

Where I agree or disagree with Barry Setterfield's cosmology issues or else may be go beyond [II, 2010].

Thank you for sending your evaluated versions of the articles. In the main goal, namely to dismantle ART and Einstein, I very sympathize with you. I'll give some commentaries to selected points, not aiming to criticize your proposal in general. Concerning your effort to introduce ZPE as main feature of the so called vacuum, which is just the contrary, I hope to understand enough, and so I share your intension.

Meanwhile you gave your last version to w+w-discussion. I'll give some commentaries to your sketch and in general to the stand of dialogue after the w&w-autumn meeting. I intend to put it in the following discussion. I am not sure, if you received my first version of *> Basic Thoughts on God's Revealed Acting Touching Aspects of Physical Cosmology* < [BThPhC] foreseen for a conference booklet (2010) of Gustav-Siewerth-Akademy (not related with W&W!) - www.institut-diakrisis.de/beckref2.pdf. There you can find my theological and general garment to a creation cosmology. This sketch is founded in: Light, Space, and the Puzzle of Time QUANTUM LIGHT COSMOLOGY [QLC] – 2003 www.institut-diakrisis.de/beckref2.pdf and in **Vom Geheimnis des Lichtes und der Zeit** (German:: transl.: Mystery of Light and Time, 2008 MLT). www.professorenforum.de/professorenforum/content/artikeldatenbank/Artikel/2008/v09n02a1.pdf

“The naturalists are steadily facing so called MÜNCHHAUSEN lemmatas: they are endlessly looking for the *last pure natural laws*, finding in this hermeneutic circle nothing else than the stipulated *quantum vacuum*, which can not be a *vacuum*. In contrary, it shows as the deepest mystery we can scientifically face.” This mystery of embedding reality I named <Hyper-Space> [HySp].

ZPE is a basic feature of HySp. I often cited [QLC; MLT] the German physicist B.Heim as author of the – in my knowledge - ripest TOE (Quantum-field-theory in difference-equations [~~ds~~, ~~dt~~, ~~dE~~, are substituted to $(\Delta)s$, $(\Delta)t$, $(\Delta)E$ not in deterministic differential-equations (Einstein's Geometro-Dynamics)! I suggest a deep relation on SED (who can proof that?).

B.Heim's cosmology starts with a creation stretching of a basic cubic wave field, swinging around the Planck-length, mediating through space with an unknown $> c(u) <$ extreme speed, quasi unlimited. ($c(u) \Rightarrow \infty$). There is a source of stretching out and a limited extension with reflecting this basic wave back to the source. This enduring space-time stretch has a source-centre, is quasi endless but with a not to calculate reflecting edge-boarder condition. Heim named this space-time-set "*metron*". The back and forth with $c(u)$ around the Planck-length everlasting (since creation) swinging substrate represents the Planck-cube-granulated space. The Planck-length L^* is like the de Broglie-length of this the creation space, presenting ubiquitous energy-substrate. Accordung to B.Heim, each Planck-cube of this *metron* can be addressed for an information-super manager, who can stir all wanted space-time-cubes by mathematical algorithms, mediating and storing information by $c(u)$. So this basic creation energy-Planck-de Broglie-substrate is in last icon-terms a digital information-medium. Physically spoken, it seems like a closed medium.[$c(u)$; L^* ; digital time for information managing $> T^* <$ (digit-Planck-de Broglie) = $L^*/ c(u)$].

For the non-limited Creator the Creation should be limited for His autonomous information handling. We remember Newton as theologian and physicist: the *absolute space* is the medium of God's acting, signed as $>$ sensorium Dei $<$. This *metron* is physically closed and limited, but very open for God's contingent handling at all thinkable space-time points (Planck-cubes). According to B.Heim, the Planck-Length L^* is the only fixed constant of creation, from or on which all others are derived or in basic relation.

On the background of God's enlightening revealing we must not be shy to dare in the spur of Newton s.-c. "*Theo-Physics, better Creation-Physics*", and describe Newton's $<$ sensorium Dei $>$, stimulated especially by B. Heim, in well known physical terms. (Later I'll deal with s.-c. *laws of physics* or *laws of nature*.).

Doing such *Creation -Physics*, we may propose the edge of the *metron*-wave-set as a water-belt. The with $c(u)$ mediating light-energy may be addressed on edged Planck-cubes by stir-information, to spin up to a water-belt, the Rakia (Hebr. רַקִּיעַ) Gen 1,6). Of course, those hydro-atoms are designed with $c(u)$, profiling also the standard atom-radius via the electron orbit for all thinkable molecule shaped creation entities [theorem of conservation of geometry, inclusive L^*], and also re-emitting $c(u)$ -photons. (Physicists, as e.g. Barry S., may reflect that imagination more technically). So the center-source of *metron*-radiation will be steadily informed from the edge situation over all mediated Planck-cubes. The Center-source may receive back-information of all *metron*-Planck-cubes and act and react autonomously. (God knows all, almighty to fulfill His will). According to this basic causality chain, namely *Will-Word-Information-Energy-styling (downward causation!)*, there are in B.Heim's *metron*-quantum-field-theory in difference-mathematics (Delta-terms) on Planck-values, besides the mass-tensor [Einstein-GRT] also tensors of electro-magnetism, and last not least, tensors of information and entelechy in their geometric effects to style special entities.

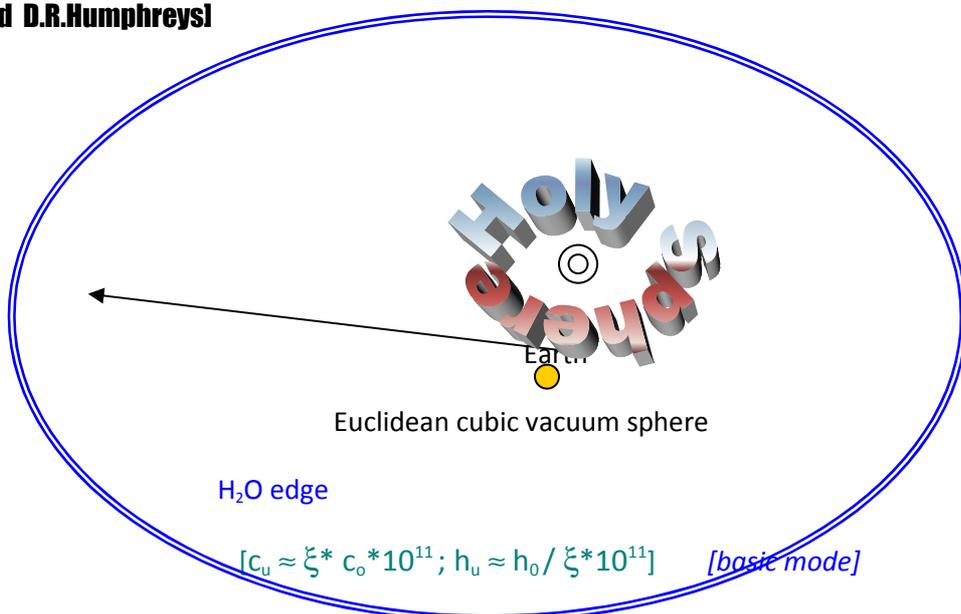
Daring further *Creation-Physics*, we are challenged by Revelation 15,7 "And before the throne *there was* a sea of glass like unto crystal.." May this be interpreted as the inner CCD-belt of H_2O molecules, deciphering the amount of received information, mediated by the *metron*-waves, and re-emitting the $c(u)$ -radiation loaded with instructive information to rule the creation by addressing each intended Planck-cube? *Throne-Theology* has its weight through the Old and New Testament [e.g. Rev 4,5; HWB: Biblische Universalität und Wissenschaft, II.5.3 Bibel und Kosmologie, 293ff].

The Biblical icon-material to shape God's Throne, has a multiple varying with a common tenor: the Holy living sphere of the Triune God in its glory has weight, splendour and glance as forms of light-energy (Hebr. כְּבוֹד; Gr.: δόξα). The Triune God, who challenges his creature man by bodily incarnation in His Son's shape, isn't untainted spiritual! What's that, spiritual? May such *Creation-Physics* risk just a painting? Yes!

