Helical CMBR Asymmetry, Pre Big 'Bang' State, Dark Matter and the Axis of Evil,
The Architecture of the Universes

Peter A. Jackson
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Abstract

We describe the solution to Cosmic Microwave background Radiation (CMBR) quadrupolar asymmetry and anisotropy, which is as predicted by the discrete field model (DFM) described in earlier archives, and explain how it may have taken it's spiral, or in fact it should be 'helical' form, the so called 'axis of evil', and the big bang, or more appropriately big 'whoosh', and pre big bang conditions resulting. We provided logical and photographic evidence. These discoveries are based on the apparently 'magic bullet' properties of the DFM and found as part of a a falsification exercise which has recently also provided galactic secular evolution sequencing, and unites Relativity with a Quantum mechanism. This uses the postulates of Special Relativity (SR) but makes a small conceptual correction to it's understanding to put it on a basis precisely equivalent to General relativity (GR), also better defining Quantum mechanics. This is an initial paper pending consideration of publication of fuller papers, which will be followed up here.

1. Introduction

We have presented a theory that galaxies are recycled by Quasars via toroid super massive black holes (smbh's) at approximately 9 Billion year intervals.

The final configuration is from Lenticular to Ring as the smbh sucks it in, ionises and re-polarises all the matter and ejects it in contraflow gas jets at up to 7'c' in the frame of the black hole, in 'incentric' (graduated velocity stream) jets.

Due to the basic symmetry of a torus 'Tokamac' (which has intrinsic rotation) the gas jets cannot be symmetrical, giving quantum uncertainty. Re-inonisation (without an 'epoch', and Chiral polarisation are thus explained. This means the jet must 'range' around the axis, forming a spiral pattern. Evidence has been found from solar mass black holes upwards. Fig 1, shows Centaurus A, taken from the European Souther Observatory, presently considered to be of a spiral galaxy being eaten, but the model shows it as one being born.

Fig.1 NGC 5128 Centaurus A (ESO. APEX) The sub mm. Radio source is from the receding gas jet. Note the plasma cloud around the jet.

The smbh expends itself by consuming the whole galaxy, but then is re formed and starts rotating on the new axis perpendicular to the jets, restarting the galactic cycle. The plasmasphere around the black hole remains, (and as it has a refraction co-efficient light passes through it at c/n) The Sphere, perhaps up to many thousand light years in diameter, rotates with the black hole, taking the inner arms with it to form an open spiral. The plasma, which is the dark matter that binds the galaxy together gravitationally, forms the inertial frame of the galaxy, which is better described by the DFM term of inertial 'field', the co-ordinates being 'attached to a (though non rigid) body' as Einstein specified rather than abstractions of line point and mathematics. This rejoins Locality and Reality but with a quantum mechanism, the plasma refraction providing curved space time.

The plasma particles also condense from the vacuum increasingly with motion with respect to the CMBR rest frame. This frame would otherwise disprove SR as it is a 3rd 'background' frame, it is however in the frame 'last scattered to' www.apctp.org/topical/stringws2007/Tarun%20Souradeep1.ppt so is a discrete local frame, not absolute, avoiding problems with bells inequality.

The following is an extract from a recent paper describing this in more detail;

2. Effects of Refraction & Diffraction

The QED analogy of the DFM is absorbed photons re-emitted at 'c' *in the rest frame of the co-moving electron.* This has an effect well known in optics [1] where the time averaged Poynting vector can be reversed, but this is *mistakenly little recognised and applied* in general physics due to the extra variable. The velocity change is *twofold;* first due to the index 'n' of the medium, and *second due to the relative 'v' (inertial frame) of the medium. (*The energy for acceleration remains mediated by the Fresnel/Lorentz exponential transformation function). We provide an example; Consider a plasma bubble or cloud expanding in a vacuum. FIG. 2 shows the Magellanic cloud white dwarf supernova bubble, 23 light years dia. expanding at 18m km/hr. Let the plasma layer be 1,000km thick with n = 1.1. To an observer O at rest with the centre point of the sphere a light pulse entering the membrane would appear to slow by 18m.km/hr.(v_p) *plus* the c/n of the local plasma. Light reaching O is only

that emitted by each one of a progression of particles, the scattered signal from each travelling *at 'c',* but the sequence gives an *apparent* $c^1 = c/n + v_p$. This is entirely allowable without breaching either SR postulate as it is moving in a different field and nothing breaches the limit 'c' in reality. A different observer frame allows this.

