fluctuations recorded by CMB, may also carry an information message of outside of our Universe horizon, the usually beyond the human tools observation (New Scientist, November, 2006).

#### *THE ERA OF TEMPERATURE RIPPLES (about 400.000 years after the BB)*

In the suitable era formed atoms of a plasmatic fog than a result of recombination - capture protons to electrons. That freed photons travels and that are observed as cosmic background radiation(CBR). Presently the most working approach to catch the temperature and sound ripples waves for decoding the early Universe events( Hu, White, 2004; G. Starkman, D. Schwarz, Scientific Am. August , 2005). The lately improved of polarization of observed photons strengthen the theory of Inflationary Big Bang Cosmology. In this outlook paper was reported that as a result of three years of data, the Wilkinson's Microwave Anisotropy Probe (WMAP) produced the first all - sky polarization maps of the CMB. Thanks that success is pinpointed that the first moment of transparency of photons from the primordial fog took place at the one trillionth of a second of the age of Universe ( L. O'Hanlour, Discovery News, March, 16, 2006).

Concurrently to the primordial data of polarized photons, were produced acoustic signals applied also as a measure of age and geometry of the Universe (Hu, White, 2004, Starkman, Schwarz, 2005). Hence from the early Universe we are receiving primary information on a pattern of hot and cold spots, induced both temperature and acoustic fluctuations as signals of a various density geometry of its structures, including massive black holes making various crazy noises (Craig Horgan, Am. Scientist, November - December, 2006). Already Einstein's relativity theory predicted that the Universe is fulfilled with a cacophony of vibrating energy, the source of gravitational waves and now more easily testable(Gary Hinshaw, Physics World, May, 2006).

For the matter, vibrating ripples waves that broke through the fog of the plasma at the first moments of BB arises also metaphysical inquire in a direction of a pattern of some code ?

#### *PRESUMABLE TANAKH (GENESIS) METAPHORS of BB*

Notable that even an atheist and one of the world top science writer, a professor of biochemistry, Isaac Asimov in his book " In the Beginning"( 1981), also acknowledges that the authors and editors of the Bible had have critically

compiled various sources and generalized as an highest reasonable and feasible concept of the Creation of the world in what they remarkably succeeded.

He came to terms with biblical narrative on creation of the Universe and Big Bang that its origin emerge from primordial raw material. Now we call its singularity, whose derivation is not refined both in the Bible and science. Then were fixed such correlative points between the starting verses of Genesis and Big Bang : - a turn of primeval chaos (in Hebrew *tohu*) to order; - generation of light of the fireball in the course of biblical "black fire" [cf. above], and "nuclear fire" of a termonuclear reaction that turn on the light like the commandment "*Let there be Light...*" ( Gen. 1:3). Further, Asimov explained that the "firmament" Gen. (1:7), is explainable quite scientifically as a space that spread to infinity. So also the verse fragment of Gen. (1:2), "*... and darkness was upon the face of deep. And the spirit of God moved upon the face of the waters*", he took a temptation to interpret scientifically still in the biblical guise, namely : that the divine spirit moving upon the "*deep*", viz. abyss (chaos) pressed all the substance of the Universe in a super-dense singularity, and then let it exploded with an irradiation of a huge energy, like "*let there be light*", and then cool than our Universe.

On the whole that such deeply rational skeptic as Asimov likewise turned to the Bible discussing the matter of BB.

Eventually also the deliberations of opportunity of multi-facet interpretations of the narratives, especially of the opening verses of Genesis, of professor Richard Ellis (2002), and one of his consultants in interpretation of Tanakh, the Orthodox rabbi Saul Perlmutter, the leader of society "*Hilel*" of campus University Mass., Amherst, where also teach the professor. As was mentioned above they stemmed that sacred scrolls lacked vowels, punctuation and spaces that even the first word in Genesis in Hebrew "*B'reyshit*" after adequate relocating its letters is formable the meaning "in the beginning God created himself, simultaneously with his house (heavens and earth). Besides, Ellis in kind with the ultra - Orthodox rabbi Akiva Tatz of Jerusalem, that the word "*B'reyshit*" codes all stages of Creation, respectively also of BB ("*Michelangelo's Art, and Artistry of the Hebrew Bible*" (Judaism,v.51,p.162, 2002).

To be fair, the priority of correlation of the metaphors of Tanakh with the achievements of latest cosmology and quantum physics possess rabbi David Nelson (2005,6). Among them also of Genesis: "God is BB", "God is Light", "God chaotic theory", as well as his general terms "Fractal shaped God" and "Emergent God" ( in T.A., True Ancestors, April 15, 2007).