[Variationen zu einer interdisziplinären Schöpfungskosmologie, 1999, Fig.17, 18, 134f];

Fig.17 Expansion of the Vacuum-Sphere (Stretchphase)

[B.Heim and D.R.Humphreys]

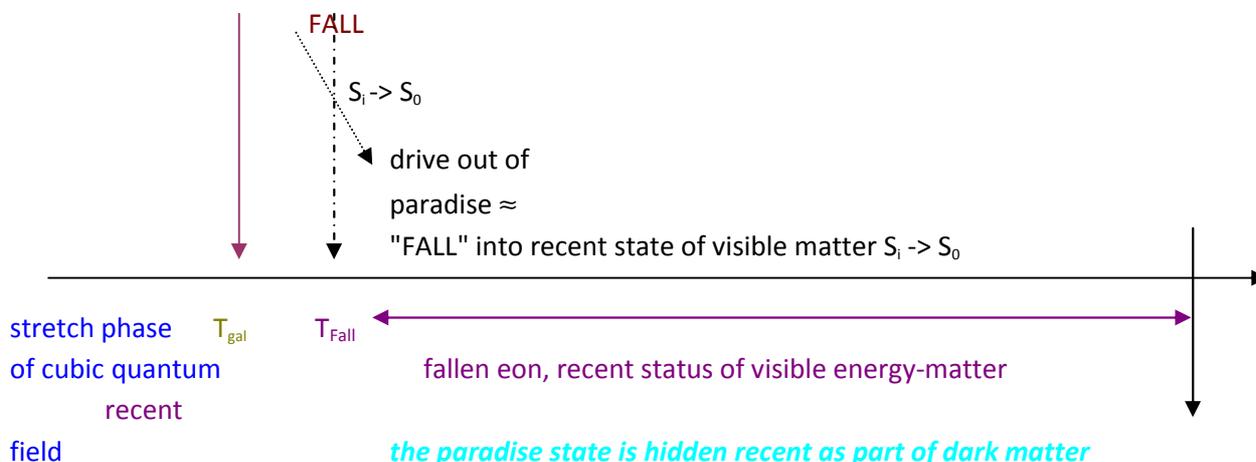


vacuum characteristics: void of matter; pure bounded radiation: standing pilot waves $\{\epsilon_u, \mu_u, l_{kub} = h * c / 2 \sqrt{\pi} m_p * c^2 = 1,61 * 10^{-33} \text{ cm}; [\text{Schwarzschild horizon of Planck mass}]\}$

heuristic suggestion: solution of the discrete world equation of B.Heim with the boundary condition: be the edge a water surface! the boundary edge cubes are specifically energized to represent H₂O - molecules : the atomic status is on $c_u \sim \infty \sim > \xi * c_0 * 10^{11}$! [Troitzkij; Magueijo ..10⁶⁰ basic mode].??

Fig.18 Creation oriented Reflections on Correlations between B.Heim and D.R.Humphreys:

Creation of matter [H.Arpe; B.Heim]: spontaneous galaxy creation [no expanse of galaxy systems!] mathematically selected special space time points; basic mode of matter [virtual status; projecting of hyper space]; tunneling of virtual matter in deeper modes [S_i ; s. H.Arpe]; transgress from radiation energy to spinned up atomic matter: by information conditioned radiation fields [c_u, h_u mode].



Biblical analogy: The risen Christ appears to the disciples *suddenly* and vanishes suddenly [Luke 24]. *physically spoken: his risen body springs from hidden molecule $S_{u,i}$ modes to the visible mode S_0*

I have no doubt, that the sketched *>metron<* represents – may be partly - the ZPE as an all-encompassing Planck-de Broglie-substrate with the touched traits. $c(u)$ may be the absolute maximum wave-front-speed of *metron* transgressing. The wave formula gives also the maximum *metron* frequency. As nobody can ever grasp $c(u) \approx > \infty$ and $h(u) \approx > 0$ [$c(u) \times h(u) = \text{constant}$], one cannot calculate neither the energy content nor the quasi scarce zero density [$h(u) \approx > 0$] of the ground state of this *metron*-set. [This confirms the prophetic word, Jeremia 31,37]. Barry has cited some ZPE- calculations on trends to quasi unlimited.

Further hints on *Creation-Physics*:

In the *metron*-granulate of hyperspace, $c(u)$ can be grasped as the everlasting maximum pendulum speed. likewise information mediating speed as basic causation nexus (source-edge-source), presenting the *metron* with the L^* -meshes itself. Lower $c(i)$ s than $c(u)$ are in the *metron*-granulate possible with greater wavelength' than L^* , and therefore lower frequencies. By sudden creation act of stretching the *metron*-skeleton, (Barry likes more the neutral term *>inception<*), the whole creation-*metron* was differentially styled by $c(i)$ -spheres and their $c(i)$ entities. It follows $h(i)$ and a convenient density of ZPE(i) in this realms.

According to Barry S., we have a local mass depending and cosmic-temporal varying of ZPE-density with varying constants “ c ” and “ h ”. It may be that those varying trends are measurable, locally or historically (from Roemer to recent, ca 300 years). But, are these varying aspects the kernel of the problem? I am strictly with you battling for varying of c and h ($c \times h = \text{constant}$) and against the paralogism [$c = h = g = 1$]. But I am not convinced of the special derived historical curve. Statistically this curve may be in the best harmony with the data of 300 years back. But other curves would be also in satisfying correlation, e.g. a decreasing branch of a flat sinus-curve.

I heard and read by Barry, that the Norman-Setterfield curve could be interpreted (in adapting to secular cosmology?) as a cosmic Mega-Sinus-Curve, coming now asymptotically on the bottom tangent of this sinus-swing, outdoing now a measurable changing of c and h , not aware of the real cause by the definition-circle of *>SI<* [SI- international measure-system since round 1970]. Past and future are this way opened to transgress Biblical Salvation History [Creation, Fall, Flood, Incarnation, New Creation], that means avoiding a short-timed cosmology of *>this (a)eon<*. I can be friendly to this adjustment to be accepted as discussion partner of normal astro-physicists. But for the task of Biblical bounded *Creation-Cosmology*, as my part, I am free to other thought-experiments, justified as a needed first step for all cosmos-physics, e.g. done by M. Planck, A. Einstein, J.A. Wheeler and other genies!

So further brain-storming is needed:

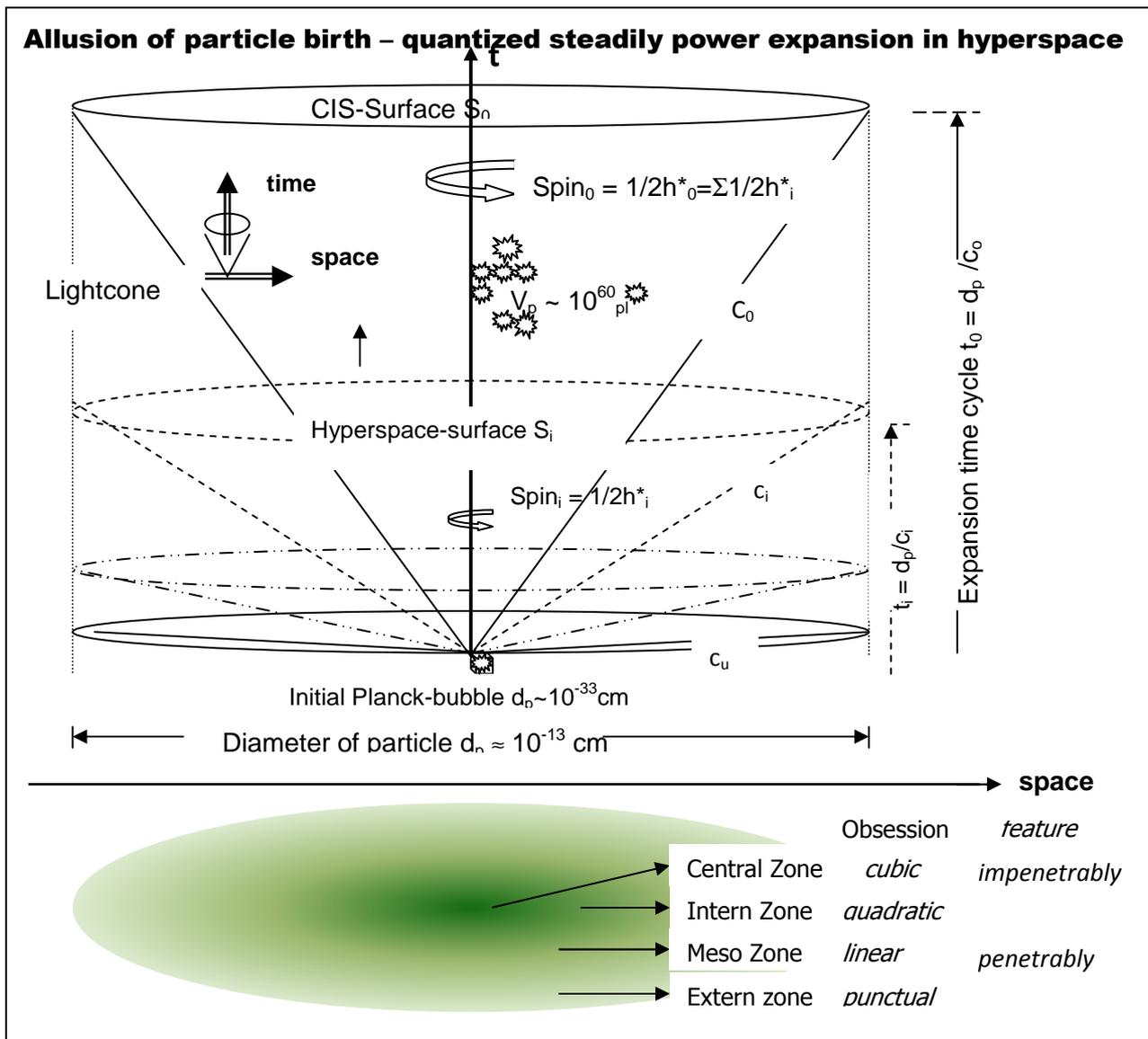
The primordial sudden creation styling of the space-skeleton *metron* may brought up in the basic frame of the ground-state $c(u)$ spheres $S(i)$ with characteristic step-values of $c(i)$; $h(i)$. $h(i)$ expresses a spherical ZPE-density $\rho(i)$. As the creation was very alive from the beginning, the hosts of heavens, the uncountable amount of angels were and are spherically body-shaped and may transgress the spheres $S(i)$ and divulge on commanded case to the outer spheres $S_{i..o}$. [The Biblical type-metaphor for that is the Jakob's ladder Gen 28:12]. Theirs ground-state may be virtual in S_u , in a vague analogy to the virtual agents in the earthly internet, named avatars. To strengthen the analogy inversely: The *metron*-ground-

state S_u may in the sketched constraints represent God's internet, a fantastic digital information field, - I named this "cww" (cosmic wide web) - where all creation entities will be virtually predisposed and appearing in a projection act in stronger mass-spheres $S_{u,i}$, suitable on B.Heim's projection theory. The spheres S_i are an old Biblical-Jewish wisdom, shared by the Apostle Paul, named (Hebr.) the sefirot (numbered outreaches)- or heichalot (heaven-halls)-wisdom. (The way, the Jewish theologian as Paul or the early Church-fathers were doing creation-cosmology). The ground-state, the basic sefira (outreach) S_u stretched the space-cosmos, Newton's wisdom: sensorium Dei. All this sounds *cosmos*, and not *chaos*!

We are now – as driven out creatures (Gen 3) down in the dumps (Rom 8,18-23) and restrictions of (the extremely sefira) S_0 , experiencing S_0 -physics and looking from there to hidden worlds $S_{0+1,...i,...u}$, announcing dark-matter [DM], dark-energy[DE], ZPE as the major hidden content of cosmic physical creation. Yes, there are hidden worlds with therein emboxed creatures and their needed environments with S_i -physics: baryonic and bosonic $DM_{i...u}$ and $DE_{i...u}$. The only S_i -swells (I named it Planck-swells) transgressing force is gravity. Hence, the synonym "dark". How do physical cosmology, confronted by the abundance of dark physical reality?

I beg you pardon, dear Barry, that I turned from a historically varying light-speed unto a brain-storming on a topologically differentiated sphere-physics S_i . I suggest and hope that most of your enlightening work on VL (Varying Light-speed) can be transformed to this issue, as justified by Biblical presuppositions: creation and salvation-history physics.

As kernel questions appear: how can we understand the transformation of the information load of the saintly internet *metron-ZPE_u*? The key is the inner feature of Planck-cubes. Here we meet the string-world. The closed or open strings bear in the sight of string-theorists, the information for the particle design: load, spin, mass, Popping up and vanishing of PPP show the activity of transformation of bits to its. J.A.Wheeler, the master of thought experiments, proposed the idea from "bit to it", the emergence of particles from informational bits. The steadily transmutation from "bit to it" is a basic fact of created reality, in spite of the lack of a plausible 'mechanism'. Quantum theory handles these basic facts statistically as effects after, as a theoretical proof, that from the strand of classical physics, there is no deterministic causality available, say a mechanism, to grasp that mystery. The B.Heim's projection theory describes by the mentioned informational and enetelechial tensors this downward causation, from mathematics to bit sets and its geometrical effects and lets the prime cause (causa prima) open. This process is pure contingency, looked on it from the strand of deterministic physics as geometro-dynamics. So all string mathematics, trying to exhaust the inside puzzle of Planck-bubbles, do not reach the goal to unveil the Planck-world mystery. Is the popping up and vanishing of PPP more than a detectable surface effect of this zippy mystery of the mutation process from "bit to it"? The Planck-mass is derived from $T^*, L^*, c_{i...u}$ and stands via the activity of PPP(i) for the density of $S_{i...u}$, numerically expressed through $h_{i...u}$. There unveils no dependency of cosmic time-elapsing for the increasing of ZPE-density. All depends of the sudden created topology of *metron-*



spheres S_i . Consequently, there is a stepped density scale, increasing from ground-state S_u unto $S_{i..0}$.

According to this thought-experiments (German, and in English used “Gedankenexperimente”), all created and conserved entities in their mutual relations (baryonic and bosonic) are proposed in the ground-state S_u and from there a steadily projection activity in the intended spheres $S_{i..0}$. (B.Heim), metaphoric “little bangs”. One can say: incarnation in denser mass-spheres S_i . On this insights, the picture of little bangs of particles from the ground-state unveils, which I have sketched in (LZ, MLT, BThPhC).

. From this insinuation follows much:

→ All particle-phenomena are steadily projection cycles from the disposing ground-state S_u through all spheres unto the projected goal-sphere S_i (special case: our S_0) with by the sphere-structure quantized spins [$Spin_i = 1/2h^*_i$; $Spin_0 = 1/2h^*_0 = \sum 1/2h^*_{u..i..0}$]. That means, each particle shares in its inner behave also the sphere-disposition $\langle I \rangle$, and mainly the information-bit-causation of the ground-state $\langle u \rangle$. In other words: shares the dark-matter-deepness of reality. What we can “see” and handle the S_0 -physics way, is only a small surface

attitude of the things. S_0 -physics is a grace-gift to practice life on *>this eon<*-stage, e.g. doing engineering, but not for creation-cosmology! Biblical revealing is additionally needed to practice lighten thought-experiments!

→ All physical entities are at least in the ground-state S_u in a causal or informational connection. The horizon-problem vanishes in the hidden dimensions $S_{i..u}$. You know, to solve this problem for physical cosmology, Albrecht-Magueijo have invented the primordial $c = c_0 \times 10^{exp60}$ light-speed, banned by the big bang scenario. The above dispatched S_i -metron-scenario solves this mega-problem the more elegant way [LZ; MLT].

→ The question rises up: is there any hint to grasp the sphere distinction $\langle i \rangle$. I am very convinced that this basic question touches immensely the red-shift facets.