FIG. 2. The expanding Plasma Bubble in the Large Magellanic Cloud; NASA, ESA, Hughes.

Light paths are refracted by the mass of the plasma in the normal way via the Polarisation Mode Dispersal (PMD) scattering delay, [2] both quantitively and qualitatively equivalent [3] to time delay (dilation) and lensing via gravitational and inertial mass equivalence, providing a real space-time curvature mechanism. This can provide simple consistent relationships between optics, relativity and QM, but is more troublesome to conceive than it may first appear. Free of PC Einstein said we "*should be able to explain physics to a barmaid*." This meets Occams' razor as it represents the fixed time t for light to pass through a glass of beer, - set by the c/n of glass and beer. C/n is invariant with vector of the glass or light source when slid along the bar at any velocity. If an observer at rest on a bar stool could see a light pulse passing through the beer, what he would actually be observing is the sequence of emissions from individual particles, scattered *at the 'c' (or c/n) of the particle,* travelling, and received, at the local c/n of the media it passes through, i.e. air, and the lens fine structure then medium of any observer or instrument. The *apparent* time t^2 the pulse takes to pass from the observer frame depends on the v of the glass. But an observer sliding with the glass would time the pulse passage across his frame differently, proving that specification of observer frame is essential, *any number* of different frames being possible, all giving different *apparent* velocities! A block of ice, or cloud of plasma would be equivalent to the beer glass, with n = above 1 and representing different inertial frames or 'inertial fields'. The co-ordinates are "*attached to a 'body"*, as Einstein specified, rather than to unreal 'point' and 'line' abstractions. The DFM [4] gives simple relationships which are fundamental in understanding the process [5] [6] and avoiding anomalies, but which require the brain to hold and consistently apply that one variable more than we are used to. A mathematical analogy is the in-ability to compute the motion due to gravity of three bodies. The speed of light scattered from any medium to any observer is c/n, and bears no relation to the apparent progress of the original signal through that medium with respect to any other moving observer, so although the light is received at 'c' in all frames, the apparent rate from each of infinitely many frames varies. This both proves SR and allows light scattered in *local* CMBR vacuum rest frames. Einstein identified the difference in field basis of SR and GR in 1924 saying;

"*..the aether of general relativity differs from those of classical mechanics and special relativity in that it is not 'absolute' but determined, in its locally variable characteristics, by ponderable matter.* The DFM also removes this inconsistency. Our conceptual ability may be able to adapt better than a computer to an extra variable but it may first require abandoning some pre-conditioned assumptions or beliefs to unveil the simpler solution.

This dynamic plasmaspheric 'inertial field' model has simple axioms; the SR postulates, Equivalence, Fresnel's 'n', Doppler shift, and the assumption that the *fine structure of massive bodies increases with motion as a plasma observed as photoelectron clouds, halo's and shocks, acting as inertial frame boundaries via refraction.* [7] These give lensing consistent with ACDM Nbody simulations. [8] Lenses have opacity n = 1.38 (eye) and n = 1.5 (glass), plus a boundary fine structure with non zero 'n'. They may also move at v. All change the speed of light to 'c' locally as it must be invariant *within* frames. All moving observers therefore find it at 'c' or c/n.. Apparent rate of change of position of something in another inertial field (frame) *does not matter!* Frequency *or* wavelength also change (subject to observer frame), which is equivalent to dilation (red shift) and contraction (blue shift). [1] This further predicts that rotational direction will slightly influence frequencies in double lenses. When applied consistently to secular evolution of galaxies the simple solution emerges with a close to perfect fit to broad observational evidence, based on a rotating inertial field and consistent with Einstein's view, extended beyond GR, that massive bodies are not *in* space but "s*patially extended,*" and that there is not one but "*infinitely many spaces*" in relative motion. ('notes to 15th edition 1952, - after Minkowski 1909). With all but ideal plane waves having non zero interaction with vacuum 'dark energy' cosmological red shift may now not be entirely attributed to expansion.