At large we also admit to that Nelson's metaphors.

In that framework a representative number of noted astronomers and theoretical physicists also are comfortable with the existence of several parallels among the events predicted by cosmologists for BB and hints found in the Bible (Nicolas Short, 2000; Nobelist Charles Townes, 2005; Hugh Ross " The fingerprints of God ", 2005, Nicholas Short (2000), John Primack, Nelly Abrams (2005), Gregory Benford (2006).

Thus, Short (in Remote Sensing Tutorial, sec. 20, 2000, underlined that the insights and parables composed by ancient sages of the Bible and some Eastern philosophers upon the creation of the world, resonates in modern sciences as natural laws after thousand years of their predictions. Moreover, he concedes that God (or an Ultimate Principle ) is a Scientist that established the Laws (which can vary with time or circumstances), governing in the Universe, viz. also at it origin ( inclosing BB ).

Paul Johnston, the internationally acclaimed historian, called the attention to the value and "significance that the first chapter of Genesis, unlike any

other cosmogony of antiquity, fits perfectly well, in essence, with modern scientific explanations of the origin of the universe, not least the 'BB theory' ('A History of the Jews', 1987).

For the matter, the solid-state physicist Gerald Schroeder, an Orthodox rooted in Jewish tradition, an author of 60 works in world leading scientific periodical editions, in his books "Genesis and Big Bang" (1990,92), "The Science of God: The Convergence of Scientific and Biblical Wisdom" (1997) "The Hidden Face of God's" (2001), and in "Genesis Project of 1st day (March 1, 2006, - of 2nd day, March 8, 2006; - 3d day, and so on, (in Tothesource.org/ web site), focused on parallels of the Tanakh's, especially Genesis wisdom with latest science achievements. So, he found a close parallelism of the contemporary view on the expansion of our Universe and the narrative of Ps. (19:14).

Though generally Schroeder was guided from a rigorous comprehension of the literary text of scripture, he assumes that the divine intelligent design is not necessarily perfect.

The vision of Schroeder shout one another also with that of Dr. Hugh Ross, PhD, Astrophysicist, President and Director of the website "Reason To Believe", and founder of "Progressive Creation" ideology of "theistic evolutionism".

Ross interpretation of Genesis was also just literary, i.e. that Genesis is literally true. The proper view most appears in his latest book (one of a lot of this prolific author) is "Creation As Science: A Testable Model Approach to End the Created Evolution Wars" (2006), and the report on the organized by him Conference "Cosmic Fingerprints: Evidence of Design", that took place in South Caroline (posted on his website in January 17, 2006). One of his crucial postulates that "the record of nature is just as perfect as the word of God".

Incidentally, one the most ardent atheist of the 20th century Anthony Flew, not long ago explained that in his conversion to deism mostly were influenced by works of Ross and Schroeder on a tight correlation the narrative of Creation in Genesis with the up - to dates science.

The appropriate works of Ross and Schroeder has been subjected by the Matt Young, a physicist at Colorado School of Mines, a renown skeptic, to fierce criticism. So, Young on a website Panda'sThumb of November 4 (2007), calls the attention that that Creation of Genesis was rendered as an allegoric text, and at large the Hebrew Bible was not stabilized until after the invention of the printing press. Issuing from this a literary reading of first chapter of Genesis is not compatible.

We also recognizes that the main shorthand of the representation of Genesis strictly literary, whereas the common view on the scripture text as a metaphorical, and especially Genesis. is plausible. That overlap with the aforesaid approach to the apt sacred text of professor Richard Ellis and rabbi David Nelson.

***THE REASONABILITY of BIBLICAL CREATION METAPHORS PARALLELS to BB THEORY'S PILLARS***

About the reasonability of a search of correlation of the clues of Creation of the Universe of Genesis with the experimental data of BB, spoke too Bryce DeWitt, the Jane and Roland Blumberg Professor Emeritus in Physics (the University of Texas, Austin), a prolific scientist, in his posthumously essay (Physics Today, January,2005). He assumed that some point of BB he found in the Bible.

On some adequate parallels considered also Fred Heeren ( "Show Me God", 1994), Y.Veinberg, the noted historian of the Pentateuch ("The Introduction in Tanakh", 2001), and Ram Edwards "What Caused the BB ?(2001).

Noteworthy also that the eminent rabbi of United Kingdom Sir Jonathan Sacks, "paid a heavy price" for perceiving as information of the first chapter of Genesis about the origins of matter, "the Good Book of the Big Bang", regarding that the creation of the universe was told compressed, only in 34 verses, and the other 500-600 verses were dedicated mostly about humanity than about God ("Celebrating Life", 2000).