→ Outreach of the S_i -Paradigm:

At the W&W-meeting/ Neustadt-G, I denounced a new steady-state model of Sanchez-Bizouard (2009, cited in BThPhC p 13). In a new proposal of a *Steady-State, Holographic, Tachyonic and Super-Symmetric Cosmology* ask the authors F.M.SANCHEZ and CHR.BIZOUARD: are we possibly with our physical surrounding in the center of a black hole¹? The authors calculate the radius of this black hole as the radius (SCHWARZSCHILD-radius) of our emboxed matter-cosmos. Biblically questioned: Can we understand the T_{gal} -scenario as a cosmic phase-transition, an in-crash into a black hole against a primordial light and matter reality. God's judgment! There is no exit, neither physically nor by reflecting imagination, not at all by theoretical cosmology, only guidance by Biblical revelation: "Paradise lost for the prisoners! The Cherubim with the flaming sword are watching those doors (Gen. 3,24), later in text *Planck-wall* signed. Is *our* black hole, embedded in light-spheres, shaped by heavenly light characteristics $S_{i..u}$, physically suggested as dark-energy and dark-matter shapes, in sum as hyperspace reality described?

The authors derived this formula for their SSC-Universe: $R = 2 \hbar^2 / (GM_p^2 m_e)$. In their interpretation it seems as a s.-c. c-free value, under the belief of "normal physicist" that \hbar and G, M_p, m_e were really constants. I can accept this postulate for the conditions of *>this eon<* S_0 , but not for a spherical integral cosmology $\langle S_i \rangle$. So I handled this formula due to the invariance-theorems of conversation of geometry and energy. I packed all invariance-terms in a summarizing constant-term and got a proportional relation:

$$R(i) = K * c_i^4 / G_i \implies R(i) = K_i * c_i^2 \rightarrow R_i \text{ prop. } c_i^2$$

¹ Evidence for Steady-State, Holographic, Tachyonic and Super-Symmetric Cosmology: GED Special Issues: Gravity & Cosmology, Paris 2009. The Universe Permanence. Rational and Scientific Critique of Evolution. Experts Conference EVOLUTION-THEORY AND SCIENCE 7- 11th September 2009. Gustav-Siewerth-Akademie Weilheim. Preprint 2009.

In my thought-experiment-cosmology I am only looking on general proportions. (Barry ore everyone may have lust to reckon precisely). From the aspects of the Sanchez-Bizouard-steady-state-cosmology [SSC], we are in the centre of a black-hole with the derived Schwarzschild-horizon "R₀". The black-hole interpretation needs an embedding outer sphere, and we can interpret that demand as the set of embedding spheres S_{0+1,...i...u}. Stressing the black-hole-vision, which I theologially share for our eon S₀, due to a judgment-phase-transition, a sudden rupture – be aware of this bold theological interpretation - from S_{0+1,...i?} onto S₀, the black-hole scale may be outreached to the relation S_i unto S_{i+1,...u}. In accord to the exp2-proportion, the special sphere-Schwarzschild-horizon shrinks form S_i unto S_{i-1} by $\forall R_i$.

A cosmic picture arise: the lighter the wider! (E?). In other words: Going through the S(i)-ladder up 0...i...u, the mass-shape gets weaker ($h_{i...u} \rightarrow 0$; the density fainter ($\rho_{i...u} \rightarrow 0$; PPP activity?), the information mediating quicker, and the sphere-outreach larger. The ground-state-*metron* S_u presents itself as an unchanging coordinate-space, a three-dimensional standing-carrier-wave net, woven in L*-meshes, and encircling all thinkable space-time points of the sphere-outreaches S_i. This picture leads to the imagination of possible parallel-spheres S_{i-1,p}/R_{i-1,p} in S_i. In contrast to all multiple-world speculations of naturalist's cosmologies, in the proposed S_i-paradigm, there doesn't exist any creation-entity the pure mathematics way, as in principle possible - as a solution of equations - , which is not specifically projected out of S_u, due to God's actual will. [In B.Heim*s projection-cosmology: the contingent entelechy and information tensors must be activated!]. The strongly will-ruled S_u-coordinate-ground-state is in this sense a clear restriction to mathematical speculations.

But, the spherical parallel-world imagination may give vague answers to biblically induced questions: where is the hell, the abyss, the discerned realms of heavens, the everlasting paradise, from which we are driven out. These more theological reflections should be strengthened otherwise.

→ . What's with red-shift in the frame of S_i-paradigm?

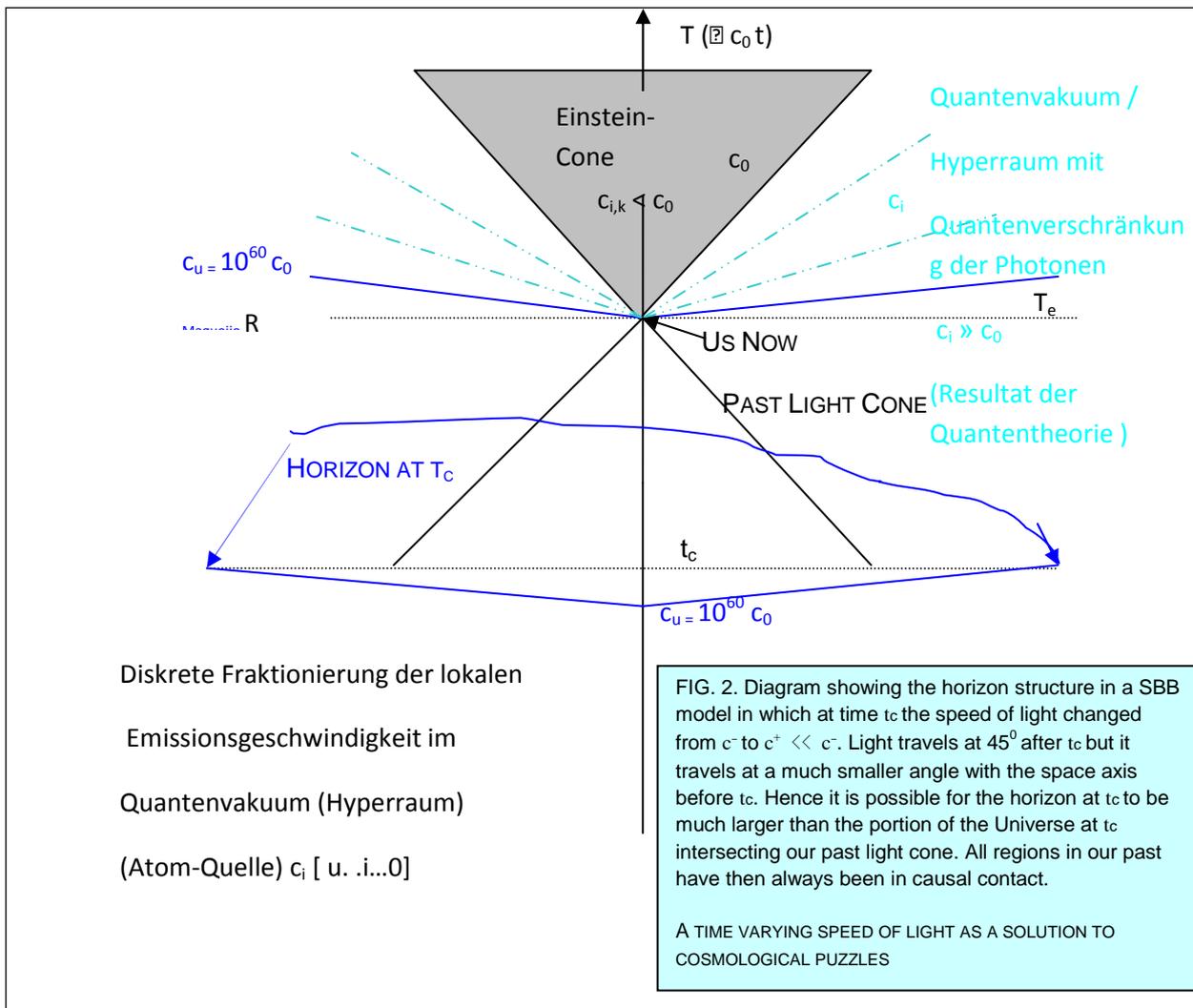
In LZ (MLT; QLC) and "Können wir das Alter des Schöpfungkosmos erkunden?"