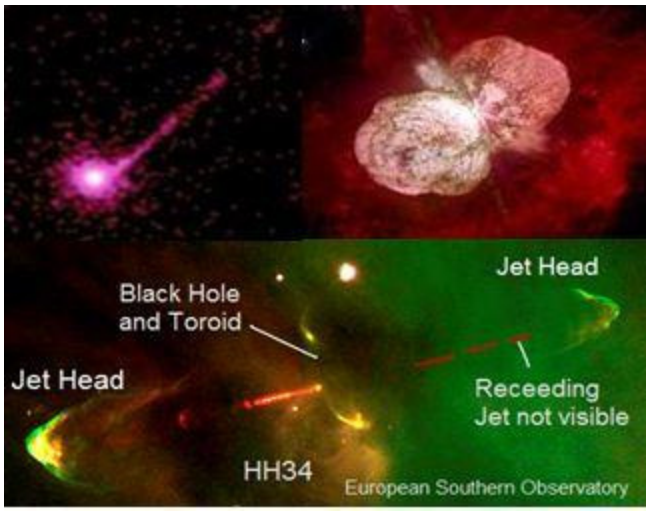

FIG. 3.*a)* (*Top L*; Nasa) M87. Apparent superluminal blazar gas jet 7c in Hubble's frame. 1M L.yrs. **FIG. 3.b)** (*Top R*) Carinae, with 'ranging' or dispersed gas jets. **FIG. 3.c)** *(Bottom)* HH34. ESO The receding jet is red shifted beyond the visible range but does lensed light pick out the toroid black hole profile?

Ou first approximation of time scale, suggests that the Milky Way has already been recycled once, and will be due again shortly after the sun expires, in 5-6Bn years. Finite galactic life span is approximated at 8-12Bn years. We show that the DFM has good predictive power and ability to resolve anomalies, and is equivalent to the Stokes/Planck model consistent with Michelson's nul result. We find the prediction of laser beam refraction by the photoelectron clouds around accelerated particles appears consistent with current theory. We highlight that in classical and geometrical optics light changes speed on entering a shock or halo plasma by *both* n/c *and* the relative media speed factor V_g, the time spent passing through a glass of beer or ion cloud being invariant to motion, that this 'extra' variable, often forgotten, must always apply, as must observer frame selection. We show that light passing through a galaxy is therefore 'carried' at local c/n and advanced or delayed compared to that refracted at the edges, subject to galaxies vector in it's background CMBR rest frame, giving a better fit to observation with no requirement for gravity wells and macro caustics. It is predicted that lens red shift will vary with potential and rotational vector. We identify that non zero vacuum resistivity for non ideal plane waves gives a very small dispersion, thus the model may help explain the Hubble Constant but also suggest cosmic expansion acceleration rate is overly high.

The sequencing results from an exercise falsifying predictions of the DFM, which we conclude appears more logically consistent with observation than present models and relies on no new mathematical abstraction, but references to existing mathematical proofs are below. [9]

3. Scaling to the Universe.

Evidence suggests the process is scalable down to solar mass black holes, and up to universes. Fig.4. Shows the toroid rather than the "neutron star", at the heart of the Crab nebula. This is currently dormant.

FIG. 4. b) *Centre Left*. Toroid black holes are scalable. Centre of the Crab Nebula I.R. note the weak gas jet.

The ions themselves represent the inertial mass needed for equivalence with gravitational mass, and are the mass of that gravity, which really does increase with motion through the cvacuum CMBR frame, as in [particle accelerators, where the search for dark matter appears to have been hampered by the unrecognised dark matter photoelectrons.

The superposed ion particle waves are externalised to a macro wave when matter is formed, which provides the gradient, proportional to the matter in accordance with Newtons 2nd law. This is proposed as the core of the solution to quantum gravity.

At the larger scale to similarities with the universe are too many to go un-noticed. The DFM and recycling process would predict an 'axis' of the jet, but a spiral asymmetry around it. All would be ionised, then re-ionised locally in galaxy recycling rather than an 'epoch'. The other side of the source from our universe is the opposite polarity universe. But the Multiverse is also proven, not parallel but sequential. If we accept infinity we have neen through infinite recycling excercises already and will continue to do so, both locally and universally.

This is consistent with life after death on a scientific basis, as, if time goes past in an instant once dead, the next time we awaken our particles will be part of another sentient being. We may of course have been much sunshine or cold rock in between

The Milky Way will be in middle age at present. We will need to go a little further than another planet in our own galaxy if we wish to continue this cycle when the sun burns out as our black hole will recycle us, so we'll need to start the journey a little earlier. It should be possible to derive a life of the universe, which may have slowing rate of expansion due to the slight red shift derived from the CMBR frame vacuum, so also be approaching middle age, but possibly a little more than 13.7Bn yars.

The possibility that scaling of distance as well as time, as discussed by Karl Sagan and others, also remains.

Credits; Many at FQXi.

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