Besides, we above cited the considerations of the professor of physics Gregory Benford 2006, and physicists Anthony Zee, and Stephen Hsu (2005), that the temperature ripples of the relic radiation of BB carry a signature of message of a creator coded with 100.000 bits that consists roughly of 10.000 words.

In kind is also the insight of Joel Primack, a particle physicist and cosmologists( University of California at Santa Cruz), that also described the BB's cosmic ripples as "the handwriting of God". His wife Nancy Abrams, a composer, created a ballad on music about the cosmic background radiation from BB as a CD track under the title "The Handwriting of God"( N. Abrams, J. Primack, in "God for the 21st Century",2000; Primack, Abrams "The View from the Center of the Universe", 2005; in Jerry Adler, a senior editor at Newsweek, Smithsonian, 2006)

Remarkable the insight of the leader of the COBE satellite team, George Smoot, one of the Nobelist in 2006 for the results of COBE, the pioneer of cosmic "seeds", called "the fingerprints of God", that "there is no doubt that a parallel exists between the BB as an event and the Christian notion of creation from nothing" ( K. Davidson "Wrinkles in Time",1993). That overlaps with the conviction of Robert Jastrov, the head of the Mount Wilson Institute and its observatory, that the core of astronomical and biblical accounts about Genesis is similar, a quest of the chain of events towards the birth of a man, "in a flash of light and energy"( "God and the Astronomers", sec.ed.,1992).

In his turn the Nobelist Robert Wilson, the co-discover of the cosmic radiation background, also ponders that the BB "certainly fits...Genesis" (in interview of Fred Heeren with R. Wilson, in "Show Me God", v.1, 1995).

Most convincingly substantiated the deep difference of ancient mythology of cosmogony and the rational cosmogony of Genesis, the historian of Hebrew Bible Y. Veinberg (2001). He argued that the creation of the Universe in the Genesis represent a convincingly negation of the of the demonic activities locality directly at the borders of a specific ethos of the Near East. As against the systematic clues of Creation of the Universe of Genesis does not built upon miracles, and are related to the mankind and carry a seed of reason.

Michael Ruse, an philosopher of biology and ardent evolutionist, in his recent book "The Evolution - Creation Struggle"(2005), considered that the first chapter of Genesis became both the most famous creation predication, and also the most constructive account upon it.

The founder the of Goldilocks University, Michael Corey reviewed that the most ardent atheists became uneasily aware that the BB cosmology events and the opening chapters of Genesis shares a noted resemblance(www.weeklystandard.

com/ (2002).

In such a situation is amazing by what subtle mode the sages of the Bible compressed dense information accessible both to the ancient people, and interpretable variably by medieval and modern Bible researchers in dependence of their level of knowledge and wisdom (Maimonides, Guide,p.3,ch.21).

Concurrently, we above presented some other principal intuitive hints of the biblical authors upon Creation of the physical world that in a certain way parallels with the modern science and strikingly with the BB theory posits. Eventually, the submitted correlation with the in the way achievements of modern and particularly quantum physics, rather drives us to discuss the opportunity that the proper reasonable assertions were made by wise and highly spiritually sensible ancient Israelis, that had been deeply intuitive and inspired by an idea of an omnipotent God's Wisdom.

Our assumptions were sided also by the researches of the modern Bible history investigators – G. von Rad “Genesis”, Westminster Press (1961); B.Bamberger “The Story of Judaism” (1974); N. Gottwald “The Hebrew Bible”,1985); R. Alter “The World of Biblical Literature”(1992); H. Kung “Judaism” (1992), C.Houtmann “*Der Pentateuch*” (1994); F.Heeren “Show Me God”(1994), J.Blenkinsopp “Sage, Priest, Prophet” (1995); A.Rofe “Introduction to the Composition of the Pentateuch” (1999); J. Polkinghorne “Faith, science and Understanding” (2000) ; Y.Veinberg (2001); DeWitt (2005); M. Ruse (2005);

P. Johnson(1987), H. Kung (1992, 2008), J. Heeren (2005),A. Barac “Presumption of Humanity” (1998, in Russian, Israel), Y. Veinberg (2001), L. Kass (2003, 2006), B. DeWitt (2005), H. Ross (2005,6), G.Schroeder (2001,2006,7) expressed their amazement that quite 3000 years ago already had been submitted some principal purposeful clues that in general terms fit the BB theory.