www.professorenforum.de/professorenforum/content/artikeldatenbank/Artikel/2005/v07n02a5.pdf [Transl.: Can we explore/ calculate the Age of the created Cosmos? -Alter/ Age]

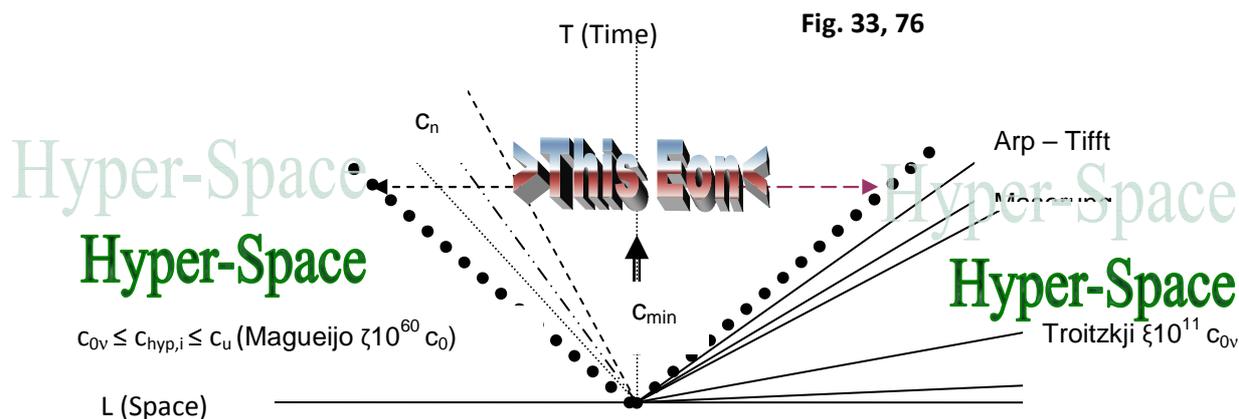
I derived basic relations between the eon-Age $>T_{gal}$ and red-shift scattering in a S_i-cosmology. To be short: read [GLC, 112-128: www.institut-diakrisis.de/beckref2.pdf]; Light, more physically spoken, the electro-magnetic all encompassing energy form of the created cosmos, remains a mystery in spite of measurable and experimentally handled reduced aspects, e.g. by laser research. The demanding c(i)-paradigm stands for [LZ, MLT]. In analogy of the projection chain (Fig. above).of particles from the ground-state into our sphere S₀ [Spin₀ = 1/2h*₀=Σ1/2h*_i], each radiating photon is rooted in and ruled out of the ground-

state and its directed spin₀ = h*₀=Σ1/2h*_i, mediates by all c_i through the spherically i-discerned hyperspace, presenting a quiet another causality and information nexus than by GRT space-time bending [Fig.2, 29, 33, LZ/ MLT p.11,69, 76]:

Fig 2, LZ[MLT], 11

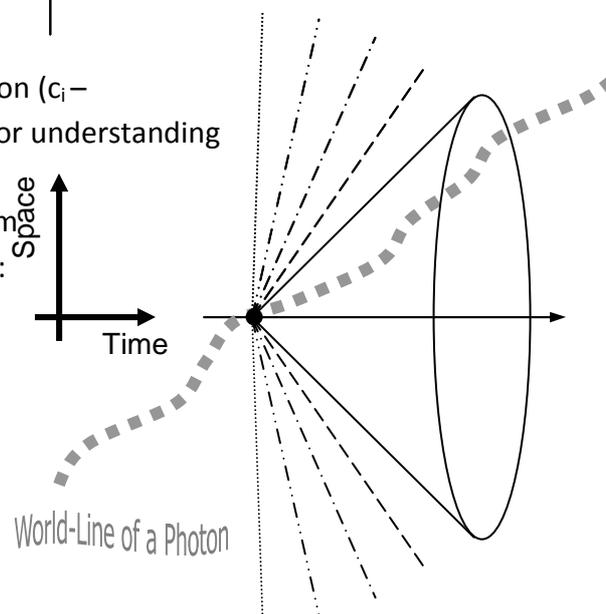


Hyper-Space-Light-Dispersion $c_{0v} \leq c_{hyp,i} \leq c_u$ (Magueijo $\zeta 10^{60} c_{0v}$)



Light-key for the logic of time and causality in the c(i)-cosmos

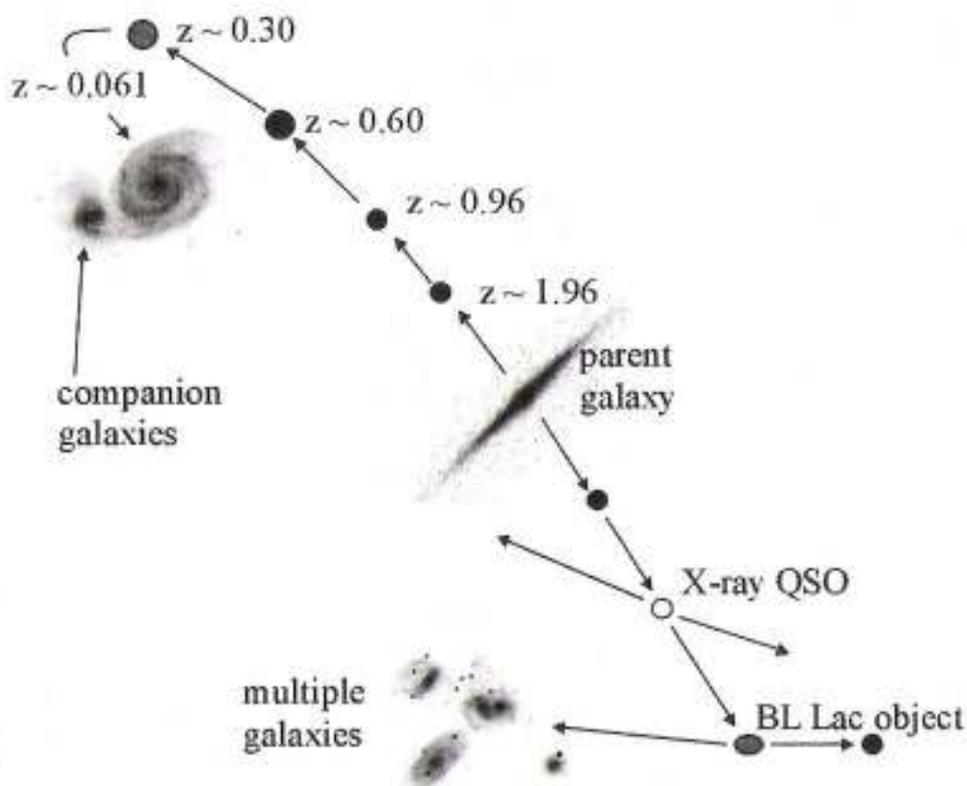
The figures 2,29,33 [MLT] show the light-dispersion (c_i -quantization) in the $c(i)$ -space-time and the key for understanding also the red-shift dispersion or periodicity. In my method of thought-experiments, I concluded from fig 11 [GLC, 127] a red-shift quantization formula: GLC Fig. 11, 127 >:Distribution-shells of galaxies in $S_0 <$ leads to the result:



“[QLC] offers another correlation between z and distance of emitter: There are shells for the observer with distance radii $d_i = c_i * T_{gal}$. The nearest observer shell $d_0 = c_0 * T_{gal}$ generates indeed a spectra-fraction mediated by c_0 with no systematic red-shift [$\Delta E_{ph,i-0} = 0$]. But as the [SSC]s show, there are high redshifts also in the Local Cluster, embedding our own galaxy. Concerning the wider shells (fig.11), the middle redshift counts from the energy defect of shadow photons [$E_{ph,i} = h\nu$], $\Delta E_{ph,i-0} = E_{ph,i} - E_0$. The redshift law in general matters: $z_i = f(\Delta E_{ph,i-0}; V_i)$; V_i = shell-volume between d_i and d_{i+1} ; fig.11). Experts may fulfil the mathematics. So one can gain a multiplicity distribution of redshifts with an increasing tendency for higher intrinsic redshifts in the furthest shell, correlated with fainter galaxies at the optical border. Hence in the multiplicity distribution reveals a kind of HUBBLE-law. Nevertheless, intrinsic high redshifts are, as ARP and other [SSC]-adepts strengthened, also found in nearest galaxies of our Local Group. That’s also a theory conform expectation of [QLC]. The new interpretation of the reddened spectra of cosmic light-emitters as intrinsic atomic phenomena may be the deathblow of bubble big bang cosmology [SBB]. W. TIFFT stated, urged by his observation results: “Cosmology will never be the same again”. Hence [QLC] forces itself from two sides: the observation realm and the hyperspace conditions for energetic and matter phenomena.”

These reflections are nothing else than stimuli to find an independent explanation of starlight-, resp. galaxy-red-shifts and their c_i -quantization in contrast to the standard SBB-explanations. In the W&W-discussion, Christian Knobel argued, that in newest surveys of galaxies, Tifft's periodicity master-structure and Arp's periodicity law were never found.

Rinus Kiel argued literally against. I'll give a diagnosis of these discrepancies. Arp's periodicity formula, diversified and outreached by Tifft, were founded on very precise detail-observations of selected special galaxies in their relation patterns to others, and in their behavior of decades, inclusive their moving traces. The newest survey's research programs and goals are obviously not styled for clearing those special features of small selected galaxy-groups. The above named (Tifft, Arp) observation programs are very personal-, and time-consuming in contrast to the automatically managed surveys with generalizing average aims. Out-smearing of fine structures may be the result of issue. The battling for observational time and telescope-access is known as Arp's life drama.



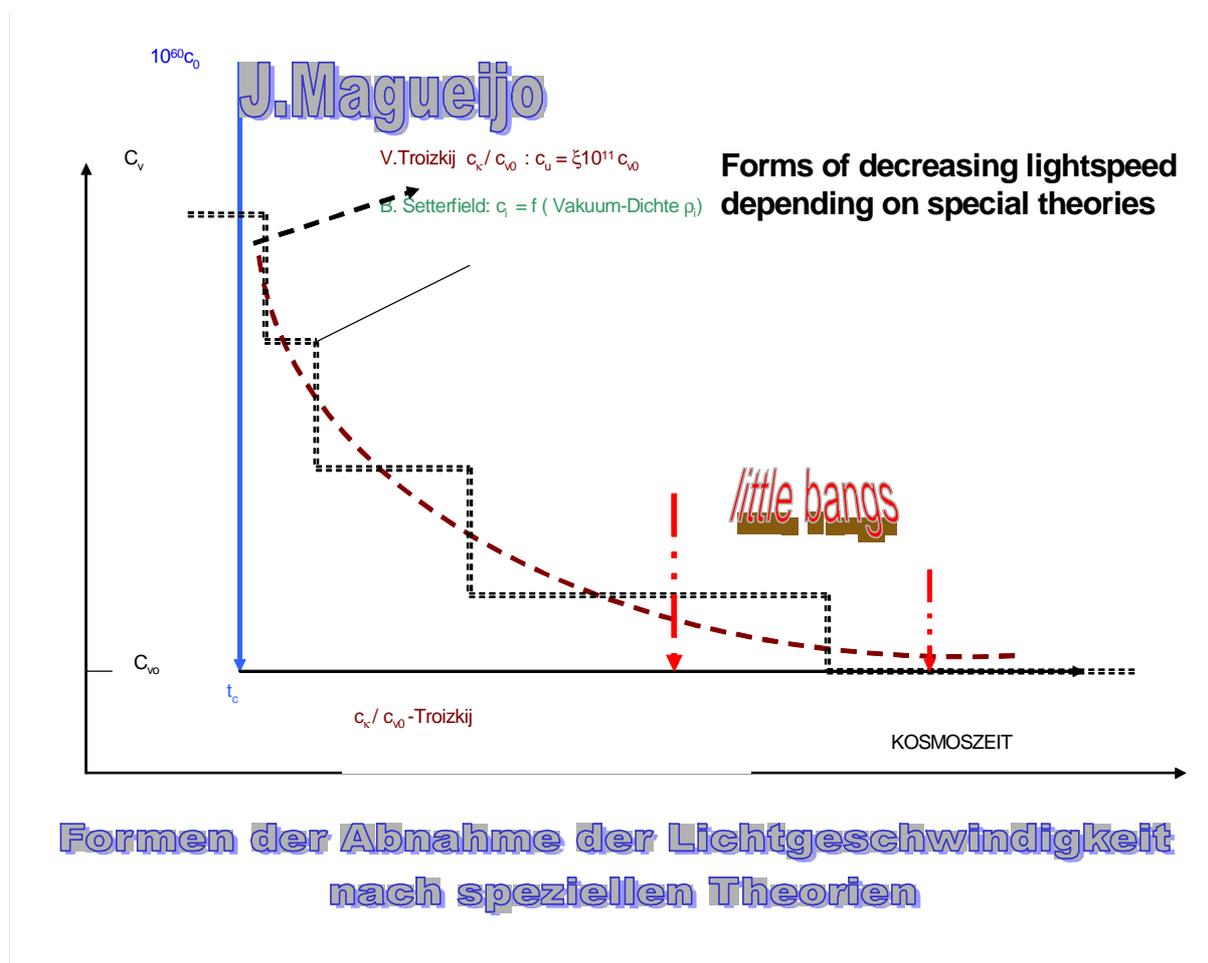
This schematic diagram of the changes occurring in the ejected quasars as they turn into normal galaxies is from Arp's *Seeing Red*.⁸

Tifft's and Arp's uncovering of a systematic quantization of red-shifts and their further confirmations (underlined at the conference by Rinus K.) are really not out of discussion, especially their concluded theoretical arguments against the standard expansion explanation. Under the bundle of hunts for explanation, there arose the question: Is there a screen between us and the object which removes, in discrete amounts, the energy from all

the photons coming toward us from the object? [Arp 1987,179]. Arp mentioned the search for shell-models, which could produce such an astonishing red-shift periodicity observed.

The highlight-observation by Arp is given above in the copied picture: A row of galaxies like on a moving track, with red-shift peaks in a mathematical order and the law: *The younger the redder*. Arp's and Tiff's efforts of theoretical clearing (Arp 87,98,2003) are probably known and here not in debate. I dealt with this in QLC, 2.5. 107f ["How to understand the master-pattern of cosmic red-shift?"]. and were really surprised, that just the spherical S(i)-paradigm with its special application via a shell-model to clear the time-bridging of >this eon<, gives a solution of the short-time-problem, as well a rough formula of red-shift-periodicity $z_i = f(\Delta E_{ph,i..0}; V_i)$ [QLC, Fig.11, 127]. From this c(i)-shell-model follows consequently, that we must see, depending from our observation-standpoint, the same galaxy on a moving-curve multiply again, in accord with Arp's law >the younger, the redder<, presenting the red-shift scaffold. And that is just this, we can see in the Arp-sketch above! (The off-spring theory of Arp, in my knowledge, no one in the astronomer's community beliefs!).

So, may be with high-school-mathematics, anybody eager to gain a Nobel-Prize, can fulfill and solve the proposed red-shift formula; finding the numerical confirmation of the observational values of Arp. [QLC, 128: G.F.Ellis discussed in a thought-experiment a cosmic model with repeating galaxy images. This idea isn't new. But generalizing surveys can't find such highlights. This needs demanding detailed observations of individual galaxy features over time-spans, on which the big-bang-community can not be attracted, because the



results would dismantle the standard scenario]. I confess a vision: the astrophysical and astronomical data, we have, could in the sketched lines be interpreted in a biblical oriented cosmology of >*this eon*<. The mystery of light [LZ, MLT9], deciphered in some aspects by help of S(i)-paradigm [S(i)-P], can still remain a mystery, protecting God's Holiness, but can give rational weighing answers to reject the idolatry of hot big bang. S(i)-P does not and will not intend a physical TOE. The basic condition is the openness for God's sovereign acting at each *metron*-point, contingent bit-storms expecting [10exp40 Q-bits per space-time knot; C.F.von Weizsäcker].