Strikingly, that already one of formulators of BB, George Gamow, the eminent physicists, compared a primeval hot sea of elementary particles, dubbed “Ylem”, seemingly to that of Genesis (1:2), hot chaotic sea (“*raging ocean*”) of primordial elements(“The Creation of the Universe” (1957, 2004). His co-workers was Ralph Asher Alpher, and Robert Herman. They predicted microwave background radiation - a window in BB-Universe. The latter two physicists were the authors of “The Genesis of Big Bang” (2001), that was by them evaluated as a 'new religion', alike biblical Genesis.

Some prototypes to the discussed were the narratives of Jeremiah (10:12) and Proverbs (8:22) - “*He made the earth by His power Established the world by His wisdom...*”, and “*The Lord created me (wisdom) at the beginning of His course...*”.

Moreover, Leonid Kass, MD, PhD, a noted Professor in the Committee on Social Thought (University of Chicago), in his “The Beginning of Wisdom: Reading the Genesis” (2003,2006), due rethought the Genesis philosophically found that it cosmic and human nature wisdom resounds actually present reality. He argued that the seeds of Genesis wisdom are plausible for our time of denigration of all basic traditions, e.g. ethics, in the light of brilliant advance of science and technology. The latter especially urgently need to be doted with humanity's wisdom.

Almost in the same sense of rethought were the researches of Gerald Schroeder, PhD, manifested in his books “Genesis and Big Bang” (1992), “The Hidden Face of God” (2001), and in essays “The Genesis Project” (in Tothessource.org website, 2006), Daniel Matt's, Dr., an expert in Kabbalah, “God & Big Bang” (1996), as also of Charles Ellis', professor of mathematics (Mass. University, cf. above) book.

Schroeder (2001), argued that the act of “Beginning...” created by

wisdom ,energy and information, lead to a BB blast, that overlaps with Matt's considerations that the kabblah's wisdom Infinite Light (God's analog) created the world by transfer of information from *Hochma* (Wisdom) to *Binah* (Understanding). Whereon, Ellis in "Michelangelo's Art, and Artistry of the Hebrew Bible" (2002), insisted that in Hebrew word "*Breyshit*", the Torah's wisdom coded both the creation of Universe, and God himself concurrently with his home ( heavens, earth), i.e. the Universe.

Such was one of the reasons of the undertook by us work of searching parallels between the Tanakh's holy metaphors and the latest cosmology and quantum physics advances.

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*Epitomizing the reviewed current special literature, we fills supported in relation of our key ideas and novel positions in paralleling the pivotal metaphors of Tanakh upon creation and evolve of the Universe and Life, with its seeming scientific analogs.*

*The offered essay we tempt to deliver in the light of the landmark idea of the forgoing trilogy of essays: a primordial wisdom's, God's acts metaphor, purposive agencies - energy, and information guides upon origin and evolve of an abiotic Universe, and its laws conversion in bio - friend towards a self-organizing of human mind consciousness wisdom, the framer of that laws, and own humanity, ethics.*

*Most important that such imaginable purposive orient of an anthropocentrism, is etched in BB - Universe, as hinted in the Gen.(2:7)- "Lord formed man from dust..."(and only after ), and "blew... breath of life, and man became a living being", that remotely resembles an etched in BB - " Principle Life, Mind"(Davies) in cosmos , also alike - "universe fulfilled with mind wisdom (Haught), - Universal consciousness, wisdom (Ward; Haish), - "Nature's Law"( Hawking), etc (cf. above).*

*The other adequate parallel pillars of that essay are: - the beginning of time and space; - a start of primary energy ("darkness", "fire", "light"), as a hint on both a Law of conservation of energy and speed of light - "C" (in equation  $E=mc^2$ ); - the God's word commands of Creation the Universe, Life, started at "Let be...light,"- force, energizing divine commands information, that parallels information guides of the Universe, Life self-growth (Wheeler, Davies, Loyd, Bayer, etc. cf. above); - Job's narratives on chaos, and Gen.1:2 - on "awesome wind...was moving over a raging ocean..."(GNB), a metaphoric cue on a chaotic quantum fluctuation; - emergent commands of stage - vise creation of the world, resembles to emergent information for stages of self-growth an abiotic and biotic Universe; - Jobs "expending the heaven" is alike to present expand of the Universe.*

*Ultimately, the hallmark of the submitted series of essays is that the primordial purposive wisdom (a metaphor of God's acts), etched in abiotic Universe, which laws guides an induction of an human being wisdom, the actor of emergent creativity of laws for self - organizing Universe, Life, and framer of its bio - friendliness and own spirituality, e.g. reconciling pantheistic ethics.*