In Neustadt I showed the sketch: **Forms of decreasing lightspeed depending on special theories (above).**

The faint proposal of S(i)-P focuses in that:

Barry S. found systematic density-swells (quantization jumps) via the temporal developing of physically caused increasing of PPP-density for the whole vacuum-cosmos. **with time.**

The Norman-Setterfield-curve, ontologically understood as representing characteristics of a real cosmic history, consequently leads to such possible *physical* interpretations. [Barry:

the energy density of the electromagnetic fields making up the vacuum Zero Point Energy (ZPE) is increasing with time...in jumps; boldly, Barry correlates this cosmic density-swells with geological eras: In Neustadt the MS" The Bible and Geology" was handed out to us].

On that my question: if the Sanchez-Biduoard- formula [$\rightarrow R_i \text{ prop. } c_i^2$] can be widened to an integral cosmic trend, would we have in reverse analogy, namely a in jumps thinking Triotzkij- and Norman-Setterfield cosmos? (May be, that in analogy to other SSCs, a temporal stableness could be apologized). But from my theological-biblical criteria asked: the standard big bang expansion cosmology is the framework for all in that stated self-organizing processes – matter, galaxies, life. In the contrast-picture of a decreasing light-speed - and I add: a shrinking space – there is consequently also a self-organizing scenario proposed: intensifying ZPE-fields; rising PPP-density; increasing mass, derived cosmic quantization-swells; plasma-physics inducing cosmic patterns for galaxy evolution. In all this, Barry S. is much involved to confirm this scenario physically. Have we really to apologize God's sovereign original, and sustaining, and ruling creation acting this physical way to gain prestige by the community of naturalists?

From the theological criteria stand, the S(i)-quantized *metron*-creation [S(i)-P] proofs as an original autonomous creation act, giving the existence- frame for all thinkable created entities in their spaced and timely relations. This vague described (Gedankenexperimente!) magnificent *metron* – sensorium Dei (Newton) – is as such shaped as an information mediating and mathematics exhausting system and totally open to God's sovereign acting at each *metron* knot. From here rises a critical dislike on all stated self-organizing procedures in nature – better say creation.

But than what with mathematically skilled physics, thought as crown of science? As a trained engineer I very appreciate those skills. Here is the point to face a big misunderstanding on s.-c. *laws of nature*, highly living also in he think-tank by W&W (in short, knowing this demanding major-problem of philosophy of science) : God had created the wonder of natural laws, self-creating now the following features of nature (creation). The physicists, mainly the theoretical, are the priesthood to mandate this mathematically for the public hidden treasure, to explain lastly all.

No! The *laws of nature* are a-posteriori subsumed of experience, observation, experiments and than (a-posteriori) by homo faber (applicators and scientists) proposed, partly in mathematical models (mainly statistically and approximately by equations - s. the mentioned battle for quantum-theory-shaped *difference* against false deterministically shaped differential equations - by B.Heim!). To focus the tough item in short: look on the newest campaign of the Nobel-laureat R.B.Laughlin against any distressing of cosmic nature by deterministic theories as e.g. geometro-dynamics (s. my discussion with the Stuttgarter theoretical physicist W.Weidlich (- sorry in German -)).

www.professorenforum.de/professorenforum/content/artikeldatenbank/Artikel/2009/v10n02a2.pdf Details otherwise!

The tension between deterministic GRT applications in cosmology and fainter quantum-theory-oriented access (e.g. B.Heim contra A.Einstein; SED contra Maxwell etc.) is routed here. Details otherwise. In [LZ, MLT] I referenced to the s.-c- quantum hermeneutic of the famous philosopher of Science H.Lenk (formerly president of the World Alliance of Philosophers). The quantum-theory-oriented Projection-Cosmology of B. Heim is an application of H.Lenk's fundamentals of science as an informational non-deterministic downward-causation theory, and applicable on that in this tracks sketched S(i)-P.

In short also a byword on the resistance against dark-matter, dark-energy, ZPE-ground of cosmic reality (vacuum-ocean) by American creationists and friends of W&W:

If there were no physical detections and grounds for a dark-hemisphere of nature (creation), I urged for that on biblical and confessional reasons [Details otherwise [e.g. LZ; B&W].

I register: the astro-sciences have now accepted the >dark< hemispheres in their concept. To be short a personal spot: as I visited courses at the Heidelberg-Uni- Observatory, leaded by I. Appenzeller 15 years ago, I urged him and his coworkers to be aware of this realm of reality. In the course >Astronomical Relativity< I wanted, that VL and Arp's and Tiff't's periodicity – observations should be handled. It was refused as non scientific. Appenzeller went than, interrupting the course, to an International Congress to Munich. Prof. A. was by my demanding somewhat disturbed, but promised me to be aware of such news, and if meet Arp there, to discuss quantization of red-shift. As he came back, he told me very well feeling, that all my problems were no items at this congress and all were still quite normal. But now, in Appenzeller 's new book "High-Redshift Galaxies" (Springer 2009), the dark-matter-scenery is quite normal dealt with. I was astonished, that the influence of DM/DE –drive is fully incorporated in the cosmic standard scenario, and is a big challenge for creation-cosmology. So I beg my friends: do not clash more at fake frontiers!

In the S(i)-P, ZPE (ground-state and quantized spheres, (sefirots of heichalots, the heavens pl.!), DM, DE are major parts of creation reality in full harmony with Biblical insights.

By these soft reflections on Barry's issue and conclusions, some concluding remarks:

- a) The a-posteriori diagnose of what can be a *law of nature* and the needed quantum hermeneutic to interpret data and gain knowledge over creation reality, throw light also on mathematics as a human skill to gain knowledge. Math has no ontological rank. It belongs to the intellectual side. E.g. the circle-trap: $c=h=g=1$ as axiom, introduced in any algorithm, e.g. establishing a theory of measuring (SI-System), leads logically to the conclusion: one cannot measure any changing of this values by measure-means, defined on that. The further conclusion: these values can therefore not change in the cosmic reality, stands for nonsense! So I share your math-critique, Barry.
- b) I proposed an alternative cosmic creation paradigm S(I)-P, with mega-quantized quantities $c_i, h_i, g_i, [c_i \times h_i \neq 0 \text{ constant}]$. Stimuli came from traditional biblical highlights on creation, others from modern observations of the light-mystery, which shows a mega-quantized master-plan in several astro-dimensions [W.Tiffet, H.Arp al. LZ, MLT]. In contrary to Troitzkij and Norman-Setterfield, there is no changing of this S(i)-master-structure in cosmic time. It represents original creation and lets in its informational ground-state, with relations to all created entities, God's free acting open. So individual and cosmic wonders do not hurt *laws of nature*. They reveal God's all-might, the confession of us Christians. In the a-posteriori quantum hermeneutic vanish in regard to the c_i -fine-tuning time horizons, contradicting the time-span of *this eon* $[T_{gal} - T_{now}]$, the causality and information feature is highlighted, the observed and derived mega-quantization of red-shifts signs the spherical S(i)-shaped ZPE-*metron*.
- c) Cmb (cosmic background radiation) could be grasped as the all encompassing remainder of the S_u ground-state, consequently – $\langle i \rangle$ - shaped. This basic radiation-field represents the maximum red-shift z_{i-max} in all spheres S(i), in the typical inner black-hole-Planck-radiation curve. This field $\langle cmb(i) \rangle$, as a steadily cycling projection result of the ground-state S(u), smearing statistically out the original information procedures [Q-bit-field(u)] and may be due to the steadily popping up and down of sphere-styled PPP(i). From here may be derived the specific sphere-density $\rho_i, (\text{ and } h_i)$, which is not depending on any temporal cosmic evolution. Original creation style! The steadily from the ground-state S(u) projected and formed entities (particles, atoms and secondary by atoms emitted photons (+ other bosons . s. QCD) give their additional contributions to the density household of spheres. All wonderful knowledge of stabilization of atoms by the vacuum surrounding, on which Barry S. dealt with, inspired by Puthoff (? et al.), can probably be profiled the S(i)-diversification's way.
- d) At this stage a byword on the structure auf downward-causation:

Above I spoke on out-smearing of the Q-bit-splendour of the cosmic ground-state field, the cww (the creator's cosmic wide web – Newton: Sensorium Dei) in the spherical $\langle i \rangle$ -cmb-remainders. The spheres may be additionally filled by the plenty of created atomically shaped entities (baryonic DM from S_0 standpoint) and the bosonic shaped mutual effects [DE from S_0]. These

DM(i) + DE(i) present applied projected information (spin, spin-vector; mass; e-load; bosonic relations -> B.Heim; T.Stonie LZ-MLT). These S(i)-projected features collect for S(0) the grandiose standard-QCD, the proud of physicist! In LZ [MLT] I qualified these over decades by big-science-colliders resembled knowledge as not reducible design. About 20 styling parameters around the looked for Higgs-field, remarkably a scalar-field (no vector-spins!) are open. What could really be expected to find, are statistical S_0 -structures as remainder of the veiled S_u -Q-bit-field as ZPE-ground-state of the cosmos. From S(0)-physics there is no access to the hidden (dark!) $S_{i,u}$ -realms in principle possible. Scouting by big-science-entertainments as GHC-Geneva to God's-particel-field, may come to the boldest scientific hoax (or repeating the Tower of Babel up-stand from bottom to high-campaign, actually said: changing from downward causation to naturalistic bottom up science) of mankind. (But that's another theme!)

The German known microelectronics-scientist Karl Goser (University of Dortmund) profiled two fogs as barriers for gaining knowledge for man:

- I) The quantum-bit-fog-cloud and
- II) The thermo-dynamic's heat-fog-cloud.

The downward styling of systems, reducing entropy, can with no tricks be explained by endeavours of reductive causality, neither deterministic (a mechanism!) nor quantum-statistically (the Schroedinger-equation remains in spite of the differential-form an eq.of expected probabilities!). Details can be strengthened by the mentioned quantum-hermeneutic [H.Lenk]. K.Goser sees here also a deep relation to Heisenberg's uncertainty-principle. [The PCC of B.Heim and the Q-Philosophy of D.Bohm are parallel): Why here such bypasses?

Barry S. likes to handle cosmic-wide "seas of PPP" (instead of Dirac's false "vacuum-sea" of electrons). Thermodynamics handles "seas of atoms or molecules", and Barry, in the spur of H.Alfen, plasma-seas of ions. The big-bang-ART-cosmologists smear the cosmic scarcely mass out to a super-fluid of (neutral) atoms; the trick to apply hydro-mechanically shaped deterministic GRT-equations for the whole physical cosmos substrate.

All that is done in the shields of the two named nebulae (fogs), to handle the splendour of the phenomenon "cosmos" (that symbolizes ordained order against chaos) the reductive way of averaging and smearing out the true causes of will-ruled information. Than you can find pure "physical laws" without any informational causation for self-organizing the genuine physical believed reality unto life. In sum: up-ward-causation against downward causation [the topic: Will-Information-Entelechy-physically and bodily formed energy to matter].

The two fogs, K. Goser argues, hinder up-ward explaining in favour of downward effect-chains (B.Heim). You can't spike or unveil the fogs, the zippy vacuum influence or the thermo-heat, or the information noise via deterministic upward approaches.

Naturalistic physics can averagely deal the touched cosmic "seas" with macro-, in most cases quantum-statistics, and find some a-posteriori structures, as Barry in his light-speed-decreasing issue the cosmic large temporal density phase-swells, plasma-mega-strings to rouse galaxy evolution, all without God's directing action.

III) A third fog-cloud:

The scenery of galaxies has two poles (G. F. Ellis):

Pole I: Our sun-system shaped for our earth with the maximum of order or needed amount of Q-bits to present life: the sink-point of macro-entropy.

Pole II: The fog-cloud of disordered galaxies as maximum of entropy, balancing the macro-entropy-household of S_0 . That can be seen as the entropic perspective of Mach's principle in our black-hole S_0 . The galactic scenario S_0 is for us observers an a-posteriori result of the transgress from $S_{0+1} \dots i \dots u$. In LZ [MLT] I apologized the sudden appearing of our sun-system with all physical features, e.g. as dynamic fusion reactor, the sudden fixing of the reactor clock $H \rightarrow H_e$ for our eon. All macro- and micro-radio clocks were in analogy fixed at T_{gal} . [The problem of radio-clocks may be treated this way, and the undigested macro-time-horizons will vanish!] The first human couple, Adam and Eve, could post lapsum (after the fall) in principle as astronomers observe a HRD- T_{gal} , as the whole galaxy scenario came suddenly in relational and dynamical existence. That's not original creation, that's the result of a phase transition $S_{i \dots u}$ as God's action ruled out from S_u . HRD- T_{gal} stands for a moment-shot >after<, as an a-posteriori then observable phenomena-diagram. The primordial pre-history in $S_{i \dots u}$ remains for fallen S_0 -man veiled: the HRD-curtain, may be woven in cosmic strings and plasma-clouds, holds! No access, say the Cherubim with their flaming swords!

To run through the third macro-fog-cloud from now to the primordial state $S_{i \dots u}$ is likewise impossible, as to spike the first (Q-bit) and second (thermo) fog-cloud. So all questions to search out the evolution of galaxies with physics > S_0 < would be in vain. Right: star evolution and devolution in the framework of the crucial recent galaxy-dynamics belongs also to the time of *this eon*, and is precisely observed, e.g. in the star-birth, and in black hole off-springs and down-springs, and super novae scenarios. The macro-boarder (galaxies, added all interstellar and intergalactic phenomena) and the micro-boarder (vacuum-HySp) are embedded in the very zippy activity of the $S_{i \dots u}$ – Hyperspace.

The Triune God's grace allows us S(0)-science and technique of *this eon*. That's enough for space-exploring and micro-technique. Further he grants to us fallen men cosmology of >*this eon*<, respecting the set boarders of T_{gal} (timely) and $S_{i \dots u}$ (topologically S(i)-P). downward-causation against up-ward-causation via the ideology of self-organizing *laws of nature*, aware of the three nebulae (fogs-clouds). In accord to the prophecy Jerem 31,37, we have a wonderful destiny to do science and technology in and of *this eon* until the Lord will come. Reductive pure physical cosmology of the whole and the all – as there were no God (etsi Deus non daretur) would be a contradiction in se.

To summarize the following abstract [LZ; QLC; BThPhC]:

„Cosmology will never be the same again” proclaimed the astronomer William G. Tifft, faced with the observations of the last decades. The obstacles are the 99,9..% of merely understood dark energy and matter of the physical cosmos, the exponential explosion of recently detected dark holes, the strong periodicity of red-shift in the cosmic spectra and the partly observed sudden changing of the red-shift amount of identical galaxies in view

decades. The question arose: do we see identical galaxies in different physical states lined up on their moving curve? All these and other exaggerated features focus on the mystery of the basic energy form “light”, which constitutes in its electromagnetic feature space and time as an information induced and multidimensional holomovement (D.Bohm). In 1905, anno mirabile, A.Einstein invented two revolutions in physics: special relativity and the quantum reaction of light and matter. The “photon” was born. The step to general relativity lastly challenged to the standard world view of a hot big bang scenario, with its billions of expansion years as conditioning frame of special evolutions of galaxies, stars with orbiting planets and eventually expected life mantles. But, can we earthers gain information from the sky by other means than the captured light spectra? Indeed, the CCDtechnique leads to overwhelming picture galleries of the whole sky-calotte – NASA’s benefits! Yet, does anybody really understand cosmic “light”, the biggest mystery ever faced? The CCDanalyzed spectra are demanding quantum statistics from space and dark-energy hyperspace. As D.Bohm, C.F.von Weizsäcker, B.Heim and others showed, one needs a complicated quantum hermeneutic to realize any cosmic scenario. The standard hot big bang is hardly to apologize faced with newest apocalypses of the cosmic light field. What will the Geneva’s crash-machine reveal in 2008? The God’s bit field (L.Lederman)? I intend to convince the reader, that the challenging MYSTERY OF LIGHT AND TIME (title!) opens a new possibility to understand the cosmic reality as a scenario of *this eon*. In biblical terms: Creation-Fall-Incarnation and Salvation. There is no contradiction between what we can see by the amazing CCD-pictures and its interpretations by chosen quantum hermeneutics according revealed salvation-history conditions. Naturalistic scenarios must also confess their chosen ideologies. *Cosmology of this eon* becomes a challenging face up to naturalistic ones!